

**TEST EQUIPMENT
FOR MAINTENANCE, SERVICE
AND WORKPLACE SAFETY**



MEASUREMENT

Discover our test instruments
and their functions



TESTING MEASURING INSTRUMENTS

TEST INSTRUMENTS FROM GERMANY

Maintenance and Service

PCE Deutschland GmbH, based in Meschede-Freienohl in the Sauerland region of Germany, was founded in 1999 by three engineers. With more than 150 employees and locations worldwide, PCE Instruments specialises in the development, manufacture and sale of high-performance, innovative products in the fields of measurement technology, control technology, weighing technology and laboratory technology.

PCE Deutschland GmbH is **DIN EN ISO 9001:2015** and **DIN EN ISO 14001:2015** certified and manufactures test equipment that is customised to meet specific customer requirements. PCE Instruments supplies to customers in the government, industrial and academic sectors, among others.

PCE Instruments' comprehensive range of products and services offers you high precision and flexibility in all applications, as well as outstanding quality and functionality.

PCE Instruments has acquired List-Magnetik, a renowned manufacturer specializing in magnetic field measuring instruments and coating thickness meters. Also now part of the group is A & P Instruments, well-known for its precision moisture analyzers for laboratory and industrial sectors. Furthermore, Drive Test, a specialist in vehicle testing and diagnostic equipment, has also been acquired by PCE Instruments, broadening the group's reach into the automotive industry.

Through the combined expertise and product portfolios of PCE Instruments, List-Magnetik, A & P Instruments, and Drive Test, the group offers a wide array of high-quality measuring instruments and services to meet diverse industrial and research needs worldwide.



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MEASURING INSTRUMENTS

The field of measuring instruments covers a multitude of innovative portable products as well as products for fixed installation that measure electrical, mechanical, biological and chemical parameters.

CONTROL SYSTEMS

The range of control systems covers the complete demand for sensors, displays, controllers and paperless recorders.

WEIGHING EQUIPMENT

The field of weighing equipment comprises a wide standard range of high-quality scales and balances that can be calibrated and/or verified for trade.

LABORATORY TECHNOLOGY

High-end analytical and laboratory devices have been developed for professional applications and in particular for use in laboratories.



DEVELOPMENT

In order to develop modified test equipment in line with customers' specifications, proficient engineers and technicians cooperate closely with the customer.

PRODUCTION

PCE Instruments manufactures industrial test instruments that help improving process analysis and optimisation.

CALIBRATION

Our DIN EN ISO 9001:2015 certified calibration laboratory verifies the measuring accuracy of our products. They calibrate pressure, hardness, force, material thickness, sound volume, conductivity, redox, vibration acceleration and more.



PCE-VDL 16I

For the parameters temperature, relative humidity, air pressure, light and vibration

The mechanical engineering data logger PCE-VDL 16I from PCE Instruments measures and records the relevant parameters temperature, relative humidity, air pressure, light as well as 3-axis acceleration by means of a vibration sensor. This makes the data logger the ideal tool for monitoring machine vibration and at the same time measuring and recording important environmental conditions of the equipment.

Depending on the sampling rate, the data logger can record for several days. The recorded readings are saved to the internal 32 GB SD card and can be transferred to other media for evaluation where required.

ISO cal option

- » 3-axis acceleration up to 800 Hz
- » measures temperature, humidity, air pressure and light
- » 32 GB SD memory card
- » compact design: 86.8 x 44.1 x 22.2 mm
- » country of origin Germany



APPLICATION



TECHNICAL SPECIFICATIONS

Parameter	
Temperature measuring range	-20 ... +65 °C
Accuracy	±0.2 °C
Sampling rate	1 s ... 1800 s
Relative humidity measuring range	0 ... 100 % RH
Accuracy	±1.8 % RH
Sampling rate	1 s ... 1800 s
Air pressure measuring range	10 ... 2000 mbar
Accuracy	±2 mbar (within range 750 ... 1100 mbar) otherwise ±4 m bar
Sampling rate	1 s ... 1800 s
Light measuring range	0.045 ... 188,000 lux
Sampling rate	1 s 1800 s
3-axis acceleration measuring range	±16 g
Accuracy	±0.24 g
Sampling rate	800 Hz 1 Hz

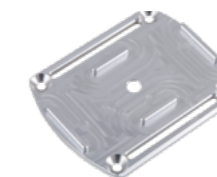
General technical data of the mini data logger PCE-VDL 16I

Memory capacity	2.5 readings per measurement, 3.2 billion readings with included 32 GB memory card
Keys	start / stop of a measurement; data logger on / off
LED	Log: operating status Alarm: alarm indicator Charge: charging status USB: status of PC connection
Power supply	integrated rechargeable Li-Ion battery 3.7 V / 500 mAh The meter is charged via the USB interface.
Integrated sensors	3-axis acceleration
Interface	USB
PC software	free setup and evaluation software (Windows XP / Vista / 7 / 8 / 10 32 bit / 64 bit) to record and evaluate data
Operating conditions	temperature -20 ... +65 °C
Storage conditions	temperature +5 ... +45 °C (ideal storage conditions for battery) 10 ... 95 % RH, non-condensing
Standards	complies with EU regulation RoHS/WEEE
Weight	approx. 60 g
Dimensions (L x W x H)	87 x 44 x 23 mm

Optional accessories:

Mounting plate

Order code PCE-VDL MNT



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION METER

PCE-VDL 24I

3-axis acceleration up to 1600 Hz

The acceleration sensor of this 3-axis data logger has a sampling rate of 1600 Hz. The sensor measures the current acceleration (3 axes), for instance in case of a shock or vibration. The measurements are made in pre-set (selectable) time intervals. The data measured with the internal 3-axis acceleration sensor are saved to a 32 GB memory card. This makes the data logger perfectly suitable to determine the acce-

leration for the purposes of fault diagnostics / stress test of components, machine monitoring, shock measurements and preventive maintenance in general.

ISO cal option

- » 3-axis acceleration up to 1600 Hz
- » 32 GB SD memory card
- » compact design: 86.8 x 44.1 x 22.2 mm
- » country of origin Germany



APPLICATION



TECHNICAL SPECIFICATIONS

Parameter 3-axis acceleration

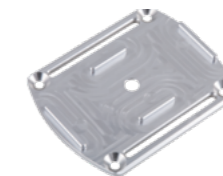
Measurement range	±16 g
Accuracy	±0.24 g
Sampling rate	1600 Hz ... 1 Hz

General technical data of the 3-axis acceleration sensor

Memory capacity	2.5 readings per measurement, 3.2 billion readings with included 32 GB microSD memory card
Keys	start / stop of a measurement; data logger on / off
LED	Log: operating status Alarm: alarm indicator Charge: charging status USB: status of PC connection
Power supply	integrated rechargeable Li-Ion battery 3.7 V / 500 mAh The meter is charged via the USB interface.
Integrated sensors	3-axis acceleration
Interface	USB
PC software	setup and evaluation software included 10 32 bit / 64 bit) to record and evaluate data
Operating conditions	temperature -20 ... +65 °C
Storage conditions	temperature +5 ... +45 °C (ideal storage conditions for battery) 10 ... 95 % RH, non-condensing
Standards	complies with EU regulation RoHS/WEEE
Weight	approx. 60 g
Dimensions (L x W x H)	87 x 44 x 23 mm

Optional accessories:

Mounting plate	Order code PCE-VDL MNT
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Subject to change without notice

VIBRATION MEASUREMENT VIBRATION ANALYZER

PCE-VT 1100 SERIES

Measurement of acceleration, vibration velocity and displacement

The vibration analyzer is used as a hand-held measuring device for the individual assessment of vibrations on machines and systems. With the help of this vibration analyzer, the actual state can easily be determined on site. Thus, corresponding changes can be made directly on site after the measurement. Thereafter, the new condition can be assessed. Thus, the vibration analyzer serves as a measuring

device for a relative measurement on different machines. The vibration analyzer serves essentially as precautionary or preventive maintenance of production machines. Very often, the vibration analyzer is used to assess the state of smaller electric motors.

ISO cal option

- » measures speed, distance, acceleration
- » keeps the value after every measurement
- » easy to handle, powered by batteries
- » wide frequency range
- » automatic shut-down after 20 seconds of inactivity to protect battery life
- » low battery indicator

PCE-VT 1100



PCE-VT 1100S

APPLICATION



TECHNICAL SPECIFICATIONS

Parameter	Measuring Range	Frequency Range
Acceleration	0.01 ... 199.9 m/s ² peak	10 Hz ... 1 kHz
Vibration speed	0.01 ... 199.9 mm/s rms	10 Hz ... 1 kHz
Displacement	0.001 ... 1.999 mm p-p	10 ... 500 Hz

Measurement accuracy	Acceleration: ≤3 % Vibration speed: ±5 %, ±2 Digits Displacement: +10/-20 % (10...20 Hz); ±5 % (20...1000 Hz)
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General specifications

Display	LCD, Response time approx. 1 second
Power supply	2 x 6 V CR2032 button cell
Battery life	about 5 hours (in continuous operation)
Environmental conditions	0 ... +40 °C / 32 ... 104 °F, 0 ... 84 % r.H.
Dimensions	155 x 24 x 18.7 mm / 6.1 x 0.9 x 0.7"
Weight	ca. 40 g / 1.4 oz (incl. batteries)

Optional accessories::

Standard probe	length 10mm	Order no.: PCE-VT-NF-10
Vibration Sensor	length 45 mm	Order no.: PCE-VT-NF-45
1 point calibration at:	159.2 Hz; 10 mm/s; 14.1 m/s ² ; 0.028 mm	Order no.: CAL-V-I

Model:

PCE-VT 1100	Vibration meter with sensor length 10 mm
PCE-VT 1100S	Vibration meter with sensor length 45 mm
PCE-VT 1100M	Vibration meter with magnetic adaptor plate

PCE-VT 1100M



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VIBRATION MEASUREMENT

VIBRATION METER

PCE-VT 3700 / PCE-VT 3700S

Handy entry-level device for vibration monitoring of machines and systems

The vibration meter is ideal for maintenance workers to quickly check vibrating parts, machines and systems. This vibration meter shows the vibration acceleration, vibration velocity and vibration displacement directly on the display. You can use the device to quickly and reliably detect machine imbalances which can lead to, for example, bearing damage. The vibration meter is equipped with a mode that

allows a measurement according to ISO 10816-3 to be carried out. The vibration meter analyzes the measured values and automatically shows a good / bad evaluation on the display. The vibration meter is supplied with a sensor on a spiral cable, magnet adapter, service bag and batteries. The ISO factory certificate completes the scope of delivery.

ISO cal option

- » automatic ISO 10816-3 evaluation
- » easy to handle
- » for mobile vibration measurement
- » coloured graphic display
- » peak-hold function



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	Acceleration 0.0 ... 399.9 m/s ² 0.1 m/s ²	Optional accessories: PCE-VT NP PCE-VT VMH PCE-VT 3700 CASE CAL-PCE-VT 3700 PCE-VT 3xxx SENSOR Needle sensor for vibration meter Magnet adapter Case with rigid foam insert ISO-calibration for vibration meter Replacement sensor
Resolution	±2 %	
Accuracy @ 160 Hz	10 Hz ... 1 kHz 10 Hz ... 10 kHz	
Frequency range		Further models: PCE-VT 3750 PCE-VT 3750S incl. sensor, magnetic adapter, headset incl. needle sensor with handgrip, headset
Measuring range	Velocity 0.00 ... 399.9 mm/s 0.1 mm/s	
Resolution	±2 %	
Accuracy @ 160 Hz	10 Hz ... 1 kHz	
Frequency range		
Measuring range	Displacement 0.000 ... 3.9 mm 1 µm	
Resolution	±2 %	
Accuracy @ 160 Hz	10 Hz ... 200 Hz	
Frequency range		
Measurement parameters	RMS, Peak, Peak-Peak Crest factor switchable metric / imperial	
Units	3.5" LC display	
Display	English, German, French Spanish, Italian, Dutch Portuguese, Turkish, Polish Russian, Chinese, Japanese	
Menu languages	3 x 1.5 V AA batteries	
Power supply	-20 ... +65 °C / -4 ... 149 °F; 10 ... 95 % r.H.	
Operating and storage conditions	150 x 80 x 38 mm / 5.9 x 3.1 x 1.5"	
Dimensions	170 g / 6 oz	
Weight	Sensor with spiral cable PCE-VT 3xxx SENSOR	
Sensor PCE-VT 3700	Magnet adapter PCE-VT VMH	
Sensor PCE-VT 3700S	Sensor with spiral cable PCE-VT 3xxx SENSOR	
	Magnet adapter PCE-VT VMH	
	Needle sensor PCE-VT NP	
	Handgrip PCE-VT 3xxx HANDLE	

Technical data vibration sensor

Resonance frequency	30 kHz
Transverse sensitivity	≤5 %
Destruction limit	5000 g (peak)
Operating and storage temperature	-20 ... +80 °C / -4 ... 176 °F; max. 95 % r.H.
Housing material	Stainless steel
Mounting thread	M5
Dimensions	16 x 36 mm / 0.6 x 1.4"
Weight (without cable)	35 g / 1.2 oz



PCE-VT 3700



PCE-VT 3700S



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION ANALYZER

PCE-VT 3800 / PCE-VT 3800S

Vibration analyzer with external sensor / data logger function

The vibration analyzer is the ideal companion for checking vibrating parts, machines and plant. With the external vibration sensor of the vibration meter, the vibration displacement up to 3.9 mm, the vibration velocity up to 399.9 mm/s and the vibration acceleration up to 399.9 m/s² can be determined. RMS, peak, peak-to-peak and crest factor are available as measurement parameters on the vibration

meter. Another function of the vibration measuring device is the automatic evaluation according to ISO 10816-3. Accordingly, the vibration meter can determine the current vibration state of a machine via a good/bad evaluation. This means that the vibration meter is used, for example, for repair and maintenance work on machines.

ISO cal option

- » data logger function
- » automatic ISO 10816-3 evaluation
- » measuring range up to 399.9 m/s² / 15744 in/s²
- » hand-held device for mobile vibration measurement
- » rechargeable battery
- » 2.48" LC display



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	Acceleration 0.0 ... 399.9 m/s ² / 0.0 - 15744 in/s ²	Housing material	stainless steel
Resolution	0.1 m/s ² / 3.94 in/s ²	Mounting thread	¼ - 28"
Accuracy @ 160 Hz	±2 %	Dimensions	Ø 17 x 46 mm / 0.67 x 1.8"
Frequency range	10 Hz ... 10 kHz 1 kHz ... 10 kHz	Weight (without cable)	52 g / 1.8 oz
Measuring range	Velocity 0.00 ... 399.9 mm/s / 0.00 - 15.74 in/s	Sensor PCE-VT 3800	Sensor with spiral cable PCE-VT 3xxx SENSOR Magnet adapter PCE-VT VMH
Resolution	0.1 mm/s / 0.0039 in/s	Sensor PCE-VT 3800S	Sensor with spiral cable PCE-VT 3xxx SENSOR Needle sensor PCE-VT NP Handle PCE-VT 3xxx HANDLE
Accuracy @ 160 Hz	±2 %	Optional accessories:	
Frequency range	10 Hz ... 1 kHz	PCE-VT NP	Needle sensor
Measuring range	Displacement 0.000 ... 3.9 mm / 0.000 - 0.154 in	PCE-VT VMH	Magnet adapter
Resolution	1 µm / 39.4 µin	CAL-PCE-VT 3xxx	ISO Calibration Certificate
Accuracy @ 160 Hz	±2 %	PCE-VT 3xxx SENSOR	Replacement vibration sensor
Frequency range	10 Hz ... 200 Hz	Further models:	
Measurement parameters	RMS, Peak, Peak-Peak Crest factor	PCE-VT 3850	incl. sensor, magnetic adapter, headset
Manual memory	99 folders with 50 measured values each	PCE-VT 3850S	incl. needle sensor with handgrip, headset
Data logger	Various start/stop triggers Measurement interval between 1 s ... 12 h 50 memory locations with 43.200 measured values each		
Units	can be switched to metric / imperial		
Display	2.8" LC display		
Menu languages	English, German, French Spanish, Italian, Dutch Portuguese, Turkish, Polish Russian, Chinese, Japanese		
Power supply	internal: LiPo battery (3.7 V, 2.500 mAh) external: USB 5 VDC, 500 mA		
Operating time	approx. 15 ... 20 h (depending on display brightness)		
Operating and storage conditions	temperature: -20 ... +65 °C / -4 ... 149 °F humidity: 10% RH ... 95% RH, non-condensing		
Protection Class	IP52		
Dimensions	165 x 85 x 32 mm / 6.5 x 3.3 x 1.3"		
Weight	239 g / 8.4 oz		
Technical Data Vibration Sensor			
Resonance frequency	24 kHz		
Transverse sensitivity	≤5 %		
Destruction limit	5000 g (peak)		
Operating and storage temperature	-55 °C ... +150 °C / -67 °F ... 302 °F		



PCE-VT 3800



PCE-VT 3800S



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION ANALYZER

PCE-VT 3900 / PCE-VT 3900S

Vibration analyzer with internal memory / route measurement

The vibration analyzer is an ideal measuring device for fast and precise checking of vibrating parts, machines and systems.

This vibration meter uses the external vibration sensor to determine the vibration displacement (measuring range 0.000 ... 3.9 mm), the vibration velocity (measuring range 0.00 ... 399.9 mm/s) and the

vibration acceleration (measuring range 0.0 ... 399.9 m/s²). Various measurement parameters are available for the vibration meter, such as RMS, peak, peak-peak and crest factor. The vibration meter is equipped with a mode that allows a measurement to be automatically evaluated according to the limit values of ISO 10816-3.

ISO cal option

- » for mobile vibration measurement
- » measuring range up to 399.9 m/s² / 15744 in/s²
- » FFT analysis
- » route measurement
- » manual measured value memory
- » automatic ISO 10816-3 evaluation
- » internal memory
- » 2.48" LC display



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	Acceleration 0.0 ... 399.9 m/s ² / 0.0 - 15744 in/s ²	Sensor PCE-VT 3900	Sensor with spiral cable PCE-VT 3xxx SENSOR
Resolution	0.1 m/s ² / 3.94 in/s ²	Sensor PCE-VT 3900S	Magnet adapter PCE-VT VMH Sensor with spiral cable PCE-VT 3xxx SENSOR
Accuracy @ 160 Hz	±2 %		Needle sensor PCE-VT NP
Frequency range	10 Hz ... 10 kHz 1 kHz ... 10 kHz		Handle PCE-VT 3xxx HANDLE
Measuring range	Velocity 0.00 ... 399.9 mm/s / 0.00 - 15.74 in/s	Technical Data Vibration Sensor	
Resolution	0.1 mm/s / 0.0039 in/s	Resonance frequency	24 kHz
Accuracy @ 160 Hz	±2 %	Transverse sensitivity	≤ 5 %
Frequency range	10 Hz ... 1 kHz	Destruction limit	5000 g (peak)
Measuring range	Rotational Speed 600 ... 50000 RPM	Operating and storage temperature	-55 °C ... +150 °C / -67 °F ... 302 °F
FFT acceleration	10 Hz ... 8 kHz	Housing material	stainless steel
FFT velocity	10 Hz ... 1 kHz	Mounting thread	¼ - 28"
Accuracy @ 160 Hz	±2 %	Dimensions	Ø 17 x 46 mm / 0.67 x 1.8"
Number of FFT lines	2048	Weight (without cable)	52 g / 1.8 oz
Route measurement	100 routes each with 100 machines each with 100 measuring points with 1000 measured values each	Optional accessories:	
Measuring range	Displacement 0.000 ... 3.9 mm / 0.000 - 0.154 in	PCE-VT NP	Needle sensor
Resolution	1 µm / 39.4 µin	PCE-VT VMH	Magnet adapter
Accuracy @ 160 Hz	±2 %	CAL-PCE-VT 3xxx	ISO Calibration Certificate
Frequency range	10 Hz ... 200 Hz	PCE-VT 3xxx SENSOR	replacement vibration sensor
Measurement parameters	RMS, Peak, Peak-Peak Crest factor	Further models:	
Manual memory	99 folders with 50 measured values each	PCE-VT 3950	incl. sensor, magnetic adapter, headset
Data logger	Various start/stop triggers Measurement interval between 1 s ... 12 h 50 memory locations with 43.200 measured values each can be switched to metric / imperial	PCE-VT 3950S	incl. needle sensor with handgrip, headset
Units			
Display	2.48" LC display		
Menu languages	English, German, French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Japanese		
Power supply	internal: LiPo battery (3.7 V, 2500 mAh) external: USB 5 VDC, 500 mA		
Operating time	ca. 15 ... 20 h (depending on display brightness)		
Operating / storage conditions	temperature: -20 ... +65 °C / -4 ... 149 °F humidity: 10% RH ... 95% RH, non-condensing		
Dimensions	165 x 85 x 32 mm / 6.5 x 3.3 x 1.3"		
Weight	239 g / 8.4 oz		



PCE-VT 3900



PCE-VT 3900S



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION METER

PCE-VM 20

Vibration meter for vibration measurement on machines

Rotating components in machines generally cause machine vibrations which can go over to the entire machine via mechanically coupled components. This creates a mixture of vibration with different frequencies. This machine vibration can have different effects some of which may be desired (e. g., in conveyors or vibrating sieves) – however, in most cases they are undesirable and cause poor manu-

facturing qualities and increased wear of the machine. Increased wear and tear due to machine vibrations leads to reduced running times, higher failure rates and higher maintenance expenditure, i. e. to avoidable costs as a whole.

ISO cal option

- » real-time FFT analysis
- » robust housing
- » many vibration parameters
- » integrated rechargeable LiPo battery
- » direct evaluation of machine vibration in compliance with DIN ISO 10816



APPLICATION



TECHNICAL SPECIFICATIONS

Vibration acceleration	0 ... 200 m/s ² , RMS and Peak-Peak
Vibration velocity	0 ... 200 mm/s, RMS
Vibration displacement	0 ... 2000 µm, Peak-Peak
Accuracy vibration	±5 %
Operating modes	vibration, temperature, revolutions
Representable measured variables	Frequency Vibration acceleration vibration velocity vibration FFT spectrum
Units	metric, imperial mm/s ² , mm/s, µm RPM und Hz
Interface	USB 2.0
Memory	4 GB micro SD card
Battery life	up to 8 h continuous operation
Battery type	lithium polymer
Display	128 x 160 pixel colour LCD
Environmental conditions	-10 ... +55 °C ≤80 % RH non-condensing
Dimensions	132 x 70 x 33 mm / 5.2 x 2.8 x 1.3 in (L x W x D)
Weight	approx. 150 g

Handset: must not be exposed to strong vibration, magnetic fields, corrosive media or dust

Technical data of the vibration sensor

Sensitivity	100 mV/g
Frequency response (± 3 dB)	0.5 ... 15000 Hz
Frequency response (± 10 %)	2.0 ... 10000 Hz
Dynamic range	±50 g, peak
Power supply (IEPE)	18 ... 30 V DC
Constant current source	2 ... 10 mA
Spectral noise at 10 Hz	14 µg / √Hz
Spectral noise at 100 Hz	2.3 µg / √Hz
Spectral noise at 1000 Hz	2 µg / √Hz
Output impedance	<100 Ω
Bias voltage	10 ... 14 V DC
Housing insulation	>100 MΩ
Environmental conditions	-50 ... 121 °C / -58 ... 249.8 °F
Maximum impact protection	5000 g, peak
Resonant frequency	23,000 Hz
Housing material	316L stainless steel
Connection	2-pin MIL-C-5015
Protection class	IP 68
Weight	90 g / < 1 lb



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION ANALYZER

PCE-VM 400B

Measurement of Acceleration, Velocity, Displacement, and Rotational Speed

The vibration analyzer is a technologically advanced instrument for the precise measurement and evaluation of vibrations in industrial applications. It enables the simultaneous measurement of vibrations on shafts and bearings across four independent channels. Equipped with high-quality piezoelectric acceleration sensors, even the smallest vibrations can be accurately captured. The vibration analyzer

has various measurement functions, including acceleration, velocity, displacement, and rotational speed, to cover a wide range of applications. It also offers the capability of balancing with up to 8 correction planes to counterbalance imbalances in rotating machinery. Additionally, the vibration analyzer allows for route measurement, specifically for recurring measurements at identical measuring points.

ISO cal option

- » 4 channels for measuring and evaluating vibrations
- » measurement on shafts and bearings
- » reliable piezoelectric acceleration sensors
- » wide frequency range: 1 ... 25000 Hz
- » acceleration measurement range: 0.001 ... 200 m/s²
- » velocity measurement range: 0.001 ... 200 mm/s
- » balancing - up to 8 correction planes
- » evaluation according to ISO 10816



APPLICATION



TECHNICAL SPECIFICATIONS

Acceleration

Measurement Range +0.001 m/s² ... +200 m/s²
Resolution 0.001 m/s²
Accuracy ± 5 %

Velocity

Measurement Range +0.001 mm/s ... +200 mm/s
Resolution 0.001 mm/s
Accuracy ± 5 %

Displacement

Measurement Range +0.001 μm ... +2000 μm
Resolution 0.001 μm
Accuracy ± 5 %

Optical Rotational Speed

Measurement Range +10 rpm ... +200000 rpm
Resolution 1 rpm
Accuracy ± 5 %

General Technical Data

Number of Measurement Channels 4
Frequency 1 ... 25000 Hz
Display Type VGA Color Display
Display Size 3.5 inches
Storage Capacity 4 GB
Data Interface USB
Battery Capacity 3200 mAh
Battery Voltage 3.6 V
Battery Type Lithium-Ion Battery
Operating Time 8 hours
Selectable Auto Power Off 30 ... 99999 s
Menu Language German, English, Spanish, Polish, Russian, French, Chinese, Indonesian
Protection Class (Device) IP20
Power Supply Battery, Power Adapter
Weight 460 g / 1.0 lb
Device Weight with Accessories 2800 g / 6.1 lb
Device Weight with Accessories and Packaging 2800 g / 6.1 lb
Dimensions (L x W x H) 220 x 100 x 42 mm / 8.6 x 3.9 x 1.6 in
Additional Dimensions Sensor Cable Length: 140 cm
Operating Conditions -10 ... 50 °C , 90 % r.H
Storage Conditions -10 ... 50 °C , 90 % r.H



Subject to change without notice

VIBRATION MEASUREMENT VIBRATION ANALYZER

PCE-VM 22

Vibration analyzer with 4 GB data memory / Measuring range 0 ... 200 mm/s²

The vibration analyzer has a measuring range of 0 ... 200 m/s² for acceleration. In addition to acceleration, the vibration meter can also measure speed, displacement, frequency and an ISO 18016-3 measurement. During the vibration measurement, an FFT view is simultaneously displayed on the vibration meter. By pressing a button, it is possible to switch from the FFT analysis to the actual wave view of the

vibration. This makes it possible to analyse and evaluate a vibration even better with the vibration meter. The magnetic holder of the vibration sensor of the vibration meter is designed in such a way that it can be attached to curvatures with a minimum radius of 20 mm / 0.78".

ISO cal option

- » measuring range 0 ... 200 m/s²
- » infrared temperature measurement
- » 4 GB data storage
- » 8 hours of battery life
- » optionally with ISO calibration certificate
- » FFT analysis and wave view of the vibration



APPLICATION



TECHNICAL SPECIFICATIONS

Frequency			
Measuring range	1 ... 10,000 Hz		
Resolution	0.1 Hz		
Accuracy	±5 %		
Acceleration			
Measuring range	0 ... 200 m/s²		
Resolution	0.01 m/s ²		
Accuracy	±5 %		
Speed			
Measuring range	0 ... 200 mm/s		
Resolution	0.01 mm/s		
Accuracy	±5 %		
Displacement			
Measuring range	0 ... 2000 µm		
Resolution	0.01 µm		
Accuracy	±5 %		
Infrared temperature measurement			
Measuring range	-70 ... 380 °C / -94 ... 716 °F		
Resolution	0.1 °C / °F		
Accuracy	±0.5% at (0...+60°C), (32 ... 140 °F) ±1 % at (-40 ... 0, 60 ... 120 °C), (-40 ... 32, 140 ... 248 °F) ±2 % at (-70 ... -40, 120 ... 180 °C), (-94 ... -40, 248 ... 356 °F) ±4 % at (180 ... +380 °C), (356 ... 716 °F)		
Emissivity	1 fixed		
Tachometer			
Measuring range	10 ... 200,000 RPM		
Resolution	0.1 RPM		
Accuracy	±0.1 % and ±1 RPM		
Units	RPM, Hz		
Further specifications for the handheld device			
FFT spectrum resolution	400, 800, 1600 lines		
Dynamic range	106 dB		
A/D converter resolution	24 bit		
Storage space	4 GB		
Display	128 x 160 pixels		
Interfaces	Micro USB interface		
Power supply battery	3.7 V, 1000 mAh battery		
Battery life	ca. 8 hours		
Power supply for power pack	5 V DC, 1 A		
Operating conditions	0 ... 50 °C / 32 ... 122 °F, <85% RH, non-condensing		
Storage conditions	-20 ... 60 °C / -4 ... 140 °F, <85% RH, non-condensing		
Dimensions	132 x 70 x 33 mm / 5.2 x 2.7 x 1.3"		
Weight	150 g / 5.3 oz		
Vibration sensor specifications			
Sensitivity	100 mV/g		
Cable length	approx. 1.5 m / 4.9 ft		
Connection	2 pin MIL-DTL-5015		
Case material	316L stainless steel		
Dimensions	Ø 25 x 53 mm / Ø 0.98 x 2.08"		
Weight	86 g / 3.0 oz		
Magnetic holder specifications			
Diameter	30 mm / 1.18"		
Magnetic force	20 kg / 44 lbs		
Connection thread	1/4"-28 UNF female		
Smallest radius	20 mm / 0.78"		
Infrared and RPM sensor specifications			
Cable length	ca. 1.2 m / 3.9 ft		
Dimensions	Ø 16 x 83 mm / Ø 0.63 x 3.26"		
Weight	75 g / 2.6 oz		



Subject to change without notice

VIBRATION MEASUREMENT STETHOSCOPE

PCE-S 42

Machine stethoscope to listen to bearings and motors / 32 sound levels

The automotive-testing mechanics stethoscope PCE-S 42 is designed for listening to individual machine parts, which enables you to carry out maintenance and repair work using the machine stethoscope. The use of a machine stethoscope thus makes it easier to listen to sound phenomena in bearings and motors. This makes it possible to amplify noises that imply that the machine is slightly damaged,

which can cause severe impairments and damage to the machine if not observed. The machine stethoscope comes with headphones the shape of which is adapted to the human head and thus are perfectly suitable to be used in noisy environments. The big, padded earpieces have a noise-suppressing effect and at the same time offer wearing comfort.

ISO cal option

- » two different measuring tips
- » non-stationary measuring device
- » 32 volume levels
- » headphones adapted to the human head
- » for preventive maintenance and servicing
- » noise-suppressing headphones



APPLICATION



TECHNICAL SPECIFICATIONS

Frequency range	30 Hz ... 15 KHz
Operating temperature	-10 ... +40 °C
Output volume	digitally adjustable (32 levels)
Headphones	32 Ω
Power supply	4 x AAA battery
Battery life	30 h
Dimensions	220 x 35 x 35 mm
Length sensors	70 / 280 mm



Subject to change without notice

RPM MEASUREMENT STROBOSCOPE

PCE-LES 103

LED tachometer with a range of 60 ... 300.000 flashes

The LED stroboscope PCE-LES 103 combines LED technology with intelligent and compact electronics for precise control of the flash frequency. The mobile handheld stroboscope is particularly suitable for non-contact measurement and visualisation of movements on machines and systems. The frequency of the PCE-LES 103 can be continuously adjusted between 1 and 5000 Hz (60 - 300,000 flashes

per minute). The high-power LEDs used ensure a particularly long service life of the light sources. The stroboscope achieves an illuminance of 6160 lux at 1000 Hz and a distance of 30 cm. A long operating time is achieved by the large Li-ion battery.

ISO cal option

- » brightness: 3 High Power LEDs
- » UV models available
- » flash frequency up to 300.000 FPM
- » 6160 lux at 30 cm / 1000 Hz
- » adjustable flash duration and phase shift
- » phase shift: -360° to +360°
- » automatic shutdown



APPLICATION



TECHNICAL SPECIFICATIONS

Display Type	TFT Color Display
Display Size	2.8 inches
Operating Time	4.5 hours
Additional Information	at flash frequency 100 Hz, 1%, display brightness 70%
Adjustable Auto Shutdown	2 ... 10 min.
Auto Shutdown Deactivatable	Yes
Brightness	11730 lux @ 20cm @ 1000Hz 1 % 6160 lux @ 30cm @ 1000Hz 1 % 2650 lux @ 50cm @ 1000Hz 1 %
Light Color	6500 K
Phase Shift	-360 ... 360 °
Pulse Width	0.01 ... 1% of pulse duration Resolution: 0.01% 0.01 ° ... 3.60 ° of 360 ° Resolution: 0.01 °
Menu Language	German, English, Spanish, French, Italian, Dutch, Turkish, Polish, Russian, Chinese
Protection Class (Device)	IP52
Power Supply	5V DC, 2A
Weight	284 g
Dimensions (L x W x H)	165 x 90 x 35 mm / 6,4 x 3,5 x 1,3 in
Operating Conditions	-20 ... 60 °C, 35 ... 85% r.H
Storage Conditions	-20 ... 60 °C, 35 ... 85% r.H
Instruction Manual Languages	German, English
Frequency	
Measurement Range	+60 FPM ... +9999.99 FPM
Resolution	0.01 FPM
Accuracy	0.003 % of the setting or ± 1 LSD
Frequency	
Measurement Range	+10000 FPM ... +300000 FPM
Resolution	0.1 FPM
Accuracy	0.003 % of the setting or ± 1 LSD
Frequency	
Measurement Range	+1 Hz ... +5000 Hz
Resolution	0.01 Hz
Accuracy	0.003 % of the setting or ± 1 LSD

Batteries and Accumulators

Type	Lithium-Ion Battery
Lithium Info	Lithium in the product (built-in or included)
Capacity	2200 mAh
Voltage	7.4 V
System	Secondary: Rechargeable Battery / Accumulator Number

Further Models:

PCE-LES 103UV-365	3 high power UVA LEDs UVA light 365 ... 370 nm
PCE-LES 103UV-385	3 high power UVA LEDs UVA light 380 ... 390 nm

With external trigger input and output

PCE-LES 303	
PCE-LES 303UV-365	
PCE-LES 303UV-385	



Subject to change without notice

RPM MEASUREMENT STROBOSCOPE

PCE-LES 108

with 8 High Power LEDs / 9150 lux @ 30cm @ 1000Hz 1%

Analysing the movement of rotating machines is quick and easy with our stroboscope. The stroboscope is equipped with 8 high-power LEDs, which together generate a light intensity of 17670 lux at 20 cm / 1000 Hz. The stroboscope allows you to precisely set the flash frequency in both FPM and Hz. The stroboscope is pocket-sized and is also mains-independent thanks to the rechargeable battery. The stroboscope is

operated intuitively using the 10 buttons, allowing quick adjustments to be made. The phase shift allows the observation point to be moved variably. The pulse width can be used to set the duration and therefore also the intensity of the flash frequency.

ISO cal option

- » powerful 8 High Power LEDs
- » flash frequency adjustable in FPM and Hz
- » 9150 lux at 30 cm / 1000 Hz
- » digital pulse width modulation
- » phase shift - 360 ° ... + 360 °
- » quick adjustment using x2 and ÷2 button
- » intuitive control buttons and clear display
- » pocket size
- » route measurement
- » slow motion mode



APPLICATION



TECHNICAL SPECIFICATIONS

Frequency		Further Models::	
Measuring range	60 ... 9999.99 FPM	PCE-LES 108UV-365	8 UVA HochleistungsLEDs
Resolution	0.01 FPM	PCE-LES 108UV-385	UVA-Licht 365 ... 370 nm
Accuracy	±0.003 % of the setting or ±1 LSD		8 UVA Hochleistungs LEDs
			UVA-Licht 380 ... 390 nm
Frequency		With external trigger input and output	
Measuring range	10000 ... 300000 FPM	PCE-LES 308	
Resolution	0.1 FPM	PCE-LES 308UV-365	
Accuracy	±0.003 % of the setting or ±1 LSD	PCE-LES 308UV-385	
Frequency			
Measuring range	1 ... 5000 Hz		
Resolution	0.01 Hz		
Accuracy	±0.003 % of the setting or ±1 LSD		
General technical data			
Display Type	LC colour display		
Display size	2.8 inch		
Storage medium	Internal memory		
Operating time	4.5 h		
Operating time	Additional information at flash frequency 100 Hz, 1 %, display brightness 70 %		
Hz, 1 %, Automatic switch-off from ... to	2 ... 10 min.		
Automatic switch-off can be deactivated	Yes		
Light intensity	17670 lux @ 20 cm @ 1000 Hz 1% 9150 lux @ 30 cm @ 1000 Hz 1% 4100 lux @ 50 cm @ 1000 Hz 1%		
Light colour	6200 K		
Phase shift	-360 ... 360 °		
Pulse width	0.01 ... 1 % of pulse duration		
Resolution:	0.01 %		
	0.01 ° ... 3.60 ° of 360 °		
Resolution:	0.01 °		
Trigger	input: Permissible input: NPN signal, 24 V DC, sensor supply: 24 V / 100 mA for external sensors		
Output:	Open-drain output, up to 24 V, 50 mA		
Route measurement	Up to 15 routes, 10 machines per route, 5 points per machine		
Menu language	Turkish, English (US), Polish, Spanish, German, Chinese, Russian, French, Italian, Dutch		
Protection class (device)	IP52		
Power supply	5 V DC, 2 A		
Plug type	Device Euro plug		
Rechargeable battery/battery	1 x 7.4 V internal, lithium-ion battery		
Capacity	2200 mAh		
Operating conditions	-20 ... 60 °C , 35 ... 85 % r. H.		
Storage conditions	-20 ... 60 °C , 35 ... 85 % r. H.		
Dimensions (L x W x H)	165 x 90 x 35 mm		
Weight	284 g		



Subject to change without notice

RPM MEASUREMENT TACHOMETER

PCE-T 220

Optical speed measurement / laser: class 3 A 2-5 mW / measuring functions: MIN, MAX, LAST

Our Tachometer is a digital, battery-operated optical meter that can be used up to a distance of 50 cm from the measuring point thanks to its optical sensor. It covers a measurement range from 2.5 to 99999 revolutions per minute (rpm) and offers a resolution of 0.1 rpm to provide reliable results. Equipped with minimum, maximum, last and average value functions, the Tachometer enables the recording of

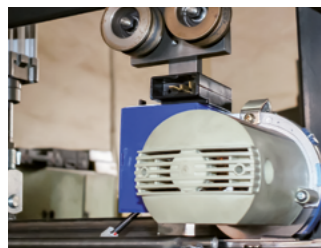
current and extreme measured values over the measurement period. The 1.8-inch LC display provides a clear view under all conditions. The compact design with dimensions of 127 x 55 x 30 mm makes the device handy and easy to use. The laser enables precise measurements at a distance of 50 to 500 mm. The trigger key must be held down to make a measurement.

ISO cal option

- » measuring functions: MIN, MAX, LAST, AVG
- » automatic power off after 60 s
- » laser: class 3 A 2-5 mW
- » measuring distance: 50 ... 500 mm
- » sampling rate: 1 x per second
- » LC display 1.8 inch



APPLICATION



TECHNICAL SPECIFICATIONS

Optical speed	
Measurement range up to	2,5 ... 999,9 RPM
Resolution	0,1 RPM
Accuracy	± (0.1 % of Rd + 5 digits)
Optical speed	
Measurement range up to	1000 ... 99999 RPM
Resolution	1 RPM
Accuracy	± (1 % of Rd + 5 digits)
General technical data	
Measuring functions	MIN, MAX, LAST, AVG
Display type	LCD
Display size	1,8 Inch
Measuring rate	1 x per second
Automatic power-off	60 s
Laser	Class 3A 2-5 mW
Measuring distance	50 ... 500 mm
Menu language	English, English (GB)
Protection class (device)	IP20
Weight	100 g
Operating conditions	0 ... 50 °C , 10 ... 90 % RH
Storage conditions	-10 ... 80 °C , 10 ... 75 % RH
(Rechargeable) battery	2 x 1,5 V AAA battery , Zinc carbon
Capacity	400 mAh
Dimensions (L x W x H)	127 x 55 x 30 mm



Subject to change without notice

RPM MEASUREMENT HANDHELD TACHOMETER

PCE-T 230

Optical speed measurement / Measurement range of 0.5 ... 19999 rpm and a resolution of 0.1 rpm

Our handheld tachometer with a measurement range of 0.5 ... 19999 rpm and a resolution of 0.1 rpm enables accurate and reliable measurements in many applications. With a sampling rate of 0.8 seconds, the handheld tachometer delivers quick results. It offers multiple measurement functions to choose from, including MAX, MIN, LAST and AVG, to capture different aspects of rotational speed measure-

ment. The units can be flexibly selected between rpm, m/min and ft/min. The handheld tachometer has a low battery indicator and is powered by two AAA batteries. Automatic power off after 60 seconds helps to save energy. The handheld tachometer fits compactly in the hand and can be operated using just three keys.

ISO cal option

- » Measuring functions: MAX, MIN, LOAD, AVG
- » Units: rpm, m/min, ft/min
- » Measuring rate: 0.8 s
- » Automatic switch-off after 60 s
- » LC display 1.8 inch



APPLICATION



TECHNICAL SPECIFICATIONS

Optical speed	
Measurement range up to	0,5 ... 9999 RPM
Resolution	0,1 RPM
Accuracy	0.05 % of Rd + 1 digit
Optical speed	
Measurement range up to	1000 ... 19999 RPM
Resolution	1 RPM
Accuracy	0.05 % of Rd + 1 digit
General technical data	
Measuring functions	MIN, MAX, LAST, AVG
Units	ft/min, m/min, RPM
Display type	LCD
Display size	1,8 Inch
Measuring rate	0,8 s
Automatic power-off	60 s
Menu language	English, English (GB)
Protection class (device)	IP20
Weight	110 g
Operating conditions	0 ... 50 °C , 10 ... 90 % RH
Storage conditions	-10 ... 80 °C , 10 ... 75 % RH
(Rechargeable) battery	2 x 1,5 V AAA battery , Zinc carbon
Capacity	400 mAh
Dimensions (L x W x H)	144 x 51 x 30 mm



Subject to change without notice

RPM MEASUREMENT TACHOMETER

PCE-T 238

Tachometer for contact and non-contact measurement / For speeds up to 99,999 rpm

The tachometer PCE-T 238 is a battery-powered hand-held device that allows mobile use. The handheld tachometer can perform a contact measurement as well as a non-contact measurement. It is also possible to perform a measurement of the surface velocity. The handheld tachometer allows a measurement of up to 99,999 revolutions per minute. This measuring range is possible with contactless measurements

with the optical tachometer. With the contact measurement, values up to 19,999 revolutions per minute can be determined, and the measurement of the surface speed offers the possibility of determining speeds of up to 1999.9 meters per minute.

ISO cal option

- » non-contact measurement via a laser
- » contact measurement of m/min via surface wheel
- » robust ABS plastic housing
- » with different rubberized measuring tips (cone shape and funnel shape)
- » checking the speed of hard to reach components possible
- » independent of rotation direction
- » running speed



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range contactless measurement	5 ... 99,999 RPM
Measuring range contact measurement	0.5 ... 19,999 RPM
Measuring range surface measurement	
0.05 ... 1,999.9 m/min	
Resolution RPM	At <1,000 rpm: 0.1
At ≥1,000 rpm: 1	
Resolution m/min	
At <100 m/min: 0.01	
At ≥1000 m/min: 1	
Display	LCD, size: 32 x 28 mm / 1.2 x 1.1
in, 5 digits	
Measurement accuracy	± (0.1% of rdg. + 1 digit)
Measuring distance for non-contact measurements	Typically 5 ... 150 cm / 2 ... 59 in
Laser	Class II, power: 1 mW
Operating conditions	0 ... 50°C / 32 ... 122°F, <80 %
relative humidity	
Memory	Last value, extreme values with
call function	
Data interface	RS232
Power supply	4 x 1.5V AAA batteries
Power consumption	Contactless measurement: ca. DC
20-mA	
Contact measurement: ca. DC 9.5-mA	
Dimensions	165 x 50 x 33 mm / 6.5 x 1.9 x 1.3
in	
Weight	182 g / 6.4 oz (incl. batteries)



Subject to change without notice

BELT TENSION TESTING

BELT TENSION METER

PCE-BTM 2000A

To measure the tension of V-belts or drive belts

The PCE-BTM 2000 is a measuring instrument to determine the tension of V-belts or drive belts. Belt tension can only be measured when the belt is not in operation. A small impulse with the help of a beater is enough to make the belt vibrate. With a measuring probe and a sensor beam, the generated vibration frequency is determined. The belt tension is calculated on the basis of the measuring data of

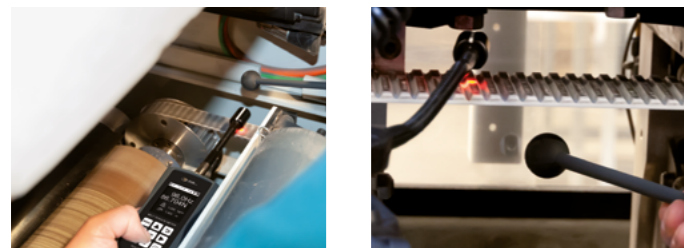
the natural frequency as well as the belt mass and the length of the free belt span. It is not necessary to enter the belt mass and the belt length. The maximum service life of V-belts or drive belts can only be achieved with ideal tension.

ISO cal option

- » measures vibration frequency of the belt
- » intuitive operation
- » calculation of belt tension (trum force)
- » displays belt tension in N
- » 6 menu languages
- » memory for 750 readings
- » sensor with gooseneck
- » belt length and belt mass can be entered



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement range	10 ... 900 Hz
Accuracy	±(1 % of Rd + 4 digits)
Repeatability	±1 Hz
Resolution	<100 Hz: 0.1 Hz >100 Hz: 1 Hz
Sensor length	16 cm / 6,2 in
Belt length	max. 9.999 m
Belt mass	max. 9.999 kg/m
Memory	750 readings 15 folders, 50 measuring points/folder
Menu languages	English, German, Spanish, French, Italian, Dutch
Power supply	3 x 1.5 V AA battery
Operating conditions	0 ... 50 °C; max. 95 % RH
Storage conditions	-20 ... 65 °C; max. 95 % RH
Dimensions	150 x 80 x 38 mm
Weight	approx. 200 g incl. batteries

Further Model:
PCE-BTM 2000L **Sensor length** **25 cm / 9,8 in**



Subject to change without notice

TEMPERATURE MEASUREMENT TEMPERATURE DATA LOGGER

PCE-T 394

4 input channels / Measuring range from -210 ... 1370 °C / Thermocouple types K and J

The temperature data logger offers precise temperature monitoring. With a measuring range of -210 to 1370 °C and support for thermocouple types K and J, it enables accurate measurements in different environments. Its 4 input channels allow simultaneous monitoring of multiple measuring points, making it ideal for complex applications. Before the recording mode can be started, the temperature data

logger must be connected to a PC via a micro USB port and the parameters configured using the PC software. The storage interval, the number of measured values and also the starting point of the data logger can be set. Up to 32000 data records can be recorded with this function. The interval can be set in steps from 1s to max. 24h.

ISO cal option

- » Thermocouple types K and J
- » 4 input channels
- » Data logger up to 32,000 data records
- » Display of the temperature difference between two channels
- » Units: °C, °F, K
- » LC display 2.8" with illumination
- » Automatic switch-off



APPLICATION



TECHNICAL SPECIFICATIONS

Temperature type K	
Measuring range	-200 °C ... +1370 °C
Resolution	0.1 °C
Accuracy	±0.2 % of Rd.+1 °C above -100 °C / ±0.5 % of Rd.+2 °C below -100 °C

Temperature type J	
Measuring range	-210 °C ... +1100 °C
Resolution	0.1 °C
Accuracy	±0.5 % of Rd.+2 °C below -100 °C / ±0.5 % of Rd.+2 °C below -100 °C

General technical data

Number of measuring channels	4
Measurement functions	MIN, MAX, HOLD, average value
Units	°C, °F, K
Display type	LCD
Display size	2.8 inch
Display refresh rate	500 mS
Storage capacity	32000 data records
Storage interval of	1 s
Storage interval to	24 h
Interface	Micro-USB
Automatic switch-off	20 min
Automatic switch-off can be deactivated	yes
Menu language	English
Protection class (device)	IP52
Power supply	5V DC
Plug type	Euro plug device
Weight	247 g
Dimensions (L x W x H)	166 x 88 x 32 mm
Operating conditions	-10 ... 50 °C , 0 ... 80 % r.H
Storage conditions	-20 ... 50 °C , 0 ... 80 % r.H
Capacity	2500 mAh



Subject to change without notice

TEMPERATURE MEASUREMENT 4-CHANNEL TEMPERATURE LOGGER

PCE-T 420

4 Channels for Various Thermocouples / Data Storage for 10 Million Readings

The 4-channel temperature meter for thermocouples allows for the display and archiving of measured values from multiple temperature sensors simultaneously. It can be connected to up to 8 different types of thermocouples. Notably, the data logger offers high accuracy, especially with Type K thermocouples, with an accuracy of $\pm(0.04\% + 0.3\text{ }^\circ\text{C})$. The measurement overview of the 4-channel temperature meter

provides a quick overview of the 4 displayed temperatures. Another view displays the maximum, minimum, and average values since the start of measurement. Additionally, each channel can be compared with all other channels, showing the current measurement value of the channel and the difference from the reference channel.

ISO cal option

- » measurement range from -200 ... +1800 °C
- » compatible with 8 types of thermocouples
- » adjustable storage interval from 1 s to 12 h
- » display of maximum, minimum, and average values
- » storage capacity for 10 million readings
- » adjustable alarm thresholds
- » high accuracy $\pm(0.04\% + 0.3\text{ }^\circ\text{C})$



APPLICATION



TECHNICAL SPECIFICATIONS

Temperature Type K
Measurement Range -200 °C ... +1370 °C
Resolution 0.1 °C
Accuracy $\pm (0.04\% + 0.3\text{ }^\circ\text{C})$

Temperature Type J
Measurement Range -200 °C ... +1050 °C
Resolution 0.1 °C
Accuracy $\pm (0.04\% + 0.3\text{ }^\circ\text{C})$

Temperature Type S
Measurement Range 0 °C ... +1750 °C
Resolution 0.1 °C
Accuracy $\pm (0.05\% + 1\text{ }^\circ\text{C})$

Temperature Type R
Measurement Range 0 °C ... +1750 °C
Resolution 0.1 °C
Accuracy $\pm (0.05\% + 1\text{ }^\circ\text{C})$

Temperature Type E
Measurement Range -200 °C ... +850 °C
Resolution 0.1 °C
Accuracy $\pm 0.6\text{ }^\circ\text{C}$

Temperature Type T
Measurement Range -200 °C ... +400 °C
Resolution 0.1 °C
Accuracy $\pm 0.6\text{ }^\circ\text{C}$

Temperature Type N
Measurement Range -200 °C ... +1300 °C
Resolution 0.1 °C
Accuracy $\pm 0.6\text{ }^\circ\text{C}$

Temperature Type B
Measurement Range +600 °C ... +1800 °C
Resolution 0.1 °C
Accuracy $\pm (0.05\% + 1\text{ }^\circ\text{C})$

General Technical Data

Inputs 4 channels for thermocouples
Display Type LCD
Display Size 2.8 inches
Storage Capacity 100 data sets
up to 100,000 readings per data set
Storage Interval 1 ... 43,200 s
Data Interface USB-C
Power Supply USB 5V DC 500mA
Battery Capacity 2,500 mAh
Battery Voltage 3.7 V

Battery Type Lithium-Ion Polymer Battery
Operating Duration 15 h
Approx. 15 ... 20 h (depending on display brightness)
Menu Language English, German, French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Japanese, Danish
Protection Class IP52
Operating Conditions -20 ... 65 °C, 10 ... 95% r.H.
Dimensions 165 x 85 x 32 mm (L x W x H)
Weight 255 g

Optional accessories:

High Temperature Sensor	Order no.:	TF-514
Surface temperature sensor	Order no.:	PCE-SP-202
Surface temperature roller sensor	Order no.:	PCE-SP-101
Screw-on Sensor	Order no.:	TF-524
Surface Sensor (self-adhesive)	Order no.:	TF-509
Magnetic Surface Sensor	Order no.:	TF-513
HT Surface Sensor	Order no.:	TF-110A
Flexible Temperature Sensor	Order no.:	TF-500
Screw-in Sensor	Order no.:	TF-119
Temperature Sensor	Order no.:	TF-101
Crocodile Clip Sensor	Order no.:	TF-109
Insulated Surface Temperature Sensor	Order no.:	TF-102A
High Temperature Sensor (extra long)	Order no.:	TF-104B
Penetration / Immersion Sensor	Order no.:	TF-106



Subject to change without notice

TEMPERATURE MEASUREMENT 12-CHANNEL TEMPERATURE METER

PCE-T 1220

12 channels for various thermocouples/ Data memory for 10 million measured values

With the Temperature Meter, the measured values of several temperature sensors can be recorded, displayed and archived simultaneously. It supports eight different thermocouple types (K, J, E, T, N, S, R, B), which can be connected to the 12 measuring channels. The large measuring range of -200 ... 1800°C / -328 ... 3272°F makes the Temperature Meter ideal for a wide range of applications - from

cryogenic temperatures to high-temperature processes. Particularly noteworthy is the high measuring accuracy, especially with type K thermocouples with $\pm(0.04\%$ of the mean value + 0.3 K). The measured values of the Temperature Meter are displayed on a large 7-inch display, which provides a clear and easy-to-read visualization of all 12 measured temperatures.

ISO cal option

- » measuring range from -200 ... 1800°C / -328 ... 3272°F
- » high accuracy of $\pm(0.04\%$ v.Mw. + 0.3 K) for type K
- » thermocouple types K, J, S, R, E, T, N, B
- » memory for 10 million measured values
- » adjustable alarm limits
- » 12 input channels
- » PC software



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data

Number of measuring channels	12
Units	°C, °F
Display type	LCD
Display size	7 Inch
Storage capacity	100 Data records
Memory capacity (additional information)	Up to 100,000 measured values per data record
Storage interval from	1 s
Storage interval to	12 h
Interface	USB-C
Operating time additional information	24 days @ 10 min. storage interval and screen off
Menu language	Turkish, English, Polish, Spanish, German, Chinese, Russian, Japanese, French, Danish, Italian, Dutch, Portuguese
Protection class (device)	IP52
Power supply	3.7 V
(Rechargeable) battery	1 x 3,7 V internal, Lithium-ion polymer battery
Capacity	10000 mAh
Operating conditions	-20 ... 65 °C, 10 ... 95 % RH
Storage conditions	-20 ... 65 °C, 10 ... 95 % RH
Dimensions (W x H x D)	248 x 145 x 50 mm
Weight	730 g

Temperature K-type

Measurement range up to	-200 ... +1370 °C
Resolution	0,1 °C
Accuracy	$\pm(0.04\%$ of Rd +0.3 K)

Temperature J-type

Measurement range up to	-200 ... +1050 °C
Resolution	0,1 °C
Accuracy	$\pm(0.04\%$ of Rd +0.3 K)

Temperature S-type

Measurement range up to	0 ... 1750 °C
Resolution	0,1 °C
Accuracy	$\pm(0.05\%$ of Rd +1 K)

Temperature R-type

Measurement range up to	0 ... 1750 °C
Resolution	0,1 °C
Accuracy	$\pm(0.05\%$ of Rd +1 K)

Temperature E-type

Measurement range up to	-200 ... +850 °C
Resolution	0,1 °C
Accuracy	± 0.6 K

Temperature T-type

Measurement range up to	-200 ... +400 °C
Resolution	0,1 °C
Accuracy	± 0.6 K

Temperature N-type

Measurement range up to	-200 ... +1300 °C
Resolution	0,1 °C
Accuracy	± 0.6 K

Temperature B-type

Measurement range up to	600 ... 1800 °C
Resolution	0,1 °C
Accuracy	$\pm(0.05\%$ of Rd +1 K)



Subject to change without notice

TEMPERATURE MEASUREMENT DIGITAL THERMOMETER

PCE-895

Cross laser thermometer for non-contact measurement tot 1600 °C

The Dual Laser Digital Thermometer PCE-895 is used for fast surface temperature measurement. The two laser points of the dual laser thermometer PCE-895 mark the exact measuring point and thus offer excellent assistance with the temperature measurement. Due to the cross laser function, the two laser spots indicate exactly how large the actual IR spot is. The emissivity of the dual laser thermometer

PCE-895 is adjustable in the range of 0.10 ... 1.0. Thus, the dual laser thermometer PCE-895 is suitable for almost all surfaces. The temperature measuring range extends from -35 ... 1600 °C / -31 ... 2912 °F. In addition to the IR function, a type K thermocouple can also be connected to the dual laser thermometer.

ISO cal option

- » non-contact temperature measurement
- » 60 :1 optics
- » temperature measurement up to 1600 °C / 2912 °F
- » compact cross laser thermometer
- » double laser shows the spot diameter
- » adjustable emissivity
- » adjustable emissivity
- » alarm function



APPLICATION



TECHNICAL SPECIFICATIONS

Infrared

Measuring range -35 ... 1600 °C / -31 ... 2912 °F
 Measuring accuracy (at 23 ... 25 °C ambient -35 ... 0 °C / 0 °F: $\pm 2 \text{ °C} / 3.6 \text{ °F} + 0.05 \cdot T_{obj}$
 0 ... 1600 °C: $\pm 2 \% \text{ of Rd}$ or $\pm 2 \text{ °C} / 3.6 \text{ °F}$
 Resolution 1 °C / 1.8 °F at 1000 ... 1600 °C / 1832 ... 2912 °F

Thermocouple

Measuring range Type K: -64 ... 1400 °C / -83 ... 2552 °F
 Measuring accuracy (at 23 ... 25 °C ambient temperature) $\pm 1 \% \text{ of Rd}$ or $\pm 1 \text{ °C} / 1.8 \text{ °F}$
 Resolution 0.1 °C / 0.18 °F at -64 ... 999.9 °C / -83.2 ... 1831.8 °F

Emissivity Adjustable 0.10 ... 1.0
 Spectral range 8 ... 14 μm
 Response time 1 s
 Optical resolution / measurement spot ratio 60 :1
 Storage Internal: 24 memory points
 External (micro-SD card): max. 8 GB supported

Interface USB
 Display LCD illuminated
 Power supply 2 x 1.5 V AA batteries
 Operating time Typical: 14 h
 Continuous: 10 h

Operating conditions 0 ... 50 °C / 32 ... 122 °F
 Weight approx. 400 g / 14.1 oz
 Dimensions 203 x 176 x 89 mm / 7.9 x 6.9 x 3.5 in



Subject to change without notice

TEMPERATURE MEASUREMENT INFRARED THERMOMETER

PCE-IR 80

Food thermometer for non-contact and contact measurement / Up to 330°C (626°F)

The infrared thermometer PCE-IR 80 is used to quickly control the temperature of food. The infrared thermometer is used in the area of canteen kitchens, catering services, refrigerated warehouses and warehouses. The infrared thermometer has two types of measurement. On the one hand, the PCE-IR 80 infrared thermometer can measure the temperature of the object without contact via infrared.

Here the measuring range is -35 ... 330°C / -31 ... 626°F. The emissivity of the infrared thermometer is adjustable, so that always best measuring results can be achieved.

On the other hand, the infrared thermometer has a stainless steel needle sensor, so that the meter can also be used as a puncture, infrared thermometer.

ISO cal option

- » non-contact and contacting temperature measurement combined in one measuring device only
- » large measuring range
- » suitable for use in the food industry according to HACCP
- » emissivity adjustable (pre-set for food)
- » low response time
- » measurement hold function (Min./Max.)
- » continuous measurement function
- » waterproof, thus simple hygienic cleaning (flushable housing)



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement type infrared

Measuring range	-35 ... 330°C / -31 ... 626°F
Resolution	0.1°C / 0.18°F
Accuracy	-35 ... 0°C / -31 ... 32°F : ± 4°C / 7.2°F > 0°C / 32°F : ± 2% of rdg. ± 2°C / 3.6°F

Type of measurement Penetration sensor

Measuring range	-20 ... 260°C / -4 ... 500°F
Resolution	0.1°C / 0.18°F
Accuracy	± 1% of of rdg. ± 1.5°C / 2.7°F

Optical resolution	4: 1
Emissivity	Adjustable 0.1 ... 1.0
Response time	10 ms
Spectral	8 ... 14 μm
Power supply	3.0V CR2032 battery
Operating conditions	0 ... 50°C / 32 ... 122°F, max. 80% rh
Weight	About 100 g / < 1 lb
Dimensions	151 x 41 x 20 mm / 6 x 1.6 x 0.8 in



Subject to change without notice

TEMPERATURE MEASUREMENT THERMOMETER

PCE-IR 90

Thermometer with Bluetooth interface / Measuring range -40 ... 300°C (-40 ... 572°F)

The thermometer is used to check the temperature of food. In addition to the surface temperature via the infrared sensor, the thermometer can also be used to determine the core temperature via the fold-out resistance temperature sensor. Both temperature sensors on the thermometer have a measuring range of -40 ... 300°C / -40 ... 572°F.

In addition to the normal measured value display, the thermometer has a temperature display. This display on the thermometer signals whether the temperature of the food being measured is optimal. If the temperature is between 4 ... 65°C / 39.2 ... 149°F, this is indicated by a red LED. If the temperature is colder than 4°C / 39.2°F or warmer than 65°C / 149°F, this is indicated by a green LED.



ISO cal option

- » Measuring range -40 ... 300°C / -40 ... 572°F
- » Infrared and penetration temperature sensor
- » Timer and stopwatch function
- » Charging station with micro USB cable
- » **Bluetooth interface**
- » Mobile temperature measuring device
- » Easy handling

APPLICATION



TECHNICAL SPECIFICATIONS

Infrared measurement

Measuring range	-40 ... 300°C, -40 ... 572°F
Resolution	0.1°C, °F
Measurement accuracy	± 1°C, ± 1.8°F at 0 ... 65°C, 32 ... 150°F ± 2.5°C, ± 4.5°F at < 0°C, < 32 ° F ± 1.5% at > 65°C, 150°F
Spot ratio	2: 1
Reaction time	< 500 ms

Penetration probe

Measuring range	-40 ... 300°C, -40 ... 572°F
Resolution	0.1° C, °F
Measurement accuracy	± 1°C, ± 1.8°F at -40 ... 200°C, -40 ... 392°F ± 1.5°C, ± 4.5°F at > 200°C, > 392°F
Sensor type	Resistance temperature sensor
Probe length	100 mm

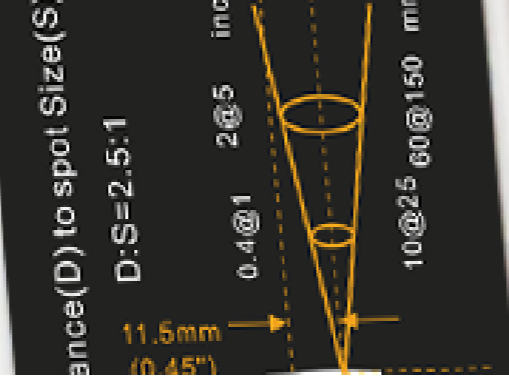
Further specifications

Emission value	0.95 fixed
Interfaces	Bluetooth (data transfer) Micro USB (for charging)
Additional functions	Timer and stopwatch
Power supply	4.2V 1300-mAh battery, 5V DC / 1 A fixed voltage supply via Micro USB interface
Operating conditions	0 ... 50°C, < 85% RH, non-condensing
Dimensions	176 x 55 x 40 mm / 6.9 x 2.2 x 1.6 in
Weight	185 g / < 1 lb



Subject to change without notice

TEMPERATURE MEASUREMENT PYROMETER



PCE-IR 100

Non-contact and contact temperature measurement combined in a single measuring device

PCE-IR 100 is both an infrared non-contact Pyrometer for measuring surface temperature and a contact Pyrometer with probe for measuring core temperature of food. This food-grade Pyrometer allows for quick and easy testing of food surface temperatures without contamination using the infrared sensor, while also offering the possibility of testing food internal temperatures using the food-quality

sensor probe, making the Pyrometer a useful tool for complying with the hazard analysis and critical control points (HACCP) system. The HACCP system was established to ensure food safety and consistent product quality. Food cannot be put into circulation if it doesn't meet strict safety standards like those in the HACCP.

ISO cal option

- » ideal for use in food processing, food inspection, food safety, food quality control, food preparation and food catering applications
- » aids in compliance with the hazard analysis and critical control points (HACCP) system
- » sensor probe folds into unit for convenient storage
- » accurately covers a wide measurement range
- » quick response time
- » minimum, maximum and lock functions
- » enables continuous measurement over a period of time
- » IP 65 ingress protection rating allows hygienic cleaning
- » easy to use: LEDs indicate temperatures below 4°C / 39.2°F, temperatures between 4°C / 39.2°F and 60°C / 140°F, and temperatures above 60°C / 140°F



APPLICATION



TECHNICAL SPECIFICATIONS

Non-contact measurement with infrared sensor

Temperature range	-33 ... 220°C / -27 ... 428°F
Resolution	0.2°C / 0.36°F
Accuracy / degree	-33 ... 0°C / -27.4 ... 32°F: ± 1°C / 1.8°F + 0.1
0 ... 65°C / 32 ... 149°F: ± 1°C / 1.8°F	
65 ... 200°C / 149 ... 392°F: ± 1.5% of reading	
Response time	< 500 ms
Wavelength	8 ... 14 μm
Emissivity (default is 0.95 - ideal for food)	Adjustable in intervals of 0.1 ... 1.0
Distance to target ratio	Spot (FOV) = 2.5:1
Minimum diameter of the measurement point	11.5 mm / 0.44 in

Contact measurement with sensor probe

Temperature range	-55 ... 330°C / -67 ... 626°F
Resolution	0.2°C / 0.36°F
Accuracy	Below -5°C / 23°F: ± 1°C / 1.8°F
Between -5°C ... 65°C / 23 ... 149°F: ± 0.5°C / 0.9°F	
Above 65°C: ± 1.0% of reading	
Response time	7 ... 8 seconds
Sensor dimensions	Diameter: 3.2 mm / 0.13 in, Length: 150 mm / 5.91 in
Sensor type	Thermal element (type-K)

General characteristics

Repeatability	Within the accuracy of the device
Functions	Max / Min / Lock
Operating temperature	0 ... 50°C / 32 ... 122°F
Dimensions (with battery)	190 x 22 x 38 mm / 7.48 x 0.87 x 1.5 in
Power	2 x 1.5V AAA batteries
Operating time	Approx. 40 hours of continuous use
Measurement point illumination	LED
Holding of values on the display	15 seconds
Display	4 positions
Ingress protection rating	IP 65



Subject to change without notice

TEMPERATURE MEASUREMENT DIGITAL THERMOMETER

PCE-MIR 10

Measuring range of -50 ... +500 °C

The thermometer has a measuring range of -50 ... +500 °C and covers a wide temperature range. With an accuracy of $\pm 2\% \pm 2\text{ °C}$ at 20 ... 500 °C, the thermometer is a very precise measuring device. For better orientation of the measuring spot, a laser pointer is built into the thermometer. This laser has an output power of <1 mW. The emission value of the thermometer is fixed at 0.95. The thermometer is

used, for example, for surface temperature testing of electric motors, combustion engines or heat sinks. Thanks to its compact design, the thermometer is handy and can be easily stowed away. To switch on the thermometer, press the measuring button. The measurement is then immediately taken by the thermometer.

ISO cal option

- » measuring range -50 ... 500 °C
- » automatic switch-off
- » immediate operating range
- » measuring ratio 12:1
- » max / Min function
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	-50 ... +500 °C / -58 ... +932 °F
Resolution	0,1 °C / 0,1 °F
Accuracy	$\pm 3\text{ °C} / 5,4\text{ °F}$ bei -50 ... +20 °C / -58 ... +68 °F $\pm 2\% \pm 2\text{ °C} / 3,6\text{ °F}$ bei 20 ... 500 °C / 68 ... 932 °F
Repeatability	$\pm 1\text{ °C} / \pm 1,8\text{ °F}$
Spot ratio	12:1
Emission value	0,95 fixed
Measuring rate	2 Hz
Spectral range	8 ... 14 μm
Overload indicator	„ - - - - „
Laser	output power: <1 mW; wavelength: 630 ... 670nm; Laser class: 2
Power supply	9 V block battery
Operating conditions	00 ... 50 °C / 32 ... 122 °F, <90 % r. h.
Storage conditions	-10 ... 60 °C / 14 ... 140 °F, <80 % r. h.
Dimensions	175 x 75 x 35 mm
Weight	132 g



Subject to change without notice

TEMPERATURE MEASUREMENT DIGITAL THERMOMETER

PCE-MIR 20

Measuring range of -50 ... +760 °C

The digital thermometer has a measuring range of -50 ... +760 °C and thus covers a wide temperature range. With an accuracy of $\pm 2\%$ ± 2 °C at 20 ... 760 °C, the digital thermometer is a very precise measuring device. For better orientation of the measuring spot, two lasers are built into the digital thermometer. Both lasers have an output power of <1 mW. To determine different surfaces with the digital thermo-

meter, the emission value can be set between 0.10 ... 1.00. With the limit value alarm function on the digital thermometer, a minimum temperature and a maximum temperature can be set individually. If the set limit value is exceeded or undershot during a measurement with the digital thermometer.

ISO cal option

- » measuring range -50 ... +760 °C
- » double laser for better orientation
- » limit value alarm MAX / MIN
- » adjustable emission value
- » backlit display
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	-50 ... +760 °C / -58 ... +1400 °F
Resolution	0,1 °C / 0,1 °F
Accuracy	± 3 °C / 5,4 °F bei -50 ... +20 °C / -58 ... +68 °F $\pm 2\%$ ± 2 °C / 3,6 °F at 20 ... 760 °C / 68 ... 1400 °F
Repeatability	± 1 °C / $\pm 1,8$ °F
Spot ratio	12:1
Emission value	0,10 ... 1,00
Measuring rate	2 Hz
Spectral range	8 ... 14 μ m
Overload indication	„ - - - - “
Laser	Laser Double laser; output power: <1 mW; Wavelength: 630 ... 670 nm; Laser class: 2
Power supply	9 V block battery
Operating conditions	0 ... 50 °C / 32 ... 122 °F, <90 % r. h.
Storage conditions	-10 ... 60 °C / 14 ... 140 °F, <80 % r. h.
Dimensions	175 x 75 x 35 mm
Weight	132 g



Subject to change without notice

MAGNETIC FIELD MEASUREMENT ELECTROMAGNETIC FIELD METER

PCE-EMF 30

Environmental Meter with LCD display with measuring range up to 1800 V/m

With this environmental meter it is possible to measure magnetic fields up to 999.9 mG directly. At the same time, the environmental meter displays the strength of the magnetic field numerically using an X, Y and Z axis. The environmental meter is a multifunctional 3-in-1 meter for electric fields (EF), magnetic fields (MF) and radio frequency fields (RF). The default mode is EF mode when the environmental

meter is turned on. The measured value can be affected by the influence of the electric field of the environment. The environmental meter is equipped with a built-in electromagnetic radiation sensor that displays the radiation value on the LCD screen. You can take appropriate precaution or take effective measures against the electromagnetic radiation according to the test result.

ISO cal option

- » range up to 1800 V/m
- » 3-axis measurement
- » for mobile and fast use
- » LCD screen
- » Average/Peak mode
- » Auto-Off
- » EF/MF/RF test display
- » graphic display



APPLICATION



TECHNICAL SPECIFICATIONS

Radiation mW/m ² Measuring range Resolution	0,01 ... 1.800 mW/m ² 0,01 mW/m ²
Radiation V/m Measuring range Resolution	1 ... 1.999 V/m 1 V/m
Radiation mG Measuring range Resolution	0,1 ... 999,9 mG 0,1 mG
Radiation μT Measuring range Resolution	0,01 ... 99,99 μT 0,01 μT
General technical data	
Automatic switch off	15 min
Battery capacity	1.000 mAh
Battery voltage	3,7 V
Battery type	Lithium-ion battery
Menu language	English
Protection class	IP20
Weight	150 g
Weight with scope of delivery	169 g
Weight of device with scope of delivery and outer packaging	260 g
Ambient dimensions	147 x 70 x 31 mm (L x W x H)
Ambient dimensions incl. outer packaging	175 x 145 x 40 mm (L x W x H)
Operating conditions	0 - 50 °C
Operating conditions	< 80%
Storage conditions	0 ... 50 °C
Storage conditions	< 80 %



Subject to change without notice

MAGNETIC FIELD MEASUREMENT MAGNETIC FIELD METER

PCE-MFM 3800

Field meter with transverse sensor / direct (DC) and alternating fields (AC)

The magnetic field meter is a high-precision measuring instrument for recording magnetic flux and temperature. It is ideal for applications in industry, research and development. With a measuring range of 0 to 3500 mT for direct (DC) and alternating (AC) fields and a high resolution of 0.001 mT, the magnetic field meter delivers precise measurement results even at very low field strengths.

Thanks to the automatic detection of AC or DC fields and the option of automatic or manual range selection, the device is particularly user-friendly. It measures with an accuracy of up to $\pm 0.5\%$ of the measured value (DC) and $\pm 1\%$ (AC at 50 Hz). The magnetic field meter is equipped with a sensor that measures transversely, i.e. the magnetic field is measured at right angles to the sensor direction.

ISO cal option

- » measuring direction: transverse
- » magnetic field AC and DC
- » accuracy of $\pm 1\%$ v.Mw. @ 100 ... 2400 mT (DC)
- » frequency display
- » temperature measurement
- » units: μT , mT, G, A/m, Oe, WB/m^2 , A/cm
- » 2.8 inch TFT colour display
- » data logger for up to 10 million measuring points



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data

Measuring functions	HOLD, MAX, average value
Unit(s)	μT , mT, G, A/m, Oe, WB/m^2 , A/cm
Measuring direction	transversal
Display type	LCD with illumination
Display size	2.8 inch
Storage medium	Internal memory
Storage capacity	32 GB
Storage interval of	1 s
Storage interval up to	24 h
Interface	USB-C
Operating time	24 h
Operating time Additional	information depending on screen brightness and data logger usage
Automatic switch-off from ... to	1 ... 15 min.
Automatic switch-off can be deactivated	Yes
Menu language	German, English (GB), English (US), French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Danish, Japanese
Protection class (device)	IP52
Power supply	USB 5 V DC, 500 mA
Rechargeable battery	1 x 3.7 V internal, lithium polymer battery
Capacity	2500 mAh
Operating conditions	-20 ... 65 °C, 10 ... 95 % r. H.
Storage conditions	-20 ... 65 °C, 10 ... 95 % r. H.
Dimensions (L x W x H)	168 x 85 x 32 mm
Weight	248 g

Magnetic field AC

Measuring range	0.4 ... 3500 mT
Resolution	0.001 mT
Accuracy	$\pm 3\%$ of Mw.
Frequency range	10 ... 5000 Hz

Magnetic field DC

Measuring range	-3500 ... +3500 mT
Resolution	0.001 mT
Accuracy	0 ... 100 mT: $\pm 0.15\%$ 100 ... 2400 mT: $\pm 1\%$ v.Mw. 2400 ... 3500 mT: $\pm 3\%$ v.Mw.

Temperature

Measuring range	0 ... 80 °C
Resolution	0.1 °C
Accuracy	$\pm 0.4\%$

Temperature

Measuring range	32 ... 176 °F
Resolution	0.18 °F
Accuracy	$\pm 0.72\%$

Sensor

Shaft dimensions: (L x W x H)	57 x 4 x 1.7 mm
Cable length	140 cm
Additional description	Tripod thread: 1/4 inch



Subject to change without notice

RADIATION PROTECTION

RADIATION METER



PCE-RDM 10

Measurement Range 0.01 ... 99.99 $\mu\text{Sv/h}$ / Measurement of Beta, Gamma, and X-rays

The radiation meter is a portable handheld device for the measurement of Beta, Gamma, and X-rays. A GM tube (Geiger-Müller counter) detects radiation exposure that can be harmful to humans and the environment. The real-time value, the average value, and the accumulated dose are displayed on the radiation meter's large color screen. Additionally, the radiation dosimeter can display a bar graph of the

most recent real-time measurements.

By setting an adjustable alarm threshold, the user can be alerted when the limit is exceeded. The radiation meter has a data storage capacity for 167,857 values, which can be accessed with a simple button press.

ISO cal option

- » real-time dynamic data display
- » long-term dose accumulation function
- » manual adjustment of alarm thresholds
- » manual setting of recording intervals
- » historical data display function
- » capable of storing up to 167,857 data points



TECHNICAL SPECIFICATIONS

Measurement Range	0 ... 99.99 usv/h
Accuracy	0.25cps/usv/h
Resolution	0.01usv/h
Detector Type	GM Tube
Detectable Radiations	Beta (B) rays, Gamma (Y) rays, X-rays
Unit	$\mu\text{Sv/h}$
Power Supply	3.7V/2000mAh Polymer Lithium Battery
Automatic Power off	Automatically shuts down after 5 minutes of inactivity
Modes	Hold Mode, Measurement Mode
Interface	USB-C
Display	TFT 16-bit 2.8" Color Screen
Alarm	Adjustable from 0.20 $\mu\text{Sv/h}$ to 0.50 $\mu\text{Sv/h}$
Memory	Up to 167,857 data points
Environmental Conditions	-20 ... +50 °C, 20 ... 85 % r.F.
Dimensions	151 x 68 x 24.5mm
Weight	190 g

APPLICATION



Subject to change without notice

RADIATION PROTECTION GEIGER COUNTER



PCE-RAM 100

Radiation meter for α , β , γ radiation / internal memory for 10 million measuring points

The radiation meter offers comprehensive measurement functions for α , β and γ radiation and is the test instrument of choice for professional radiation measurements. With the ability to precisely record the accumulated radiation dose and count the radiation in both cps (counts per second) and cpm (counts per minute), the radiation meter provides accurate and reliable measurement data at all times.

The integrated data logger with 32 GB memory saves the measured values and enables detailed analyses. The measurement process is shown graphically on the TFT colour display. Individual alarm limits can also be set in the radiation meter: A warning message appears if a certain radiation value or a defined radiation dose is exceeded.

ISO cal option

- » α , β , γ radiation
- » accumulated radiation dose
- » pulse counting in cps and cpm
- » data logger with 32 GB memory
- » adjustable alarm
- » graphical measurement curve
- » radiation pulse audible



APPLICATION



TECHNICAL SPECIFICATIONS

Radiation		Menu language	German, English (UK), English (US), French, Spanish, Italian, Danish, Portuguese, Turkish, Polish, Russian, Chinese, Dutch, Japanese
Measurement range	0 ... 1500 μ Sv/h	Protection class (device)	IP52
Resolution	0.001 μ Sv/h	Power supply	5 V DC, 500 mA
Accuracy	<10 % of Rd (< 1000 μ Sv/h)	Weight	280 g
Radiation		Operating conditions	-20 ... 65 °C, 10 ... 95 % RH
Measurement range	0 ... 150 mrem/h	Storage conditions	-20 ... 65 °C, 10 ... 95 % RH
Resolution	0.001 mrem/h	Capacity	2500 mAh
Accuracy	<10 % of Rd (< 100 mrem/h)	Dimensions (L x W x H)	208 x 85 x 37 mm
Radiation			
Measurement range	0 ... 9.9 Sv		
Resolution	0.1 Sv		
Accuracy	<10 % of Rd (< 100 μ Sv)		
Radiation			
Measurement range	0 ... 167000 cps		
Resolution	1 cps		
Accuracy	<10 % of Rd		
Radiation			
Measurement range	0 ... 9999999 cpm		
Resolution	1 cpm		
Accuracy	<10 % of Rd		
General technical data			
Measuring functions	MIN, MAX, average value		
Display type	TFT colour display		
Display size	2.8 inch		
Storage medium	internal memory		
Memory capacity	32 GB		
Memory capacity (additional information)	10 million measuring points		
Storage interval from	1 s		
Storage interval to	12 h		
Interface	USB-C		
Sensor	Geiger-Müller counter tube		
Operating time	24 h		
Operating time (additional information)	depending on display brightness and data logger settings		
Automatic power off from ... to	1 ... 15 min		
Automatic power off deactivatable	yes		
Alarm	optical, acoustic		
Alarm modes	radiation, radiation dose pulse count		
Sensitivity	α -rays from 4 MeV β -rays from 0.2 MeV γ -rays from 30 keV		



Subject to change without notice

RADIATION PROTECTION RADIOACTIVITY METER

PCE-RAM 7

With Geiger-Müller counter tube / gamma, beta and X-rays

The Radioactivity Meter with a measurement range of 0 to 9999 $\mu\text{Sv/h}$ and a resolution of 0.01 $\mu\text{Sv/h}$ is a powerful and precise instrument for detecting beta (β), gamma (γ) and X-ray radiation. Equipped with an energy-compensated Geiger-Müller tube, it offers a high sensitivity of 80 CPM/ μSv (for Co-60) and a flexible display in $\mu\text{Sv/h}$, CPM and CPS. Thanks to its compact and handy design, the Radioac-

tivity Meter is easy to use and is ideal for measuring small changes in radiation values. Our Radioactivity Meter is equipped with a display that shows the date and time and offers the option of switching the display from white to black to optimise readability under different lighting conditions. An adjustable audible alarm provides additional safety by making you aware of increased radiation levels.

ISO cal option

- » gamma, beta and X-rays
- » display in $\mu\text{Sv/h}$, CPM, CPS
- » sensitivity of 80 CPM / μSv (Co-60)
- » adjustable audible alarm
- » sensor: Geiger-Müller counter tube
- » display of time and date
- » battery operation
- » ergonomic handle



APPLICATION



TECHNICAL SPECIFICATIONS

Radiation	
Measurement range up to	0 ... 9999 $\mu\text{Sv/h}$
Resolution	0,01 $\mu\text{Sv/h}$
Accuracy	$\leq 3\%$ of Rd
Radiation	
Measurement range up to	0 ... 9999 cps
Resolution	1 cps
Accuracy	$\leq 3\%$ of Rd
Radiation	
Measurement range up to	0 ... 9999 cpm
Resolution	1 cpm
Accuracy	$\leq 3\%$ of Rd
General technical data	
Measuring functions	Gamma rays, X-rays, Beta radiation
Energy range	20 ... 3000 keV
Display type	TFT colour display
Display size	1,8 Inch
Interface	Micro-USB
Sensor	Geiger-Mueller counter tube
Alarm	Acoustic
Sensitivity	80 cpm/ μSv (Co-60)
Menu language	English
Protection class (device)	IP54
Power supply	5 V
Weight	170 g
Operating conditions	0 ... 50 °C, 10 ... 90 % RH
Storage conditions	-10 ... 60 °C, 10 ... 90 % RH
Capacity	1100 mAh
Dimensions (L x W x H)	180 x 55 x 80 mm



Subject to change without notice

THICKNESS MEASUREMENT COATING THICKNESS GAUGE

PCE-CT 29

Measuring range of 0 ... 2000 µm / Micro-USB / visual and acoustic alarm

The material tester has a measuring range of 0 ... 2000 µm. The material tester can measure the coating thickness on ferrous (Fe) and non-ferrous (NFe) metals.

For a better analysis of the measurements, the coating thickness gauge has a measuring function based on the SSPC standards. With this function, the corrosion protection of a coating can be checked

with the material tester. The group function stores the measured values directly. A memory of 50 groups with 50 measurements each is available. In each group, statistics are created for all measured values from the material tester. All measurement data and statistics can be recalled after a measurement run.

ISO cal option

- » measuring range 0 ... 2000 µm
- » with SSPC measuring function
- » individually adjustable limit value alarms
- » data memory with up to 2500 measured values
- » temperature and humidity measuring function
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement on ferrous metal (Fe)

Measuring range	0 ... 2000 µm
Resolution	0.1 µm @ 0.0 ... 99.9 µm 1 µm @ 100 ... 2000 µm
Accuracy	±(2 % ±2 µm of Rd.)
Repeatability	±(1 % ±1 µm of Rd.)
Smallest radius of curvature	1.5 mm
Smallest measuring area	Ø 7 mm
Smallest layer thickness	0.5 mm

Measurement on non-ferrous metal (NFe)

Measuring range	0 ... 2000 µm
Resolution	0.1 µm @ 0.0 ... 99.9 µm 1 µm @ 100 ... 2000 µm
Accuracy	±(2 % ±2 µm of Rd.)
Repeatability	±(1 % ±1 µm of Rd.)
Smallest radius of curvature	3 mm
Smallest measuring area	Ø 5 mm
Smallest layer thickness	0.3 mm

Temperature

Measuring range	0 ... 50 °C / 32 ... 122 °F
Resolution	0.1 °C / °F
Accuracy	±1.2 °C / ±2.2 °F

Humidity

Measuring range	0 ... 100 % r. h.
Resolution	0.1 % r. h.
Accuracy	±3.2 % r. h. @ 20.0 ... 70.0 % r. h. ±4.0 % r. h. @ 0.0 ... 19.9 % r. h. ±4.0 % r. h. @ 70.1 ... 100.0 % r. h.

Further specifications

Display	2.4" LC display
Automatic display orientation	0, 90, 180 and 270 °, can be switched off (only measuring window)
Statistic functions	average, highest, lowest and SDEV measured value
Measuring modes	direct, groups, SSPC
Units	µm, mm, mils, inch
Power supply	2 x 1.5 V AA batteries
Interface	Micro-USB (for data transfer only)
Alarm	signal tone and / or LED signal light in case of Exceeding of the adjustable upper and lower alarm limit
Switch-off	Off, 30 seconds, 1 minute, 5 minutes
Menu languages	English, German, French, Spanish, Italian, Portuguese, Chinese, Japanese
Operating conditions	0 ... 50 °C, 20 ... 90 % r.h.,

Storage conditions	non-condensing -10 ... +60 °C, 20 ... 90 % r.h.,
Dimensions	35 x 64 x 137 mm
Weight	175 g



Subject to change without notice

THICKNESS MEASUREMENT COATING THICKNESS GAUGE

PCE-CT 80 SERIES

Paint layer thickness gauge for Fe and NFe

The paint layer thickness gauge PCE-CT 80 is a measuring device for the non-destructive measurement of coatings (lacquers, paints, plastics ...) on steel / iron and non-ferrous metals. Thanks to the externally connected sensor on the PCE-CT 80 paint coating thickness gauge, even difficult-to-reach measuring locations can be easily reached. The menu navigation of the paint thickness gauge allows easy adjust-

ment and setting to new parameters and makes this handy paint coating thickness gauge an indispensable tool for control measurements in production, workshop and quality assurance.

ISO cal option

- » for many materials such as iron, steel, aluminium, copper, brass and stainless steel
- » measurements cannot be influenced by vibrations
- » wear-resistant, spring-mounted measuring head for precise measurement results
- » practical V-groove on the measuring heads
- » internal data memory
- » warning for measurements exceeding the measuring range
- » all PCE-CT 80 HP models feature a particularly high accuracy



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement range	Fe: 0 ... 5000 μm / 0 ... 196.9 mils (depending on probe) NFe: 0 ... 3000 μm / 0 ... 118.1 mils (depending on probe)
Accuracy	
PCE-CT 80 Serie	±(2 % v. Rd. + 1 μm)
PCE-CT 80 HP Serie	±(1 % v. Rd. + 1 μm)
Resolution	0.1 μm (<100 μm) 1 μm (>100 μm)
Measurable materials	Non-magnetic layers on steel, iron, ... Non-electrically conductive layers on aluminium, copper, ...
Min. radius of curvature convex	5 mm
Min. radius of curvature concave	25 mm
Min. measuring surface	Ø 17 mm
Min. layer thickness	0.2 mm (on magnetic materials) 0.05 mm (on non-magnetic materials)
Probe mode	Autom. mode with material detection (Fe + NFe) Magnetic mode (Fe) Eddy current mode (NFe)
Measurement modes	Single measurement Continuous measurement
Calibration	Multipoint calibration (1 ... 4 points for each group) zero point calibration
Units	μm, mm, mils
Data transfer	USB 2.0
Memory	One volatile measuring group (DIR mode) Four measuring groups with autom. storage and max. 2000 readings (GEN mode)
Statistical functions	Number of measured values, mean, minimum, maximum, standard deviation
Alarm	Display when the adjustable upper and lower alarm limits are exceeded
Operating time	Auto Power Off mode (3 min)
Power supply	3 x 1.5 V AAA batteries
Display	128 x 128 px LCD
Displayed information	Battery status / flaw detection
Operating conditions	0 ... 50 °C / 32 ... 122 °F / 20 ... 90 % RH not condensing
Storage conditions	-10 ... 60 °C / 14 ... 140 °F / 20 ... 90 % RH not condensing
Dimensions	143 x 71 x 37 mm / 5.6 x 2.8 x 1.5 in (L x W x H)
Weight	with sensor and batteries: approx. 271 g / <1 lb

Models:

PCE-CT 80-F5N3	Measurement range: Fe: 0 ... 5000 μm, NFe: 0 ... 3000 μm
PCE-CT 80-FN0D5	Measurement range: Fe: 0 ... 500 μm, NFe: 0 ... 500 μm
PCE-CT 80-FN1D5	Measurement range: Fe: 0 ... 1500 μm, NFe: 0 ... 1500 μm
PCE-CT 80-FN2	Measurement range: Fe: 0 ... 2000 μm, NFe: 0 ... 2000 μm
PCE-CT 80-FN2D5	Measurement range: Fe: 0 ... 2500 μm, NFe: 0 ... 2500 μm
PCE-CT 80-FN3	Measurement range: Fe: 0 ... 3000 μm, NFe: 0 ... 3000 μm

PCE-CT 80HP-F5N3	Measurement range: Fe: 0 ... 5000 μm, NFe: 0 ... 3000 μm
PCE-CT 80HP-FN0D5	Measurement range: Fe: 0 ... 500 μm, NFe: 0 ... 500 μm
PCE-CT 80HP-FN1D5	Measurement range: Fe: 0 ... 1500 μm, NFe: 0 ... 1500 μm
PCE-CT 80HP-FN2	Measurement range: Fe: 0 ... 2000 μm, NFe: 0 ... 2000 μm
PCE-CT 80HP-FN2D5	Measurement range: Fe: 0 ... 2500 μm, NFe: 0 ... 2500 μm
PCE-CT 80HP-FN3	Measurement range: Fe: 0 ... 3000 μm, NFe: 0 ... 3000 μm



Subject to change without notice

THICKNESS MEASUREMENT ULTRASONIC THICKNESS GAUGE

PCE-TG 75A

Material thickness measurement up to 225 mm

The thickness meter can measure material thicknesses up to 225 mm / 8.85". So that the material thickness of a wide variety of homogeneous materials can be measured, it is possible to store the corresponding speed of sound in the thickness meter. For materials such as steel, aluminum, zinc, silver and gold, the appropriate sound speeds are already stored in the device library. This means that the thick-

ness meter can be used universally. With the limit value function in the thickness meter, individual maximum and minimum values can be stored. If the measured value of the test piece is outside the limits, the thickness meter signals this visually.

ISO cal option

- » measured value memory
- » calibration reference on the housing
- » automatic shutdown
- » material thickness measurement up to 225 mm / 8.85"
- » battery status indicator
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	1.00 ... 225.0 mm / 0.04 ... 8.85"
Resolution	0.01 mm at ≤99.99 mm 0.1 mm at ≥100.0 mm
Accuracy	±0.5 % of measured value + 0.05 mm
Storage space	500 measured values
Probe frequency	5 MHz
Standard sensor	sensor PCE-TG 5M10d
Further specifications	
Adjustable speed of sound	1000 ... 9999 m/s
Smallest pipe diameter	Ø 20 x 3 mm (steel)
Material library	15 memory locations
Calibration reference	4 mm
Display	2.4 inch TFT LCD color display with brightness adjustment
Power supply	3 x 1.5 V AA batteries
Automatic switch-off	switched off, 2, 5, 10, 30 minutes
Ambient conditions	0 ... 40 °C / 32 ... 104 °F, <90 % RH, non-condensing
Dimensions	168 x 87 x 35 mm / 6.4 x 3.2 x 1.5"
Weight	230 g / 8.1 oz

Optional accessories:

Standard probe for the PCE-TG 75/150	Order no.: PCE-TG 5M10d
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Subject to change without notice

THICKNESS MEASUREMENT ULTRASONIC THICKNESS GAUGE

PCE-TG 150A

Material thickness meter up to 300 mm

The thickness meter can measure material thicknesses up to 300 mm / 11.81". So that the material thickness of a wide variety of homogeneous materials can be measured, it is possible to store the corresponding speed of sound in the thickness meter. For materials such as steel, aluminum, zinc, silver and gold, the appropriate sound speeds are already stored in the device library. This means that the thick-

ness meter can be used universally. With the limit value function in the thickness meter, individual maximum and minimum values can be stored. If the measured value of the test piece is outside the limits, the thickness meter signals this visually.

ISO cal option

- » measured value memory
- » calibration reference on the housing
- » automatic shutdown
- » material thickness measurement up to 300 mm / 11.81"
- » battery status indicator
- » data logger
- » optionally high temperature sensor
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	1.00 ... 300.0 mm / 0.04 ... 11.81"
Resolution	0.01 mm at ≤99.99 mm 0.1 mm at ≥100.0 mm
Accuracy	±0.5 % of measured value +0.05 mm
Storage space	1500 measured values
Probe frequency	5 MHz / 2.5 MHz
Standard sensor	sensor PCE-TG 5M10d
Further specifications	
Adjustable speed of sound	1000 ... 9999 m/s
Smallest pipe diameter	Ø 20 x 3 mm (steel)
Material library	15 memory locations
Calibration reference	4 mm
Display	2.4 inch TFT LCD color display with brightness adjustment
Power supply	3 x 1.5 V AA batteries
Automatic switch-off	switched off, 2, 5, 10, 30 minutes
Ambient conditions	0 ... 40 °C / 32 ... 104 °F, <90 % RH, non-condensing
Dimensions	168 x 87 x 35 mm / 6.4 x 3.2 x 1.5"
Weight	230 g / 8,11 oz

Further Model:

PCE-TG 150A HT Probe frequency 5 MHz

PCE-TG 150 F2.5 Probe frequency 2.5 MHz

Optional accessories:

2.5 Mhz sensor Order no.: PCE-TG 2.5M
 High temperature sensor Order no.: PCE-TG HT
 Miniature sensor Order no.: PCE-TG 5M6d
 Standard probe for the PCE-TG 75A/150A Order no.: PCE-TG 5M10d



Subject to change without notice

THICKNESS MEASUREMENT WALL THICKNESS GAUGE

PCE-TG 300 SERIES WITH BLUETOOTH

With a wide measuring range of up to 600 mm

The PCE-TG 300 is a wall thickness gauge with special probes for various applications. In general, the wall thicknesses of all homogeneous materials can be measured with the PCE-TG 300. For damping or scattering materials such as plastic or cast iron, a special probe is available. An angled 90° probe also enables measurements at hard-to-reach measuring positions. The speed of sound can be set freely

and thus adapted to a wide variety of materials. The measured values are displayed directly on the easy-to-read TFT colour display.

ISO cal option

- » wide measuring range
- » various probes available
- » battery operation
- » fault and cavity detection
- » internal measurement data memory
- » printing via Bluetooth



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	PE: pulse-echo mode 0.65 ... 600 mm (steel)	PCE-TG 300-N05	5 MHz / 10 mm
Accuracy	±0.04 mm H [mm] (< 10 mm); ±0.4 % H [mm] (> 10 mm) H refers to the material thickness of the workpiece	Frequency / Ø	1 ... 600 mm (steel)
Resolution	0.1 mm / 0.01 mm / 0.001 mm (adjustable)	Measurement range	20 x 3 mm
Measurable materials	Metals Plastics Ceramics Epoxy resin Glass and all homogeneous materials	Minimum pipe diameter	normal measurement
Working modes	Pulse echo mode (fault and cavity detection) Echo-Echo mode (hiding layer thicknesses, e.g. lacquers)	PCE-TG-300-N05/90 N05 / 90°	5 MHz / 10 mm
Calibration	Sound velocity calibration Zero point calibration Two-point calibration	Frequency / Ø	1 ... 600 mm (steel)
View mode	Normal mode, scan mode, difference mode	Measurement range	20 x 3 mm
Units	mm / inch	Minimum pipe diameter	normal measurement
Data transfer	Printing via Bluetooth / USB 2.0	PCE-TG 300-N07	7 MHz / 6 mm
Memory	Non-volatile memory with 100 data groups with 100 data sets each	Frequency / Ø	0.65 ... 200 mm (steel)
Operating time	Continuous operation 100 h Automatic stand-by mode (adjustable) Automatic power off mode (adjustable)	Measurement range	15 x 2 mm
Power supply	4 x AA battery 1.5 V	Minimum pipe diameter	for thin-walled or strongly curved pipes
Display	320 x 240 pixel TFT LCD colour display with brightness adjustment	Description	
Operating conditions	0 ... 50 °C / 32 ... 122 °F, ≤80 % RH non condensing	PCE-TG 300-HT5	5 MHz / 12 mm
Storage conditions	-20 ... 70 °C / -4 ... 158 °F, ≤80 % RH non-condensing	Frequency / Ø	1 ... 600 mm (steel)
Dimensions	185 x 97 x 40 mm / 7.3 x 3.8 x 1.6 in	Measurement range	30 mm
Weight	375 g / < 1 lb	Minimum pipe diameter	for high temperatures (max. 300 °C)
Models		Description	
PCE-TG 300-P5EE			
Frequency	5 MHz		
Diameter	10 mm		
Measurement range	P-E: 2 ... 600 mm, E-E: 2,5 ... 100 mm		
diameter	20 x 3 mm		
Description	normal measurement and E-E test		
PCE-TG 300-N02			
Frequency / Ø	(not suitable for curved materials) 2.5 MHz / 14 mm		
Measurement range	3 ... 40 mm (steel) 3 ... 300 mm (steel)		
Description	For damping / scattering materials (plastics, cast iron)		



Subject to change without notice

FORCE MEASUREMENT DIGITAL FORCE GAUGE

PCE-DFG X SERIES

Force gauge with internal load cell for tensile and compressive force measurement up to 1,000 N

The force measuring device can be used to record both tensile and compressive forces with high accuracy. Tensile and compressive forces are often measured in the test laboratory. For example, to determine the yield point, the tear-off force or the force required to actuate buttons or switches. The force gauge has an internal measuring cell and can measure forces up to 1,000 N. Various eyelets or

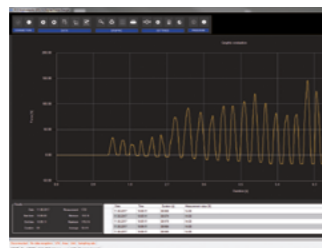
hooks with an M6 thread can be attached to the measuring cells. It is also possible to attach your own devices to the measuring cell using these threads. The internal memory of 32 GB offers space for 30 million measuring points. This allows measurement logs to be created, saved and exported. The force tester has a USB-C interface that can be used to read the measurement data into the PC software..

ISO cal option

- » measuring range up to 1,000 N
- » accuracy 0.05 % FS
- » sampling rate up to 7,200 Hz
- » limit value function
- » various units of measurement
- » graphical evaluation
- » memory for 30 x 1,000,000 readings
- » various alarm modes
- » time / date
- » control and evaluation software
- » USB-C interface
- » mains operation possible



APPLICATION



TECHNICAL SPECIFICATIONS

Model	Measuring range	Resolution
PCE-DFG 5 X	0 ... 5 N	0.001 N
PCE-DFG 10 X	0 ... 10 N	0.005 N
PCE-DFG 20 X	0 ... 20 N	0.01 N
PCE-DFG 200 X	0 ... 200 N	0.1 N
PCE-DFG 500 X	0 ... 500 N	0.1 N
PCE-DFG 1000 X	0 ... 1,000 N	0.5 N

General technical data

Accuracy	±0.05 % FS
Units	N, kg, g, t, kN, Pa, kPa, Nm, Ncm, lb, ft
Display	2.8" LCD graphical display
Alarm modes	overrun, underrun, inside, outside
Alarm type	Visual, acoustic
Sampling rate	1 ... 7,200 Hz
Calibration	mV/V, individually up to 15 measuring points
Memory	30 x 1 Mio data points
Power supply	internal: LiPo battery, external: USB 5 V DC, 500 mA
Menu languages	German, English, French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Japanese, Danish
Operating time	approx. 13 h
Interface	USB-C
Protection class	IP 52
Operating and storage conditions	-20 ... 65 °C / -4 ... 149 °F, 10 ... 95 % RH non-condensing
Force absorption element	M6 x 7 mm
Dimensions	165 x 85 x 32 mm / 65 x 33.5 x 12.6 in
Weight	540 g / 1.2 lbs

Optional accessories:

Clamp for peel-off tests	Order code	PCE-SJJ035
Holder for button and rivet testing	Order code	PCE-SJJ032
Clamping device for bristle testing	Order code	PCE-SJJ029
Clamping device for bristle testing	Order code	PCE-SJJ020
Clamping device for tensile tests	Order code	PCE-SJJ012
Fork holder for tensile & compr. tests	Order code	PCE-SJJ09
Clamping tool for tensile tests	Order code	PCE-SJJ08
Clamping device for tensile tests	Order code	PCE-SJJ07
Clamping device for tensile tests	Order code	PCE-SJJ017
Adaptor clamp for tensile tests	Order code	PCE-SJJ010
Adaptor clamp for tensile tests	Order code	PCE-SJJ06
Round adaptor stamp for compr. tests	Order code	PCE-SJJ04
Adaptor for compr. tests	Order code	PCE-SJJ01
Motorised force test stand	Order code	PCE-MTS50
Force test stand	Order code	PCE-FTS50
Clamping device for test stand	Order code	PCE-SJJ03
Adaptor ring for tensile tests	Order code	PCE-SJJ02
Clamping device for test stand	Order code	PCE-SJJ024
Clamping device for test stand	Order code	PCE-SJJ015
Clamping jaw for test stand	Order code	PCE-SJJ130



PCE-SJJ035



PCE-SJJ012



PCE-SJJ029



PCE-SJJ020



PCE-SJJ017



Subject to change without notice

FORCE MEASUREMENT DIGITAL FORCE GAUGE

PCE-DFG K X SERIES

Force gauge with external load cell for tensile and compressive force measurement up to 100 kN / 10 t

The force gauge can be used to measure both tensile and compressive forces with high accuracy. Tensile and compressive forces are often measured in the test laboratory. For example, to determine the yield point, the tear-off force or the force required to actuate buttons or switches. The force measuring device is supplied with an external measuring cell and can measure forces of up to 100,000 N. Various

eyelets or hooks with an M12 thread can be attached to the measuring cells. It is also possible to attach your own devices to the measuring cell using these threads.

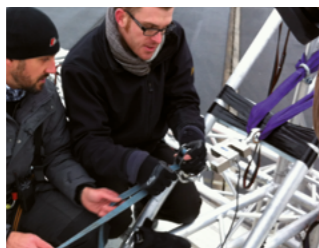
The internal memory of 32 GB offers space for 30 million measuring points. This allows measurement logs to be created, saved and exported.

ISO cal option

- » measuring range up to 100,000 N
- » accuracy 0.05 % FS
- » sampling rate up to 7,200 Hz
- » limit value function
- » various units of measurement
- » graphical evaluation
- » memory for 30 x 1,000,000 readings
- » various alarm modes
- » time / date
- » control and evaluation software
- » USB-C interface
- » mains operation possible



APPLICATION



TECHNICAL SPECIFICATIONS

Model	Measuring range	Resolution
PCE-DFG 1K X	0 ... 1,000 N / 100 kg	0.5 N
PCE-DFG 2K5 X	0 ... 2,500 N / 250 kg	1 N
PCE-DFG 5K X	0 ... 5,000 N / 500 kg	1 N
PCE-DFG 10K X	0 ... 10,000 N / 1 t	2 N
PCE-DFG 20K X	0 ... 20,000 N / 2 t	2 N
PCE-DFG 50K X	0 ... 50,000 N / 5 t	5 N
PCE-DFG 100K X	0 ... 100,000 N / 10 t	10 N

General technical data

Accuracy	±0.05 % FS
Units	N, kg, g, t, kN, Pa, kPa, Nm, Ncm, lb, ft
Display	2.8" TFT graphical display
Alarm modes	overrun, underrun, inside, outside
Alarm type	Visual, acoustic
Sampling rate	1 ... 7,200 Hz
Calibration	mV/V, individually up to 15 measuring points
Menu languages	German, English, French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Japanese, Danish
Memory	30 x 1 Mio data points
Power supply	internal: LiPo battery external: USB 5 V DC, 500 mA
Operating time	approx. 13 h
Interface	USB-C
Protection class	IP 52
Protection class measuring cell	IP 67
Operating and storage conditions	-20 ... 65 °C / -4 ... 149 °F, 10 ... 95 % RH non-condensing
Dimensions	165 x 85 x 32 mm / 6.5 x 3.35 x 1.26 in
Weight handheld	255 g / 0.6 lbs

Optional accessories:

Fork holder for tensile & compr. tests	Order code	PCE-SJJ09
Adaptor clamp for tensile tests	Order code	PCE-SJJ06
Round adaptor stamp for compr. tests	Order code	PCE-SJJ04
Adaptor for compr. tests	Order code	PCE-SJJ01
Clamping device for test stand	Order code	PCE-SJJ015



PCE-SJJ06



PCE-SJJ015



Subject to change without notice

FORCE MEASUREMENT DYNAMOMETER

PCE-PFG 500

With internal S load cell

The PCE-PFG dynamometer is a handy, digital measuring device for measuring tensile and compressive forces. The force measuring device offers a sampling rate of 500 Hz and various measurement options such as real-time measurement (RT), maximum value measurement (PEAK), configurable average value acquisition (Average) and automatic measurement storage of up to 100 measurements. The

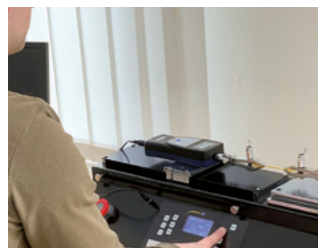
measurement data and a statistical evaluation of the data stored in the force measuring device (MIN / MAX / average) are shown on the graphic display and can be transferred to a PC via the USB interface. In addition, the force measuring device offers a limit value function MIN / MAX, which can switch a multi-colored LED and switching contacts.

ISO cal option

- » 4 measurement modes (real-time measurement / maximum value / average measurement / automatic memory measurement)
- » internal memory for up to 100 measured values
- » statistics evaluation (MIN / MAX / average)
- » rotatable display
- » alarm function with multi-colored LED (yellow / green / red) and switching contact output 2.85 V.
- » USB B interface
- » battery life up to 36 hours



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	0 ... 500 N
Resolution	0.1 N
Accuracy	±0.3 % of the measuring range
Measurement units	N, kgF, lbf
Display	1.8" graphic display
Alarm modes	Below, Inside, Outside
Sampling rate	500 Hz
Memory	100 measurements
Power supply	lithium battery 3.7 V / 1500 mAh
Battery life	up to 36 hours
Power supply / USB charging adapter	5 V / 1 A
Outputs	interface: USB B Switching output / alarm modes: MD6 with 2.85 V if active
Protection class	IP 54
Operating and storage conditions	5 ... 45 °C 35 ... 65 % r.H. not condensing
Force application	M6 x 10 mm thread
Dimensions	189 x 707 x 34 mm
Weight	450 g

Optional accessories

Hand grip	order code	KG-LTS-20
Mounting adapter for test stand	order code	FG-ADP
Adapters for Pressure Tests	order code	PCE-SJJ01
Adapter Ring for Tensile Tests	order code	PCE-SJJ02
Clamping Device for Test Stand	order code	PCE-SJJ03
Adapter Stamp Round for Pressure Tests	order code	PCE-SJJ04
Clamp Jaw	order code	PCE-SJJ05
Adapter Clamps for Tensile Tests	order code	PCE-SJJ06
Clamping Device for Tensile Tests	order code	PCE-SJJ07
Clamping Tool for Tensile Tests	order code	PCE-SJJ08
Fork Holder for Tensile and Compression Tests	order code	PCE-SJJ09
Adapter Clamp For Tensile Tests	order code	PCE-SJJ010
Clamp Jaw for Teststand	order code	PCE-SJJ011
Tensioning Device for Tensile Tests	order code	PCE-SJJ012
Clamp Jaw for Test stand	order code	PCE-SJJ013
Clamping Device for Test Stand	order code	PCE-SJJ015
Universal Clamping Device	order code	PCE-SJJ017
Clamping Device for Testing Bristles	order code	PCE-SJJ020
Clamping Device for Test Stand	order code	PCE-SJJ024
Clamping Device for Testing Bristles	order code	PCE-SJJ029
Holder for Button and Rivet Testing	order code	PCE-SJJ032
Pliers for Trigger Tests	order code	PCE-SJJ035
Adapter Plate for Force Test Stand	order code	ADP-UNI
Force Test Stand	order code	PCE-FTS50
Force gauge test stand	order code	LTS-20

Further models :

PCE-PFG 10	Measuring range	0 ... 10 N
PCE-PFG 20	Measuring range	0 ... 20 N
PCE-PFG 50	Measuring range	0 ... 50 N
PCE-PFG 100	Measuring range	0 ... 100 N
PCE-PFG 200	Measuring range	0 ... 200 N



Subject to change without notice

FORCE MEASUREMENT FORCE GAUGE

PCE-FM 200

Force gauge for tensile force measurement and pressure force measurement up to 200 N

The force gauge PCE-FM 200 is a handheld device that measures up to 200 N. The force gauge can determine the units N, kg and lb. The scope of delivery of the PCE-FM 200 force gauge includes various adapters with different shapes. These can be screwed onto the device and thus offer the optimum solution for differently designed surfaces in the measurement of pressure and tension. In addition to the adap-

ters, an extension rod is also supplied, which allows measurements in hard to reach places. The scope of delivery of the PCE-FM 200 force gauge includes flat head adapter, hook adapter, ball head adapter, chisel head adapter and a notched head adapter, whereby the hook adapter is used for tensile force measurements.

ISO cal option

- » differently shaped measuring adapters
- » downloadable evaluation software
- » device for mounting on test stands
- » peak measurement
- » power supply via charging adapter
- » delivery includes extension rod
- » evaluation via USB interface
- » fast display of measured value



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	2 ... 200 N / 0.2 ... 20 kg / 0.4 ... 45 lbs
Resolution	0.1 N / 0.02 lbs
Pressure calibration	1 Mpa
Load cell	integrated load cell with M6 connection
Measuring range	1 ... 100% of the full scale
Measurement accuracy	±0.5%
Units	n, kg, lb
Display	LCD
Operating temperature	10 ... 30°C / 50 ... 86°F
Relative humidity	15 ... 80%
Working conditions	the device must not be located near sources of vibration or corrosive substances
Weight	1 kg / 2.2 lb

Further models :

PCE-FM 500N	Measurement range 5 ... 500 N
PCE-FM 50N	Measurement range 0.5 ... 50 N

Optional accessories :

Double handle	order code	PCE-DHFG 500
Thread reducer	order code	PCE-SIJM10M6
Hand grip	order code	KG-LTS-20
Mounting adapter for test stand	order code	FG-ADP
Adapters for Pressure Tests	order code	PCE-SIJ01
Adapter Ring for Tensile Tests	order code	PCE-SIJ02
Clamping Device for Test Stand	order code	PCE-SIJ03
Adapter Stamp Round for Pressure Tests	order code	PCE-SIJ04
Clamp Jaw	order code	PCE-SIJ05
Adapter Clamps for Tensile Tests	order code	PCE-SIJ06
Clamping Device for Tensile Tests	order code	PCE-SIJ07
Clamping Tool for Tensile Tests	order code	PCE-SIJ08
Fork Holder for Tensile and Compression Tests	order code	PCE-SIJ09
Adapter Clamp for Tensile Tests	order code	PCE-SIJ010
Clamp Jaw for Teststand	order code	PCE-SIJ011
Tensioning Device for Tensile Tests	order code	PCE-SIJ012
Clamp Jaw for Test stand	order code	PCE-SIJ013
Clamping Device for Test Stand	order code	PCE-SIJ015
Universal Clamping Device	order code	PCE-SIJ017
Clamping Device for Testing Bristles	order code	PCE-SIJ020
Clamping Device for Test Stand	order code	PCE-SIJ024
Clamping Device for Testing Bristles	order code	PCE-SIJ029
Holder for Button and Rivet Testing	order code	PCE-SIJ032
Pliers for Trigger Tests	order code	PCE-SIJ035
Adapter Plate for Force Test Stand	order code	ADP-UNI
Force Test Stand	order code	PCE-FTS50
Force gauge test stand	order code	LTS-20



Subject to change without notice

FORCE MEASUREMENT PEEL TESTER

PCE-PST 1 X

Edge band tester for Edge Tests / Measures up to 500 N

PCE-PST 1 X edge band tester is designed to check the adhesive force of edges on support materials. With the edge band tester, checks can be made with respect to the quality of workmanship. Feed speed, travel distance, tension, and traction angle are fixed. Ball transfer units on the guide surface of the Test Stand reduce the coefficient of friction. Likewise the self-locking jaws and smooth guide rollers

always guarantee reproducible and comparable results. Measurement errors caused by the "human factor" are reduced to a minimum. The PCE-PST 1 X edge band tester is designed for adhesive forces up to 500 N or 110 pounds.

ISO cal option

- » for adhesive forces to 500 N or 110 pounds
- » high repeatability
- » defined test parameters
- » mobile implementation
- » automatic and manual measurement mode



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	500 N / 50 kg / 110 lbs
Measurable edge thickness	0.4 ... 3.5 mm 0.02 ... 0.14 in
Measurable plate thicknesses	10 ... 64 mm 0.4 ... 2.5 in
Speed	300 mm/min / 11.8 in/min 100 mm/min / 3.9 in/min 130 mm / 3.9 in
Traverse	130 mm / 3.9 in
Measurement accuracy	±0.1 % of the measuring range
Resolution	0.1 N / 0.010 kg / 0.02 lbs
Max. overload	±20 %
Display	graphic display with backlight 61 x 34 mm / 2.4 x 1.3 in
Operating modes	manual / automatic
Interface	USB
Environmental conditions	-10°C ... 40°C / 14°F ... 104°F
Weight	ca. 9 kg / 19.8 lbs
Power supply	230 V / 110 V / 12 V; 1.2 A
Dimensions (LxWxH)	490 x 210 x 150 mm 19.3 x 8.3 x 5.9 in

Optional accessories:

Test Table	Order no.: PS-PST 1
Support table extension	Order no.: AV-PST 1



Subject to change without notice

FORCE MEASUREMENT ADHESION TESTER

PCE-AAT 500

Adjustable pulling speed, limit and holding time

The Adhesion Tester is a portable, hand-operated device that measures the force required to pull a specific test diameter of coating from the substrate using hydraulic pressure. The measured pressure is displayed on the 5-inch touch screen and represents the adhesion strength of the coating to the substrate. This device evaluates the adhesion (peel strength) of a coating by determining the maximum

tensile force it can withstand before it peels off. The Adhesion Tester visualises fractures caused by cracks along the weakest layer in the system of carrier, adhesive, coating layers and substrate.

ISO cal option

- » electronically controlled hydraulic pump
- » various measuring head sizes available
- » adjustable pulling speed, limit and holding time
- » graphical measuring process
- » 5-inch touch screen
- » USB interface
- » storage in csv file format



APPLICATION



TECHNICAL SPECIFICATIONS

Pressure
Measurement range up to 0,1 ... 80 MPa
Resolution 0,01 MPa
Accuracy $\pm 1\%$ FS

Pressure
Measurement range up to 14 ... 11600 psi
Resolution 1 psi
Accuracy $\pm 1\%$ FS

General technical data
Units MPa, psi
Display type LCD touchscreen
Display size 4,8 Inch
Storage medium Internal memory
Storage capacity 16 MB
Interface USB
Standard(s) GB/T 5210, ASTM D4541/D7234, ISO 4624/16276-1
Automatic power-off 10 min
Menu language English (GB), English, Chinese
Protection class (device) IP40
Power supply 100 ... 240 V AC | 50/60 Hz
Connector type Euro plug
Weight 4,1 kg
Operating conditions 0 ... 50 °C, 10 ... 90 % RH
Storage conditions 0 ... 50 °C, 10 ... 90 % RH
(Rechargeable) battery 1 x 3,7 V 18650, Lithium-ion battery
Capacity 3400 mAh
Dimensions (L x W x H) 360 x 100 x 130 mm



Subject to change without notice

FORCE MEASUREMENT ADHESION TESTER

PCE-DAT 500

Self-aligning measuring head / various measuring head sizes selectable

The Adhesion Tester is a portable, hand-operated device that measures the force required to pull a specific test diameter of coating from a substrate using hydraulic force. The measured force is shown on the LCD and represents the adhesion strength of the coating to the substrate. This device is used to evaluate the adhesion (peel strength) of a coating by determining the maximum tensile force it can with-

stand before it peels off. Breakage points, which appear as cracks along the weakest layer in the system of carrier, adhesive, coating layers and substrate, are visualised by the Adhesion Tester. Equipped with a hand-operated hydraulic pump, our Adhesion Tester enables precise and repeatable application of the required tensile force.

ISO cal option

- » various measuring head sizes selectable
- » mini USB port
- » memory in CSV file format
- » battery operated
- » automatic power off



APPLICATION



TECHNICAL SPECIFICATIONS

Pressure
Measurement range up to 0,4 ... 80 MPa
Resolution 0,01 MPa
Accuracy $\pm 1\%$ FS

Pressure
Measurement range up to 25 ... 11600 psi
Resolution 1 psi
Accuracy $\pm 1\%$ FS

General technical data

Units MPa, psi
Display type LCD
Display size 2,36 Inch
Storage medium Internal memory
Storage capacity 16 MB
Interface Mini-USB
Standard(s) GB/T 5210, ASTM D4541/D7234, ISO 4624/16276-1
Automatic power-off from...to 1 ... 10 min.
Menu language English (GB), English, Chinese
Protection class (device) IP40
Power supply 100 ... 240 V AC | 50/60 Hz
Connector type Euro plug
Weight 3,25 kg
Operating conditions 0 ... 50 °C, 10 ... 90 % RH
Storage conditions 0 ... 50 °C, 10 ... 90 % RH
(Rechargeable) battery 1 x 3,7 V 18650, Lithium-ion battery
Capacity 3400 mAh
Dimensions (L x W x H) 220 x 140 x 81 mm



Subject to change without notice

FORCE MEASUREMENT HYDRAULIC FORCE GAUGE

PCE-HFG SERIES

For the measurement of compression forces in mechanical systems

The hydraulic force transducer PCE HFG series is used for the absorption of static pressure forces and is made of stainless steel. The force transducer can measure forces over a long period of time due to its independence from power sources. With the integrated drag indicator the respective PEAK value is stored for later read out. The force transducer uses the measuring principle of hydraulic transmission of

forces. The forces applied to the plunger are transmitted to the dial gauge via the medium and are displayed on the Newton scale [N]. Due to the 27 mm ring opening, it is also possible to use the force transducer axially and to determine axial shaft forces, for example.

ISO cal option

- » measurement of static pressure forces
- » for stationary maintenance measurements and adjustment work
- » independent of power sources
- » analogue meter scale
- » compact for small installation spaces
- » pressure force display in kilonewtons [kN]
- » stainless steel
- » integrated drag indicators



APPLICATION



TECHNICAL SPECIFICATIONS

Models of the PCE-HFG series:

Measured value: Force [N]

Measuring range	
PCE-HFG 1K	0... 1000 N
PCE-HFG 2.5K	0... 2500 N
PCE-HFG 10K	0... 10000 N
PCE-HFG 25K	0... 25000 N

Models with 1 m long hydraulic hose

PCE-HFG 1K E100	01000 N
PCE-HFG 2.5K E100	0 ... 2500 N
PCE-HFG 10K E100	0 ... 10000 N
PCE-HFG 25K E100	0 ... 25000 N

Resolution:	
PCE-HFG 1K	20 N
PCE-HFG 2.5K	100 N
PCE-HFG 10K	200 N
PCE-HFG 25K	1000 N

Accuracy: ±(1.6 % pressure gauge +0.25 % reading error) from measuring range

Temperature range: 0... 50 °C

Weight: 1.6 kg

Mounting holes: 2 x M6

Inner diameter of the ring: Ø 27 mm

Display dimensions: Ø 55 mm



Subject to change without notice

FORCE MEASUREMENT CRANE SCALE

PCE-DDM SERIES

Measurement range up to 50 t

The crane scale is the ideal tool for measuring strong tensile forces. Quality materials are used for the production of the crane scale. Despite the high measuring capacity, these materials ensure a compact design with low weight. The crane scale is supplied complete with remote control and two shackles in a carrying case. The crane scale has functions such as PEAK holding, picking and

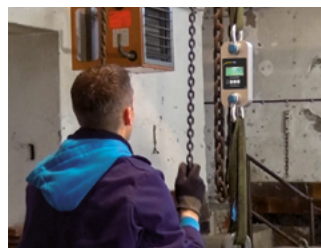
various measuring units such as kg / t / lb / N or kN. Tensile crane scales are only suitable for tensile measurements; for pressure tests, other force measuring devices such as our force measuring devices in the PCE-DFG series should be used.

ISO cal option

- » high capacity
- » compact and portable
- » long battery life
- » peak hold function
- » summation function
- » selectable units of measurement: kg / t / lb / N / kN
- » adjustable gravitation range
- » remote control indicator, shackles and carrying case included



APPLICATION



TECHNICAL SPECIFICATIONS

Range

PCE-DDM 3	3.000 kg / 30 kN
PCE-DDM 5	5.000 kg / 50 kN
PCE-DDM 10	10.000 kg / 100 kN
PCE-DDM 20	20.000 kg / 200 kN
PCE-DDM 50	50.000 kg / 500 kN

Resolution

PCE-DDM 3	1 kg / 10 N
PCE-DDM 5	2 kg / 20 N
PCE-DDM 10	5 kg / 50 N
PCE-DDM 20	10 kg / 100 N
PCE-DDM 50	20 kg / 200 N

Minimum load

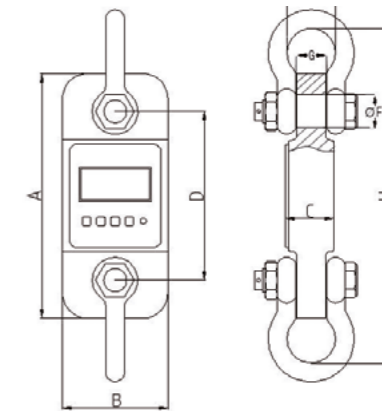
PCE-DDM 3	10 kg
PCE-DDM 5	40 kg
PCE-DDM 10	100 kg
PCE-DDM 20	200 kg
PCE-DDM 50	400 kg

** The device also displays values under minimum load. However, our measurement accuracy specification is only valid for the minimum load listed in the table.

accuracy	± 0,1 % of measurement range
taring range	max. 20 % of measurement range
display	25 mm (1"), 5 digits, LCD with 22 mm digit height
unit of measurement	kg / t / lbs / N / kN
wireless range	approx. 80 m
sampling rate	2.5 Hz
operating conditions	-10 ... +40 °C, ≤ 85 % RH
power supply	3 x 1.5 V AA batteries
operation time	approx. 50 h
battery life	≤ 40 hours

Model	A(mm)	B(mm)	C(mm)	D(mm)	Ø(mm)	H(mm)	Material
PCE-DDM 3	260	123	37	195	51	365	aluminium
PCE-DDM 5	285	123	57	210	58	405	aluminium
PCE-DDM 10	320	120	57	230	92	535	steel
PCE-DDM 20	375	128	74	260	127	660	steel
PCE-DDM 50	465	150	104	305	184	930	steel

Technical Drawing



The dimensions of the dynamometer are given in mm.



Subject to change without notice

CONDUCTIVITY MEASUREMENT CONDUCTIVITY TESTER FOR NFE METALS

PCE-COM 20

With wide measuring range of up to 112 % IACS or 65 MS/m

The conductivity tester for measuring the electrical conductivity of non-ferrous metals such as aluminium or copper belongs to the group of NDT devices. The conductivity tester is used in non-destructive material testing. By means of the eddy current measuring principle which has proven for this application, the electrical conductivity of metallic materials can be determined quickly and precisely. With its

operating frequency of 60 kHz, the conductivity tester has a wide measuring range of 0.51 ... 112 % IACS and reaches an accuracy of +/-0.5 % at 20 °C, with a resolution of up to 0.01 % IACS.

ISO cal option

- » user-friendly hand-held meter
- » memory for up to 500 groups of measurements
- » durable internal rechargeable battery
- » lift-off and temperature compensation
- » adjustable backlight
- » for mobile use
- » automatic calibration
- » operating frequency of 60 kHz
- » incl. 3 calibration plates (titanium 1.03 % IACS, bronze 8.11 % IACS and copper 100 % IACS)



APPLICATION



TECHNICAL SPECIFICATIONS

Operating frequency	60 kHz, sine wave
Conductivity measuring range	0.51 % IACS ... 112 % IACS 0.3 MS/m ... 65 MS/m resistance 0.015388 ... 3.33333 Ω·mm ² /m
Conductivity resolution	0.01 % IACS (at <51 % IACS) 0.1 % IACS (at 51 % IACS ... 112 % IACS)
Conductivity accuracy	±0.5 % at +20 °C / 68 °F ±1 % at 0 ... +40 °C / 32 ... 104 °F
Lift-off effect	probe compensation 0.5 mm
Temperature measuring range	0 ... +50 °C / 32 ... 122 °F
Temperature accuracy	±0.5 °C
Automatic compensation	Automatic adjustment of conductivity result to the value at 20 °C / 68 °F
Operating conditions	0 ... 50 °C / 32 ... 122 °F, 0 ... 95 % RH
Display	LCD with backlight
Menu languages	English, German, Chinese (simplified)
Power supply	internal rechargeable battery
Probe	∅ 14 mm / ≈ 0.55 in
Memory	up to 500 groups of measurement values
Data interface	USB
Dimensions	220 x 95 x 35 mm / 8.66 x 3.74 x 1.38 in
Weight	415 g / 1 lb (with probe)

Optional accessories:

Calibration standard titanium	1.02 % IACS	Order code PCE-COM 20-CP1
Calibration standard brass	21.02 % IACS	Order code PCE-COM 20-CP9
Calibration standard magnesium	11.88 % IACS	Order code PCE-COM 20-CP11
Calibration standard magnesium	31.88 % IACS	Order code PCE-COM 20-CP3
Calibration standard copper	87.24 % IACS	Order code PCE-COM 20-CP10
Calibration standard copper	60.69 % IACS	Order code PCE-COM 20-CP8
Calibration standard copper	101.03 % IACS	Order code PCE-COM 20-CP13
Calibration standard bronze	8.47 % IACS	Order code PCE-COM 20-CP12
Calibration standard bronze	10.55 % IACS	Order code PCE-COM 20-CP5
Calibration standard bronze	15.24 % IACS	Order code PCE-COM 20-CP2
Calibration standard aluminium	15.29 % IACS	Order code PCE-COM 20-CP7
Calibration standard aluminium	32.07 % IACS	Order code PCE-COM 20-CP6
Calibration standard aluminium	57.41 % IACS	Order code PCE-COM 20-CP4
Calibration standard aluminium	41.21 % IACS	Order code PCE-COM 20-CP14



Subject to change without notice

HARDNESS TESTING HARDNESS TESTER

PCE-2000N

Leeb hardness tester for metals

The PCE-2000N hardness tester from PCE-Instruments uses the Leeb rebound method. This is a dynamic hardness test method in which a standardized test specimen, usually a hard metal ball, hits a test surface at a defined impact energy. The impact of the hard metal ball on the test surface results in a plastic deformation of the surface at the point of impact. This deformation results in an energy loss which is

proportional to the hardness of the workpiece and which can be determined by means of the ratio of rebound to impact velocity of the specimen.

ISO cal option

- » various other impactors as accessories
- » measurement in different angles possible
- » readings are saved to USB pen drive
- » external impact device with 1.5 m cable
- » wide measurement range
- » 6 different hardness scales



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement ranges	170 ... 960 HLD 17.9 ... 69.5 HRC 19 ... 683 HB 80 ... 1042 HV 30.6 ... 102.6 HS 59.1 ... 88 HRA 13.5 ... 101.7 HRB	Display resolution	128 x 64 pixel OLED
Impact device included (optional impact devices)	D (DC, D+15, C, G, DL)	Data memory	600 averages in 6 data groups
Cable length impact device	approx. 1.5 m	Data output	USB pen drive
Accuracy	±0.5 % (@800 HLD)	Power supply	3 x AAA batteries
Repeatability	0.8 % (@800 HLD)	Auto Power Off	after 12 min of inactivity
Hardness scales	HL (Leeb) HV (Vickers) HB (Brinell) HS (Shore) HRA (Rockwell A) HRB (Rockwell B) HRC (Rockwell C)	Operating conditions	+10 ... +50 °C, 20 ... 90 % RH
Measurable materials	Steel Cast steel Alloy steel Stainless steel Grey cast iron Spheroidal graphite iron Cast aluminium alloy Cu-zinc (brass) Copper-tin alloy Copper	Storage conditions	-30 ... +60 °C
		Dimensions	160 x 80 x 40 mm (H x W x D)
		Weight	Meter with batteries: approx. 300 g / <1 lb Impact device: approx. 75 g / <1 lb
		Material	
		Steel / cold-rolled steel	HRA 59.1 ... 85.8 HRC 20 ... 68.5 HRB 38.4 ... 99.6 HB 127 ... 651 HSD 32.2 ... 99.5 HV 83 ... 976
		Alloyed tool steel	HRC 20.4 ... 67.1 HV 80 ... 898
		Stainless steel	HRB 46.5 ... 101.7 HB 85 ... 655 HV 85 ... 802
		Grey cast iron	HB 93 ... 334
		Spheroidal graphite iron	HB 131 ... 387
		Cast aluminium	HRB 23.8 ... 84.6 HB 19 ... 164
		Brass	HRB 13.5 ... 95.3 HB 40 ... 173
		Bronze	HB 60 ... 290
Copper	HB 45 ... 315		

Optional accessories:

Impact device D	Order code	PCE-2000N Probe D
Impact device DC	Order code	PCE-2000N Probe DC
Impact device D+15	Order code	PCE-2000N Probe D+15
Impact device C	Order code	PCE-2000N Probe C
Impact device G	Order code	PCE-2000N Probe G
Impact device DL	Order code	PCE-2000N Probe DL



Subject to change without notice

HARDNESS TESTING HARDNESS TESTER

PCE-900

Leeb hardness tester for metals / measurement of tensile strength

The Leeb hardness tester PCE-900 measures the hardness of nine different metals using the Leeb rebound method. This means that an impact body bounces on a metallic surface and the intensity of the rebound is used as an indicator of the material hardness. The hardness test instrument PCE-900 can show the metal hardness in 6 different hardness scales, including: Rockwell, Vickers, Leeb,

Brinell and Shore. A distinction is made between Rockwell B and C when measuring in the Rockwell scale. Via the data interface, the measured values can be transmitted live to the PC. The delivery scope is completed by an ISO calibration certificate.

ISO cal option

- » hardness test by the rebound method
- » nine saved material characteristic curves
- » easy to use
- » data interface
- » six different hardness scales
- » incl. D-type impact device and test block
- » optional software available



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement range	200 ... 900 HLD
Measuring accuracy	±10 HLD
Materials	9 different materials Leeb: HL Rockwell C: HRC Rockwell B: HRB Brinell: HB Vickers: HV Shore: HSD
Hardness scales	
Display	12.5 mm LCD with backlight
Included impact device	D-type
Memory	50 data records
Interface	RS-232
Power supply	4 x 1.5 V AAA batteries
Operating temperature:	-10 ... 50 °C
Environmental conditions	Storage temperature: -30 ... 60 °C relative humidity: <90 %
Dimensions	142 x 77 x 40 mm
Weight	Meter: ca. 130 g Impact device: 75 g
Cable length	approx. 1.2 m

Optional accessories:

Surface adaptor for concave spherical surfaces	Order code	HK16.5-30	16.5 ... 30 mm
Surface adaptor for concave spherical surfaces	Order code	HK12.5-17	12.5 ... 17 mm
Surface adaptor for concave spherical surfaces	Order code	HK11-13	11 ... 13 mm
Surface adaptor convex	Order code	Z25-50	25 ... 50 mm (outside) Surface
Adaptor convex	Order code	Z10-15	10 ... 15 mm (outside) Surface
Adaptor concave	Order code	HZ16.5-30	16.5 ... 30 mm (inside) Surface
Adaptor concave	Order code	HZ12.5-17	12.5 ... 17 mm (inside) Surface
Adaptor concave	Order code	HZ11-13	11 ... 13 mm (inside)



HK16.5-30



Z25-50



HZ11-13



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HARDNESS TESTING

HARDNESS TESTER FOR METALS

PCE-2500N / PCE-2550 / PCE-2600N

Determines all common hardness parameters / Measuring principle: Rebound method

The material tester is used wherever a fast hardness test has to be carried out. It is possible with the material tester to determine the surface hardness of many metals. The material tester is particularly suitable for quality or material inspection. The measured values can be stored in the internal memory and recalled later. Please note that the measured values can only be read from the material tester on the

display and it does not offer any readout. One-hand operation of the material tester allows for convenient use in different locations. Due to its construction, the material tester also offers the possibility to determine the surface hardness in bores or other depressions.

ISO cal option

- » limit alarm
- » suitable for measurement in bores
- » surface measurement on many metals
- » internal memory for measurements
- » bright OLED
- » handheld measuring instrument



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring ranges	HLD: 170 ... 960 HRC: 17.9 ... 69.5 HB: 19 ... 683 HV: 80 ... 1042 HS: 30.6 ... 102.6 HRA: 59.1 ... 88 HRB: 3.5 ... 101.7	Battery life	ca. 10 h
Measurement accuracy	HLD: ± 0.5%	Power supply	Polymer Li-ion battery, 3.7V
Measuring principle	Rebound method / According to Leeb	Interface	USB 2.0
Impact device	Type D striker	Dimensions	205 x 32 x 25 mm / 8 x 1.3 x 1 in
Display	128 x 64 OLED	Weight	650 g / 1.4 lbs
Repeatability	HLD: ± 0.8%	Display	128 x 64 mm / 5 x 2.5 in OLED
Hardness max.	1042 HV	Operating conditions	-10 ... 50°C / 14 ... 122°F, <90% r.H.
Measurement units	HLD, HRC, HB, HV, HS, HRA, HRB	Storage conditions	-30 ... 60°C / -22 ... 140°F, <90% r.H.
Running time	Approx. 10 hours of continuous use at full charge		
Power supply	Rechargeable Li-ion battery		
Storage conditions	-30 ... 60°C / -22 ... 140°F, <90% RH		
Operating conditions	-10 ... 50°C / 14 ... 122°F, <90% RH		
Dimensions	148 x 32 x 25 mm / 5.83 x 1.26 x 0.99 in		
Limit alarm	Yes		
Automatic shutdown	Yes		
Weight	650 g / 1.44 lbs		
Materials	Steel, Cast steel, Alloyed tool steel Stainless steel, Cast iron, Ductile iron Cast aluminum alloy, Brass, Bronze, Copper		

Measuring ranges on various material surfaces

Steel	HRC: 17.9 ... 68.5 HRB: 59.6 ... 99.6 HRA: 59.1 ... 85.8 HB: 127 ... 651 HV: 83 ... 976 HS: 32, 2 ... 99.5
Tool steel	HRC: 17.9 ... 68.5 HRB: 59.6 ... 99.6 HRA: 59.1 ... 85.8 HB: 127 ... 651 HV: 83 ... 976 HS: 32, 2 ... 99.5
Stainless steel	HRB: 46.5 ... 101.7 HB: 85 ... 655 HV: 85 ... 802
Cast iron	HB: 93 ... 334
Brass	HRB: 13.5 ... 95.3 HB: 40 ... 173
Bronze	HB: 60 ... 290
Copper	HB: 45 ... 315

PCE-2500N



PCE-2550



PCE-2600N



Subject to change without notice

HARDNESS TESTING

HARDNESS TESTER

PCE-2900

For metallic materials / Measuring range 170 ... 960 HLD

The hardness tester PCE-2900 has been developed for hardness measurements on metallic materials. The hardness tester measures the material hardness in Vickers, Brinell, Rockwell, Leeb and Shore. The hardness tester PCE-2900 measures the hardness according to the Leeb rebound principle. An impactor bounces on the workpiece via a firing pin and the metal hardness is measured via the rebound.

The PCE-2900 hardness meter is equipped with a backlit colour display. Likewise, the buttons on the PCE-2900 are illuminated. Thus, the display can be read well even in low light conditions. The impact device is connected to the hardness tester via a cable.

ISO cal option

- » USB and WiFi for data transmission
- » large, bright touch-screen LCD display
- » large measuring range
- » measurement possible in every position
- » hardness scales (HRC, HRB, HV, HB, HS)
- » for all metallic materials



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	170 ... 960 HLD
Reproducibility	±6 HLD
Impactor	Type D
Measuring direction	360 °
Adjustable scales	Leeb, Brinell, Rockwell A, Rockwell B, Rockwell C, Vickers, Shore
Surface quality Ra of the workpiece	2 µm
Minimum weight of the workpiece	direct measurement: 5 kg / 11 lbs tied measurement: 2 ... 5 kg / 4.4 ... 11 lbs with coupling gel: 0.05 ... 2 kg / 0.1 ... 4.4 lbs
Minimum thickness of the workpiece	direct measurement: >5mm / >0.19 in with coupling gel: 0.8 ... 5 mm / 0.03 ... 0.19 in
Display	Colour LCD
Internal measured value memory	600 records in 6 files
Interface	USB, WiFi
Power supply	2 x 1.5 V AA batteries
Operating time	approx. 50 hours
Operating conditions	10 ... 50 °C / 50 ... 122 °F max. 90 % r.H.
Storage conditions	-30 ... 60 °C / -22 ... 140 °F max. 90 % r.H.
Dimensions	160 x 80 x 35 mm / 6.3 x 3.1 x 1.3 in
Weight	350 g / < 1 lb

Optional accessories:

Adaptor spherical inside HK11-13	Order no.: HK11-13
Adaptor spherical inside HK12.5-17	Order no.: HK12.5-17
Adaptor spherical inside HK16.5-30	Order no.: HK16.5-30
Adaptor spherical inside HZ11-13	Order no.: HZ11-13
Adaptor concave inside HZ12.5-17	Order no.: HZ12.5-17
Adaptor concave inside HZ16.5-30	Order no.: HZ16.5-30
Adaptor convex outside Z10-15	Order no.: Z10-15
Adaptor convex outside Z25-50	Order no.: Z25-50
Adaptor convex outside 14,5...30mm	Order no.: Z14.5-30
Adapter set for hardness testers with Impact D impactor	Order no.: PCE-HAK
Impact Sensor C	Order no.: PCE-2000N Probe C
Impact Sensor D	Order no.: PCE-2000N Probe D



Subject to change without notice

HARDNESS TESTING CONCRETE TESTER

PCE-HT 224E

For measuring the quality of concrete surfaces / Test load 2.207 J

The Material Tester is a measuring tool for testing the strength of concrete. The Material Tester measures strength according to the Schmidt principle. According to this measurement method, the quality of concrete can be measured with the Material Tester. Thus, the Material Tester finds its essential application in the construction and in the construction sector. The Material Tester is also suitable

for testing hardness of rolled paper. The built-in mechanism on the hardness tester always ensures the same impact energy of 2.207 Nm. The Material Tester displays measurements Rebound Value and can display force in PSI, MPa, kgF/cm², or N/mm².

ISO cal option

- » OLED for reading the measured values
- » USB interface for connection to a PC
- » measuring range 10 ... 100 N/mm², 1500 ... 8500 lbs/in²
- » measurement of the hardness of concrete
- » data storage for later analysis
- » rechargeable battery for mobile use



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	10 ... 100 N / 1500 ... 8500 PSI or lbs/in ²
Accuracy	± 0.1 R
Display	OLED
Nominal kinetic energy	2.207 Nm, 0.225 kgm
Interface	micro USB
Storage	1,000 data units with 256 measurements each
Operating conditions	-40 ... 60°C / -40 ... 140°F
Power supply	3.7V Li-ion battery
Power supply (mains adapter)	Primary: 100 ... 240V AC, 50/60 Hz Secondary: 5V DC, 1 A
Dimensions	280 x 75 x 60 mm / 11 x 3 x 2.4 in
Weight	About 1.2 kg / 2.6 lbs



Subject to change without notice

NON-DESTRUCTIVE TESTING CONCRETE MEASURING DEVICE

PCE-UCD 100

Concrete measuring device for quality assessment / with ultrasonic sensors

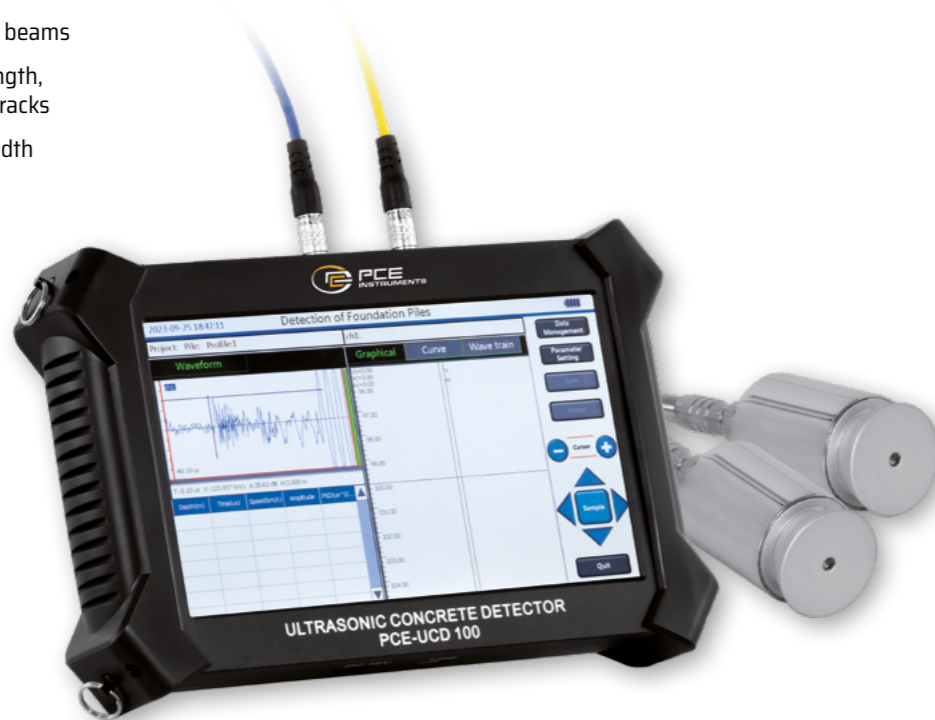
The Concrete tester / concrete measuring device sets a new standard for the quality control of concrete structures. With a wide range of measurement parameters and state-of-the-art technology, this material testing device enables accurate assessment of concrete piles, concrete beams, and other building components. This innovative material testing device provides not only reliable concrete strength

measurements but also detailed error detection, including the size and depth of voids and cracks. The included camera even allows for precise measurement of crack widths.

The Concrete tester / concrete measuring device is specifically designed to accurately measure concrete strength and detect flaws such as voids and cracks.

ISO cal option

- » measurement on concrete piles, concrete beams
- » measurement parameters: Concrete strength, error detection, size and depth of voids, cracks
- » includes a camera for measuring crack width
- » bandwidth 1 to 500 kHz
- » display: 10.1" TFT touchscreen display
- » sturdy carrying case
- » internal storage: 8 GB



APPLICATION



TECHNICAL SPECIFICATIONS

Acoustic Signal Range

Measurement Range -1677700 μ s ... +1677700 μ s
Resolution 0.05 μ s

General Technical Data

Measurement Functions	Detection of concrete piles, concrete strength, depth and width of voids, cracks
Measurement Interval	0.05 ... 409.6 μ s
Display Type	TFT color display
Display Size	10.1 inches
Data Interface	USB
Battery Capacity	8100 mAh
Battery Voltage	11.1 V
Battery Type	Lithium-ion battery
Bandwidth	1 ... 500 kHz
Test Voltage	125 V, 250 V, 500 V, 1000 V
Gain Range	146 dB
Menu Language	English, Chinese
Protection Class	IP20
Power Supply	Mains, Battery
Weight	2160 g
Device Weight with Accessories	8152 g
Device Weight with Accessories and Packaging	8700 g
Dimensions (L x W x H)	300 x 200 x 58 mm
Additional Dimensions	Sensor Cable Length: approximately 10 m
Operating Conditions	0 ... 50 °C, 10 ... 85 % r.F.
Storage Conditions	0 ... 50 °C, 10 ... 85 % r.F.



Subject to change without notice

FLOW MEASUREMENT ULTRASONIC FLOW METER

PCE-TDS 200 SERIES

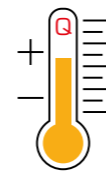
Flow velocity / volume flow and volume / heat quantity

The flow meter has a measuring range of ± 32 m/s. With an accuracy of ± 1.5 % f.s. for a pipe diameter of $DN \geq 50$, ± 3.5 % f.s. for a pipe diameter of $DN < 50$ and a reproducibility of ± 0.5 % f.s., the flow meter is a particularly precise measuring device. The installation aid graphically displays the signal quality from the flow meter. In addition, it is graphically displayed whether the sensors of the flow meter are positioned

at the correct distance from each other. To carry out flow measurement with the flow meter, the flow velocity, the volume flow and the volume are displayed after entering the pipe and medium specifications.

ISO cal option

- » measuring range: ± 32 m/s
- » reproducibility of ± 0.5 % of the measured value
- » various ultrasonic probes available
- » heat quantity measurement (only PCE-TDS 200+ series)
- » data memory for 10 million measuring points (32 GB)
- » individually adjustable alarm limits
- » USB-C interface for data transfer
- » optional: software and calibration certificate ISO or DAkkS



APPLICATION



TECHNICAL SPECIFICATIONS

Flow measurement

Measuring range	± 32 m/s
Resolution	0.001 m/s
Accuracy $DN \geq 50$ mm	± 1.5 % of Rd for velocities > 0.3 m/s
Accuracy $DN < 50$ mm	± 3.5 % of Rd for velocities > 0.3 m/s
Repeatability	± 0.5 % of Rd
Temperature resistance	$-30 \dots +160$ °C
Measuring method	N / V / W / Z

Medium

Petrol
Diesel
Ethanol
Sea water
Methanol
Oil
Petroleum
Crude oil
Water
User defined (manual input of sound velocity from the medium)
Suitable for all liquids with an impurity of less than 5 %.

Pipe material

Copper CU
Steel FE
Stainless steel VA
Aluminium AL
Brass ME
Cast iron CI
Iron FE
Nickel NI
Titanium TI
Zinc ZI
Acrylic AC
Polyethylene PE
Polypropylene PP
Polyvinyl chloride PVC
Nylon NY
User defined (manual input of the sound velocity of the pipe material)

Inner pipe lining

No lining
Epoxy resin
Rubber
Mortar
Polystyrene PS
Polyethylene PE
Polytetrafluoroethylene PTFE
Polyurethane PU
Polypropylene PP
User defined (man. Input of the longitudinal sound velocity of the inner lining of the pipe)

Temperature (only PCE-TDS 200+)

Measuring range	type B	600 ... 1800 °C
	type E	-100 ... 900 °C
	type J	-100 ... 1150 °C
	type K	-100 ... 1370 °C
	type N	-100 ... 1150 °C
	type R	0 ... 1700 °C
	type S	0 ... 1500 °C
	type T	-100 ... +400 °C
Resolution		0,1 °C
Accuracy	type B	$\pm(0,5 \% + 3$ °C)
	type E	$\pm(0,4 \% + 1$ °C)
	type J	$\pm(0,4 \% + 1$ °C)
	type K	$\pm(0,4 \% + 1$ °C)
	type N	$\pm(0,4 \% + 1$ °C)
	type R	$\pm(0,5 \% + 3$ °C)
	type S	$\pm(0,5 \% + 3$ °C)
	type T	$\pm(0,4 \% + 1$ °C)



Subject to change without notice

FLOW MEASUREMENT ULTRASONIC FLOW METER

TECHNICAL SPECIFICATIONS

Further specifications

Measuring parameters PCE-TDS 200	flow velocity / volume flow / volume
Measuring parameters PCE-TDS 200+	flow velocity / volume flow / volume Temperature / Heat output / Heat quantity
Unit linear dimension	mm / in
Unit Flow velocity	m/s / ft/s
Unit Flow rate	m ³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit Volume	m ³ / l / gal / igl / mgl / cf / bal / ib / ob
Unit Temperature	°C / °F
Unit Heat quantity	K / kJ / MJ / Wh / kWh / MWh / Btu / kBtu / MBtu
Unit Heat output	W / kW / MW / J/h / kJ/h / MJ/h / Btu/h / kBtu/h / MBtu/h
Unit Cost display	€ / £ / \$ / TL / Zł / ¥
Date / Time	second / minute / hour / day
Display	LCD of 2.8
Units	metric / Imperial
Memory	10 million values (32 GB)
Menu languages	German / Chinese / Danish / English / Turkish / French / Italian / English / Turkish / French / Italian Italian / Japanese / Dutch / Polish / Portuguese / Russian / Polish / Portuguese / Russian / Spanish
Operating and Storage conditions	-20 ... +65 °C
Interface	10 ... 95 % H.r. non-condensing USB For online measurement, reading out of the internal memory and for recharging the battery
Protection class	IP52
Power supply	LiPo battery / 3.7 V / 2500 mAh
Charger	USB / 5 V DC / 500 mA
Operating time	approx. 10 h
Dimensions	165 x 85 x 32 mm
Weight	255 g

Sensor Order.-no.	Nominal diameter in DN *	Dimensions Sensor	Temperature Measuring range	Rail
PCE-TDS 200 L SENSOR	DN 300 ... 6000	70 x 40 x 37 mm	-30 ... 160 °C	no
PCE-TDS 200 M SENSOR	DN 50 ... 700	70 x 40 x 37 mm	-30 ... 160 °C	no
PCE-TDS 200 MR SENSOR	DN 50 ... 700	280 x 60 x 40 mm	-30 ... 160 °C	yes
PCE-TDS 200 S SENSOR	DN 15 ... 100	45 x 30 x 30 mm	-30 ... 160 °C	no
PCE-TDS 200 SR SENSOR	DN 15 ... 100	198 x 45 x 25 mm	-30 ... 160 °C	yes

*The nominal diameter is the inside diameter of a pipe.
Note : If you order the sensor later, we need the PCE-TDS 200 device to adapt the sensor to the device.

TECHNICAL SPECIFICATIONS

Model PCE-TDS 200

PCE-TDS 200 L
PCE-TDS 200 M
PCE-TDS 200 ML

PCE-TDS 200 MR
PCE-TDS 200 S
PCE-TDS 200 SL

PCE-TDS 200 SM

PCE-TDS 200 SML

PCE-TDS 200 SR

Model PCE-TDS 200+

PCE-TDS 200+ L
PCE-TDS 200+ M
PCE-TDS 200+ ML

PCE-TDS 200+ MR
PCE-TDS 200+ S
PCE-TDS 200+ SL

PCE-TDS 200+ SM

PCE-TDS 200+ SML

PCE-TDS 200+ SR

Accessories

CAL-PCE-TDS-ISO
CAL-PCE-TDS-DAkkS
CAL-T2

Additional sensors
PCE-TDS 200 case
PCE-TDS 200 SW
TF-RA330
TF-RA330-3
TF-RA330-5
TT-GEL
K-Gel

Sensors are included in the scope of delivery Standard version

PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 MR SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 SR SENSOR for DN 15 ... 100

Sensors included in the scope of delivery Version with temperature sensors

PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 MR SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 S SENSOR for DN 15 ... 100
PCE-TDS 200 M SENSOR for DN 50 ... 700
PCE-TDS 200 L SENSOR for DN 300 ... 6000
PCE-TDS 200 SR SENSOR for DN 15 ... 100

ISO Calibration Certificate
DAkkS Calibration Certificate
Calibration certificate for 2-channel thermometer

see table above
spare transport case
software
Temperature Contact Sensor Typ T, 1 m
Temperature Contact Sensor Typ T, 3 m
Temperature Contact Sensor Typ, 5 m
Ultrasonic Contact Gel, 100 ml
High Temperature Coupling Gel, 100 ml

Delivery Scope

1 x Ultrasonic flow meter PCE-TDS 200
1 x Flow sensors (depending on model)
2 x Temperature sensor TF-RA330 (only PCE-TDS 200+)
2 x Connection cable 5 m
2 x Detachable cable ties
1 x Power supply unit
1 x USB-C cable
1 x Ultrasonic contact gel
1 x PCE measuring tape
1 x Plastic case
1 x Instruction manual



Subject to change without notice

FLOW MEASUREMENT ANEMOMETER

PCE-AM 30

With vane wheel sensor / Measuring range 0 ... 30 m/s

The flow meter is the ideal solution for measuring wind speeds, whether in light breezes or strong wind currents, and can measure speeds of up to 55 km/h. Versatile in use, it enables measurement in various units such as m/s, km/h, kn, mph and ft/min and also integrates the Beaufort scale to enable a quick assessment of wind force. In addition to wind speed measurement, the flow meter also offers

functions for temperature and humidity measurement. These three parameters are shown simultaneously on the display, providing the user with a clear and simple visualisation. With additional functions such as MAX, MIN, HOLD and AVG, the flow meter makes it easier to record important data.

ISO cal option

- » Wind speed measurement up to 55 km/h
- » m/s, km/h, kn, mph, ft/min
- » Beaufort scale
- » Temperature measurement
- » Humidity measurement
- » MAX, MIN, HOLD, AVG display
- » Vane wheel sensor



APPLICATION



TECHNICAL SPECIFICATIONS

Moisture relative	
Measurement range	20 % ... 90 %
Resolution	1 %
Accuracy	5 %
Speed	
Measurement range	0.1 m/s ... 30 m/s
Resolution	0.1 m/s
Accuracy	±5 %
Speed	
Measurement range	39 ft/min ... 5860 ft/min
Resolution	19 ft/min
Accuracy	±5 %
Speed	
Measurement range	0.1 knots ... 55 knots
Resolution	0.2 knots
Accuracy	±5 %
Speed	
Measurement range	0.3 km/h ... 55 km/h
Resolution	0.2 km/h
Accuracy	±5 %
Speed	
Measurement range	0.2 mph ... 65 mph
Resolution	0.2 mph
Accuracy	±5 %
Temperature	
Measurement range	-10 °C ... +50 °C
Resolution	0.1 °C
Accuracy	±1 °C
General technical data	
Measurement functions	MIN, MAX, HOLD, average value
Units	m/s, km/h, kn, mph, ft/min
Display type	LCD with illumination
Sensor	Wheel
Automatic switch-off	10 min
Automatic switch-off can be deactivated	Yes
Menu language	English
Protection class (device)	IP20
Weight	48 g
Dimensions (L x W x H)	115 x 40 x 18 mm
Operating conditions	-10 ... 50 °C, 0 ... 90 % r.H
Storage conditions	-10 ... 50 °C, 0 ... 90 % r.H



Subject to change without notice

FLOW MEASUREMENT MULTIFUNCTION AIR VELOCITY METER

PCE-AM 45

Air velocity meter with Beaufort scale / Measuring range 0.3 ... 45.0 m/s

The multifunction air velocity meter determines the wind speed via an impeller with a diameter of 65 mm / 2.5". The anemometer can reliably determine the speed in a measuring range of 0.3 ... 45.0 m/s / 0.9 ... 147 ft/s. In addition to the speed measurement with the anemometer, a volume flow measurement can also be carried out. In addition to the normal measured value display on the anemometer, a

Beaufort scale is stored. The wind strength level is displayed directly on the Beaufort scale on the anemometer. Depending on the orientation of the impeller, the multifunction air velocity meter can also be used to determine the wind direction. This is made possible by the anemometer's built-in gyroscope.

ISO cal option

- » battery operation for mobile use
- » telescopic probe with a length of 270 ... 540 mm / 10.63 ... 21.26"
- » impeller opening of 65 mm / 2.5"
- » velocity and volume flow measurement
- » measuring range 0.3 ... 45.0 m/s / 0.9 ... 147 ft/s
- » backlit LC display



APPLICATION



TECHNICAL SPECIFICATIONS

Wind speed	m/s	CFM (FT³/min)	
Measuring range	0.3 ... 45.0 m/s	Measuring range	0 ... 999900 ft ³ /min
Resolution	0.01 m/s	Resolution	0.001 ... 100 m ³ /min
Accuracy	±3 % ±0.1 m/s of measured value	Adjustable area	0.001 ... 999 m ³
Wind speed	ft/min	Temperature measurement	°C
Measuring range	60 ... 8800 ft/min	Measuring range	0 ... 45 °C
Resolution	0.01, 0.1, 1 ft/min	Resolution	0.1 °C
Accuracy	±3 % ±20 ft/min of measured value	Accuracy	±1.0 °C
Wind speed	knots	°F	
Measuring range	0.6 ... 88.0 knots	Measuring range	32 ... 113 °F
Resolution	0.01 knots	Resolution	0.18 °F
Accuracy	±3 % ±0.2 knots of measured value	Accuracy	±1.8 °F
Wind speed	km/h	Moisture measurement	
Measuring range	1.0 ... 140.0 km/h	Measuring range	10 ... 90 % RH
Resolution	0.01 km/h	Resolution	0.1 % RH
Accuracy	±3 % ±0.4 km/h of measured value	Accuracy	±5 % RH
Wind speed	mph	Further specifications	
Measuring range	0.7 ... 100 mph	Probe length	270 ... 540 mm / 10.63 ... 21.26"
Resolution	0.01 mph	Probe opening	Ø 65 mm / 2.5"
Accuracy	±3 % ±0.2 mph of measured value	Interface	Micro USB
Wind direction		Data memory	960 measured values
Measuring range	0 ... 360 °	Power supply	4 x 1.5 V AAA batteries
Resolution	1 °	Power consumption	15 ... 20 mA without background lighting
Accuracy	- - -		20 ... 25 mA with background lighting
Volume flow	CMM (m ³ /min)	Battery discharged display	<4.5 V
Measuring range	0 ... 999900 m ³ /min	Operating conditions	0 ... 50 °C / 32 ... 122 °F, 40 ... 80 % RH,
Resolution	0.001 ... 100 m ³ /min	non-condensing	
Adjustable area	0.001 ... 999 m ²	Storage conditions	-20 ... 60 °C / -4 ... 140 °F, <80 % RH,
		non-condensing	
		Dimensions	70 x 194 x 35 mm / 2.7 x 7.6 x 1.3"
		Weight	400 g / 14.1 oz



Subject to change without notice

FLOW MEASUREMENT

AIR FLOW METER

PCE-HWA 30

Hot wire anemometer/ Telescopic arm with swiveling head / Measuring range 0.3 ... 30.0 m/s

The air flow meter measures the flow velocity according to the hot wire principle. This guarantees a particularly compact design. The measuring range of the hot wire anemometer is between 0.3 ... 30.0 m/s / 0.98 ... 98.4 ft/s. In addition to the flow velocity, the hot wire anemometer can measure the volume flow and the ambient temperature. For each measurement, a Beaufort scale is displayed next to

the measured value. The current wind strength can be read from this scale. With the integrated data memory, up to 960 measured values can be recorded with the air flow meter. The data can be read directly on the hot wire anemometer.

ISO cal option

- » hot wire anemometer with data storage
- » software for reading out the measured values
- » swiveling telescopic arm
- » measuring range 0.3 ... 30.0 m/s / 0.98 ... 98.4 ft/s
- » data memory for 960 measured values
- » beaufort scale



APPLICATION



TECHNICAL SPECIFICATIONS

Wind speed	m/s	Further specifications	
Measuring range	0.3 ... 30.0 m/s	Probe length	270 ... 990 mm / 10.63 ... 38.98"
Resolution	0.01 m/s	Probe diameter	Ø 0.8 ... 1.2 mm / 0.031 x 0.047"
Accuracy	±3 % ±0.1 m/s of measured value	Interface	Micro USB
		Data memory	960 measured values
		Power supply	3.7 V, 1000 mAh battery
			5 V DC, 1 A Micro USB interface
Wind speed	ft/min	Power consumption	15 ... 35 mA without background lighting
Measuring range	60 ... 5904 ft/min		70 ... 100 mA with background lighting
Resolution	0.01, 0.1, 1 ft/min		
Accuracy	±3 % ±20 ft/min of measured value	Battery discharged display	<3.4 V
		Operating conditions	0 ... 50 °C / 32 ... 122 °F,
			40 ... 80 % RH, non-condensing
Wind speed	knots	Storage conditions	-20 ... 60 °C / -4 ... 140 °F,
Measuring range	0.6 ... 58.3 knots		< 80 % RH, non-condensing
Resolution	0.01 knots	Dimensions	70 x 194 x 35 mm / 2.7 x 7.6 x 1.3"
Accuracy	±3 % ±0.2 knots of measured value	Weight	400 g / 14 oz
Wind speed	km/h		
Measuring range	1.0 ... 108.0 km/h		
Resolution	0.01 km/h		
Accuracy	±3 % ±0.4 km/h of measured value		
Wind speed	mph		
Measuring range	0.7 ... 67 mph		
Resolution	0.01 mph		
Accuracy	±3 % ±0.2 mph of measured value		
Volume flow	CMM (m ³ /min)		
Measuring range	0 ... 999900 m ³ /min		
Resolution	0.001 ... 100 m ³ /min		
Adjustable area	0.001 ... 999 m ²		
Volume flow	CFM (FT ³ /min)		
Measuring range	0 ... 999900 ft ³ /min		
Resolution	0.001 ... 100 m ³ /min		
Adjustable area	0.001 ... 999 m ³		
Temperature measurement	°C		
Measuring range	0 ... 45 °C		
Resolution	0.1 °C		
Accuracy	±1.0 °C		
Temperature measurement	°F		
Measuring range	32 ... 113 °F		
Resolution	0.18 °F		
Accuracy	±1.8 °F		



Subject to change without notice

FLOW MEASUREMENT AIRFLOW METER

PCE-AM 40

With wind speed, volume flow and temperature measurement / Memory for 1,000 measured values

The Airflow Meter is a professional measuring device for the precise measurement of wind speed, air flow and temperature. It is ideal for applications in industry, trade, research or hobby. The Airflow Meter supports various units such as m/s, km/h, knots, mph, ft/min and ft/s - with a measuring range of 0.06 to 45 m/s. Thanks to practical functions such as max, min, average (AVG) and

hold, the Airflow Meter is easy to operate. Individually adjustable upper and lower limit values enable precise monitoring - a visual and audible alarm warns you if these are exceeded. The repeat accuracy is 2%, with a measuring rate of 2 measurements per second.

ISO cal option

- » wind speed up to 45 m/s
- » units: m/s, km/h, knots, mph, ft/min, ft/s
- » temperature measurement
- » MAX, MIN, AVG, HOLD functions
- » alarm: audible and visual
- » memory for up to 1000 readings
- » interface: Micro-USB
- » LCD display 2.8 inch
- » operation: AA batteries or USB
- » PC software



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data

Measuring functions	MIN, MAX, HOLD, AVG
Units	ft ³ /min, m ³ /min, m ³ /s, m/s, km/h, ft/min, ft/s, mph, Bft, knots, °C, °F
Display type	LCD
Display size	2,8 Inch
Measuring rate	2 x per second
Storage medium	Internal memory
Storage capacity	1000 Values
Storage interval from	5 s
Storage interval to	24 h
Interface	Micro-USB
Sensor	Vane
Automatic power-off	15 min
Automatic power-off can be deactivated	Yes
Tripod thread	1/4 inch
Alarm	optical, Acoustic
Repeat accuracy	2 %
Display range	9999 counts
Alarm settings	0 ... 45 m/s
Protection class (device)	IP20
Power supply	5 V DC
(Rechargeable) battery	3 x 1,5 V AA battery , Alkali-manganese
Capacity	3000 mAh
Operating conditions	-10 ... 50 °C , 0 ... 80 % RH
Storage conditions	-10 ... 50 °C , 0 ... 70 % RH
Dimensions (L x W x H)	240 x 70 x 33 mm
Weight	212 g

Speed	
Measurement range up to	0,06 ... 45 m/s
Resolution	0.001 m/s
Accuracy	±(2% of Rd +0.2)

Speed	
Measurement range up to	1 ... 162 km/h
Resolution	0.001 km/h
Accuracy	±(2 % of Rd +0.7)

Speed	
Measurement range up to	10 ... 8858 ft/min
Resolution	0.001 ft/min
Accuracy	±(2 % of Rd +20)

Speed	
Measurement range up to	1 ... 147,6 ft/s
Resolution	0.001 ft/s
Accuracy	±(2 % of Rd +0.2)

Speed	
Measurement range up to	0,1 ... 84,48 knots
Resolution	0.001 knots
Accuracy	±(2 % of Rd +0.2)

Speed	
Measurement range up to	1 ... 100,6 mph
Resolution	0,001 mph
Accuracy	±(2 % of Rd +0.2)

Volume flow	
Measurement range up to	0 ... 9999 m ³ /min
Resolution	0,001 m ³ /min
Accuracy	±(2 % of Rd +0.2)

Volume flow	
Measurement range up to	0 ... 9999 ft ³ /min
Resolution	0,001 ft ³ /min
Accuracy	±(2 % of Rd +0.2)

Volume flow	
Measurement range up to	0 ... 9999 m ³ /s
Resolution	0,001 m ³ /s
Accuracy	±(2 % of Rd +0.2)

Temperature	
Measurement range up to	0 ... 45 °C
Resolution	0,1 °C
Accuracy	±2 °C

Temperature	
Measurement range up to	32 ... 113 °F
Resolution	0,1 °F
Accuracy	±3.6 °F



Subject to change without notice

WORKPLACE SAFETY HEAT STRESS METER

PCE-WBGT 10

WBGT Meter / Indoor or outdoor mode / Real-time display / Acoustic alarm

The Heat Stress Meter / WBGT Meter is used to assess heat stress in working environments, sports facilities or industrial plants. It is used both indoors and outdoors to precisely measure climatic conditions and ensure the safety of people exposed to heat. The measuring range of the device covers a large number of climate-relevant variables: The WBGT value can be recorded from 0 ... 50°C

/ 32 ... 122°F, the sphere temperature (TG) ranges from -20 ... 125°C / -4 ... 257°F, as does the air temperature (AIR). The dew point (DP) is measured between -20...60°C / -4 ... 140°F, the wet bulb temperature (WB) covers the same range. The device also records the relative humidity (RH%) in the range from 0 to 100%.



ISO cal option

- » measuring functions: MIN, MAX, HOLD, AVG
- » indoor or outdoor mode - selectable
- » data logger 8 MB
- » WBGT alarm: adjustable, acoustic
- » real-time display
- » automatic switch-off
- » adjustable standby mode
- » convertible units °C and °F
- » 1.8 inch LCD display
- » rechargeable via USB-C cable

APPLICATION



TECHNICAL SPECIFICATIONS

Measuring functions	MIN, MAX, HOLD, AVG	Wet bulb temperature	
Units	°C, °F	Measurement range up to	50 ... 60 °C
Display type	LCD with backlight	Resolution	0,1 °C
Display size	1,8 Inch	Accuracy	±3 °C
Storage medium	Internal memory	WBGT	
Storage capacity	8 MB	Measurement range up to	0 ... 50 °C
Memory capacity (additional information)	8 MB EEPROM for approx. 260,000 measured values, transferable to PC via USB-C only.	Resolution	0,1 °C
		Accuracy	±0.3°C
Storage interval from	0 s	Dew point	
Storage interval to	10 min.	Measurement range up to	-20 ... 0 °C
Interface	USB-C	Resolution	0,1 °C
Warm-up time	30 s	Accuracy	±3°C
Operating time	72 h	Dew point	
Automatic power-off from...to	15 ... 360 min.	Measurement range up to	0 ... 50 °C
Automatic power-off can be deactivated	Yes	Resolution	0,1 °C
Alarm	Acoustic	Accuracy	±1.5°C
Dimensions	Sensor ball: Ø 46 mm	Dew point	
Alarm settings	0 ... 9999 °C	Measurement range up to	50 ... 60 °C
Menu language	English, English (GB)	Resolution	0,1 °C
Power supply	5 V	Accuracy	±3°C
(Rechargeable) battery	1 x 3,7 V internal , Lithium-ion battery	Temperature	
Capacity	2000 mAh	Measurement range up to	-20 ... 0 °C
Operating conditions	0 ... 50 °C , 0 ... 95 % RH	Resolution	0,1 °C
Storage conditions	-20 ... 60 °C , 0 ... 99 % RH	Accuracy	±1 °C
Dimensions (L x W x H)	200 x 62 x 38 mm	Temperature	
Weight	187 g	Measurement range up to	60 ... 125 °C
Relative humidity		Resolution	0,1 °C
Measurement range up to	0 ... 20 %	Accuracy	±1 °C
Resolution	1 %	Temperature	
Accuracy	±5% @ 25°C	Measurement range up to	0 ... 60 °C
Relative humidity		Resolution	0,1 °C
Measurement range up to	20 ... 80 %	Accuracy	±0.3 °C
Resolution	1 %	Temperature	
Accuracy	±3 %	Measurement range up to	60 ... 125 °C
Relative humidity		Resolution	0,1 °C
Measurement range up to	80 ... 100 %	Accuracy	±1 °C
Resolution	1 %		
Accuracy	±5% @ 25°C		
Wet bulb temperature			
Measurement range up to	-20 ... 0 °C		
Resolution	0,1 °C		
Accuracy	±3 °C		
Wet bulb temperature			
Measurement range up to	0 ... 50 °C		
Resolution	0,1 °C		
Accuracy	±1.5 °C		



Subject to change without notice

ENVIRONMENTAL MEASUREMENT EMISSION MEASURING DEVICE

PCE-EM 750

Compact sensors / Acoustic alarm / MIN, MAX and average value / Tripod connection

This multifunctional Environmental Tester combines five important functions in a single, compact device. It measures sound level, light intensity, air speed, temperature and humidity - and thus reliably covers the most important environmental parameters. The Environmental Tester has an easy-to-read color display and an additional LED display that indicates at a glance whether the measured values are

within the desired range. A switchable acoustic interval alarm ensures that deviations are recognized immediately, even if the display is not constantly in view.

ISO cal option

- » 6 in 1 environmental measuring device
- » sound level, light intensity, wind speed
- » volume flow
- » adjustable alarm
- » colored bar graph display
- » many measuring units



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring functions	MAX, MIN, HOLD	Speed	
Time weighting	slow (1 s)	Measurement range up to	0,97 ... 58,3 knots
Frequency	31.5 ... 8000 Hz	Resolution	0,1 knots
Frequency weighting	A	Accuracy	±3% v.Mw. ±3 Digits
Display type	LCD	Speed	
Display size	2,75 Inch	Measurement range up to	1,11 ... 67 mph
Measuring rate	2 x per second	Resolution	0,1 mph
Interface	USB-C	Accuracy	±3% v.Mw. ±3 Digits
Standard(s)	IEC 61672-1 (Class II)	Light	
Operating time	30 h	Measurement range up to	0 ... 10000 lx
Automatic power-off	15 min	Resolution	0,1 lx
Automatic power-off can be deactivated	Yes	Accuracy	±3.5% v.Mw. ±8 digits
Tripod thread	1/4 inch	Light	
Alarm	optical, Acoustic	Measurement range up to	10000 ... 200000 lx
Alarm modes	Sound level: Value see instructions, interval alarm 20 s active, 60 s inactive Light intensity: Value adjustable 20 ...999 lx Air velocity: Value see instructions, interval alarm 20 s active, 60 s inactive	Resolution	1 lx
	IP20	Accuracy	±4.5% v.Mw. ±10 Digits
Protection class (device)		Sound level	
(Rechargeable) battery	3 x 1,5 V AA battery , Alkali-manganese	Measurement range up to	35 ... 130 dB
Capacity	3000 mAh	Resolution	0,1 dB
Operating conditions	-20 ... 60 °C , 10 ... 90 % RH	Accuracy	±2 dB
Storage conditions	-20 ... 60 °C , 10 ... 90 % RH	Volume flow	
Dimensions (L x W x H)	250 x 70 x 32 mm	Measurement range up to	150 ... 9000 CMM
Weight	225 g	Resolution	1 CMM
		Accuracy	±3% v.Mw. ±3 Digits
Relative humidity		Volume flow	
Measurement range up to	35 ... 80 %	Measurement range up to	787 ... 47244 CFM
Resolution	0,1 %	Resolution	1 CFM
Accuracy	±5 %	Accuracy	±3% v.Mw. ±3 Digits
Relative humidity		Temperature	
Measurement range up to	20 ... 100 %	Measurement range up to	-20 ... +60 °C
Resolution	0,1 %	Resolution	0,1 °C
Accuracy	±7 %	Accuracy	±1 °C
Speed			
Measurement range up to	0,5 ... 30 m/s		
Resolution	0,1 m/s		
Accuracy	±3% v.Mw. ±3 Digits		
Speed			
Measurement range up to	1,75 ... 105 km/h		
Resolution	0,1 m/s		
Accuracy	±3% v.Mw. ±3 Digits		
Speed			
Measurement range up to	98,4 ... 5905 ft/min		
Resolution	1 ft/min		
Accuracy	±3% v.Mw. ±3 Digits		



Subject to change without notice

FLOW MEASUREMENT WIND MEASURER

PCE-MAM 2

Lightweight portable handheld pocket-sized wind speed meter or air velocity measuring device

PCE-MAM 2 is a lightweight portable handheld pocket-sized mini anemometer, wind speed meter or air velocity measuring device with an impeller wheel sensor that is ideal for determining air or wind speeds inside or out. This mini anemometer allows you to take velocity and temperature measurements quickly and on the spot. In addition to displaying the current air or wind speed, the mini

anemometer has a MAX / MIN function for recording maximum and minimum air or wind velocity readings. The velocity measuring units (choice of 5 - m/s, km/h, mph, knots, ft/min) can be switched on the backlit display with just the touch of a button.

ISO cal option

- » color display
- » pocket size
- » low-battery indicator
- » displays velocity measurements in 5 different units (selectable - m/s, km/h, mph, knots, ft/min)
- » also measures temperature
- » impeller wheel sensor for air or wind speed
- » heavy-duty plastic housing
- » MAX / MIN function
- » good for beginners
- » ideal for professional and recreational use
- » automatic shutdown to save battery power



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	
Wind speed	0.4 ... 30 m/s (0.9 ... 67 mph)
Resolution	0.1
Accuracy	± (3% + 0.3 m/s)
Temperature	-20 ... 70°C / -4 ... 158°F
Resolution	0.1°
Accuracy	± 1.5°C / 34.7°F
Units	m/s, km/h, mph, knots, ft/min
Measuring interval	300 ms
Battery life	Approx. 60 h continuous use
Automatic shutdown	After approx. 15 min. of inactivity
Power supply	3 x 1.5V AAA batteries
Operating conditions	-20 ... 60°C / -4 ... 140°F, 10 ... 90% RH
Dimensions	178.5 x 56 x 30.5 mm / 7 x 2 x 1 in
Weight	Approx. 84 g / < 1 lb



Subject to change without notice

FLOW MEASUREMENT AIR VELOCITY METER

PCE-VA 11

Measurement of air velocity and volume flow/ Measurement of m/s, km/h, ft/min, knot, mph

The Air Velocity Meter PCE-VA 11 is an extensively used measuring instrument. The air velocity meter provides the opportunity to determine air speeds, air temperature and infrared temperature. The backlit LCD allows comfortable readings and facilitates use in dimly lit areas. To mount the windmill it has a thread on the back. Here it is possible to mount the wind meter on a thread. Thanks to the fast response time

of the device, real-time measurement is possible without problems. The large display provides an accurate overview of the measured values and can optionally be backlit, which makes the wind meter useful even in low light conditions. Immediately after the impeller has been connected, the measurement can be started and measured values are immediately displayed on the display.

ISO cal option

- » suitable for low air velocities
- » measuring units m / s, km / h, ft / min, knot, mph
- » large LCD
- » max and min values
- » data Hold function
- » high precision



APPLICATION



TECHNICAL SPECIFICATIONS

Display Functions	Backlit LCD Automatic shutdown Hold Extreme value measurement (Min / Max) Average Range Selection
Cable length	1.2 m / 3.9 ft
Power supply	9V block battery
Airspeed Measuring Range	m/s: 0.4 ... 30 ft/min: 80 ... 5900 km/h: 1.4 ... 108 MPH: 0.9 ... 67 Knots: 0.8 ... 58
Resolution	m/s: 0.1 ft/min: 1 km/h: 0.1 MPH: 0.1 Knots: 0.1
Accuracy	m/s: $\pm 3\% \pm 20$ m/s ft/min: $\pm 3\% \pm 40$ ft/min km/h: $\pm 3\% \pm 0.8$ km/h MPH: $\pm 3\% \pm 0.4$ MPH Knots: $\pm 3\% \pm 0.4$ Knots
Air temperature Measuring Range Resolution Accuracy	-10 ... 60°C / 14 ... 140°F 0.1°C / 0.18°F $\pm 2^\circ\text{C} / 3.6^\circ\text{F}$
Infrared temperature Measuring Range Resolution Accuracy	-50 ... 500°C / -58 ... 932°F 0.1°C / 0.18°F at -50 ... -20°C / -58 ... -4°F: $\pm 5^\circ\text{C} / 41^\circ\text{F}$ at -20 ... 500°C / -4 ... 932°F: $\pm 2\%$ of measured value / $\pm 2^\circ\text{C} / 3.6^\circ\text{F}$



Subject to change without notice

FLOW MEASUREMENT WIND SPEED METER

PCE-VA 20

Measures air flow velocity, volume flow, relative humidity, air temperature and dew point temperature

PCE-VA 20 is a multifunction wind speed meter for assessing wind, weather, indoor / outdoor environmental climate conditions as well as for testing heating, ventilation and air conditioning or cooling (HVAC) systems. In addition to measuring air flow velocity (i.e., wind speed), this multipurpose handheld device measures volume flow, relative humidity (RH), air temperature, dew point temperature and wet-bulb

temperature. This combination anemometer-hygrometer-thermo-thermometer features a 10 cm / 3.9" Ø fan impeller, easy-to-read backlit LCD, and functions such as display hold, average value, maximum value, minimum value, battery-saving automatic power off, low-battery indicator, and metric or imperial unit selection.



ISO cal option

- » measurement of wind speed
- » measurement of temperature and humidity
- » dew point temperature and wet bulb temperature
- » volume flow measurement optional
- » extreme value measurement
- » hold function
- » wing wheel Ø: 100 mm
- » automatic switch-off function

APPLICATION



TECHNICAL SPECIFICATIONS

Air flow velocity measuring range	0.2 ... 30 m/s (39.4 ... 5905.5 fpm)
Air flow velocity accuracy	<20 m/s: ±(1.5% of rdg. + 0.3 m/s) >20 m/s: ±(3% of rdg. + 0.3 m/s)
Air temperature measuring range	-20 ... 60 °C / -4 ... 140 °F
Air temperature accuracy	±0.6 °C
Air temperature resolution	0.1 °C / °F
Humidity measuring range	0.1 ... 99.9 % r.H.
Humidity accuracy	±3 % r.H. (at 25 °C / 77 °F and 10...90 % r.H.) else: ±5 % r.H.
Humidity resolution	0.1 % r.H.
Temperature response time	60 seconds
Humidity response time	60 seconds
LCD update	1 x per second
Wet bulb temperature display	-20 ... +59.9 °C / -4 ... 139.8 °F
Dew point temperature display	-5 ... +59.9 °C / 23 ... 139.8 °F
Volume flow display	0 ... 99999 m³/min
Volume flow resolution	0.1 m³/min (0...9999,9 m³/min) 1 m³/min (10000...99999 m³/min)
Automatic shutdown	after 20 minutes of inactivity
LCD size	32.5 x 54 mm / 1.28 x 2.13" (H x W)
Power supply	4 x 1.5 V AAA batteries
Operating conditions	0 ... +50 °C / 32 ... 89.6 °F, <80 % r.H.
Storage conditions	-10 ... +50 °C / 14 ... 89.6 °F, <90 % r.H.
Dimensions	269 x 106 x 51 mm / 10.6 x 4.1 x 2.0"
Weight	ca. 200 g / 7 oz

Models:

PCE-VA 20-SET	with round volume flow hood Ø 210 mm with square volume flow hood 346 x 346 mm
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Optional accessories:

AFC-PCE-VA	Set of volume flow hoods for the PCE-VA 20
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Subject to change without notice

FLOW MEASUREMENT FLOW METER

PCE-HVAC 2

Based on the Pitot tube measuring principle / memory for up to 99 measured values per parameter

PCE-HVAC 2 is a flow meter with a pitot tube. This portable flow meter can be used to determine air speed, air pressure, air flow, differential pressure and ambient temperature. The pitot tube allows access through tiny openings to take measurements in small pipe systems and other confined spaces. Stored measurement values can be called or read out later on the

device itself or on the computer. The transfer to a computer works easily via a USB interface. A real-time measurement can also be carried out via this interface. When a USB connection is established, the measured values are displayed on the computer screen using the downloadable PC-compatible software.

ISO cal option

- » measures air speed, air pressure, airflow
- » displays ambient temperature
- » zero adjustment function
- » MIN, MAX, AVR, REC and HOLD functions
- » dual display on the LCD
- » suitable for high flow rates
- » internal memory for 99 measurement values per parameter
- » downloadable PC-compatible software
- » real-time measurement
- » pitot tube measurement
- » differential pressure and standard measurement
- » 2 connecting hoses (each 85 cm / 33.46 in)



APPLICATION



TECHNICAL SPECIFICATIONS

Air pressure

Accuracy ± 0.3% of reading at 25°C / 77°F
 Repeatability ± 0.2% (± 0.5% of reading)
 Linearity / hysteresis ± 0.29% of reading
 Pressure range 5000 Pa
 Maximum pressure 10 psi
 Response time Typically 0.5 seconds
 Measuring range 0.7252 psi
 50.00 mbar
 20.07 inH2O
 509.8 mmH2O

Resolution

5000 Pa
 0.0001 psi
 0.01 mbar
 0.01 inH2O
 0.1 mmH2O
 1 Pa

Selectable units

Mbar, psi, inH2O, mmH2O, or Pa

Air speed

Measuring range

1 ... 80 m / s
 200 ... 15733 ft / min
 3.6 ... 288 km / h
 2.24 ... 178.66 MPH
 2 ... 154.6 knots

Resolution

0.01 m / s
 1 ft / min
 0.1 km / h
 0.01 MPH
 0.1 knots

Accuracy

At m / s: ± 2.5% of measured value
 At ft / min, Km / h, MPH and Node: Depending on the air speed and the size of the air duct

Flow rate

Measuring range

0 ... 99999 m³ / min
 0 ... 99999 ft³ / min

Resolution

0.001 ... 100 m³ / min
 0.0001 ... 100 ft³ / min

Temperature

Measuring range

0 ... 50°C / 32 ... 122°F

Resolution

0.1°C / 0.18°F

Accuracy

± 1°C / ± 1.8°F

General

Diameter of pitot tube 8 mm / 0.3 in
 Length of measuring hoses Each 85 cm / 33.46 in
 Total length of the tube 335 mm / 13.18 in
 Low battery indicator Yes
 Power supply 9V block battery
 Operating conditions 0 ... 50°C / 32 ... 122°F / <90% RH
 non-condensing
 Storage conditions -10 ... 60°C / 14 ... 140°F / <90% RH
 non-condensing
 Internal memory 99 measured values per parameter
 Interface USB
 Display LCD
 Housing material ABS plastic
 Dimensions Device: 206 x 95 x 45 mm / 8.11 x 3.7 x 1.7 in
 Pitot tube: 335 mm / 13.18 in - Ø 8 mm / 0.31 in
 Weight (incl. pitot tube, battery and measuring hoses) 600 g / 1.3 lbs



Subject to change without notice

PCE-PCO 1

For monitoring clean room particulate concentrations / Measures 6 sizes of particles

This is a laser particle counter, or dust measuring device, for measuring the concentration of particles in the air. The dust measuring device is ideal for monitoring clean rooms, indoor air quality, exposure to exhaust, tobacco or cigarette smoke and other harmful air pollutants, and levels of airborne dust. Cigarette smoke particles mainly are distributed in the size range from 0.1 to 1.0 micron. A variety of mate-

rials are explosible in dust form. Some examples include: food (e.g., candy, sugar, spice, starch, flour and feed), grain, tobacco, plastics, wood, paper, pulp, rubber, pesticides, pharmaceuticals, dyes, coal and metals (e.g., aluminum, chromium, iron, magnesium and zinc).

ISO cal option

- » measures 6 sizes of particles: 0.3 µm, 0.5 µm, 1.0 µm, 2.5 µm, 5.0 µm, 10 µm
- » offers a robust 80 MB internal memory and microSD card slot
- » features a large, full-color LCD display with backlight
- » includes a built-in camera for image and video recording
- » contains sensors for measuring air temperature, dew point and relative humidity
- » displays temperature measurements in degrees Celsius (°C) or degrees Fahrenheit (°F)



APPLICATION



TECHNICAL SPECIFICATIONS

General specifications

Environmental conditions (non-condensing)	0 ... +50 °C / +32 ... +122 °F, 10 ... 90 % RH
LCD display	2.8" / 320 x 240 pixels, back-lit, color
Rechargeable battery	Operating time ~ 4 hours
Dimensions	240 x 75 x 55 mm / 9.45 x 2.95 x 2.17"
Weight	420 g / 0.93 lb
Memory	Internal: 80 MB External: Micro SD card up to 8 GB (optional)

Particle counting specifications

Measurable particle sizes (channels) µm	0.3 µm / 0.5 µm / 1.0 µm / 2.5 µm / 5.0 µm / 10 µm
Flow rate	0.1 cfm (2.83 L/min)
Coincidence error	<5% at 2,000,000 particles per cubic foot
Counting efficiency	50 % at particle size 0.3 µm 100 % at particle size > 0.45 µm (per ISO 21501)
Data storage	5000 records
Counting modes	Cumulative, differential, concentration

Air temperature, dew point and relative humidity measuring specifications

Air temperature measuring range	0 ... +50 °C / +32 ... +122 °F
Air temperature accuracy	±0.5 °C with +10 ... +40 °C / +50 ... +104 °F Otherwise ± 1 °C
Dew point measuring range	0 ... +50 °C / +32 ... +122 °F
Dew point accuracy	±0.5 °C with +10 ... +40 °C / +50 ... +104 °F Otherwise ± 1 °C
Relative humidity measuring range	0 ... 100 % RH
Relative humidity accuracy	±3 % RH with 40 ... 60 % RH ±3.5 % RH with 20 ... 40 % and 60 ... 80 % RH ±5 % RH with 0 ... 20 % and 80 ... 100 % RH

Further Model:

PCE-PCO 2	Kanäle	PM 2,5 & PM 10
	Messbereich	0 ... 2000 µg/m³
	Auflösung	1 µg/m³



Subject to change without notice

HUMIDITY MEASUREMENT HYGROMETER

PCE-THD 50

With connection for thermocouple type K / Measuring range -20 ... 60 °C

The moisture meter is the ideal measuring device to check the climatic conditions in, for example, warehouses, production halls or greenhouses. The moisture meter can measure the ambient temperature and humidity. Temperatures between -20 ... 60 °C (-4 ... 140 °F) can be measured reliably and quickly by the moisture meter. In addition, the dew point and wet bulb temperature is calculated and displayed

by the moisture meter. In addition, any type K thermocouple can be connected to the moisture meter in a temperature range of -100 ... 1372 °C (-148 ... 2501 °F). As soon as the connected thermocouple has been recognized, the temperature display automatically switches from the moisture meter to the thermocouple.

ISO cal option

- » measuring range -20 ... 60 °C / -4 ... 140 °F
- » temperature, humidity, dew point
- » backlit LC display
- » micro USB interface
- » rechargeable battery
- » data memory for 32,000 readings
- » wet bulb temperature
- » optionally with ISO calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Air temperature

Measuring range -20 ... 60 °C (-4 ... 140 °F)
Resolution 0.01 °C/°F
Accuracy ±0.5 °C @ 0 ... 45 °C, ±1.0 °C in remaining range
±1.0 °F @ 32 ... 113 °F, ±2.0 °F in remaining range
Measuring rate 3 Hz

Relative humidity

Measuring range 0 ... 100 % RH
Resolution 0.1 % RH
Accuracy ±2.2 % RH (10 ... 90 % RH) @ 23 °C (73.4 °F)
±3.2 % RH (<10, >90 % RH) @ 23 °C (73.4 °F)
Response time <10 s (90 % RH, 25 °C (77 °F), with no wind)

Thermoelement

Sensor type Thermoelement Type K
Measuring range -100 ... 1372 °C (-148 ... 2501 °F)
Resolution 0.01 °C/°F, 0.1 °C/°F, 1 °C/°F
Accuracy ±(1 % ±1 °C)

Calculated values

Wet bulb temperature -20 ... 60 °C (-4 ... 140 °F)
Dew point temperature -50 ... 60 °C (-58 ... 140 °F)

Further specifications

Internal memory 99 measuring points (redundant, only readable on the measuring device)
32,000 measuring points (only readable on the PC)
Power supply 3.7 V Li-ion battery
Operating conditions 0 ... 40 °C (32 ... 104 °F) <80 % RH, non-condensing
Storage conditions -10 ... 60 °C (14 ... 140 °F) <80 % RH, non-condensing
Dimensions 162 mm x 88 mm x 32 mm / 6.3 x 3.4 x 1.2"
Weight 248 g / 8.74 oz

Further model:

PCE-THD 50S

with sinter filter



Optional accessories:

Compensation / Thermocouple	Order no. Nr.AGL-90
Extension Cable 90 °C (linear meter)	
Compensation / Thermocouple	Order no. AGL-260
Extension Cable 260 °C (linear meter)	
Compensation / Thermocouple	Order no. AGL-400
Extension Cable 400 °C (linear meter)	
High Temperature Sensor	Order no. TF-524
Crocodile Clip Sensor	Order no. TF-109
Magnetic Surface Sensor	Order no. TF-513
Screw-in Sensor	Order no. TF-119
Temperature Sensor	Order no. TF-101
High Temperature Sensor (extra long)	Order no. TF-104B
HT Surface Sensor	Order no. TF-110A
Flexible Temperature Sensor	Order no. TF-500
Surface Sensor (self-adhesive)	Order no. TF-509
High Temperature Sensor	Order no. TF-514
Penetration / Immersion Sensor	Order no. TF-106



Subject to change without notice

HUMIDITY MEASUREMENT THERMO HYGROMETER

PCE-555

Ambient humidity, ambient temperature, dew point dew point, wet bulb temperature

With the thermo hygrometer it is possible to determine the humidity, ambient, wet bulb and dew point temperature. Measurements up to 60 °C are possible with the environmental measuring device. The environmental measuring device can therefore be used universally because of its various measuring functions in order to determine the environmental conditions. With a high accuracy of ± 0.5 °C and \pm

3.5% RH, the environmental measuring device determines the current measured value very precisely. The environmental measuring device is used, for example, to check the climatic conditions in offices, cold rooms or in greenhouses. The thermo hygrometer with Bluetooth interface can establish a direct connection to an Android or iOS device.

ISO cal option

- » Bluetooth interface for Android and iOS
- » Temperature measurement up to 60 °C / 140 °F
- » LC display with backlight
- » Wet bulb temperature
- » Humidity measurement up to 100% RH
- » MIN / MAX / HOLD function
- » Automatic shutdown
- » Dew point temperature



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range humidity	0 ... 100 % RH
Resolution	0.1 % RH
Accuracy	± 3.5 % RH at (20 ... 80 % RH), Rest ± 5 % RH
Measuring range ambient temperature	-20 ... 60 °C, -4 ... 140 °F
Resolution	0.1 °C, 0.1 °F
Accuracy	± 0.5 °C / 0.9 °F at (0 ... 40 °C), Rest ± 1 °C / 1.8 °F
Measuring range wet bulb temperature	0 ... 60 °C, 32 ... 140 °F
Resolution	0.1 °C, 0.1 °F
Accuracy	± 0.5 °C / 0.9 °F at (0 ... 40 °C), Rest ± 1 °C / 1.8 °F
Measuring range dew point temperature	-20 ... 60 °C, -4 ... 140 °F
Resolution	0.1 °C, 0.1 °F
Accuracy	± 0.5 °C / 0.9 °F at (0 ... 40 °C), Rest ± 1 °C / 1.8 °F
Display	LC display with backlight
Interface	Bluetooth
Mount	3/8" tripod thread
Automatic shutdown	after 15 minutes of inactivity (deactivation possible)
Operating conditions	0 ... 50 °C (32 ... 122 °F)
Storage conditions	< 80 % RH non-condensing -20 ... 60 °C (-4 ... 140 °F) < 80 % RH non-condensing
Power supply	9 V block battery
Dimensions	204 x 54 x 36 mm / 8.0 x 2.1 x 1.4"
Weight	172 g / 6 oz



Subject to change without notice

AIR QUALITY MONITORING PARTICLE COUNTER

PCE-PQC 10EU

Measurement of particle sizes up to 25 µm / up to 6 parallel measuring channels

With the help of a particle counter calibrated in compliance with ISO 21501-4, the size and number of particles in gases can be determined. Particle Counter Industry ISO-21501-4It often goes about optical particle counters in accordance with the scattered light method. The essential components of the particle counter with appropriate measuring method are a measuring cell with a light source and detector. The

particles are sucked in by means of a vacuum pump and are passed through the measuring chamber. In principle, these components are arranged in such a way, that no light gets on the detector as long as there is no particle in the measuring volume or in the measuring chamber.

ISO calibrated

- » internal memory
- » particle sizes up to 25 µm
- » color display
- » handy
- » 6 measuring channels
- » ISO 14644-1, EU GMP Annex I, FS 209E
- » mass concentration
- » ethernet, USB
- » incl. temperature and humidity sensor
- » incl. calibration certificate traceable to NIST ISO 21501-4 and JIS B9921



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	0.3 ... 25 µm
Measuring channel sizes	Factory calibrated at 0.3, 0.5, 1.0, 2.5, 5.0, 10.0 µm
Counting efficiency	50% at 0.3 µm 100% at > 0.45 µm according to JIS
Flow	2.83 l / min (0.1 ft ³ / min)
Random loss	5% at 4,000,000 particles / ft ³
Battery	10 h
Light source	Long-life laser diode
Zero count	<1 count / 5 min (< 2 particles / ft ³) According to ISO 21501-4 and JIS
Counting modes	Automatic, manual, real-time, cumulative / Differential, mass concentration
Alarms	1 ... 9999999 counts, adjustable
Calibration	Traceable to NIST
Display	4.3" WQVGA color touch display, 480x272 px
Printer	External thermal printer
Aspiration	Internal pump with automatic Flow control
Air outlet	Internal HEPA filter
Battery pack	Replaceable Li-Ion battery
Charging time	About 4 hours
Reports	ISO 14644-1 EU GMP Annex 1 FS 209E
Configuration	Memory for 50 custom configurations
Standards	ISO 21501-4 and JIS B9921
Dimensions	25.4 x 12.9 x 11.4 cm
Weight	1.0 kg
Storage	45000 data sets (ring memory) consisting of Particle count, temp and humidity, locations and times
Sample locations	Up to 1000 locations can be stored
Samples duration	1 s ... 99 h adjustable
Power supply	110 ... 240V AC 50/60 Hz
Operating conditions	5 ... 40°C / 41 ... 104°F Up to 95% RH not condensing
Storage conditions	0 ... 50°C / 32 ... 122°F Up to 98% RH not condensing
Temp./ Humidity sensor	0 ... +50 °C (32 ... +122 °F), 15 ... 90 % r.H.
Internal	
Resolution	0.5 °C
Accuracy	±0.5 °C (±1 °F), ±2 % r.H.
Interface	Ethernet, USB
Optional interfaces	WiFi 802.11 b/g, RS485 or RS232
Number of measuring channels	6

Further models:

PCE-PQC 11EU	Measuring range: up to 25 µm Channel sizes: 0.5, 0.7, 1.0, 3.0, 5.0, 10.0 µm
PCE-PQC 12EU	Measuring range: 0.3 ... 25 µm Channel sizes: 0.3, 0.5, 5.0 µm
PCE-PQC 13EU	Measuring range: 0.3 ... 25 µm Channel sizes: 0.5, 1.0, 5.0 µm
PCE-PQC 14EU	Measuring range: 0.5 ... 55 µm Channel sizes: 0.5, 1.0, 2.5, 5.0, 10.0, 20.0 µm
PCE-PQC 15EU	Measuring range: 0.3 ... 75 µm Channel sizes: 0.5, 1.0, 2.5, 5.0, 10.0, 30.0 µm



Subject to change without notice

AIR QUALITY MONITORING

AIR QUALITY METER

PCE-PQC 21EU

Counting of six particle sizes / Flow rate of 2.83 l / min

The PCE-PQC 2xEU series air particle counters are portable detection systems that include particles of specific sizes in the air. Furthermore, the air temperature and the relative humidity are monitored. The fixed flow rate of 2.83 l / min complies with current standards for air particle counter ISO 21501-4 and JIS B9921. Due to the compact design, the air particle counter of the PCE-PQC 2xEU series can be used in a variety

of ways. These include the monitoring and inspection of clean rooms, filter systems in operating theaters and bottling plants in the pharmaceutical industry. The internal memory of the air particle counter is sufficiently large for up to 45000 data sets. These data sets each include the metering parameters, temperature and humidity sensor readings, locations, and timestamp.

ISO calibrated

- » captures 6 particle sizes
- » flow rate 2.83 l / min
- » including software package
- » 4.3" color touch display
- » ethernet and USB interfaces
- » installed in a stainless steel housing
- » incl. temperature and humidity sensor
- » incl. calibration certificate traceable to NIST ISO 21501-4 and JIS B9921



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	0.5 ... 25 µm	Further models: PCE-PQC 20EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,5, 0,7, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 22EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 23EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 30EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 31EU Measurement Range: 0,5 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 32EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 33EU Measurement Range: 0,5 ... 25 µm Channel sizes: 0,5, 0,7, 1,0, 3,0, 5,0, 10,0 µm PCE-PQC 34EU Measurement Range: 0,5 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 2,5, 5,0, 10,0 µm PCE-PQC 35EU Measurement Range: 0,3 ... 25 µm Channel sizes: 0,3, 0,5, 1,0, 2,5, 5,0, 10,0 µm
Measuring channel sizes	Factory calibrated at 0.5, 0.7, 1.0, 3.0, 5.0, 10.0 µm	
Counting efficiency	50% at 0.5 µm, 100% at > 0.75 µm according to JIS	
Flow	2.83 l / min (0.1 ft ³ / min)	
Random loss	5% at 4,000,000 particles / ft ³	
Battery	>8 h	
Light source	Long-life laser diode	
Zero count	<1 count / 5 min (<2 particles / ft ³) according to ISO 21501-4 and JIS	
Counting modes	Automatic, manual, real-time, cumulative / differential, mass concentration	
Alarms	1 ... 9999999 counts, adjustable	
Calibration	Traceable to NIST	
Display	4.3" WQVGA color touch display, 480x272 px	
Printer	External thermal printer	
Aspiration	Internal pump with automatic flow control	
Air outlet	Internal HEPA filter	
Battery pack	Replaceable Li-Ion battery	
Charging time	About 4 hours	
Reports	ISO 14644-1 EU GMP Annex 1 FS 209E	
Configuration	Memory for 50 custom configurations	
Standards	ISO 21501-4 and JIS B9921	
Dimensions	13.3 x 10.5 x 21 cm	
Weight	1.8 kg	
Storage	45000 data sets (ring memory) consisting of Particle counting, temp. and humidity, places and times up to 1000 places can be deposited	
Sample locations	1 s ... 99 h adjustable	
Sample duration	110 ... 240V AC 50/60 Hz	
Power supply	5 ... 40°C / 41 ... 104°F	
Operating conditions	Up to 95% RH not condensing	
Storage conditions	0 ... 50°C / 32 ... 122°F Up to 98% RH not condensing	
Temp. / Humidity sensor intern	0 ... 50°C (32 ... 122°F), 15 ... 90% rh	
Resolution	0.5°C / ± 0.9°F	
Accuracy	± 0.5°C / ± 0.9°F, ± 2% RH	
Interface	Ethernet, USB	
Optional interfaces	Wifi 802.11 b / g, RS485 or RS232	
Number of measuring channels	6	



Subject to change without notice

AIR QUALITY MONITORING INDOOR AIR QUALITY METER

PCE-AQD 50A

Temperature, humidity, atmospheric pressure, CO₂ / measurement range up to 40,000 ppm

The environmental meter is specially designed for long-term monitoring of climatic conditions in, for example, offices, classrooms or lecture halls. Among other things, the air quality meter has a carbon dioxide sensor up to 40,000 ppm, a temperature sensor with a measuring range between 0 ... 50 °C, an ambient humidity sensor with a measuring range between 0 ... 100% RH and a barometer with a measuring

range between 300 ... 2000 hPa. The air quality meter can therefore be used in many applications due to its large number of sensors. The measured values are shown directly on the e-paper display of the air quality measuring device. A good / medium / bad rating of the carbon dioxide content in the ambient air is also displayed.

ISO cal option

- » battery life of up to 10 months
- » measuring range up to 40,000 ppm CO₂
- » 32 GB data storage
- » temperature and humidity sensor
- » csv file format
- » E-paper display with histogram display
- » display of atmospheric pressure
- » good / medium / bad rating



APPLICATION



TECHNICAL SPECIFICATIONS

Temperature

Measuring range 0 ... +50 °C / 32 ... 122 °F
Resolution 0.1 °C
Accuracy ±0.15 °C @ 0 ... 20 °C / 32 ... 60 °F
±0.1 °C @ 20 ... 50 °C / 68 ... 122 °F

Ambient Humidity

Measuring range 0 ... 100 % RH
Resolution 0.1 % RH
Accuracy ±1.5 % RH @ 0 ... 80 % RH
±2 % RH @ 80 ... 100 % RH

Atmospheric Pressure

Measuring range 300 ... 2000 hPa
Resolution 0.1 hPa
Accuracy ±2 hPa @ 25 °C / 77 °F and 750 ... 1100 hPa
±4 hPa @ 0 ... +50 °C / 32 ... 122 °F
and 300 ... 1200 hPa

CO₂

Measuring range 0 ... 40000 ppm
Resolution 1 ppm
Accuracy ±(30 ppm + 3% of measured value)
@ 400 ... 10000 ppm @25 °C / 77 °F
±(6 ... 10 % of measured value)
@ 0 ... 400 ppm or 10000 ... 40000 ppm

Temperature Stability

2.5 ppm/°C @ T = 0 ... 50 °C / 32 ... 122 °F, 400 ... 10000 ppm

Further Specifications

Display 2.7" E-Paper
Battery life* ca. 10 months for the measurement intervals:
Temperature: 60 minutes
Ambient humidity: 60 minutes
Atmospheric pressure: 60 minutes
CO₂: 60 minutes

*further information on battery life can be found in the instructions

Storage capacity MicroSD card with 32 GB of storage for a total of 1 trillion measuring points

Sampling intervals 30s, 1 min, 2 min, 10 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h, 24 h

Power supply battery 7.4 V DC / 3400 mAh, Li-Ion battery
Power supply mains power adapter 12 V DC / 1.5 A
Protection class IP30

Operating conditions 0 ... +50 °C / 32 ... 122 °F
0 ... 100 % RH, non-condensing

Storage conditions -20 ... +60 °C / -4 ... 140 °F
0 ... 100 % RH, non-condensing
Dimensions 128.5 x 88.5 x 41 mm / 1.1 x 3.4 x 1.6"
Weight 300 g / 10.5 oz



Subject to change without notice

MOISTURE MEASUREMENT MOISTURE METER

PCE-WMT 200

Bluetooth moisture meter with ram electrode / For 44 different types of wood

When burning wood, it is important to know the wood moisture content. If the wood moisture content is too high during combustion, the water must first be heated and evaporated. This results in lower flame temperatures and smoldering gases. In addition, it can lead to incomplete combustion of the wood. In summary, too high a wood moisture content results in poor efficiency, pollutants and also odor

emissions.

With the Bluetooth wood moisture meter PCE-WMT 200, up to 44 different types of wood can be checked for their moisture content. These include 36 hardwoods and 8 conifers, such as beech, spruce, pine and maple.

ISO cal option

- » temperature compensation up to 50°C / 122°F
- » 44 different types of wood
- » ramming electrode with pairs of needles
- » up to 150% moisture
- » bluetooth 4.0 interface



APPLICATION



TECHNICAL SPECIFICATIONS

Resolution	0.1%
Resolution digit display	1
Repeatability	± 0.5%
Temperature compensation	-20 ... 50°C / -4 ... 122°F, manual / automatic
Measuring principle	Electrical resistance measurement
Sensor type	Ram electrode
Pairs of needles	
maximum penetration depth	45 x Ø3.05 mm: 30 mm 165 x Ø2.85 mm: 150 mm
Protection class	IP 52
Power supply	9V block battery / 9V DC, 1 A mains connection
Interface	Bluetooth 4.0
Cable length	Approx. 1 m / 39.4 in
Power consumption	Max. 1 A
Dimensions	
Ram electrode:	332 x Ø45 mm / 13.1 x Ø1.8 in
Measuring device:	175 x 90 x 35 mm / 6.9 x 3.5 x 1.4 in
Pair of needles:	45 x Ø3.05 mm / 1.8 x Ø0.1 in 165 x Ø2.85 mm / 6.5 x Ø0.1 in
Weight	Ram electrode: 1677 g / 3.7 lbs Measuring device: 250 g / 0.6 lbs

Material

Hardwoods	Measuring range
Maple	7.9 ... 150%
American birch	6.4 ... 150%
Basla	7.3 ... 150%
Sycamore maple	7.9 ... 150%
Birch	8.1 ... 150%
Beech	7.2 ... 150%
Real mahogany	6.7 ... 150%
Sweet chestnut	8.1 ... 150%
Alder	8.1 ... 150%
Ash	8.1 ... 150%
False acacia	8.1 ... 150%
Yellow birch	6.4 ... 150%
Hornbeam	8.1 ... 150%
European hornbeam	8.1 ... 150%
Canadian birch	8.1 ... 150%
Cherry tree	8.1 ... 150%
Walnut	8.1 ... 150%
Poplar	6.8 ... 150%
Plum tree	8.1 ... 150%
Plane	7.1 ... 150%
Black locust	8.1 ... 150%
European beech	7.2 ... 150%
Black alder	8.1 ... 150%
Sipo	9.7 ... 150%
Stone beech	8.1 ... 150%
English oak	7.0 ... 150%

Teak	6.8 ... 150%
Sessile oak	7.0 ... 150%
Elm	8.0 ... 150%
Willow	6.1 ... 150%
White maple	7.9 ... 150%
White birch	8.1 ... 150%
White beech	8.1 ... 150%
Sugar birch	8.1 ... 150%
Damson plum	8.1 ... 150%
Softwoods	
Douglas fir	6.6 ... 150%
Spruce, common	8.1 ... 150%
Pine	6.6 ... 150%
Larch	7.5 ... 150%
Central European spruce	8.1 ... 150%
Scandinavian spruce	8.1 ... 150%
Fir	8.5 ... 150%
Cypress	6.7 ... 150%

The moisture content is based on the dry matter at a temperature of 20°C / 68°F

More building materials

Building moisture (digit display)	11 ... 200 digits
Wood fiber insulation board	6.8 ... 150%
Chipboard	3.5 ... 150%

Optional accessories:

PCE-WMT 200 RE	Ram Electrode
MMK-E-150	MMK-E-150 needles
MMK-E-30	MMK-E-10 30-mm needles



Subject to change without notice

MOISTURE MEASUREMENT MOISTURE METER

PCE-PMM 10

Induction measurement for 10 material types / traffic light function

The Moisture Meter provides accurate moisture analyses for ten different material types, including drywall, masonry, hardwood, softwood, anhydrite screed (wt%), anhydrite screed (CM%), cement screed (wt%), cement screed (CM%), concrete and gypsum screed. It uses a capacitive measuring method and the sensor works inductively. The Moisture Meter has two limit value settings which are shown on

a bar graph and are designed for the 10 material types that our Moisture Meter can analyse. The first alarm point activates a rapid beep and the yellow LED when the moisture is between 20% and 69%. The second alarm point, which responds at values between 70% and

ISO cal option

- » induction sensor for 10 material types
- » limit value settings
- » HOLD function
- » automatic power off
- » battery warning



APPLICATION



TECHNICAL SPECIFICATIONS

Humidity Material Measurement range up to Resolution Accuracy	Dry construction 0 ... 100 % 0,1 % ±4 % of Rd	Humidity Material Measurement range up to Resolution Accuracy	Concrete 0 ... 6 % 0,1 % ±0.7 % of Rd
Humidity Material Measurement range up to Resolution Accuracy	Masonry 0 ... 89,5 % 0,1 % ±4 % of Rd	Humidity Material Measurement range up to Resolution Accuracy	Gypsum screed 0 ... 10 % 0,1 % ±1.1% f.s.
Humidity Material Measurement range up to Resolution Accuracy	Hardwood 0 ... 35 % 0,1 % ±4 % of Rd	General technical data Measuring functions Display type Display size Sensor Automatic power-off Alarm Alarm modes Measuring principle Alarm settings Menu language Protection class (device) (Rechargeable) battery Capacity Operating conditions Storage conditions Dimensions (L x W x H) Weight	HOLD, ALARM LCD with backlight 2 Inch inductive 10 min optical, Acoustic lower limit, upper limit Capacitive measuring method 20 ... 100 % English, English (GB) IP20 1 x 9 V 9V block , Zinc carbon 550 mAh 0 ... 40 °C , 0 ... 80 % RH -10 ... 40 °C , 0 ... 70 % RH 155 x 70 x 35 mm 144 g
Humidity Material Measurement range up to Resolution Accuracy	Softwood 0 ... 55 % 0,1 % ±4 % of Rd		
Humidity Material Measurement range up to Resolution Accuracy	Anhydrite screed (% by weight) 0 ... 3,5 % 0,1 % ±0.4 % of Rd		
Humidity Material Measurement range up to Resolution Accuracy	Anhydrite screed (CM%) 0 ... 1,5 % 0,1 % ±0.2 % of Rd		
Humidity Material Measurement range up to Resolution Accuracy	Cement screed (% by weight) 0 ... 4,7 % 0,1 % ±0.5% of Rd		
Humidity Material Measurement range up to Resolution Accuracy	Cement screed (CM%) 0 ... 3 % 0,1 % ±0.4 % of Rd		



Subject to change without notice

MOISTURE MEASUREMENT

MOISTURE METER

PCE-PMI 3

For concrete and wood

The moisture meter is a small and reliable measuring instrument for the determination of existing moisture in, for example, concrete and wood. Corresponding scales for measuring moisture are already stored in the library of the moisture meter. After selecting the scale, the required measurement can be carried out with the moisture meter. The measurement result is displayed on the moisture meter

both numerically and graphically after a few seconds. Another special feature of the moisture meter is the possibility of displaying the calcium carbide method (CM%) for screed. Also in this measurement, the moisture meter is placed on the surface to be tested.

ISO cal option

- » for measurements on wood and concrete
- » ergonomic shape with anti-slip rubber
- » individually adjustable alarm limits
- » numeric and graphical view
- » easy three-button operation
- » automatic shutdown



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring function	Measuring range
Relative scale	0.0 ... 99.9%
anhydrite (Weight percent)	0.0 ... 3.5%
anhydrite (Calcium carbide method)*	0.0 ... 1.5%
cement screed (Weight percent)	0.0 ... 4.7%
cement screed (Calcium carbide method)*	0.0 ... 3.0%
Concrete (weight percent)	0.0 ... 6.0%
gypsum plaster (Weight percent)	0.0 ... 10.0%
hardwood (Weight percent)	0.0 ... 37.0%
softwood (Weight percent)	0.0 ... 51.0%

*The calcium carbide method is approximate.

Further specification	
Accuracy	± 0.5%
Resolution	0.1%
Power supply	2 x 1.5V AA batteries
Uptime	About 20 hours
Automatic shutdown	After 5 minutes of inactivity
Menu languages	English, German, Dutch, Spanish, French
Display	Graphically monochrome, 128 x 64 pixels, 61 x 33 mm, backlight
Operating conditions	5 ... 40°C / 41 ... 104°F
Dimensions	147 x 89 x 33 mm / 5.8 x 3.5 x 1.3 in
Weight	200 g / < 1 lb (with batteries)



Subject to change without notice

MOISTURE MEASUREMENT WALL MOISTURE METER

PCE-PMI 4

Non-destructive measurement on floors and walls / with eight spring electrodes

The moisture meter is a measuring device for nondestructive moisture measurement on concrete and screed. Here, the spring electrodes of the moisture meter are pressed onto the surface to be tested. Within seconds, the moisture meter will show the moisture content to the operator. Different scales are already stored in the moisture meter for a wide variety of surfaces. These are available to the operator directly

from the moisture meter.

As another special feature, the moisture meter has an automatic shutdown. This feature automatically shuts off the meter if the moisture meter is not used for 5 minutes. This prevents a sudden discharge of the battery at the moisture meter. Another function of the moisture meter is the Max HOLD function.

ISO cal option

- » for measuring the moisture in concrete and screed
- » numeric and graphical view
- » eight spring electrodes are used for the measurement
- » automatic shutdown
- » ergonomic shape with anti-slip rubber
- » normal measurement and max. HOLD display



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring function	Measuring range
Concrete (H ₂ O)	0 ... 6%
Cement screed (H ₂ O)	0 ... 6%
cement screed (Calcium carbide method)*	0 ... 4%
Anhydrite screed (H ₂ O)	0 ... 3.5%
anhydrite (Calcium carbide method)*	0 ... 1.9%
Caisson scale	0.3 ... 15.3 m
Relative scale	0 ... 100%

*The calcium carbide method is approximate.

Further specification	
Accuracy	± 0.5%
Resolution	0.1%
Display	Graphically monochrome, 128 x 64 pixels, 61 x 33 mm / 2.4 x 1.3 in, backlight
Operating conditions	5 ... 40°C / 41 ... 104°F
Automatic shutdown	After 5 minutes of inactivity
Power supply	2 x 1.5V AA batteries
Uptime	About 20 hours
Dimensions	147 x 89 x 33 mm / 5.8 x 3.5 x 1.3 in
Weight	Approx. 250 g / < 1 lb (with batteries)

Optional accessories:	
Penetration Probe	PCE-PMI 4-ST100G
Penetration Probe	PCE-PMI 4-ST230
Brush Electrode	PCE-PMI 4-B120



Subject to change without notice

MOISTURE MEASUREMENT HANDHELD HUMIDITY DETECTOR

PCE-W3

Moisture meter for waste paper (% H2O)

PCE-W3 is a waste paper moisture meter designed for professional use in the input control of large amounts of waste paper or containers of paper. The waste paper moisture meter can detect absolute moisture in waste paper in order to determine the exact moisture content in the collection center or the paper plant. The meter is very easy to use, with a very small size as well as a solid structure.

PCE-W3 moisture meter is sent with a calibration certificate, however an ISO calibration certificate can be required as an option (see accessories). Besides, a recalibration can be performed at any time. PCE-W3 moisture meter for waste paper has a very robust and long penetrating probe to detect absolute moisture with high accuracy.

ISO cal option

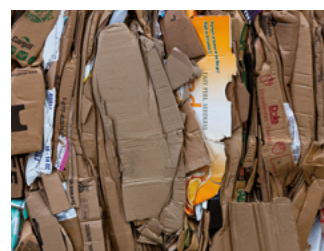
- » measurement range: 6 ... 30%
- » resolution: 0.1%
- » accuracy: $\pm 10\%$ of the measurement value
- » long and heavy-duty penetrating probe
- » accurate measurement



TECHNICAL SPECIFICATIONS

Measurement range	6 ... 30 %
Resolution	0.1 %
Accuracy	$\pm 10\%$ of the measurement value
Electrodes length	85 mm / 3.3 in
Display	3.5 digits LCD display
Power	1 x 9 V battery
Dimensions	Meter: 165 x 80 x 33 mm / 6.4 x 3.1 x 1.2 in Case: 270 x 180 x 55 mm / 10.6 x 7 x 2.1 in
Weight	680 g / 1.5 lbs (electrode and cable included)

APPLICATION



Subject to change without notice

MOISTURE MEASUREMENT MOISTURE METER

PCE-MA 60XT

Precision moisture meter up to max. 60 g sample weight / drying temperature up to 160°C

The precision moisture meter enables accurate and simple moisture determination in a wide range of materials. The sample is automatically weighed, dried and the weight loss is displayed as moisture content. This measuring principle requires therefore no complex characteristic curve production and is immediately operational shortly after setting up.

For the weighing task, the precision moisture analyzer has an electromagnetic load cell installed which registers the weight loss with a measuring resolution of 0.1 mg = 0.0001 g. For drying the sample, a moisture analyzer is installed in the sample chamber. For drying the sample a 400 Watt halogen round lamp is used in the lid to ensure an even heat distribution.

ISO cal option

- » sample weight max. 60 g
- » readability 0.1 mg = 0.0001 g = 0.001 % humidity
- » round 400 watt IR halogen lamp
- » drying temperature adjustable from 35 °C up to 160 °C in 1 °C steps
- » sample dish size Ø100 mm / h= 8 mm
- » 5" color touch display
- » memory for up to 300 performed moisture determinations
- » data transfer as TXT file to USB stick directly possible
- » user database / product database / measurement database



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring principle	Gravimetric moisture determination
Weighing range (Max)	60 g
Readability	0.1 mg / 0.0001 g / 0.001 % humidity
Weighing electronics	Electromagnetic force compensation cell
Repeatability	Weight measurement ± 0.0003g
Moisture measurement	± 0.18 % (referred to 2 g sample)
Sample weight	Min. 2 g / Max. 60 g
Sample area	approx. Ø 100 mm / height max. 25 mm
Determination options	Moisture content % / Dry content % / ATRO % / Weight
End of measurement	no weight loss / time lapse / manual
Drying temperature range	+35 ... +160 °C in 1°C steps
Heating profiles	Standard / Fast / Mild / Steps
Heating element	400 Watt IR round heater
Databases	300 measurement protocols performed
Drying database	for over 30 products
User database	for 10 users
Interface	RS-232 / USB-A for USB stick
Display	5" touch color display
Menu language	German / English / French / Italian / Spanish
Power supply	220 V / 50 Hz
PCE-MA 60XT-US	110 V / 50 Hz
Dimensions	345 x 215 x 235 mm
Weight	6,1 kg
Recommended calibration weight	50 g



Subject to change without notice

MOISTURE MEASUREMENT MOISTURE METER

PCE-MA 100

For weighing and halogen-heating samples to determine moisture content

The moisture meter PCE-MA 100 allows different materials to be weighed and their moisture contents determined. The heating chamber is heated by a halogen lamp up to 199 °C. In this chamber, the moisture meter dries the material to be weighed, and then calculates the moisture content from the weight difference. The moisture meter can determine the smallest weight differences thanks to a readabi-

lity of 0.001 g. The results are displayed on the large LCD display. Up to 15 different drying programs can be stored in the memory of the moisture meter. Accordingly, the moisture meter is suitable for quality control of wood products, granules, pellets, feed, food, pastes and more. With the included 100 g weight, the moisture meter can be calibrated at any time.

ISO cal option

- » heating chamber for moisture determination
- » RS-232 interface
- » memory for up to 15 drying programs
- » adjustable drying temperature and time
- » ease of use
- » calibration function for readjustment
- » large LCD display with nine membrane keys



APPLICATION



TECHNICAL SPECIFICATIONS

Weighing range	110 g
Readability	1 mg / 0.001 g
Heating element	halogen lamp
Temperature range	+40 ... +199 °C
Heating time	1 ... 99 min. adjustable
Humidity measurement range	0 ... 100 %
Readability	0.01 %
Memory	15 drying programs
Interface	RS-232
Display	LCD, 9 membrane keys
Power supply	220 V / 50 Hz or 110 v / 60 Hz
Dimensions	200 x 180 x 380 mm

Further Models:

PCE-MA 110	Weighing range	110 g
	Readability (g)	10 mg / 0.01 g
	Readability (%)	0.1 %
PCE-MA 200	Weighing range	200 g
	Readability (g)	1 mg / 0.001 g
	Readability (%)	0.01 %
PCE-MA 202	Weighing range	200 g
	Readability (g)	10 mg / 0,01 g
	Readability (%)	0.1 %



Subject to change without notice

MOISTURE MEASUREMENT MOISTURE METER

PCE-MA 110TS

Halogen lamp as heating element Ø90 mm / 3.5" / memory for 32 drying parameters

The moisture meter has a moisture measuring range of 0 ... 100%. The moisture balance is operated via the 5" touchscreen. To determine the moisture content with the moisture balance, a sample is evenly distributed on the sample pan. The sample pan is then placed in the moisture balance and sealed. After setting all parameters, the moisture balance starts the measurement. The accuracy of the moisture

scale is ± 0.003 g. The moisture balance is therefore a precise measuring device.

The moisture meter determines the moisture content via the measured weight difference, based on the weight before and after drying the sample. The adjustable temperature range for the moisture balance is between 40 ... 165 °C / 104 ... 329 °F.

ISO cal option

- » spirit level for leveling the moisture balance
- » memory for 32 drying parameters
- » 5" touch screen for easy operation
- » RS-232 interface for connection to a PC
- » halogen lamp as heating element Ø90 mm / 3.5"
- » optionally with ISO calibration certificate
- » optionally with PC software



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	0 ... 110 g / 0 ... 3.88 oz
Resolution	0.001 g
Heating element	round halogen lamp, Ø 90 mm / 3.5"
Temperature range	40 ... 165 °C / 104 ... 329 °F
Moisture display	0 ... 100 %
Moisture resolution	0.01 %
Memory	32 drying parameters
Interface	RS-232
Display	5" touchscreen
Power supply	220 ... 240 V AC, 50 / 60 Hz
Power consumption	300 W
Dimensions	370 x 215 x 195 mm / 14.5 x 8.4 x 7.6"
Weight	4.5 kg / 9.9 lb



Subject to change without notice

DEW POINT MEASUREMENT

DEW POINT METER

PCE-DPM 3

Dew point meter for compressed air pipes

The dew point meter is a mobile testing device for monitoring the quality of compressed air on stationary and mobile compressed air generators. This dew point meter measures the temperature, the relative humidity, H₂O and calculates the current dew point up to an ambient pressure of 20 bar. Thanks to the sintered cap, the moisture meter in the pressure lines is protected from dirt, moisture and high

flow speeds. This increases the service life of the dew point meter's sensors. The data memory of the moisture meter enables the course of the measurement parameters to be recorded in a pressure line. The data recorded by the moisture meter is permanently stored in the internal memory.

ISO cal option

- » data storage with CSV data export
- » dew point, H₂O, temperature, humidity measurement
- » for inline measurement of pressure pipes
- » battery operation for mobile use
- » with G1/2" connection thread
- » sensors protected with sintered filters



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement

Measuring range
Resolution
Accuracy at 20°C / 68°F

Measurement

Measuring range
Resolution
Accuracy at 20°C / 68°F

Measurement

Measuring range
Resolution
Accuracy

Measurement

Measuring range
Resolution
Accuracy at 20°C / 68°F
Environmental conditions

Response time at: 0.2 m / s, 1 bar,
20°C / 68°F, 63% RH [90%]

Data storage
Adjustable storage rates

Adjustable recording time

File format

Cable length

Thread

Thread length

Probe length

Probe width

Display

Power supply

Power supply power pack

Interface 7 mains connection

Weight

Temperature

-10 ... 60 °C / 14 ... 140 °F
0.01 °C / 0.018 °F
-10 ... 50 °C / 14 ... 122 °F: ± 0.3 °C / 0.5 °F

Relative humidity

0 ... 100 %
0.01 %
<5 %: ±(0.025 % + 17.5 % of mv)
>5 %: ±(1 % + 5 % of mv)
>15 %: ±(2 % + 3 % of mv)

Dew point*

-50 ... 30 °C / -58 ... 86 °F
0.01 °C / 0.018 °F
-40 ... 20 °C / -40 ... 68 °F: ±2 °C / 3.6 °F
-50 ... -40 °C / -58 ... -40 °F: ±2.5 °C / 4.5 °F

*The accuracy of the dew point relates to an ambient temperature of 16 ... 25 °C / 61 ... 77 °F

H₂O

40 ... 20,000 ppm
1 ppm
±(7.3 ppm + 8.3 %)
-10 ... 60 °C / 14 ... 140 °F
0 ... 20 bar (absolute)
0 ... 40 °C / 32 ... 104 °F: 20 s [120 s]
-40 ... 0 °C / -40 ... 32 °F: 10 s [20 s]
For approx. 50,000 measuring points
10 seconds
1, 5, 10, 20, minutes
1, 5, 12, 24, 48 hours
CSV
approx. 1.5 m / 4.9 ft
G1/2"
1.2 cm
5.2 cm
1.2 cm
2.3" LCD
Battery 3.7 V DC, 3000-mAh
Primary: 100 ... 240 V AC, 0.25 A
Secondary: 5 V DC, 1 A
Micro USB
Approx. 610 g / 1.3 lbs



Subject to change without notice

DEW POINT MEASUREMENT DEW POINT METER

PCE-DPM 10

Mobile dew point meter for compressed air pipes (-100 ... +50 °C Td)

The dew point meter PCE-DPM 10 is a hand-held instrument for measuring dew point, pressure and humidity in compressed air systems. The unique sensor system, which combines a QCM and a Polymer sensor in a single unit, enables the user to measure the dew point in a range from -100 °C Td up to +20 °C Td. The integrated pressure sensor allows the measured value into any

humidity value needed, for example ppm (v) or atmospheric dew point.

The PCE-DPM 10 dew point meter offers a unique algorithm for predicting final dew point values.

ISO cal option

- » measures dew point, temperature and pressure
- » -100 ... +20 °C Td with pressure sensor
- » measurement according to ISO 8573-1
- » PDF report function
- » integrated pressure sensor
- » touch screen for easy operation



APPLICATION



TECHNICAL SPECIFICATIONS

Dew point

Measuring range	-100 ... +20 °C Td
Accuracy	±1 °C Td (0 ... 20 °C Td) ±2 °C Td (-70 ... 0 / +20 ... +50 °C Td) ±3 °C Td (-100 ... -70 °C Td)
Selectable units	%rH, °C Td, g/m ³ , mg/m ³ , g/m ³ atm., mg/m ³ atm., ppmv, g/kg, °C Td atm.
Reproducibility	0.5 °C
Sensor	QCM + Polymer

Pressure

Accuracy	0.5 % FS
Measuring range	0 ... 1.5 MPa (g)
Sensor	Piezo resistance sensor

Temperature

Accuracy	±0.3 °C
Measuring range	-30 ... +50 °C
Sensor	PT 100

Display Memory

3.5" colour LCD touch screen
Integrated mass memory, up to 30 million recorded data sets
(4 channels each)

Power supply	USB charger: 5 V, 3 A, connection: USB-C
Operating time	8 h
Data interface	USB
Housing	PC + ABS
Metal parts	aluminium
Protection	class IP30
Dimensions	206 x 98 x 62 mm
Weight	2.7 kg Complete set in transport case

Operating conditions

Medium	Air, N ₂ , O ₂ , Argon, CO ₂
Medium temperature	-30 ... +50 °C
Medium humidity	0 ... 90 %, no condensation
Operating pressures	-0.1 ... 1.6 MPa (g)*
Ambient temperature	0 ... +40 °C
Ambient humidity	0 ... 80 % rH
Storage temperature	-20 ... +50 °C
Transport temperature	-30 ... 70 °C



Subject to change without notice

PRESSURE MEASUREMENT PRESSURE METER

PCE-PDA A100L

For barometric absolute pressure up to 200 kPa

The pressure meter PCE-PDA A100L is suitable for the measurement of the atmospheric pressure. This pressure meter records the pressure from absolute zero to 200 kPa. The pressure meter can be used for many mobile applications in industry and crafts. This professional pressure gauge can either be operated with batteries or rechargeable batteries. In battery mode, the USB interface allows charging of the

inserted batteries. The PCE-PDA A100L pressure meter is equipped with a large LC display. A display illumination makes it easier to read the measured values even under poor conditions. The pressure is measured by an internally installed sensor.

ISO cal option

- » graphic LCD
- » USB interface
- » datalogger
- » absolute pressure measurement
- » different units
- » MAX MIN HOLD function
- » measured value smoothing
- » integrated temperature measurement



TECHNICAL SPECIFICATIONS

Measuring range pressure	0 ... 200 kPa absolute
Resolution	0.01 kPa, 0.1 kPa
Accuracy	<± 0.5% of the measuring range
Nominal pressure	200 kPa
Overpressure	200 kPa
Burst pressure	300 kPa
Media	Liquids Air Non-aggressive gasses
Measuring rate	10 Hz
Measurement units	Pa, hPa, kPa, MPa, mbar, bar, ATM, kg / cm ² , mmH ₂ O, cmH ₂ O, inH ₂ O, mmHg, inHg, Torr, PSI, PSF
Pressure	Absolute pressure
Pressure connections	5 mm nipple for quick connectors
Max, Min and Hold function	Yes
Data logger	1024 memory slots 1 s ... 255 h Recording time per memory location 1 s ... 24h recording interval
Medium	For air and non-explosive gasses
Zero correction	Yes, with a zero key
Averaging	Yes, between 0.1 ... 9.9 s
Display	Graphic LCD with backlight
Protection	IP41
Power supply	2 x 1.5V AA battery / 1.2V NiMh battery 5V / 500-mA USB power adapter
Current consumption	50-mA (with backlight) 10-mA (without backlight)
Operating temperature	0 ... 50°C / 32 ... 122°F
Storage temperature	10 ... 55°C / 50 ... 131°F
Dimensions	145 x 85 x 35 mm / 5.7 x 3.3 x 1.4 in
Weight	About 285 g / < 1 lb

APPLICATION



Subject to change without notice

PRESSURE MEASUREMENT DIFFERENTIAL PRESSURE MANOMETER

PCE-PDA 10L

For maintenance of ventilation ducts / pitot tube optional / adaptable to the unit

The Flow Meters of the PCE-PDA series are reliable differential pressure gauges for pressure measurement of gases in the range of ± 200 kPa, ± 2 kPa and 20 kPa depending on the model. The Flow Meter has many different pressure measuring functions. This gives the user more than 16 units. Furthermore, the Flow Meter measures in addition to the differential pressure, the temperature, flow velocity and

volume flow. In addition, the maximum and minimum differential pressure can be displayed in the two-part graphic display. The resolution of the differential pressure can optionally be switched. The Flow Meter incorporates a high-precision mode that increases the resolution tenfold.

ISO cal option

- » graphic display with lighting
- » Min and Max value memory
- » datalogger and leak test
- » quick coupling connection
- » temperature measurement, flow measurement
- » high precision measuring mode
- » simple operation (voice-controlled)
- » units switchable (Pa, kPa, hPa, ...)



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range temperature	0 ... 50°C / 32 ... 122°F
Resolution	0.1°C / 0.18°F
Accuracy	$\pm 1^\circ\text{C} / 1.8^\circ\text{F}$
Measuring range pressure	± 20 kPa
Resolution	1/10 Pa
Accuracy	$\pm 0.5\%$ of final value
Nominal pressure	20 kPa
Overpressure	40 kPa
Burst pressure	100 kPa
Media	Liquids, air
Measuring rate	10 Hz
Measurement units	Pa, hPa, kPa, MPa, mbar, bar, ATM, kg / cm ² , mmH2O, cmH2O, inH2O, mmHg, inHg, Torr, PSI, PSF
Pressure	Differential
Pressure connections	Pressure relative pressure (if neg. Pressure connection open)
Max, Min and Hold function	5 mm nipple for quick connectors
Data logger	Yes
	1024 memory slots
	1 s ... 255 h Recording time per memory location
	1 s ... 24h recording interval
Medium	For air and non-explosive gases
Zero correction	Yes, with a zero key
Averaging	Yes, between 0.1 ... 9.9 s
Display	Graphic LCD with backlight
Protection	IP41
Power supply	2 x 1.5V AA battery / 1.2V NiMh battery
	5V / 500-mA USB power adapter
Current consumption	50-mA (with backlight)
	10-mA (without backlight)
Operating temperature	0 ... 50°C / 32 ... 122°F
Storage temperature	10 ... 55°C / 50 ... 131°F
Dimensions	145 x 85 x 35 mm / 5.7 x 3.3 x 1.4 in
Weight	About 285 g / < 1 lb
Optional accessories:	
Pitot Tube SR-795	Order no.: SR-795
Pitot Tube SR 483	Order no.: SR-483
Pitot Tube SR-305	Order no.: SR-305



Subject to change without notice

PRESSURE MEASUREMENT

DIFFERENTIAL PRESSURE METER

PCE-PDA 01L

Digital pressure meter with a datalogger

The differential pressure gauges of the PCE-PDA series are reliable differential pressure gauges for pressure measurement of gases in the range of ± 200 Pa, ± 2 kPa and 20 kPa depending on the model. The differential pressure gauge has many different pressure measuring functions. This gives the user more than 16 units. Furthermore, the differential pressure gauge measures in addition to the diffe-

rential pressure, the temperature, flow velocity and volume flow. In addition, the maximum and minimum differential pressure can be displayed in the two-part graphic display. The resolution of the differential pressure can optionally be switched. The differential pressure gauge incorporates a high-precision mode that increases the resolution tenfold.

ISO cal option

- » datalogger and leak test
- » quick coupling connection
- » temperature, flow and leakage measurement
- » high precision measuring mode
- » simple operation (voice-controlled)
- » units switchable (Pa, kPa, hPa, ...)



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range temperature	0 ... 50°C / 32 ... 122°F
Resolution	0.1°C / 0.18°F
Accuracy	$\pm 1^\circ\text{C} / 1.8^\circ\text{F}$
Measuring range pressure	± 200 Pa
Resolution	0.01 / 0.1 Pa
Accuracy	$\pm 1\%$ of final value
Nominal pressure	200 Pa
Overpressure	1 kPa
Burst pressure	20 kPa
Media	air
Measuring rate	10 Hz
Measurement units	Pa, hPa, kPa, MPa, mbar, bar, ATM, kg / cm ² , mmH2O, cmH2O, inH2O, mmHg, inHg, Torr, PSI, PSF
Pressure	Differential Pressure relative pressure (if neg. Pressure connection open)
Pressure connections	5 mm nipple for quick connectors
Max, Min and Hold function	Yes
Data logger	1024 memory slots 1 s ... 255 h Recording time per memory location 1 s ... 24h recording interval
Medium	For air and non-explosive gasses
Zero correction	Yes, with a zero key
Averaging	Yes, between 0.1 ... 9.9 s
Display	Graphic LCD with backlight
Protection	IP41
Power supply	2 x 1.5V AA battery / 1.2V NiMh battery 5V / 500-mA USB power adapter
Current consumption	50-mA (with backlight) 10-mA (without backlight)
Operating temperature	0 ... 50°C / 32 ... 122°F
Storage temperature	10 ... 55°C / 50 ... 131°F
Dimensions	145 x 85 x 35 mm / 5.7 x 3.3 x 1.4 in
Weight	About 285 g / < 1 lb

Further models of the PCE-PDA series:

PCE-PDA 1L	Differential	Measuring range pressure ± 2 kPa
PCE-PDA 10L	Differential	Measuring range pressure ± 20 kPa
PCE-PDA 100L	Differential/absolute	Measuring range pressure -100 ... 200 kPa
PCE-PDA 1000L	Relative	Measuring range pressure -100 ... 2000 kPa



Subject to change without notice

PRESSURE MEASUREMENT MANOMETER

PCE-PME-SERIES

13 selectable units/ export to xls file

The digital Manometer is an accurate and compact meter for differential pressure measurement in a wide range of applications, such as measuring filter resistances, pressure in furnaces, orifices, gas-air ratio equalisation, combustion processes, air conditioning systems, ventilation systems, etc. The Manometer is suitable for measuring non-aggressive and non-explosive gases.

The Manometer offers a variety of measuring functions such as maximum, minimum and average value calculation and a HOLD function. It offers an integrated data logging function with adjustable logging interval and real-time communication with a PC as well as export of the logged data as an xls file. The rechargeable battery enables an operating time of approx. 13 hours.

ISO cal option

- » MAX, MIN, AVG value, HOLD
- » audible alarm
- » 13 selectable pressure units
- » data logging and software
- » rechargeable lithium battery
- » LC colour display
- » date and time display



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data	MIN, MAX, HOLD, AVG
Measuring functions	inHg, Pa, bar, mmHg, mbar, hPa, inH ₂ O, kPa, psi, kg/cm ² , psi, Ozf/in ² , ftH ₂ O
Units	LC colour display
Display type	Internal memory
Storage medium	15996 Measurements
Storage capacity	1 s
Storage interval from	9999 s
Storage interval to	USB-C
Interface	13 h
Operating time	1 ... 99 min.
Automatic power-off from...to	Yes
Automatic power-off can be deactivated	Acoustic
Alarm	Above, below
Alarm modes	3 kPa
Overpressure	English
Menu language	IP20
Protection class (device)	5 V
Power supply	180 g
Weight	-10 ... 60 °C, 0 ... 95 % RH
Operating conditions	-10 ... 60 °C, 0 ... 95 % RH
Storage conditions	1000 mAh
Capacity	63 x 162 x 32 mm
Dimensions (W x H x D)	

Models:

PCE-PME 1	Measurement range -10 ... +10 mbar	-1 ... +1 kPa
PCE-PME 2	-25 ... +25 mbar	-2,5 ... +2,5 kPa
PCE-PME 4	-40 ... +40 mbar	-4 ... +4 kPa
PCE-PME 10	-100 ... +100 mbar	-10 ... +10 kPa
PCE-PME 40	-400 ... +400 mbar	-40 ... +40 kPa
PCE-PME 50	-500 ... +500 mbar	-50 ... +50 kPa
PCE-PME 100	-1 ... +1 bar	-100 ... +100 kPa
PCE-PME 125	-1,25 ... +1,25 bar	-125 ... +125 kPa
PCE-PME-250	-2,5 ... +2,5 bar	-250 ... +250 kPa



Subject to change without notice

SOUND LEVEL MEASUREMENT NOISE LEVEL METER

PCE-324

Measurement range up to 30 ... 130 dBA / Frequency weighting A and C / Accuracy class 2

The Noise Level Meter offers a wide measurement range of 30 to 130 dB (dBA) and 35 to 130 dB (dBC), making it suitable for accurate measurements in various acoustic environments. The accuracy of the device is ± 1.5 dB at 94 dB @ 1 kHz. Equipped with functions for A and C frequency weighting and both fast and slow time weighting, our Noise Level Meter is versatile and adaptable to different requirements.

The 2-inch LC colour display provides a clear and easy-to-read display of the measured values in numerical form. In addition, the device has a scale that enables a quick visual assessment of the sound level. With a sampling rate of 2 x per second, the Noise Level Meter records acoustic changes almost in real time and is therefore particularly suitable for monitoring sound levels in dynamic environments.

ISO cal option

- » automatic / manual measurement range selection
- » fast and slow time weighting
- » frequency weighting A and C
- » numerical values and traffic light display
- » measuring functions: MIN, MAX, HOLD
- » automatic power off
- » accuracy class 2



APPLICATION



TECHNICAL SPECIFICATIONS

Sound level	
Measurement range up to	30 ... 130 dBA
Resolution	0,1 dB
Accuracy	± 1.5 dB (94 dB @ 1 kHz) and ± 5 dB (94 dB @ 8 kHz)
Sound level	
Measurement range up to	35 ... 130 dBC
Resolution	0,1 dB
Accuracy	± 1.5 dB (94 dB @ 1 kHz) and ± 5 dB (94 dB @ 8 kHz)
Sound level	
Measurement range up to	30 ... 80 dB
Resolution	0,1 dB
Accuracy	± 1.5 dB (94 dB @ 1 kHz) and ± 5 dB (94 dB @ 8 kHz)
Sound level	
Measurement range up to	60 ... 110 dB
Resolution	0,1 dB
Accuracy	± 1.5 dB (94 dB @ 1 kHz) and ± 5 dB (94 dB @ 8 kHz)
Sound level	
Measurement range up to	80 ... 130 dB
Resolution	0,1 dB
Accuracy	± 1.5 dB (94 dB @ 1 kHz) and ± 5 dB (94 dB @ 8 kHz)
General technical data	
Measuring functions	MIN, MAX, HOLD
Time weighting	fast (125 ms), slow (1 s)
Frequency weighting	A, C
Display type	LC colour display with backlight
Display size	2 Inch
Measuring rate	2 x per second
Microphone type	Condenser microphone
Standard(s)	IEC 61672-1 (Class II)
Automatic power-off	20 min
Automatic power-off can be deactivated	Yes
Tripod thread	1/4 inch
Menu language	English, English (GB)
Protection class (device)	IP20
Weight	123 g
Operating conditions	0 ... 40 °C , 10 ... 80 % RH
Storage conditions	-10 ... 60 °C , 10 ... 70 % RH
(Rechargeable) battery	4 x 1,5 V AAA battery , Alkali-manganese
Capacity	1200 mAh
Dimensions (L x W x H)	210 x 64 x 32 mm



Subject to change without notice

ACOUSTIC MEASUREMENT SOUND LEVEL METER

PCE-325D

Frequency 31.5 ... 8,000 Hz / recording mode

Our condition monitoring sound level meter records and visualizes sound levels in the range from 30 to 130 dB. It has three manual measuring ranges and an automatic measuring range mode. When the device is switched on, the automatic mode with a range of 30 to 130 dB is activated by default. The manual ranges are 30 to 90 dB, 50 to 110 dB and 70 to 130

The user can choose between the frequency weightings A and C and between the time weightings "Fast" and "Slow" at the touch of a button. Before the recording mode can be started, the condition monitor must be connected to a PC via a micro USB port and the parameters configured using the PC software.

ISO cal option

- » measuring range from 30 ... 130 dB
- » auto and manual measurement range selection
- » measurement functions: HOLD, MIN, MAX
- » adjustable condition monitoring sound level meter
- » time weighting F and S
- » frequency weighting A and C
- » automatic switch-off
- » PC software



APPLICATION



TECHNICAL SPECIFICATIONS

Sound level	
Measurement range	30 dB ... 90 dB
Resolution	0.1 dB
Accuracy	±1.5 dB (at reference conditions of 94 dB and 1 kHz)
Sound level	
Measurement range	50 dB ... 110 dB
Resolution	0.1 dB
Accuracy	±1.5 dB (at reference conditions of 94 dB and 1 kHz)
Sound level	
Measuring range	70 dB ... 130 dB
Resolution	0.1 dB
Accuracy	±1.5 dB (at reference conditions of 94 dB and 1 kHz)
General technical data	
Measurement functions	MIN, MAX, HOLD
Time evaluation	fast (125 ms), slow (1 sec.)
Frequency	31.5 ... 8000 Hz
Frequency rating	A, C
Display type	LCD
Display refresh rate	500 mS
Memory medium	Internal memory
Memory capacity	32000 values
Memory interval of	1 s
Storage interval to	24 h
Microphone type	Electret condenser
Interface	Micro-USB
Standard(s)	IEC 61672-1 (Class II)
Automatic switch-off	3 min
Automatic switch-off can be deactivated	yes
Menu language	English
Protection class (device)	IP52
Power supply	5V DC
Plug type	Euro plug device
Weight	307 g
Dimensions (L x W x H)	248 x 90 x 35 mm
Operating conditions	-10 ... 50 °C, 0 ... 80 % r.H
Storage conditions	-20 ... 50 °C, 0 ... 80 % r.H
Capacity	2500 mAh

Further Model:

PCE-325	without data logger
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Subject to change without notice

ACOUSTIC MEASUREMENT DECIBEL METER

PCE-322A

Class II / Measuring range: 30 ... 130 dB / Memory stores up to 32,700 readings

PCE-322A is a handheld, portable, professional Class II sound level meter or decibel (dB) meter with built-in data-logging or data-recording functionality. Thus, PCE-322A is ideal for real-time noise measurement as well as for long-term noise exposure monitoring over time. A mini tripod is included in the delivery contents, as is a wind noise suppressor. The recorded decibel readings help users determine if and

what protective measures need to be taken to ensure overall health, safety and productivity in industrial, commercial, occupational, educational and residential environments. The decibel meter can also be used to evaluate acoustics for audio installations. The decibel meter can be connected to a PC via the USB port.

ISO cal option

- » IEC 61672-1 Class II sound level meter
- » USB port for data transfer
- » memory stores up to 32,700 readings
- » fast and slow time weighting
- » A and C frequency weightings
- » max, min, hold and alarm functions
- » date- and time-stamped measurements
- » analog millivolt output
- » heavy-duty ABS plastic enclosure
- » large, easy-to-read, 4-digit LCD screen
- » power-saving automatic shutoff > 15 min. inactivity
- » battery allows approx. 30 hours continuous use
- » ISO calibration available as an option - see accessories for details
- » tripod mount with 1/4-20 UNC thread



APPLICATION



TECHNICAL SPECIFICATIONS

Noise levels	Low 30 ... 80 dB Medium 50 ... 100 dB High 80 ... 130 dB Auto 30 ... 130 dB
Dynamic range	50 dB
Display	4-digit LCD
Resolution	0.1 dB
Accuracy	±1.4 dB
Sampling rate	2 x per second
Frequency	31.5 Hz ... 8 kHz
Storage capacity	32,700 readings (9 hours @ 1 second interval)
Frequency weighting	A and C
Time weighting	Fast (125 ms) Slow (1 sec.)
Microphone type	Electret condenser
Functions	MIN, MAX, HOLD, ALARM
Analog output	AC/DC millivolt Headphone
Data interface	USB port
Automatic shutdown	After 15 minutes inactivity
Operating conditions	0 ... 40°C / 32 ... 104°F, < 90% RH
Storage conditions	-10 ... 60°C / 14 ... 140°F, 10 ... 75% RH
Power supply	9V block battery (for approx. 30 h continuous operation) AC power
Dimensions	280 x 95 x 45 mm / 11.02 x 3.74 x 1.77 in
Weight	Approx. 350 g / 0.78 lb
Standards	IEC 61672-1 Class II



Subject to change without notice

ACOUSTIC MEASUREMENT SOUND LEVEL METER

PCE-428

Class II with octave band filter / A, B, C and Z frequency weightings

PCE-428 is a class 2 data-logging sound level meter that meets IEC 60651:1979, IEC 60804:2000, IEC 61672-1:2013, ANSI S1.4-1983 and ANSI S1.43-1997 requirements. This portable high-accuracy sound level meter has a large easy-to-read illuminated LCD screen that displays the sound pressure level (SPL) numerically and graphically in real time. Thanks to octave band filtering, even the slightest diffe-

rence in frequency is detected. The handheld meter also functions as a data logger, recording measurements at an adjustable interval from 1 s ... 24 h and storing the recorded measurement data to a micro SD card memory. The SD card can be removed from the meter and inserted into the SD card reader of a PC.

ISO cal option

- » accuracy class 2
- » A, B, C and Z frequency weightings
- » fast, slow and impulse time weightings
- » 1/1 octave band filter (optional 1/3 octave band filter upgrade)
- » adjustable data-recording interval from 1 s ... 24 h
- » real-time numerical and graphical LCD display
- » adjustable alarm



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	25 ... 136 db(A)
Accuracy	Class 2
Frequency range	20 Hz ... 12.5 kHz
Standards	GB/T 3785.1-2010 GB/T 3785.2-2010 IEC 60651:1979 IEC 60804:2000 IEC 61672-1:2013 ANSI S1.4-1983 ANSI S1.43-1997
Frequency analysis	1/1 Octave band filter: 20 Hz ... 8 kHz 1/3 Octave band filter: 20 Hz ... 12.5 kHz 1/2"
Microphone	Microphone Class: 2 Sensitivity: 40 mV/PA Frequency range: 20 Hz ... 12.5 kHz Connection: TNC Power supply: ICCP Standard
Data-logging interval	1 s ... 24 h (adjustable)
Measuring functions	LXY (SPL), LXeq, LXYS, LXSEL, LXE, LXymin, LXymin, LXPeak, LXN
Frequency weightings	A, B, C, Z
Time weightings	Fast (F) 125ms, Slow (S) 1 sec, Impulse (I) 35 ms
Inherent noise	Microphone: 20 db(A), 26 db(C), 31 db(Z) Electronics: 14 db(A), 19 db(C), 24 db(Z)
AD converter	24 Bit
AD Sample rate	Standard: 48 kHz LN Mode: 20 ms
Measuring display	Numerical Bar graph Graphical
Display	160 x 160 pixel LCD with backlight
Memory	4 GB Micro SD card
Interface	USB (Memory readable via software or directly as
mass storage)	
RS-232	
Voltage output	AC 5V RMS DC 10 mV/db
Alarm	Adjustable
Power supply	4 x 1.5V AA Batteries 12V / 1 A Power plug 5V / 1 A USB
Battery life	Min. 10 h continuous use
Dimensions	70 x 300 x 36 mm / 2.76 x 11.81 x 1.42 in (W x H x D)
Weight	approx. 620 g / 1.4 lbs incl. batteries

Optional accessories:

Class I Decibel Meter Calibrator	Order no.: PCE-SC 09
Power supply	Order no.: NET-PCE-4XX
Microphone cable 50 m	Order no.: MIC-50-4XX
Microphone cable 20 m	Order no.: MIC-20-4XX
Microphone cable 10 m	Order no.: MIC-10-4XX
Microphone cable 2 m	Order no.: MIC-2-4XX
Outdoor Sound Monitor Kit	Order no.: PCE-4xx-EKIT-EU
Check book	Order no.: PCE-SL-PB
Outdoor Microph. Class 1	Order no.: PCE-4xx-EMIC
Wind noise suppressor	Order no.: SOFT-BALL
Firmware Upgrade to 1/3 Octave Band Filter	Order no.: PCE-OCT II
Mini Tripod	Order no.: MINI-STAT

Further model:

PCE-428-EKIT	Sound level meter incl. outdoor noise kit
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Subject to change without notice

ACOUSTIC MEASUREMENT SOUND LEVEL METER

PCE-430

Class 1 with 1/1 octave band / A, B, C & Z Frequency weighting

PCE-430 is a class 1 sound level meter that meets IEC 60651:1979, IEC 60804:2000, IEC 61672-1:2013, ANSI S1.4-1983 and ANSI S1.43-1997 requirements. This portable high-accuracy sound level meter has a large easy-to-read illuminated LCD screen that displays the sound pressure level (SPL) numerically and graphically in real time. Thanks to octave band filtering, even the slightest difference in frequency is

detected. The handheld meter also functions as a data logger, recording measurements at an adjustable interval from 1 s ... 24 h and storing the recorded measurement data to a micro SD card memory. The SD card can be removed from the class 1 sound level meter and inserted into the SD card reader of a PC.

ISO cal option

- » 1/1 octave band included
- » 1/3 octave band optional
- » accuracy class 1
- » A, B, C & Z Frequency weighting
- » fast, Slow, Pulse and Peak time weighting
- » statistics function
- » display of the sound curve as a graph
- » 3 measurement profiles adjustable



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	22 ... 136 db(A)
Accuracy	Class 1
Frequency range	3 Hz ... 20 kHz
Standards	GB/T 3785.1-2010 GB/T 3785.2-2010 IEC 60651:1979 IEC 60804:2000 IEC 61672-1:2013 ANSI S1.4-1983 ANSI S1.43-1997
Frequency analysis	1/1 Octave band filter: 8 Hz ... 16 kHz 1/3 Octave band filter: 6.3 Hz ... 20 kHz
Microphone	1/2" Microphone Class: 1 Sensitivity: 40 mV/PA Frequency range: 3 Hz ... 20 kHz Connection: TNC Power supply: ICCP Standard
Data-logging interval	1 s ... 24 h (adjustable)
Measuring functions	LXY (SPL), LXeq, LXYS, LXSEL, LXE, LXymin, LXymin, LXPeak, LXN X = Frequency weighting: A, B, C, Z Y = Time weighting: F, S, I N = Statistics in %: 1 ... 99 %
Frequency weightings	A, B, C, Z
Time weightings	Fast (F) 125ms, Slow (S) 1 sec, Impulse (I) 35 ms
Inherent noise	Microphone: 19 db(A), 25 db(C), 31 db(Z) Electronics: 13 db(A), 17 db(C), 24 db(Z)
AD converter	24 Bit
AD Sample rate	Standard: 48 kHz LN Mode: 20 ms
Measuring display	Numerical Bar graph Graphical
Display	160 x 160 pixel LCD with backlight
Memory	4 GB Micro SD card
Interface	USB (Memory readable via software or directly as mass storage) RS-232
Voltage output	AC 5V RMS DC 10 mV/db
Alarm	Adjustable
Power supply	4 x 1.5 V AA Batteries 12 V / 1 A Power plug 5 V / 1 A USB
Battery life	Min. 10 h continuous use
Dimensions	70 x 300 x 36 mm / 2.76 x 11.81 x 1.42" (W x H x D)
Weight	approx. 620 g / 1.4 lbs incl. batteries

Optional accessories:

Class I Decibel Meter Calibrator	Order no.: PCE-SC 09
Power supply	Order no.: NET-PCE-4XX
Microphone cable 50 m	Order no.: MIC-50-4XX
Microphone cable 20 m	Order no.: MIC-20-4XX
Microphone cable 10 m	Order no.: MIC-10-4XX
Microphone cable 2 m	Order no.: MIC-2-4XX
Outdoor Sound Monitor Kit	Order no.: PCE-4xx-EKIT-EU
Check book	Order no.: PCE-SL-PB
Outdoor Microph. Class 1	Order no.: PCE-4xx-EMIC
Wind noise suppressor	Order no.: SOFT-BALL
Firmware Upgrade to 1/3 Octave Band Filter	Order no.: PCE-OCT II
Mini Tripod	Order no.: MINI-STAT

Further models:

PCE-432	Sound Level meter with GPS
PCE-430-EKIT	Sound level meter incl. outdoor noise kit
PCE-432-EKIT-ICA	Sound Level meter with GPS incl. outdoor noise kit



Subject to change without notice

ACOUSTIC MEASUREMENT SOUND LEVEL METER

PCE-SLM 50

Class 1 accuracy / Over 30 measurement parameters / Frequency weighting: A, C, Z

The Sound Level Meter / Noise Level Meter is certified in accordance with IEC 61672-1:2013, Class 1 and is ideally suited for professional use in noise monitoring. With a wide frequency range from 10 Hz to 20 kHz and extensive filter options, the device enables precise measurements in almost all areas of application. The frequency weightings A, C and Z as well as the time weightings S (Slow), F (Fast) and I (Impulse)

are supported in order to always ensure application-appropriate measurement behaviour.

The Sound Level Meter / Noise Level Meter also impresses with its comprehensive connectivity: Ethernet, WiFi and USB Type-C enable flexible and uncomplicated data transfer.

ISO cal option

- » class 1 accuracy IEC61672-1:2013
- » frequency range: 10 Hz ... 20 kHz
- » frequency weighting: A, C, Z
- » time weighting: S, F, I
- » ethernet, WiFi, USB Type-C
- » internal memory: 8 GB
- » external memory: 32 GB / 64 GB SD card
- » measurement parameters: Lp, Lmax, Lmin, Leq, Lpeak
- » 4-inch TFT touch display
- » PC software



APPLICATION



TECHNICAL SPECIFICATIONS

Sound level

Measurement range up to
Resolution
Accuracy

21 ... 143 dBA
0,1 dB
±1 dB @1000 Hz / ±1.5 dB @31.5 Hz ... 8 kHz (Class 1)

General technical data

Outputs
Measuring functions
Measuring functions (additional information)

AC signal (3.5 mm jack)
LXY(SPL), LXeq, LXYmax, LXYmin, LXPeak
X = Frequency weighting: A, C, Z
Y = Time weighting: F, S, I

Time weighting
Frequency
Frequency weighting
Display type
Display refresh rate
Measuring rate
Storage capacity
Memory capacity (additional information)
Storage interval from
Storage interval to
Microphone type
Classification
Interface
Standard(s)
Operating time
Operating time additional information
Tripod thread
Menu language
Protection class (device)
Power supply
(Rechargeable) battery
Capacity
Operating conditions
Storage conditions
Dimensions (L x W x H)
Weight

fast (125 ms), slow (1 s), Pulse (35ms)
10 ... 20000 Hz
A, C, Z
LCD touchscreen
1 x per second
48 kHz
8 GB
Internal: 8 GB, External: max. 64 GB SD card
1 s
24 h
Condenser microphone
Class 1
USB-C, Ethernet, SD card
IEC 61672-1:2013, GB/T 3785.1-2010
17 h
Screen and Wifi switched off
1/4 inch
English (GB), English, Chinese
IP20
5V USB
2 x 3,6 V internal , Lithium-ion battery
6600 mAh
-20 ... 60 °C , 90 % RH
-20 ... 60 °C , 90 % RH
262 x 89 x 42 mm
470 g



Subject to change without notice

ACOUSTIC MEASUREMENT CALIBRATOR

PCE-SC 09

Class I / Sound pressure level 94 and 114 db

The sound calibrator is a battery powered sound source. With the sound calibrator, direct and fast calibrations of sound level meters and other systems for noise measurement can be carried out. Sound level sensors of 1, 1/2 and 1/4 inch can be connected to the sound calibrator and checked via the adapter attachments.

The calibration frequency for the sound calibrator is 1000 Hz. This is the reference frequency for the internationally standardized evaluation curves. With this sound calibrator you can calibrate sound measuring devices with weighting filters A, B, C, or D. The calibration pressure for this sound calibrator is 94 ± 0.3 dB (1 Pa) and 114 ± 0.3 dB (10 Pa).

ISO cal option

- » sound pressure level 94 and 114 db
- » for weighting filters A, B, C, D
- » ready for immediate use
- » accuracy class 1, IEC 942
- » easy handling
- » adapter for various microphones



APPLICATION



TECHNICAL SPECIFICATIONS

Sound pressure level	94 dB, 114 dB
Accuracy class	IEC 942, class 1
Sound level accuracy	± 0.3 dB (20 °C / 68 °F, 760 mm Hg)
Frequency	1000 Hz for A, B, C and D frequency weighting
Accuracy frequency	$\pm 0.01\%$
Microphone size	1", 1/2" (with included adapter), 1/4" (with optional adapter)
Display	digital
Height dependency	0.1 dB per 610 m difference in height from zero level
Temperature coefficient	0 ... 0.01 dB / °C / °F
Battery status	graphical display of the battery status
Power supply	2 x 1.5 V AA batteries
Operating conditions	-10 ... 50 °C / 14 ... 122 °F 20 ... 90 % r. H., not condensing
Storage conditions	-40 ... 65 °C / -40 ... 149 °F 20 ... 90 % r. H., non-condensing (without battery)
Dimensions	100 mm x 100 mm x 75 mm / 3.9 x 3.9 x 3 in (L x W x H)
Weight	250 g / < 1 lb



Subject to change without notice

OPTICAL MEASUREMENT

LUX METER

PCE-LMD 5

Units: lux, footcandle / Micro-USB interface

The lux meter has a large measuring range of 0 ... 400 lux. The illuminance is measured using an external silicon photodiode with a spectral filter. This means that the lux meter can be positioned appropriately for every measuring task. The measured values can be displayed by the lux meter in lux and in footcandles. In addition to the normal measured value display on the lux meter, the measured value

is also displayed on a scale. The lux meter has additional functions so that an analysis of the illuminance can be carried out. With the additional functions of the lux meter, the largest and smallest measured value can be output using the "MIN" and "MAX" buttons.

ISO cal option

- » rechargeable battery
- » micro USB interface
- » measuring range 0 ... 400 kLux
- » lux and footcandle units
- » LCD display with backlight



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	1000 ... 400,000 Lux 0.0 ... 999.9 Lux
Resolution	1 Lux 0.1 Lux
Measuring range (footcandle)	1000 ... 400,000 fc 100 ... 999 fc 0.00 ... 99.00 fc
Resolution	1 fc 1 fc 0.01 fc
Accuracy	±5 % of measured value ±10 digits with standard light A ±10 % of measured value ±10 digits
Repeatability	±2 %
Sampling rate	4 Hz
Sampling rate peak hold	10 µs
Sensor	silicon photodiode with spectral filter
Battery status display	battery symbol appears, when the battery voltage is too low.
Interface	Micro-USB (only for charging)
Power supply battery	3.7 V Li-Ion battery
Power supply USB	5 V DC, 1 A
Operating conditions	-10 ... 50 °C / 14 ... 122 °F / <80 % RH, non-condensing
Storage conditions	-20 ... 50 °C / -4 ... 122 ° / <80 % RH, non-condensing
Dimensions	meter: 162 x 88 x 32 mm / 6.4 x 3.5 x 1.3" sensor: 102 x 60 x 25 mm / 4 x 2.4 x 1"
Weight	approx. 320 g / 11.3 oz
Further model:	
PCE-LMD 10	with data storage 32,000 measurement sets



Subject to change without notice

OPTICAL MEASUREMENT

LUX METER

PCE-LMD 200

Lux Meter class A according to DIN 5032-7 / data logger with 8 GB measured value memory

The lux meter is a precise measuring instrument that meets the highest demands for light measurements. In accordance with DIN 5032-7, it fulfils the requirements of precision class A, which enables accurate and reliable detection of light intensities. With an impressive measuring range of 0.000 lux to 500,000 lux, the lux meter is extremely versatile.

Whether for lighting control at the workplace, in exhibitions or outdoors - the lux meter covers a wide range of applications. Accuracy class A not only ensures precise measurements, but also high reproducibility of the results. This is particularly important in applications where accurate light measurements are crucial.

ISO cal option

- » precision according to DIN 5032-7
- » large measuring range: 0.000 lx ... 500 klux
- » accuracy class: A
- » external sensor
- » 8 GB measured value memory
- » battery operation



APPLICATION



TECHNICAL SPECIFICATIONS

Lux	
Measurement range	0 ... 500 000 lx (500 klx)
Resolution	0,001 lx @ 0 ... 50 lx 0,1 lx @ 50 ... 5 klx 0,01 klx @ 5 ... 500 klx
Accuracy	Total error ≤ 2.0% (CIE, DIN 5032-7) Class A @ 10 ... 40 °C
General technical data	
Units	lx, klx
Display type	LCD
Display refresh rate	1 x per second
Storage medium	Micro-SD card
Memory interval of	1 s
Memory interval up to	60 s
Memory capacity	8 GB
Interface	Micro-USB
Standard(s)	DIN 5032-7, ISO/CIE 19476, EN 12464-1, EN 12464-2, EN 12665
Operating time	23 h
Measurement rate	1 Hz
Classification	A (CIE, DIN 5032-7)
Menu language	English, Polish
Protection class (appliance)	IP20
Power supply	5V DC / max. 2,1A
Weight	172 g
Device weight with delivery	1.67 kg
Equipment weight with scope of delivery and outer packaging	1,71 kg
Dimensions (L x W x H)	118 x 74 x 21 mm
Other dimensions	Probe dimensions: Ø 44 x 25 mm Extension rod: approx. 1 m
Operating conditions	-20 ... 50 °C , 90 % r.H.
storage conditions	-20 ... 50 °C , 90 % RH
Languages of the instructions	English



Subject to change without notice

OPTICAL MEASUREMENT LIGHT METER

PCE-UV 40A

Simultaneous measurement of UVA and light

The light measuring device / lux meter is a highly developed instrument that is characterized by its versatility and precision. With its dual measurement channels, the light measuring device / lux meter enables the simultaneous measurement of UV-A radiation and visible light.

The external sensor allows the light measuring device / lux meter to

be positioned flexibly to carry out precise measurements in different locations. This function is helpful, for example, when measuring UV lights for material testing according to the standards "EN ISO 9934-1 Non-destructive testing with magnetic powder" and "EN ISO 3059 Non-destructive testing, penetrant testing and magnetic particle testing

ISO cal option

- » two-channel measuring device UV-A and visible light
- » external sensor
- » simultaneous measurement
- » two UV-A measuring ranges up to 100 W/m²
- » control of UV lights for material testing
- » automatic measuring range changeover 0 lx ... 10 klx
- » accurate measurement of illuminance regardless of lamp type
- » measured value memory



APPLICATION



TECHNICAL SPECIFICATIONS

Light

Measuring range	0 lx ... 10 klx
Resolution	0.1 lx
Accuracy	f1 ≤ 3 %

UV

Measuring range	0 W/m ² ... +100 W/m ²
Resolution	0.01W/m ²
Accuracy	According to EN ISO 3059 V(λ) CIE
	Δλ1/10 320 - 395nm
	Δλ1/2 337 - 385nm
	λmax 365nm
	Sλ=313nm < 5%
	Sλ=405nm < 0.5%

General technical data

Display type	LCD with lighting
Storage medium	Internal memory
Storage capacity	20 records
interface	Mini USB
Norm(s)	ISO/CIE 19476, EN ISO 3059, EN ISO 9934
Measuring rate	1Hz
Menu language	English, Polish
Protection class (device)	IP20
Weight	148g / 0.3 lbs
Device weight with scope of delivery	1198g / 2.6 lbs
Device weight including scope of delivery and outer packaging	1377g / 3 lbs
Dimensions (L x W x H)	118 x 72 x 20 mm / 4.6 x 2.8 x 0.8 in
Other dimensions	Probe Ø 44 x 25.5 mm Cable length probe 1.5 m / 4.9 ft Extension rod 460 mm / 18.1 in
Operating conditions	-10 ... 50 °C / 14 ... 122 °F, 0 ... 90 % RH
Storage conditions	-10 ... 50 °C / 14 ... 122 °F, 0 ... 80 % RH
Languages of the instructions	English



Subject to change without notice

OPTICAL MEASUREMENT

LUMINANCE METER

PCE-LMD 100

For luminance measurement / for monitors, screens, LED video walls

The luminance meter is designed for measuring the luminance of self-illuminating surfaces, such as monitor matrices, TV screens, negatoscopes, reading boards, etc. e.g. monitor matrices, TV sets, negatoscopes, reading panels, etc. The luminance meter guarantees an accurate measurement, regardless of the spatial distribution of the measured luminance or the backlighting of the surface to be tested. It

is indispensable for checking medical screens and negatoscopes. The unit cd/m^2 relates the photometric quantity cd (abbreviation for candela) to the area of the display, expressed in square metres. Another feature of the luminance meter is the integrated measured value memory. With this function, measurement results can be easily saved and automatically recorded.

ISO cal option

- » accuracy class: A according to DIN 5032-7
- » large measuring range: 0.00 ... 50000 cd/m^2
- » external sensor with multifunction button
- » 8 GB measured value memory



APPLICATION



TECHNICAL SPECIFICATIONS

Luminance	
Measuring range	0 cd/m^2 ... +500 cd/m^2
Resolution	0.01 cd/m^2
Accuracy	Total error at +10 ... +40°C: 2.5% Total error at -10 ... +50°C: 3% Class A (CIE, DIN 5032-7)
Luminance	
Measuring range	+500 cd/m^2 ... +50000 cd/m^2
Resolution	1 cd/m^2
Accuracy	Total error at +10 ... +40°C: 2.5% Total error at -10 ... +50°C: 3% Class A (CIE, DIN 5032-7)
General technical data	
Display type	NULL
Display refresh rate	1 x per second
Storage medium	Micro SD card
Storage interval of	1 s
Memory interval up to	60 s
Memory capacity	8 GB
Interface	Micro-USB
Operating time	23 h
Measurement rate	1 Hz
Measuring field	10 mm
Measuring angle	1°
Menu language	English, Polish
Protection class (device)	IP20
Power supply	5V DC / max. 2.1A
Weight	172 g
Device weight with scope of delivery	1.4 kg
Device weight with scope of delivery and outer packaging	1.8 kg
Dimensions (L x W x H)	118 x 74 x 21 mm
Other dimensions	Probe dimensions: \varnothing 25 x 160 mm
Operating conditions	-10 ... 50 °C, 90 % r.h.
Storage conditions	-10 ... 50 °C, 90 % r.h.



Subject to change without notice

CALIBRATION CALIBRATOR

PCE-SC 43

Class II sound level calibrator with different sound pressure levels

The calibration frequency for the class II sound level calibrator is 1000 Hz and is a sinusoidal shape. Compared to other calibrators, this class II sound calibrator has three adjustable sound pressure levels. 94 dB, 104 dB and 114 dB are available and can be selected by pressing a button on the class II sound calibrator. This means that an additional 104 dB sound pressure level is available. With an accuracy of ± 0.4 dB,

the class II sound calibrator is particularly precise. This means that the Class II sound calibrator can be used to check sound measuring devices for their accuracy and, if necessary, to adjust them. The class II sound calibrator can optionally be equipped with an ISO certificate.

ISO cal option

- » sound pressure level 94, 104, 114 db
- » for weighting filters A, B, C and D
- » sound class 2
- » exchangeable batteries
- » 1/2 inch microphone connection
- » 50 hours of battery life



TECHNICAL SPECIFICATIONS

Sound pressure level	94 dB, 104 dB, 114 dB
Accuracy	± 0.4 dB
Class	2
Frequency	1000 Hz for A, B, C and D frequency weighting
Frequency accuracy	± 1.7 %
Stabilization time	10 seconds
Total harmonic distortion	< 3 %
Environmental conditions	
Temperature influences	< 0.4 dB at 0 ... 40 °C / 32 ... 104 °F
Humidity influences	25 ... 90 % RH
Atmospheric pressure	< 0.1 dB at 65 ... 108 kPa
Stability at < 60 seconds	± 0.15 dB
Stability after one year (normal use)	± 0.35 dB
Operating conditions	0 ... 40 °C / 32 ... 104 °F, < 25 ... 90 % RH, non-condensing
Storage conditions	-20 ... 50 °C / -4 ... 122 °F, < 90 % RH, non-condensing
Automatic shutdown	after 20 minutes
Power supply	2 x 1.5 V AA batteries
Battery life	ca. 50 hours
Microphone size	1/2 inch
Dimensions	60 x 130 x 37.5 mm / 2.3 x 5.1 x 1.4"
Weight	400 g / 14.1 oz

APPLICATION



Subject to change without notice

CALIBRATION TEMPERATUR CALIBRATOR

PCE-DBC 650

Dry Well Temperature Calibrator for temperature sensors / high accuracy of 0.1 %

Regular calibration of temperature sensors is crucial, as they are exposed to a variety of mechanical, thermal and chemical stresses that can lead to drift over time. This drift can cause the measured temperature to deviate from the actual temperature. Through regular calibration, the differences between the actual and measured temperature can be determined, making the specific drift behaviour

visible. Dry-block calibrators are effective instruments for checking and calibrating a wide range of temperature measuring devices and temperature sensors. The calibrator / simulator is used to calibrate temperature sensors such as Pt100, Pt1000 and many other temperature sensors. The dry block function offers a practical solution for calibrating temperature sensors in the laboratory and in the field.

ISO cal option

- » simple calibration
- » 4 sensor openings 6 ... 12 mm
- » easily transportable
- » colour touch display
- » adjustable alarm
- » PID settings
- » internal memory



APPLICATION



TECHNICAL SPECIFICATIONS

Temperature	
Measuring range	300 °C ... 1200 °C
Resolution	0.001 °C
Accuracy	0.1 %
General technical data	
Units	°C, °F
Display type	Touch display
Display size	4.96 inch
Storage medium	Internal memory
Storage capacity	50 data records
Temperature stability	±0.2 °C/15 min
Vertical temperature field	Deviation within 10 mm of floor calibration insert is 1 °C
Horizontal temperature field	±0.25 °C (equipped with thermostat)
Heating speed	25 ... 100 °C: 10 min 100 ... 600 °C: 15 min 600 ... 800 °C: 20 min 800 ... 1200 °C: 30 min
Cooling speed	1200 ... 800 °C: 25 min 800 ... 600 °C: 15 min 600 ... 300 °C: 60 min 300 ... 50 °C: 180 min
Dimensions	Calibration insert: 4 openings for sensors: 6, 8, 10, 12 mm Depth: 135 mm
Fuse(s)	Fuse 20 A, 250 V
Menu language	English, Chinese
Protection class (device)	IP20
Power supply	110 ... 220 V AC, 45 ... 65 Hz
Plug type	Protective contact plug
Weight	7.7 kg
Dimensions (L x W x H)	295 x 174 x 350 mm
Operating conditions	0 ... 50 °C, 0 ... 90 % r.H
Storage conditions	0 ... 50 °C, 0 ... 90 % r.H



Subject to change without notice

LEAK DETECTION GAS DETECTOR

PCE-GA 10

Gas leak detector for flammable gases / Optical, acoustic and haptic alarm

The gas leak detector PCE-GA 10 is used to check for leaks in gas pipes and connections. This gas leak detector is suitable for many flammable gases. The gas leak detector has 5 LEDs that inform the gas intensity. In addition to the visual information, the gas leak detector has an audible and haptic alarm. This means that, depending on the level, the gas leak detector emits an alarm tone and vibrates at the

same time. The leak detector is therefore ideal for detecting sporadic gases. The gas leak detector is therefore of great help to employees who want to inspect plants during a plant tour or inspect engines, supply lines or gas lines. The gas leak detector is supplied with a rechargeable battery.

ISO cal option

- » LED display
- » for flammable gases
- » 500 mm sensor
- » optical, acoustic and haptic alarm
- » fast response time
- » rechargeable battery



APPLICATION



TECHNICAL SPECIFICATIONS

Testable gases	Acetaldehyde Ammonia Benzene Ethan Ethanol Ethylene Formaldehyde Hexane ISO-butane Methane Propane P-xylene Hydrogen sulfide Toluene Hydrogen
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And compounds in which these gases occur

Measuring range (methane)	0 ... 10000 ppm
Sensitivity (methane)	<50 ppm
Display stages	High: 100 / 400 / 700 / 1000 ppm Low: 1000 / 4000 / 7000 / 10000 ppm
Response time	<2 s
Heating time	approx. 50 s
Alarm types	Optical, acoustic, haptic
Power supply	3.7 V Li-ion battery
Lifetime sensor	On average, 5 years
Sensor length	500 mm
Dimensions	211 x 70 x 45 mm / 8.3 x 2.7 x 1.7 in
Weight	approx. 400 g / <1 lb

Optional accessories:

Replacement sensor	Order no.: ESS-PCE-GA 12
Replacement sensor	Order no.: ESS-PCE-GA 10



Subject to change without notice

LEAK DETECTION GAS DETECTOR

PCE-GA 12

Gas flammable gas detector / Measured value display up to 10000 ppm

The gas detector PCE-GA 12 is a very easy-to-use measuring device. This gas detector detects combustible gases and emits a vibrating alarm as well as an audible alarm once a combustible gas has been detected by the gas detector. Thanks to the semi-rigid hose on the gas detection device, the sensor can be aligned in almost any position to reach even inaccessible places.

This makes the gas detection device an ideal measuring device for employees who want to detect sporadically escaping gases (testing of plants during a tour of the plant, checking engines and supply lines, testing gas supply lines). A manual setting of the gas detector is not necessary as the gas detector automatically calibrates.

ISO cal option

- » audible alarm with 85 dB
- » rechargeable battery for mobile use
- » automatic calibration
- » measuring range up to 10000 ppm
- » for the detection of combustible gases
- » durability of the sensor about 5 years
- » vibrating alarm when detecting gases
- » sensor changeable



APPLICATION



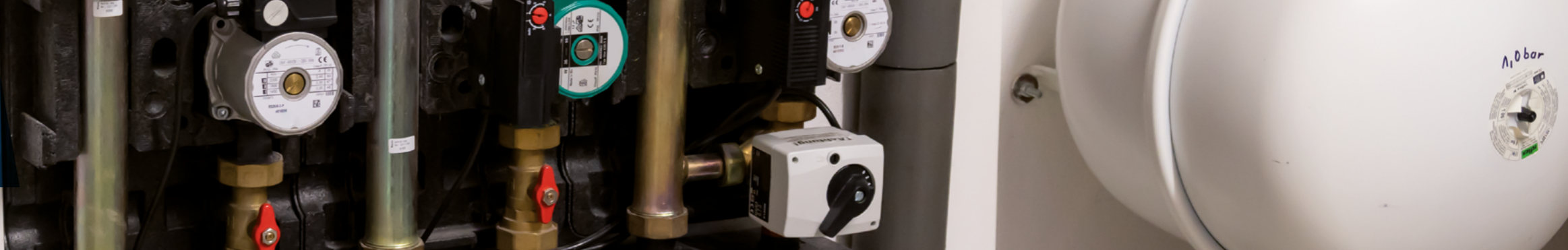
TECHNICAL SPECIFICATIONS

Measuring range (only for methane)	at low concentration 0 ... 1000 ppm
Acoustic alarm	at high concentration 0 ... 10000 ppm
Sensitivity	Volume: 85 dB
Measuring interval	<10 ppm (with methane)
Display	<2 seconds
Calibration	Measurement of combustible gases on the LC display, bar graphs automatically
Warming up	40 seconds
Battery	Polymer Li-ion battery 18500 3.7 V
Power adapter	Primary side: 100 ... 240 V, 50/60 Hz, 0.2 A
Automatic shutdown	Secondary side: 5 V, 1 A
Sensor durability	turns off if the battery capacity is too low by itself or after 10 minutes if not used.
Probe	about 5 years (sensor is interchangeable)
Weight	semi-rigid 400 mm / 16" about 430 g / <1 lb



Subject to change without notice

LEAKAGE LOCATION GAS DETECTOR



PCE-HAD 5

Gas Leak Detector/ triple alarm: audible, visual, vibration

The Gas Leak Detector is a versatile instrument for the detection of halogen gases such as chlorine, fluorine, medical ethylene oxide, ethanol vapour and other refrigerants. It is used in fire extinguishing systems, air conditioning systems, cooling systems and refrigerant recovery systems to detect gases such as CFCs, HCFCs and HFCs. The leak detector offers precise measurement within the range of 0 ...

1000 ppm with a resolution of 1 ppm and a quick response time (T90) of below 30 seconds as well as a warm-up time of only 30 seconds. The Gas Leak Detector has an ergonomic housing and a flexible, 265 mm long universal probe that can be adapted for measurements in different environments. It utilises a semiconductor sensor for real-time measurement of gas concentration.

ISO cal option

- » refrigerant gases CFC, HCFC and HFC
- » measurement range 0 ... 1000 ppm
- » ergonomic housing
- » triple alarm
- » flexible probe
- » automatic power off
- » operating time: 6 h



APPLICATION



TECHNICAL SPECIFICATIONS

Gas	
Measurement range up to	0 ... 1000 ppm
Resolution	1 ppm
Accuracy	±5 % FS
Temperature	
Measurement range up to	-10 ... +50 °C
Resolution	0,1 °C
Accuracy	±1 °C
Temperature	
Measurement range up to	14 ... 122 °F
Resolution	0,1 °F
Accuracy	±2 °F
General	
Display type	LC colour display
Display size	2 Inch
Response time	30 s
Warm-up time	30 s
Operating time	6 h
Automatic power-off	15 ... 60 min
Tripod thread	1/4 inch
Refrigerant	R12, R502, R500, R22, R32, R402A, R402B, R409A, R410A, R134a, R404A, R407C, R507, R11, R13, R113, R114, R503, R170, R600a, R1270, R123, R124, R1416, R142b, R403A, R125, R417A, R23, R1343
Sensor length	265 mm
Alarm	Acoustic, Vibration, optical
Upper alarm limit	110 ... 990 ppm
Lower alarm limit	100 ... 890 ppm
Protection class	IP40
Weight	177 g
Operating conditions	-10 ... 50 °C , 10 ... 99 % RH
Storage conditions	-10 ... 50 °C , 10 ... 99 % RH
Rechargeable battery	4 x 1,5 V AAA battery, Alkali-manganese
Capacity	1200 mAh
Dimensions (L x W x H)	173 x 64 x 30 mm



Subject to change without notice

PERSON CONTROL ALCOHOL METER

PCE-ALC 30

Alcohol meter/ quick results / measurement range: 0 ... 4 g/l

This handy Alcohol meter / Breathalyzer quickly measures the alcohol content and is very easy to use. Our Alcohol meter / Breathalyzer has a measurement range of 0 ... 4 g/l. Its lightweight and compact design makes it particularly user-friendly. After blowing, the digital result is shown on the OLED display within a few seconds. The Alcohol meter / Breathalyzer is equipped with a fuel cell sensor. The measuring units

can be flexibly switched between mg/l, g/l, % BAC and ‰ BAC. The history of the last measured values is displayed in the app. An adjustable alarm value in the Alcohol meter / Breathalyzer provides additional safety while the special anti-backflow mouthpiece protects your health. The OLED display ensures clear readability of the results.

ISO cal option

- » Measurement range 0 ... 4 g/L
- » adjustable alarm threshold
- » units: mg/l, g/l, % BAC, ‰ BAC
- » OLED display
- » quick results < 5 s



APPLICATION



TECHNICAL SPECIFICATIONS

Alcohol content	
Measurement range up to	0 ... 4 g/L
Resolution	0,01 g/L
Accuracy	±0.5 g/l
Alcohol content	
Measurement range up to	0 ... 0,4 ‰BAC
Resolution	0,001 ‰BAC
Accuracy	±0.05 ‰ BAC
Alcohol content	
Measurement range up to	0 ... 2 mg/L
Resolution	0,01 mg/L
Accuracy	0.25 mg/l
Alcohol content	
Measurement range up to	0 ... 440 mg/100 ml
Resolution	1 mg/100 ml
Accuracy	±55 mg/100 ml
General	
Units	mg/l, g/l, mg/100ml, ‰BAC, ‰BAC
Display type	OLED
Display size	1 Inch
Automatic power-off	35 s
Service life	Re-calibration after 2000 measurements
Protection class	IP20
Weight	35 g
Operating conditions	-10 ... 50 °C , 0 ... 95 % RH
Storage conditions	-10 ... 50 °C , 0 ... 95 % RH
Rechargeable battery	1 x 1,5 V AAA battery , Alkali-manganese
Capacity	1200 mAh
Dimensions (L x W x H)	50 x 35 x 20 mm



Subject to change without notice

PERSON CONTROL ALCOHOL METER

PCE-ALC 10

Traffic light display for alcohol values with warning signal / Voice output

This Alcohol meter / Breathalyzer is perfect for personally checking your alcohol level - for example after consuming alcoholic drinks at parties, when driving the next morning or for general health monitoring. It is very easy to use: by briefly blowing into the device, the Alcohol meter / Breathalyzer reliably measures the alcohol content in your breath.

With a measuring range of 0.00 to 0.400% BAC and a fine resolution of 0.001% BAC, the Alcohol meter / Breathalyzer delivers precise results in just a few seconds. An integrated voice output guides you step by step through the measurement.

ISO cal option

- » Measuring range: 0.00 ... 0.400% BAC
- » Traffic light display for alcohol values with warning signal
- » Fast results < 10 s
- » Automatic reset after high alcohol concentration < 10 s
- » Voice output
- » LCD color display with illumination 1.4 inch



APPLICATION



TECHNICAL SPECIFICATIONS

Alcohol content

Measurement range up to	0 ... 0,4 %BAC
Resolution	0,001 %BAC
Accuracy	0.015% BAC

General technical data

Display type	LC colour display with backlight
Display size	1,4 Inch
Storage medium	Internal memory
Storage capacity	100 Values
Interface	USB-C
Service life	approx. 2 ... 3 years
Warm-up time	10 s
Automatic power-off	115 s
Measurement time	5 s
Menu language	English, English (GB)
Protection class (device)	IP20
(Rechargeable) battery	1 x 3,7 V internal , Lithium-ion battery
Capacity	800 mAh
Operating conditions	-5 ... 40 °C , 0 ... 95 % RH
Storage conditions	-20 ... 70 °C , 0 ... 95 % RH
Dimensions (L x W x H)	126 x 62 x 25 mm
Weight	118 g



Subject to change without notice

LEAK DETECTION GAS LEAK DETECTOR

PCE-LDC 8

Leak detector for compressed air lines / operating frequency 40 kHz

The Gas Leak Detector is used to locate leaks on compressed air lines. Furthermore, the Gas Leak Detector can also be used on coolant lines or gas lines for leak detection. The Gas Leak Detector is equipped with an ultrasonic sensor that can precisely detect leaks in air lines. The ultrasound sensor from the Gas Leak Detector works at a frequency of 40 kHz. This means that the Gas Leak Detector is calibrated to the

medium frequency that leaks on pressure lines emit. This is in the range between 20 ... 80 kHz. A high-pass filter in the leak detector ensures that all noises are filtered at a frequency <40 kHz in order to perform a better leak detection. An integrated amplifier element in the leak detector ensures that the high-frequency tones.

ISO cal option

- » working frequency of 40 kHz
- » easy to use
- » up to 6 h battery operation
- » Leak detection via headphones and LCD display
- » robust and ergonomic
- » can be used over long distances



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring principle	Ultrasonic
Measuring medium	Air, coolant, non-explosive gases
Operating frequency	40 kHz ± 2 kHz
Connections	3.5 mm jack plug for sensor 3.5 mm jack plug for headphones and charger
Display	LC display
Power supply	NiMH battery
Operating time	approx. 6 h without laser pointer approx. 4 h with laser pointer
Charging time	about 1.5 h
Operating temperature	Normal operation: 0 ... 40 °C Charging mode: 10 ... 40 °C
Laser	2nd grade; <1mW; 650 nm
Dimensions	7.54 x 3.44 x 2.09 in; 191.5 x 87.5 x 53 mm
Weight	approx. 250 g

Measurement options pressure vs. Diameter / range

print	diameter	Range
0.5 bar	0.1 mm	6.6 ft, 2 m
	0.2 mm	6.6 ft, 2 m
	0.5 mm	32.8 ft, 10 m
5 bar	0.1 mm	26.2 ft, 8 m
	0.2 mm	45.9 ft, 14 m
	0.5 mm	59.1 ft, 18 m



Subject to change without notice

LEAK DETECTION LEAK DETECTOR

PCE-LDC 15

Leakage detection via sound/noise measurement / operating frequency 40 kHz

The leak detector is used in various areas of industry. For example, the leak detector is used on compressed air, gas, steam and vacuum systems, as well as on refrigeration systems and door seals. The working frequency of the leak detector is 40 kHz (± 2 kHz). The soundproof headphones on the leak detector ensure that it can also be used in extremely noisy environments. The leak detector is used wherever

gases can escape from leaks in piping systems. The noises caused by the outflow are often in the ultrasonic range and are therefore imperceptible to the human ear.

ISO cal option

- » working frequency 40 kHz (± 2 kHz)
- » operating time >10 hours
- » various attachments
- » transport case for safe transport
- » easy to use thanks to the touchscreen
- » soundproof headphones



APPLICATION



TECHNICAL SPECIFICATIONS

Working frequency	40 kHz (± 2 kHz)
Laser	wavelength 630 ... 660 nm, output power <1mW (laser class 2)
Color display	3.5" touch panel TFT
Connections	3.5 mm jack plug for headphones, power supply socket for connecting an external charger USB port for software updates
Power supply	internal 7.4 V lithium-ion battery
Charging time	max. 4 hours
Operating time	>10 h (continuous operation)
Degree of protection	IP20
Operating conditions	-5 ... +50 °C / 23 ... 122 °F, <95 % RH, non-condensing
Storage conditions	-20 ... 60 °C / -4 ... 140 °F, <95 % RH, non-condensing
Altitude	4000 m above sea level
Permitted Pollution degree	2
Dimensions	263 x 96 x 280 mm / 10.3 x 3.7 x 11" (with preamplifier and horn)
Weight	0.55 kg / 1.2 lb with preamplifier and horn, complete set in case approx. 3.0 kg / 6.6 lb



Subject to change without notice

COLOUR MEASUREMENT LUX METER

PCE-CRM 40

Measurement range up to 150,000 lx / Presents tristimulus and RGB values

With the LED lux meter, important photometric factors in the field of light measurement can be determined. These include the tristimulus values of XYZ, the u' and v' color location coordinates according to CIE 1976, and the xy color location coordinates according to CIE 1931. Moreover, further color statistics are measured as absolute values and differences. The user can determine the dominant wavelength

within the sensitivity range of the LED spectrophotometer, which is 360 ... 780 nm, as well as the color density (Pe) and the correlated color temperature (CCT) in Kelvin. Also, the lux meter can measure the illuminance in lux (lx) or foot-candle (fcd) as well as the light flux in lumens (lm) and show the color location in the RGB color space.

ISO cal option

- » measurement of colour temperature
- » lux measurement up to 150 kLux
- » representation of Tristimulus and RGB
- » ideal for LEDs
- » SD memory
- » colour LCD



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement functions	Tristimulus values: XYZ Chromaticity: Ev xy, Ev u'v' Correlated colour temperature: Tc Colour difference: Δ (XYZ), Δ (Evxy), Δ (Evuv), $\Delta E v \Delta Tc \Delta uv$ Chromaticity coordinates: ICE1931 (x, y), ICE1976 (u, v) Dominant wavelength: λd Colour fastness: Pe Luminous flux: Φ , RGB parameter, colour chart, maximum recording and indicator
Measuring range	0.1 ... 150,000 lx 0.01 ... 15000 fcd Ev: 5 lx / 0.5 fcd or above in four automatically selected ranges (lx or fcd is switchable)
Spectral range	360 ... 780 nm
Relative spectral sensitivity luminous efficiency V (λ)	Based on CIE standard X (λ), y (λ), and Z (λ), deviation within 6% (f1') of CIE spectral
Cosine correction	Ev: < 3% (f2)
Accuracy	Ev: $\pm 5\% \pm 1$ digit of displayed value Xy: ± 0.003 lx (at 500 lx, standard A) Ev: $\pm 0.5\% \pm 1$ digit (2 σ)
Repeatability	xy: ± 0.0005 (measured at 500 lx, standard A)
Temperature drift	Ev: $\pm 3\% \pm 1$ digit of the indicated value xy: ± 0.003
Response time	0.5 second (for continuous measurement)
Sensor type	Silicon photocell
Interface	USB Slot for SD card
Display	3.2" color LCD
Operating conditions	-10 ... 40°C / 14 ... 104°F <85% RH
Storage conditions	-20 ... 40°C / -4 ... 104°F <85% RH
Power supply	2200-mAh rechargeable lithium-ion battery
Battery life	Min. 12 hours
Dimensions	210 x 80 x 35 mm / 8.2 x 3.1 x 1.37 in
Weight	300 g / < 1 lb including battery



Subject to change without notice

COLOUR MEASUREMENT SPECTROPHOTOMETER

PCE-PSR SERIES

colour coordinates and spectral distributions/ data as csv. and pdf. file

The high-precision Spectrophotometer was developed to perform even the most demanding light measurements with the highest accuracy and reliability. Thanks to a spectral resolution of ± 0.2 nm and a reproducibility of ± 0.5 nm, it provides precise and consistent measurement results. The remarkable accuracy of the chromaticity coordinate (Δx , Δy) of ± 0.005 enables exact colour representation and is

therefore ideal for applications in light and colour analysis.

With a wide illuminance range of 0.1 to 500000 lux and an accuracy of ± 0.1 lux, the Spectrophotometer is suitable for both weak light sources and extremely bright environments.

ISO cal option

- » spectral resolution: ± 0.2 nm
- » reproducibility: ± 0.5 nm
- » accuracy of the chromaticity coordinate (Δx , Δy): ± 0.005
- » correlated colour temperature CCT: 1500 ... 100000 K
- » illuminance range: 0.1 ... 500,000 lx
- » capacitive 5-inch IPS touch screen
- » rechargeable 4000 mAh lithium-ion battery
- » 8 GB internal memory
- » PC software



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data	
Display type	LCD touchscreen
Display size	5 Inch
Display resolution	480 x 854
Storage medium	Internal memory
Storage capacity	8 GB
Memory capacity (additional information)	approx. 5000 data records
Interface	USB, BLE switch
Operating time	20 h
Automatic power-off from...to	2 ... 60 min.
Automatic power-off can be deactivated	Yes
Reproducibility	± 0.5 nm
Colour spaces	CIE1931, CIE1960, CIE1976, SDCM, CRI1, CRI2, TM30 (Distribution of Fidelity), TM30 (Change Distribution), TM30 (Rg/Rf)
Light parameters	CCT (K), Illuminance (lx), Coordinate-x, y, Coordinate-u, v, Coordinate-u', v', PeakWave (nm), CentralWave (nm), DominantWave (nm), CentroidWave (nm), HalfWidth (nm), Darksignal, Peak signal, Purity (%), ntegTime (ms), SDCM, Ra, Ravg, R1-R5, R6-R10, R11-R15, duv, R-ratio (%), G-ratio (%), B-ratio (%), Irradiance (W/m ²), Candela (fc), S/P, CIE1931-X, CIE1931-Y, CIE1931-Z, CQS, Rg, Rf, Transmittance (%)
Menu language	English, Chinese, English (GB)
Protection class (device)	IP56
Power supply	100 ... 240V AC 50/60 Hz
Connector type	Euro plug
Capacity	4000 mAh
Operating conditions	-10 ... 40 °C, 70 % RH
Storage conditions	-20 ... 45 °C, 70 % RH
Dimensions (L x W x H)	160 x 82 x 22 mm
Weight	390 g
Models	
PCE-PSR 100	Wavelength range 380 ... 780 nm
PCE-PSR 200	Wavelength range 380 ... 800 nm
PCE-PSR 300UV	Wavelength range 200 ... 400 nm



COLOUR MEASUREMENT COLORIMETER

PCE-CSM 1

Determines reference values to compare to samples / White and black calibration

The handheld portable digital colorimeter PCE-CSM 1 was developed for quality control and offers a high accuracy. When using the colorimeter, you can choose between different color spaces (CIE L*a*b*C*h, CIE L*a*b* and CIE XYZ). After a measurement with the colorimeter, the reading can be used as a reference value while other readings can be recorded as a sample and later be compared to the reference

value easily. In addition to the individual color space coordinates, the deviation between the reading is also displayed. When using the colorimeter, it is possible to store up to 100 reference values and up to 20,000 samples on the device. The measured data can also be transferred to a PC via the USB interface. A special PC software is included in the package.

ISO cal option

- » CIE L*a*b*C*h, L*a*b* and XYZ
- » automatic white and black calibration
- » determines reference values to compare to samples
- » rechargeable Li-ion battery
- » measuring of different colors
- » suitable for many different surfaces
- » 8°/d geometry diffused illumination integrating sphere system illuminates sample from 8-degree angle
- » easy to use
- » incl. PC software
- » 6 mm sample aperture



APPLICATION



TECHNICAL SPECIFICATIONS

Geometry	8°/d
Aperture	Ø 6 mm
Sensor	Silicon photoelectric diode
Color spaces	CIE L*a*b*C*h, CIE L*a*b, CIE XYZ
Color difference formula	ΔE^*ab , ΔL^*ab , ΔE^*C^*H
Observation Angle	CIE 10°
Light source	D65
Light source device	LED blue light
Errors between each equipment	$\leq 0.80 \Delta E^*ab$
Storage	100 reference values, 20,000 samples
Repeatability	Standard deviation within ΔE^*ab 0.08 Average of 30 measurements of standard white plate
Power supply	Rechargeable lithium-ion battery 3.7 V @ 3200-mAh
Charging time	8 hours
Battery life	Approx. 5,000 measurements
Lamp life	5 years, more than 1.6 million measurements
Storage conditions	Air temperature: 0 ... 40°C / 32 ... 104°F Air humidity: 0 ... 85% RH, non-condensing
Dimensions	205 x 67 x 80 mm / 8.07 x 2.63 x 3.14 in
Weight	500 g / 17.6 oz



Subject to change without notice

COLOUR MEASUREMENT COLORIMETER

PCE-CSM 10

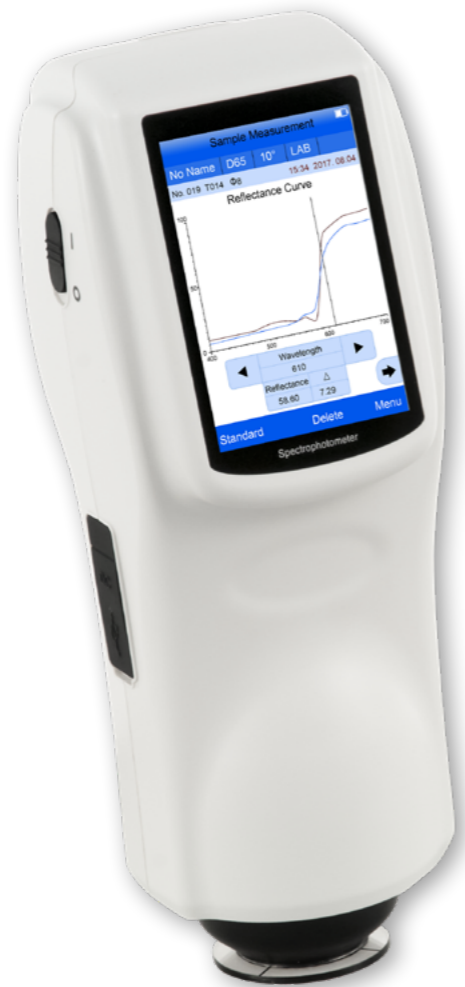
High precision / 3 different color spaces / Determines reference values to compare to samples

The handheld portable digital colorimeter PCE-CSM 1 was developed for quality control and offers a high accuracy. When using the colorimeter, you can choose between different color spaces (CIE L*a*b*C*h, CIE L*a*b* and CIE XYZ). After a measurement with the colorimeter, the reading can be used as a reference value while other readings can be recorded as a sample and later be compared to the reference

value easily. In addition to the individual color space coordinates, the deviation between the reading is also displayed. When using the colorimeter, it is possible to store up to 100 reference values and up to 20,000 samples on the device. The measured data can also be transferred to a PC via the USB interface. A special PC software is included in the package.

ISO cal option

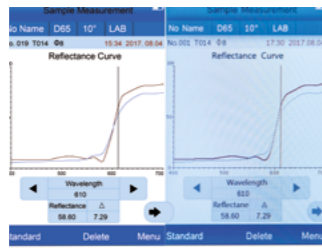
- » CIE L*a*b*C*h, L*a*b* and XYZ
- » automatic white and black calibration
- » determines reference values to compare to samples
- » rechargeable Li-ion battery
- » measuring of different colors
- » suitable for many different surfaces
- » 8°/d geometry diffused illumination integrating sphere system illuminates sample from 8-degree angle
- » easy to use
- » incl. PC software
- » 6 mm sample aperture



TECHNICAL SPECIFICATIONS

Geometry	8°/d
Aperture	Ø 6 mm
Sensor	Silicon photoelectric diode
Color spaces	CIE L*a*b*C*h, CIE L*a*b, CIE XYZ
Color difference formula	ΔE^*ab , ΔL^*ab , ΔE^*C^*H
Observation Angle	CIE 10°
Light source	D65
Light source device	LED blue light
Errors between each equipment	$\leq 0.80 \Delta E^*ab$
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Repeatability	Standard deviation within ΔE^*ab 0.08 Average of 30 measurements of standard white plate
Power supply	Rechargeable lithium-ion battery 3.7 V @ 3200-mAh
Charging time	8 hours
Battery life	Approx. 5,000 measurements
Lamp life	5 years, more than 1.6 million measurements
Storage conditions	Air temperature: 0 ... 40°C / 32 ... 104°F Air humidity: 0 ... 85% RH, non-condensing
Dimensions	205 x 67 x 80 mm / 8.07 x 2.63 x 3.14 in
Weight	500 g / 17.6 oz

APPLICATION



Subject to change without notice

SURFACE TESTING GLOSS METER

PCE-GM 60PLUS

Measurement up to 200 gloss points / Measuring range 0 ... 200 GU

The gloss tester PCE-GM 60Plus is a measuring device for the determination of gloss on different materials. During the measurement, the gloss tester picks up the reflection of emitted light. The light is emitted directly by the gloss tester. Part of the light is then reflected off the surface to be measured and part of the light is absorbed by the surface. Thanks to the reflected light, the gloss tester then calcu-

lates the degree of gloss and displays it clearly on the TFT display. The gloss tester is used in areas where it is essential that individual products always have the same appearance and texture and properties. In this way, complaints and associated costs are avoided.

ISO cal option

- » 60° measuring geometry
- » 3.5" TFT touchscreen display
- » built-in rechargeable battery
- » quick 0.5 second measuring time
- » 0 ... 200 GU gloss measurement range
- » measuring accuracy ± 1.5 GU
- » self-calibration possible using included calibration plate
- » chromaticity fulfills CIE 1931 2° under a CIE illuminant C
- » light source: D65
- » wave length: 400-700 nm



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring geometry	60°
Display	3.5" TFT touchscreen display
Standards	ISO 2813 GB/T 9754 ASTM D523 ASTM D2457
Measuring aperture	10 x 25 mm / 0.4 x 1.0 in
Measuring range	0 ... 200 GU
Readability	1 GU
Repeatability	± 1 GU
Reproducibility	± 1 GU
Chromaticity	Fulfills CIE 1931 2° under a CIE illuminant C
Measuring accuracy	$\pm 1.5 / \pm 1.5\%$
Measuring time	0.5 second
Dimensions	160 x 75 x 90 mm / 6.3 x 3 x 3.5 in
Weight	350 g / 0.78 lb
Menu languages	English, Chinese
Power supply	3200-mAh Li-ion rechargeable battery
Data interface	USB / RS-232
Operating temperature	0 ... 40°C / 32 ... 104°F
Storage temperature	-20 ... 50°C / -4 ... 122°F
Relative humidity	< 85% RH (non-condensing)



Subject to change without notice

SURFACE TESTING GLOSS METER

PCE-PGM 100

Measuring geometry: 20°, 60°, 85° / Internal memory for readings

The PCE-PGM 100 gloss meter works with measuring geometries of 20°, 60° and 85°, using the reflection principle. This means that the gloss meter emits light which hits the surface to be tested. A part of the light will be absorbed by the surface and another part will be reflected. After this, the gloss meter will calculate the degree of gloss. The wide measurement range allows the user to test many different

surfaces. These features make the gloss degree meter very useful for gloss measurements in quality and incoming goods control. The included software makes later evaluation of the measured data easily possible.

ISO cal option

- » various measuring geometries
- » 3.5" TFT
- » internal measurement value storage
- » calibration plate included in the delivery content
- » short measuring time
- » evaluation software light source: D65
- » wave length: 400-700 nm



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement geometry	20° / 60° / 85°
Display	3.5 in TFT touch display
Standards	ISO 2813 GB/T 9754 ASTM D 523 ASTM D 2457
Measuring surface	20° : 10 x 10 mm / .4 x .4 in 60° : 9 x 15 mm / .4 x .6 in 85° : 5 x 36 mm / .2 x 1.4 in
Measuring range	20° : 0 ... 1000 GU 60° : 0 ... 1000 GU 85° : 0 ... 160 GU
Readability	0.1 GU
Repeatability	Meas. range 0 ... 10 GU: ±0.1 GU Meas. range 10 ... 100 GU: ±0.2 GU Meas. range 100 ... 1000 GU: ±0.2 GU (%)
Reproducibility	Meas. range 0 ... 10 GU: ±0.2 GU Meas. range 10 ... 100 GU: ±0.5 GU Meas. range 100 ... 1000 GU: ±0.5 GU (%)
Chromaticity	Fulfills CIE 1931 (2°) under a CIE C - light source Measurement accuracy ±1.5 / ±1.5%
Measuring time	0.1 second
Dimensions	160 x 75 x 90 mm / 6.3 x 3 x 3.5 in
Weight	350 g / < 1 lb
Menu language	English, Chinese
Power supply	3200-mAh Li-ion rechargeable battery
Interface	USB / RS-232
Measuring storage	Baseline measurement: 1000
Operating temperature	0 ... 40°C / 32 ... 104°F
Storage temperature	-20 ... 50°C / -4 ... 122°F
Relative humidity	< 85% rel. humidity (non-condensing)

Further models

PCE-PGM 60	Measurement geometry:	60°
	Measuring surface:	9 x 15 mm / .4 x .6 in
	Measuring range:	0 ... 300 GU
	Measuring time:	0.5 second



Subject to change without notice

SURFACE TESTING ROUGHNESS TESTER

PCE-RT 2300

Rapid detection of roughness Ra, Rz, Rq, Rt

The roughness tester PCE-RT 2300 is used to measure the roughness of surfaces. The PCE-RT 2300 roughness meter has a removable motorized sensor. This property makes it possible to determine the surface roughness with the roughness tester even on small or narrow profiles. The measured values are displayed on a large LCD display of the roughness meter. This display is also used by the roughness

tester. The roughness tester is powered by an internal battery with voltage. This battery can be powered by a conventional USB power adapter. The detachable motorized sensor is connected by a cable to the main unit of the roughness gauge. The diamond stylus is installed in the motorized sensor.

ISO cal option

- » touchscreen interface and PC connection
- » measurement of all roughness profile values
- » battery and mains operation
- » different filters adjustable
- » diamond test head
- » removable motorized sensor
- » large measuring range: Rz: 0.02 μm ... 320 μm ; Ra, Rq: 0.005 μm ... 32 μm



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	Rz: 0.02 μm ... 320 μm ; Ra, Rq: 0.005 μm ... 32 μm , Rz = 320 μm (-160 μm -160 μm) / 12600 μin (-6300 μin -+6300 μin)
Accuracy	$\pm 10\%$
Repeatability	$\pm 6\%$
Resolution	$\pm 20 \mu\text{m}$: 0.01 μm $\pm 40 \mu\text{m}$: 0.02 μm $\pm 80 \mu\text{m}$: 0.04 μm
Measurement Parameters	Ra, Rz, Rq, Rt, Rc, Rp, Rv, R3z, R3y, Rz (JIS), Ry, Rs, Rsk, Rku, Rmax, Rsm, Rmr, R _{Pc} , Rk, Rpk, Rvk, Mr1, Mr2
Measurement Standards	ISO4287, ANSI b46.1, DIN4768, JISb601
Graphic	Primary profile (roughness + waviaviness) Roughness profile (roughness) Loading curves
Measuring filter	RC, PC-RC, Gaus, DP
Measuring section (Cut Off)	0.25 mm, 0.8 mm, 2.5 mm
Measuring length	1 ... 5* measuring path Max. 17.5 mm (including pre- and post-run) Diamond probe tip 90° cone angle
Sensor	5 μm
Contact force sensor	<4 mN
Feed rate	0.25 mm: 0.135 mm / s 0.8 mm: 0.5 mm / s 2.5 mm: 1 mm / s
Display	3.5" LCD screen 3.7V Li-Ion Battery
Power supply	5V / 800-mA USB Power Adapter
Operating time	50 h
Operating conditions	-20 ... 40°C / -4 ... 104°F, max. 90% rh
Storage conditions	-40 ... 60°C / -40 ... 140°F, max. 90% rh
Dimensions	Main unit: 158 x 55 x 52 mm / 6.2 x 2.2 x 2 in Motor unit: 115 x 23 x 27 mm / 4.5 x 1 x 1.1 in
Weight	About 500 g / 1.1 lbs
Optional accessoires	
PCE-ER-55	Extending
PCE-RP-100	Spare Sensor
PCE-RP-110	Sensor for curves Surfaces
PCE-RP-120	for Holes
PCE-RP-131	Sensor for Grooves



Subject to change without notice

ROUGHNESS MEASUREMENT

ROUGHNESS TESTER

PCE-RT 1200

For fast detection of Ra, Rz, Rq and Rt

The Profilometer - Roughness Tester PCE-RT 1200 is used to determine surface roughness. The profilometer is a handheld device for mobile use. Due to the power supply via a powerful battery, it can be used directly on site. The profilometer is used in the laboratory, in production and everywhere where the roughness of surfaces is to be determined. The measured values are displayed on the clear

and user-friendly OLED display directly on the measuring device. In addition, the profilometer has a storage option for up to 20 measured values, which can later be read out via the micro USB interface. For this purpose, the measurement software can be used, and a USB cable is included in the delivery.

ISO cal option

- » very compact
- » easy to handle
- » a large OLED display
- » 4 measurable parameters of roughness
- » the probe of the roughness meter consists of a high-quality diamond
- » the display of the roughness meter outputs the measured values in tabular form
- » the measured values can also be output by the roughness meter as a graph
- » a micro-USB interface for online data transmission to a PC



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement parameters	Ra, Rz, Rq, Rt
Measuring ranges	Ra, Rq: 0.005 ... 16.00 µm / 0.197 ... 629.921 µin Rz, Rt: 0.002 ... 200.0 µm / 0.079 ... 7874.016 µin
Radius probe tip	5 µm / 196.850 µin
Material probe tip	Diamond, 90° angled
Max. recommended force for static measurement	4 mN (0.4 gf)
Radius longitudinal guide bar	45 mm / 1.77"
Standards	ANSI B46.1 / ASME B46.1 (DIN EN ISO 4287)
Maximum driving distance	15 mm / 0.59"
Measuring principle	Inductive
Cut-off wavelength	0.25 mm / 0.8 mm / 2.5 mm / 0.009" / 0.03" / 0.098"
Testing speed	0.135 mm/s at cut-off wavelength: 0.25 mm 0.5 mm/s at cut-off wavelength: 0.8 mm 1 mm/s at cut-off wavelength: 2.5 mm Reversing speed: 1 mm/s
Measuring accuracy	< ± 10%
Repeatability	< 6%
Display	OLED
Units	µm / µinch (switchable)
Interface	Micro-USB
Power supply	Rechargeable Li-ion battery
Dimensions L x W x H	150 x 60 x 43 mm / 5.9 x 2.36 x 1.69 in
Weight	370 g / < 1 lb

Optional Accessories

PCE-RT2000	Teststand
PCE-RT2000-RP200	
PCE-RT2000-RP131	Groove Sensor
PCE-RT2000-RP110	Curvature Sensor

Further Models:

PCE-RT 1200BT	with Bluetooth
PCE-RT 2000	Measurement parameters Ra, Rq, Rsm, Rsk, Rz, Rt, Rp, Rv, Rc
	Measuring ranges Ra, Rq, Rc: 0,005 µm ... 16 µm
PCE-RT 2000BT	with Bluetooth
PCE-RT 2200	21 Mess-Parameter: Ra, Rq, Rsm, Rsk, Rz, Rt, Rp, Rv, Rc, Rmax, Ry(JIS), Rz(JIS), RP(ASME), Rpm(ASME),



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OPTICAL INSPECTION INDUSTRIAL BORESCOPE

PCE-VE 200 SERIES

Videoboreoscope for NDT machine diagnostics / Ø 4.5 mm or Ø 3.7 mm

The video borescope PCE-VE 200 is a nondestructive inspection camera. Thus, the video borescope is an ideal tool for diagnosing hard-to-reach areas.

For example, the areas of mechanical engineering, plumbing and heating, and the entire construction / building industry are among the main application fields of the video borescope. Also, the video

boreoscope is suitable for the use in the automotive industry. The fact that it has a one-meter camera tube makes it possible to use the video borescope in a way that in many cases no disassembly of machines or motors is necessary. There are bright LEDs on the camera head that can be controlled and adjusted by the user via the device.

ISO cal option

- » 4.5, 3.7 and 10 mm cable diameter
- » 3.5" display
- » brightness adjustable on the camera head
- » 2600 mAh battery
- » SD card slot for micro SD card



APPLICATION



TECHNICAL SPECIFICATIONS

Display	3.5" LCD
Resolution	video function AVI (640 x 480) image function JPEG (1600 x 1200)
Image rotation	180 ° rotation and mirror function
Freeze-function	yes
Zoom	up to 4 x
Memory	Micro SD card
Menu languages	German, English, Spanish, French, Russian, Japanese, simplified Chinese, traditional Chinese
Interfaces	Micro USB 2.0, TV output, Micro SD card slot
TV output	PAL
Power supply	Li-Ion battery
Battery capacity	2600 mAh
Operating conditions	-10 ... +40 °C, RH <75 %

Cable specifications (only for PCE-VE 200 and PCE-VE 200-S)

Cable diameter	depends on the model 4.5 mm / 0.177 in (PCE-VE 200), 3.7 mm / 0.14 in (PCE-VE 200-S)
Image sensor	1/8" CMOS chip
Resolution camera	640 x 480 pixels
Illumination of the cam.	6 white LEDs (intensity can be adjusted)
Field of view or angle	90 °
Field of view depth	15 mm / 0.59 in... 100 mm / 3.93 in
Camera tube length	1 m
Push-cable	semi-flexible (semi-rigid spiral)

Operating temperature:

Main unit / probe	in the air:	-10 ... +50 °C / +14 ... +122 °F
	in water:	+5 ... +50 °C / +41... +122 °F
Relative humidity	probe and device	15 ... 90 %
Fluid resistance	probe / device	machine / light oil, saline solution 5 %
Intrusion protection	probe	water, oil, dust, protection IP67
	Main unit	rain in windy weather (battery compartment must be closed) not under
	water	

Model	Cable diameter	Cable length
PCE-VE 200	4,5 mm	1 m
PCE-VE 200-S	3,7 mm	1 m
PCE-VE 200-S3	3,7 mm	3 m

Optional accessories:

PCE-VE 200-SCSV3	Camera cable with front and side, camera 9 mm, length: 3 m
PCE-VE 200-SCSV1	Camera cable with front and side, camera 9 mm, length: 1 m
PCE-VE 200-SCSV2	Camera cable with front and side, camera 6 mm, length: 1 m
PCE-VE 200-SCS3	Camera cable 3.7 mm, length: 3 m
PCE-VE 200-SCS1	Camera cable 3.7 mm, length: 1 m
PCE-VE 200-SC	Spare camera cable 4,5 mm, length: 1 m



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 100N4

Multiway inspection camera with photo and video recording

The multiway inspection camera with a cable length of one meter and a camera head diameter of 6 mm is the ideal tool for endoscopy. The LED illuminance on the camera head can be set in 5 steps up to 25,000 lux. This ensures that the test item is adequately illuminated. With the mini-HDMI interface on the multiway videoscope, the image can be transmitted to an external monitor or projector. This has the

particular advantage that the multiway videoscope can be used for presentations. Thus, the multiway videoscope is used in car workshops, heating and air conditioning technology, or vocational schools, universities and other educational facilities.

ISO cal option

- » multiway 360° rotation head
- » rechargeable via USB interface
- » 3.5" display
- » operating time of more than 3 hours
- » mini-HDMI interface for image output
- » braided tungsten tube with a length of 1 m / 3 ft 2"



APPLICATION



TECHNICAL SPECIFICATIONS

Camera diameter	6 mm / 0.23"
Cable length	1 m / 3 ft 2"
Camera pixels	1,000,000
Depth of field	7 ... 110 mm / 0.27 ... 4.33"
Field of view	120°
Swivel range	360°
Illuminance	can be set in five levels up to 25,000 lx
Cable material	Tungsten braided
Bending radius	>220°
Display	3.5" IPS
Display resolution	640 x 480
Photo and video format	JPG / MP4
Photo and video resolution	960 x 720, 1280 x 720
Magnification	5-times
Protection class	camera cable: IP67 display: IP65
Memory	16 GB Micro-SD card
Battery power supply	1 x 3.7 V 3200 mAh 18650 battery
Power consumption	3.5 W
Operating time	>3 hours
Mains power supply	primary: 100 ... 240 V AC, 50 ... 60 Hz, 0.35 A secondary: 5 V DC, 2 A
Interfaces	Mini-HDMI (image transmission) Micro-USB connector (charging port)
Storage conditions	-10 ... +63 °C / 14 ... 145 °F, <92 % RH, non-condensing
Operating conditions display*	-10 ... +50 °C / 14 ... 122 °F, <92 % RH, non-condensing
Operating conditions camera*	-10 ... +80 °C / 14 ... 176 °F, <92 % RH, non-condensing
*at temperatures below 0 °C / 32 °F the display must be preheated and the camera head must not be swivelled completely	
Dimensions	277 x 106 x 92 mm / 10.9 x 4.1 x 3.6"
Weight	ca. 500 g / 17.6 oz



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 100N4

Movable camera probe / Integrated microphone in the device

This state-of-the-art video Inspection Camera is the essential tool for all professional visual inspections and detailed inspections in hard-to-reach places. It combines an extremely slim design with advanced recording functions to guarantee you maximum precision. The centerpiece of the inspection system is the camera probe, which is only 6.2 mm / 0.24 in in size and has flexible 2-way articulation.

This swiveling function enables precise control of the tip of the Inspection Camera in two directions to inspect hidden angles and side walls with ease. To ensure an excellent view, six bright LEDs are integrated into the camera probe, the brightness of which can be individually adjusted to optimally adapt the illumination to the respective environment.



ISO cal option

- » 2-way camera probe Ø6.2 mm / 0.24 in
- » image and video recording
- » max. resolution 1920 x 1080
- » 32 GB micro SD card
- » integrated microphone in the device

APPLICATION



TECHNICAL SPECIFICATIONS

Type of cable	semi-rigid
Cable length	1 m
Display type	IPS
Display size	4,3 Inch
Display resolution	480 x 272 pixels
Storage medium	Micro SD card
Storage capacity	32 GB
Interface	USB-C
Camera resolution	JPG: 640x480 / 1280x720 / 1920x1080
Operating time	4 h
Camera head diameter	6,2 mm
Camera probe length	60 mm
Camera probe material	Metal
Camera probe movement	2-way
Protection class camera probe	IP67
Field of vision	90 °
Depth of field of vision	15 ... 100 mm
Bending angle	210 °
Bending radius	30 mm
Image / video format	JPG
Menu language	German, English (GB), English, Chinese, Japanese, Russian, French, Polish, Spanish, Italian
Protection class (device)	IP42
Power supply (Rechargeable) battery	5V DC (USB-C)
Capacity	1 x 3,7 V internal , Lithium-ion battery
Operating conditions	2200 mAh
Storage conditions	-10 ... 50 °C , 0 ... 90 % RH
Dimensions (L x W x H)	-10 ... 50 °C , 0 ... 90 % RH
Weight	225 x 125 x 50 mm
	431 g



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 300N

Movable camera probe / Integrated microphone in the device / 6 bright LEDs

This state-of-the-art video Inspection Camera is the essential tool for all professional visual inspections and detailed inspections in hard-to-reach places. It combines an extremely slim design with advanced recording functions to guarantee you maximum precision. The centerpiece of the inspection system is the camera probe, which is only 6.2 mm / 0.24 in in size and has flexible 2-way articulation.

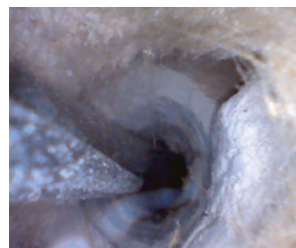
This swiveling function enables precise control of the tip of the video Inspection Camera in two directions to inspect hidden angles and side walls with ease. To ensure an excellent view, six bright LEDs are integrated into the camera probe, the brightness of which can be individually adjusted to optimally adapt the illumination to the respective environment.

ISO cal option

- » 2-way camera probe Ø6.2 mm / 0.24 in
- » image and video recording
- » max. resolution 1920 x 1080
- » 32 GB micro SD card
- » integrated microphone in the device



APPLICATION



TECHNICAL SPECIFICATIONS

Type of cable	semi-rigid
Cable length	3 m
Display type	IPS
Display size	4,3 Inch
Display resolution	480 x 272 pixels
Storage medium	Micro SD card
Storage capacity	32 GB
Interface	USB-C
Camera resolution	JPG: 640x480 / 1280x720 / 1920x1080
Operating time	4 h
Camera head diameter	6,2 mm
Camera probe length	60 mm
Camera probe material	Metal
Camera probe movement	2-way
Protection class camera probe	IP67
Field of vision	90 °
Depth of field of vision	15 ... 100 mm
Bending angle	210 °
Bending radius	30 mm
Image / video format	JPG
Menu language	German, English (GB), English, Chinese, Japanese, Russian, French, Polish, Spanish, Italian
Protection class (device)	IP42
Power supply	5V DC (USB-C)
(Rechargeable) battery	1 x 3,7 V internal , Lithium-ion battery
Capacity	2200 mAh
Operating conditions	-10 ... 50 °C , 0 ... 90 % RH
Storage conditions	-10 ... 50 °C , 0 ... 90 % RH
Dimensions (L x W x H)	225 x 125 x 50 mm
Weight	431 g



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 800N4

4-way camera head / data storage / diameter 2.8 mm

The inspection camera has a 1.5 m / 4.9 ft long borescope cable. With a diameter of only 2.8 mm, cavities with the smallest access can be viewed with the help of this inspection camera. The camera head of the inspection camera can move freely in 4 directions. Especially in the maintenance of engines, turbines, etc., the high-resolution display of the inspection camera offers a good view of cavities and hard-to-

reach places. The moveable camera has a resolution of 400 x 400 pixels. The field of view is 80°, which means that with a relatively short distance to the object to be inspected, very large images can still be taken with the inspection camera. All recordings of the inspection camera can be saved as an image or video.

ISO cal option

- » 2.8 mm camera head
- » 1.5 m / 4.9 ft borescope cable
- » 4-way camera
- » 5" monitor
- » image and video memory
- » IP 58 camera cable
- » 400 x 400 pixel image resolution
- » 5 ... 50 mm focus distance



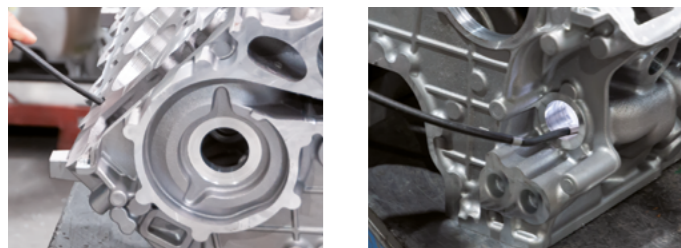
TECHNICAL SPECIFICATIONS

Cable / head diameter	2.8 mm
Direction of movement camera head	4-way
Length of camera head	8 mm
Bending radius	7 mm
Camera head material	Titanium alloy
Camera lens material	Glass
Perspective	80 °
Line of sight	0 °
Focus area	5 ... 50 mm
Image sensor	1/18" color
Trigger	160000 pixels
Refresh rate	30 Hz
Borescope cable length	1.5 m / 4.9 ft
Borescope cable material	Tungsten
Degree of protection borescope cable	IP 58
Operating conditions	Main unit: 0 ... 45 °C / 32 ... 113 °F, 15 ... 90 % RH Cable: 0 ... 60 °C / 32 ... 140 °F
Display	LCD 5" 16:9 display
Interface	Micro USB
Video output	HDMI
Memory	SDHC memory card up to 64 GB
Power supply	Li-Ion battery 3550 mAh 5 V power supply
Dimensions	33.5 x 14.5 x 8 cm
Weight	Approx. 700 g / 1.5 lbs

Further models:

PCE-VE 400N4	ø 4 mm
PCE-VE 900N4	ø 2 mm

APPLICATION



PCE-VE 400N4



PCE-VE 800N4



PCE-VE 900N4



Subject to change without notice

OPTICAL INSPECTION INDUSTRIAL BORESCOPE

PCE-VE 250

With cleaning function / 4x optical zoom / Camera head diameter 8.5 mm (0.33 in)

The Industrial Borescope PCE-VE 250 is a diagnostic tool with integrated cleaning function. This makes the industrial borescope ideal for use on machine components. The cleaning can be done either with compressed air or compressed air in conjunction with water and or detergents. The nozzle for the water and air is located directly next to the camera head of the digital endoscope, allowing very precise

work. Another advantage is that the camera head has a light, so that an exact estimation of the point to be cleaned can be made. The approximately 90 cm / 2ft 11 in long endoscope cable offers semi-flexible properties that allow the cable to be inserted into openings. The cleaning takes place via a trigger. Cleaning can be done with water or detergent.

ISO cal option

- » 8.5 mm / 0.33 in camera head diameter
- » 3.5" display
- » Adjustable illumination brightness
- » Cleaning function
- » 4 h battery life in continuous operation
- » Cable length ca. 90cm / 2ft 11 in
- » Memory option on Micro SD card
- » Image rotation and reflection on the display



APPLICATION



TECHNICAL SPECIFICATIONS

Main unit

Display	3.5" TFT LCD
Resolution video function	AVI (640 x 480)
Resolution image function	JPEG (640 x 480)
Image rotation	360° rotation und mirror function
Freeze function	yes
Zoom	4-fold, digital
Storage medium	Micro SD card (4 GB)
Menu languages	German English Spanish French Russian Japanese simplified Chinese traditional Chinese

Interfaces

TV output	Micro USB 2.0, TV output, Micro SD card slot
Power supply	PAL
Typical battery life per battery charge	Li-ion battery (2600-mAh) 4 hours in continuous operation
Protection class	Splashproof

Endoscope cable

Camera head diameter	8.5 mm / 0.33 in
Cable diameter	4.5 mm / 0.18 in
Cable length	ca. 90 cm / 2ft 11 in
Camera resolution	720 x 576 Pixel
Camera lighting	6 white LEDs (adjustable intensity)
Field of view / angle of view	60°
Field of view depth	30 ... 60 mm / 1.18 ... 2.36 in
Push cable	semi-flexible

Environmental conditions of digital endoscope PCE-VE 250

Operating temperature probe	In air: -10 ... 50°C / 14 ... 122°F In water: 5 ... 50°C / 41 ... 122°F
Operating temperature main unit	In air: -10 ... 50°C / 14 ... 122°F
Relative humidity probe and main unit	15 ... 90%
Liquid resistance probe and main unit	Machine oil, light oil or saline solution 5%
Probe	Water, oil and dust, to protection class IP67
Main unit	Splash-proof (with closed battery compartment) not usable under water

Optional accessories:

Air Compressor	PCE-ACO 9500
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Further Model:

PCE-VE 250-KIT



Industrial Borescope with compressor



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 270HR

Battery-operated inspection camera with 2.8 mm diameter

The inspection camera gives you new, visual insights into the interior of motors and systems. The inspection camera is the ideal tool for maintenance and repair in workshops or industrial companies. Optical analysis with an inspection camera has never been so easy. Guide the flexible cable through a hole or a cavity near the point to be inspected and look at everything on the display of the inspection camera. Thanks

to the flexible guidance, the low weight and the excellent optics, you can use this inspection camera to identify weak spots and problem areas very easily and early and thus take preventive measures without having to carry out complex disassembly first.

ISO cal option

- » 2 m / 6.56 ft cable length
- » 2.8 mm / 0.11 in cable diameter
- » storage function on micro SD card
- » LED light
- » 0° viewing angle
- » miniature probe cable with 90° viewing angle option



APPLICATION



TECHNICAL SPECIFICATIONS

Cable length	2 m / 6.56 ft
Cable type	Flexible
Cable diameter	2.8 mm / 0.11 in
Protection class	IP 67
Field of view depth	5 ... 50 mm / 0.2 ... 1.98 in
Field of view	120°
Perspective	0°
Lighting	4 LEDs
Exposure	Automatically
Anti-reflection coating	Automatically
Image sensor	1/18" CMOS
Camera resolution / image sensor	400 x 400 px
Display	5" TFT screen
Interface	Micro USB, HDMI
Memory option	Image and video
Memory	Micro SD memory card (incl.)
Picture format	JPEG (400 x 400 Px)
Video format	MP4 (400 x 400 Px)
Video output	HDMI
Menu languages	German, English, Chinese, Spanish, Korean, Portuguese, French, Russian, Japanese,
Operating and storage temperature	-10 ... 50 °C / 14 ... 122 °F
Power supply	3.7 V Li-ion battery, 5200-mAh
Battery life	Min. 6 h
Dimensions	200 x 130 x 58 mm / 7.9 x 5.1 x 2.3 inch
Weight	595 g / 1.3 lb

Optional accessories:

PCE-VE 270HR-PROBE Spare endoscope cable

PCE-VE 270HR-2,1-PROBE Endoscope cable extremely thin

PCE-VE 270HR-SV-PROBE Endoscope cable with lateral camera Korean



Subject to change without notice

OPTICAL INSPECTION INDUSTRIAL BORESCOPE

PCE-VE 1000

A Versatile 2-way Inspection Instrument

The endoscope PCE-VE 1000 is a versatile inspection instrument. Various endoscope cables with different properties can be connected to the endoscope.

A particular advantage of the endoscope is the large display, which due to its dimensions and resolution offers the user the best possible overview of the surface to be inspected. The endoscope allows the

recording of pictures and videos, whereby the videos are additionally stored with an audio recording.

The clear resolution is also good when via button pressing the images are stored on the SD card, inserted in the endoscope. When the SD card is read out on the computer, the recorded pictures and videos are clearly displayed.

ISO cal option

- » various endoscope cables are selectable and are optionally available
- » storage of images and videos
- » 8 GB memory card incl.
- » LED lighting
- » large 7" LC display



APPLICATION



TECHNICAL SPECIFICATIONS

Screen	7"
LCD	800 x 480 pixels
Photo resolution / format	640 x 480 pixels / JPEG
Video resolution / format	640 x 480 pixels / MPEG(with sound)
Drop test	1 m / 3.3 ft fall
Power supply	Li - on battery
Interface	USB
Memory	Accommodates SD cards up to 32 GB
AV output	NTSC / PAL
Audio input	Built - in microphone
Brightness setting	Adjustable, 10 levels
Run time per battery charge	5 hours
Charging time battery	3 hours
Charging temperature	10 ... 40 °C / 50 ... 104 °F
Operating temperature	0 ... 60 °C / 32 ... 140 °F
Storage temperature	0 ... 60 °C / 32 ... 140 °F
Protection class	IP 57
Dimensions	240 x 154 x 47 mm / 9.4 x 6 x 1.8 in
Weight	1.3 kg / 2.9 lbs

Optional accessories:

Two-Way Articulating Camera Cable	PCE-VE-2W3-HR
Four-Way Articulating Camera Cable	PCE-VE-4W3-HR
Four-Way Articulating Camera Cable	PCE-VE-4W1-HR
Two-in-One Semi-Flexible Camera Cable	PCE-VE-2in1-N
Semi-rigid borescope cable HighRes	PCE-VE-N-SC1-HR
Semi-Flexible Camera Cable	PCE-VE-N-SC2
Semi-Flexible Camera Cable	PCE-VE-N-SC1
Semi-Flexible Camera Cable	PCE-VE-N-SC30
Flexible Camera Cable	PCE-VE-N-SC10
Flexible Borescope Cable	PCE-VE-N-SC2F
Camera probe	PCE-IVE 300-PROBE
Waterproof Camera Cable	PCE-VE 380N-SC30
Semi-Flexible Camera Cables	PCE-VE-N-SCS
Magnetic Hook Attachment	MAG-H-VE-N
Guide Ball	GB-25-PCE-VE-N
Guide Ball	GB-15-PCE-VE-N
Cable Holder	HT-55-PCE-VE
Centering brush	PCE-VE-CB
Surveying Software	SOFT-M-VE-N



PCE-VE-2W3-HR



PCE-VE-N-SC2F



PCE-IVE 300-PROBE



PCE-VE-N-SC1-HR



Subject to change without notice

OPTICAL INSPECTION INSPECTION CAMERA

PCE-VE 1500 SERIES

4-way camera head with electric motors / diameter Ø 2.2 ... 6 mm

The 4-way system makes it possible to move the camera head in a 190° bending radius. The viewing angle is 120°. Control is via a joystick that drives the electric motors on the endoscope camera. Thanks to the particularly narrow camera head with a diameter between 2.2 ... 6 mm, the endoscope camera can be used for endoscopy in, for example, engines, fire-

arms, boreholes and other narrow openings. This means that the endoscope camera can be used to quickly and easily inspect weld seams, wear and damage in order to make quick diagnoses. The touch screen of the industrial endoscope has a size of 7".

ISO cal option

- » 4-way camera head with electric motors
- » 7" touch screen for easy operation
- » exchangeable battery with status display
- » recording storage on SD card
- » motor with endoscope cable can be changed quickly
- » HDMI connection for image transmission
- » brightness adjustable in 5 steps
- » 120° viewing angle and 190° bending radius



APPLICATION



TECHNICAL SPECIFICATIONS

Camera direction	90 °	Model	Diameter	Cable length
Resolution	160.000 Pixel	PCE-VE 1500-60200	6 mm	2 m
Focusing range	5 ... 50 mm	PCE-VE 1500-60500	6 mm	5 m
		PCE-VE 1500-38200	3,8 mm	2 m
		PCE-VE 1500-28200	2,8 mm	2 m
		PCE-VE 1500-22190	2,2 mm	1 m
		PCE-VE 1500-38209	3,8 mm	2 m
Further specifications				
Camera head material	titanium alloy			
Material camera hose	braided tungsten			
Material camera lens	glass			
Field of view	120 °			
Illuminance	50.000 lux			
Bending direction	360 ° (4-way camera head)			
Bending angle	190 °			
Display	7" LCD touch screen			
Display resolution	1920 x 1200 pixels			
Image format	JPG			
Video format	MP4			
Image resolution	1280 x 720 pixels			
Video resolution	1280 x 720 pixels			
Digital magnification	8 x			
Memory (internal)	16 GB			
Memory (external)	expandable up to 128 GB for approx. 285,000 images or 1500 minutes of video recording			
Interface	mini HDMI, USB-A, USB-C (for data transfer only), audio interface, WiFi			
Power consumption (endoscope)	10 W			
Operating time	>3 hours			
Akku	7,4 V (4 x 18650), 6400 mAh, removable			
Akku (charging)	12 VDC, 3 A			
Power supply	primary: 100 ... 240 VAC 50/60 Hz, 1,5 A secondary: USB-C (PD) maximum 65 W 5 VDC, 3 A 9 VDC, 3 A 12 VDC, 3 A 15 VDC, 3 A 20 VDC, 3,25 A PPS1: 3.6 ... 11 VDC, 3 A PPS2: 3.6 ... 20 VDC, 3 A			
Operating conditions (handset)	5 ... 50 °C, <92 % r. h., non-condensing			
Operating conditions (endoscope cable)	5 ... 80 °C, <92 % r. h., non-condensing			
Storage conditions	5 ... 63 °C, <92 % r. h., non-condensing			
Dimensions	366 x 194 x 137 mm			
Weight	hand-held unit: 1017 g endoscope cable with electric motor: approx. 600 g battery 550 g			



Subject to change without notice

OPTICAL INSPECTION WIFI INDUSTRIAL BORESCOPE

PCE-WVE 100

WiFi Industrial Borescope for use with iOS and Android devices / 4-Way Camera Head

The WiFi industrial borescope with the 4-way camera head is a versatile tool for visual inspection and image capture in hard-to-reach areas. With a flexible cable length of 1 meter, the borescope provides the necessary reach to penetrate tight spaces and capture accurate images. The borescope's image transmission is done wirelessly via WiFi, allowing easy and convenient connection to iOS and Android

devices. Using the corresponding app, you can control functions of the borescope, view live images, and record videos. This makes inspection and documentation of hard-to-reach areas extremely efficient. The app for the WiFi endoscope also offers the option to store images and videos directly on your mobile device.

ISO cal option

- » 4-Way Camera Head
- » flexible 1 m Cable Length
- » image Transmission via WiFi
- » iOS and Android App
- » storage for Image and Video via App
- » 6 Dimmable LEDs on the Camera Head



APPLICATION



TECHNICAL SPECIFICATIONS

Probe Length	100 cm / 39.3 inch
Probe Material	Tungsten braided
Probe Movement	4-Way
Probe Protection Class	IP67
Camera Head Diameter	6.5 mm / 0.25 inch
Camera Resolution	1280 x 720 pixels
Field of View	75°
Field of View Depth	4 ... 8 cm / 1.5 ... 3.1 inch
Bending Radius	60 mm / 2.3
Menu Language	Spanish, French, English
Protection Class (Device)	IP54
Power Supply	Power supply, Battery
Weight	415 g / 0.9 pf
Device Weight with Accessories	1495 g / 3.2 pf
Device Weight with Accessories and Packaging	1695 g / 3.7 pf
Dimensions (L x W x H)	180 x 84 x 130 mm / 7.0 x 3.3 x 5.1 inch
Operating Conditions	0 ... 50 °C, 15 ... 90% r.H
Storage Conditions	-20 ... 60 °C, 15 ... 90% r.H



Subject to change without notice

OPTICAL INSPECTION RIGID INDUSTRIAL BORESCOPE

PCE-RS 40

Working length of 175 or 432 mm (6.9 or 17 in) / Diameter only 4 mm

Rigid borescope for visual inspection in small and narrow holes and cavities. With a diameter of 4 mm and a length of 175 or 432 mm / 6.9 or 17 in, this rigid borescope is very versatile. The integrated LED lamp allows for a very good illumination of cavities to be inspected. For image transmission, this rigid borescope uses a lens system with a field of view of 45°. The rigid borescope is robust and designed for

industrial environments. This rigid borescope provides very high resolution images with high sharpness. A mirror attachment is available as an option on this rigid borescope. The rigid borescope is very well suited for inspections of small objects.

ISO cal option

- » diameter only 4 mm / 0.16 in
- » LED bulbs
- » working length 175 or 432 mm / 6.9 or 17 in
- » extremely robust
- » high resolution
- » battery operation



APPLICATION



TECHNICAL SPECIFICATIONS

Effective length	175 or 432 mm / 6.9 or 17 in depending on model
Diameter	4 mm / 0.16 in
Field of view	45 °
Lighting	LED
Power supply	3.7 V Li-Ion battery (rechargeable)

Optional accessories:

Mirror for Rigid Borescope	Order no.:	ES-45-RS40-175
Mirror for Rigid Borescope	Order no.:	ES-45-RS40-432

Further model:

PCE-RS 27	Effective length	175 mm
	Diameter	2,7 mm

Optional accessories:

Mirror ES-45-RS 27 for endoscope	Order no.:	ES-45-RS 27
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Subject to change without notice

OPTICAL INSPECTION INDUSTRIAL BORESCOPE

PCE-PIC 20

Inspection camera with 20 m (66 ft) push cable

The inspection camera of the PCE-PIC series is an ideal tool for any service technician who needs to visually inspect pipes and ducts. The inspection camera has a 23 mm / 0.9 in camera head, which is attached to a fiberglass push cable. The inspection camera is optimally suited for pipes and ducts DN 40 ... 150 mm / 1.6 ... 5.9 in. The camera of the inspection camera is waterproof up to 20 m / 66 ft. To facilitate the

search for damaged areas on canals and pipes, the inspection camera has an electronic meter counter. Recorded pictures and videos can be saved on an SD memory card via the inspection camera. For better documentation, comments can be added to the pictures and videos via the keyboard.

ISO cal option

- » 20 m / 66 ft push cable
- » electronic meter counting
- » 23 mm / 0.9 in camera head
- » keyboard for comment input
- » braked endoscope line
- » 12x LED lighting
- » waterproof up to 20 m / 66 ft
- » IP66 Carrying Case
- » 90° radius of curvature at min. Ø 45 mm



APPLICATION



TECHNICAL SPECIFICATIONS

Cable diameter / head diameter	23 mm / 0.9 in
Cable length	20 m / 66 ft
Sight depth	20 ... 100 cm
Perspective	120°
Lighting	12 x LED (dimnable)
White balance	Automatically
Image sensor	1/3" Sony CCD
	720 x 576 pixels
Display	7" LC display
Interface	USB 2.0
Memory option	Video, photo and sound
Image memory	SD card up to 32 GB
Video output format	PAL 720 x 576 pixels
	NTSC 720 x 488 pixels
Menu navigation	Multilingual:
	German, English, French, Spanish, Italian, Portuguese, Japanese, Chinese, Russian
Length measurement	0 ... 20 m / 0 ... 66 ft
Data entry	By keyboard possible
Operating conditions	-10 ... 50 °C / 14 ... 122 °F, 30 ... 90 % rh
Storage conditions	-20 ... 60 °C / -4 ... 140 °F, 30 ... 90 % rh
Power supply	Power supply 110 V ... 240 V AC / 12 V / 1.2 A DC
	Li-Ion battery 7.4 / 5400-mAh
Protection class	Display: IP 66
	Camera head: waterproof up to 20 m / 66 ft
Dimensions	Complete: 55 x 43.5 x 34.5 cm
	Camera head: 23 x 45 mm / 0.9 x 1.8 in
	(total length: 150 mm / 5.9 in)
Weight	About 13 kg / 28.7 lbs
Further Model:	
PCE-PIC 40	with 40 metre push cabl
Optional accessories	
Self-leveling Camera Head	PCE-PIC-SCH
Camera Head with Transmitter	PCE-PIC-TCH
Locator for videoscope	PCE-VE-LOC



Subject to change without notice

OPTICAL INSPECTION DRAIN INSPECTION CAMERA

PCE-PIC 120

120 m drain inspection camera pipe / Motor focus / Meter counting

The drain camera finds its application whenever the inspection of the drain system, in particular, pipes for wastewater and rainwater, is needed. The design of the drain camera is specifically made in such way so that an operator could move the camera deep into the pipe, due to the push cable, and see the required area, due to the motorized camera head. The camera is positioned on the aluminium trolley,

which makes the application easy and convenient. The cable is long, but since it may be coiled carefully back, there are no problems with the tangles cables which may slow down the work and cause inconvenience. The camera head is movable in both ways, horizontally and vertically which provides a possibility for a full inspection.

ISO cal option

- » 120 m / 393.7 ft drain inspection camera pipe
- » with cable cars
- » large display
- » text input in the picture and video possible
- » motorized camera
- » engine focus
- » locator function
- » ø 9.5 mm fiber optic cable



APPLICATION



TECHNICAL SPECIFICATIONS

Camera head diameter	60 mm / 2.4 in
Head rotation	Horizontal: 360° Vertical: 180°
Cable length	120 m / 393.7 ft
Sight depth	20 ... 100 cm
Perspective	105°
Pipe diameter from / to	80 ... 1200 mm / 3.1 ... 47.2 in
Lighting	4 x LED (dimnable)
White balance	Automatically
Image sensor	1 / 2.9" Sony CCD 1920 x 1080 pixels
Display	10.1" LCD display 1280 x 800 pixels
Interface	USB 2.0 HDMI
Memory option	Video (AVI), Photo (JPEG) and Sound
Image memory	SD card up to 256 GB
Video output format	PAL 1080P, 720P, CVBS NTCS 1080P, 720P, CVBS
Menu navigation	Multilingual
Length measurement	0 ... 120 m / 0 ... 393.7 ft
Data entry	Possible by keyboard
Operating conditions	-10 ... 50°C / 30 ... 90 % rh
Storage conditions	-20 ... 60°C / 30 ... 90 % rh
Power supply	Power supply 110V ... 240V AC / 13.5V / 5 A DC Li Ion battery 12V / 6000-mAh
Protection class	Camera head: IP68
Dimensions	Complete: 87.5 x 97.8 x 40.6 cm Camera head: 60 x 146 mm / 2.4 x 5.7 in (total length: 360 mm / 14.2 in)
Weight	About 35 kg / 77.2 lbs
Further Model:	
PCE-PIC 60	Cable length: 60 m Weight: approx. 20 kg



Subject to change without notice

ELECTRICAL MEASUREMENT CLAMP METER

PCE-DC 25

Current measurement 0 ... 1000 A AC/DC / Electrical tester with Bluetooth interface

The electrical tester has a measuring range of 0... 1000 A AC/DC. The current is measured inductively using the clamp on the measuring device. Live supply lines with a diameter of up to 32 mm (1.2") can be connected to the clamp meter. With the optional Rogowski coil, the measuring range of the clamp meter can be extended to up to 3000 A AC. The clamp meter has sub-functions for current measurement. The

inrush current can be measured with the clamp meter. This is a particularly important function, as motors such as those installed in ventilation systems or hall lighting require a particularly high current when switched on. The electrical tester can be connected to an Android or iOS device via the Bluetooth interface.

ISO cal option

- » measuring range 0 ... 1000 A AC/DC
- » bluetooth interface
- » inrush current measurement
- » not Connected Voltage function
- » LC colour display
- » optionally with ISO certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Storage space	16 groups with a total storage space of 100,000 measured values	Resolution	0.1 V
Clamp diameter horizontal	38 mm / 1.49"	Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$
Clamp diameter vertical	63 mm / 2.48"		61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$
Clamp opening	45 mm / 1.77"	Measuring range	0 ... 1500 V
Protection class	IP65	Resolution	1 V
Interface	Bluetooth 4.0	Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$
Pollution degree	2		61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$
Insulation categories	CAT IV 600 V, CAT III 1000 V, CAT II 1500 V	AC voltage with low input impedance (LowZ)	
Maximum working height	2000 m / 6562 ft	Measuring range	0.000 ... 6.000 V
Power supply battery	7.4 V, 1200 mAh Li-ion battery	Resolution	0.001 V
Power supply charger	Primary: 100 ... 240 V AC, 50 ... 60 Hz Secondary: 12 V DC, 2 A	Accuracy	$\pm(3.0\% \text{ of measured value} + 40 \text{ digits})$
Plug connection charger	Europa, USA, England, China available	Measuring range	0.00 ... 60.00 V
Battery status display	switched off, 15, 30 or 60 minutes	Resolution	0.01 V
Automatic switch-off	2.36" TFT	Accuracy	$\pm(3.0\% \text{ of measured value} + 40 \text{ digits})$
Display	3 Hz	Measuring range	0.0 ... 300.0 V
Display frequency	18 ... 28 °C, 64 ... 82 °F; <80 % RH, non-condensing	Resolution	0.1 V
Reference conditions	275 x 100 x 45 mm / 10.8 x 3.9 x 1.7"	Accuracy	$\pm(3.0\% \text{ of measured value} + 40 \text{ digits})$
Dimensions	481 g / 16.9 oz	DC and AC voltage (50 ... 1 kHz)	
Weight		Measuring range	0.000 ... 6.000 V
DC voltage		Resolution	0.001 V
Measuring range	$\pm 600.0 \text{ mV}$	Accuracy	$\pm(2.5\% \text{ of measured value} + 40 \text{ digits})$
Resolution	0.1 mV	Measuring range	0.00 ... 60.00 V
Accuracy	$\pm(0.8\% \text{ of measured value} + 8 \text{ digits})$	Resolution	0.01 V
Measuring range	$\pm 6.000 \text{ V}$	Accuracy	$\pm(2.5\% \text{ of measured value} + 40 \text{ digits})$
Resolution	0.001 V	Measuring range	0.0 ... 600.0 V
Accuracy	$\pm(0.5\% \text{ of measured value} + 5 \text{ digits})$	Resolution	0.1 V
Measuring range	$\pm 60.00 \text{ V}$	Accuracy	$\pm(2.5\% \text{ of measured value} + 40 \text{ digits})$
Resolution	0.01 V		
Accuracy	$\pm(0.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	$\pm 600.0 \text{ V}$		
Resolution	0.1 V		
Accuracy	$\pm(0.8\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	$\pm 1500 \text{ V}$		
Resolution	1 V		
Accuracy	$\pm(0.8\% \text{ of measured value} + 5 \text{ digits})$		
AC voltage			
Measuring range	0.000 ... 6.000 V		
Resolution	0.001 V		
Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$		
	61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	0.00 ... 60.00 V		
Resolution	0.01 V		
Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$		
	61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	0.0 ... 600.0 V		

More specifications online:



Subject to change without notice

ELECTRICAL MEASUREMENT

CLAMP METER

PCE-CTI 10

Measuring range 0 ... 1500 V AC/DC / with Bluetooth 4.0 interface

The clamp meter is the ideal measuring device for measuring voltages up to 1500 V AC/DC and currents up to 1000 A AC/DC. The current measurement with the clamp meter is inductive. To do this, the supply line is placed in the clamp meter. This has the particular advantage that the current can be measured during operation. This means that the clamp meter is used, for example, for maintenance work on a

photovoltaic system. Photovoltaic systems consist of many different solar cells that are connected in series with one another. Here, the current clamps can be used to measure the individual currents of individual rows in order to limit possible errors.

ISO cal option

- » measuring range 0 ... 1500 V AC/DC
- » data logging for up to 100,000 measured values
- » inrush current measurement
- » additionally with LowZ voltage measurement
- » 2.36" TFT display
- » with voltage and temperature measurement
- » optionally with calibration certificate



APPLICATION



TECHNICAL SPECIFICATIONS

Storage space	16 groups with a total storage space of 100,000 measured values	Resolution Accuracy	0.1 V 50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$ 61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$
Clamp diameter horizontal	38 mm / 1.49"	Measuring range Resolution Accuracy	0 ... 1500 V 1 V 50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$ 61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$
Clamp diameter vertical	63 mm / 2.48"		
Clamp opening	45 mm / 1.77"		
Protection class	IP65		
Interface	Bluetooth 4.0		
Pollution degree	2		
Insulation categories	CAT IV 600 V, CAT III 1000 V, CAT II 1500 V		
Maximum working height	2000 m / 6562 ft		
Power supply battery	7.4 V, 1200 mAh Li-ion battery		
Power supply charger	Primary: 100 ... 240 V AC, 50 ... 60 Hz Secondary: 12 V DC, 2 A		
Plug connection charger	Europe, USA, England, China available		
Battery status display	switched off, 15, 30 or 60 minutes		
Automatic switch-off	2.36" TFT		
Display	3 Hz		
Display frequency	18 ... 28 °C, 64 ... 82 °F; <80 % RH, non-condensing		
Reference conditions	275 x 100 x 45 mm / 10.8 x 3.9 x 1.7"		
Dimensions	481 g / 16.9 oz		
Weight			
DC voltage			
Measuring range	$\pm 600.0 \text{ mV}$		
Resolution	0.1 mV		
Accuracy	$\pm(0.8\% \text{ of measured value} + 8 \text{ digits})$		
Measuring range	$\pm 6.000 \text{ V}$		
Resolution	0.001 V		
Accuracy	$\pm(0.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	$\pm 60.00 \text{ V}$		
Resolution	0.01 V		
Accuracy	$\pm(0.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	$\pm 600.0 \text{ V}$		
Resolution	0.1 V		
Accuracy	$\pm(0.8\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	$\pm 1500 \text{ V}$		
Resolution	1 V		
Accuracy	$\pm(0.8\% \text{ of measured value} + 5 \text{ digits})$		
AC voltage			
Measuring range	0.000 ... 6.000 V		
Resolution	0.001 V		
Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$ 61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	0.00 ... 60.00 V		
Resolution	0.01 V		
Accuracy	50 ... 60 Hz: $\pm(1.2\% \text{ of measured value} + 5 \text{ digits})$ 61 ... 1 kHz: $\pm(2.5\% \text{ of measured value} + 5 \text{ digits})$		
Measuring range	0.0 ... 600.0 V		

More specifications online:



Subject to change without notice

ELECTRICAL MEASUREMENT VOLTMETER

PCE-OC 15

Multimeter with oscilloscope functions / various measuring functions

The Digital Multimeter was developed for practical and mobile use and can be used universally thanks to its diverse measurement functions. Our Digital Multimeter reliably measures voltage, current, frequency, resistance, temperature, capacitance and offers a diode and continuity test. The MODE key makes it easy to switch between digital multimeter and Digital Multimeter mode. With a bandwidth of

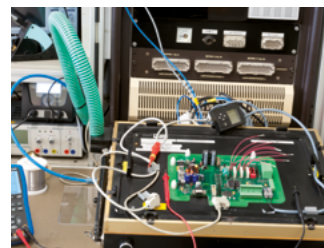
10 MHz and a fast sampling rate of 48 MSa/s, it ensures precise and quick data acquisition. The device supports the storage of waveform data which can be exported as images and transferred to a PC. An LED backlight with adjustable brightness makes it easier to operate the measuring device. The hand-held Digital multimeter is an ideal companion for service technicians on site.

ISO cal option

- » bandwidth 10 MHz
- » sampling rate up to 48 MSa/s
- » LC display with 4 brightness levels
- » auto measurement range selection
- » USB-C interface



APPLICATION



TECHNICAL SPECIFICATIONS

Oscilloscope specifications

Number of channels	1
Measuring functions	Period, Frequency, Peak-peak, MAX, MIN, RMS value
Sampling rate	48 MSa/s
Input impedance	1 M Ω
Probe factors	X1, X10
Max. input voltage	150 V
Adjustable sampling rate	1.5 Sa/s ... 48 MSa/s
Time base	100 ns/div ... 20 s/div
Accuracy	20 ppm
Vertical sensitivity	20 mV/div ... 10 V/div
Rise time	10 ns
DC gain accuracy	$\pm 3\%$

General technical data

Display type	LCD
Display size	2,76 Inch
Measuring rate	3 Hz
Storage medium	Internal memory
Storage capacity	15 MB
Memory information	Screenshot on keystroke
Interface	USB-C, BNC
Automatic power	15 ... 120 min.
Safety standard	CAT III 600 V, CAT II 1000 V
Fuse(s)	Microfuse 10 A
Trigger input	Mode: auto, normal, single Edge: rising, falling
Menu language	English, Chinese, English (GB)
Protection class (device)	IP20
Power supply	100 ... 240 V AC 50/60 Hz
Weight	352 g
Operating conditions	0 ... 40 °C, 0 ... 75 % RH
Storage conditions	-20 ... 60 °C, 0 ... 80 % RH
(Rechargeable) battery	1 x 3,7 V 18650, lithium
Capacity	2000 mAh
Dimensions (L x W x H)	175 x 90 x 40 mm

Direct voltage DC

Measurement range up to	0 ... 9,999 mV
Resolution	0,001 mV
Accuracy	$\pm(0.5\%$ of Rd +3 digits)

Direct current DC

Measurement range up to	0 ... 9999 μ A
Resolution	1 μ A
Accuracy	$\pm(0.8\%$ of Rd +3 digits)

Capacity

Measurement range up to	0 ... 9,999 nF
Resolution	0,001 nF
Accuracy	$\pm(5\%$ of Rd +20 digits)

AC voltage

Measurement range up to	0 ... 9,999 mV
Resolution	0,001 mV
Accuracy	$\pm(1\%$ of Rd +3 digits)
Frequency range	40 ... 1000 Hz

Alternating current AC

Measurement range up to	0 ... 9999 μ A
Resolution	1 μ A
Accuracy	$\pm(1\%$ of Rd +3 digits)
Frequency range	40 ... 1000 Hz

Resistance

Measurement range up to	0 ... 99,99 Ω
Resolution	0,01 Ω
Accuracy	$\pm(1\%$ of Rd +3 digits)

Frequency

Measurement range up to	0 ... 99,99 Hz
Resolution	0,01 Hz
Accuracy	$\pm(0.1\%$ of Rd +2 digits)

Temperature

Measurement range up to	-20 ... +1000 °C
Resolution	1 °C
Accuracy	$\pm(2.5\%$ of Rd +5 digits)



Subject to change without notice

PCE-OC 6

2-channel Oscilloscope / 1 GSa/s sampling rate

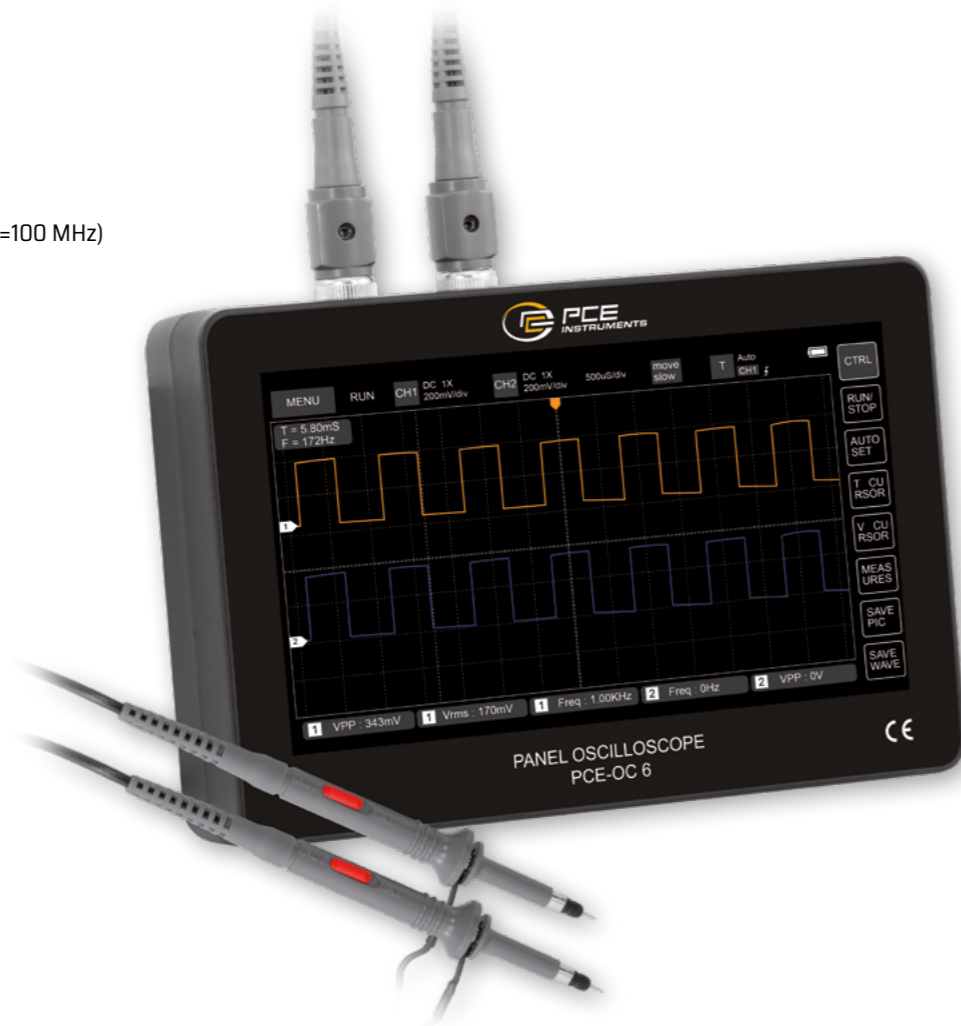
This modern Oscilloscope impresses with a real-time sampling rate of up to 1 GSa/s and an analogue bandwidth of 100 MHz per channel. It is ideal for the precise acquisition of both periodic analogue and aperiodic digital signals. Thanks to the 7-inch colour TFT LCD touchscreen with a resolution of 800 × 480 pixels, the Oscilloscope can be operated intuitively. The slim and lightweight design makes it particu-

larly mobile and flexible to use.

The Oscilloscope offers complete trigger functions (single/normal/automatic) and a practical one-button auto-setup function to quickly adjust signals. An integrated high-voltage protection module ensures safe measurements by tolerating continuous voltages of up to 400 V.

ISO cal option

- » 2 channel handheld oscilloscope
- » 1 GSa/s sampling rate (1X=5 MHz, 10X=100 MHz)
- » voltage range: 0 ... 400 V
- » trigger adjustable
- » screenshot export via USB
- » 7-inch TFT LCD touchscreen
- » 6000 mAh rechargeable battery



APPLICATION



TECHNICAL SPECIFICATIONS

Oscilloscope specifications

Number of channels	2
Bandwidth	100 MHz
Frequency accuracy	0,01 %
Sampling rate	1 GSa/s
Memory depth	240 kbit
Input impedance	1 M Ω
Probe factors	1x, 10x
Max. input voltage	400 V
Time base	10 ns ... 50 s
Vertical sensitivity	50 mV ... 500 V
Rise time	3 ns
DC gain accuracy	±2 %

General technical data

Display type	TFT touchscreen
Display size	7 Inch
Display resolution	800x480 pixels
Storage medium	Internal memory
Storage capacity	1 GB
Memory information	screenshot only
Operating time	4 h
Menu language	English (GB), English
Protection class (device)	IP20
Power supply	5 V DC (power supply unit included)
Connector type	Euro plug
(Rechargeable) battery	1 x 3,7 V internal , lithium-ion battery
Capacity	6000 mAh
Operating conditions	0 ... 50 °C , 0 ... 90 % RH
Storage conditions	0 ... 50 °C , 0 ... 90 % RH
Dimensions (L x W x H)	182 x 121 x 38 mm
Weight	606 g



Subject to change without notice

ELECTRICAL MEASUREMENT OSCILLOSCOPE

PCE-OC 50

2-channel oscilloscope with multimeter and signal generator / DC and AC current

This innovative 3-in-1 Oscilloscope is the perfect combination of a powerful Oscilloscope, a versatile multimeter and a signal generator. It has been specially developed for electronics technicians, engineers and hobby users who are looking for a compact, versatile and user-friendly device to carry out their measurement tasks efficiently. The 2-channel Oscilloscope offers a bandwidth of 10 MHz and a samp-

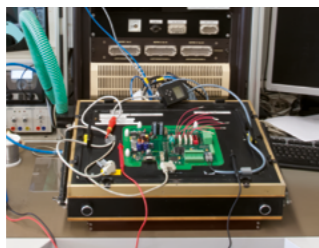
ling rate of 50 MS/s, which enables signals to be reliably recorded and analysed. Whether troubleshooting circuits, observing waveforms or analysing transients, this Oscilloscope delivers clear and precise results. Thanks to its high resolution and simple operation, even complex signal curves can be easily visualised.

ISO cal option

- » 2-channel oscilloscope
- » bandwidth: 10 MHz, sampling rate: 50 MS/s
- » multimeter functions
- » voltage, current, resistance
- » capacitance, non-contact voltage detection
- » signal generator: 1 Hz ... 2 MHz



APPLICATION



TECHNICAL SPECIFICATIONS

Oscilloscope specifications

Number of channels	2
Bandwidth	10 MHz
Sampling rate	50 MSa/s
Memory depth	32 kpts
Input impedance	10 M Ω
Probe factors	1-fold, 10-fold
Max. input voltage	400 V
Vertical sensitivity	20 mV/div - 10 V/div

Function generator

Bandwidth	1 ... 2000000 Hz
Resolution	1 Hz
Channels	1
Amplitude	0.1 ... 3.3 Vpp
Waveform length	16 kpts
Functions	Sine, Rectangle, Triangle, Half wave, Whole wave,
Noise, DC	

General technical data

Measuring functions	Diode test, Continuity, non-contact voltage detection
Display type	LC colour display
Display size	2,8 Inch
Display resolution	320x240
Storage medium	Internal memory
Storage capacity	8 MB
Memory information	oscilloscope image saved as a BMP file
Interface	USB-C, BNC
Operating time	6 h
Automatic power-off from...to	5 ... 30 min.
Automatic power-off can be deactivated	Yes
Safety standard	CAT III 1000V, CAT IV 600 V
Fuse(s)	10 A
Trigger input	Mode: auto, normal, single Edge: rising, falling English (GB), English, Portuguese, German,
Menu language	
Russian, Japanese	
Protection class (device)	IP20
Power supply	5 VDC / 1 A
(Rechargeable) battery	1 x 3,7 V internal , Lithium-ion polymer
battery	
Capacity	3000 mAh
Operating conditions	0 ... 50 °C , 0 ... 90 % RH
Storage conditions	0 ... 50 °C , 0 ... 90 % RH
Dimensions (L x W x H)	170 x 90 x 35 mm
Weight	300 g



Subject to change without notice

TOOLS

SOLDERING IRON

PCE-SST 200

Soldering device with storage stand / colour 2.5-inch HD display / easy to change soldering tip

The Soldering iron / Soldering device stands out with an impressive combination of precision, convenience and functionality, making it an indispensable tool for professional and demanding users. With an adjustable temperature range of 100 to 450 °C, it enables flexible working on a wide range of projects. Thanks to the short heat-up time of just a few seconds, the Soldering iron / Soldering device is ready

for use immediately.

The integrated colour HD display offers a clear and concise representation of all relevant parameters, making operation particularly user-friendly. The Soldering iron / Soldering device is supplied with three interchangeable fine soldering tips, which are ideal for precise work and offer a wide range of applications.

ISO cal option

- » temperature range: 100 ... 450 °C
- » heat-up time in a few seconds
- » colour HD display
- » incl. 3 interchangeable fine soldering tips
- » 2 flexible arms "helping hands"
- » sleep and standby mode
- » adjustable alarm tone
- » soldering tips can be changed quickly
- » memory for 3 temperatures



APPLICATION



TECHNICAL SPECIFICATIONS

Display type	TFT colour display
Display size	2,5 Inch
Cable length	1 m
Temperature range	100 ... 450 °C
Performance	200 W
Menu language	English (GB), English, Chinese
Protection class (device)	IP20
Power supply	110 ... 250 V AC
Connector type	Schuko plug
Operating conditions	0 ... 50 °C , 90 % RH
Storage conditions	0 ... 50 °C , 90 % RH
Dimensions (L x W x H)	180 x 180 x 110 mm
Weight	925 g



Subject to change without notice

TOOLS

SOLDERING IRON

PCE-ESI 100

Cordless battery-powered soldering iron 8 W / Temperature: approx. 480°C / 896°F

The cordless Soldering iron / Soldering device with 8 watts of power impresses with its fast heat-up time of approx. 20 seconds and reaches temperatures of up to 480°C/896°F - ideal for precise soldering work on the go or in hard-to-reach places. Thanks to its ergonomic design, the cordless Soldering iron / Soldering device iron sits comfortably in the hand and allows you to work comfortably.

With an operating time of approx. 1 hour and a powerful 1800 mAh lithium battery, the cordless Soldering iron / Soldering device is the perfect companion for mobile applications. The integrated battery level indicator ensures that the charge status is always visible. Two integrated LEDs also ensure optimum illumination of the soldering point.

ISO cal option

- » Cordless battery-powered soldering iron 8 W
- » Heating time: approx. 20 s
- » 2 integrated LEDs
- » Temperature: approx. 480°C / 896°F
- » Ergonomic design
- » Operating time approx. 1 h
- » 1800 mAh lithium battery



TECHNICAL SPECIFICATIONS

Interface	USB-C
Warm-up time	20 s
Operating time	1 h
Charging time	1,5 h
Temperature range	0 ... 480 °C
Performance	8 W
Protection class (device)	IP30
Power supply	5 V DC
(Rechargeable) battery	1 x 3,7 V internal , Lithium-ion battery
Capacity	1800 mAh
Operating conditions	0 ... 50 °C , 0 ... 90 % RH
Storage conditions	0 ... 50 °C , 0 ... 90 % RH
Dimensions (L x W x H)	207 x 33 x 26 mm
Weight	108 g

APPLICATION



Subject to change without notice

ELECTRICAL MEASUREMENT DIGITAL MULTIMETER

PCE-DM 7

True RMS measurement / automatic and manual measurement range selection

The Digital Multimeter provides precise measurements for a variety of parameters, including AC and DC voltage, direct and alternating current, frequency, resistance, capacitance and temperature. Our Digital Multimeter has a hold function for saving measurement results as well as non-contact voltage detection (NCV). The device enables both automatic and manual measurement range

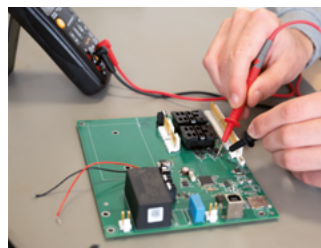
selection and is equipped with an easy-to-read 2.8-inch LCD with backlight. With a sampling rate of three measurements per second, it delivers quick results and switches off automatically after five minutes of inactivity to

ISO cal option

- » non-contact voltage detection
- » temperature measurement
- » automatic power off
- » automatic and manual measurement range selection
- » hold function
- » 2.8-inch LC display with backlight
- » small and compact design



APPLICATION



TECHNICAL SPECIFICATIONS

Direct voltage DC

Measurement range 0 ... 9,999 mV / 10 ... 99,99 mV / 100 ... 999,9 mV / 1 ... 9,999 V / 10 ... 99,99 V / 100 ... 999,9 V
Resolution 0,001 mV / 0,01 mV / 0,1 mV / 0,001 V / 0,01 V / 0,1 V
Accuracy $\pm(0.5\% \text{ of Rd} + 3 \text{ digits})$

Direct current DC

Measurement range 0 ... 9999 μA / 10 ... 99,99 mA / 100 ... 999,9 mA / 1 ... 9,999 A
Resolution 1 μA / 0,01 mA / 0,1 mA / 0,001 A
Accuracy $\pm(0.8\% \text{ of Rd} + 3 \text{ digits}) / \pm(1\% \text{ of Rd} + 3 \text{ digits})$

Capacity

Measurement range 0 ... 9,999 nF / 10 ... 99,99 nF / 100 ... 999,9 nF / 1 ... 9,999 μF / 10 ... 99,99 μF / 100 ... 999,9 μF / 1 ... 9,999 mF / 0,001 nF / 0,01 nF / 0,1 nF / 0,001 μF / 0,01 μF / 0,1 μF / 0,001 mF
Resolution 0,001 nF / 0,01 nF / 0,1 nF / 0,001 μF / 0,01 μF / 0,1 μF / 0,001 mF
Accuracy $\pm(5.0\% \text{ of Rd} + 20 \text{ digits}) / \pm(2.0\% \text{ of Rd} + 5 \text{ digits}) / \pm(5.0\% \text{ of Rd} + 5 \text{ digits})$

AC voltage

Measurement range 0 ... 9,999 mV / 10 ... 99,99 mV / 100 ... 999,9 mV / 1 ... 9,999 V / 10 ... 99,99 V / 100 ... 750 V
Resolution 0,001 mV / 0,01 mV / 0,1 mV / 0,001 V / 0,01 V / 0,1 V
Accuracy $\pm(1\% \text{ of Rd} + 3 \text{ digits}) / \pm(1\% \text{ of Rd} + 3 \text{ digits})$
Frequency range 40 ... 1000 Hz

Alternating current AC

Measurement range 0 ... 9999 μA / 10 ... 99,99 mA / 100 ... 999,9 mA / 1 ... 9,999 A
Resolution 1 μA / 0,01 mA / 0,1 mA / 0,001 A
Accuracy $\pm(1\% \text{ of Rd} + 3 \text{ digits}) / \pm(1.2\% \text{ of Rd} + 3 \text{ digits})$
Frequency range 40 ... 1000 Hz /

Resistance

Measurement range 0 ... 99,99 Ω / 100 ... 999,9 Ω / 1 ... 9,999 k Ω / 10 ... 99,99 k Ω / 100 ... 999,9 k Ω / 1 ... 9,999 M Ω / 10 ... 99,99 M Ω
Resolution 0,01 Ω / 0,1 Ω / 0,001 k Ω / 0,01 k Ω / 0,1 k Ω / 0,001 M Ω / 0,01 M Ω
Accuracy $\pm(1\% \text{ of Rd} + 3 \text{ digits}) / \pm(0,5\% \text{ of Rd} + 3 \text{ digits}) / \pm(1,5\% \text{ of Rd} + 3 \text{ digits})$

Duty cycle

Measurement range 1 ... 99 %
Resolution 0,1 %
Accuracy $\pm(0.1\% \text{ of Rd} + 2 \text{ digits})$

Frequency

Measurement range 0 ... 99,99 Hz / 100 ... 999,9 Hz / 1 ... 9,999 kHz / 10 ... 99,99 kHz / 100 ... 999,9 kHz / 1 ... 5 MHz / 0,001 kHz / 0,01 kHz / 0,1 kHz / 0,001 MHz
Resolution 0,01 Hz / 0,1 Hz /
Accuracy $\pm(0.1\% \text{ of Rd} + 2 \text{ digits}) /$

Temperature

Measurement range -20 ... +1000 $^{\circ}\text{C}$ / -4 ... +1832 $^{\circ}\text{F}$
Resolution 1 $^{\circ}\text{C}$ / 1 $^{\circ}\text{F}$
Accuracy $\pm(2.5\% \text{ of Rd} + 5 \text{ digits})$

General technical data

Measuring functions HOLD
Display type LCD with backlight
Display size 2,8 Inch
Measuring rate 3 x per second
Automatic power-off 5 min
Safety standard CAT II 1000 V, CAT III 600 V
Measurement range selection Automatic, Manual
Menu language English, English (GB)
Protection class (device) IP20
Weight 175 g
Operating conditions 0 ... 40 $^{\circ}\text{C}$, 0 ... 75 % RH
Storage conditions -20 ... 60 $^{\circ}\text{C}$, 0 ... 80 % RH
(Rechargeable) battery 2 x 1,5 V AA battery, Alkali-manganese
Capacity 3000 mAh
Dimensions (L x W x H) 140 x 70 x 35 mm



Subject to change without notice

ELECTRICAL MEASUREMENT DIGITAL MULTIMETER

PCE-DM 8

Non-contact voltage detection / Monitoring mode with threshold value

The Digital Multimeter is a versatile meter that is used in various areas of electrical engineering and electronics. The Digital Multimeter enables precise measurements of voltage, current and resistance and supports both direct and alternating parameters. It also offers practical functions such as checking electrical connections using continuity testing and testing diodes for functionality.

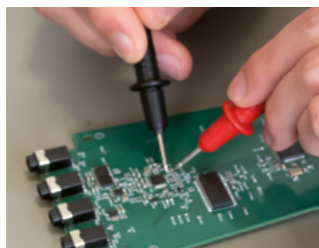
For specialised applications, the device offers additional functions such as capacitance and frequency measurement, temperature monitoring and non-contact voltage detection (NCV), which enables electrical fields and live wires to be reliably detected.

ISO cal option

- » display range: 9999 counts
- » measurement range selection: automatic
- » non-contact voltage detection
- » 3 display modes
- » live test
- » monitoring mode
- » recording mode
- » diode test



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data

Measuring functions	HOLD, Continuity test, Diode test
Display type	TFT colour display
Display size	2,4 Inch
Display resolution	240 x 320
Storage medium	Internal memory
Storage capacity	8 Values
Safety standard	CAT III 1000V, CAT IV 600 V
Fuse(s)	Low current range: 1 A fuse and high current range: 10 A fuse
Measurement range selection	Automatic
Display range	9999 counts
Menu language	English, Chinese, English (GB)
Protection class (device)	IP20
Power supply	5 V DC
Capacity	1500 mAh
Operating conditions	0 ... 40 °C, 0 ... 75 % RH
Storage conditions	-20 ... 60 °C, 0 ... 80 % RH
Dimensions (L x W x H)	153 x 80 x 38 mm
Weight	191 g

Direct voltage DC

Measurement range up to	0 ... 9,999 V
Resolution	0,001 V
Accuracy	±(0.5 % of Rd +3 digits)

Direct voltage DC

Measurement range up to	10 ... 99,99 V
Resolution	0,01 V
Accuracy	±(0.5 % of Rd +3 digits)

Direct voltage DC

Measurement range up to	100 ... 999,9 V
Resolution	0,1 V
Accuracy	±(0.5 % of Rd +3 digits)

Direct current DC

Measurement range up to	0 ... 9999 µA
Resolution	1 µA
Accuracy	±(1.2 % of Rd +3 digits)

Direct current DC

Measurement range up to	10 ... 99,99 mA
Resolution	0,01 mA
Accuracy	±(1.2 % of Rd +3 digits)

Direct current DC

Measurement range up to	100 ... 999,9 mA
Resolution	0,1 mA
Accuracy	±(1.2 % of Rd +3 digits)

Direct current DC

Measurement range up to	1 ... 9,999 A
Resolution	0,001 A
Accuracy	±(1.2 % of Rd +3 digits)

Capacity

Measurement range up to	0 ... 9,999 nF
Resolution	0,001 nF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	10 ... 99,99 nF
Resolution	0,01 nF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	100 ... 999,9 nF
Resolution	0,1 nF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	1 ... 9,999 µF
Resolution	0,001 µF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	10 ... 99,99 µF
Resolution	0,01 µF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	100 ... 999,9 µF
Resolution	0,1 µF
Accuracy	±(2 % of Rd +5 digits)

Capacity

Measurement range up to	1 ... 9,999 mF
Resolution	0,001 mF
Accuracy	±(5 % of Rd +20 digits)

Capacity

Measurement range up to	10 ... 99,99 mF
Resolution	0,01 mF
Accuracy	±(5 % of Rd +20 digits)

AC voltage

Measurement range up to	0 ... 9,999 V
Resolution	0,001 V
Accuracy	±(1 % of Rd +3 digits)

AC voltage

Measurement range up to	10 ... 99,99 V
Resolution	0,01 V
Accuracy	±(1 % of Rd +3 digits)



Subject to change without notice

ELECTRICAL MEASUREMENT CURRENT CLAMP

PCE-CM 7

Automatic and manual measurement range selection / alternating and direct current

The Current Clamp is a multifunctional meter for the precise measurement of alternating and direct voltage as well as alternating and direct current that can be measured without direct contact to the line. The Current Clamp is suitable for measuring resistance, temperature, diodes, continuity, frequencies and capacitance and is particularly useful for diagnosing electrical and electronic components.

For maximum measurement accuracy, the Current Clamp supports True RMS for non-sinusoidal waveforms and a Low Impedance (LoZ) function to reduce interference. The non-contact voltage test enables reliable detection of voltages in cables and sockets.

ISO cal option

- » display range: 6000 counts
- » measurement range selection: automatic and manual
- » min, max and hold function
- » 2-inch LC display
- » integrated LED torch
- » automatic power-off



APPLICATION



TECHNICAL SPECIFICATIONS

General technical data

Measuring functions	MIN, MAX, HOLD
Display type	LCD
Display size	2 Inch
Standard(s)	IEC61010-1, IEC 61010-2-032, IEC 61010-2-033
Maximum cable diameter	35 mm
Automatic power-off	15 min
Automatic power-off can be deactivated	Yes
Safety standard	CAT III 1000V, CAT IV 600 V
max. input impedance	10 M Ω
Measurement range selection	Automatic, Manual
Diode test	Test current: approx. 1.5 mA
Test voltage: approx. 1 V	
Overload protection: 250 V	
Display range	6000 counts
Protection class (device)	IP20
(Rechargeable) battery	3 x 1,5 V AAA battery, Alkali-manganese
Capacity	1200 mAh
Operating conditions	0 ... 40 °C, 0 ... 80 % RH
Storage conditions	-10 ... 60 °C, 0 ... 70 % RH
Dimensions (L x W x H)	240 x 85 x 45 mm
Weight	327 g

Direct voltage DC

Measurement range up to	0,1 ... 600 mV
Resolution	0,1 mV
Accuracy	$\pm(0.5\% \text{ of Rd} + 5 \text{ digits})$
Overload	1000 V

Direct voltage DC

Measurement range up to	600 mV ... 6 V
Resolution	0,001 V
Accuracy	$\pm(0.5\% \text{ of Rd} + 5 \text{ digits})$

Direct voltage DC

Measurement range up to	6 ... 60 V
Resolution	0,01 V
Accuracy	$\pm(0.5\% \text{ of Rd} + 5 \text{ digits})$

Direct voltage DC

Measurement range up to	60 ... 600 V
Resolution	0,1 V
Accuracy	$\pm(0.5\% \text{ of Rd} + 5 \text{ digits})$

Direct voltage DC

Measurement range up to	600 ... 1000 V
Resolution	1 V
Accuracy	$\pm(0.8\% \text{ of Rd} + 5 \text{ digits})$

Direct current DC

Measurement range up to	0,1 ... 60 A
Resolution	0,01 A
Accuracy	$\pm(2.5\% \text{ of Rd} + 8 \text{ digits})$

Direct current DC

Measurement range up to	60 ... 600 A
Resolution	0,01 A
Accuracy	$\pm(2.5\% \text{ of Rd} + 8 \text{ digits})$

Direct current DC

Measurement range up to	600 ... 1000 A
Resolution	0,1 A
Accuracy	$\pm(2.5\% \text{ of Rd} + 8 \text{ digits})$

Capacity

Measurement range up to	1 ... 10 nF
Resolution	0,001 nF
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Capacity

Measurement range up to	10 ... 100 nF
Resolution	0,001 nF
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Capacity

Measurement range up to	100 ... 1000 nF
Resolution	0,01 nF
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Capacity

Measurement range up to	1000 nF ... 10 μ F
Resolution	0,1 nF
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Capacity

Measurement range up to	10 ... 100 μ F
Resolution	0,001 μ F
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Capacity

Measurement range up to	100 ... 1000 μ F
Resolution	0,01 μ F
Accuracy	$\pm(4.0\% \text{ of Rd} + 5 \text{ digits})$

Further Model:

PCE-CM 6	alternating current
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Subject to change without notice

ELECTRICAL MEASUREMENT INSULATION TESTER

PCE-IT 200

Resistance Tester up to 1 KV / Automatic detection of AC and DC / insulation resistances of up to 5.5 GΩ

Our compact electrical tester is perfect for measuring the insulation resistance of electrical devices and household appliances. With its ability to measure insulation resistance, AC voltage, low resistance, PI (polarization index) and DAR (dielectric absorption), it is a versatile and reliable tool for many application scenarios. With test voltages of 100 V, 250 V, 500 V and 1000 V, insulation resistances of up to

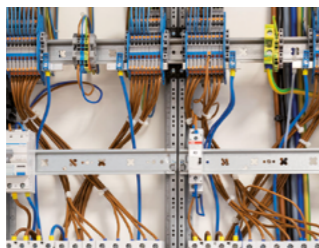
5.5 GΩ can be measured, enabling accurate analysis and evaluation of insulation quality. The electrical tester not only offers the possibility to measure direct voltage (DC) in the measuring range from 30 V to 600 V and alternating voltage (AC), but also records the resistance in the range from 0 Ω to 999 Ω with high accuracy to ensure a good diagnosis of electrical systems.

ISO cal option

- » measurement functions: HOLD, PI (polarization index) DAR (absorption ratio)
- » automatic detection of AC and DC
- » automatic discharge
- » high voltage indicator
- » alarm when limit value is exceeded
- » overload: AC 720 V / 10 seconds
- » powered by 6 x 1.5V AA batteries
- » external 9V DC power supply possible



APPLICATION



TECHNICAL SPECIFICATIONS

Direct voltage DC

Measuring range	30 V ... 600 V
Resolution	1 V
Accuracy	±2% v.Mw. ±3 digits

AC voltage AC

Measuring range	30 V ... 600 V
Resolution	1 V
Accuracy	±2% v.Mw. ±3 digits
Overload	AC 720 V / 10 seconds

Insulation resistance

Test voltage DC	100 V
Measuring range	0 GΩ ... 1.5 GΩ
Resolution	0.01 GΩ
Accuracy	±5% v.Mw. ±3 digits (over 100 kΩ)

Insulation resistance

Test voltage DC	250 V
Measuring range	0 GΩ ... 5.5 GΩ
Resolution	0.01 GΩ
Accuracy	±5% v.Mw. ±3 digits (over 100 kΩ)

Insulation resistance

Test voltage DC	500 V
Measuring range	0 GΩ ... 5.5 GΩ
Resolution	0.01 GΩ
Accuracy	±5% v.Mw. ±3 digits (over 100 kΩ)

Insulation resistance

Test voltage DC	1000 V
Measuring range	0 GΩ ... 5.5 GΩ
Resolution	0.01 GΩ
Accuracy	±5% v.Mw. ±3 digits (over 100 kΩ)

Resistance

Measuring range	0 Ω ... 999 Ω
Resolution	0.1 Ω
Accuracy	±(2% v.Mw. +3 digits)

General technical data

Measurement functions	HOLD, PI, DAR
Display type	LC color display
Measurement rate	2 Hz
Standard(s)	IEC 6010-1
Operating time	12 h
Safety standard	CAT III 600 V, CAT I 2500 V
Alarm	optical, acoustic
Menu language	English
Protection class (device)	IP20
Power supply	DC9V
Weight	689 g
Dimensions (L x W x H)	110 x 176 x 77 mm
Operating conditions	0 ... 40 °C, 0 ... 85 % r.H
Storage conditions	-20 ... 60 °C, 0 ... 90 % r.H
Accumulator/battery	6x 1.5 V AA battery, alkaline-manganese
Capacity	3000 mAh



Subject to change without notice

ELECTRICAL MEASUREMENT INSULATION TESTER

PCE-MO 1500

Insulation Resistance Tester up to 2.5KV / Detection of AC and DC / insulation resistance up to 200 GΩ

The Electrical Tester was developed to simplify on-site troubleshooting in both industrial systems and solar systems. With selectable test voltages from 250 ... 2500 V and resistance measurement up to 200 GΩ, this device allows multiple operations to be carried out with just one tool. The intuitive user interface, short-circuit current of up to 1.8 mA and CAT IV 600 V safety make these portable high-voltage

Electrical Testers ideal for quick and stable resistance measurements anywhere.

The test voltage can be variably selected from 250 V, 500 V, 1000 V, 2000 V and 2500 V. It can also measure AC and DC voltages from 10 ... 600 V. The Electrical Tester has a memory for 100 data records which can be called up via the LC display.

ISO cal option

- » direct voltage DC
- » alternating voltage AC
- » selectable test voltages
- » measuring functions: PI/DAR/HOLD
- » internal memory
- » display of measuring time
- » automatic discharge
- » automatic power-off
- » high-voltage display
- » safety: EN 61010-1; CAT III 1000V; CAT IV 600 V



APPLICATION



TECHNICAL SPECIFICATIONS

Direct voltage DC Measurement range up to Resolution Accuracy	10 ... 600 V 1 V ±(0.8 % of Rd +5 digits)	Menu language Protection class (device) Weight Operating conditions Storage conditions	English IP20 651 g 0 ... 35 °C, 0 ... 75 % RH 0 ... 35 °C, 0 ... 75 % RH
AC voltage Measurement range up to Resolution Accuracy Overload	10 ... 600 V 1 V ±(1 % of Rd. +5 digits) 2000 V AC max. 1 minute	(Rechargeable) battery manganese Capacity Dimensions (L x W x H)	8 x 1,5 V AA battery , Alkali- 2500 mAh 140 x 180 x 70 mm
Insulation resistance Test voltage DC Measurement range up to Resolution Accuracy	250 V 2 M Ω ... 20 GΩ 0,01 M Ω ±(5 % o Rd +10 digits)		
Insulation resistance Test voltage DC Measurement range up to Resolution Accuracy	500 V, 1000 V 1 M Ω ... 20 GΩ 0,01 M Ω ±(5 % o Rd +10 digits)		
Insulation resistance Test voltage DC Measurement range up to Resolution Accuracy	2000 V 3 M Ω ... 200 GΩ 0,01 M Ω ±(5 % o Rd +10 digits)		
Insulation resistance Test voltage DC Measurement range up to Resolution Accuracy	2500 V 5 M Ω ... 200 GΩ 0,01 M Ω ±(5 % o Rd +10 digits)		
General technical data Measuring functions Display type Display size Storage medium Storage capacity Standard(s) Automatic power-off Safety standard	HOLD, PI, DAR LCD 3,7 Inch Internal memory 100 Data records EN 61010-1 25 min CAT III 1000V, CAT IV 600 V		



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ELECTRICAL MEASUREMENT INSTALLATION TESTER

PCE-ITE 55B

With Carrying Strap / Fast Testing on Fixed Installations

The Multifunction Installation Tester is a multifunctional instrument designed for testing electrical safety in accordance with standards EN 61557 and DIN VDE 0100. It offers many functions specifically designed for the inspection and evaluation of electrical installations. The Multifunction Installation Tester can perform precise measurements of insulation resistance between live parts and grounding. In the RCD

test, both Type-A and AC, B, B+, and F-controlled residual current circuit breakers can be efficiently tested, ensuring the proper functioning of these vital protective devices. The Multifunction Installation Tester allows for quick and accurate measurement of loop resistance to ensure that, in the event of a fault current, there is sufficient resistance to ensure a safe shutdown.

ISO cal option

- » testing according to EN 61557 and DIN VDE0100
- » insulation resistance
- » RCD Type A, AC, B, B+, and F
- » line and fault loop impedance
- » continuity test
- » voltage, phase rotation, and frequency
- » testing of EV charging stations with optional test adapter
- » includes test leads and carrying case



APPLICATION



TECHNICAL SPECIFICATIONS

Display type	TFT color display	Resolution	1 MΩ
Display size	3.3 inch	Accuracy	±(10 % of Mw.)
Standard(s)	EN61557, DIN VDE 0100	Passage test	
Operating time	15 h	Measuring range	0.1 Ω ... +20 Ω
Automatic switch-off adjustable	0.5 ... 60 min.	Resolution	0.01 Ω
Automatic switch-off can be deactivated	Yes	Accuracy	±(3 % v. Mw. + 3 digits)
RCD test current characteristic	A, AC, B, B+, F	passage test measurement range	+20 Ω ... +1999 Ω
RCD tripping current	650 mA, 500 mA, 30 mA, 6 mA, 300 mA, 10 mA, 1000 mA, 100 mA	Resolution	0.1 Ω (20.0 Ω ... 99.9 Ω)
RCD tripping time	0 ... 500 ms	Accuracy	±(5 % v. Mw.)
Touch voltage	0 ... 99.9 V	Impedance	
Menu language	German, English	Measurement range	0.25 Ω ... +9999 Ω
Power supply	Battery, Power supply	Resolution	0.01 Ω (0.20 ... 19.99)
Weight	1300 g	Accuracy	±(5 % v. Mw. + 5 digits)
Device weight with scope of delivery	2165 g	Frequency	
Device weight with scope of delivery and packaging	2300 g	Measurement range	+10 Hz ... +499.9 Hz
Dimensions (L x W x H)	250 x 135 x 107 mm	Resolution	0.1 Hz
Operating conditions	0 ... 40 °C, 95 % r.H	Accuracy	0.2 % + 1 digit
Storage conditions	-10 ... 70 °C, 90 % r. F		
AC voltage AC			
Measuring range	0 V ... +550 V		
Resolution	1 V		
Accuracy	±(2 % v. Mw. + 2 digits)		
Isolation resistance			
Test voltage DC	50 V		
Measuring range	0.1 MΩ ... +80 MΩ		
Resolution	0.001 MΩ (0.100 ... 1.999)		
Accuracy	±(5 % v. Mw. + 3 digits)		
Isolation resistance			
Test voltage DC	100 V, 250 V		
Measuring range	0.1 MΩ ... +199.9 MΩ		
Resolution	0.001 MΩ (0.100 ... 1.999)		
Accuracy	±(5 % v. Mw. + 3 digits)		
Isolation resistance			
Test voltage DC	500 V, 1000 V		
Measuring range	0.1 MΩ ... +199.9 MΩ		
Resolution	0.001 MΩ (0.100 ... 1.999)		
Accuracy	±(2 % v. Mw. + 3 digits)		
Isolation resistance			
Test voltage DC	500 V, 1000 V		
Measuring range	+200 MΩ ... +999 MΩ		



Subject to change without notice

ELECTRICAL MEASUREMENT

OHM METER

PCE-MO 2010

4-wire measuring method / maximum test current of 10 A

The milliohmmeter with seven selectable measuring ranges from 0 $\mu\Omega$ to 200 Ω , a maximum resolution of 0.1 $\mu\Omega$ and a maximum test current of 10 A offers a wide range of applications. Thanks to the 4-wire measuring method, the micro-ohmmeter guarantees accurate measurements at the smallest resistances without the influence of the lead resistance. It can therefore be used for a wide range of appli-

cations, e.g. to detect poor contact between two measuring points, measurements on switches, continuity of earth connections or for testing metal coatings.

ISO cal option

- » 7 selectable measuring ranges
- » 4-wire measuring method
- » LC display 5.1 inch with illumination
- » Internal memory
- » Automatic switch-off
- » Date and time display



APPLICATION



TECHNICAL SPECIFICATIONS

Resistance			General technical data	
Measuring range	0 $\mu\Omega$... 200 $\mu\Omega$		Display type	LCD with illumination
Resolution	0.1 $\mu\Omega$		Display size	5.1 inch
Accuracy	$\pm(2\% + 8 \text{ digit})$		Storage medium	Internal memory
			Memory capacity	200 values
Resistance			Interface	RS232
Measuring range	0 $\mu\Omega$... 2000 $\mu\Omega$		Standard(s)	IEC61010-1, EN 61326-1
Resolution	1 $\mu\Omega$		Automatic switch-off	3 min
Accuracy	$\pm(2\% + 8 \text{ digit})$		Safety standard	CAT III 300V
			Measurement method	4-wire method for m Ω measurement
Resistance			Test current	10 A: 200.0 $\mu\Omega$ / 2000 $\mu\Omega$
Measuring range	0 m Ω ... 20 m Ω			1 A: 20.00 m Ω / 200.0 m Ω
Resolution	0.01 m Ω			100 mA: 2.000 Ω / 20.00 Ω
Accuracy	$\pm(1\% + 4 \text{ digit})$			10 mA: 200.0 Ω
			Menu language	English
Resistance			Protection class (device)	IP30
Measuring range	0 m Ω ... 200 m Ω		Power supply	24 VDC / 0.625 A
Resolution	0.1 m Ω		Plug type	Euro plug device
Accuracy	$\pm(1\% + 4 \text{ digit})$		Weight	3126 g
			Dimensions (L x W x H)	322 x 260 x 135 mm
Resistance			Operating conditions	0 ... 40 $^{\circ}\text{C}$, 0 ... 80 % r.H
Measuring range	0 Ω ... 2 Ω		Storage conditions	0 ... 40 $^{\circ}\text{C}$, 0 ... 40 % r.H
Resolution	1 m Ω		Accumulator/battery	1x 14.8 V , lithium-ion battery
Accuracy	$\pm(1\% + 4 \text{ digit})$		Capacity	5200 mAh
Resistance				
Measuring range	0 Ω ... 20 Ω			
Resolution	0.01 Ω			
Accuracy	$\pm(1\% + 4 \text{ digit})$			
Resistance				
Measuring range	0 Ω ... 200 Ω			
Resolution	0.1 Ω			
Accuracy	$\pm(1\% + 4 \text{ digit})$			



Subject to change without notice

ELECTRICAL MEASUREMENT POWER ANALYZER

PCE-PA 8500

Power Analyzer with Data Logger / Color Display with Graphical Presentation

The power analyzer redefines standards in electrical measurement technology, offering a comprehensive range of features for precise and detailed measurements. The power analyzer allows accurate measurements of electrical voltage, current, frequency, harmonics, and starting currents. In addition, precise power and energy measurements can be performed, enabling accurate monitoring and optimization of energy consumption.

The graphical representation of waveforms and vector graphics allows users to visually capture and analyze electrical signals. These features provide insights into the quality of electrical power and aid in identifying issues in the network. The device can also detect and display sags, surges, or flickers in the power supply network.

ISO cal option

- » measurement of voltage, current, frequency
- » harmonics, harmonics, starting current
- » power and energy measurement
- » sags, surges, and flicker in the power grid
- » graphical representation of waveform and vector graphics
- » data logger with 8 GB storage
- » LAN and USB data interface
- » includes flexible current clamps up to 3000 A
- » compliance with standards: IEC61000-4-30, 61000-4-15, 61000-4-7, EN50160



APPLICATION



TECHNICAL SPECIFICATIONS

Direct Current (DC)		General Technical Data	
Measurement Range	+1 V ... +1000 V	Display Type	TFT Color Display
Resolution	0.1 V	Display Size	2.6 Inches
Accuracy	±0.5 % of the measured value	Storage Medium	Internal Memory
		Storage Interval From	1 s
		Storage Interval To	60 min
		Storage Capacity	8 GB
Alternating Current (AC)		Data Interface	USB, Ethernet
Measurement Range	+1 V ... +1000 V	Standard(s)	IEC61000-4-30, EN50160, IEC61000-4-15, IEC61000-4-7
Resolution	0.1 V		
Accuracy	±0.5 %		
		Safety Standard (IEC61010-1)	600V CAT IV / 1000V CAT III
Alternating Current (AC)		Battery Capacity	3800 mAh
Measurement Range	+15 A ... +5000 A	Battery Type	Nickel-Metal Hydride Battery
Resolution	0.1 A	Harmonics (Order)	1 ... 50
Accuracy	±3 %	Menu Language	German, Russian, Polish, Turkish, Spanish, French, Portuguese, English, Korean, Chinese
		Protection Class (Device)	IP41
Power Factor		Power Supply	Power Supply, Battery
Measurement Range	0 ... +1	Weight	1880 g
Resolution	0.01	Device Weight with Accessories	4200 g
Accuracy	±0.03	Device Weight with Accessories and Packaging	4600 g
		Dimensions (L x W x H)	260 x 190 x 67 mm
Switch-On Current		Operating Conditions	0 ... 40 °C, 0 ... 90 % r.F
Measurement Range	+15 A AC ... +3000 A AC	Storage Conditions	-20 ... 60 °C, 0 ... 90 % r.F
Resolution	0.1 A AC		
Accuracy	±3 %	Optional accessories:	
		PCE-PA 8500-CL1000	Current clamp for PCE-PA 8500 (up to 1000 A)
Frequency 50 Hz		PCE-PA 8500-CL100	Current clamp for PCE-PA 8500 (up to 100 A)
Measurement Range	+42.5 Hz ... +57.5 Hz	PCE-PA 8500-ROG5000	Rogowski coil for PCE-PA 8500 (5000 A)
Resolution	0.01 Hz	PCE-PA 8500-ROG1500	Rogowski coil for PCE-PA 8500 (1500 A)
Accuracy	±0.01 Hz		
Frequency 60 Hz			
Measurement Range	+51 Hz ... +69 Hz		
Resolution	0.01 Hz		
Accuracy	±0.01 Hz		
Frequency 400 Hz			
Measurement Range	+385 Hz ... +414 Hz		
Resolution	0.01 Hz		
Accuracy	±0.1 Hz		
Harmonic Measurement (Harmonics)			
Measurement	+1 (harmonic order). +50 (harmonic order)		
Current Range	0 ... 100 %		
Voltage Range	0 ... 100 %		
THD Range	0 ... 100 %		



Subject to change without notice

HYGIENE MEASUREMENT ATP SURFACE TEST INSTRUMENT

PCE-ATP 1

Stores up to 10,000 date- and time-stamped data records to internal memory

PCE-ATP 1 is a food safety / hygiene - ATP test instrument, ATP meter, lumitester or luminometer used for surface testing. This luminometer allows for quick and easy first-generation adenosine triphosphate (ATP) testing and monitoring to ensure proper cleanliness, sterilization and sanitization. PCE-ATP 1 is an ATP tester that can be used for cleanliness control and documentation in many different appli-

cations. Use PCE-ATP SWAB (sold separately - see accessories) to take a sample of the surface to be tested. Press the swab all the way down into the tube, so the swab comes into contact with the reaction liquid and reagent. Gently shake the tube to ensure the sample is fully covered.

ISO cal option

- » HACCP concept implementation
- » low weight and short measuring time
- » data transfer to the evaluation software
- » USB and Bluetooth interface
- » measured value memory for 10000 measurement results automatic self-calibration



APPLICATION



TECHNICAL SPECIFICATIONS

Detection method	Analog integration by photodiodes
Data output	Relative light units (RLUs)
Background interference	± 5 RLUs
Measurement width	0 ... 999,999 RLUs
Measuring time	10 seconds
Display	3.5 " graphic LCD
Interface	USB
	Bluetooth printer
Memory	10000 measurement records
Self-calibration	Automatic cleanliness testing before each use
Environmental conditions	+5 ... +40 ° C / 41 ... 104 ° F, 20 ... 80% rh
Storage conditions	-10 ... +40 ° C / 14 ... 104 ° F, max. 60% rh
Voltage supply	3.7 V / 2300 mAh Li-ion rechargeable battery
Battery life	Operating: 10 hours Standby: 600 hours
Dimensions	189 x 70 x 35 mm / 7.44 x 2.7 x 1.3 "
Weight	280 g / 0.62 lb

Optional Accessories:

PCE-ATP SWAB	sterile test tubes for sampling on surfaces (100 pieces)
PCE-ATP LIQ-SWAB	sterile test tubes for sampling in liquids/water (100 pieces)
PCE-ATP CAL-SWAB	Calibration rod



Subject to change without notice

HYGIENE MONITORING AIR SAMPLER

PCE-AS1

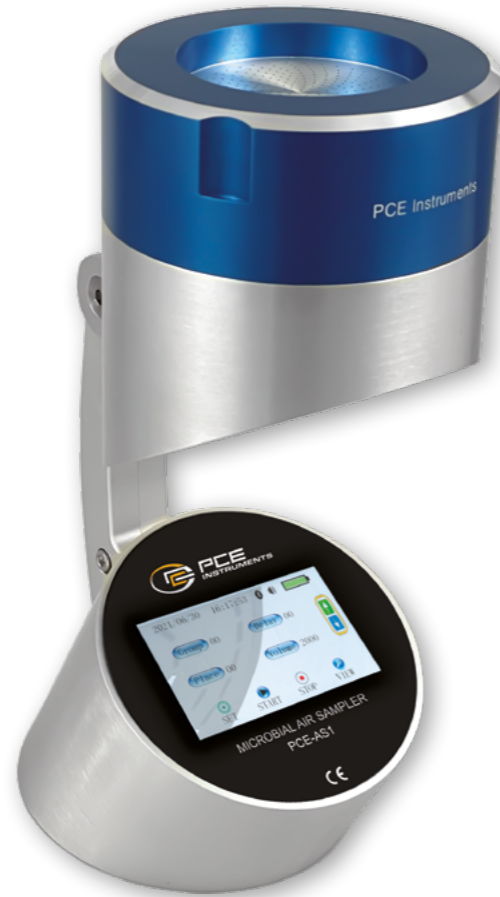
Testing device for checking microbiological contamination

PCE-AS1 is an air sampling meter used to assess microbiological pollution and monitor hygiene. Designed for use in hospitals, clean rooms and food and beverage, cosmetics and pharmaceutical production facilities, the PCE-AS1 air sampler meets the latest requirements for devices used for airborne microbial analysis. Optional ISO calibration lab certificate as an accessory.

The PCE-AS1 air sampler uses the aerosol impaction principle or Andersen collision principle to assess air quality. The air taken in at the top of the instrument is pulled through 300 micropores and the resulting laminar air flow is directed onto the surface of an agar petri dish. When the sampling cycle is complete, the petri dish is removed and incubated.

ISO cal option

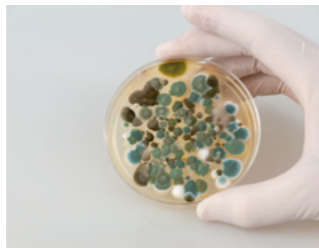
- » backlit LCD
- » memory for up to 99 parameters
- » sterilizable collecting head
- » adjustable volumes of up to 6000 l
- » powerful battery
- » use of standard petri dishes



TECHNICAL SPECIFICATIONS

Number of micropores in the collecting head	589
Hole diameter of the micropores	0.8 mm / 0.03"
Battery	6400 mAh
Sample throughput	100 liters per minute (l/min) or 3.53 cubic feet per minute
Flow rate at measuring head	0.38 l/min
Automatic control of the measuring volume	10 ... 6000 liters
Dimension of plate	ø 70 ... 90 x 15 mm / ø 2.76 x 3.54 x 0.59 inches
Data storage values	max. 99 parameters and 2000 measurement
Dimensions	ø 120 x 300 mm / ø 4.72 x 11.81 inches
Standards	ISO 14698-1
Weight	2.6 kg / 5.73 lb

APPLICATION



Subject to change without notice

WATER ANALYSIS PHOTOMETER

PCE-CP SERIES

Multi-parameter photometer with Bluetooth interface / storage of measured values

The multi-parameter photometer is a mobile measuring device for liquid analysis. This means that the most varied of measurements can be carried out with the multi-parameter photometer. With this multi-parameter photometer it is possible, for example, to determine alkalinity, chlorine, cyanuric acid or the pH value. In order to carry out a measurement with the multi-parameter photometer, a water sample

of 10 ml must be placed in a cuvette. The LED built into the multi-parameter photometer generates a test light in the wavelength ranges of 503 nm, 570 nm and 620 nm. A photodiode now recognizes the value to be measured based on the light transmission of the sample.

ISO cal option

- » bluetooth connection with app
- » exchangeable and lockable cuvette
- » 503 nm / 570 nm / 620 nm LED
- » automatic shutdown when inactive
- » many different menu languages
- » light detector: photodiode
- » cuvette: 36 x ø 21 mm / 3.6 x ø 2.1 cm (10 ml)



APPLICATION



TECHNICAL SPECIFICATIONS

Calibration	Zero point calibration	Optional accessories:	
Light source	503 nm / 570 nm / 620 nm LED		Reagent Kit Urea
Light detector	Photodiode	Liquid Reagent No. 1 for Urea	Order no.: PCE-CP XO Tab PL Urea No1
Power supply	4 x 1.5V AA batteries	Liquid Reagent No. 2 for Urea	Order no.: PCE-CP XO Tab PL Urea No2
Dimensions of the cuvette	36 x ø 21 mm / 3.6 x ø 2.1 cm (10ml)	Bromine Auxiliary Tablets	Order no.: PCE-CP XO Tab Glycine
Menu languages	English, German, French, Spanish and Italian	Ammonia No1 Tablets PCE-CP XO	Order no.: PCE-CP XO Tab Ammonia No1
Storage	Automatic storage of measured values and readout	Polyhexanide Tablets PCE-CP XO	Order no.: PCE-CP XO Tab PHMB
Storage space	256 values	Reagent Tablets for pH Value Measurement	Order no.: PCE-CP XO Tab Phenol Red
Interface	Bluetooth connection with app and PC software	Reagent Kit for Hydrogen Peroxide High Range	Order no.: PCE-CP XO Tab Kit Hydrogen Peroxide HR
Automatic shutdown	After 300 seconds of inactivity	Reagent Tablets for Hydrogen Peroxide Low Range	Order no.: PCE-CP XO Tab Hydrogen Peroxide LR
Operating conditions	5 ... 45°C / 41 ... 113°F, 20 ... 90% RH non-condensing	DPD N° 3 Reagent Tablets for Free Chlorine, Total Chlorine	Order no.: PCE-CP XO Tab DPD 3
Storage conditions	5 ... 45°C / 41 ... 113°F, 20 ... 90% RH non-condensing	DPD N° 1 Reagent Tablets for Free Chlorine	Order no.: PCE-CP XO Tab DPD 1
Dimensions	165 x 95 x 50 mm / 6.5 x 3.7 x 2 in	DPD N° 4 Reagent Tablets for Active Oxygen	Order no.: PCE-CP XO Tab DPD 4
Weight	230 g / < 1 lb	Light Protection Cover	Order no.: PCE-CP XO Cuvette Cover
Models:		Carrying Case	Order no.: PCE-CP XO Case
PCE-CP 04	up to 5 selectable parameters e. g. Alkalinity, pH, Calcium hardness, total hardness	Replacement Cuvette	Order no.: PCE-CP XO Cuvette
PCE-CP 10	up to 5 selectable parameters e. g. Alkalinity, Chlorine, Cyanuric acid, pH,	Stirring Stick for the PCE-CP 10	Order no.: PCE-CP XO Spurtle
PCE-CP 11	up to 7 selectable parameters e. g. Chlorine, pH, Iron, total hardness	Microfiber Cloth	Order no.: PCE-CP XO Microfibre Cloth
PCE-CP 20	up to 7 selectable parameter e. g. Alkalinity, Chlorine, Cyanuric acid, pH, total hardness	Dosing Pipette 10 ml	Order no.: PCE-CP XO PIP
PCE-CP 21	up to 7 selectable parameter e. g. Chlorine, pH, Iron, Cyanuric acid, Bromine, Iodine	Calibration Set PCE-CP XO Cal-Set	Order no.: PCE-CP XO Cal-Set
PCE-CP 22	up to 13 selectable parameter e. g. pH, Iron, Urea, Nitrite, Nitrate, Phosphate,	Reagent Kit Total Hardness	Order no.: PCE-CP XO Tab Kit Total Hardness
PCE-CP 30	up to 13 selectable parameter e. g. Alkalinity, Chlorine, Cyanuric acid, pH,	Reagent Kit Calcium Hardness	Order no.: PCE-CP XO Tab Kit Calcium Hardness
Calcium hardness,			
Ozone,	Active oxygen, Chlorine dioxide, Bromine,		
range (LR),	Hydrogen peroxide - small measuring		
(HR),	Hydrogen peroxide - large measuring range		
	PHMB (polyhexanide), Urea, total hardness		



Subject to change without notice

WATER ANALYSIS MULTIFUNCTION pH METER

PCE-PHD 1

Measures pH value, redox, conductivity, salt content, oxygen, and temperature

The Multifunction pH Meter is a portable, easy-to-use measuring device with multiple capabilities for inspecting water quality. Offering extraordinary precision at an affordable price, the Multifunction pH Meter is used for laboratory and in situ testing of the pH value, redox, conductivity, salt content, oxygen level and temperature of water. Three-point calibration and automatic temperature compensa-

tion guarantee a high level of accuracy even with variable temperature measurements. This meter is supplied with both a pH electrode and a conductivity electrode. Additional electrodes are available for purchase separately, as is an optional mains adapter for power and a software kit with an RS-232 cable.

ISO cal option

- » the saved data is saved directly as an Excel file on the SD card (for evaluation, no software is required)
- » measures pH value, redox, conductivity, salt content, oxygen, and temperature
- » adjustable measuring rate
- » easy to use
- » robust housing
- » includes pH and conductivity electrode
- » manual or automatic temperature compensation
- » BNC connector
- » suitable for laboratory and on-site measurements
- » REDOX and oxygen electrode optionally available



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement rate	1 second up to 8 hrs 59 mins 59 secs
Display	LCD 52 x 38 mm / 2 x 1.5"
Memory	SD card up to 16 GB (2 GB card included)
Interface	RS-232
Software	Optional
Power supply	6 x 1.5 V AA batteries (optional power adapter)
Operating conditions	0 ... +50 °C / < 85 % RH
Dimensions	177 x 68 x 45 mm / 7.0 x 2.7 x 1.8"
Weight	490 g / 1.1 lbs

pH measurement

Measurement range	0 ... 14.0 pH
Resolution	0.01 pH
Accuracy	±0.02 pH + 2 digits
Calibration	3 points (pH 4, pH 7, and pH 10)
Temperature compensation	Automatic with additional temperature sensor (0 ... 60 °C / 32 °F ... 140 °F) or manual (0 ... 100 °C / 32 °F ... 212 °F)

Redox measurement (optional)

Measurement range	1999 ... 0 ... 1999 mV
Resolution	1 mV
Accuracy	± 0.5 % + 2 digits

Conductivity measurement

Measurement range	0 ... 200 µS/cm, 0.2 ... 2.0 mS/cm, 2 ... 20.0 mS/cm,
	20 ... 200 mS/cm
Resolution	0.01 µS/cm, 0.001 mS/cm, 0.01 mS/cm,
	0.1 mS/cm
Accuracy	±2 % of the measurement range + 1 digit
Calibration	1413 mS/cm
Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)

Total dissolved solids (TDS) measurement

Measurement range	0 ... 132 ppm, 132 ... 1320 ppm, 1320 ... 13200 ppm, 13200 ... 132000 ppm
Resolution	0.1 ppm, 1 ppm, 10 ppm, 100 ppm
Accuracy	±2 % of the measurement range + 1 digit
Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)

Salt content measurement

Measurement range	0 ... 12 % (of weight)
Resolution	0.1 %
Accuracy	±0.5 % of the measurement range
Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)

Oxygen measurement (optional)

Measurement range	0 ... 20 mg/l (in water), 0 ... 100 % (in air), 0 ... 50 °C / 32 °F ... 122 °F
Resolution	0.1 mg/l, 0.1 %, 0.1 °C
Accuracy	±0.4 mg/l, ±0.7 %, ±0.8 °C
Calibration	In the air
Temperature compensation	Automatic (0 ... 50 °C / 32 °F ... 122 °F)

Temperature measurement

Measurement range	0 ... 60 °C / 32 °F ... 140 °F
Resolution	0.1 °C
Accuracy	±0.8 °C
Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)



Subject to change without notice

WATER ANALYSIS PH TESTER

PCE-PH 14

For aqueous non-corrosive media / automatic 3-point calibration

Our pH Tester is a precise pH and temperature meter with replaceable electrode and automatic temperature compensation. The pH Tester has a hold function for freezing the current measured value and a temperature display in °C and °F.

The measurement ranges of the device for the pH value are 0 ... 14 pH with a resolution of 0.01 pH and for temperature 0 ... 60 °C or

32 ... 140 °F with a resolution of 0.1 °C/°F. The automatic calibration ensures reliable measurement accuracy, while automatic power off after 10 minutes of inactivity extends the battery life. The pH Tester is compact, user-friendly and shows pH and temperature values simultaneously on the LCD colour screen. The charge status of the integrated lithium battery is also displayed.

ISO cal option

- » displays pH value and temperature
- » HOLD function
- » red display at pH<3.5 or pH>11.5
- » automatic 3-point calibration
- » automatic power off
- » automatic temperature compensation
- » temperature display (°C, °F)
- » LC colour display 1.6 inch



APPLICATION



TECHNICAL SPECIFICATIONS

pH	
Measurement range up to	0 ... 14 pH
Resolution	0,01 pH
Accuracy	±0.05 pH
Electrode	
Application	Aqueous non-corrosive media
Reference electrolyte	Potassium chloride
Shank material	Glass
Shank length	35 mm
Shank diameter	19,5 mm
Temperature	
Measurement range up to	0 ... 60 °C
Resolution	0,1 °C
Accuracy	±1 °C
Temperature	
Measurement range up to	32 ... 140 °F
Resolution	0,1 °F
Accuracy	±1 °F
General technical data	
Measuring functions	HOLD
Temperature compensation	automatic: 0 ... 60 °C
Display type	LC colour display
Display size	1,6 Inch
Automatic power-off	10 min
Number of calibration points	3
Menu language	English, English (GB)
Protection class (device)	IP67
Power supply	5 V
Capacity	600 mAh
Operating conditions	0 ... 60 °C , 0 ... 85 % RH
Storage conditions	0 ... 60 °C , 20 ... 85 % RH
Dimensions (L x W x D)	190 x 190 x 43 mm
Weight	120 g



Subject to change without notice

PCE-PH 228 SERIES

pH Meter with GLP Data Management / High Accuracy ± 0.002 pH + 2 Digits

The advanced pH meter stands for precision, user-friendliness, and GLP compliance (Good Laboratory Practice). With a high-resolution LCD display, the pH meter provides a clear and concise presentation of measurement values. GLP compliance is ensured through automatic data recording and traceable documentation. It allows measurement of pH or redox value and temperature with external sensors.

A Permanent Measurement Verification (PMV) indicates to the operator, using a color bar, where the measurement value is located within the calibration range, providing insight into whether the measurement is in the correct range. User and sample management enable easy navigation and adjustment of measurement parameters on the pH meter.

ISO cal option

- » fast, precise pH and temperature measurement
- » range -2 pH ... +20 pH
- » redox measurement (with optional electrode)
- » GLP data management
- » easy 2, 3, 4, and 5-point calibration
- » calibration reminder
- » permanent Measurement Verification (PMV)
- » graphical display of measurement history
- » data logger



APPLICATION



TECHNICAL SPECIFICATIONS

pH	Measurement Range	-2 pH ... +20 pH	
	Resolution	0.001 pH	
	Accuracy	± 0.002 pH + 2 digits	
Electrode	Designation	PE-03	
	Measurement Range	+1 pH ... +13 pH	
	Temperature Range	5 ... 60 °C	
	Application	Aqueous non-corrosive media	
	Reference Electrolyte	Ag/AgCl	
	Shaft Material	Epoxy resin	
	Shaft Length	160 mm	
	Shaft Diameter	12 mm	
	Cable Length	1 m	
Redox	Measurement Range	-2000 mV ... +2000 mV	
	Resolution	1 mV	
	Accuracy	± 2 mV	
Temperature Sensor	Minimum Temperature	-20 °C	
	Maximum Temperature	100 °C	
	Resolution	0.1 °C	
	Accuracy	± 0.5 °C (@ 20 °C)	
General Technical Data	Storage Medium	Internal memory	
	Storage Interval from	1 s	
	Storage Interval to	12 h	
	Storage Capacity	32 GB	
	Storage Capacity		
	Additional Information	100 records with a maximum of 100,000 data points per record	
	Interface	USB-C	
	Menu Language	German, English, French, Spanish, Italian, Dutch, Portuguese, Turkish, Polish, Russian, Chinese, Danish, Japanese	
	Protection Class (Device)	IP52	
	Power Supply	5 V DC, 500 mA	
	Weight	252 g	
	Dimensions (L x W x H)	178 x 85 x 32 mm / 7 x 3,3 x 1,2 in	
	Operating Conditions	-20 ... 65 °C, 10 ... 95 % r.H	
	Storage Conditions	-20 ... 65 °C, 10 ... 95 % r.H	
	Languages of the Manual	German, English	
Batteries and Accumulators	Type	Lithium polymer battery	
	Lithium Info	Lithium in the product (built-in or included)	
	Capacity	2500 mAh	
	Voltage	3.7 V	
	System	Secondary: Rechargeable battery	
	Quantity	1	

Optional accessories:

Calibration Solution pH4 and pH7 and pH10	Order no.: PCE-PH4710
Electrode Storage Solution 3mol / l	Order no.: PCE-SSO
pH Electrode IJ-44A	Order no.: IJ-44A
Diaphragm Cleaner with Thiourea	Order no.: PCE-DCS-250
Cleaning solution pepsin / hydrochloric acid	Order no.: PCE-GCS-500
REDOX-Electrode ORP-14	Order no.: ORP-14
Redox Solution +468 mV	Order no.: PCE-RTS-468
Redox Solution +240 mV	Order no.: PCE-RTS-220
Temperature sensor TP-07	Order no.: TP-07
pH-Electrode PE-03	Order no.: PE-03
Food pH-electrode	Order no.: CPC-OSH-12-01

Models:

PCE-PH 228	general pH measurements in aqueous solutions
PCE-PH 228HTE	high-temperature measurements up to 100 °C
PCE-PH 228LIQ	pH measurements specifically for beer, milk, blood
PCE-PH 228M	pH measurements in food, pH electrode with stainless steel blade
PCE-PH 228P	pH measurements in pasty media such as shampoo, soap, pastes, paints and lacquers
PCE-PH 228R	measurement of redox potential
PCE-PH 228S	measurements in loose soil and seeds
PCE-PH 228SF	surface pH measurements
PCE-PH 228SLUR	pH measurements in sludge and soil
PCE-PH 228WINE	pH measurements in wine



Subject to change without notice

WATER ANALYSIS CHLORINE TESTER

PCE-CHT 10

Chlorine tester for swimming pools / Measuring range 0 ... 10 mg/l

The water analysis meter chlorine tester with a measuring range of 0 ... 10 mg/l has been developed for rapid chlorine measurement in water. The display of the chlorine analysis meter shows the chlorine content and the temperature. The measurement result appears on the display within a few seconds after the test and can also be frozen. In addition, the water analysis meter shows a symbol in the display

when the measured value is stable. The measuring accuracy of the water analysis meter chlorine tester is increased by an automatic temperature compensation. The automatic switch-off function after 20 minutes extends the battery life of the water analysis meter.

ISO cal option

- » ideal for swimming pools
- » manual 2-point calibration
- » measured value stabilization
- » exchangeable chlorine electrode
- » automatic temperature compensation
- » backlight



TECHNICAL SPECIFICATIONS

Measuring range chlorine	0...10.00 mg/l
Measurement accuracy	±2 % of measuring range
Resolution	0.01 mg/l
Protection class	IP67
Measuring range temperature	0 ... 100 °C / 32 ... 212 °F
Calibration	manual 2-point calibration
Operating conditions	0 ... 60 °C / 32 ... 140 °F 20 ... 90 % RH not condensing
Power supply	1 x 1.5V AAA battery
Dimensions	185 x 40 x 48 mm / 7.28 x 1.57 x 1.89"
Dimensions electrode	35 x Ø 20 mm / 1.37 x Ø 0.78"
Weight	95 g / 3.35 oz

APPLICATION



Subject to change without notice

WATER ANALYSIS DISSOLVED OXYGEN METER

PCE-DOM 20

For oxygen analysis / Measuring range up to 20 mg / L

The oxygen meter PCE-DOM 20 is a measuring device to determine the oxygen content both in liquids and in the ambient air. With this oxygen meter, water analyzes can be carried out on the oxygen content in a very short time and with the integrated temperature sensor, the oxygen meter is able to carry out an automatic temperature compensation. As a result, the oxygen meter is also used for

analyzing the oxygen content of lakes or streams, as strong temperature fluctuations can occur here, which falsify the measurement result. This oxygen meter is also used, for example, in fish farming.

ISO cal option

- » measuring range up to 20 mg / L
- » for oxygen analysis
- » temperature compensation up to 50°C / 122°F
- » electrolyte included
- » for measurements in liquids and in air
- » exchangeable oxygen sensor



APPLICATION



TECHNICAL SPECIFICATIONS

Oxygen in liquids

Measuring range	0 ... 20 mg / L
Resolution	0.1 mg / L
Accuracy	± 0.4 mg / L

Oxygen in the air (reference measurement)

Measuring range	0 ... 100%
Resolution	0.1%
Accuracy	± 0.7%

Temperature

Measuring range	0 ... 50°C / 32 ... 122°F
Resolution	0.1°C / 0.18°F
Accuracy	± 0.8°C / 1.4°F

Cable length	4 m / 13.1 ft
Temperature units	°C / °F
Display	LCD display 29 x 28 mm / 1.1 x 1.1 in
Temperature compensation	Automatically
Storage	MIN, MAX
Automatic shutdown	After approx. 15 minutes
Operating conditions	0 ... 50°C / 32 ... 122°F, < 80% RH
Power supply	4 x 1.5V AAA batteries
Power consumption	Approx. 6.2-mA
Dimensions device without sensor	180 x 40 x 40 mm / 7.1 x 1.6 x 1.6 in(hand-held)
Weight	Approx. 390 g / < 1 lb

Optional accessories:

Oxygen Probe	Order no.: OXPB-19
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Subject to change without notice

WATER ANALYSIS TURBIDITY METER

PCE-TUM 20

Portable Turbidity Meter according to ISO 7027 / measuring range 0 ... 50 NTU and 50 ... 1000 NTU

PCE-TUM 20 is a portable handheld turbidity meter for water quality analysis. This turbidity measuring device is equipped with a large LCD screen and user-friendly keyboard. The turbidity meter features two automatically switching measuring ranges between 0 ... 50 NTU and 50 ... 1000 NTU for increased accuracy. Using the included calibration references of 0 NTU and 100 NTU, the meter can be adjusted at any

time. (Note: NTU stands for Nephelometric Turbidity Unit). Inside the meter, there is an infrared LED light source with a wavelength of 850 nm. A photodiode positioned in a 90° angle to the measuring ray absorbs the light reflected by the particles in the dissolution.

ISO cal option

- » portable
- » high accuracy
- » large LCD screen
- » user-friendly keyboard
- » displays turbidity measurements in NTU



TECHNICAL SPECIFICATIONS

Measuring range	0.00 to 50.0 NTU and 50 to 1000 NTU
Resolution	0.01 and 1 NTU
Accuracy	± 5 % of measured value or ± 0.5 NTU
Light source	LED, infrared at 850 nm
Lifetime	Almost unlimited
Light detector	Photodiode
Measurement time	< 10 sec.
Power supply	6 x 1.5 V AAA batteries
Operating conditions	< 50 °C / 122 °F, < 85 % RH
Dimensions (H x W x D)	Approx. 155 x 76 x 62 mm / 6.1 x 3.0 x 2.4"
Weight	Approx. 320 g / 0.71 lb

Optional accessories:

Replacement calibration standard	Order no.: TU-0NTU
Replacement calibration standard	Order no.: TU-100NTU
Spare Cuvette	Order no.: SB-TUM

APPLICATION



Subject to change without notice

PCE-TUM 50

According to ISO 7027 (90°) / Turbidity calibration up to 7 points

The turbidity meter PCE-TUM 50 is a portable device for measuring turbidity according to ISO 7027. This allows the user to quickly and easily determine important water parameters with the turbidity meter and to check the quality of drinking water and waste water. The calibration of the turbidity meter PCE-TUM 50 is very easy due to the calibration standards supplied. The calibration can be carried out with

7 preset points. In addition, user-specific calibration points can also be set. The turbidity meter is capable of measuring turbidity of liquids up to 2000 NTU.

Furthermore, the measuring unit can be switched to EBC (European Brewery Convention) or ASBC (American Society of Brewing Chemists).

ISO cal option

- » high precision
- » 3 measuring units
- » turbidity calibration up to 7 points
- » color display
- » fasy handling
- » USB interface



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement method	ISO 7027 (90°)
Measuring ranges	0 ... 2000 NTU 0 ... 500 EBC 0 ... 9999 ASBC
Resolution	< 100 NTU: 0.01 < 999 NTU: 0.1 < 2000 NTU: 1
Accuracy	< 500 NTU: ±2 % of measured value < 2000 NTU: ±3 % of measured value
Calibration	< 0.02 NTU 10 NTU 200 NTU 500 NTU 1000 NTU 1500 NTU 2000 NTU Or user-specific
Light source	850 nm IR LED
Scattered light influence	< 0.02 NTU
Dimensions of cuvettes	60 x 25 mm / 2.4 x 1 in
Automatic shutdown	2 hours after the device was not used
Storage	200 memory slots
Interface	USB
Power supply	220 VAC/50 Hz, 12 VDC
Current consumption	About 300-mA
Operating temperature	0 ... 60°C / 32 ... 140°F
Dimensions	250 x 177 x 96 mm / 9.8 x 7 x 3.8 in
Weight	About 1.2 kg / 2.6 lbs

Optional accessories:

Replacement Cuvette	Order no.: SB-PCE-TUM 50
Replacement Calibration Standards	Order no.: CS-PCE-TUM 50



Subject to change without notice

OPTICAL MEASUREMENT REFRACTOMETER

PCE-DR SERIES

Measurement of the refractive index of a liquid and other parameters

Refractometers sometimes have scales with several units. The visible dividing line between the blue field and the white field indicates the results. With the Oechsle - Winzer - refractometer, for example, in °Oe, Brix and Babo. Refractometer for the beekeeper for quick determination on the farm. Air quality measuring device for correct ventilation to protect against viruses. If you want to determine the concentra-

tion of suspensions or aqueous solutions (e.g. from a color suspension) using the refractometer, this is no problem. You only need to measure a sample of the liquid with a refractometer (e.g. the O32).

ISO cal option

- » easy to use (1-key operation)
- » quick and accurate measurement in approx. 1 s
- » ABS plastic housing with IP65 ingress protection rating against water and dust
- » large LC display (measured value and temperature)
- » automatic temperature compensation
- » stainless steel sample holder with glass prism
- » automatic power-off after 1 min of inactivity
- » simple calibration with distilled water

General technical data:

Temperature compensation	automatic	+10 ... +40 °C / +50 ... +104 °F
Sample quantity	0,2 ... 0.3 ml	
Protection class (device)	IP56	
Power supply	5V DC, 500mA	
Weight	115 g	
Dimensions (L x W x H)	145 x 46 x 27 mm	



APPLICATION



TECHNICAL SPECIFICATIONS

Models and specifications (continued)

Model	Scale	Measure Range	Model	Scale	Measure Range
PCE-DRB 1	Brix	0 ... 90,00 %	PCE-DRF 3	Calcium chloride	0 ... 41 %
	Refractive Index	1.3330 ... 1.5177nD		Refractive Index	1.333 ... 1.42 nD
PCE-DRB 2	Dextran	0 ... 10.6 %	PCE-DRF 4	Glycerin	0 ... 100 %
	Fructose	0 ... 68.9 %		Refractive Index	1.333 ... 1.474 nD
	Glucose	0 ... 59.9 %	PCE-DRF 5	Hydrogen peroxide	0 ... 61 %
	Lactose	0 ... 16.5 %		Refractive Index	1.333 ... 1.465 nD
	Maltose	0 ... 15.6 %	PCE-DRF 6	Potassium carbonate	0 ... 51 %
	Refractive Index	1.3330 ... 1.5177 nD		Refractive Index	1.333 ... 1.465 nD
PCE-DRW 1	Brix	0.0 ... 50.0 %	PCE-DRF 7	Potassium hydroxide	0 ... 21 %
	Wort D20/20	1.000 ... 1.130		Refractive Index	1.333 ... 1.3744 nD
PCE-DRP 1	Brix	0.0 ... 50.0 %	PCE-DRF 8	Lithium hydroxide	0 ... 15 %
	Coffee p1	0.0 ... 25.0		Refractive Index	1.333 ... 1.4641 nD
	Refractive Index	1.3330 - 1.4200 nD	PCE-DRF 9	Methanol [45%]	0 ... 46 %
PCE-DRP 2	Brix p2	0.00 ... 30.00 %		Refractive Index	1.333 ... 1.329 nD
	Coffee p2	0.00 ... 25.00	PCE-DRG 1	Magnesium chloride	0 ... 35 %
PCE-DRS 1	Salinity	0 ... 28.0 %		Refractive Index	1.333 ... 1.465 nD
	Salinity	0 ... 280 ‰	PCE-DRG 2	Sodium nitrate	0 ... 41 %
	Specific Gravity	1.000 ... 1.217		Refractive Index	1.3127 ... 1.387 nD
	Refractive Index	1.3330 ... 1.3900 nD	PCE-DRG 3	Ammonia	0 ... 35 %
PCE-DRS 2	Salinity	0 ... 100 ‰		Refractive Index	1.328 ... 1.3565 nD
	Chlorinity	0 ... 57 ‰	PCE-DRG 4	Isopropyl alcohol	0 ... 81 %
	Specific Gravity	1.000 ... 1.070		Refractive Index	1.333 ... 1.465 nD
	Refractive Index	1.3330 ... 1.3530 nD	PCE-DRG 5	Dimethylacetamide	0 ... 100 %
PCE-DRH 1	Brix	0 ... 90.00 %		Refractive Index	1.327 ... 1.4472 nD
	Water	38.0 ... 5.0 %	PCE-DRG 6	Dimethylformamid	0 ... 55 %
	Bé	33.0 ... 48.0		Refractive Index	1.326 ... 1.4039 nD
	Refractive Index	1.3330 ... 1.5177 nD	PCE-DRG 7	Dimethylformamide	0 ... 100 %
PCE-DRW 2	Brix	0 ... 45.00 %		Refractive Index	1.326 ... 1.432 nD
	%VOL ap	0 ... 22.00 %	PCE-DRG 8	N-methyl-2-pyrrolidone	0 ... 100 %
	Oechsle	3 ... 150		Refraktionsindex	1.326 ... 1.48 nD
	KMW	0 ... 25.00	PCE-DRG 9	Sodium hypochlorite	0 ... 18 %
PCE-DRU 1	Urea (NH ₂) ₂ CO	0 ... 51.0 %		Refractive Index	1.325 ... 1.4 nD
	Refractive Index	1.3330 ... 1.4056 nD	PCE-DRG 10	Sodium hydroxide	0 ... 55 %
PCE-DRC 1	Cleaner	-40 ... 0 °C		Refractive Index	1.325 ... 1.441 nD
	Ethylene Glycol	-50 ... 0 °C			
	Propylene Glycol	-50 ... 0 °C			
	Battery	1.000 ... 1.500 sg			
PCE-DRA 1	Ethylene Glycol (V/V)	0 ... 60 %			
	Ethylene Glycol (°C)	-50 ... 0 °C			
	Propylene Glycol (V/V)	0 ... 70 %			
	Propylene Glycol (°C)	-70 ... 0 °C			
PCE-DRD 1	Salinity	0 ... 28 %			
	Refractive Index	1.333 ... 1.42 nD			
PCE-DRD 2	Salinity	0 ... 280 ‰			
	Refractive Index	1.333 ... 1.42 nD			
PCE-DRD 3	Salzgehalt	0 ... 28.5 %			
	Refractive Index	1.333 ... 1.42 nD			
PCE-DRF 2	Essigsäure	0 ... 75 %			
	Refractive Index	1.327 ... 1.377 nD			



Subject to change without notice

VISCOSITY MEASUREMENT

VISCOSITY METER

PCE-RVI 10

Measuring range up to 2,000,000 cP / for measuring the viscosity of liquids

The viscometer measures by means of the mechanical resistance of any liquid that acts in the opposite direction to the rotational movement of a spindle. This results in a torque that is recognized by the viscometer and converted into a viscosity value. With an accuracy of $\pm 1.0\%$, the rotary viscometer is a very precise measuring device despite the high measuring range of 10... 2,000,000 cP or mPa*s. With the

immersion resistance temperature sensor on the viscometer, the temperatures of the liquids to be tested can be measured between 0 and 100 °C or 0 and 212 °F. This viscometer is used, for example, in the quality control of oils. Many oils change their viscosity depending on the temperature. Thanks to the timer function, the rotary viscometer can work independently for the period set by the operator.

ISO cal option

- » viscosity measuring range: 10 ... 2,000,000 cP (various units can be displayed)
- » accuracy: $\pm 1\%$ of full scale (with Newtonian liquid)
- » rotation speeds: 0.3, 0.6, 1.5, 3, 6, 12, 30, 60 rpm
- » 5" touch screen with simple interface
- » immersion temperature sensor up to 100 °C or 212 °F
- » spindle set consisting of L1, L2, L3, L4
- » height adjustable approx. 25 cm
- » built-in bubble level for leveling
- » optional L0 spindle down to 1 cP



APPLICATION



TECHNICAL SPECIFICATIONS

Measuring range	10 ... 2,000,000 mPa*s
Measuring accuracy	$\pm 1.0\%$ of the set measuring range
Repeatability	$\pm 0.2\%$ of the set measuring range
Rotation speed	0.3, 0.6, 1.5, 3, 6, 12, 30, 60 rpm
Temperature sensor	resistance temperature sensor
Temperature measurement measuring range	0 ... 100 °C, 0 ... 212 °F
Temperature measurement accuracy	0.1 °C
Adjustable units	mPa*s, Pa*s, dPa*s, cP, P, cPs
Interface	RS232 (SUB D9)
Display	LCD 5" touchscreen
Height adjustment	ca. 25 cm
Power supply	primary: 100 to 240 V, 50 or 60 Hz secondary: 12VDC, 1.5 A
Dimensions	430 x 320 x 275 mm
Weight	ca. 5.4 kg



Subject to change without notice

PLASTICS TESTING

MATERIAL FLOW INDEX TESTER

PCE-MFI 400

Melt mass flow rate of plastics

The plastometer is used for rapid testing of the melt mass flow rate of plastics. The plastics testing device is designed for both incoming goods inspection and continuous production monitoring. The clear display of all relevant parameters on the 7" touch screen makes it possible to make measurements very quickly. The automatic cutting function additionally contributes to the high reproducibility of the

plastics tester. Some saved standard plastics make some cumbersome configuration processes unnecessary. These include PS, PP, PE, ABS, PC, PMMA and many more.

ISO cal option

- » large 7" TFT touch display
- » clear presentation
- » heating temperature up to +400 °C
- » pre-set materials
- » robust metal housing
- » different weights included



APPLICATION



TECHNICAL SPECIFICATIONS

Measurement rate / Melting rate	0.1 ... 400.0 g / 10 min
Temperature	+120 ... +400 °C
Measuring accuracy temperature	±0.2 °C / 0.36 °F
Resolution	0.1 °C / 0.18 °F
Test load	0.325 ... 21.6 kg
Test piston Ø	9.48 mm
Capillary Ø	2.095 mm
Standards	ISO1133-1997, ASTM 1238-04C, GB/T3682-2000
Display Type	7" LCD touch display
Resolution	800 x 480 pixels
Colour depth	16000 colours
Dimensions (without test load)	500 x 320 x 500 mm / 19.7 x 12.6 x 19.7 in
Weight (without test load)	approx. 15 kg / 33 lbs
Power supply	90 ... 264 V AC
Power consumption (at full load)	approx. 0.6 kVA

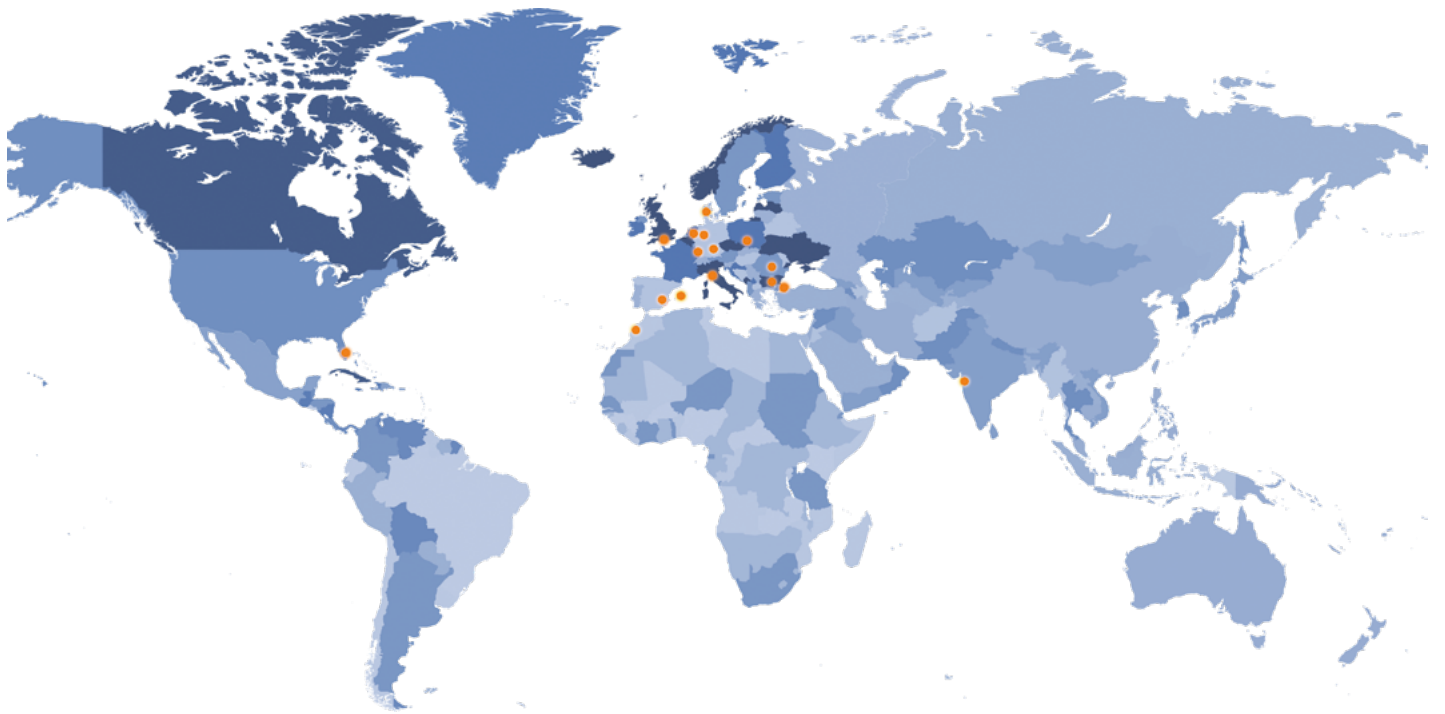


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