

## USDA Standards

Grade A Color Classes	Taste	Percent Light Transmittance
Grade A Golden	Delicate	≥ 75
Grade A Amber	Rich	50 to 74
Grade A Dark	Robust	25 to 49
Grade A Very Dark	Strong	< 25

## Tips for an Accurate Measurement

When taking measurements, the outside of the cuvette must be dry and free of syrup, fingerprints, oil, or dirt. Wipe it thoroughly with a lint-free cloth prior to insertion.

Make sure cuvettes and beakers are completely dry before using. Excess water will leave streaks in the syrup sample which may affect results.

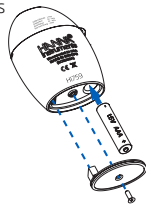
Dispense or pour the sample slowly. When transferring the syrup into the cuvette, be careful not to generate bubbles as they may cause inaccurate readings.

It is important that the sample is not turbid and does not contain debris.



## Battery Management

To conserve battery, the instrument shuts down after 10 minutes of non-use. To replace the battery, turn the instrument off by holding the button until the meter shuts off. Turn the instrument upside down and remove the battery cover with a screwdriver. Remove the battery from its location and replace it with a new one, inserting the negative end first. Replace the battery cover and screw.



## Accessories

Code	Description
<b>HI759-11</b>	glycerol reference cuvettes (2 pcs)
<b>HI731359</b>	round glass cuvettes with plastic inserts (25)
<b>HI731318</b>	cloth for wiping cuvettes (4 pcs)
<b>HI93703-50</b>	cuvette cleaning solution (230 mL)
<b>HI740028</b>	1.5V AAA batteries (4 pcs)

## Warranty

HI759 is warranted for a period of one year after date of purchase against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. This warranty is limited to repair or replacement free of charge. Damage due to accidents, misuse, tampering or lack of prescribed maintenance is not covered. If service is required, contact your local Hanna office. If under warranty, report the model number, date of purchase, serial number and the nature of the problem. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Return Goods Authorization number from the Technical Service department and then send it with shipping costs prepaid. When shipping any instrument, make sure it is properly packed for complete protection.

## Recommendations for Users

Before using Hanna products, make sure that they are entirely suitable for your specific application and for the environment in which they are used. Operation of these instruments may cause unacceptable interferences to other electronic equipment, thus requiring the operator to take all necessary steps to correct such interferences. Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance. To avoid damages or burns, do not put the instrument in microwave oven. For yours and the instrument safety do not use or store the instrument in hazardous environments.

*Hanna Instruments reserves the right to modify the design, construction, or appearance of its products without advance notice.*

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## INSTRUCTION MANUAL

# HI759 Maple Syrup Digital Grader



# Thank You

Thank you for choosing a Hanna Instruments product. Please read this instruction manual carefully before using the instrument. For more information about Hanna and our products, visit [www.hannainst.com](http://www.hannainst.com).

For technical support, contact your local Hanna office or email us at [tech@hannainst.com](mailto:tech@hannainst.com)

Find your local Hanna office on [www.hannainst.com](http://www.hannainst.com)

## Preliminary Examination

Please examine this product carefully. Make sure that the instrument is not damaged. If any damage occurred during shipment, please notify your Dealer.

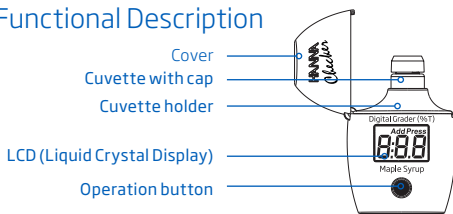
Each HI759 meter is supplied complete with:

- (3) Sample cuvettes and caps
- Glycerol reference cuvette
- (3) 20 mL beakers
- 1.5V AAA battery
- Instruction manual and quick reference guide

## Specifications

Range	0 to 100% transmittance
Resolution	1% transmittance
Accuracy	±4% transmittance
Light Source	light emitting diode @ 560 nm
Light Detector	silicon photocell
Environment	0 to 50°C (32 to 122°F); RH max 95% non-condensing
Battery Type	(1) 1.5V AAA
Auto-off	after ten minutes of non-use
Dimensions	86.0 x 61.0 x 37.5 mm (3.4 x 2.4 x 1.5")
Weight	64 g (2.3 oz)

## Functional Description



## Errors and Warnings

LH,

**Light High:** There is too much light to perform a measurement. Check that the cover is fully closed, and that the glycerol reference cuvette was used properly.

LLo

**Light Low:** There is not enough light to perform a measurement. Check to see if the light is blocked or dirty. Do not use a syrup sample to calibrate the meter.

Inu

**Inverted Cuvette:** The glycerol reference cuvette and sample have been inserted in the wrong order or the cuvette has been inserted upside down.

0

**Under Range:** A blinking "0" indicates that the sample absorbs less light than the zero reference.

100

**Over Range:** A flashing value of the maximum concentration indicates the reading is over range. Dilute the sample and re-run the test.

bAt

**Low Battery:** The battery is low and must be replaced soon. Normal operation of the instrument will not be interrupted.

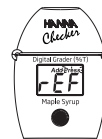
bAd

**Dead Battery:** The battery is dead and must be replaced. Once the battery display is flashing, normal operation of the instrument will be interrupted. Change the battery and restart the meter.

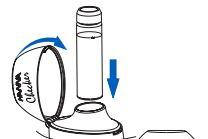
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## Measurement Procedure

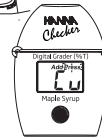
Turn the meter on by pressing the button. All tags will be displayed. The display will show "Add rEF" with "Press" blinking to indicate the meter is ready to calibrate.



Open the cover and insert the sealed glycerol reference cuvette into the meter. Close the cover.

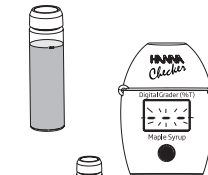


Press the button to calibrate the meter. Three lines will blink to show that calibration is taking place.

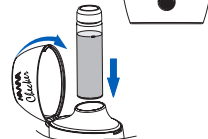


The display will then show "Add Cu" with "Press" blinking when the meter has successfully been calibrated.

Fill a clean, dry cuvette with 10 mL of maple syrup sample and replace the cap. Open the cover and insert the cuvette into the meter. Close the cover.



Press the button to take the measurement. Three lines will blink to show that a measurement is taking place.



The meter displays the percent light transmittance of the maple syrup. To take another sample reading, press the button. To turn off, press and hold the button for 3 seconds. The meter automatically turns off after 10 minutes.

65