

## **CALIBRATOR**

# **PCE-LMDC 200**

stable light source for periodic test of illuminance meters  
between calibrations



## **INSTRUCTION MANUAL**

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## 1. Instrument characteristic

PCE-LMDC 200 photometric calibrator is a source of luminous exitance (radiated surface density of luminous flux) about  $100\text{lm/m}^2$ . It is designed to periodic tests luxmeters. The device generating illuminance about  $100\text{lx}$  in reception field of photometric probe. Optical system and electronically controlled light source guarantee high stability of luminous flux. Very long life of used light source makes not expected to change it during the life of the device. Instrument is equipped with automatic switch off function. Time of single period is about 1min. Photometric calibrator is an indispensable tool for any laboratory having implemented a quality system.

**WARNING:** Checking luxmeters using PCE-LMDC 200 photometric calibrator can not replace periodic calibration in accredited laboratory.

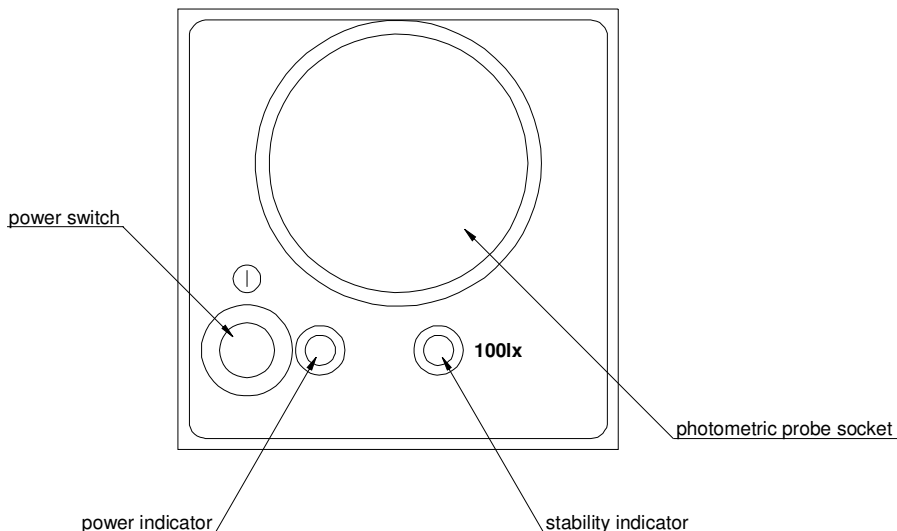
## 2. Technical specification

- Luminous exitance:  $M \approx 100\text{lm/m}^2$   
Illuminance in the reception field of photometric probe:  $E \approx 100\text{lx}$
- Light source color temperature:  $T_{cp} \approx 3000\text{K}$
- Illuminance stability:  
for single working period: typically  $\pm 0,1\%$  (max.  $\pm 0.3\%$ )  
after 3000 periods or 1 year  $\pm 1\%$
- Operating temperature:  $0 \div 40^\circ\text{C}$   
recommended operating temperature:  $23 \pm 3^\circ\text{C}$
- Temperature coefficient:  $< 0.02\%/K$
- Operating humidity:  $\leq 80\%$
- Power supply: AC adapter +12V 0.6A

Spectral distribution of PCE-LMDC 200 calibrator's light source is different than illuminant used during luxmeter calibration (typically illuminant A). That causes indication deviation, which depends on quality of the match of photometric probe spectral response to spectral luminous efficiency of CIE standard photometric observer. For our lux meters that deviation not exceed  $0.03\%$  for class A luxmeters and  $0.15\%$  for class B

luxmeters. The influence of the color temperature of calibrator's light source is negligible for our lux meters.

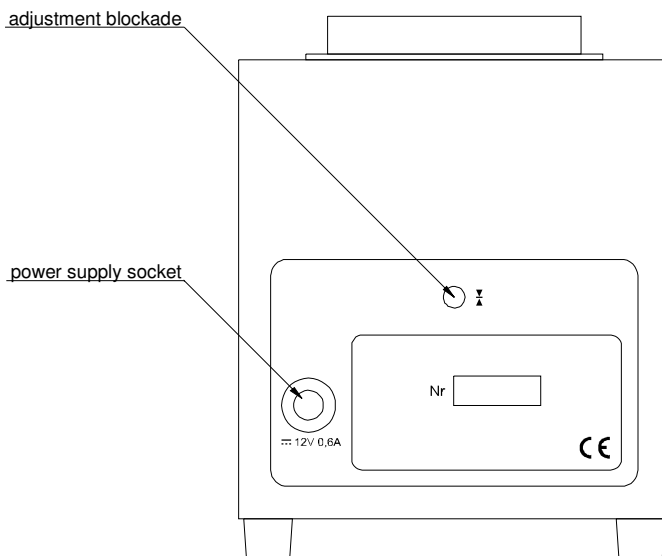
### 3. Front panel



*Fig. 1. Front panel view.*

- **Power switch** is used to turning on / on the instrument.
- **Power indicator** if the voltage of the power source is in the operating range – it lights green. If the voltage is too low – it lights red (calibrator should not be used in that case).
- **Stability indicator** should blink in normal operation. It means that electronic control of light source works properly and illuminance is as described in technical specification. Otherwise illuminance is unspecified.
- **Photometric probe socket** is used to place photometric probe which is being checked. Our photometric probes have standard diameter Ø44mm and reception field Ø12.5mm.

## 4. Back panel



*Fig. 2. Back panel view.*

- **Power supply socket** is used to connect AC adapter +12V 0.6A (see p. 7. Power supply).
- **Adjustment blockade** is secured against accidental use and it is needed during calibrator's calibration and adjustment made by manufacturer or accredited laboratory (see p. 6. Adjustment).

## 5. Operation

- Turn on luxmeter under test then check and eventually correct the zero with photometric probe covered.
- Connect AC adapter to PCE-LMDC 200 photometric calibrator (Fig. 2).
- Turn on the calibrator using key ① (Fig. 1), power indicator should lights green.
- Wait till stability indicator starts blinking (Fig. 1).
- Place luxmeter probe in photometric probe socket.

- Measure the illuminance. The time in which the photometric probe is being held in calibrator's socket should not exceed several seconds (max. 1 single working period of the calibrator), see also p. 9. Recommendations for instruments use.
- Turn off the calibrator using key ①.

## 6. Adjustment

LMDC 200 photometric calibrator has been initially adjusted by manufacturer in reference to factory standard (calibrated class A luxmeter) and adjustment blockade (*Fig. 2*) was sealed. Adjustment is possible but should be conducted only if the user have technical capabilities to do that. For that purpose remove the seal and loosen the screw blocking photometric probe socket. The screw is accessible by hole marked ▲ , located on the back panel (*Fig. 2*). Turn photometric probe socket to change luminous exitance of the calibrator. After finishing adjustment firmly fasten the blocking screw.

## 7. Power supply

PCE-LMDC 200 photometric calibrator is powered by a stabilized AC adaptor with +12V output voltage and 0.6A max current.

**Only AC adaptor supplied by the manufacturer should be used to power the instrument**

**WARNING:** AC adaptor has capability to reverse the polarity. Positive polarity should be set according to marking on back panel of the calibrator. Reversing the polarity will not damage the calibrator but instrument will not be working properly.

## 8. Accessories

- AC Adapter
- Instruction manual
- Wooden storage box

## **9. Recommendations for instruments use**

- PCE-LMDC 200 photometric calibrator contains sensitive optical elements and requires careful handling. It is forbidden to expose instrument on falls, shakes neither any other factors which can cause mechanical damages.
- Photometric probe socket cover should be removed only on measuring time. Photometric probe should be clean before placing it in socket.
- To prevent photometric probe heating, the time in which the photometric probe is being held in calibrator's socket should not exceeded several seconds (recommended time is 15 seconds, max. 1 single working period of the calibrator).
- In case of needing clean the lens use clean (degreased and devoid of impregnates) and soft brush holding the calibrator in an inverted position (photometric probe socket head down)
- It is necessary to protect instrument from wet and aggressive chemical factors that can damage instrument elements.
- Only AC adaptor supplied by the manufacturer should be used to powering the instrument.
- Adjustment should be conducted only if the user have technical capabilities to do that.
- The instrument should be stored and transported only in original packaging.

## **10. Warranty and repairs**

PCE-LMDC 200 photometric calibrator is shipped with one year warranty. It does not require any special maintenance treatment.

**All repairs of the instruments are performed by the manufacturer.**

## 11. CE marking and conformance to EU Council directives

The product described in this instruction conforms to following EU Council directives: 2004/108/EC Electromagnetic compatibility.



The conformance to above-mentioned requirements is confirmed by CE mark.



This product cannot be thrown away with household waste. Deposit the product in an authorized electrical and electronic waste collection area for recycling. Contact local Municipal Bureau or nearest waste disposal company to get more detailed information.



# DECLARATION OF CONFORMITY



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EC- Konformitätserklärung	EC- Declaración de conformidad
EC- Dichiarazione di conformità	EC- Declaration of conformity
EC- Déclaration de conformité	EC- Uygunluk Beyanı
EC- Conformiteit-verklaring	EC- Заявление о соответствии
EC- Declaração de conformidade	EC- Deklaracja zgodności
EC- Prohlášení o shode	

D	Konformitätserklärung	Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
E	Declaración de conformidad	Manifestamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes.
I	Dichiarazione di conformità	Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.
GB	Declaration of conformity	We hereby declare that the product to which this declaration refers conforms with the following standards.
F	Déclaration de conformité	Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
TR	Uygunluk Beyanı	Bu bildirime bağlı ürünün aşağıdaki standartlara uygun olduğunu beyan ederiz.
NL	Conformiteit-verklaring	Wij verklaren hiermede dat het product, waarop deze verklaring betrekking heeft, met de hierna vermelde normen overeenstemt.
RUS	Заявление о соответствии	Мы заявляем, что продукт, к которому относится данная декларация, соответствует перечисленным ниже нормам.
P	Declaração de conformidade	Declaramos por meio da presente que o produto no qual se refere esta declaração, corresponde às normas seguintes.
PL	Deklaracja zgodności	Niniejszym oświadczamy, że produkt, którego niniejsze oświadczenie dotyczy, jest zgodny z poniższymi normami.
CZ	Prohlášení o shode	Tímto prohlašujeme, že výrobek, kterého se toto prohlášení týká, je v souladu s níže uvedenými normami.

Photometric calibrator: PCE-LMDC 200

Mark applied	EU Directive	Standards
	2014/30/EU 2011/65/EU 2012/19/EU	PN-EN 61326-1:2013 PN-EN 61326-2-3:2013 PN-EN IEC 63000:2019-01

Meschede, 20.10.2022

Place and Date

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