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 Date number in the back of the manual (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. 25k

DOYLE™

20:1 DUAL-LASER INFRARED THERMOMETER



Visit our website at: https://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

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When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-800-444-3353 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.

IMPORTANT SAFETY INFORMATION

⚠WARNING **Read all safety warnings and instructions.**
Failure to follow the warnings and instructions may result in serious injury.

1. **Do not use for medical purposes.**
2. **Do not open the housing other than battery compartment.**
3. **Avoid direct eye exposure.**
4. **Do not expose the tool to rain or wet conditions.**
5. **Stay alert, watch what you are doing and use common sense when operating the tool. Do not use while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention may result in serious personal injury.*
6. **Do not use the tool if the Trigger does not turn it on and off.** *Any tool that cannot be controlled with the Trigger is dangerous and must be repaired.*
7. **Disconnect the battery before making any adjustments, changing accessories, or storing the tool.** *Such preventive safety measures reduce the risk of activating the Laser accidentally.*
8. **Maintain the tool. Check for misalignment or binding of parts, breakage of parts and any other condition that may affect the tool's operation. If damaged, have the tool repaired before use.** *Many accidents are caused by poorly maintained tools.*
9. **Use the tool in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the tool for operations different from those intended could result in a hazardous situation.*

10. **Have your tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the tool is maintained.*

11. Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries. Position batteries in proper polarity. Do not use swollen or leaking batteries.

12. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

13. This product is not a toy. Keep it out of reach of children.

14. The warnings, precautions, 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

Temperature Range	-40°F to 1472°F (-40°C to 800°C)
K-type Probe Temperature Range	-40°F to 356°F (-40°C to 180°C)
Temperature Accuracy *Accuracy is specified under controlled conditions, results may vary outside the recommended operating temperature range.	≥32°F (0°C): ±3°F (±1.5°C) or ± 1.5% whichever is greater <32°F (0°C): ±(3.6°F + 0.2°F per degree) (±(2°C + 0.2°C per degree))
Response Time	< 150ms
Distance to Spot Ratio	20:1
Operating Temperature	32°F - 122°F (0°C to 50 °C)
Operating Humidity	10 - 90% RH
Storage Temperature	14°F - 140°F (-10°C to 60°C)
Storage Humidity	≤ 80% RH
Emissivity Range	0.1 - 1.0
Battery	AAA x2 (included)



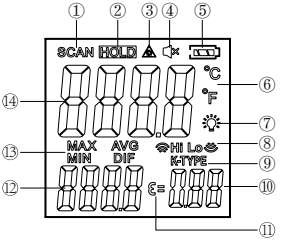
Setup - Before Use:

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



Display



1. Scan Mode
2. Hold Mode
3. Laser Pointer Status
4. Alert Status
5. Battery Status
6. Temperature Unit °C/°F
7. Backlight Status
8. High/Low Alarm
9. K-Type Probe Measurement
10. Emissivity Value
11. Emissivity Symbol
12. Temperature Values for MAX/MIN/AVG/DIF
13. Symbols for MAX/MIN/DIF/AVG
14. Current Temperature Value

Backlight/Laser Pointer Button

Laser Pointer: In Hold mode, press and hold SET/Laser Button to turn Laser Pointer on and off.

Backlight: In Hold mode, press and hold Mode Button to turn Backlight on and off.

Mode Selections

Press Mode button while measuring temperature to cycle through MAX/MIN/AVG/DIF.

MAX: Maximum temperature value measured.

MIN: Minimum temperature value measured.

AVG: Average temperature value measured.

DIFF: Difference between maximum and minimum temperature values measured.

Note: Thermometer will power off after 15 seconds of non use.

Press Mode button to enable or disable Auto Power Off. Press the Set/Laser button to confirm.

Settings

Press SET Button to enter the setting menu. Press SET Button to cycle through the following list of options.

Emissivity (EMS): Set the numerical value of emissivity to match the surface being measured. Emissivity is the amount of thermal energy emitted from a surface. Generally, organic materials, painted, dull or dark surfaces have higher emissivity. Metals and reflective surfaces have lower emissivity. Refer to Table below.

Units: Switch between F° (Fahrenheit) and C° (Celsius). When in this setting the F° or C° icon will flash on the display indicating the active temperature scale.

Alert Status: Turns audible alarms on/off. When in this setting the Alert Status Icon will flash on the display. When turned ON the "Hi" or "Lo" icons will be visible. When OFF, icons will not be visible.

High temperature limit setting: Assign a numerical value to the high temperature limit. When in this setting the "Hi" icon will flash on the display.

Low temperature limit setting: Assign a numerical value to the low temperature limit. When in this setting the "Lo" icon will flash on the display.

When in any setting Press Up/Down Button to adjust settings and select Units, turn alarms ON or OFF, or adjust the numerical values of the parameters. Press SET button again to confirm setting.

Note: This thermometer is preset to 0.95 Emissivity.

To adjust Emissivity:

1. Press **SET** Button to select Emissivity (EMS).
2. Press Up/Down Button to select (EMS) 0.10-1.0.
3. Press **SET** Button or Trigger when finished.

Approximate Surface Emissivity	
Glass	0.95
Concrete	0.95
Hot Food	0.93
Carbon	0.85
Cast Iron	0.80
Copper (oxidized)	0.50
Galvanized Pipe	0.40
Aluminum (oxidized)	0.30
Stainless Steel (polished)	0.20

Operating Instructions

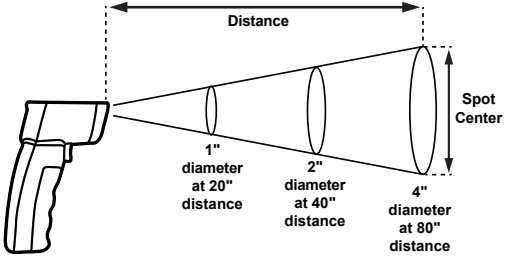
Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

General Operation

Note: Do not expose Thermometer to strong electromagnetic fields, such as those generated by an arc welder, induction heater, etc.

Note: When moving Thermometer to an area with significantly different ambient temperature, allow Thermometer to adjust to the new ambient temperature for 30 minutes before use.

The surface being tested should be larger than the size calculated by the diagram below.



Note: Thermometer will power off after 15 seconds of non use.

1. Remove dirt and grime from surface to be measured as needed.
2. Adjust Emissivity as needed.

Note: Black electrical tape or black paint may be applied to highly reflective surfaces to raise emissivity. Leave Thermometer set to 0.95 and allow tape or paint to come to same temperature as surface before taking measurement.

3. Set Reference Temperature and Threshold Value as needed.
4. Press and hold Trigger, point at surface to be measured.
5. Read Measurement(s).

Maintenance and Servicing

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

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Release the Trigger and remove the battery from the Laser Thermometer before performing any inspection, maintenance, or cleaning procedures.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If damage is noted, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of parts,
   - cracked or broken parts,
   - damaged electrical wiring, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe lens first, then external surfaces of the tool with clean,damp cloth. Only use water, do not use soap or chemicals. DO NOT submerge tool in water.
3. Remove battery if not in use for long periods.
4. Store tool in a dry location.
5. Other than battery, there are no replaceable parts on this Thermometer. **Repairs should be done by a qualified technician.**

Battery Replacement

When  symbol appears on display, replace battery.

1. Remove Screw from Battery Cover.
2. Open Battery Cover.
3. Remove battery and replace with same.
4. Close Battery Cover.
5. Replace Screw.

Record Product's Date Code Here:_____

Note: If product has no Date Code, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175555823 when ordering parts.

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.

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