

Laser distance meter

LDM-50 EXPERT EKF

LDM-70 EXPERT EKF

Thank you for choosing an EKF product!
Carefully study this manual to ensure safe and efficient use of the product.
Before using the product for the first time study the safety precautions.

1 DESCRIPTION

The laser distance meter is a compact, portable measuring device, capable of:

- single distance measurement;
- continuous distance measurement;
- area measurement;
- volume measurement;
- indirect (Pythagoras) measurement;
- addition and subtraction;
- value storage and retrieval.

The laser distance meter is intended to be used indoors and at construction sites.

The device complies with IEC 61326-2-1:2020 electromagnetic compatibility (EMC) requirements.

2 TECHNICAL DATA

Characteristics	Values
Measuring range, m	0,04 – 50 / 70*
Measurement time, s	0,5
Measurement error, mm	±2,0**
Single measurement	Yes
Continuous measurement	Yes
Area measurement	Yes
Volume measurement	Yes
Indirect (two-point Pythagoras) measurement	Yes
Indirect (three-point Pythagoras) measurement	Yes
Add/Subtract	Yes
Sound indication	Yes
Tilt sensor	Yes
Internal memory capacity	20 records
Reference points	Front / Rear side
Units of measurement	m / ft / in / ft + in
Laser class	II
Laser wavelength, nm	630–670
Laser auto power off, s	30
Device auto power off, s	180
Max laser power, mW	1
Degree of protection (IEC 60529)	IP54
Battery type	2 x AAA, 1,5 V
Battery life	Up to 5000 measurements
Operating temperature, °C	0 - 50
Dimensions, mm	115 x 20 x 29,5
Service life	10 years

*Depending on the model: LDM-50 – 50 meters, LDM-70 – 70 meters.

**The highest accuracy and maximum measurement range are achieved under favorable environmental conditions (suitable lighting and ambient temperature). Measurement accuracy may decrease under unfavorable conditions: bright lighting, low reflectivity of the target surface, high/low temperature, etc.

**Measurement accuracy of ±2,0 mm is achieved when measuring distances of up to 10m. Above 10m, the measurement accuracy is calculated as follows: $\pm 2,0\text{mm} \pm 0,05 \times (D-10)$ (D=measuring distance in meters).

**Attention: under intense sunlight or low reflectivity conditions use a target plate or a retroreflector.

2.1 Troubleshooting

Potential laser distance meter errors, display codes and methods for resolving them are shown in Table 2.

If a malfunction is detected after the warranty period has expired, the product must be disposed of.

All errors or failures will be shown as error codes.

Code	Cause	Solution
204	Measuring error	Refer to operating manual, repeat the measurement
208	Excess current	Contact the manufacturer

220	Low battery	Replace batteries
255	Return signal is too weak or the measuring time is too long	Change the surface targeted or use a target plate
256	Return signal is too strong	Point the meter at a target with lower reflectivity or use a target plate
261	The measured distance is shorter or longer than the measurement range	Use the meter within its measurement range
500	Hardware error	Turn the device on/off several times. If the error code symbol still reappears, contact your service center for assistance.

3 SAFETY REQUIREMENTS AND PRECAUTIONS

Your device is a precision laser measuring instrument. Please, study the following requirements and precautions prior to operating your laser distance meter.

Do not point the device at the sun or any other powerful light sources. This may result in measurement errors.

Do not use the device as a level.

Do not use the device in high-humidity, dusty, smoky, or any other unfavorable environmental conditions. If used under such conditions, internal components may be damaged and the instrument's accuracy may be impaired.

When moving the device from cold to warm, wait until the device reaches the ambient temperature before using it.

Measurements taken through transparent liquids (e.g. water), other translucent materials (glass, plastic, polyethylene), or low-density materials may be inaccurate.

Surfaces with anti-reflective coating refract the laser beam and, as a result, measurement errors may occur.

Shiny and bright surroundings, coupled with a low-reflective surface will reduce the measurement range and accuracy.

Do not place the device under water. Clean the device with a damp soft cloth. Do not use aggressive cleaning agents or solutions. Take extra care not to damage optical surfaces.

If the device has been dropped or subjected to shock, its accuracy must be verified before use.

Laser radiation. Avoid direct eye exposure. Do not point the laser towards people. The laser beam may cause temporary blindness.

Turn on the laser beam only when you are using the device. Do not look at the laser beam through any optical device, as this will amplify the damage of the laser beam to the eyes.

Do not place the device in a position where someone may look directly into the laser beam, either intentionally or unintentionally.

Do not point the laser beam at polished, reflective surfaces (e.g. mirrors, sheet metal).

A polished surface can reflect the beam back.

Do not attempt to repair or disassemble the device. Repairs to this device should only be carried out by an authorized service center.

Follow industry standards and safety precautions when operating the device.

Do not use the device when tired or while under influence.

This device is not a toy, keep away from children.

Inspect the device before starting the work.

Do not use faulty devices.

Do not use the device near flammable substances.

Do not use the device near medical devices.

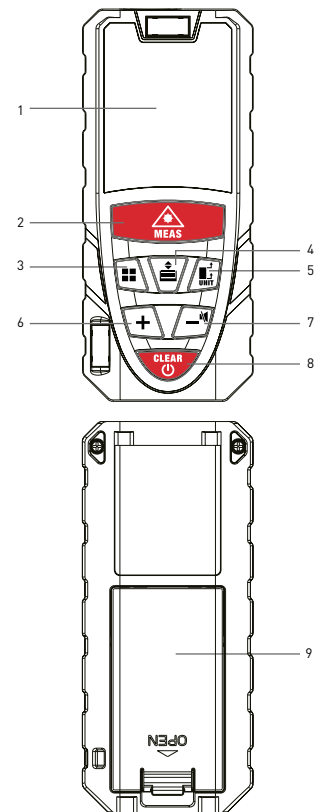
Do not use the device on an airplane.

Do not use accessories not intended for this device.

This list of warnings and precautions is not exhaustive. This manual cannot cover all potential cases. Caution and common sense cannot be integrated into the device, but should be practiced by the user.

Use the device only as intended. Do not use the device for any purposes not described in this manual.

4 DESIGN AND APPEARANCE



1. Display

2. Measure button

Activates measurement mode. Short press for instant measurement, long press for continuous measurement.

3. Menu button

Press to change the measurement mode: Area / Volume / Pythagoras

4. Memory button

Press to recall values from memory.

5. Reference / Measurement unit button

The rear surface of the device is the default reference point. Press to toggle between front/rear surface. Press and hold to change measurement units (m/ft/in/ft+in).

6. Add button (+)

Short press to add the values together In the distance, area and volume measurement mode.

7. Subtract (-) button / Beeper control

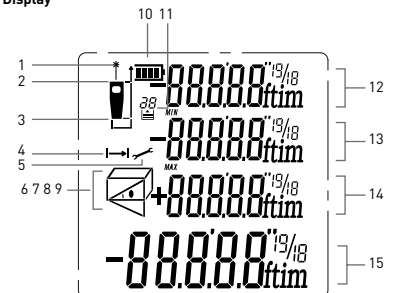
Short press to subtract values, long press to turn off/on the beeper.

8. On/Off/Reset/Return button

Long press to turn the device on/off, short press to clear previous operations or return to main menu.

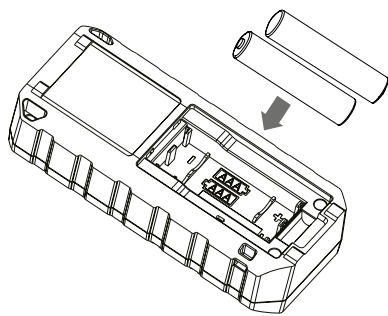
9. Battery compartment

4.1 Display



1. Laser on/off indication
2. Reference point (front)
3. Reference point (rear)
4. Distance / continuous measurement
5. Configuration
- 6, 7, 8, 9. Measurement mode indication
10. Battery status
11. Memory icon
12. First row of measurements
13. Second row of measurements / minimum value
14. Third row of measurements / maximum value
15. Primary measured value / final calculation result

4.2 Battery replacement



- Open the battery compartment cover
 - Remove old batteries
 - Insert 2 new AAA batteries*
 - Close the battery compartment cover after changing the batteries
- * Be careful to observe polarity when changing batteries.

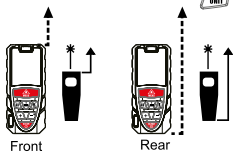
5 OPERATING INSTRUCTION

5.1 Turning the device on/off

Press and hold the button until a beep is heard. If the device is idle, the laser will turn off after 30 seconds. The device will automatically power down after 180 seconds. To turn off the laser, short press the button. To turn on the laser, press the button.

5.2 Selecting a reference point

By default, the reference point is the rear surface of the device. To change the reference point, short press the button.



5.3 Changing the measurement units

To change the units of measurement, press and hold the button until the beep is heard.

5.4 Back/Delete function

Short press the button to delete the last value or return back to the menu.

5.5 Sound indication control

Use the button to turn the sound indication (beeper) on and off.

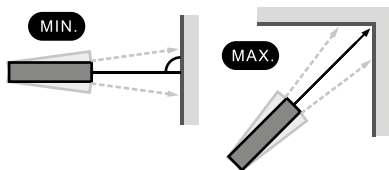
5.6. Measuring

5.6.1 Single distance measurement

After being turned on, the device switches into single distance measuring mode and the laser turns on. The laser indicator icon will appear on the display - . After aiming the device at the target surface press the button for a single distance measurement.

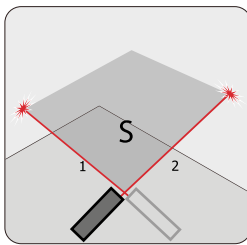
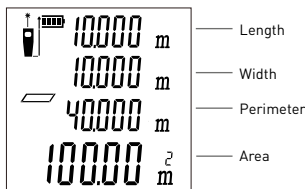
5.6.2 Continuous distance measurement

Long press the button to activate the continuous measurement mode - . Slowly walk the laser dot up, down, left, and right of the target point by tilting and panning the device. Then, press the button to stop - the display will show the maximum and minimum distance, as well as the last recorded distance in the results line.



5.6.3 Area measurement

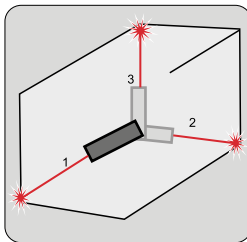
Short press the menu button - - to switch the device into the area measuring mode - . The currently measured length will be flashing on the screen. Press to measure length (1st line), press it again to measure width (2nd line). The area will be calculated automatically and displayed in the results line.



5.6.4 Volume measurement

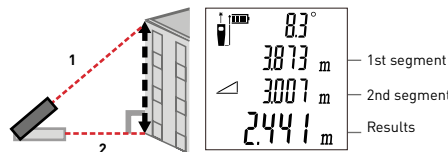
Press to select the volume measurement mode .

A line corresponding to the direction to be measured will be blinking on the display. Press to measure the required dimensions in sequence.

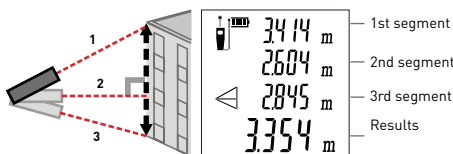


5.6.5 Indirect measurement (Pythagoras) mode - Option 1

Press the button to select the indirect measurement mode using the Pythagorean theorem - . Using the flashing elements on the display as a guide, aim the device at the appropriate target an press . Repeat the same operation for the remaining sections. The end result will be displayed in the results line.

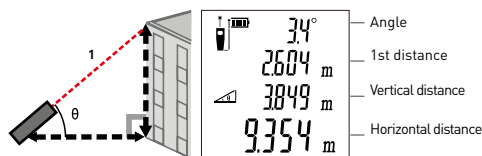


5.6.6 Indirect measurement (Pythagoras) mode - Option 2



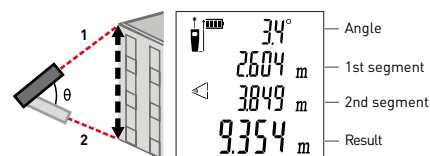
Press the button to select the indirect measurement mode using the Pythagorean theorem - . Using the flashing elements on the display as a guide, aim the device at the appropriate target an press . Repeat the same operation for the remaining sections. The end result will be displayed in the results line.

5.6.7 Automatic angle measurement



Press to switch to automatic angle measuring mode . Using the flashing elements on the display as a guide, aim the device at the appropriate target an press . Measurement result will be displayed as shown above.

5.6.8 Automatic height measurement



Press to switch to automatic angle measurement mode . Using the flashing elements on the display as a guide, aim the device at the appropriate target an press . Measurement result will be displayed as on the picture above.

5.6.10 Addition and subtraction

While measuring, press or once to add or subtract the value of the second measurement from the first. The addition/subtraction symbol will appear on the display. Press to measure the second distance. The second measured value will be automatically added/subtracted from the first measured value.

Note: This process can be repeated if necessary.

5.6.8 Storing and recalling a measurement from memory

Measurement data is saved automatically.

- press the button to recall the last saved data.

The last 20 readings are stored in memory.

6 STORAGE AND TRANSPORTATION

Laser distance meters must be stored in a dry, clean place. Do not store the device in a potentially corrosive environment.

Laser distance meters can be transported by any means of enclosed transport that ensures protection of packaged products from impact damage and weather exposure.

They shall be stored indoors, in their original packaging, at the ambient temperatures from -0°C to +50°C and relative humidity of max. 85% at +25°C.

7 DISPOSAL

Life-expired and failed products shall be disposed of in compliance with the effective national and local laws and regulations.

To dispose of the product, send it to an authorized company for recycling in compliance with the effective national and local laws and regulations.

DO NOT dispose of used batteries with household waste! Please take the empty batteries to the battery collection points for recycling. If the packaging is no longer required, it can be recycled.

8 MANUFACTURER'S WARRANTY

Service life: 10 years.

Shelf life from the manufacturing date: 2 years

Batteries shelf life from the manufacturing date: 12 months.

10.4 Warranty period from the date of sale: 12 months.

Laser distance meters EKF EXPERT have been manufactured in compliance with the effective laws and regulations and have been approved for operation.

Laser distance meters EKF EXPERT comply with the requirements of IEC 61326-2-1:2020 electromagnetic compatibility (EMC) requirements. Use strictly as intended.

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Made in China.

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Date of sale:

Seller's signature

Quality control stamp

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