HDL 60

Hultafors

Hultafors Measures

Operating instructions **EN**

INCLUDED IN DELIVERY WITH THE HDL 60

Laser distance meter
Belt pouch
Charging cable
Hand strap
Quick start guide

Operating manual
Laser distance meter HDL 60

About this manual

Congratulations on the purchase of your new HDL 60! You have acquired a Hultafors measuring instrument, which can make your work easier, faster and more precise. To utilize the complete functionality range of this measuring instrument, and to ensure safe operation, please observe the following instructions:

- Please read this operating manual before starting to use the device.
- Always keep the operating manual near the device.
- Only hand over the device to other users together with the operating manual.
- Never render the attached warning signs unreadable.

Contents

1. General information

1.1 Signal words and their meaning

DANGER

For an imminent danger that could lead to serious injury or death.

WARNING

For a possibly dangerous situation that could lead to serious injury or death.

CAUTION

For a possibly dangerous situation that could lead to slight injury or property damage.

NOTE

For application notes and other useful information.

1.2 Pictograms and other information

1.2.1 WARNING SIGNS

Warning of dangers in general.

1.2.2 SYMBOLS

Read instructions before use.

Batteries and devices must not be disposed of with household waste.

Do not throw batteries into a fire.

Warning signs on battery: Do not heat the battery above 60 °C.

Class 2 laser device.

Do not look into the laser beam!

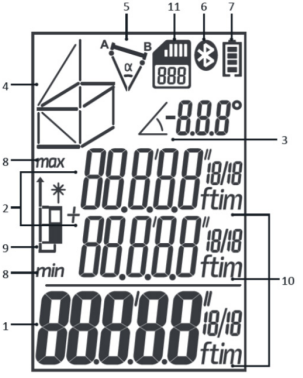
2. Description

2.1 Function buttons

1. Display
2. Keyboard
3. Hole for hand strap
4. Working face
5. Tripod adapter 1/4"
6. Mini-USB port
7. ON / Measure button
8. Function button / Memory
9. Addition, subtraction / Reference point
10. OFF / Delete button

2.2 Display

1. Measured values
2. Measured value display
3. Gradient display
4. Function display
5. Point-to-point display
6. Bluetooth
7. Battery status
8. Min/Max display
9. Reference point
10. Unit
11. Memory



2.3 Intended Use

This instrument is designed to measure distances. The measured value, setting, and instrument status can be viewed on the display.
A laser beam is emitted and then sent back to the laser distance measurement instrument from a reflected surface. This is used to calculate the distance. The range depends on the model of the laser distance measurement instrument, on reflectivity, and on the properties of the reflective surface.

3. Technical data

3.1 Gradient module

Measuring range	0.05 – 60 m*	**Operations per charge up to**	5000 measurements***
Accuracy	± 1.5 mm**	**Battery type**	3.7 V 850 mAh Li-ion
Protection class	IP 54	**Operating temperature**	0 to 40°C
Laser class	2	**Storage temperature**	-20 to 60°C
Laser type	635 nm, < 1 mW	**Tripod adapter**	1/4"
Laser auto-shutdown	45 s	**Dimensions (H x W x D)**	119 x 46 x 28 mm
Instrument auto-shutdown	180 s	**Weight with batteries**	100 g

*when measuring a target with 100% reflectivity (e.g. a painted white wall), with low backlight and an operating temperature of 25°C. Under unfavorable conditions, e.g. direct sunlight, non-reflective surfaces or measurements on glass or shiny surfaces, the inaccuracy can increase and measuring errors can therefore occur.
The reach of the visible laserpoint always depends on the ambient conditions.
**this degree of precision applies when measuring distances of between 0.05 and 10 m; when measuring distances of between 10 m and 60 m, the maximum tolerance may decrease by 0.1 mm/m.
***when used at room temperature.

3.2 Functions

- Length measurement
- Min/max measurement
- Continuous measurement
- Area measurement
- Volume measurement
- Indirect 2-point measurement
- Indirect 3-point measurement
- Addition
- Subtraction
- Measurement value memory

4. Safety instructions

4.1 Area of responsibility

4.1.1 MANUFACTURER

Hultafors is responsible for the safe delivery condition of the product, including the operating manual and the original accessories.

Hultafors Group AB
Hultaforsvägen 21
517 21 Bollebygd, Sweden

4.1.2 OPERATOR

The operator is responsible for using the product as intended, the deployment of personnel, their training and the operational safety of the product.

- The operator understands the safety information which is stated on the product and the instructions which are contained in the operating manual.
- The operator shall comply with local regulations relating to safety and accident prevention regulations as well as worker protection laws and regulations.
- The operator shall immediately notify Hultafors if safety-related issues should develop on the product or during its utilization.
- The operator shall ensure that the product is not utilized any further if defects become evident, and he will have the product repaired professionally.

4.2 Improper Use

- Use of the device and the accessories without instruction.
- Use of third-party accessories or additional equipment.
- Use outside of the intended limits (see Chapter 3 Technical data).
- Use under extreme temperature fluctuations without an adequate acclimatization.
- Disabling of safety devices and removal of hazard notices and labels.
- Unauthorized opening of the device.
- Performance of modifications or alterations the device or the accessories.
- Deliberate blinding of third parties.
- Inadequate safeguarding at the installation site.

4.3 Utilization limitations

The HDL 60 is suitable for a continuous use in an atmosphere which can be inhabited by humans.

- Do not operate the product in explosion-prone or corrosive environments.
- Inform the local safety authorities and safety experts before working in hazardous environments, in close proximity to electrical installations or similar surroundings.

4.4 Usage Hazards

4.4.1 GENERAL

WARNING
Missing or incomplete instructions may result in improper or incorrect use. This can cause accidents with serious damages to persons, property, assets and the environment.

- Follow the manufacturer‘s and operator‘s safety instructions.
- Protect equipment and accessories from access by children.

WARNING
Blinding by laser radiation can indirectly lead to serious accidents, especially for people who are driving a vehicle or operating machinery. Do not look into the laser beam.

- Do not set up the laser beam and the laser plane at eye level or aim at people.

CAUTION
A fall, longer storage, transportation or other mechanical effects can lead to erroneous measurement results. Check the unit for damage before use. Do not use damaged equipment.

- Repairs have to be exclusively performed by Hultafors.

4.4.2 CHARGER/BATTERIES/RECHARGEABLE BATTERIES

DANGER
Strong mechanical influences, can lead to a leakage, fire or explosion of the batteries or trigger the release of toxic substances.

- Batteries and rechargeable batteries may not be opened or exposed to mechanical loads.
- Repairs have to be exclusively performed by Hultafors.

WARNING
High ambient temperatures and immersion into liquids can cause a leakage, fire or explosion of the batteries or trigger the release of toxic substances.

- Protect batteries and rechargeable batteries from mechanical influences during transport.
- Do not overheat batteries and rechargeable batteries or expose them to fire.
- Avoid the ingress of moisture into batteries and rechargeable batteries.
- Do not use damaged batteries or rechargeable batteries. Perform a proper disposal (see Chapter 11 Disposal).

WARNING

A short-circuiting or unintended use can cause batteries to overheat and create an injury or fire hazard.

- Do not transport or store batteries in the pockets of garments.
- Do not bring the battery contacts in contact with jewelery, keys, or other electrically conductive objects.
- Do not charge non-rechargeable batteries.
- Do not discharge the batteries through short-circuiting.
- Do not solder the batteries within the device.
- Do not mix old and new batteries, and do not mix batteries from different manufacturers or with a differing type designation.

WARNING

If disposed of improperly third parties can possibly be seriously injured and the environment polluted. The burning of plastic components generates toxic fumes which may impair the health of people. Batteries/rechargeable batteries may explode if they are damaged or heated excessively, and thereby cause poisoning, burning, corrosion or environmental contamination.

If disposed of negligently unauthorized persons are able to use the product improperly.

- The product must not be disposed of together with household waste. Dispose of the device and accessories properly
  (see Chapter 11 Disposal).
- Protect the product at all times from access through unauthorized persons, especially children.

4.5 Electromagnetic compatibility (EMC)

The electromagnetic compatibility is the ability of the product to function in an environment where electromagnetic radiation and electrostatic discharges are present, without causing electromagnetic interference to other devices.

4.5.1 INTERFERENCE OF OTHER DEVICES BY HDL 60

Although the product meets the strict requirements of the relevant directives and standards, Hultafors can not completely exclude the possibility of interference with other devices (for example, when using the product in combination with third-party devices, such as field computers, personal computers, wireless devices, mobile phones, certain cables or external batteries).

- When using computers and radio equipment make sure to observe the vendor-specific information about electromagnetic compatibility.
- Only use original Hultafors equipment and accessories.

4.5.2 INTERFERENCE OF THE HDL 60 BY OTHER DEVICES

Although the product meets the strict requirements of the relevant directives and standards, Hultafors can not entirely exclude the possibility that intense electromagnetic radiation in the immediate vicinity of radio transmitters, two-way radios, diesel generators, etc. can distort the measurement results.

- When performing measurements under these conditions check the plausibility of the results.

5. Laser safety/Classification

The HDL 60 emits a visible laser point.
The product corresponds to Laser Class 2 according to DIN EN 60825-1:2007-03.

Laser Class 2:

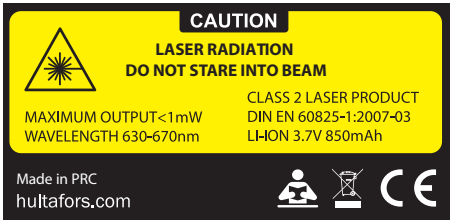
When using Class 2 laser devices, the eye is protected by the blink reflex or aversion reaction in the case of random and short-term exposure.

WARNING
Looking directly into the beam with optical aids (e.g. binoculars, telescopes) can be dangerous.

CAUTION
Looking into the laser beam may be hazardous to the eye.

- Do not look into the laser beam.
- Do not aim the laser beam at other people.

Labeling on the device:



- Do not remove the type plate!

6. Getting Started

6.1 Batteries

The device has a 3.7-V 850-mAh Li-ion battery. Fully charge the battery before first use. The battery charge status is shown on the display. Charge the batteries when the symbol flashes continuously on the screen. Use the charging cable supplied to charge your HDL 60. The device cannot be used whilst charging. The device is fully charged in approx. 3 hours.

6.2 Belt pouch

The laser instrument can be stowed in a belt pouch for transport. It must be removed from the pouch when taking measurements.

7. Operation

7.1 Getting started

7.1.1 SWITCHING THE INSTRUMENT ON AND OFF

Hold down the ON/Measure button to switch the laser instrument on.
Hold down the OFF/Delete button for 2 seconds to switch the laser instrument off.

7.1.2 BACK

Press the OFF/Delete button once to undo the last action. Press the OFF/Delete button twice to exit the current function and return to individual measurement mode.

7.1.3 SETTING THE MEASUREMENT PLANE

Press the Addition, subtraction / Reference edge button for 2 seconds, to switch between front, tripod, back with endpiece and back. The selection is indicated by an arrow on the display. The back of the instrument is set as the measurement edge by default. Each time the instrument is restarted, the back of the instrument is reset as the measurement edge.

7.2 Applications

7.2.1 LENGTH MEASUREMENT

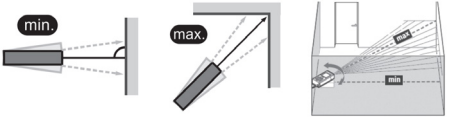
1. Switching on the laser instrument.
2. Direct the laser point at the target.
3. Press the ON/Measure button.

As soon as an audible signal is emitted, the measurement is complete and the distance can be seen on the display. To calculate additional distances, press the Measure button again.

7.2.2 MIN/MAX MEASUREMENT

1. Switching on the laser instrument.
2. Direct the laser point at the target.
3. Hold down the ON/Measure button for 2 seconds.

The minimum and maximum values are shown on the display. To stop the measurement, simply press the ON/Measure button.



7.2.3 CONTINUOUS MEASUREMENT

1. Switching on the laser instrument.
2. Direct the laser point at the target.
3. Hold down the ON/Measure button for 2 seconds.

The laser instrument measures the distance and shows it on the bottom line of the display.

7.2.4 AREA MEASUREMENT

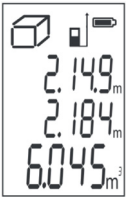
1. Switching on the laser instrument.
2. Press the Function button until the display for area measurement appears.
3. Measure the length and then the width separately using the individual measurement method. The laser beam remains switched on between the two measurements.

Once the second measurement is complete, the area is automatically calculated and shown on the bottom line of the display. The individual measured values are shown in measured value lines 1 and 2.

7.2.5 VOLUME MEASUREMENT

1. Switching on the laser instrument.
2. Press the Function button until the display for volume measurement appears.
3. Measure the length, the width, and then the height separately using the individual measurement method. The laser beam remains switched on between the three measurements. The laser instrument measures the distance and shows it on the bottom line of the display.

Once the third measurement is complete, the volume is automatically calculated and shown on the bottom line of the display. The individual measured values are shown in measured value lines 1 and 2.



7.2.6 INDIRECT 2-POINT MEASUREMENT

1. Switching on the laser instrument.
2. Press the Function button until the display for indirect 2-point measurement appears.
3. Measure the two points separately using the individual measurement method. The laser beam remains switched on between the two measurements.

Once the second measurement is complete, the length is automatically calculated and shown on the bottom line of the display. The individual measured values are shown in measured value lines 1 and 2.

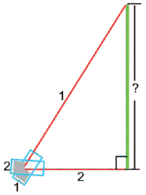


Figure 1

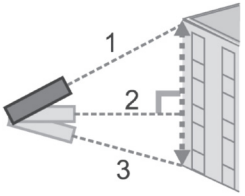
CAUTION

The two points measured must be in line and the second measurement must be taken at a right angle to the measured surface; otherwise measured values may be incorrect.

7.2.7 INDIRECT 3-POINT MEASUREMENT

1. Switching on the laser instrument.
2. Press the Function button until the display for indirect 3-point measurement appears.
3. Measure the three points separately using the individual measurement method.

The laser beam remains switched on between the three measurements. Once the third measurement is complete, the length is automatically calculated and shown on the bottom line of the display. The individual measured values are shown in measured



CAUTION
The three points measured must run in a line and the second measurement must be taken at a right angle to the measured surface; otherwise measured values may be incorrect.

7.2.8 ADDITION

1. Switching on the laser instrument.
2. Direct the laser point at the target.
3. Take an individual measurement.
4. Press the Add/subtract button to add the next individual measurement.
   (plus symbol + appears on the display).
5. Take an individual measurement.

The laser instrument shows the result on the bottom line of the display. This process can be repeated as many times as required.

7.2.9 SUBTRACTION

1. Switching on the laser instrument.
2. Direct the laser point at the target.
3. Take an individual measurement.
4. Press the Add/subtract button twice to subtract the next individual measurement.
   (minus symbol - appears on the display).
5. Take an individual measurement.

The laser instrument shows the result on the bottom line of the display. This process can be repeated as many times as required.

7.3 Selecting unit of measurement

Press ON/Measure button and Function button/ memory for two seconds at the same time in order to switch between m (3 decimal places), m (2 decimal places), in (1 decimal place), in (0 decimal places), in ft, and ft using the Addition, subtraction/Reference edge button. Select desired unit with ON/Measure button.

The device starts with the last selected unit of measurement.

7.4 Charging batteries

The battery charge status is shown on the display. Charge the batteries when the symbol flashes continuously on the screen. Use the charging cable supplied to charge your laser distance meter. The device cannot be used whilst charging. The device is fully charged in approx. 3 hours.

7.5 Guidance for operation

The laser instrument must not be moved while measuring. A fixed mounting surface with a stop is therefore recommended. The laser outlet and receiving area must not be covered during measuring. Depending on the measured surface, it cannot be guaranteed that all measurements are completely accurate. Avoid surfaces that are textured, reflective, transparent, or porous.

8. Maintenance, storage and transportation

8.1 Cleaning

- Wipe off the dirt with a soft damp cloth.
- Check the outlet openings of the laser regularly, and thoroughly clean them if necessary. Do not touch the glass with your fingers.
- Do not use aggressive cleaning agents or solvents.
- Do not immerse the device into water!
- Clean and dry wet equipment, accessories and transport containers prior to packaging them. Only pack equipment again when it is completely dry.
- Keep plug connections clean and protected from moisture.

8.2 Storage

- The equipment may only be stored within the specified temperature limits
  (see Chapter 3 Technical data).
- After prolonged storage check the accuracy of the measuring device before using it.

8.3 Transport

- The device may be damaged by strong vibrations or by falling.
- Never transport the product loose. Always use the original packaging or an equivalent transport container.
- Switch off the measuring device before transporting it.
- Check the unit for damages before use.

9. Delivery contents and accessories

9.1 Delivery contents of HDL 60

Laser distance meter
Belt pouch
Charging cable
Hand strap
Quick start quide

9.2 Accessories (optional)

LB RED laser visibility glasses
TP RED target plate
B-10 mini tripod

Further information on accessories can be found at **www.hultafors.com**

10. Troubleshooting

Error	Possible cause	Remedy
301	• Distance outside of the measurement range.	• Stay inside the measurement range.
302	• The reflected signal is too weak.	• Measure using a more reflective surface.
303	• Range outside the display.	• Use the OFF/Delete button to reset to zero.
304	• Calculation error in Pythagoras.	• Carry out measurement again.
305	• Low battery.	• Charge the battery.
306	• Temperature too low.	• Warm the instrument up.
307	• Temperature too high.	• Cool the instrument down.
308	• Ambient light is too bright.	• Carry out the measurement in a darker environment.

11. Disposal

If disposed of improperly third parties can possibly be seriously injured and the environment polluted.
The burning of plastic components generates toxic fumes which may impair the health of people.
Batteries/rechargeable batteries may explode if they are damaged or heated excessively, and thereby cause poisoning, burning, corrosion or environmental contamination.
If disposed of negligently unauthorized persons are able to use the product improperly.

Measuring tools, accessories and packaging must be recycled in an environmentally-friendly manner.

The product as well as the accessories – especially the batteries and rechargeable batteries – may not be disposed of with household waste.

- Ensure proper disposal of the device and the accessories.
- Observe the country-specific disposal requirements.

Your Hultafors dealership will accept returned batteries as well as old equipment, and will ensure proper disposal.

Only for EU countries

Electric tools may not be disposed of with household waste!
According to the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation in national law, no longer usable electrical and electronic equipment must be collected separately and recycled in an environmentally friendly manner.

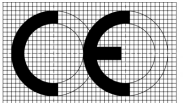
12. Manufacturer‘s Guarantee

The manufacturer warrants to the original purchaser stated on the guarantee card, freedom from defects of the device for a period of two years, with the exception of batteries, as of the point in time the device is handed over. The guarantee is limited to repairs and/or replacements at the manufacturer‘s discretion. Defects which are caused through improper handling by the purchaser or third parties, natural wear and optical flaws that do not affect the usability of the equipment, are not covered by this guarantee. Claims under this guarantee can only be invoked if the device is submitted along with the guarantee card, completely filled out by the dealer, dated and provided with the company stamp.
If the guarantee claim is justified, the manufacturer shall bear the transport costs. The duration of the guarantee will not be extended through repair or spare parts work which is carried out within the scope of the guarantee.
Further claims are excluded, unless these are stipulated by the respective by the respective national legislation. In particular the manufacturer shall not be liable for any direct, indirect, incidental or consequential damages, losses or expenses in connection with the use or because of the inability to use the tool for any purpose whatsoever. Implied warranties for the usage or suitability for a particular purpose are expressly excluded.

13. EC conformity declaration

Hultafors

Declaration of Conformity



We **Hultafors Group AB, Hultaforsvägen 21, Hultafors**

declare under our sole responsibility that the Product(s)

HDL 60

to which this declarations relates is in conformity with the following standards.

EN 61010-1	**EN 301489-17**
EN 61326-1	**EN 62479**
EN 61326-2-2	**EN 50663**
EN 300328 V2.2.2	

Following the provisions of Directive(s)

Electromagnetic compatibility 2014/53/EU RED

14. UKCA conformity declaration

Hultafors

Declaration of Conformity

UK CA

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Electromagnetic compatibility 2014/53/EU RED

2022 v.1

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