

**TEST EQUIPMENT  
FOR LABORATORY  
AND RESEARCH**



# PCE Instruments

Discover our new test instruments and their functions



# TESTING MEASURING INSTRUMENTS

## TEST INSTRUMENTS FROM GERMANY

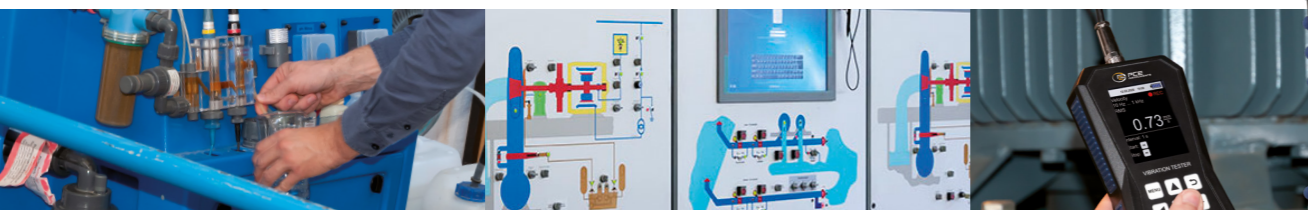
### For industry, laboratory and research

The company PCE Instruments based in Meschede-Freienohl in the German Sauerland region was founded in 1999 by three engineers. With more than 140 employees and several branches around the world, the company focuses on the development, production and distribution of high-performance and innovative products from the fields of measuring instruments, control systems, weighing equipment and laboratory technology.

PCE Instruments' wide range of products and services offers high precision and flexibility in any application as well as outstanding quality and functionality. The different fields can be seen in the overview.

Our products for laboratory environments meet all requirements for conventional laboratory analysis, from routine tests to extremely complex investigations for research purposes. The goal is clearly defined: **to offer laboratory staff equipment that meets highest demands.**

Employees in chemical, pharmaceutical laboratories and laboratory technicians in production laboratories should always be able to concentrate on their actual task and therefore be able to regard their laboratory instruments and equipment as reliable accessories.



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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.

# 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	<b>Optional accessories:</b>	
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 interface	256 values	Reagent Tablets for pH Value Measurement	Order no.: PCE-CP XO Tab Phenol Red
Automatic shutdown	Bluetooth connection with app and PC software	Reagent Kit for Hydrogen Peroxide High Range	Order no.: PCE-CP XO Tab Kit Hydrogen Peroxide HR
Operating conditions	After 300 seconds of inactivity	Reagent Tablets for Hydrogen Peroxide Low Range	Order no.: PCE-CP XO Tab Hydrogen Peroxide LR
	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
<b>Models:</b>		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		



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# WATER ANALYSIS

## PH METER

### PCE-PH 228

#### pH Meter with GLP Data Management / High Accuracy $\pm 0.002$ 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
- » 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

<b>pH</b>	Measurement Range	-2 pH ... +20 pH	<b>Optional accessories:</b>	Calibration Solution pH4 and pH7 and pH10	Order no.: PCE-PH4710
	Resolution	0.001 pH		Electrode Storage Solution 3mol / l	Order no.: PCE-SSO
	Accuracy	$\pm 0.002$ pH + 2 digits		pH Electrode IJ-44A	Order no.: IJ-44A
	Electrode Designation	PE-03		Diaphragm Cleaner with Thiourea	Order no.: PCE-DCS-250
	Measurement Range	+1 pH ... +13 pH		Cleaning solution pepsin / hydrochloric acid	Order no.: PCE-GCS-500
	Temperature Range	5 ... 60 °C		REDOX-Electrode ORP-14	Order no.: ORP-14
	Application	Aqueous non-corrosive media		Redox Solution +468 mV	Order no.: PCE-RTS-468
	Reference Electrolyte	Ag/AgCl		Redox Solution +240 mV	Order no.: PCE-RTS-220
	Shaft Material	Epoxy resin		Temperature sensor TP-07	Order no.: TP-07
	Shaft Length	160 mm		pH-Electrode PE-03	Order no.: PE-03
	Shaft Diameter	12 mm		Food pH-electrode	Order no.: CPC-OSH-12-01
	Cable Length	1 m			
	<b>Redox</b>				
	Measurement Range	-2000 mV ... +2000 mV			
	Resolution	1 mV			
	Accuracy	$\pm 2$ mV			
	<b>Temperature Sensor</b>				
	Minimum Temperature	-20 °C			
	Maximum Temperature	100 °C			
	Resolution	0.1 °C			
	Accuracy	$\pm 0.5$ °C (@ 20 °C)			
	<b>General Technical Data</b>				
	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			
	<b>Batteries and Accumulators</b>				
	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			



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# 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



## APPLICATION



## 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



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# WATER ANALYSIS

## WATER ANALYSIS 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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# WATER ANALYSIS REDOX METER

## PCE-BPH 10

### Memory for 300 measured values/ Measuring range pH -2.000 ... +19.999 pH

With the table-top water analysis meter it is possible to carry out quick and precise analysis of the pH concentration of liquid samples. For example, with the water analysis meter it is possible to check alkaline solutions, water, wine, milk and many other liquids for the pH content. The table water analysis meter has a measuring range of -2 ... +19.999 pH. With the temperature probe of the water analysis meter

it is also possible to determine the temperature of the sample. This is particularly important as the pH measurement is highly temperature dependent. This means that both manual and automatic temperature compensation is possible with the water analysis meter.

### ISO cal option

- » measuring range between -2 ... +19.999 pH
- » USB and Bluetooth interface
- » live viewing software
- » memory for 300 measured values
- » 3 point calibration
- » automatic temperature compensation



## APPLICATION



## TECHNICAL SPECIFICATIONS

<b>Measuring range pH</b>	<b>-2.000 ... +19.999 pH</b>
Resolution	0.1 / 0.01 pH
Accuracy	Electrode: ±0.02 pH
Input current	≤1×10 <sup>-12</sup> A
Input resistance	≥3×10 <sup>+12</sup> Ω
Measurement stability	±0.01 pH/3h
Temperature compensation	0 ... 100 °C / 32 ... 212 °F (automatic / manual)
<b>Measuring range mV</b>	<b>-1999.9 ... +1999.9 mV</b>
Resolution	1 mV
Accuracy	±0.03 % of measuring range
<b>Measuring range temperature</b>	<b>-10 ... +110 °C / 14 ... 230 °F</b>
Resolution	0.1 °C
Accuracy	5 ... 60 °C (41 ... 140 °F): ±0.4 °C Rest: ±0.8 °C
Data memory	300 pH measuring points
Content of a memory point	date and time, measured value with unit and temperature
Display	7" touchscreen
Resolution	1024 x 600 pixels
Interfaces	USB A, USB B, Bluetooth
Protection class	IP32
Power supply	Primary: 230 ... 240 V / 50 Hz Secondary: 12 V DC / 1 A
Operating conditions	5 ... 35 °C / 41 ... 95 °F, < 85 % r.h. not condensing
Dimensions	175 x 220 x 40 mm / 68.9 x 86.6 x 15.7"
Weight	ca. 310 g / 10.9 lb
<b>Further model:</b>	
PCE-BPH 20	with Conductivity electrode
<b>Optional accessories:</b>	
Standard pH-Electrode	Order no.: CPC-EPS-1
pH-Electrode	Order no.: PE-0
pH-Electrode	Order no.: IJ-44A
Food pH-Electrode	Order no.: CPC-OSH-12-01
pH-Electrode	Order no.: PCE-PH-WINE
pH-Electrode	Order no.: PCE-PH-SLUR
pH-Electrode	Order no.: PCE-PH-LIQ
REDOX-Electrode	Order no.: ORP-14
Calibration Solution pH4 + pH7 + pH10	Order no.: PCE-PH4710
Diaphragm Cleaner with Thiourea	Order no.: PCE-DCS-250
Redox Solution 220 mV / 250 ml	Order no.: PCE-RTS-220
Redox Solution 468 mV / 500 ml	Order no.: PCE-RTS-468



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# PROCESS CONTROL

## pH CONTROLLER

### pH CONTROLLER PCE-PHC 10

#### For fish farming, electroplating or water treatment / 2-point pH controller

The pH process controller measures and regulates the pH of various substances and is able to influence the pH value. The pH process controller is a classic 2-point controller, depending on the application, the controller can be used to influence the liquid in the direction of alkaline or acidic. The limit values for the 2-point control are programmed via

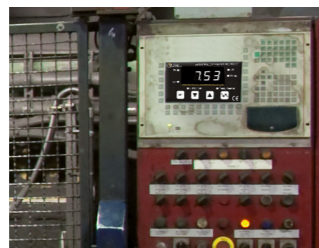
the buttons of the pH controller, which are located on the front. Also in the front is the LED display, on which the current measured value can be read at any time. This facilitates the fast and precise control of the water values, especially in the industrial process. A pH electrode is connected to the pH controller via BNC plug.

#### ISO cal option

- » small dimensions
- » large LED display
- » 2 control relays for pH and temperature
- » connection via BNC and screw contacts
- » for water treatment, electroplating ...
- » 3-point calibration



### APPLICATION



### TECHNICAL SPECIFICATIONS

#### Measured variable pH

Measuring range 0 ... 14 pH  
 Resolution 0.01 pH  
 Accuracy  $\pm (0.02 \text{ pH} + 2 \text{ digits})$

#### Measured variable temperature

Measuring range 0 ... 65°C / 32 ... 149°F  
 Resolution 0.1°C / 0.18°F  
 Accuracy  $\pm 0.8^\circ\text{C} / 1.44^\circ\text{F}$

pH input impedance 1012 ohms  
 Temperature compensation Manual: -30 ... 100°C / -22 ... 212°F  
 Automatic: 0 ... 65°C / 32 ... 149°F  
 pH 7, pH4, pH10  
 BNC  
 About 1 second  
 4 digit LED display  
 14 mm digit height  
 250V AC / 0.5A  
 24V DC / 0.5A  
 12V / 0.05A DC  
 Serial RS232  
 Operating conditions 0 ... 50°C / 32 ... 122°F, max. 80% rh  
 Power supply 90 ... 260V AC / 50/60 Hz  
 Input Approx. 4.7 VA at 110V AC  
 Approx. 5.3 VA at 220V AC  
 Weight About 275 g / 9.7 oz meter only  
 Dimensions 96 x 48 x 107 mm / 3.8 x 1.9 x 4.2 in  
 Front panel 92 x 46 mm / 3.6 x 1.8 in

#### Optional accessories:

pH Electrode PCE-PH-HTE  
 Temperature Electrode TP-07A  
 pH Electrode for pH Meter PE-21  
 pH Electrode PCE-PH-SLUR  
 pH Electrode PCE-PH-LIQ  
 Calibration Solution pH4 and pH7  
 Table Housing PCE-TGH450  
 Calibration Solution pH4 and pH7 and pH10  
 Calibration Solution pH10  
 Calibration Solution pH7  
 Calibration Solution pH4

Order no.: PCE-PH-HTE  
 Order no.: TP-07A  
 Order no.: PE-21  
 Order no.: PCE-PH-SLUR  
 Order no.: PCE-PH-LIQ  
 Order no.: PCE-PH47  
 Order no.: PCE-TGH450  
 Order no.: PCE-PH4710  
 Calibration Solution pH10  
 Order no.: PCE-PH7  
 Order no.: PCE-PH4



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# 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	Measurement range	0 ... 12 % (of weight)
Display	LCD 52 x 38 mm / 2 x 1.5"	Resolution	0.1 %
Memory	SD card up to 16 GB (2 GB card included)	Accuracy	±0.5 % of the measurement range
Interface	RS-232	Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)
Software	Optional	<b>Oxygen measurement (optional)</b>	
Power supply	6 x 1.5 V AA batteries (optional power adapter)	Measurement range	0 ... 20 mg/l (in water), 0 ... 100 % (in air), 0 ... 50 °C / 32 °F ... 122 °F
Operating conditions	0 ... +50 °C / < 85 % RH	Resolution	0.1 mg/l, 0.1 %, 0.1 °C
Dimensions	177 x 68 x 45 mm / 7.0 x 2.7 x 1.8"	Accuracy	±0.4 mg/l, ±0.7 %, ±0.8 °C
Weight	490 g / 1.1 lbs	Calibration	In the air
		Temperature compensation	Automatic (0 ... 50 °C / 32 °F ... 122 °F)
<b>pH measurement</b>		<b>Temperature measurement</b>	
Measurement range	0 ... 14.0 pH	Measurement range	0 ... 60 °C / 32 °F ... 140 °F
Resolution	0.01 pH	Resolution	0.1 °C
Accuracy	±0.02 pH + 2 digits	Accuracy	±0.8 °C
Calibration	3 points (pH 4, pH 7, and pH 10)	Temperature compensation	Automatic (0 ... 60 °C / 32 °F ... 140 °F)
Temperature compensation	Automatic with additional temperature sensor (0 ... 60 °C / 32 °F ... 140 °F) or manual (0 ... 100 °C / 32 °F ... 212 °F)		
<b>Redox measurement (optional)</b>			
Measurement range	1999 ... 0 ... 1999 mV		
Resolution	1 mV		
Accuracy	± 0.5 % + 2 digits		
<b>Conductivity measurement</b>			
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)		
<b>Total dissolved solids (TDS) measurement</b>			
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)		
<b>Salt content measurement</b>			



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## WATER ANALYSIS WATER ANALYSIS METER

### PCE-PHM 12

#### Aquarium pH meter with temperature compensation up to 50°C

The aquarium pH meter PCE-PHM 12 was specially developed for the pH measurement in aquariums. With the included universal holder, the aquarium pH meter can be attached to any aquarium. The permanently installed temperature probe on the aquarium pH meter is not only used for temperature indication but also for temperature compensation. With the aquarium pH meter this guarantees a precise

measured value even with a temperature fluctuation. Depending on your needs, an adjustment on the aquarium pH meter can also be carried out with a pH 7 reference solution.

#### ISO cal option

- » temperature compensation up to 50°C / 122°F
- » universal mounting bracket
- » removable pH electrode
- » easy to use
- » switchable temperature unit
- » battery and mains operation possible



### TECHNICAL SPECIFICATIONS

<b>Function</b>	pH
Measuring range	0.00 ... 14.00 pH
Resolution	0.01 pH
Accuracy	± 0.1 pH
<b>Function</b>	Temperature
Measuring range	0 ... 55°C / 32 ... 122°F
Resolution	0.1°C / 0.18°F
Accuracy	± 1°C / 1.8°F
Power supply	6V DC (batteries or power supply)
Battery	4 x 1.5V LR44 AG13
Power adapter	Primary: 230 ... 240V AC, 50 Hz, 19 mA Secondary: 6V DC, 100-mA
Environmental conditions	0 ... 50°C / 32 ... 122°F, <95% rh
Dimensions	75 x 55 x 25 mm
Weight	75 g / < 1 lb

### APPLICATION



Subject to change without notice

# WATER ANALYSIS TURBIDITY METER

## PCE-TUM 100

### Turbidity Meter, colour display, measuring range up to 500 NTU

The precision of the turbidity meter ensures accurate measurements in all relevant applications. With five factory-saved calibration points, the turbidity meter offers a ready-to-use solution for different environments. In addition, the turbidity meter offers the option of customised opacity calibration. With up to five calibration points, the turbidity meter can be flexibly adapted to specific requirements

and measurement conditions. The turbidity meter's colour display presents the measurement results in a clear and easy-to-understand manner. This user-friendly interface simplifies operation considerably and also enables new users to utilise the turbidity meter quickly and efficiently. The internal memory allows measurement data to be saved for later analysis or reporting.

### ISO cal option

- » precise measurement
- » 5 stored calibration points
- » individual 5-point turbidity calibration possible
- » colour display
- » simple operation
- » internal memory
- » USB-A interface for data carriers
- » RS232 printer interface



## APPLICATION



## TECHNICAL SPECIFICATIONS

<b>Turbidity</b>	
Measurement range	0 NTU ... +500 NTU
Resolution	0.01
Accuracy	±5 % FS
<b>General technical data</b>	
Display type	LED
Display size	4.2 inches
Interface	RS232, USB A
Light source	LED @ 850 nm
Number of calibration points	5
Measurement method	90 °
Menu language	English
Protection class (device)	IP20
Power supply	110-220V, 50-60Hz
Plug type	Cold plug
Weight	3.68 kg
Dimensions (L x W x H)	37 cm x 31 cm x 11.5 cm mm
Other dimensions	Cuvette
Ø x height	
25 x 65 mm	
Operating conditions	16 ... 35 °C , 45 ... 80 % RH
Storage conditions	16 ... 35 °C , 45 ... 80 % r.H
Instruction languages	English



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
<b>Optional accessories:</b>	
Replacement Cuvette	Order no.: SB-PCE-TUM 50
Replacement Calibration Standards	Order no.: CS-PCE-TUM 50



Subject to change without notice

**PCE-TUM 20**

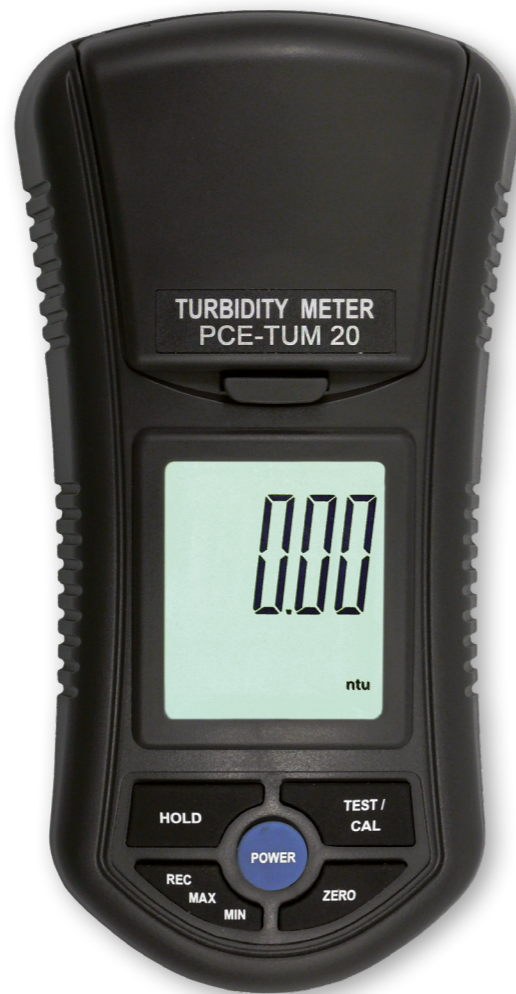
**Portable photometer according to ISO 7027 / measuring range 0 ... 50 NTU and 50 ... 1000 NTU**

PCE-TUM 20 is a portable handheld photometer or turbidimeter 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



**APPLICATION**



**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 W x D)	Approx. 155 x 76 x 62 mm / 6.1 x 3.0 x 2.4" (H x
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



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# WATER ANALYSIS

## WATER ANALYSIS METER

### PCE-WO2 10

#### Testing of oxygen content, oxygen saturation and sample temperature in wate

The oxygen meter is a simple measuring instrument that allows measurement of oxygen content, oxygen saturation and sample temperature. The oxygen meter directly reports measured values in real time via the display. The user is offered a hold function directly on the device. Important measured values can be recorded at the touch of a button directly on the display.

The oxygen content is the concentration of dissolved oxygen in the water. Most organisms require a minimum concentration of dissolved oxygen in the water to live. Oxygen is absorbed from the atmosphere, whereby the oxygen uptake mainly depends on the size of the water surface, the water temperature, the saturation deficit, the water turbulence and the air movement.

#### ISO cal option

- » robust housing
- » for mobile use
- » HOLD function
- » temperature, salt and altitude compensation
- » 1 or 2-point calibration
- » automatic shutdown



### TECHNICAL SPECIFICATIONS

Measuring range oxygen content	0.0 ... 20.0 mg/l
Resolution oxygen content	0.1 mg/l
Measuring accuracy oxygen content	±0.5 mg/l
Measuring range oxygen saturation	0.0 ... 200.0 %
Resolution oxygen saturation	0.1 %
Measuring accuracy of oxygen saturation	±2.0 %
Temperature compensation	0 ... +40 °C / 32 ... 104 °F, automatic
Air pressure correction	60.0 ... 112.5 kPa, 450 ... 850 mmHg
Salinity correction	0 ... 35 g/l
Sensor type	polarography
Environmental conditions	0 ... +60 °C / 32 ... 140 °F, max. 80 % r.H.
Power supply	2 x 1.5 AAA batteries
Dimension (length x radius)	175 x 40 mm / 6.8 x 1.5"
Weight	100 g / 3.5 oz

### APPLICATION



Subject to change without notice

## WATER ANALYSIS HUMIDITY DETECTOR

### PCE-WAM 10

#### Humidity Detector with LCD Display / Measurement Range 0.01 ... 1 aw

The humidity detector is a portable measuring device for water activity. Water activity indicates the amount of water that is biologically available for microorganisms such as bacteria, fungi, or similar. Each type of microorganism has a minimum water activity value below which no growth is possible. The higher the aw value of a food, the more perishable it is. Bacteria typically require a water activity of over

0.98, but significantly lower water activity of up to 0.6 can be tolerated by extremely halophilic bacteria, for example.

The humidity detector has a measurement range of 0.01 aw to 1 aw with high accuracy of  $\pm 0.03$  aw.

#### ISO cal option

- » measurement range: 0.01 ... 1 aw
- » resolution: 0.01 aw
- » accuracy:  $\pm 0.03$  aw
- » backlight LCD display
- » includes sample trays



### APPLICATION



### TECHNICAL SPECIFICATIONS

#### Water Activity

Measurement Range	0.01 aw ... 1 aw
Resolution	$\pm 0.01$ aw
Accuracy	0.03 aw

#### Temperature

Measurement Range	0 °C ... 50 °C
Resolution	0.1 °C
Accuracy	$\pm 1$ °C

#### General Technical Data

Display Type	LCD
Sensor	Non-conductive moisture sensor
Battery Type	AAA Battery (1.5V)
Menu Language	English
Protection Class	IP20
Weight	244 g / 0.5 lb
Device Weight with Accessories	930 g / 2 lb
Device Weight with Packaging	980 g / 2.1 lb
Dimensions (L x W x H)	150 x 68 x 68 mm / 5.9 x 2.6 x 2.6 inch
Additional Dimensions	Inner diameter of sample trays: 33mm / 1.2 inch
Operating Conditions	0 ... 50 °C, 0 ... 95% r.H.
Storage Conditions	0 ... 50 °C, 0 ... 95% r.H.



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# WATER ANALYSIS MOISTURE METER

## PCE-WAT 10

### Moisture analyser with measured value memory / Resolution 0.01 aw

The moisture analyser is a powerful instrument that has been specially developed for determining the water activity in various materials. With a measuring range of 0.00 to 1.00 aw, this moisture analyser offers a wide range of applications, from foodstuffs to pharmaceutical products and chemical substances. The moisture analyser is equipped with a practical measured value

memory for 99 measurements, which allows the user to save measurement results for later analyses or comparisons. This feature of the water activity analyser helps to improve efficiency and traceability in various applications. The supplied PC software can be used for real-time measurement, which transfers the result of the last measurement directly to the PC.

### ISO cal option

- » measuring range 0.00 ... 1.00 aw
- » resolution 0.01 aw
- » accuracy  $\pm 0.02$  aw
- » memory for 99 measurements
- » includes 5 x sample dishes
- » backlit LC display



## APPLICATION



## TECHNICAL SPECIFICATIONS

Water activity	
Measurement range	0 aw ... +1 aw
Resolution	0.01 aw
Accuracy	$\pm 0.02$ aw
Temperature	
Measuring range	-10 °C ... +60 °C
Resolution	0.01 °C
Accuracy	$\pm 0.2$ °C
General technical data	
Display type	LCD with illumination
Storage medium	Internal memory
Storage capacity	99 data records
Sensor	Non-conductive humidity sensor
Measurement rate	5 min
Menu language	English
Protection class (device)	IP20
Weight	250 g
Device weight with scope of delivery	975 g
Device weight with scope of delivery and outer packaging	985 g
Dimensions (L x W x H)	147 x 75 x 53 mm
Other dimensions	Internal diameter of sample trays: 35 mm
Operating conditions	0 ... 50 °C , 0 ... 80 % r.H
Storage conditions	-10 ... 60 °C , 0 ... 90 % r.H
Languages of the instructions	English

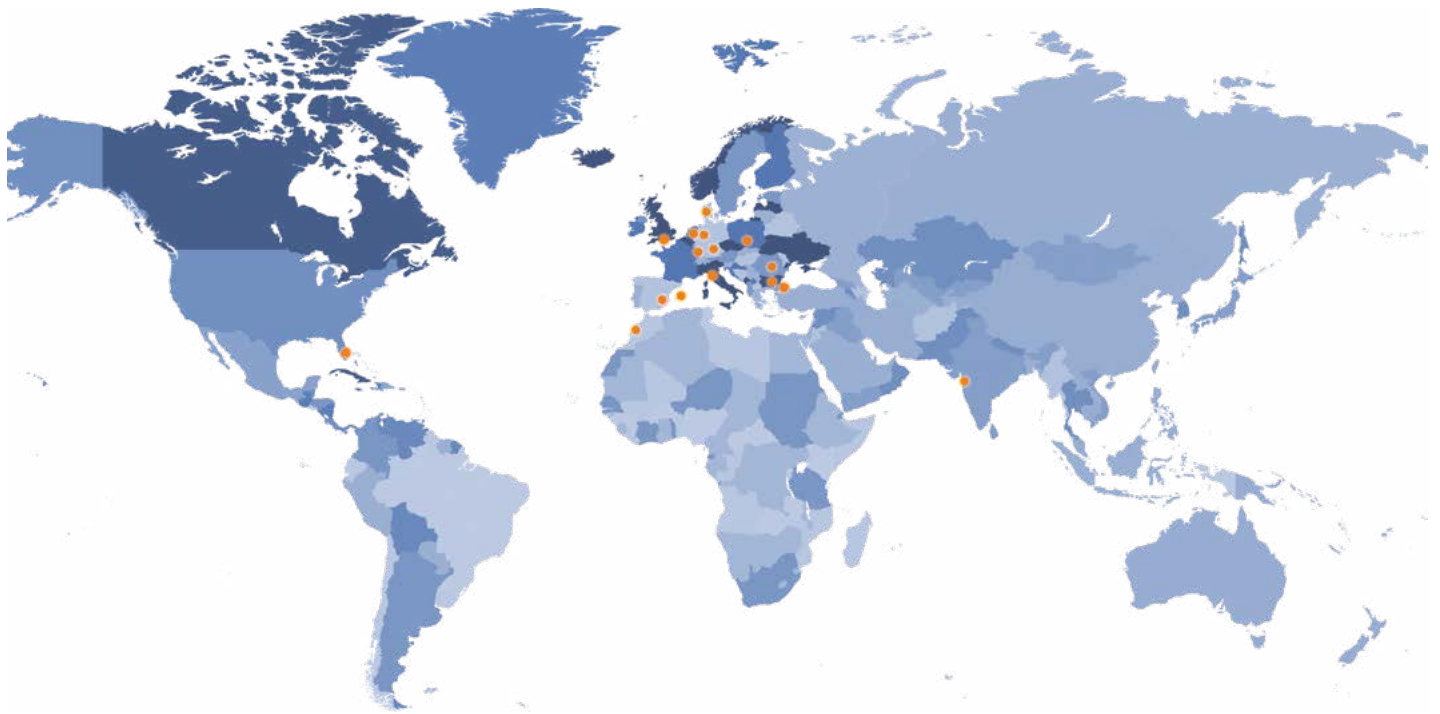


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