REED

Model R8001

Laser Distance
Meter

**Instruction
Manual**

Table of Contents

Safety

- Read and follow manual instructions before using this instrument
- Do not use this instrument outside the stated limits
- Do not deactivate the safety systems or remove explanatory and hazard labels
- Do not open this instrument with any tools unless specifically indicated to do so in this manual
- Do not modify or change the product in any way
- Do not use accessories from other manufacturers without the approval of CEM Technology
- Do not aim directly towards the sun
- Laser Class 2 products: Do not stare into the laser beam or direct it towards others

Features

- Area and volume calculations
- Indirect measurement using Pythagoras
- Addition/subtraction continuous measurement
- Min/Max and distance tracking
- Display illumination and multi-line display
- Function beep
- Multifunctional end pieces

Specifications

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Measuring Range:	0.05 to 50m* (0.16 to 164 ft*)
Measuring accuracy:	±1.5mm** (±0.06in**), up to 10m (2σ, standard deviation)
Measuring units:	Meters, inches, feet
Laser Class:	Class II

Laser Type:	635nm, <1mW
Dust/Splash proof:	IP 54
Record count:	20
Keyboard Type:	Super soft-touch (Long life)
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Storage Temperature:	-10°C to 60°C (14°F to 140°F)
Laser auto off:	0.5 min
Auto power off:	3 min of inactivity
Power Consumption:	Up to 4,000 measurements
Power Supply:	Two AAA (1.5V) batteries
Dimensions:	115 x 48 x 28mm
Weight:	135g

* Use a target plate to increase the measurement range during daylight or if the target has poor reflection properties.

** In favourable conditions (good target surface properties, room temperature) up to 1 conditions, such as intense sunshine, poorly reflecting target surface or high temperature variations, the deviation over distances above 10 m (33ft) can increase by ± 0.15mm/m (± 0.0018in/ft).

Instrument Description

1. On/Measure button
2. Area/Volume button
3. Indirect Measurement button
4. Single/Continuous Distance Measurement button
5. Plus (+) button
6. Minus (-) button
7. Storage button
8. Reference button
9. Backlight/Unit button
10. Clear/Off button
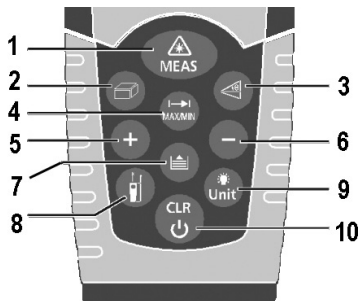
Display Description

1. Laser is active
2. Reference level (front)
3. Reference level (rear)
4. Measurement indicator
   - $\square$ Area measurement
   - $\square$ Volume measurement
   - $\triangle$ Indirect measurement
   - $\triangleleft$ Indirect (second) measurement
5. Single distance measurement
6. Battery status
7. Memory history, call up values
8. Instrument error warning
9. Continuous/Max & Min measurement
10. Primary display
11. Secondary display
12. Previous result
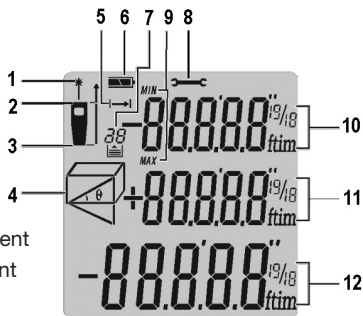
Operating Instructions

Measuring Range

The measuring range is limited to 50m. If measuring at night or dusk and the target is in a dark area, the measuring range will be increased (unless you use a target plate). To increase the measurement range during daylight or if the target has poor reflection properties you can use a target plate.

Target Surfaces

Measuring errors can occur when measuring toward colorless liquids (e.g. water) or dust free glass, Styrofoam or similar semi-permeable surfaces. Aiming at high gloss surfaces may deflect the laser beam and lead to measurement errors. When measuring against non-reflective and dark surfaces the measuring time may increase.
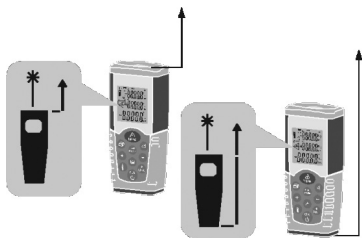
On and Off

The On/Measure button turns the instrument and laser on. Press the Clear button for a few seconds to turn the instrument and laser off. The instrument switches off automatically after three minutes of inactivity.

Clear Button

This button cancels the last action and clears the display.

Reference Level Setting

The default reference setting is from the rear of the instrument. Press the Reference button to take the selection from the top of the instrument. A special beep sounds whenever the reference setting is changed. After re-starting the instrument the reference returns automatically to the default setting.

Backlight

Press the Backlight/Unit button to turn the backlight on and off.

Distance Unit Setting

Hold down the Backlight/Unit button for a few seconds to change the unit of measure. Continue to press the button to toggle between all units of measure. You can choose between m, ft, in, and ft + in.

Single Distance Measurement

Press the On/Measure button to activate the laser. Press the button again to trigger the distance measurement. The measured value will be displayed immediately.

Continuous (Tracking)/Max & Min Measurement

The continuous measurement function (tracking) is used for the transferring of measurements (ie: from construction plans). In continuous measurement mode, the measuring tool can be moved to the target, whereby the measured value is updated approx. every 0.5 seconds. The corresponding max and min values are displayed dynamically in the first and second line.

For example, the user can move from a wall to the required distance, while the actual distance can be read continuously. For continuous measurement, press the Max/Min button until the indicator for continuous measurements appears on the display. Press it again or press the On/Measure button to stop the function. The function is terminated after 100 continuous measurements.
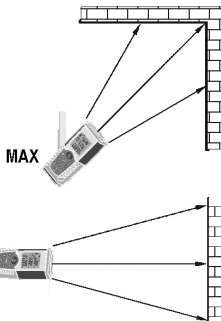
Addition/Subtraction

Press the Plus button to add the current measurement to the previous measurement. Press the On/Measure button to add the second measured value; the result will automatically display.

Press the Minus button to subtract the current measurement from the previous measurement. Press the On/Measure button for the result to be shown in the summary line and the previous measurement will be shown in the second line. Press the Clear button for the last step to be cancelled. Press the Max/Min button to return to single distance measurement mode.

Area Measurement

Press the Area/Volume button once to enter Area Measurement mode. The ▱ icon will appear on the display to confirm you are in the correct mode. Press the On/Measure button to take the first measurement (ie: length), press the On/Measure button again to take the second measurement (ie: width). Then the area/surface is automatically calculated and displayed in the summary line on the display. The previous measurement will be shown in the second line.
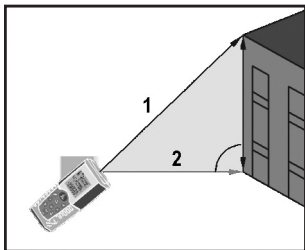
Volume Measurement

Press the Area/Volume button twice to enter Area Measurement mode. The ▱ icon will appear on the display to confirm you are in the correct mode. Press the On/Measure button to take the first measurement (length), press the On/Measure button again to take the second measurement (width), press the On/Measure button again to take the third measurement (height). Then the volume is automatically calculated and displayed in the summary line on the display. The previous measurement will not be shown.

Indirect Measurement

This is used to determine a distance using two auxiliary measurements. Press the Indirect Measurement button once, the ◿ icon will appear on the display.

Aim at the highest point and press the On/Measure button to take the measurement. Holding the instrument as horizontal as possible press and hold the On/Measure button to trigger continuous measurement, the horizontal line is measured and shown in the summary and secondary lines.

Three Point Measurement

Press the Indirect Measurement button twice, the ◺ icon will appear on the display. Aim at the highest point (1) and press the On/Measure button to trigger the measurement. Holding the instrument as horizontal as possible press and hold the On/Measure button to trigger continuous measurement and sweep the laser up and down over the ideal target point (2), press the On/Measure button again to confirm the value. Aim at the lower point (3) and press the On/Measure button to trigger the measurement. The results are shown in the summary and secondary lines at the same time.
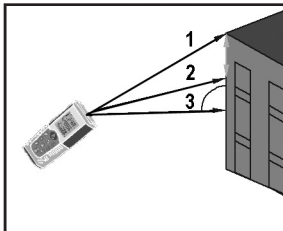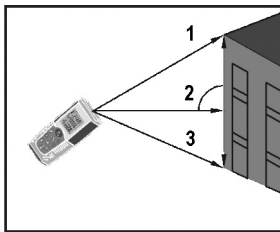
Measurement Storage

Press the Storage button to view the previous 20 records (measurements or calculated results). Use the + and – buttons to navigate the records.

Troubleshooting

Code	Cause	Corrective measure
204	Calculation error	Repeat procedure
208	Received signal too weak/ measurement time too long/ Distance >50m	Use target plate
209	Received signal too strong	Target too reflective (use target plate)
252	Temperature too high	Cool down instrument
253	Temperature too low	Warm up instrument
255	Hardware error	Switch meter on/off several times*

*If error persists contact REED Instruments at info@reedinstruments.com

Care

Do not immerse the instrument in water. Wipe off dirt with a damp, soft cloth. Do not use aggressive cleaning agents or solutions. Handle the instrument as you would a telescope or camera.

Battery Replacement

This instrument uses 2 AAA (1.5V) alkaline batteries. The batteries need to be replaced when the battery symbol flashes on the display. Remove the batteries before any long period of non-use to avoid the possibility of corrosion. Only use alkaline batteries.

1. Remove battery compartment cover.
2. Insert new batteries, respecting the correct polarity.
3. Close the battery compartment cover.

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