



Laser Distance Measure
Model No. 40-6001



Instruction Manual

Congratulations on your choice of this Laser Distance Measure. We suggest you read this instruction manual thoroughly before using the instrument. Save this instruction manual for future use.

This is a Class II laser tool and is manufactured to comply with CFR 21, parts 1040.10 and 1040.11 as well as international safety rule IEC 285. The laser also complies with EMC Test according to EN61000-6-3; 2001+A11:2004, EN 6100-6-1:2011, EN 6100-4-2, EN 61000-4-3, EN 60825, FCC Test according to PART 15.

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1. Kit Contents

<u>Description</u>	<u>Qty.</u>
Laser Distance Measure	1
Wrist Strap	1
AA Batteries	2
Soft-sided Pouch	1
Instruction Manual	1
Warranty Card	1

2. Safety Information

Please read and understand all of the following instructions, prior to using this tool. Failure to do so, may void the warranty.

CAUTION!

Class II Laser Product
Max. Power Output: $\leq 1\text{mW}$
Wavelength: 640-660nm

**THIS TOOL EMITS LASER RADIATION.
DO NOT STARE INTO BEAM.
AVOID DIRECT EYE EXPOSURE.**



ATTENTION

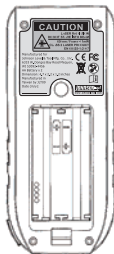


IMPORTANT

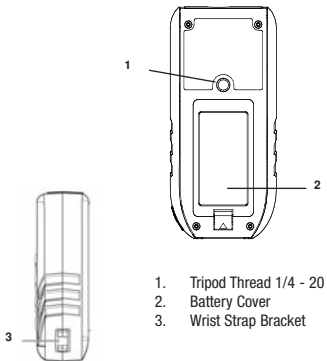
- Read all instructions prior to operating this laser tool. Do not remove any labels from tool.
- Do not stare directly at the laser beam.
- Do not project the laser beam directly into the eyes of others.
- Do not set up laser tool at eye level or operate the tool near a reflective surface as the laser beam could be projected into your eyes or into the eyes of others.
- Do not place the laser tool in a manner that may cause someone to unintentionally stare into the laser beam. Serious eye injury may result.
- Do not operate the tool in explosive environments, i.e. in the presence of gases or flammable liquids.
- Keep the laser tool out of the reach of children and other untrained persons.
- Do not attempt to view the laser beam through optical tools such as telescopes as serious eye injury may result.
- Always turn the laser tool off when not in use or left unattended for a period of time.
- Remove the battery when storing the tool for an extended time (more than 3 months) to avoid damage to the tool should the batteries deteriorate.
- Do not attempt to repair or disassemble the laser tool. If unqualified persons attempt to repair this tool, warranty will be void.
- Use only original Johnson® parts and accessories purchased from your Johnson® authorized dealer.

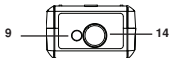
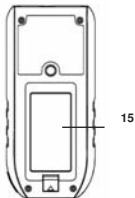
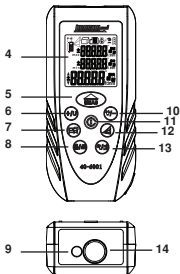
3. Location/Content of Warning Labels

 **AVOID EXPOSURE**
Laser radiation is emitted
from this **APERTURE**.



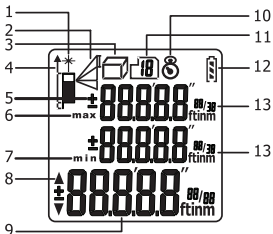
4. Location of Part/Components





- 4. LCD Display
- 5. Measure Button
- 6. Add/Unit of Measure
- 7. Measure Function
Area
Volume
Stake-Out
- 8. Countdown Measure/
Memory Recall

- 9. Laser Emitting Window
- 10. Subtract/Back-Light
- 11. Power Button/Clear/Escape
- 12. Indirect Measurement/Pythagoras
- 13. Measuring Reference Position/
Continuous Laser Mode
- 14. Receiver Window
- 15. Battery Cover



- | | |
|---|---|
| 1. Active Laser Indicator | 5. Add and Subtract |
| 2. Indirect Measuring | 6. Maximum Display |
| ▧ Single Pythagoras | 7. Minimum Display |
| ▧ Double Pythagoras | 8. Stake Direction Indicator |
| ▧ Double Pythagoras
(Partial Height) | 9. Main Screen and
Units of Measure |
| 3. Measuring Function | 10. Countdown Measuring Timer |
| □ Area Measuring | 11. Memory Counter |
| ▣ Volume Measuring | 12. Battery Status |
| 4. Measurement Reference Position | 13. Sub-Screens and Units
of Measure |

Measuring Reference

Range

Range is specified between a minimum 2-inches to a maximum of 165-feet with an accuracy of 1/16". Longer ranges will be found by the instrument but a variance in the accuracy may exist. At night or dusk the range may be greater than during daylight or if the target has poor reflective properties.

Target Surfaces

Measuring errors may occur when aiming at surfaces composed of colorless liquids (e.g. water), glass, Styrofoam or similar semi-permeable surfaces. Aiming at high gloss surfaces may deflect the laser beam and lead to measurement errors.


Hazards of Use

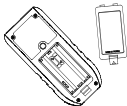
Be aware that errors in distance measurements may occur if the instrument is defective or has been dropped, been misused or modified.

Note

Conduct periodic test measurements to ensure the instrument is measuring accurately and consistently. This is most important if the instrument has been exposed to abnormal use. Always confirm accuracy before and during important measurements. Keep the laser distance measure optic clean and inspect for damage.

5. Start Up - Battery Installation

1. Remove battery compartment lid.
2. Insert 2-"AA" batteries observing correct polarity.
3. Close battery compartment lid.
4. Replace battery when the  flashes on screen. When this icon appears there are approximately 100 measurements remaining.



Note

Use only alkaline batteries. If the instrument will not be used for an extended time, remove the batteries to protect against corrosion.

Power Button

Press and release  Power Button to power up.

Press and hold  Power Button to power off.

This instrument powers off automatically after three minutes of inactivity.

Backlight

Press and hold the  button for two seconds to activate backlight. Repeat this step to turn off backlight.



Automatic Shutoff

Laser will turn off after 30 seconds

Unit will turn off after 3 minutes

6. Using the Product

Measuring

Measuring Modes

Your Laser Distance Measure has four measuring modes:

Length

Area/Square

Volume/Cube


Indirect/Pythagoras

Units of Measure

This instrument has seven units of measure. The desired unit of measure can be set by pressing and holding **⊕/U** for two seconds. The sub screen will display only feet and meters in a decimal format in Area and Volume modes. The following units can be set:

	Distance	Area	Volume
1.	0.000 m	0.000 m ²	0.000 m ³
2.	0.00 ft	0.00 ft ²	0.00 ft ³
3.	0'0" 1/32	0.00 ft ²	0.00 ft ³
4.	0.00 in	0.00 ft ²	0.00 ft ³
5.	0 1/32 in	0.00 ft ²	0.00 ft ³
6.	0 1/16 in	0.00 ft ²	0.00 ft ³
7.	0 1/8 in	0.00 ft ²	0.00 ft ³

Measurement Reference Position

Default measurement setting is from the rear of the instrument for all modes. Be sure to adjust the measuring reference position prior to engaging a measuring calculation mode. Press  to scroll through the reference point options

Front

Middle - Tripod Thread (Size 1/4" -20)

Rear



Indicator for reference



Tripod Thread

Single Distance Measuring

Press and release  to power up.

Direct Laser Beam to Target.

Press and release .


Record measurement (up to 20 measurements will be stored automatically and available for recall, see Memory Recall page 21).


Press and hold  to power down



Measuring with Countdown Timer

Press and release .

3  icon will appear on screen with default setting of three second countdown timer.


Press and release  to activate laser (if inactive.)

Direct the laser beam towards the target and hold steady.

Press and release  to activate the countdown timer.

Measurement will be recorded on screen.

Repeat these steps for each measurement. Countdown measuring may be used during any measuring function (e.g. Pythagorean, area, volume, etc).


To extend the time from three seconds press and release  until you reach desired time. Timer can be set up to 15 seconds.



Adding or Subtracting


Press and release the  button to activate laser.

Press and release the  button to record first measurement.


Press and release  (first measurement moves to sub value position on screen and a "+" sign temporarily appears).

Press and release the  button to activate laser. (If inactive.)

Press and release the  button to record second measurement.

Press and release  to add measurement 1 (stored in sub value position) and measurement 2 together.

To add another measurement to sum (repeat same measurement sequence) to tally.

To subtract a value in the tally sequence press  button.





Continuous Measuring

This mode will take continuous measurements as you move closer or further away from the target. Minimum working range is 2-inches. Maximum working range is 165-feet.



Press and hold the  button to activate continuous measuring mode.

To pause Continuous Measuring mode press  or .

To resume Continuous Measuring mode press  or to exit Continuous Measuring mode press .

Minimum / Maximum Measurements

As the laser beam is scanned across the measuring surface, the maximum and minimum distance is simultaneously recorded in the sub value positions on the screen as the laser is scanning the targeted surface.



Area Measurement (Square²)

Press  Power Button to turn power on.

Press  button to enter Area mode.

A rectangle icon will appear on the upper left side of screen.

Observe flashing line for each required measurement (Length & Width).

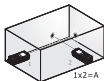


Follow flashing line instructions on screen to measure width & length.

Press and release  button to record measurements.

Area calculation will be presented in sub value position at top of screen.

Note: Unit of measure for area calculation will be displayed in decimal form in square feet or square meters on main screen.



Area Measuring Instructions

Volume Measurement (Cube³)

Press  Power Button to turn power on.

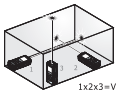
Press and release  button two times.

A 3- dimensional rectangle icon will appear on the upper left side of screen. Observe flashing line for each required measurement (Length, Height & Width).



Follow flashing line instructions on screen to measure length, width & height. Press and release  button to record measurements. Volume calculation will be presented in sub value position at top of screen.

Note: Unit of measure for cube calculation will be displayed in decimal form in cubic feet or cubic meters on main screen.



1x2x3=V



Volume Measuring Instructions

Indirect Measurements (Pythagorean Methods)

All Calculations are based on Pythagorean Theorem $a^2+b^2=c^2$.

This function allows for the measurement of hard to reach jobs.

Follow the order of the flashing lines for each required measurement.

Note: For accurate measurements the instrument's position must be held constant. For example, note the position of your hand when taking first measurement. Do not move your hand when preparing to take the second measurement. Simply pivot your wrist (keeping instrument in same position) to align the next target. Then record next measurement.



First Press for Single
Pythagoras
Calculates distance between
Point 1 and Point 2



Second Press for Double
Pythagoras (Summary)
Calculates distance between
Point 1 and Point 3




Third Press for Double
Pythagoras (Partial Measurement)
Calculates distance between
Point 1 and Point 2




Indirect Measurement 1 (2 shot measurements FULL Height)

Press and release  Indirect Measure button once to enter mode.

Position instrument by observing flashing line on screen. (Base of triangle)

Press and release  Measure button to record first measurement.

Hold instrument position and pivot to aim laser at second target observing flashing line on screen.


Press and release  Measure button to record second measurement.

Pythagoras calculation (full height) will be presented in main screen position at bottom.


Indirect Measurement 2 (3 shot measurements FULL Height)

Press and release  Indirect Measure button twice to enter Mode.

Aim laser at target-observe flashing lines on screen.

Press and release  Measure button to record first measurement.

Hold instrument position and pivot to aim laser at second target observing flashing line on screen.

Press and release  Measure button to record second measurement.

Hold instrument position and pivot to aim laser at third target.


Press and release  Measure button to record third measurement.

Pythagoras calculation (full height) will be presented in main screen position bottom.


Indirect Measurement 3 (3 shot measurements PARTIAL Height)

Press and release  Indirect Measure button three times to enter mode.

Aim laser at targeted measuring surface observe flashing line on screen.

Press and release  Measure button to record first measurement.


Hold instrument position and pivot to aim laser at second target observing flashing line on screen.

Press and release  Measure button to record second measurement.

Hold instrument position and pivot to aim laser at third target.

Press and release  Measure button to record third measurement.






Pythagoras calculation (partial height) will be presented in main screen position at bottom.



Note: Unit of measure for each Pythagoras function is capable of being displayed in decimal (feet, inches or metric) or inches and feet to 1/32. Simply press and hold  to scroll through each unit of measure.

Stake-out

Stake-out mode is designed to mark off repetitive equal distances. For example, fence post installation or framing.



1. To use Stake-out, you have to set one value or “stake” in memory.
2. Turn the unit on.
3. Press and release  three times to enter the first stake setting.
4. Press  to increase your value.
5. Press  to decrease your value.
6. Hold  for two seconds to shift to positions.
7. Once value is set, press  to enter.

Enter Continuous Measuring Mode by pressing and holding  . An arrow will guide direction. This function can be stopped by pressing the red power button  .

Memory Recall

This instrument stores your last 20 measurements in order recognizing their unit of measure and measuring mode.

Press and hold the  button.

Press  or  buttons to scroll up or down through the recorded measurements.

Memory Reset Feature

While the laser distance measure instrument is off, the memory may be erased by following these steps:

Press and hold the  button.

While holding  press the power button  .

Release  as you see the screen turn on and then immediately off.

Press and release power button  to power on the instrument.

Memory will be reset to zero.

Indoor & Outdoor Measurements

This model is designed to take measurements indoors under normal settings. The measuring surfaces and ambient light are critical factors to the quality of measurement (indoors and outdoors). Outdoor measurement capability may be limited due to sunlight/UV ray interference. Please note that in some situations the unit may have difficulty reading the surface you try to measure if lighting or sunlight is intense and/or the surface being measured does not reflect the laser beam appropriately.

Measurement Errors

Error messages will appear if the unit's receiver is not getting a sufficient laser return signal.

Common surfaces that could cause an error reading:

- Water or other fluids
- Translucent to clear surfaces like glass or acrylic
- Porous or dark surfaces may require longer reading times or cause an error reading
- Moving surfaces or objects such as curtains
- Highly reflective or angled surfaces may deflect the laser beam signal

Error Codes

Code	Description	Solution
Err01	Distance is outside of measuring range	Measure in a shorter distance or longer distance
Err02	Reflected signal is too weak	Measure on a better surface
Err03	Out of display range	Maximum Value: 99,999 Split up measurement area into smaller segments.
Err04	Pythagorean theorem calculation error	Check and verify value or the sequence of measurements is correct
Err05	Low Battery	Install a new battery
Err06	Temperature is outside of working range	Measure in an environment within specified working temperature range
Err07	Ambient light is too strong	Measure in a darker place (shadow target)

Tips from the Pro's

Take more than one measurement in critical situations where accuracy needs to be greater than an estimation measurement. Take 3-4 measurements from the same position to compare consistency of each reading. Prior to important measurements verify that the instrument is in proper working order and take sample measurements of a known distance to verify accuracy.

To accurately measure from the rear of the instrument, use a scrap piece of drywall or other flat material. Extend the material off the corner and butt the LDM up to the material. Then take measurement.

Place a white sheet of paper over the targeted measuring surface if error message Err02 occurs to improve the return signal.

7. Technical Specifications

Measure Range*	2" - 165'
Accuracy*	± 1/16"
Measure Speed*	0.5 seconds
Laser Type	650 nm, ± 10nm, Class II, ≤ 1mW
Power Supply	2-"AA" Alkaline Battery (included)
Battery Life	10,000 measurements
Dimensions	4.7" x 2.2" x 1.3" (120 x 55 x 32 mm)
Working Temperature	23°F to 104°F (-5°C to +40°C)
Storage Temperature	-4°F to 140°F (-20°C to +60°C)
Auto Shut-off Laser	30 seconds
Auto Shut-off Main Power	3 minutes
IP Protection Class	52

*The working range and accuracy is dependent on how well laser light is reflected from the surface for the target and with increased brightness of the ambient light intensity measuring accuracy may deteriorate.

8. Product Warranty

Johnson Level & Tool offers a two year limited warranty on our laser distance measure products. You can obtain a copy of the limited warranty for a Johnson Level & Tool product by contacting Johnson Level & Tool's Customer Service Department as provided below or by visiting us online at www.johnsonlevel.com. The limited warranty for each product contains various limitations and exclusions.

NOTE: The user is responsible for the proper use and care of the product.

For further assistance, or if you experience problems with this product that are not addressed in this instruction manual, please contact our Customer Service Department.

In the U.S., contact Johnson Level & Tool's Customer Service Department at 888-9-LEVELS.

In Canada, contact Johnson Level & Tool's Customer Service Department at 800-346-6682.

9. Warranty Registration

You will need to locate the serial number for your product that is located inside the battery compartment. **PLEASE NOTE THAT IN ADDITION TO ANY OTHER LIMITATIONS OR CONDITIONS OF JOHNSON LEVEL & TOOL'S LIMITED WARRANTY, JOHNSON LEVEL & TOOL MUST HAVE RECEIVED YOUR PROPERLY COMPLETED WARRANTY CARD WITHIN 30 DAYS OF YOUR PURCHASE OF THE PRODUCT OR ANY LIMITED WARRANTY THAT MAY APPLY SHALL NOT APPLY AND THERE SHALL BE NO WARRANTY.**

Enclosed with this instruction manual you will find a warranty registration card to be completed for your product.

