

DRAPER[®]

LASER DISTANCE MEASURER

15102



CE

These instructions accompanying the product are the original instructions. This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all these instructions before assembling, operating or maintaining this product.

This manual has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains all the necessary information to ensure its correct and safe use. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the product itself.

All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product.

Whilst every effort has been made to ensure the accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

1. TITLE PAGE

1.1 INTRODUCTION:

USER MANUAL FOR: Laser Distance Measurer
Stock No's: 15102
Part No's: LDM-40M

1.2 REVISIONS:

Date first published May 2017.

As our user manuals are continually updated, users should make sure that they use the very latest version.

Downloads are available from: <http://drapertools.com/manuals>

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1.3 UNDERSTANDING THIS MANUALS SAFETY CONTENT:

WARNING! – Information that draws attention to the risk of injury or death.

CAUTION! – Information that draws attention to the risk of damage to the product or surroundings.

1.4 COPYRIGHT © NOTICE:

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3. GUARANTEE

3.1 GUARANTEE

Draper tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, please return the complete tool to your nearest distributor or contact:

Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England.

Telephone Sales Desk: (023) 8049 4333 or:

Product Helpline (023) 8049 4344.

A proof of purchase must be provided.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee period covering parts/labour is 12 months from the date of purchase except where tools are hired out when the guarantee period is 90 days from the date of purchase. The guarantee is extended to 24 months for parts only. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

Note: If the tool is found not to be within the terms of warranty, repairs and carriage charges will be quoted and made accordingly.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the guarantee period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

Draper Tools Limited.

4. INTRODUCTION

4.1 SCOPE

- Measures distances of up to 40M, in metres or feet.
- Measures the shortest distance to target with Dynamic (continuous) measuring.
- Measures area and volume
- Indirect measuring using Pythagorean theorem.
- Choice of 2 reference points.
- Impact-resistant rubber casing.
- Tripod-ready.

4.2 SPECIFICATION

Stock no.	15102
Part no.	LDM-40M
Measuring Range	0.2M - 40M
Accuracy.....	±2mm@40m
Laser	Class 2 , 635nm, <1mW
Battery	2 x AAA (not supplied)
Operating Temperature	0°C to 40°C
Storage Temperature	-10°C to 60°C
Auto-off: Laser.....	30 seconds (Approx.)
Auto-off: Unit.....	180 seconds (Approx.)
Dimensions.....	120mm x 50mm x 30mm (Approx.)
Weight	114g (with batteries)

4.3 TECHNICAL SPECIFICATION

Distance measurement precision	±2mm@40m
Measurement unit options	mm/in/ft
Continuous measurement function.....	Yes
Area measurement function	Yes
Volume measurement function.....	Yes
Pythagorean proposition measurement function	Full mode
Add and subtract measurement function.....	Yes
Min/Max value	Yes
Max storage.....	20 units
Automatic backlight	Yes
Buttons/key sound.....	Yes

NOTE: There will be a bit of greater differences of measurement results in harsh environment, such as strong sunlight, excessive temperature fluctuations, weak reflective surface, low battery. As to this, large reflection board as auxiliary will assist to get a better result.

5. HEALTH & SAFETY INFORMATION

5.1 HEALTH & SAFETY INFORMATION





- Laser radiation. Do NOT stare into beam. Class II laser product.
- Viewing the laser output with certain optical instruments (for example, eye loupes, magnifiers and microscopes) with a distance of 100mm may pose an eye hazard.
- Viewing the laser output with certain optical instruments designed for use at a distance (for example, telescopes and binoculars) may pose an eye hazard.
- CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Do NOT direct the beam towards a person's eyes.
- Avoid positioning the laser such that it may lead to unintentional eye exposure to any potential passing pedestrians/traffic.
- Do NOT direct the beam towards animals.
- Do NOT use in the vicinity of children.
- Do NOT direct the beam onto reflective surfaces.
- Always switch off when not in use and do not leave unattended. Remove the batteries before storing the laser level away.
- Store the level in a dry location, out of the reach of children.
- Care must be taken to ensure that the laser level is not dropped, knocked or damaged during use or storage.
- This laser level product has no serviceable parts. Do not attempt to disassemble or repair.

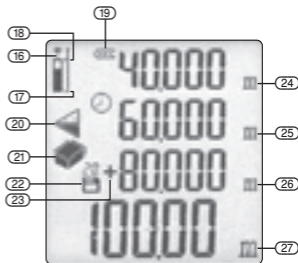
6. TECHNICAL DESCRIPTION

6.1 IDENTIFICATION



- | | | |
|---------------------------|----------------------------------|-----------------------------|
| ① + key | ⑧ Indirect measurement | ⑭ Tripod thread |
| ② Continuous measurement | ⑨ Measurement of area and volume | ⑮ Battery compartment cover |
| ③ Measuring basis setting | ⑩ Unit conversion | |
| ④ Save key | ⑪ Off/clear key | |
| ⑤ Spirit level | ⑫ Laser | |
| ⑥ Laser emission on | ⑬ Receiver | |
| ⑦ - key | | |

- ⑯ Laser designator
- ⑰ Measure reference edge (back end)
- ⑱ Measure reference edge (front end)
- ⑲ Open digital power display
- ⑳ Indirect measurement use;
 -  Pythagorean theorem to measure once
 -  Use Pythagorean theorem to measure twice
- ㉑ Measurement of area and volume;
 -  Measurement of area
 -  Measurement of volume
- ㉒ Check history
- ㉓ Add-subtract calculator
- ㉔ The minimum value for display
- ㉕ The maximum value for display
- ㉖&㉗ Main display line that indicates the final measured value and results



7. PREPARING THE MEASURE

7.1 BATTERY INSTALLATION - FIG. 1

Remove the battery cover on the back of the device.

Replace 2 x AAA batteries (not supplied) according to correct polarity.

Then replace the battery cover.

NOTE:

Only use 1.5V AAA alkaline batteries.

If not in use, remove battery to avoid battery corrosion to metre body.



8. BASIC MEASURE OPERATIONS

8.1 SINGLE MEASUREMENT

Press **(6)** to start up, and press **(6)** again to measure the distance. The result will be displayed on the screen immediately.

8.2 CONTINUOUS MEASUREMENT

Press **(2)** to enter continuous measurement status. **(24)** displays the minimum value and **(25)** displays minimum value. The current value is displayed at the **(27)** display line.

NOTE: It stops after 5 min continuous measurement.

8.3 MEASUREMENT OF AREA

Press **(9)** to enter the mode of Measurement of Area and then the laser will be activated. Measure the length and width in proper order. The result will be displayed on the screen when the measurement is completed. Press **(10)** to change the unit.

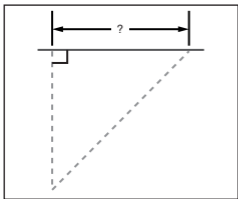
8.4 MEASUREMENT OF VOLUME

Press **(9)** twice to enter the mode of Measurement of Volume and then the laser will be activated. Measure the length, width and height according to screen instructions. The result will be displayed on the screen when the measurement is completed. Press **(10)** to change the unit.

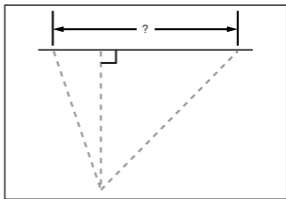
8.5 INDIRECT MEASUREMENT

Press **(8)** to enter the mode of Indirect Measurement. All the results of height are indirectly calculated according to the Pythagorean theorem ($a^2+b^2=c^2$). The laser will be activated when it enters the mode of Indirect Measurement. Measure the slope distance and length of horizon according to screen instructions, and the system then figures out the value of height. Use the Pythagorean theorem to measure for once or twice.

NOTE: Fixed tripods are advised to be used with such measurement function in order to obtain more accurate results.



Use the Pythagorean theorem to measure for once



Use the Pythagorean theorem to measure for twice

8. BASIC MEASURE OPERATIONS

8.6 ADD-SUBTRACT CALCULATION OF MEASURED VALUE

Only several simple keys operation is needed to figure out the total of several measured values.

When a value is measured, press **(1)** or **(7)** to save the data (temporarily).

Then find the next measuring point and press **(6)** to measure it.

The total of measured values will be displayed in main display line and previous measured values can also be seen.

8.7 DATA STORAGE

The storage capacity of the laser ranging finder is 20 sets of data.

Press **(4)** to check the history.

Press **(1)** and **(7)** to check page up and down.

8.8 CHANGE MEASUREMENT UNITS

Press **(10)** to change the measurement units that are needed. The sequence of displayed units is as follows: m, ft, in, ft+/in.

As to the measurement of area, the sequence of displayed units is as follows: m², ft².

As to the measurement of volume, the sequence of displayed units is as follows: m³, ft³.

8.9 SETTING OF REFERENCE EDGE AT INITIAL OF MEASUREMENT

The default reference edge is rear-end. The laser ranging finder has two reference edges respectively at the front end and back end. Press **(3)** to switch the reference edge.

9. MAINTENANCE

9.1 INSTRUMENT MAINTENANCE

The measurer should not be stored in high temperatures and strong humidity environment for long periods of time, if not used for a long time please take out the batteries and place the measure in the storage wallet and store in a cool and dry place.

Please keep the device clean. Use a damp, soft cloth to clean the surface from dust. Do not use any detergents. Laser output window and focus lens can be maintained according to maintenance procedures for optical device.

10. TROUBLESHOOTING

All information will be displayed in the form of code or "Error". Now display codes and relevant solutions are listed below:

Code	Reason	Solution
204	Miscalculation	Operate again upon requirements of manual
208	Electric currents exceed standard	Please contact with your dealer
220	Low battery	Please change battery in time
252	Too high temperature	The external measurement temperature of instrument shall be kept at 0°C-40°C
253	Too low temperature	Please raise temperature for instrument
255	The receiving reflected light is weak, or measuring time is too long.	The reflecting surface will be reflected more easily, or use sighting board, white paper etc.
256	Too strong receipt signal	The reflect light of target is too strong (use sighting board, or don't direct at hard light)

11. EXPLANATION OF SYMBOLS

11.1 EXPLANATION



Laser radiation.
Do not stare into beam
Class 2 laser product



WEEE
Do not dispose of Waste Electrical & Electronic
Equipment in with domestic rubbish



Warning!
Read the instruction manual.

12. DISPOSAL

12.1 DISPOSAL

- At the end of the machine's working life, or when it can no longer be repaired, ensure that it is disposed of according to national regulations.
- Contact your local authority for details of collection schemes in your area.

In all circumstances:

- Do not dispose of power tools with domestic waste.
- Do not incinerate.
- Do not abandon in the environment.
- Do not dispose of WEEE* as unsorted municipal waste.



* Waste Electrical & Electronic Equipment.

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Service/Warranty Repair Agent:

For aftersales servicing or warranty repairs, please contact the Draper Tools Helpline for details of an agent in your local area.

YOUR DRAPER STOCKIST

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