

DRAPER®

INSTRUCTIONS FOR Laser Distance Measurer

Stock No.34548 Part No.LDM-50M

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS PRODUCT.



CE

DRAPER®

GENERAL INFORMATION

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. 34548

Part no. LDM-50M

1.2 REVISIONS:

Date first published AUGUST 2013

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

Downloads are available from: <http://www.drapertools.com/b2c/b2cmanuals.pgm>

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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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2.1 CONTENTS

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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 with the tool.

If upon inspection it is found that a fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. The guarantee period covering parts/labour is 12 months from the date of purchase. 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 agents.

Note: If the tool is found not to be within the Terms of Warranty, repair 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.

Note: This tool is intended for domestic use only.

4. INTRODUCTION

4.1 SCOPE

- Measures distances of up to 50m, 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.	34548
Part no.	LDM-50M
Measuring Range	0.5m - 50m
Resolution	0.001m
Accuracy.....	2mm/50m (0.002"/165")
Laser.....	Class 2 , 650nm, <1mW
Battery	3 x AAA (not supplied)
Operating Temperature	0°C to 40°C
Storage Temperature	-20°C to 60°C
Auto-off: Laser	20 seconds (Approx.)
Auto-off: Unit.....	150 seconds (Approx.)
Dimensions	118mm x 54mm x 28mm (Approx.)
Weight	168g (with battery)

4.3 TECHNICAL SPECIFICATION

Distance measurement precision	±2mm
Measurement unit options	mm/in/ft
Continuous measurement function	Yes
Outdoor reflection board	No
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.....	99 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.

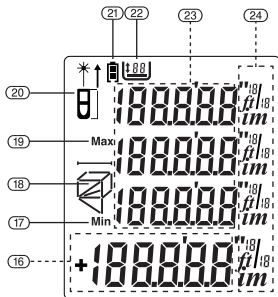
6. TECHNICAL DESCRIPTION

6.1 IDENTIFICATION



- | | | |
|---|--|--------------------------------|
| (1) + key | (5) Spirit level | (10) Off/remove key |
| (2) Unit conversion/Backlight conversion button | (6) Laser emission on | (11) Wrist strap |
| (3) Area/Volume measuring key | (7) - key | (12) Laser |
| (4) Measurement benchmark select key | (8) Pythagorean proposition indirect measurement key | (13) Receiver |
| | (9) Storage/stored date read key | (14) Tripod thread |
| | | (15) Battery compartment cover |

- (16) Main measurement display
- (17) Minimum instructions
- (18) Instructions of area, volume, pythagorean proposition and indirect measurement
- (19) Maximum
- (20) Benchmark position
- (21) Battery power instructions
- (22) Store data/check stored data
- (23) Measurement/auxiliary display
- (24) Measurement unit instructions



7. PREPARING THE MEASURE

7.1 BATTERY INSTALLATION - FIG. 1

Remove the battery cover on the back of the device.

Replace batteries 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.

FIG. 1



8. SETTING THE MEASURE

8.1 TURN ON AND OFF THE MEASURE

To turn ON the meter, press (6) and the laser is ready to use.

To turn OFF, press (10) for 3 seconds. The meter will shut off automatically after 150 seconds of not being used.

8.2 UNIT SETTINGS

Press (2) to reset current unit of measurement, the machine default is 0.000m.

8.3 BACKLIGHT

Press (2) button to turn backlight on or off.

8.4 MEASUREMENT BENCHMARK SETTING

Press (4) button to enter. To switch between front benchmark and back benchmark.

NOTE: The back benchmark is set as default.

Length	Area	Volume
0.000m	0.000m ²	0.000m ³
0.00m	0.00m ²	0.00m ³
0.0in	0.00ft ²	0.00ft ³
0.00ft	0.00ft ²	0.00ft ³

9. BASIC MEASURE OPERATIONS

9.1 SINGLE MEASUREMENT

Press **(6)** and the laser will measure the distance.

Press **(6)** again for a single measurement result to be displayed.

9.2 CONTINUOUS MEASUREMENT

Press **(6)** for a 3 sec. in measuring mode to enter into continuous measurement state, and maximum and minimum measurement results in the process of continuous measurement will display on the screen.

Press **(6)** key to exit continuous measurement state.

9.3 AREA MEASUREMENT

Press **(3)** and you will see rectangle appear on the display screen, that is rectangle will have one edge flashing.

Complete the following operations according to screen tips:

Press **(6)** to measure the first edge (length).

Press **(6)** to measure the second edge (width).

Area will be calculated automatically by the measure and the results shown on main display screen.

Press **(6)** to remove previous measured result and get ready for the next measurement.

9.4 VOLUMETRIC MEASUREMENT

Press **(3)** twice and you will see a cube appear on screen with one edge flashing.

Complete the following operations according to tips:

Press **(6)** to measure the first edge (length)

Press **(6)** to measure the second edge (width)

Press **(6)** to measure the third edge (height)

Volume will be calculated automatically by the measure and the result will show on the main display.

Press **(10)** to clear previous measured result and it is ready for the next measurement.

9.5 PYTHAGOREAN PROPOSITION INDIRECT MEASUREMENT

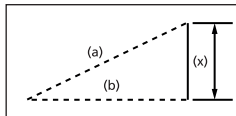
There are different kinds of pre-designed measuring mode to get unilateral distance of a triangle by ways of Pythagorean proposition. This is convenient for users to do indirect measuring in certain complex environment. Press **(8)** to make mode selection:

1. Press **(8)** and you see a triangle on the display, the hypotenuse line flashing.

Press **(6)** to measure the length (a) of the hypotenuse first according to the display.

Then press **(6)** to measure the horizontal length (b).

The height will be calculated and automatically display on measure.



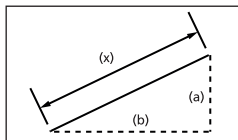
9. BASIC MEASURE OPERATIONS

2. Press **(8)** twice and you will see the triangle with the vertical line flashing.

Press **(6)** and measure the vertical length first.

Then press **(6)** to measure the horizontal length

The hypotenuse will be calculated and automatically display on measure.



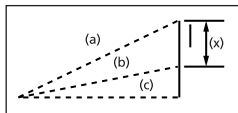
3. Press **(8)** three times and you will see the triangle appear with "I" by the vertical line and the hypotenuse line flashing.

Press **(8)** and measure the (a) length first.

Then press **(6)** to measure the (b) length.

Then press **(6)** to measure the (c) length of another hypotenuse as shown in diagram.

The length (x) of the solid line will be calculated and automatically display on measure.



4. Press **(8)** four times and you will see the double triangle appear and the hypotenuse line flashing.

Press **(8)** and measure the vertical length first.

Then press **(6)** to measure the first length (a)

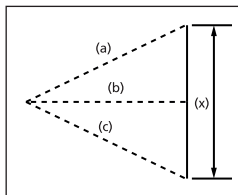
Then press **(6)** to measure the second length (b)

Then press **(6)** to measure the third length (c)

The length will be calculated and automatically display on measure.

NOTE: Under Pythagorean proposition measurement mode, length of right side must be shorter than hypotenuse length so that instrument can make out calculation, otherwise the instrument will display error signal.

Under pythagorean proposition mode, to ensure the accuracy of measurement, it must be measured from the same starting point with a measuring order of first hypotenuse, and then the right side.



9. BASIC MEASURING OPERATIONS

9.6 ADD AND SUBTRACT MEASUREMENT

Single distance measurement can be done through adding/subtracting to get accumulated add or subtract operation.

Press ① and "+" appears on main measurement screen, then enter into accumulated adding measurement mode, accumulative value of previous measured value and the very measurement results will be displayed on the screen.

Press ⑦ and "-" appears on main measurement screen, then enter into accumulated subtracting measurement mode, differences between previous measured value and the very measurement value will be displayed on the screen.

10. STORAGE AND BROWSING

10.1 STORE MEASUREMENTS

Under measuring mode, as the exciting data is effective, press **(9)** for about 3 seconds and the measurement data will automatically stored into the meters memory.

10.2 BROWSE MEASUREMENTS

Press **(9)** to check stored measurement data, press **(1)** or **(7)** to browse forward or backwards. Press **(10)** for a while can remove all stored records.

11. MAINTENANCE

11.1 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.

12. TROUBLESHOOTING

During operation, information may appear on the main screen as follows:

Information	Causes	Solutions
Err1	Signal too weak	Measure target locations which are with stronger reflecting capacity
Err2	Signal too strong	Measure target locations which are with weaker reflecting capacity
Err3	Battery voltage is too low	Replace battery
Err4	Beyond working temperature	Carry out measurement with the meter in the specified scope
Err5	Improper measurement on pythagorean proposition	Re-measure and ensure the length of hypotenuse is longer than that of the right-side
Err6	Memory damage	Please contact your local draper stockist.

13. EXPLANATION OF SYMBOLS

13.1 EXPLANATION



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



Warning!
Read the instruction manual



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

14. DISPOSAL

14.1 DISPOSAL

- At the end of the products 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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