

# HDL 20

  
**Hultafors**



Operating instructions

EN

**INCLUDED IN DELIVERY WITH THE HDL 20**

1. Laser distance measuring instrument
2. AAA batteries
3. Quick start guide



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## 2.1 Function Buttons



## 2.2 Display



# Operating manual

## Laser Distance Meter HDL 20

### About this manual

Congratulations on the purchase of your new HDL 20. 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

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# 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 SYMBOLE



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. Measure button
2. Power/Delete button

### 2.2 Display

1. Laser ON
2. Rear reference edge
3. Battery status
4. Measurement 1
5. Final measurement
6. Unit of measurement m / ft

### 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 General

Measuring range	0.2 – 20 m*
Precision	± 2 mm**
Protection rating	IP 42
Unit of measurement	m,ft
Laser class	2
Laser type	650 nm, < 1 mW
Automatic shut-off of laser	30 s
Automatic shut-off of device	180 s
Battery life	up to 5000 measurements***
Battery type	2 x AAA 1.5 V
Operating temperature	0 – 40 °C
Storage temperature	-10 – 60
Dimensions H x W x L	100 x 38 x 24 mm
Weight, including batteries	80 g

\* When measuring a target surface that is 100% reflective (such as a wall painted white), with low background lighting and at 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 0.2 to 10 m. When measuring distances of between 10 m and 20 m, the maximum tolerance may decrease by 0.1 mm/m.

\*\*\* When operated at room temperature.

### 3.2 Functions

Single measurement

Continuous measurement

## 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.

#### 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 to the device or the accessories.
- Deliberate blinding of third parties.
- Inadequate safeguarding at the installation site.

### 4.3 Utilization limitations

The HDL 20 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 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 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 (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 jewelry, keys, or other electrically conductive objects.
- Do not charge the 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.

## 5. Laser safety/classification

The HDL 20 emits a visible laser point.

The product corresponds to the Laser Class 2 according to DIN EN 60825-1:2007.

### Laser Class 2:

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



### 4.5.1 INTERFERENCE OF OTHER DEVICES BY HDL 20

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 20 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.



#### WARNING

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

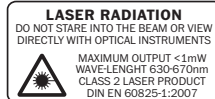


#### CAUTION

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

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

### Labelling on the device:



- Do not remove the type plate!

## 6. Getting Started

### 6.1 Batteries

1. Open the battery compartment cover on the rear side of the device.
2. Insert the batteries into the instrument, observing the correct polarity.
3. Close the battery compartment cover (audible click of the cover).

Use only AAA batteries (1.5 V).  
Remove the batteries if the instrument is not used over a longer period of time.



## 7. Operation

### 7.1 Getting Started

#### 7.1.1 SWITCHING THE INSTRUMENT ON AND OFF

Press the Power/Delete button for 2 seconds to switch the laser instrument on or off.

#### 7.1.2 BACK

Press the Power/Delete button once to undo the last action.

### 7.2 Applications

#### 7.2.1 INDIVIDUAL MEASUREMENT

1. Switch on the laser instrument.
2. Direct the laser point at the target.
3. Press the Measure button.

To calculate additional distances, press the Measure button again.

#### 7.2.2 CONTINUOUS MEASUREMENT

1. Switch on the laser instrument.
2. Direct the laser point at the target.
3. Press the Measure button for 2 seconds.

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

#### 7.2.3 CHANGING UNIT OF MEASUREMENT M/FT

1. Switch on the laser device.
2. Press the Measure button and the Power/Delete button simultaneously to switch between m and ft.

### 7.3 Operating instructions

The laser device must not be moved while measuring. A fixed contact surface with stop is recommended.

The laser outlet and receiving area must not be covered during measuring.

Depending on the measuring surface, inaccurate measurements cannot be discounted.

Textured, reflective, transparent and porous surfaces are to be avoided.

## 8. Maintenance, storage and transportation

### 8.1 Cleaning

- Wipe off the dirt with a soft damp cloth.
- Check the outlet windows 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

#### 8.2.1 GENERAL

- 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.

#### 8.2.2 BATTERIES

- For storage, remove the batteries from the device or from the charging station.
- The storage should preferably be in a dry environment at room temperature (see Chapter 3 Technical data).

- Protect from moisture and humidity. Dry wet or damp batteries before storage, or before usage.

### 8.3 Transport

#### 8.3.1 GENERAL

- 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.

#### 8.3.2 BATTERIES

- When transporting or shipping batteries, the operator is responsible for complying with the applicable national and international laws and regulations.
- Before shipping, remove the batteries from the device.

## 9. Delivery contents and accessories

### 9.1 Delivery contents of HDL 20

1. Laser distance measurement instrument
2. Batteries

### 9.2 ACCESSORIES (optional)

LB laser goggles

TP target plate

Further information on accessories can be found at **[www.hultafors.com](http://www.hultafors.com)**

## 10. Troubleshooting

<b>Error</b>	<b>Possible cause</b>	<b>Remedy</b>
204	<ul style="list-style-type: none"><li>• Calculation error</li></ul>	<ul style="list-style-type: none"><li>• Check specifications.</li><li>• Repeat process.</li></ul>
208	<ul style="list-style-type: none"><li>• Overvoltage</li></ul>	<ul style="list-style-type: none"><li>• Contact supplier.</li></ul>
220	<ul style="list-style-type: none"><li>• Battery exhausted</li></ul>	<ul style="list-style-type: none"><li>• Replace battery.</li></ul>
252	<ul style="list-style-type: none"><li>• Temperature too high</li></ul>	<ul style="list-style-type: none"><li>• Allow instrument to cool to the specified temperature.</li></ul>
253	<ul style="list-style-type: none"><li>• Temperature too low</li></ul>	<ul style="list-style-type: none"><li>• Allow instrument to warm up to the specified temperature.</li></ul>
255	<ul style="list-style-type: none"><li>• Reception signal too weak</li></ul>	<ul style="list-style-type: none"><li>• Increase reflectivity of target.</li></ul>
256	<ul style="list-style-type: none"><li>• Reception signal too strong</li></ul>	<ul style="list-style-type: none"><li>• Limit reflectivity of target.</li></ul>
261	<ul style="list-style-type: none"><li>• Outside of measurement range</li></ul>	<ul style="list-style-type: none"><li>• Observe measurement range given in specifications.</li></ul>
500	<ul style="list-style-type: none"><li>• Component error</li></ul>	<ul style="list-style-type: none"><li>• Switch instrument on and off repeatedly.</li><li>• If the error continues, contact the supplier.</li></ul>



## 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.
- Only dispose of batteries in a discharged state.
- Observe the country-specific disposal requirements.

Your Hultafors dealership will take back 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



### Declaration of Conformity



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

declare under our sole responsibility that the Product(s)

**HDL 20**

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

#### **HDL 20:**

- EN 55022: 2010
- EN 61000
- EN 55024: 2010
- EN 60825-1:2007

Following the provisions of Directive(s)

**Electromagnetic compatibility 2004/108/EC**

**Low Voltage Directive 2006/95/EC**



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