

Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

20a

AMES

INSTRUMENTS™

57013

200 ft. LASER DISTANCE METER



Visit our website at: <http://www.harborfreight.com>
Email our technical support at: productsupport@harborfreight.com

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING





Read this material before using this product. Failure to do so can result in serious injury. **SAVE THIS MANUAL.**

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WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

SAFETY

SETUP

OPERATION

MAINTENANCE

IMPORTANT SAFETY INFORMATION

Safety Warnings and Precautions

⚠ WARNING

Read all safety warnings and all instructions.

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

1. Never attach or use any other form of optical device with this product. Use as intended only.
2. Do not modify in any way as this may result in hazardous radiation exposure.
3. This product is not a toy. Do not allow children to play with or near this item.
4. Inspect before every use; do not use if parts are loose or damaged.
5. Power this Meter using only the batteries referenced in the Specifications Chart.
6. Stay alert. Watch what you are doing, use common sense. Do not operate any Meter when you are tired.
7. Do not operate Meter if under the influence of alcohol or drugs. Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the Meter.
8. Do not look into laser. Do not point laser at persons or animals directly or indirectly off of reflective surfaces.
9. Avoid damaging Meter. Use only as specified in this manual.
10. Performance of this Meter may vary depending on battery condition.
11. Maintain product labels and nameplates. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
12. Do not attempt to charge battery.
13. Do not reverse the polarity of the battery when installing.
14. Have the Meter calibrated by a qualified technician every year to maintain accurate results.
15. The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.



SAVE THESE INSTRUCTIONS.

Specifications

SAFETY

Working Range	0.2" - 197' (0.05m - 60m)
Measurement Units	Meters (m), Inches (in), Feet (ft), Feet + Inches (' ")
Accuracy	± 0.08" (2mm)
Battery	2x AAA (Included)
Working Temperature	14°F - 104°F (-10°C - 40°C)
Storage Temperature	-4°F - 140°F (-20°C - 60°C)
Operating Environment	Indoors, 0% - 80% RH

SETUP



Note: When using Meter in or around bright solar light, or on rough or poorly reflective measurement surfaces, use a target such as a white surface or sheet of paper to avoid measurement error.

OPERATION

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FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

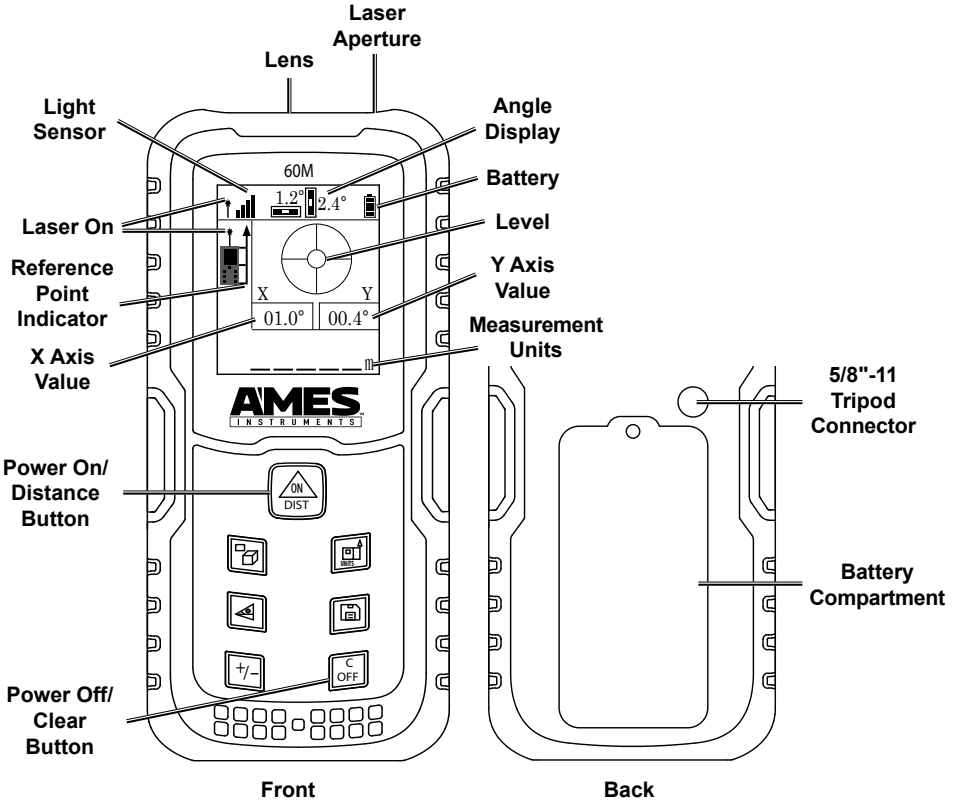


Setup - Before Use:



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Functions



Install Batteries

1. Turn the Meter over.
2. Remove battery cover.
3. Remove batteries and replace with same.

Note: Do not install old and new batteries together. Do not install alkaline, carbon-zinc or rechargeable batteries together. Position batteries in proper polarity. Do not use swollen or leaking batteries.

4. Replace battery cover.

Operating Instructions



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

General Operation



ON/DIST Button

- Press to turn Meter on.
- Press to activate laser.
- Press to go back during a measurement.



C/OFF Button

- Press to clear one data set.
- Press and hold to turn Meter off.



UNITS Button

- Press to change laser reference point between front, center, and back of Meter.
- Press and hold until measurement unit changes. Cycle through until desired measurement unit is shown.



Save Button

- Save up to 30 data sets.
- Press to retrieve data set.
- Press to save data set.
- Press and hold to delete data set.



Add/Subtract Button

- Measured or calculated values can be added or subtracted. (May not work in all modes.)

Using Target Card (Included)


On a flat surface, where there is no reference point (e.g. the end of a table or counter top), peel strip on bottom of card off and stick card to end of surface.

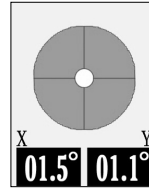


Measurement Operations

SAFETY

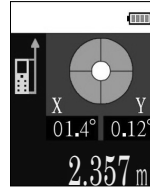
Level - Surface Inclination

1. Press **DIST** button to turn Meter on.
2. Press  to activate level.
3. Use X and Y axis values to determine angles.



Single Distance

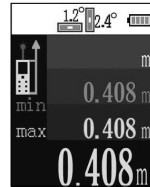
1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press **DIST** button to activate laser.
4. Aim laser at target, using level as necessary.
5. Press **DIST** button.
6. Yellow measurement - Distance.



SETUP

Continuous - Find Desired Distance

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press and hold **DIST** button.
4. Move Meter forward or backward until desired distance is displayed.
5. Press **DIST** button to stop measuring.
6. Pink measurement - Minimum.
7. Blue measurement - Maximum.
8. Yellow measurement - Distance.





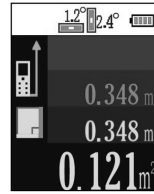
OPERATION

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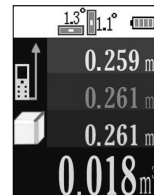
Area - Rectangle

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. Pink measurement - Place Meter against first surface, pointing at opposite surface, then press **DIST** button to take first measurement.
6. Blue measurement - Place Meter against second surface, pointing at opposite surface, then press **DIST** button to take second measurement.
7. Yellow measurement - Area.





Volume - Cubic Feet

1. Press **DIST** button to turn Meter on.
2. Set Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. White measurement - Place Meter against first vertical surface, pointing at opposite surface, then press **DIST** button to take first horizontal measurement.
6. Pink measurement - Place Meter against second vertical surface, pointing at opposite surface, then press **DIST** button to take second horizontal measurement.
7. Blue measurement - Place Meter against horizontal surface, pointing at opposite horizontal surface, then press **DIST** button to take vertical measurement.
8. Yellow measurement - Volume.





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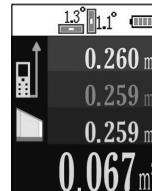
Area - Triangle

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. White measurement - Place Meter in corner of first angle, pointing to corner of second angle, then press **DIST** button to take first measurement.
6. Place Meter in corner of second angle, pointing to corner of third angle, then press **DIST** button to take second measurement.
7. Place Meter in corner of third angle, pointing to corner of first angle, then press **DIST** button to take third measurement.
8. Yellow measurement - Area.





Area - Trapezoid

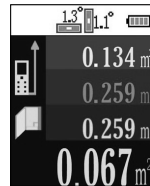
1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. White measurement - Place Meter against first surface, pointing at opposite surface, then press **DIST** button to take first measurement.
6. Pink measurement - Place Meter against second surface, pointing at opposite surface, then press **DIST** button to take second measurement.
7. Blue measurement - Place Meter against third surface, pointing opposite surface, then press **DIST** button to take third measurement.
8. Yellow measurement - Area.





Area - Multiple Surfaces

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. **First Surface:**
 - a. Press **DIST** button to activate laser.
 - b. Pink measurement - Place Meter against first surface, pointing at opposite surface, then press **DIST** button to take first measurement.
 - c. Blue measurement - Place Meter against second surface, pointing at opposite surface, then press **DIST** button to take second measurement.
 - d. Yellow measurement - Area of first surface.
 - e. White measurement - Area of first surface.
5. **Second Surface:**
 - a. Press **DIST** button to activate laser.
 - b. Pink measurement - Place Meter against first surface, pointing at opposite surface, then press **DIST** button to take first measurement.
 - c. Blue measurement - Place Meter against second surface, pointing at opposite surface, then press **DIST** button to take second measurement.
 - d. Yellow measurement - Area of second surface.
 - e. White measurement - Combined area of first surface and second surface.

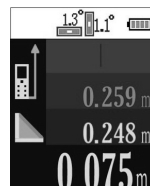
Note: Keep taking measurements to add more surfaces. White measurement will indicate total area.





Indirect Height/Length - Single Pythagorean

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. Pink measurement - Place Meter on the ground. Tilt Meter up, point at top reference point on surface, then press **DIST** button.
6. Blue measurement - Keep Meter on the ground, point at bottom reference point on surface, then press **DIST** button.
7. Yellow measurement - Height.

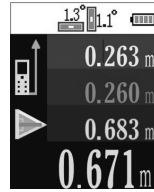
Note: Measurement may also be performed on horizontal surface to measure length.





Indirect Height/Length - Double Pythagorean

1. Place Meter on tripod.
2. Press **DIST** button to turn Meter on.
3. Set Laser Reference Point.
4. Press  until  appears.
5. Press **DIST** button to activate laser.
6. White measurement - Tilt Meter up, point at top reference point on surface, then press **DIST** button.
7. Pink measurement - Level Meter and point at middle reference point on surface, then press **DIST** button.
8. Blue measurement - Tilt Meter down, point at bottom reference point on surface, then press **DIST** button.
9. Yellow measurement - Height.

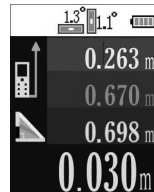
Note: Measurement may also be performed on horizontal surface to measure length.





Indirect Height/Length - Double Pythagorean Minus

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. White measurement - Place Meter on the ground. Tilt Meter up, point at top reference point on surface, then press **DIST** button.
6. Pink measurement - Keep Meter on the ground, point at specific reference point on surface, then press **DIST** button.
7. Blue measurement - Keep Meter on the ground, point at bottom reference point on surface, then press **DIST** button.
8. Yellow measurement - Height of specific area.

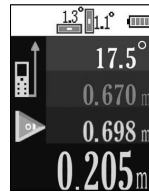
Note: Measurement may also be performed on horizontal surface to measure length.





Indirect Height/Length - Angle Calculation

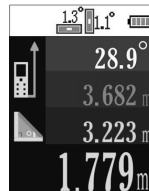
1. Place Meter on tripod.
2. Press **DIST** button to turn Meter on.
3. Set Laser Reference Point.
4. Press  until  appears.
5. Press **DIST** button to activate laser.
6. White angle value - Used to calculate measurement.
7. Pink measurement - Tilt Meter up, point at top reference point on surface, then press **DIST** button.
8. Blue measurement - Tilt Meter down, point at bottom reference point on surface, then press **DIST** button.
9. Yellow measurement - Height.

Note: Measurement may also be performed on horizontal surface to measure length.



Indirect Height/Length - Angle Calculation

1. Press **DIST** button to turn Meter on.
2. Set Laser Reference Point.
3. Press  until  appears.
4. Press **DIST** button to activate laser.
5. White angle value - Used to calculate measurement.
6. Pink measurement - Place Meter on the ground. Tilt Meter up, point at top reference point on surface, then press **DIST** button.
7. Blue measurement - Length.
8. Yellow measurement - Height.



Error Codes

Error Code	Cause	Solution
ERR01	The reflected laser signal is too strong.	Change target or affix a white sheet of paper to target.
ERR02	The distance to be measured falls outside working range.	Measure within the working range 0.2" - 197' (0.05m - 60m).
ERR03	The reflected laser signal is too weak.	Change target or affix a white sheet of paper to target.
ERR06	Low battery.	Replace battery. See Battery Replacement on page 15.

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Maintenance and Servicing



Procedures not specifically explained in this manual must be performed only by a qualified technician.

Cleaning, Maintenance, and Lubrication

1. Wipe unit with a dry, lint-free cloth. Do not use solvents or abrasives.
2. Remove batteries if not in use for long periods.
3. Store unit in a dry location.
4. Other than the batteries, there are no replaceable parts on this unit. **Repairs should be done by a qualified technician.**

Battery Replacement

1. When **ERR06** appears then the Meter turns off, the batteries need to be replaced.
 2. Turn the Meter over.
 3. Remove battery cover.
 4. Remove batteries and replace with same.
 5. Replace battery cover.
- Note:** Do not install old and new batteries together. Do not install alkaline, carbon-zinc or rechargeable batteries together. Position batteries in proper polarity. Do not use swollen or leaking batteries.

Calibration

Have the Meter calibrated by a qualified technician every year.

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Record Serial Number Here:

Note: If product has no serial number, record month and year of purchase instead.

Note: Replacement parts are not available for this item.

