

Manual Laser Range Finder PCE-LDM 44



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1 Introduction

1.1 General

Thank you for purchasing a PCE-LDM 44 laser range finder from PCE Instruments.

This laser range finder is suitable for simple distance measurements. The meter measures distances of up to 40 m. All readings are indicated on a well-readable display with backlight. The user can choose the appropriate unit, which is either m, inch or ft. In addition to simple distance measurements, you can measure the area and the volume of rooms. Moreover, you can add and subtract values measured by this meter. For better documentation of the distances, the measurement values are saved in a 99 point memory.

1.2 Delivery contents

1 x laser range finder PCE-LDM 44, 1 x carrying bag, 1 x wrist strap, 1 x cleaning cloth, 1x manual

2 Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. There is no warranty of damages or injuries caused by non-observance of the manual.

- The device may only be used in approved temperature ranges.
- The case must only be opened by qualified personnel of the PCE Instruments.
- The instrument should never be placed with the user interface facing an object (e.g. keyboard side on a table).
- You should not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth / use only pH-neutral cleaner.
- This device has a laser beam. Controls, settings or other processes can trigger laser beams. Do not look into the laser beam or target it at other people.
- This device is equipped with semi-conductor laser diodes with a wavelength of 650 nm.
- The actual continuous output of the laser never exceeds 1.0 milliwatt.
- The device is compatible with EMS tests according to EN61000-6-3: 2001 + A11: 2004, EN61000-6-1: 2001, EN61000-4-2, EN61000-4-3, EN60825, FCC test according to PART 15

This manual is published by PCE Instruments without any guarantee.

We expressly refer to our general guarantee terms, they can be found in our general terms of business.






If you have any questions please contact PCE Instruments.

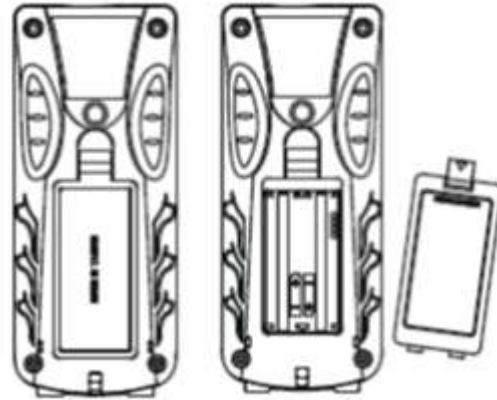
3 Specifications

Distance measurement range	0.5 ... 40 m
Measurement accuracy	± 1.5 mm
Resolution	1 mm
Measurement speed	0.5 seconds
Measurement unit	m, inch, ft
Measurement functions	calculation of area calculation of volume indirect distance measurement via Pythagoras addition / subtraction of distances continuous distance measurement max / min measurement timed measurement
Laser class	II / 650 nm / < 1 mW
Power supply	2 x AAA battery
Battery life	10,000 measurements
Dimensions (L x W x H)	113 x 47.5 x 30.2 mm
Weight	180 g
Surrounding conditions	-5 ... 40 °C
Environmental conditions	-20 ... +60 °C
Automatic switch-off of laser	after 30 seconds
Automatic switch-off of device	after 180 seconds

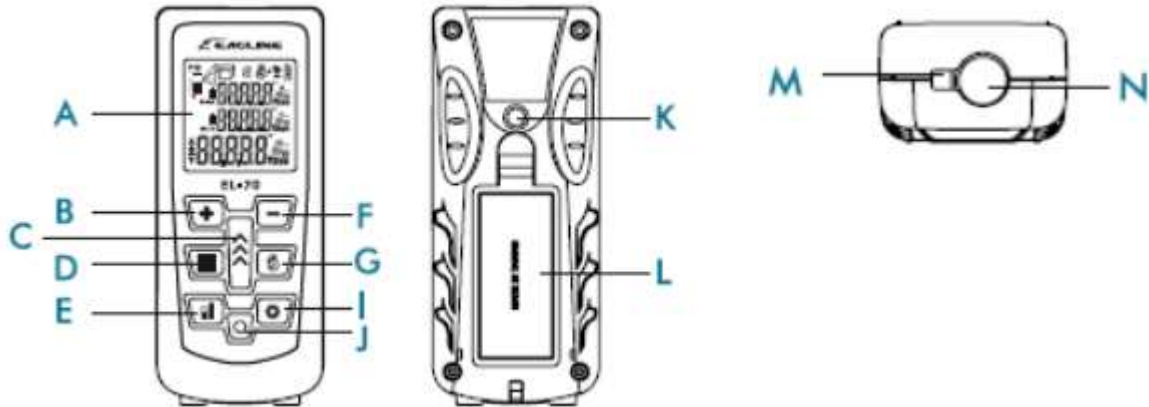
4 System description

4.1 Batteries and battery status

- The device is operated with 2 x AAA batteries
- The battery level is indicated by the  symbol on the display.
-  means that the batteries are 100 % charged.
-  means that the batteries have a capacity of 60 %.
-  means that the batteries have 25 % of power left.
-  means that the batteries have only 5 % left and that a battery replacement is recommended.








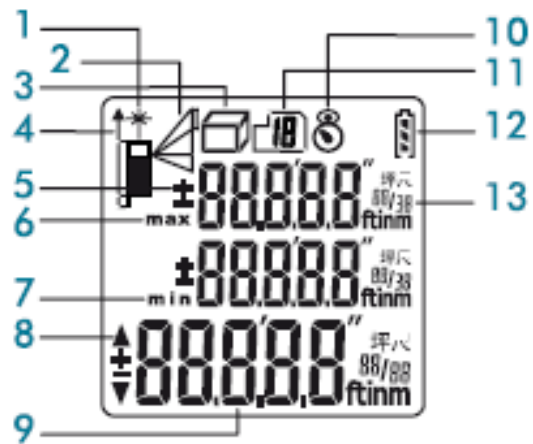
4.2 Device description



- | | |
|----------------|------------------------|
| A. Display | I. Settings |
| B. Addition | J. Power |
| C. Measurement | K. Tripod thread |
| D. Function | L. Battery compartment |
| E. Reference | M. Laser |
| F. Subtraction | N. Receiving window |
| G. Timer | |

4.3 Display description

1. laser beam indicator
2. Indirect measurement
3.  Indirect measurement I
4.  Indirect measurement II
5.  Indirect measurement III
6. Measurement function
 -  Area measurement
 -  Volume measurement
7. Measurement reference
8. Addition and subtraction
9. Maximum value
10. Minimum value
11. Direction Indicator
12. Main display
13. Timer
14. Memory
15. Battery level
16. Sub-display



5 Instructions

5.1 To switch on and off

- Press the Power key (J) to switch on the device.
- The display shows different symbols while carrying out an internal control process.
- If the display is in standby mode, the device is ready for measurements.
- To switch off the device, press and hold the Power key (J) for 3 seconds.

5.2 To make a single measurement

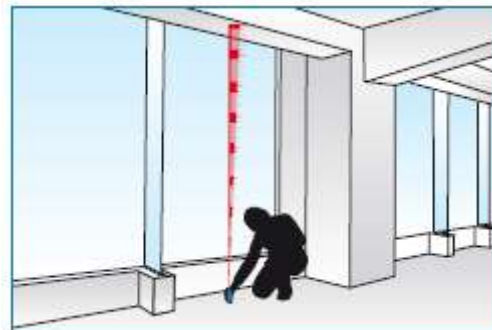
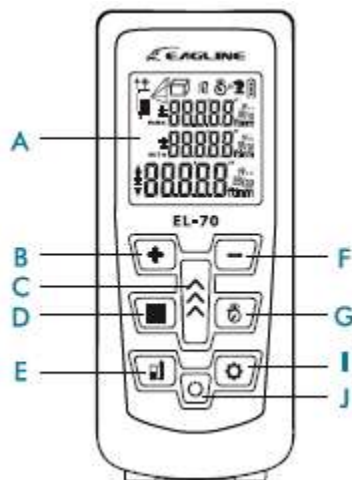
- Press the measurement key (C) to switch the laser on and target at the spot to be measured.
- Hold the device steady and press the measurement key (C) to carry out a measurement.
- The reading is displayed and a beep sounds.

5.3 To make a continuous measurement

- Press and hold the measurement key (C) to activate continuous measurement.
- The readings change when you move the device and are shown on the display. The minimum and maximum distance are shown on the sub-display.
- Press the measurement key (C) to stop the measurement.
- To exit this mode, press the Power button (J).

5.4 To make a measurement with the timer

- The timer can be used to make more accurate measurements.
- Press the timer key (G) to set a countdown between 3 and 15 seconds.
- After this setting, press the measurement key (C) to measure.
- The reading is shown on the display after the countdown.



5.5 To select the measurement reference

- There are three points of reference: back side, front side and tripod thread.
- Press the reference key (E) to switch between front side → back side → tripod thread → front side.

5.6 To add measurements

- To add a measurement to a later one, press the Addition key (B) to set the first number as the summand.
- Then make another measurement and choose an appropriate number as the addend by pressing the Addition key (B).
- The sum is shown on the main display.

5.7 To subtract measurements

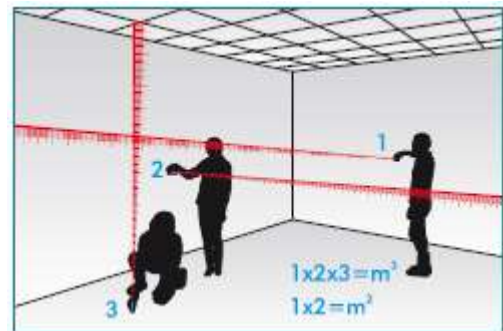
- To subtract a measurement from a later one, press the Subtraction key (F) to set the first number as the minuend.
- Then make another measurement and choose an appropriate number as the subtrahend by pressing the Subtraction key (F).
- The difference is shown on the main display.

5.8 To select the functions

- By pressing the function key (D), the functions can be selected.
- By pressing and holding the key, the functions are displayed in the following sequence: area → volume → indirect measurement I → indirect measurement II → indirect measurement III
- Release the key when you have reached the desired function and select this function.

a. Area measurement

- Follow the instructions to measure width and length.
- The area is calculated and shown on the display.

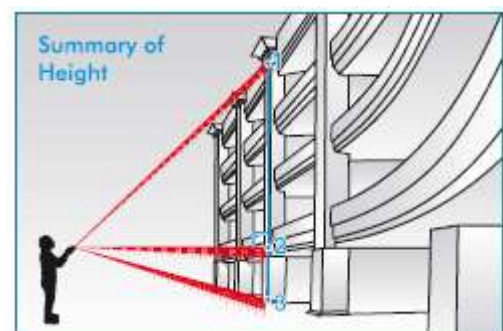
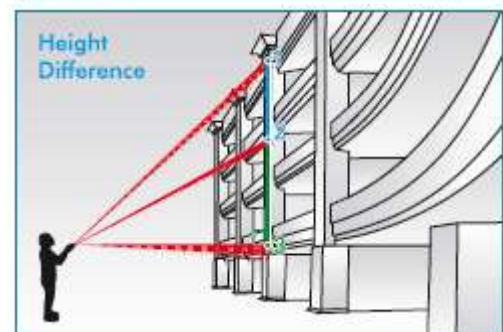
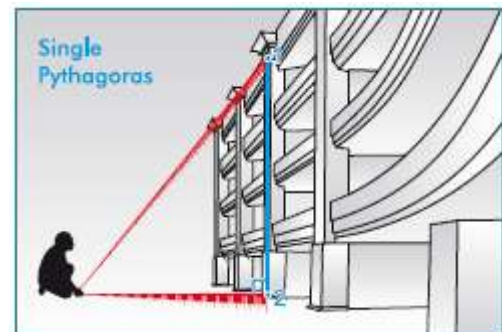


b. Volume measurement

- Follow the instructions to measure width, length and height.
- The volume is calculated and shown on the display.

c. Indirect measurement

- All calculations are based on Pythagoras' theorem ($a^2 + b^2 = c^2$) in three different ways: single, summary and height difference.
- Press the function key (D) 3, 4 and 5 times to activate indirect measurement. Now follow the instructions on the display to measure the different lengths.
- The reading is shown on the display.



5.9 Settings

- You can select and make settings by pressing the Settings key (I).
- When you press and hold the key, the settings appear on the display in the following sequence: memory (F1) → unit (F2) → section lengths (F3) → display timeout.
- Release the key when you have reached the desired setting and select this setting.

5.10 Memory (F1)

- Here you can look at your last 20 measurements, including area, volume and indirect measurements.
- Press the Addition (B) and Subtraction (F) keys to switch between the values.

5.11 Section length measurement (F3)

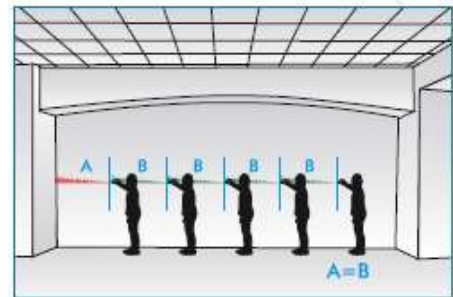
- By means of this measurement, you can find out section lengths.
- This function is normally used with continuous measurements.

a. Section length settings

1. Press the Addition key (B) to increase the value.
2. Press the Subtraction key (F) to decrease the value.
3. Press the Measurement key (C) to switch between the digits.
4. Press the Settings key (I) to confirm.
5. To set the values to 0, press the Power key (J).

b. Section length measurement

1. Press the Settings key (I) again to leave the section length settings (I).
2. Then press the Power key (J) to change from settings mode to measurement mode.
3. Press and hold the Measurement button (C) for approx. 2 seconds to make a continuous measurement.
4. Follow the arrows.
5. After each measurement a short beep will sound and after each set distance a long beep will sound and the distance covered is shown in the display.



5.12 Display timeout (F4)

- Press the Addition key (B) and the Subtraction key (F) to set the display timeout.
- You can choose between 5, 10, 20, 30, 60 and 180 seconds.
- Press the Settings key (I) to confirm.

5.13 Laser pointer

- By pressing and holding the reference key (E) you can activate and deactivate the laser pointer.

5.14 To delete the memory

To delete the saved data and settings you must press the Power (J) and the Subtraction key (F) at the same time while the device is switched off.

5.15 Error codes

Code	Description
Err01	The target is located outside the measurement range
Err02	Reflected signal is too weak or not present
Err03	Measurement value has been exceeded (max. value: 99999)
Err04	Pythagoras parameter error
Err05	Battery is low, replace battery
Err06	Device temperature is too high or too low
Err07	External noise is too loud

6 Disposal

For the disposal of batteries, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

If you have any questions, please contact PCE Instruments.

7 Contact

If you have any questions about our range of products or measuring instruments please contact PCE Instruments.

7.1 PCE Instruments UK

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You can find an overview of our measuring instruments here: <http://www.industrial-needs.com/measuring-instruments.htm>

You can find an overview of our scales here <http://www.industrial-needs.com/balances.htm>

