

DLE 150 Connect PROFESSIONAL

BOSCH
Ideas that work.

* Des idées en action.



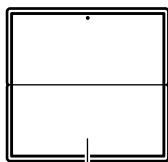
Bedienungsanleitung
Operating instructions
Instructions d'utilisation
Instrucciones de servicio
Manual de instruções
Istruzioni d'uso
Gebruiksaanwijzing
Betjeningsvejledning
Bruksanvisning
Brukerveiledningen
Käyttöohje
Οδηγία χειρισμού
Kullanım kılavuzu
Руководство по эксплуатации





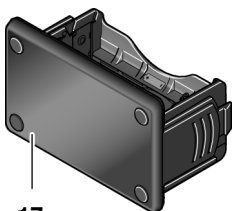
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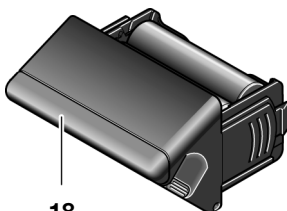
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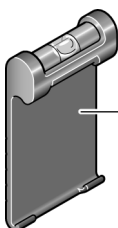
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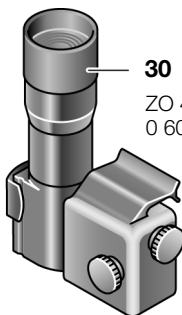
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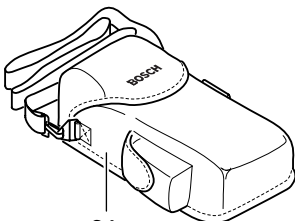
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ZO 4
0 601 098 969



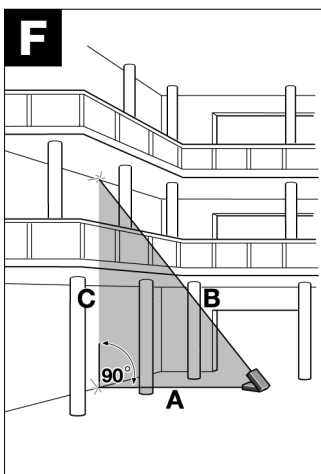
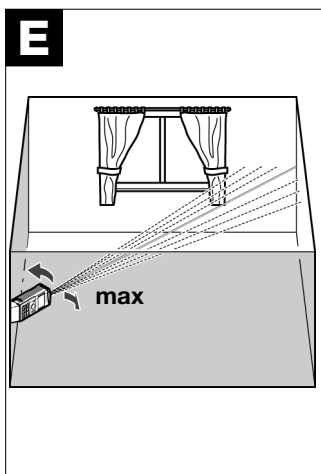
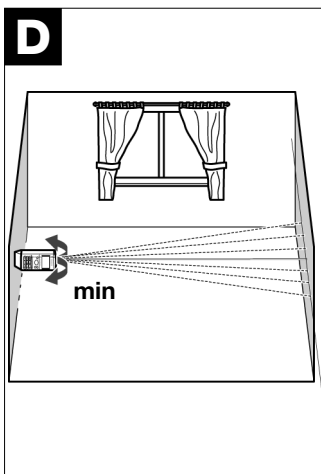
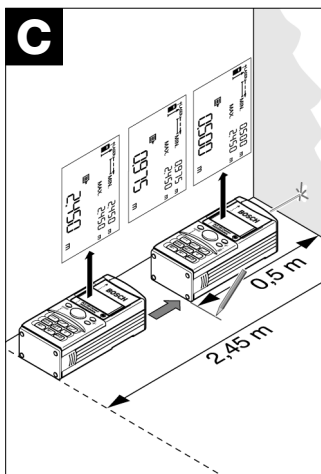
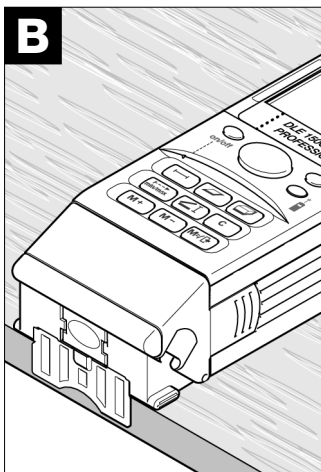
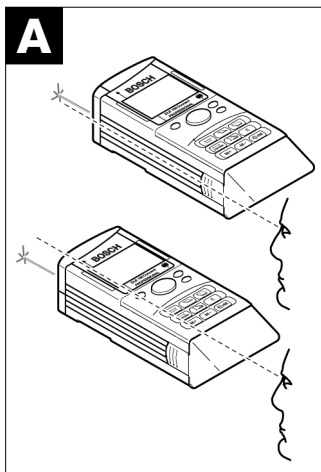
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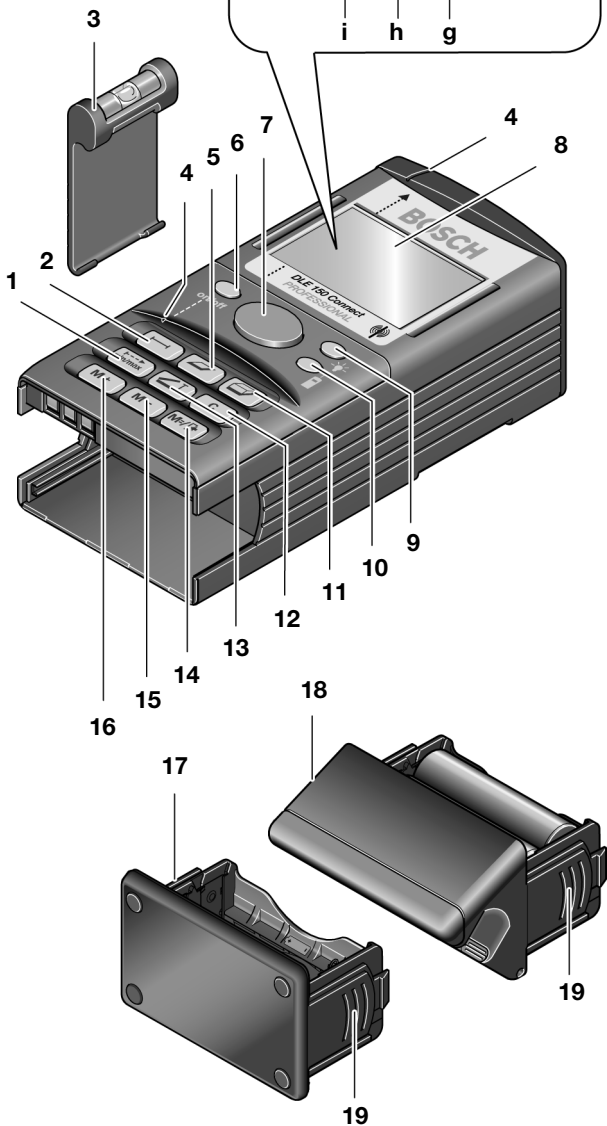
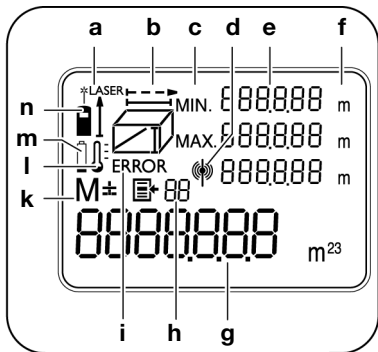
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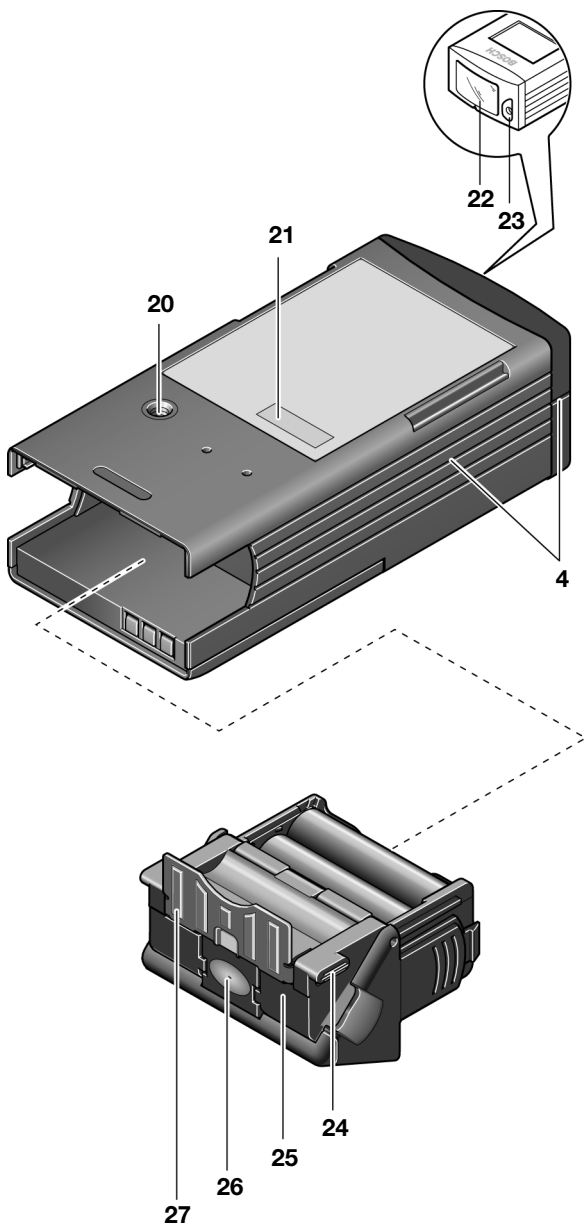


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1 609 203 M75







Product Specifications

Digital Laser Rangefinder

DLE 150 Connect PROFESSIONAL

Article number	0 601 098 503
Measuring range (natural surfaces)	0.3 ... 150 m*
Measuring accuracy	
Typical (0.3 ... 30 m)	±2 mm
Maximum	±3 mm**
Measuring time	
Typical	<0.5 s
Maximum	4 s
Smallest display unit	1 mm
Operating temperature	-10 °C ... +50 °C
Storage temperature	-20 °C ... +70 °C
Laser type	635 nm, <1 mW
Laser class	2
Diameter of the laser beam (at 25 °C), approx.	
at a distance of 10 m	6 mm
at a distance of 50 m	30 mm
at a distance of 100 m	60 mm
at a distance of 150 m	90 mm
Data interface (wireless)	BLUETOOTH® wireless technology class 2 (Specification 1.1)
Transmission range, max.	10 m***
Batteries	4 x 1.5 V LR6 (AA)
Rechargeable batteries	4 x 1.2 V KR6 (AA)
Battery service life approx.	20000 single measurements
Automatic switch-off	
Laser	20 s
Instrument (without measurement)	10 min
Weight in accordance with EPTA-Procedure 01/2003	0.43 kg
Protection class	IP 54 (dust and splash water protection)

* The better the laser light is scattered (not reflected) back from the surface of the target object and the brighter the laser point is in relation to the brightness of the surroundings (interiors, twilight), the longer the range will be. Under unfavourable conditions (e.g., measurement outdoors with strong sunlight), it can be necessary to use a target panel.

** + 0.1 mm/m for distances over 30 m and for unfavourable conditions such as, for example, strong direct sunlight

*** The transmission range can be influenced by environmental conditions. Walls made of or containing metal reduce the transmission range.

The serial number **21** for positive identification of your unit is located on the nameplate on the underside of the case.

The "Type-approval certificate under German law" is located at the end of these operating instructions.

System Requirements for the Transfer of the Measured Values


For the reception of the measured values, a PC or PDA with BLUETOOTH wireless technology is required.

Requirements for the operating system:

- PC: Microsoft® Windows® 98 or a higher version
- PDA: Microsoft® Windows® Pocket PC 2002 or a higher version

For the installation of the “BOSCH DLE 150” software on a PC, it must have a CD drive available. If the measured values are to be received by a PDA, then for the installation of the software on the PDA, a PC is necessary with a CD drive as well as Microsoft® ActiveSync® 3.7 or a higher version.

At www.bosch-imt.com, PCs and PDAs that are especially suitable for working with the DLE 150 Connect are recommended.

 **Bluetooth**® The BLUETOOTH trademarks are the property of Bluetooth SIG Inc., USA and licensed for Robert Bosch GmbH.

Microsoft, Windows, ActiveSync and Excel are trademarks or registered trade names of the Microsoft Corporation in the USA and other countries.

Intended Use












The unit is intended for measuring distances, lengths, heights, spacings and to calculate areas and volumes. The unit is suitable for measuring in interior and exterior construction.

The individual measured values can be transmitted wirelessly.

Product Elements

Please open the foldout page with the illustration of the unit and leave it open while you read these operating instructions.

The numbering of the product elements refers to the illustration of the unit on the graphic page.

- 1 Button for continuous/minimum/maximum measurement 
- 2 Length measurement button 
- 3 Bubble level ^{A, B}
- 4 Aligning aid
- 5 Area measurement button 
- 6 “on/off” button
- 7 Button for measuring and data transmitting
(Two-step button for aiming and measuring/transmitting)
- 8 Display
- 9 Display lighting button 
- 10 Continuous pointer mode button 
- 11 Volume measurement button 
- 12 Clear button 
- 13 Indirect length measurement button 
- 14 Button for memory recall/list of the last measured results 
- 15 Memory subtraction button 
- 16 Memory addition button 
- 17 Compact end piece^B
- 18 Universal end piece^B

- 19 End piece latching
- 20 1/4" threads
- 21 Serial number
- 22 Receiving lens
- 23 Laser beam exit
- 24 Grip
- 25 Flap
- 26 Flap unlocking button
- 27 Positioning extension
- 28 Laser viewing glasses^C
- 29 Target panel^C
- 30 Optical sight ZO 4^C
- 31 Protective bag^B
- 32 Installation CD with the "BOSCH DLE 150" software for the data transmission^B

A Located in the side pocket of the protective bag

B Accessory parts (included)

C Optional accessories (not included)

Display Elements

- a** Laser switched on
- b** Measurement functions
 - Continuous/minimum/maximum measurement
 - Length measurement
 - ▱ Area measurement
 - ▩ Volume measurement
 - ∠ Indirect length measurement
- c** Minimum/maximum value
- d** Wireless connection indicator
- e** Individual measured values (except for length measuring function)
- f** Units of measure: m/m²/m³
- g** Measured value/results
- h** Display of previous measurement results
- i** Error indication
- k** Store/addition/subtraction of measured values
- l** Temperature indicator
- m** Battery indicator
- n** Measuring from the back end



For Your Safety



Working safely with this unit is possible only when the operating and safety information are read completely and the instructions contained therein are strictly followed.

SAVE THESE INSTRUCTIONS CAREFULLY AND ENSURE THAT THE WARNING LABELS ON THE INSTRUMENT ARE ALWAYS EASILY READABLE.



Do not point the laser beam at persons or animals and do not look into the laser beam, even from longer distances.



This measuring instrument produces laser radiation of the laser class 2 according to EN 60825-1:2001. You can therefore unintentionally blind other persons with it.

- **Do not use the laser viewing glasses as protective glasses.** The laser viewing glasses serve for better recognition of the laser beam, however, they do not protect against the laser radiation.
- **Do not use the laser viewing glasses as sun glasses or in street traffic.** The laser viewing glasses do not provide complete UV protection and reduce colour perception.
- **Have the measuring instrument repaired only by qualified specialist personnel and only with original replacement parts.** In this manner, it is ensured that the safety of the instrument is maintained.
- **Do not allow children to use the laser measuring instrument without supervision.** They could unintentionally blind other persons.

Protection of the Unit

- Protect the unit from moisture and direct sunrays.
- Dirt in the end piece can lead to corrosion or breaks in contact. Always keep the end piece clean.
- If the unit is not used for a long period, the batteries must be removed (danger of corrosion).
- Transport and store the unit in the protective bag **31**.


Inserting/Replacing the Batteries

Use alkali-manganese or rechargeable batteries exclusively.

Rechargeable 1.2 V batteries reduce the number of possible measurements.

Press the latches **19** on both sides of the end piece and remove the end piece **17** or **18**.

Insert the batteries provided. When inserting the batteries, pay attention to the correct polarisation. Reinsert the end piece **17** or **18**.

When the battery symbol  appears, at least 100 measurements are still possible.

When the battery symbol blinks, the batteries must be replaced. Measurements are no longer possible.

Always replace the complete set of battery.

Putting into Operation

Switching On/Off

Switching on:

Press the “on/off” button **6** or the measurement button **7** completely down.

Switching off:

Press the “on/off” button **6**.

After approx. 10 min without performing a measurement, the unit switches off automatically to save the batteries.

When automatically switched off, the current display and the settings of the DLE 150 Connect are also stored in addition to the measured values. However, an existing wireless connection is interrupted (see Sections *Installing the “BOSCH DLE 150” Software* and *Starting the “BOSCH DLE 150” Software*).

When switched on again, the DLE 150 Connect is in the same functional mode and shows the same display as before the automatic switch-off. To re-establish the wireless connection between the DLE 150 Connect and the PC or PDA, see Section *Wireless Connection*.

Measuring Procedure

The instrument has several measuring functions that can be selected by pressing the respective function button (see *Measurement Functions* Section). After switching on, the instrument is in the “Length Measuring” function.

To change the measuring function, press the button for the desired function. After selecting the measuring function, all further steps take place by pressing the measure button **7**.

Place the rear end of the unit (end piece) at the desired measuring position (e.g. on a wall). The rear end of the unit is the reference point for the measurement.

- To switch on the laser beam, lightly press the measurement button **7** in the middle or press at the side.
- Aim at the target.
- **Do not point the laser beam at persons or animals and do not look into the laser beam, even from longer distances.**
- To measure, press the measure button **7** completely down.

The measured value appears after 0.5 to 4 s. The end of the measurement is indicated by an acoustical signal. The duration of the measurement is dependent on the distance, light conditions and reflection characteristics of the measured surface. After completion of the measuring procedure, the laser switches off automatically.

If a wireless connection exists to a PC or PDA, the last measured individual value is automatically transmitted after each measurement to the PC or PDA (see Section *Working with the “BOSCH DLE 150” Software*).

Continuous Pointer Mode

The unit can be switched to continuous laser beam (continuous pointer mode) as required. For this purpose, press the somewhat recessed continuous pointer mode button **10**. The laser beam will also remain switched on between the measurements in this setting. For measuring, only a single complete pressing down of the measurement button **7** is necessary.

- **Do not point the laser beam at persons or animals and do not look into the laser beam, even from longer distances.**

To switch off the continuous laser beam, press the continuous pointer mode button **10** or switch off the unit. After renewed switching on, the unit is again in the normal mode (the laser beam is switched on only when the measurement button **7** is pressed).

Installing the “BOSCH DLE 150” Software

The “BOSCH DLE 150” software delivered on the CD **32** makes possible the transmission of the measured values to a suitable PC or PDA (see *System Requirements for the Transfer of the Measured Values*).

Depending on the operating system of the PC or PDA, administrator rights may be necessary for the installation of the software.

Installation on a PC

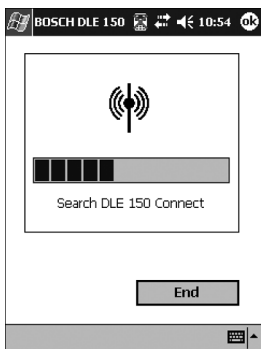
1. Start the PC and close unnecessary applications.
2. Place the installation CD **32** in the CD drive of the PC.
3. The selection menu of the “BOSCH DLE 150” software starts automatically. To start the installation, click on “Installing the Software”.
4. Follow the instructions of the Installation Assistant.

Installation on a PDA

1. Install the “BOSCH DLE 150” software on a PC that has Microsoft® ActiveSync® available (see *Installation on a PC*).
2. Connect the PDA by means of Microsoft® ActiveSync® with the PC. For this, see the operating instructions of the PDA.
3. The “BOSCH DLE 150” software is automatically transferred by Microsoft® ActiveSync® from the PC to the PDA as soon as it is connected to the PC. Follow the instruction of the programs on the PC and the PDA.

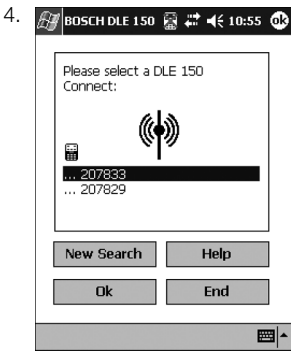
Starting the “BOSCH DLE 150” Software

1. Switch on the DLE 150 Connect.
2. Switch on the PC or the PDA with the “BOSCH DLE 150” software installed.
3. In the start menu of Microsoft® Windows® under “Programs”, click on the “BOSCH DLE 150” program.



When working with a recommended PC or PDA, the software attempts automatically to make connection with all switched on DLE 150 Connects that are within range. The progress of the search process is indicated with a bar graph.

When working with a PC or PDA that is not one of those recommended, the connection must be made manually according to the instructions of the PC or PDA manufacturer. In this case, use the “0000” PIN.



The DLE 150 Connects found are displayed by the software. The last six digits of the serial number serve to distinguish between the individual units. The serial number **21** can be found on the nameplate on the underside of the unit.

5. Select and mark the desired unit on the basis of its serial number. By clicking on the “OK” button, the selection is acknowledged. To perform a new search for available units, click on the “New Search” button.



If a DLE 150 Connect was selected and the selection acknowledged, a connection will be established to that unit (“Connect the DLE 150 Connect” indication). The display shown here then appears with the serial number of the connected DLE 150 Connect. The PC or PDA is now ready to receive measured values.

The selection steps 4. and 5. are skipped when, at the start of the software on the PC or the PDA, the DLE 150 Connect to which a wireless connection last existed is within range.

Quitting the “BOSCH DLE 150” Software





To quit the software, select the “End” menu item in the “File” menu on the menu bar. This also interrupts the wireless connection.

Working Instructions

The instrument measures from the back end of the case.

- The receiving lens and the outlet of the laser beam should not be covered during a measurement.
- For the wireless connection, it is not necessary that a line of sight exists between the DLE 150 Connect and the PC or PDA. However, transmission barriers (e.g. steel-reinforced concrete walls) reduce the range.

- The DLE 150 Connect should not be moved during measurement (exception: the functions continuous/minimum/maximum measurements). For this purpose, rest the unit on or against the measuring point, if possible.
- The measurement takes place at the middle point of the light spot, also for obliquely illuminated target surfaces.
- The measuring range is dependent on the light relationships and the reflection characteristics of the measured surface. For working in exterior areas and with strong direct sunlight, use the optical sight ZO 4 **30**, the laser viewing glasses **28** and the target panel **29** (accessory) for better visibility of the laser point or shield the target surface.
- When measuring to transparent surfaces (e.g. glass, water) or reflecting surfaces, erroneous measurement can result. Porous or structured surfaces, air strata with different temperatures or indirectly received reflections can also influence the measured value. These effects are caused by physical properties and can therefore not be excluded by the measuring instrument.
- In the dark, press the display lighting button  **9**. The display is then lit. To switch off the lighting, press the  button **9** again.
- By means of the upper and side aligning aids **4**, aiming over longer distances is facilitated. For this purpose, sight along the upper or side aligning aids. The laser beam runs parallel to these lines of sight (see Fig. **A**).
- When the DLE 150 Connect is switched off, all values in the memory of the unit are retained. However, when the end piece is removed (changing of the end piece or the batteries), the memory contents are lost.
- The instrument is equipped with a wireless interface. Local operating restrictions, for example in aircraft or hospitals are to be observed.

Changing the End Piece

The unit is provided with two different end pieces.

The compact end piece **17** reduces the dimensions of the unit. It is suitable for measurements for which the rear end of the unit can rest on a flat surface.

The universal end piece **18** is suitable for measurements from corners, e.g. to determine the diagonals of a room.

- With the aid of the positioning extension **27** on the universal end piece **18**, the unit can be placed on an edge (see Fig. **B**). For this purpose, pull up the flap **25** with the grips **24** and fold out the positioning extension **27**.
- If the rear end of the unit is to be placed on a flat surface, fold in the positioning extension **27**.
- For measuring from corners, fold in the positioning extension **27**, press the unlocking button **26** and allow the flap **25** to relatch.

To change the end piece, press the latches **19** on both sides and remove the end piece. Insert the new end piece.

The unit takes automatically into consideration the different lengths of the end pieces when measuring (measurement in both cases from the rear end of the unit).

Bubble Level

The bubble level makes possible the easy horizontal alignment of the unit.

The bubble level **3** can be attached on the right or left of the display **8** on the housing. Attach the bubble level with the lower end of the holder first.

Measurements with a Tripod

Measurements with a tripod are especially necessary for long distances. The unit can be screwed onto a camera tripod with the 1/4" threads **20** on the underside of the housing.

☞ **Also with the use of a tripod, the unit measures from its rear end and not from the middle of the threads.**

The distance from the threads **20** to the rear edge of the unit is 45 mm with the compact end piece **17** and 70 mm with the universal end piece **18**.

Measuring Long Distances

For the measurement of longer distances (>30 m), the use of the optical sight ZO 4 **30** and a tripod (accessory) is recommended. With the optical sight, the target area is shown enlarged four times and the visibility of the laser point is improved by a swing-in filter.

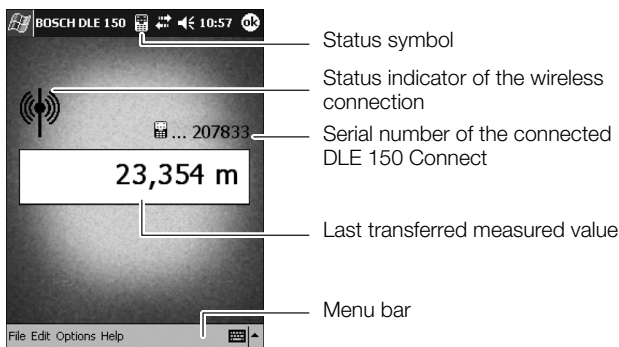
Working with the "BOSCH DLE 150" Software

General

Independent of the measuring function selected on the DLE 150 Connect, individual measured values are transmitted wirelessly. Values calculated by the DLE 150 Connect (e.g. volume in m³) or stored values cannot be transmitted. Calculations on the basis of the transferred individual measured values are possible, however, with the aid of the applications on the PC or PDA.

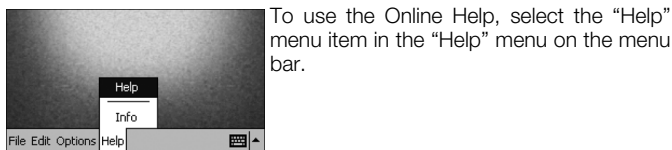
The last transferred measured value is displayed in each case by the "BOSCH DLE 150" software. In an opened application software on the PC or PDA (e.g. Microsoft® Excel), this measured value is entered at the same time at a desired location (see *Inserting Measured Values in an Application Software*).

Indication Elements of the Software on a PDA



Online Help of the Software

The operating instructions can also be called up by means of the Online Help of the "BOSCH DLE 150" software.




Wireless Connection

During the start of the “BOSCH DLE 150” software, the wireless connection is established (see *Starting the “BOSCH DLE 150” Software*).

The software checks the status of the wireless connection regularly:


Wireless Connection Intact



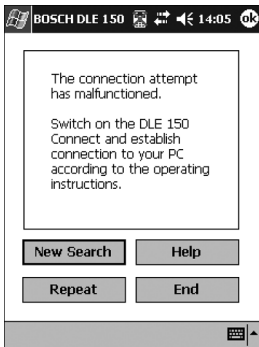
When the connection is intact, the wireless connection indication **d** appears on the display of the DLE 150 Connect and the status indication shown here in the “BOSCH DLE 150” software. On the PC or PDA, the status symbol  is also visible while working with other applications.

Disconnecting the Wireless Connection by the DLE 150 Connect

The wireless connection is interrupted when the DLE 150 Connect is located out of range, when it is switched off or it switches itself off automatically.

After an interruption, the software of the PC or PDA attempts to re-establish the connection for some minutes (“Connect the DLE 150 Connect” indication). In an application software, the status symbol  is shown in the header during this time.

If the DLE 150 Connect is switched on again or returned to within range during the time that the connecting process is running, the wireless connection is then automatically re-established.



If the connection cannot be re-established within some minutes, the status symbol of the DLE 150 Connect is no longer displayed. In the “BOSCH DLE 150” software, the display shown here appears.

To re-establish the connection to the same DLE 150 Connect with which work was in progress before the interruption, click on the “Repeat” indicator. The connection will be re-established.

To start a search for all DLE 150 Connects within range, click on “New Search”. All units found will be listed. For the further procedure, see *Starting the “BOSCH DLE 150” Software*.

To close the software, click on “End”.

Disconnecting the Wireless Connection by the PC or PDA

When the software on the PC or PDA is terminated or it is located out of range, the wireless connection indication **d** on the DLE 150 Connect then goes off after a short time.

To re-establish the wireless connection, restart the “BOSCH DLE 150” software on the PC or PDA.

Changing the Connection to Another DLE 150 Connect



To establish connection to another DLE 150 Connect, click on the “New Search” menu item in the “File” menu on the menu bar. All units found will be listed. For the further procedure, see *Starting the “BOSCH DLE 150” Software*.

Acquiring the Measured Values

The measured value transmitted by the DLE 150 Connect is always displayed in the “BOSCH DLE 150” software. At the next measurement, the value is overwritten. In addition, the transmitted measured value can be entered in another application software at the same time when this software was started before the measurement.

Processing Measured Values in the “BOSCH DLE 150” Software

The currently displayed measured value can be transferred to the clipboard of the PC or PDA and entered in other programs as required.



To cut out, copy or delete the measured value, select the corresponding menu item in the “Edit” menu on the menu bar.

Inserting Measured Values in an Application Software


The measured values transmitted by the DLE 150 Connect can be entered directly in any software (e.g. Microsoft® Excel). For this purpose, start the application software on the PC or PDA and open the file in which the measured values are to be inserted. Place the cursor at the location at which the next measured value is to be entered. Then perform the measurement. The measured value is inserted at the position marked by the cursor.

E19		23,354			
C	D	E	F	G	
	+ -	Length	With	Height	
10					
11					
12	2	23,35	14,14	5,04	
13	1	2,39	2,50	5,73	
14					
15	2	12,65	8,29	4,60	
16	1	35,56	22,73	4,73	
17	2	2,59	1,45	4,68	
18	1	5,36	2,35	4,67	
19	1	23,35			
20					

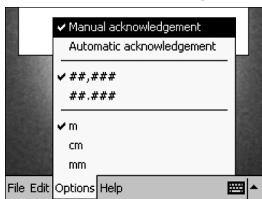
Example:

On a PDA in the Microsoft® Excel program, the table cell E19 (shown here) was selected. The value 23.35 m was then measured with the DLE 150 Connect. This value is automatically entered in the selected table cell E19 and is available there for further calculations.

Switching from the Application Program to the “BOSCH DLE 150” Software

By means of the  status symbol in the menu bar, it is possible to switch to the “BOSCH DLE 150” software at any time. The last transmitted measured value can be checked here.

Options for Working with the Measured Values



In the “Options” menu of the “BOSCH DLE 150” software, the format of the displayed measured values as well as the type of their acknowledgement can be defined. In this manner, the format for the display of the measured values in the Software is defined but the display on the DLE 150 Connect remains unchanged.

For the selection of the options, click on the respective menu item. The current selection is marked in the menu with a check mark.

Acknowledgement of the measured values: For the use of the individual measured values in an application software, the type of acknowledgement can be defined.


- **Manual acknowledgement:** With manual acknowledgement, the measured value is overwritten on the PC or PDA until it is manually acknowledged (e.g. by pressing the arrow buttons). In this manner, a measurement can be repeated until the correct (desired) measured value is present.
- **Automatic acknowledgement:** With automatic acknowledgement, a return (“Enter”) is automatically inserted after each measured value. This option makes possible that, for example in Microsoft[®] Excel, the data of several measurements can be written consecutively in a column without having to separately acknowledge each measured value.

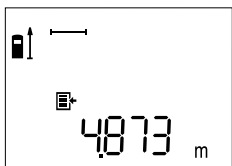
Selection of the measuring unit: The measured values can be displayed in the measuring units of m, cm or mm.

Selection of the decimal point: As the decimal point for the display of the measured values, a coma (“##,###”, e.g. 23,35 m) or a period (“##.###”, e.g. 23.35 m) can be selected.

Measurement Functions

Length Measurements


Press the length measuring button  **2** to switch to the mode for length measurements. The symbol for length measurements appears in the upper part of the display.

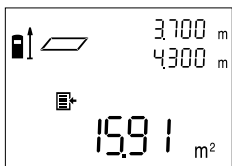


To measure, press the measure button **7** completely down.

The measured value is shown at the bottom of the display and transmitted automatically at the same time.

Area Measurement

Press the area measuring button  **5** to switch to the mode for area measuring. The symbol for area measurements appears in the upper part of the display.

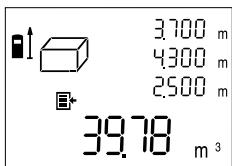


Then measure the length and width one after the other as for a length measurement. The individual values are transmitted automatically. After completion of the second measurement, the result is automatically calculated and displayed but not transmitted.

The individual measured values are shown in the upper right of the display, the results at the bottom.

Volume Measurement


Press the volume measuring button  **11** to switch to the mode for volume measurement. The symbol for volume measurement appears in the upper part of the display.



Then measure the length, width and height one after the other as for a length measurement. The individual values are transmitted automatically. After completion of the third measurement, the result is automatically calculated and displayed but not transmitted.



The individual measured values are shown in the upper right of the display, the results at the bottom.

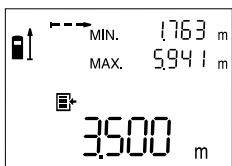
Continuous/Minimum/Maximum Measurement

Switching between the continuous, minimum and maximum measurement functions is performed by repeated pressing of the  button **1**.

Continuous Measurement (see Fig. **C**)

The continuous measurement serves for the transfer of dimensions, for example, from construction plans. With continuous measuring, the instrument can be moved relative to the target with the measured value being updated approximately every 0.5 s. For example, the user can move back from a wall until he reaches the desired distance with the actual distance always being readable.

To switch to the continuous measuring mode, press the  button **1** repeatedly until the  symbol as well as the "MIN." and "MAX." indicators appear in the display.



To initiate the measurement process, press the measurement button **7** completely down. Move the measuring instrument until the desired distance value is shown at the bottom of the display.

By pressing the measurement button **7**, the continuous measuring is interrupted. The current measured value is shown in the display and automatically transmitted. A repeated pressing of the measurement button **7** starts the continuous measurement anew.

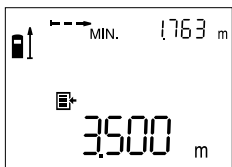
The continuous measuring switches off automatically after 10 min. The last measured value remains in the display.

For earlier ending of the continuous measuring, change the measuring function with one of the function buttons.

Minimum Measurement (see Fig. D)

The minimum measurement serves for determining the minimum distance from a fixed reference point. It is an aid, for example, for the determination of a vertical or horizontal distance. For minimum measuring, use the universal end piece **18**.

To switch to the minimum measuring mode, press the $\overleftrightarrow{\text{min/max}}$ button **1** repeatedly until the $\overleftrightarrow{\text{---}}$ symbol as well as the "MIN." indicator appear in the display.



To initiate the measurement process, press the measurement button **7** completely down. Move the laser spot back and forth over the desired target point (e.g. a wall) such that the rear end of the unit as the reference point of the measurement remains at the same position.

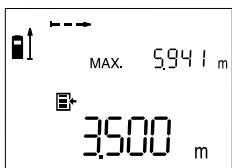
The minimum measured value is shown in the upper right of the display.

By pressing the measurement button **7**, the minimum measuring is ended. The current measured values as well as the minimum value are shown in the display. The minimum value is automatically transmitted. A repeated pressing of the measurement button **7** starts the minimum measurement anew.

Maximum Measurement (see Fig. E)

The maximum measurement servers for the determination of the maximum distance from a fixed reference point. It is an aid, for example, for the determination of diagonals. For maximum measuring, use the universal end piece **18**.

To switch to the maximum measuring mode, press the $\overleftrightarrow{\text{min/max}}$ button **1** repeatedly until the $\overleftrightarrow{\text{---}}$ symbol as well as the "MAX." indicator appear in the display.



To initiate the measurement process, press the measurement button **7** completely down. Move the laser spot back and forth over the desired target point (e.g. corner of a room) such that the rear end of the unit as the reference point of the measurement remains at the same position.

The maximum measured value appears in the upper right of the display.

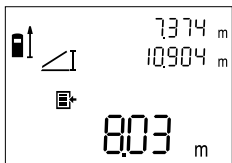
By pressing the measurement button **7**, the maximum measuring is ended. The current measured values as well as the maximum value are shown in the display. The maximum value is automatically transmitted. A repeated pressing of the measurement button **7** starts the maximum measuring anew.

Indirect Length Measurement (see Fig. F)

The indirect length measuring function serves for measuring distances that cannot be measured directly because an obstacle would obstruct the laser beam or no target surface is available as a reflector. The best possible results are achieved only when the laser beam and the measured distance form an exact right angle (Pythagorean theorem).

In the illustrated example, the length "C" is to be determined. For this purpose, "A" and "B" must be measured.

Press the indirect length measurement button $\angle I$ **13** to switch to the mode for indirect length measuring. The symbol for indirect measuring $\angle I$ appears in the display.



As for a length measurement, measure the distance "A". Take care that a right angle exists between the laser beam and the distance "C". Then measure distance "B".

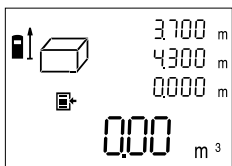
During the measurements, the rear end of the unit as the reference point must remain at the same position.

The individual measured values "A" and "B" are shown at the upper right and are automatically transmitted after each measurement.

After completion of the second measurement, the length "C" is automatically calculated by the DLE 150 Connect and shown at the bottom of the display. The "C" value is not transmitted.

Clearing the Measured Values

By pressing the **C** clear button **12**, the correction of the last determined individual measured value is possible.



By repeated pressing of the clear button **C**, several individual measured values are cleared one after the other in the reverse order of the measurement.

By pressing the **C** clear button in the continuous measurement functional mode, the minimum and maximum measured values are both cleared at the same time.

Already transmitted measured values must be cleared in the "BOSCH DLE 150" software or in the application software used (see *Working with the "BOSCH DLE 150" Software*). The clearing is not possible by means of the DLE 150 Connect.

Storing the Measured Values

The unit makes possible the storing of the measured values by two methods:

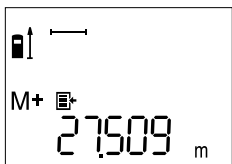
- **Adding/subtracting measured values:** The results of individual measurements can be added or subtracted and the sum or difference displayed.
- **List of the last 20 measured results:** In addition, the unit stores automatically the results of the last 20 measurements and can display them.

Both methods of storing are called up with the memory recall button **M=/ \square** **14**.

The transmission of stored measured values is not possible. If transmitted measured values are to be added or subtracted, this must take place in an application software on the PC or PDA.

Adding/Subtracting Measured Values

Storing/Adding Measured Values



By pressing the **M+** button **16**, the value at the bottom of the display – either a length, area or volume value depending on the current measuring function – is stored in memory. In the display, “**M+**” appears briefly and then “**M**”.

If a value is already present in the memory, the new value is added to the memory contents, however, only when the units of the measurements are in agreement.

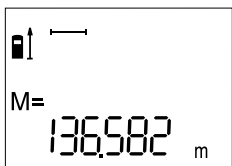
For example, if an area value is stored in the memory and the current measurement is a volume value, the addition cannot be performed. In the display, the “ERROR” message blinks briefly.

Subtracting Measured Values

By pressing the **M-** button **15**, the value at the bottom of the display is deducted from the value stored. In the display, “**M-**” appears briefly and then “**M**”.

If a value is already stored in memory, the new value is subtracted from the contents of memory, however, only when the measuring units agree (see *Storing/Adding Measured Values*).

Displaying Stored Values



By pressing the button for memory recall **M=/E** **14**, the value stored in the memory is displayed. In the display, the memory symbol “**M=**” appears.

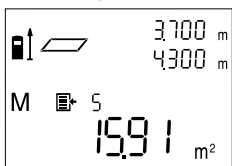
When the memory content “**M=**” is shown in the display, it can be doubled by pressing the **M+** button **16** or set to zero by pressing the **M-** button **15**.

Clearing the Memory

To clear the memory contents, first press the **M=/E** button **14** for memory recall until “**M=**” appears in the display. Then press the clear **C** button **12**; the “**M**” no longer appears in the display.

List of the Last 20 Measured Results

Displaying the List



By repeated pressing of the memory recall button **M=/E** **14**, the last 20 measured results are displayed in reverse order (the last measured value first). In the display, the symbol **M** appears. The counter on the right next to the symbol **M** shows the numbering of the measurements.

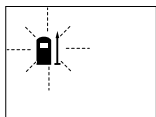
The measured values displayed can still be entered into memory by pressing the **M+** button **16** or the **M-** button **15**.


Clearing the List

The list of the last 20 measurement results can be cleared when first the **M=/E** button **14** for memory recall is pressed until the **M** symbol and the counter of the measurements appear. Then press the clear **C** button **12**; in the display, **M** no longer appears.

Error – Cause and Correction

Cause	Correction
The temperature indicator I blinks, measuring is not possible	
Measurement outside the allowed temperature range from $-10\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$.	Wait until the allowable temperature range is reached.
“ERROR” Message and “----- m” in the Display	
The angle between the laser beam and the target is too acute.	Increase the angle between the laser beam and the target.
The target surface reflects too strongly (e.g. a mirror) or too weakly (e.g. black material).	Use the target panel (accessory).
Ambient light is too strong (e.g. sunlight).	Use the target panel (accessory).
The receiving lens 22 or the laser beam exit 23 are misted over, for example, as a result of changing between low and high environmental temperatures.	Wipe the receiving lens 22 or the laser beam exit 23 dry with a soft cloth.
Unreliable Measurement Results	
The target surface does not reflect clearly (e.g. water, glass).	Cover the target surface.
The laser beam exit 23 or the receiving lens 22 is soiled.	Keep the laser beam exit 23 or the receiving lens 22 free of dirt.
A wireless connection is not established or is interrupted	
The DLE 150 Connect or PC/PDA is switched off or the software was not started.	Check whether the DLE 150 Connect and PC or PDA is switched on and the “BOSCH DLE 150” software started on the PC or PDA.
The distance between the DLE 150 Connect and PC or PDA is too large.	Reduce the distance between the DLE 150 Connect and the PC or PDA.
Environmental influences interfere with the wireless connection.	Remove the DLE 150 Connect and PC or PDA from the vicinity of possible interference sources (e.g. walls made of or containing metal).
The PC or PDA used is not supported by the “BOSCH DLE 150” software.	Information concerning the equipment recommended by Bosch can be found at www.bosch-imt.com .
The version of the “BOSCH DLE 150” software is not current.	Download a software update at www.bosch-imt.com .
The corrective measures listed above do not eliminate the error.	Take the unit to your dealer for sending to the Bosch customer service.



The instrument monitors the correct functioning for every measurement. If a defect is detected, only the symbol  blinks in the display (measurement from the back end). Take the unit to your dealer for sending to the Bosch customer service.

Checking the Measurement Accuracy

The accuracy of the instrument can be checked as follows:

- Select a distance that never changes that is approx. 1–10 m long (e.g. room width, door opening) whose length is known exactly.
- Measure this distance ten times one after the other.

The measurement error can be a maximum of ± 3 mm. Record the measurements so that the accuracy can be compared at a later time.

Maintenance and Cleaning

Do not immerse the unit in water.

Wipe off dirt with a damp, soft cloth. Do not use aggressive cleaning agents or solvents.

Take care of the unit, especially the receiving lens **22**, by handling it in the same manner as for eye glasses or a camera.

If the unit should fail despite the care taken in manufacture and testing, repair should be carried out by an authorised customer services agent for Bosch power tools.

For all inquiries and replacement parts ordering, always include the 10-place article number on the nameplate of the unit.

In the “Help” menu of the “BOSCH DLE 150” software, the installed version of the software is shown under the “Info” menu item.

In case of repair, send in the unit in the protective bag **31**.

Environmental Protection



Recycle raw materials instead of disposing as waste.

The unit, accessories and packaging should be sorted for environment-friendly recycling.

These instructions are printed on recycled paper manufactured without chlorine.

The plastic components are labeled for categorized recycling.

Do not throw used batteries into household waste, fire or water, but rather – according to the applicable legal regulations – dispose of in an environmentally friendly manner.

Service and Customer Advice

Exploded views and information on spare parts can be found under:
www.bosch-pt.com.

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Further information on Bosch measuring instruments can be found at
www.bosch-imt.com.

Specifications subject to change without notice