



200.40



200.80

Congratulations!

On choosing this FUTECH instrument. FUTECH provides measuring instruments of precision and quality. Contributions from professional end users enable us to offer innovative, easy-to-use equipment.

DISTY40 / DISTY80
Distance meter

IMPORTANT - SAFETY INSTRUCTIONS !

Read the instructions for use carefully before using the instrument. Keep them in a safe place for consultation when necessary. Whether on or off, keep the instrument out of reach of children. This equipment is a high quality precision instrument which must be handled with care. Avoid shocks and vibration. After use, always replace the instrument in its carrying bag. Make sure that the bag and instrument are dry; otherwise condensation may occur in the device. Make sure that the windows are free of dirt, and clean them using a soft cloth and a glass cleaning product only. Do not use any optical equipment such as a magnifying glass to view the laser beam, and take care to remove all reflecting objects to avoid damage to the eye. Locate the laser in such a way that it is not possible for any person to look at the laser beam (intentionally or otherwise). Under no circumstances take the instrument apart, since this may expose you to powerful laser radiation. The laser is only to be used for the projection of laser lines. Do not use the instrument in rain or near flammable materials. Technical modification or alterations to the instrument may be carried out without prior notice. The manufacturer's responsibility shall in no case exceed the value of the costs of repair or replacement of the instrument. Respect the environment and do NOT discard the instrument or batteries in household waste. Take them to a recycling centre.

DISTY40 / DISTY80

MANUAL



1. Display
2. On / DIST (on / measuring)-button
3. Plus-button
4. Minus-button
5. Angle button / Storage button
6. Area / volume button
7. Indirect measurement (pythagoras)
8. Clear / Off-button
9. Reference button
10. Background light / Units-button
11. Laser beam
12. Measurement sensor

Display

13. Laser active
14. Reference
15. Indirect measurement (pythagoras)
16. Delay measurement
17. Area volume measurement
18. Stored record
19. Data display
20. Display unit
21. Battery Status
22. Hardware failure
23. Dynamic continuous measurement
24. Marking function
25. Operation error indicator

Start-up

Inserting / replacing batteries

- Remove battery compartment lid and attach handstrap.
- Insert batteries, observing correct polarity
- Close battery compartment again.

Replace the batteries when the battery symbol (21) flashes permanently in the display.

Note

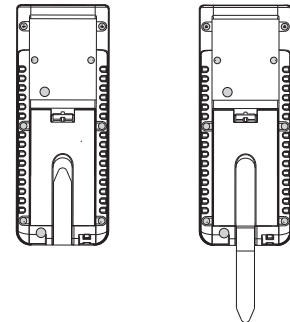
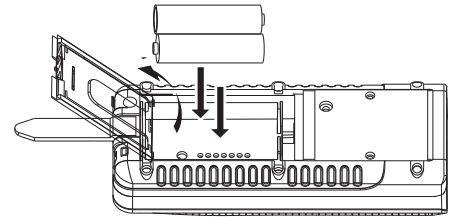
Only use alkaline or rechargeable batteries
Remove the batteries before a long period of non-use to avoid the danger of corrosion

Changing the reference point (multifunctional endpiece)

The instrument can be adapted for the following measuring situations:

- For measurements from an edge, fold out the positioning bracket until it first locks in place.
- For measurements from a corner, open the positioning bracket until it locks in place, then push the positioning bracket lightly to the right to fold it out fully.

A built-in sensor automatically detects the orientation of the positioning bracket and adjust the zero point of the instrument accordingly.



Menu functions





Measurements

[Unit icon]-button (pressed long) - Press once again to change the unit of distance measurement. The following units are available: m (meter), ft (feet), in (inch), ft +/- in (feet - inch 1/16)


Beep

[Beep icon] button (press long). You can choose the beep on or off as required.

Laser Continuous (—✕)

 Press and hold down the button when switching on the device until character  appears permanently in the display with beep sounds. Every further press of the  button releases a distance measurement. Press the -button and hold to switch the device and laser continuous operation off.






Measuring with tripod

The reference must be appropriately adjusted in order to be able to take correct measurements with a tripod. You can switch the reference by -button. The setting can be shown on the display.

Illuminating display


Press short on the -button, the illuminating display can be turned on or off.


The correction of tilt sensor

Press the -button to enter into the "Tilt sensor" mode. Continuously press the -button five times again when the bottom of display shows 0.0; Then press the  once to see the display shows 0.1. Wait for five seconds and rotate the instrument by 180 degrees. Press the -button once and it shows 0.2; wait several seconds till it shows 0.0 for finishing the correction. Press the -button for exiting.


Operation

Switching on and off


Switches on the instrument and laser. The display shows the battery symbol until the -button.



Pressing the -button for longer switches the instrument off. The instrument switches off automatically after three minutes of inactivity.



Clear button


Pressing the -button, the last action is cancelled. While making area of volume measurements, each single measurements can be deleted and remeasured in series.

Reference


The default reference setting is from the rear of the instrument. The display will show you .

Press the -button to change the reference point to the forefront. The display will show you .

Press the -button again to change the reference point again to the rear. The display will show you .

By folding out the fold-out bracket 180° open, the reference point will automatically changed to the end of the bracket. The display shows , now you can make measurements from a corner.

Level

You can choose the level gauge on or off as required by press the -button.


Measuring


Single distance measurement

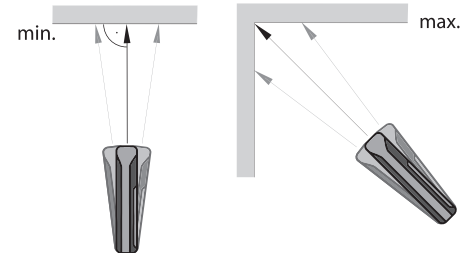
Press  to activate the laser. Press  again to trigger the distance measurement. The result is displayed immediately.

Minimum/maximum measurement

This function allows the user to measure the minimum of maximum distance from a fixed measuring point. It can also be used as to determine spacings. It is commonly used to measure room diagonals maximum values) or horizontal distances (minimum values).

Press the -button and hold down this button until you hear a beep. Then slowly sweep the laser back and forth and up and down over the desired target point (e.g. into the corner of a room).

Press the -button to stop continuous measurement. The values for maximum and minimum distances are shown in the display as well as the last measured value in the summary line.




Tilt measurement

- The tilt sensor measures tilts between $\pm 45^\circ$.
- During the measurement of tilt, the instrument should be held without transverse tilt, as far as possible, ($\pm 10^\circ$).

Horizontal measurement

Press the -button to activate horizontal measurement in the instrument.




After pushing this button, the horizontal distance is displayed in the summary line for each distance measurement (up to max. $\pm 45^\circ$ and up to max. a transverse tilt of $\pm 10^\circ$).

Press the -button to collect the measurement data. On the display, the height, the horizontal distance, the hypotenuse distance and angle will be showed.

Functions



Addition / Substraction

Distance measuring

- Use the -button to add a measurement to the previous one.
This process can be repeated as required.
- Use the -button to subtract a measurement to the previous one.
This process can be repeated as required.
- Use the -button to cancel the last step.

Area




Press once the -button. The  symbol appears in the display.

- Press the -button to take the first measurement (e.g. length)
- Press the -button to take the second measurement (e.g. width).

The result is displayed in the summary line.

Volume


Press twice the -button. The  symbol appears in the display.


- Press the -button to take the first measurement (e.g. length)
- Press the -button to take the second measurement (e.g. width).
- Press the -button to take the third measurement (e.g. height).

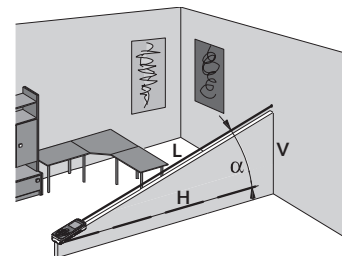
The result is displayed in the summary line.

Tilt measurement

To activate the tiltsensor, press a few seconds on the -button. The tilt degree data and the tilt symbol \uparrow or \downarrow appears in the display.

Press the -button to enter the measuring mode.

Press the -button to measure the inclination and the distance.



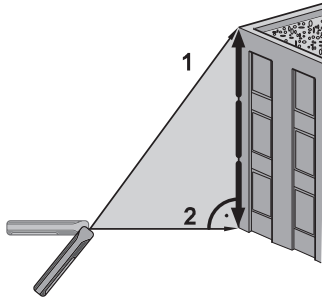
Indirect measurement

The instrument can calculate distances using Pythagoras' theorem.

Make sure you adhere to the prescribed sequence of measurement:

- All target points must be in a horizontal or vertical plane.
- The best results are achieved when the instrument is rotated about a fixed point (e.g. with the position bracket fully folded out and the instrument placed on a wall).
- The minimum/maximum measurement can be used - see explanation in "Measuring \rightarrow minimum/maximum measurement" (page 6). The minimum value must be used or measurements at right angles to the target; the maximum distance for all the other measurements.

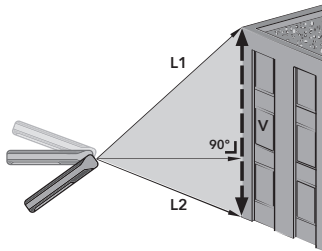
Make sure that the first measurement and the distance to be measured are at right angles. Use the minimum/maximum function, as explained in "Measuring \rightarrow Minimum/maximum measurement".



- **Indirect measurement - determining a distance using 2 auxilliary measurements**
e.g. for measuring building heights or widths. It is helpful to use a tripod when measuring heights that require the measurement of two of three measurements.

Press the \triangle -button once, the display shows the \triangle -symbol. The laser is switched on. Aim at the upper point and trigger the measurement using \oplus . After the first measurement the value is adopted. The result is displayed in the summary line, the angle on the secondary line, height (vertical) on the third line and width (horizontal) on the top line.

Please note that the length of the horizontal line is only correct when you perform a precise vertical measurement.



- **Indirect measurement - determining a distance using 3 measurements**
Press the \triangle -button twice; the display shows the \triangle -symbol. The laser is switched on. Aim at the upper point and trigger the measurement using \oplus . After the first measurement is done, on the topline of the display appears the distance. Aim at the lower point and trigger the measurement using \oplus . Now the results are appears on the display (from top to bottom):
 - distance to upper point
 - angle between upper and lower point
 - distance to lower point
 - distance between upper and lower point (height)

Storage of constants/historical storage

Press the \square -button short, the \square will be displayed. The previous 10 results (measurements of calculated results) are shown in reverse order.

The \oplus and \ominus buttons can be used for navigation.

Make previous results available for further calculations by pressing \oplus .

Appendix

Message codes

· *Cause*

Calculation error

Receiving the reflected light too weak or too strong,
Measurement Time too Long



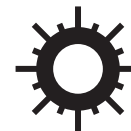
· *Remedy*

Reoperation, Change a better surface reflecting or using a target plate.

· *Cause*

Calculation error

The goal of the ambient light is too strong



· *Remedy*

Change the light for measuring.

· *Cause*

Temperature is too high ($>40^{\circ}\text{C}$) or too low ($< 0^{\circ}\text{C}$)



· *Remedy*

Cool down of warm up the instrument.

External temperature will be available from 0°C to $+40^{\circ}\text{C}$.

· *Cause*

Hardware error

· *Remedy*

Switch o/off the instrument several times.

If the symbol still appears, then your instrument may be defective. Please contact your dealer for assistance.



Measuring conditions

Measuring range

The Disty40 is limited to 40m, the Disty80 to 80m. At night or dusk and if the target is in shadow, the measuring range without target plate is increased. Use a target plate to increase the measurement range during daylight or if the target has poor reflection properties.

Target surfaces

Measuring errors can occur when measuring toward colourless liquids (e.g. water) or dust free glass, Styrofoam or similar semipermeable surfaces. Aiming at high gloss surfaces may deflect the laser beam and lead to measurement errors. Against non-reflective and dark surfaces the measuring time may increase.

Care

Do not immerse the instrument in water. Wipe off dirt with a damp, soft cloth. Do not use aggressive cleaning agents or solutions. Handle the instrument as you would a telescope or camera.

All illustrations, descriptions and technical specifications may be subject to change without prior notice.

GENERAL

Description

The following directions should enable the person responsible for the product, and the person who actually uses the equipment, to anticipate and avoid operational hazards. The person responsible for the product must ensure that all users understand these directions and adhere to them.

Adverse Use

- Use of the product without instruction.
- Use outside of the intended limits.
- Disabling safety systems.
- Removal of hazard notices.
- Opening the product using tools, for example screw- driver, unless this is specifically permitted for certain functions.
- Modification or conversion of the product.
- Use after misappropriation.
- Use of products with obviously recognizable damages or defects.
- Use with accessories from other manufacturers without the prior explicit approval of FUTECH.
- Inadequate safeguards at the work site, for example when using on or near roads.
- Deliberate dazzling of third parties.
- Controlling of machines, moving ob-

jects or similar monitoring application without additional control and safety installations.

WARNING

Adverse use can lead to injury, malfunction and damage. It is the task of the person responsible for the equipment to inform the user about hazards and how to counteract them. The product is not to be operated until the user has been instructed on how to work with it.

LIMITS OF USE

Environment

Suitable for use in an atmosphere appropriate for permanent human habitation: not suitable for use in aggressive or explosive environments.

DANGER

Local safety authorities and safety experts must be contacted before working in hazardous areas, or in close proximity to electrical installations or similar situations by the person in charge of the product.

RESPONSIBILITIES

Manufacturer of the product

Laseto N.V., Belgium, BE0808.043.652, hereinafter referred to as FUTECH, is responsible for supplying the product, in-

cluding the user manual and original accessories, in a completely safe condition.

Manufacturers of non FUTECH accessories

The manufacturers of non FUTECH accessories for the product are responsible for developing, implementing and communicating safety concepts for their products, and are also responsible for the effectiveness of those safety concepts in combination with the FUTECH product.

Person in charge of the product

The person in charge of the product has the following duties:

- To understand the safety instructions on the product and the instructions in the user manual.
- To be familiar with local regulations relating to safety and accident prevention.
- To inform FUTECH immediately if the product and the application becomes unsafe.

HAZARDS OF USE WARNINGS

- The person responsible for the product must ensure that it is used in accordance with the instructions. This person is also accountable for the training and the deployment of personnel who use the product and for the safety of the equipment in use.
- The absence of instruction, or the inadequate imparting of instruction, can lead to incorrect or adverse use, and can give rise to accidents with far-reaching human, material, financial and environmental consequences.
- All users must follow the safety directions given by the manufacturer and the directions of the person responsible for the product.
- Watch out for erroneous measurement results if the product has been dropped or has been misused, modified, stored for long periods or transported.
- Periodically carry out test measurements and perform the field adjustments indicated in the user manual, particularly after the product has been subjected to abnormal use and before and after important measurements.
- If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning.
- Do not use the product in a thunderstorm.
- Inadequate securing of the working site can lead to dangerous situations, for example in traffic, on building sites, and at industrial installations.
- Always ensure that the working site is adequately secured. Adhere to the regulations governing safety and accident prevention and road traffic.
- If the accessories used with the product are not properly secured and the product is subjected to mechanical shock, for example blows or falling, the product may be damaged or people may sustain injury.
- When setting-up the product, make sure that the accessories are correctly adapted, fitted, secured, and locked in position. Avoid subjecting the product to mechanical stress.
- During the transport, shipping or disposal of batteries it is possible for inappropriate mechanical influences to constitute a fire hazard.
- Before shipping the product or disposing of it, discharge the batteries by running the product until they are flat. When transporting or shipping batteries, the person in charge of the product must ensure that the applicable national and international rules and regulations are observed. Before transportation or shipping contact your local passenger or freight transport company.
- High mechanical stress, high ambient temperatures or immersion into fluids can cause leakage, fire or explosions of the batteries.
- Protect the batteries from mechanical influences and high ambient temperatures. Do not drop or immerse batteries into fluids.
- Short circuited battery terminals can overheat and cause injury or fire, for example by storing or transporting in pockets if battery terminals come in contact with jewellery, keys, metallized paper or other metals.
- Make sure that the battery terminals do not come into contact with metallic objects.
- During the operation of the product there is a hazard of squeezing extremities by moving parts.
- Keep extremities in a safe distance from the moving parts. If the product is improperly disposed of, the following can happen: If polymer parts are burnt, poisonous gases are produced which may impair health. If batteries are damaged or are heated strongly, they can explode and cause poisoning, burning, corrosion

or environmental contamination. By disposing of the product irresponsibly you may enable unauthorized persons to use it in contravention of the regulations, exposing themselves and third parties to the risk of severe injury and rendering the environment liable to contamination.

- The product must not be disposed with household waste. Dispose of the product appropriately in accordance with the national regulations in force in your country.

DECLARATION OF CONFORMITY

We herewith declare that this product conforms with the following standards and directives:

Standards

DIN EN 61000-6-1

DIN EN 61000-6-3

in accordance with the regulations stipulated in the directives:

EC Directive

2004/108/EG

2006/95/EG

Technical changes reserved.

We accept no liability for printing errors.

LASER CLASSIFICATION

General

The following directions (in accordance with the state of the art - international standard IEC 60825-1(2007-03) and IEC TR 60825-14 (2004-02)) provide instruction and training information to the person responsible for the product and the person who actually uses the equipment, to anticipate and avoid operational hazards. The person responsible for the product must ensure that all users understand these directions and adhere to them.

Products classified as laser class 1, class 2 and class 3R do not require:

- laser safety officer involvement,
- protective clothes and eyewear,
- special warning signs in the laser working area

if used and operated as defined in this user manual due to the low eye hazard level.

Products classified as laser class 2 or class 3R may cause dazzle, flash blindness and afterimages, particularly under low ambient light conditions.

DISTY40 / DISTY80

MANUAL

TECHNICAL SPECIFICATIONS	DISTY40	DISTY80
MEASURING RANGE	0,05 TO 40M	0,05 TO 80M
MEASURING ACCURACY	TYPICAL ± 2 MM	
DISPLAY ACCURACY	1MM	
LASER CLASSIFICATION	CLASS 2M II	
LASER TYPE	620-690NM, <1 MW	
DISTANCE MEASUREMENT WITH TILT SENSOR	✓	
HORIZONTAL MEASUREMENT RANGE	$\pm 45^\circ$	
HORIZONTAL MEASUREMENT ACCURACY	$\pm 0,3^\circ$	
AREA, VOLUME MEASUREMENT	✓	
INDIRECT MEASUREMENT	✓	
PYTHAGORAS PROPOSITION	✓	
PLUS-MUNUS METHOD	✓	
CONTINUOUS MEASUREMENT	✓	
MINIMUM/MAXIMUM MEASUREMENT	✓	
DISPLAY ILLUMINATION	✓	
SHOW BEEP	✓	
MULTIFUNCTIONAL END PIECE	✓	
PROTECTION AGAINST SPLASHES AND DUST	IP54	
HSITORICAL STORAGE	10	
TEMPERATURE RANGE OF OPERATION	0°C TO 40°C	
TEMPERATURE RANGE OF STORAGE	-20°C TO 70°C	
BATTERY LIFE	3000 TO 5000 MEASUREMENTS	
BATTERIE SELECTION	LR6 (AA) - 2X 1,5V	
LASER SWITCH-OFF AUTOMATICALLY	AFTER 30 SECONDS	
INSTRUMENT SWITCH-OFF AUTOMATICALLY	AFTER 3 MINUTES	
DIMENSIONS	123 X 44 X 23MM	
WEIGHT	0,11KG (WITHOUT BATTERY)	

