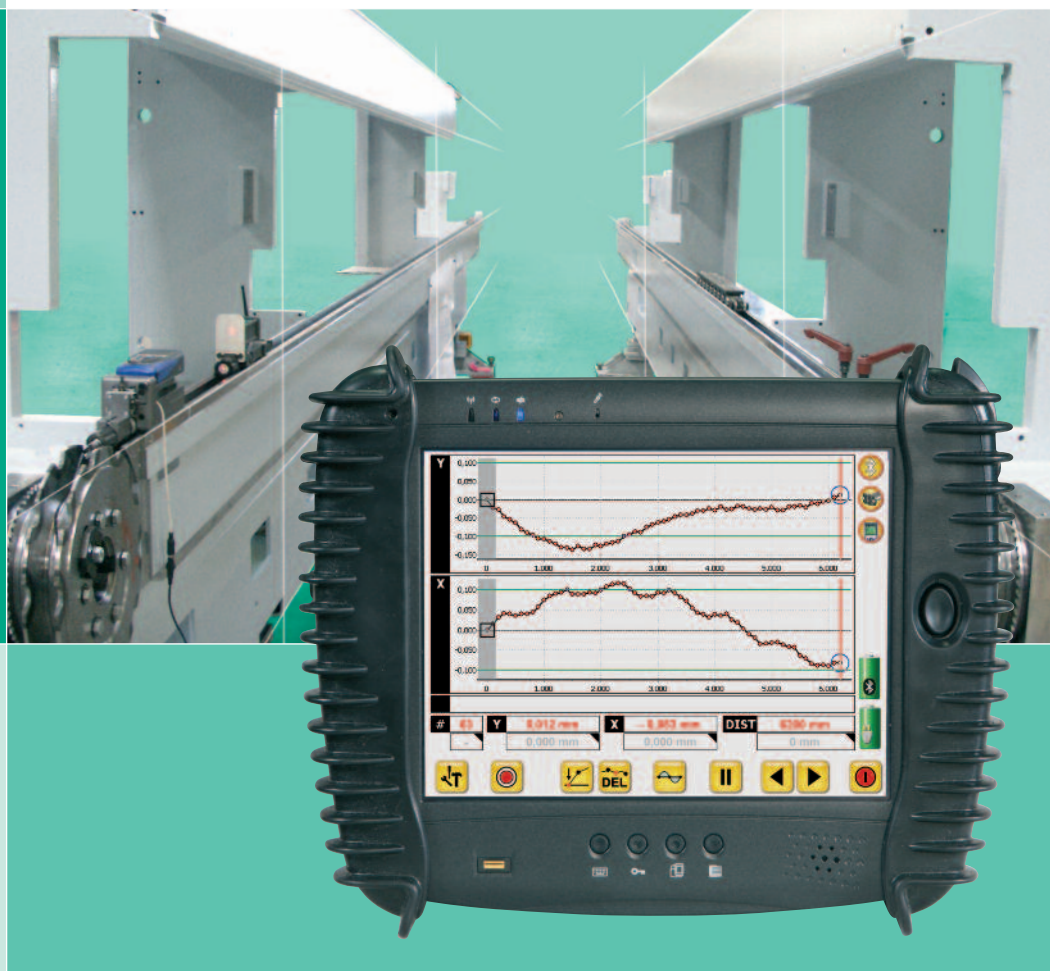


# ProLine<sup>®</sup> v2

## Alignment Software for Linear Guides





# ProLine® v2

**You have made a good choice ...**

ProLine® v2, in combination with the display unit, is the optimum solution for the alignment of linear guides.

**The following functions and characteristics will convince you:**

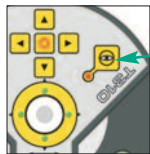
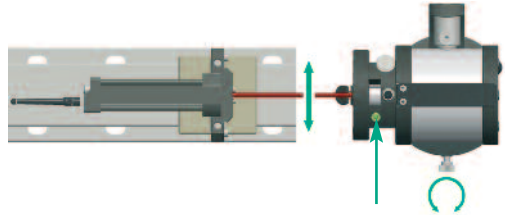
- Excellent user interface: Logical and user-friendly and nevertheless fully suitable for professional use
- Automatic connection management, wireless via Bluetooth
- Automatic sensor detection
- Measuring point comments can be inserted and edited
- Easy-to-use touch screen, no keyboard needed.
- Reports and measured data can be stored on USB stick.
- Automatic calculation of the best reference
- High-performance display unit is robust and yet lightweight.

## Contents

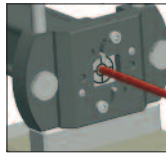
<b>Preparatory laser alignment for measuring a guide plane</b> .....	<b>3</b>
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## Preparatory laser alignment for measuring a guide plane

1. Move the sensor slide and the magnets into the desired position. Set up the T310 Rotational laser in the direction of measurement. Use the integrated spirit level to align the housing so that it is perpendicular.



2. Now switch on the leveling function of the T310.

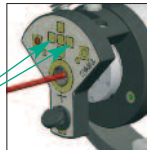


3. Now adjust the height of the tripod so that the laser beam strikes the middle measuring range of the receiver.

4. Push the sensor to the last measuring point of the guide.



Arrow keys



5. Use the remote control to center the laser beam again. Then move the laser receiver unit back to the position of the first measuring point.



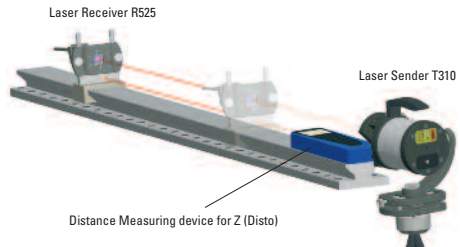
6. Now center the laser beam by means of the adjusting screw of the T310 laser transmitter.


7. The laser beam is again centered with the remote control to the position of the last measuring point. During subsequent movements of the sensor at the guide plane, you will determine that the laser beam remains approximately in the center of the receiver measuring plane.



## The software – first steps

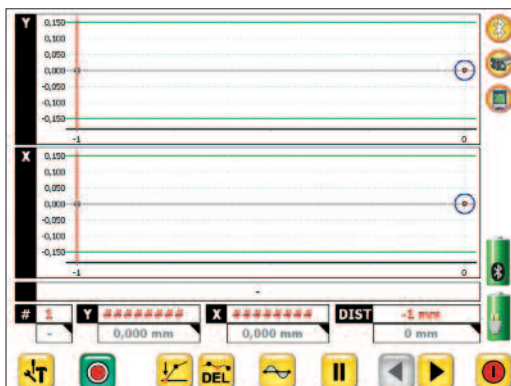
Mount the Disto™. Switch it on and select the Bluetooth communication. Switch on the sensor and open the target window (R525).  
*For instructions on preparatory laser alignment, see page 3.*




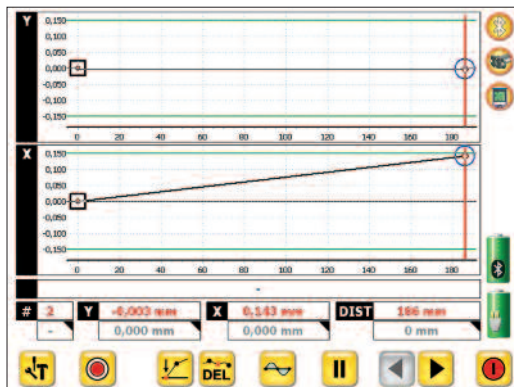
Start the ProLine® v2 software via the desktop icon . The software automatically establishes a connection to Disto™ and the sensor.




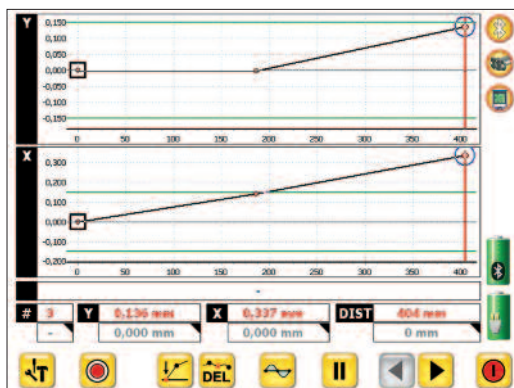
*You will notice that in the upper right area, the Bluetooth symbol and the symbols for the receiver and the Disto™ indicate an active connection. You will also see the X-, Y- and Z-starting coordinates.*



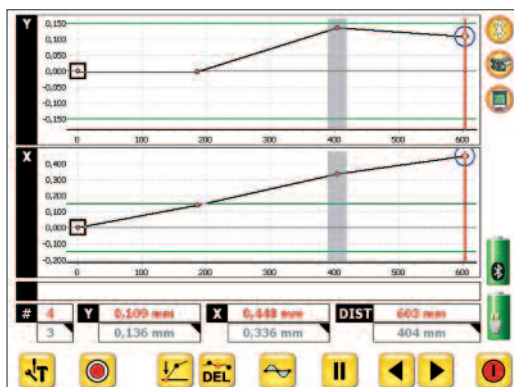
Move the sensor to the desired start position and start the first measurement with this  button. In the coordinate display, you see that X, Y and Z are set to zero. Also, the output ##### indicates that the unit is conducting a large query of measured data according to its structure. Do not move the sensor until the measured value is displayed.





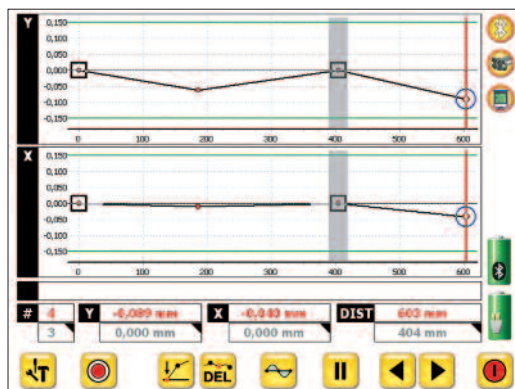
Now you can move the sensor to the next position. The new value is automatically registered (in this case, a distance of 186 mm from the first measuring point). Start the measuring point registration with the corresponding button .



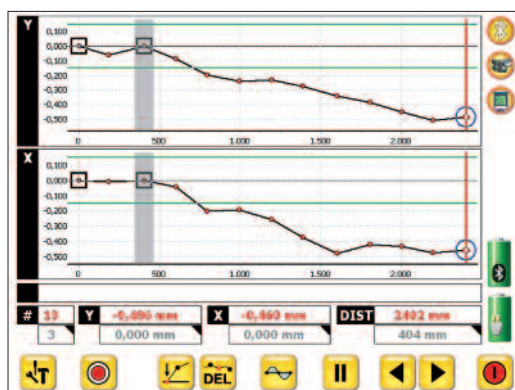
Repeat these steps through to the last measuring point.





You can delete any point . Also, you can define any two points as reference points by setting them to zero .

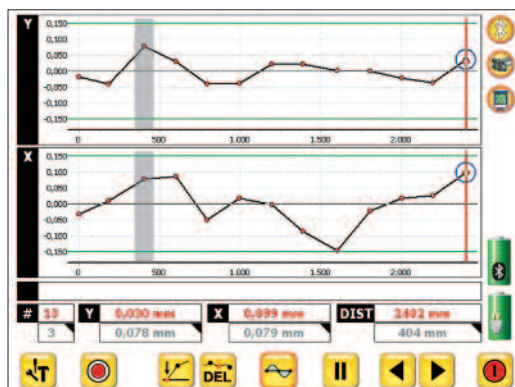


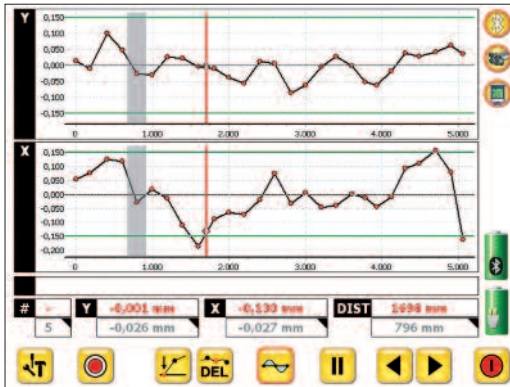
In this case, the third measuring point is set to zero. Now points 1 and 3 form the reference line for our measurement. You can change them at any time by setting a new point to zero.



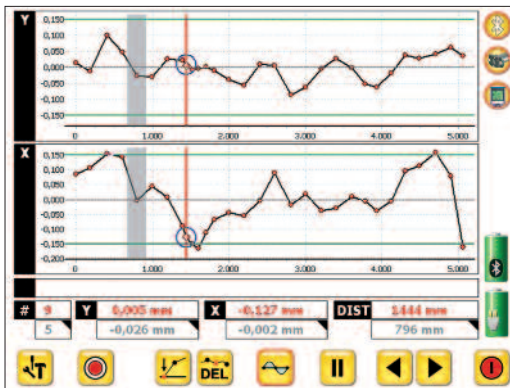
Now continue with further measurements. Over a distance of 2.4 m you have now created nine additional measuring points. You will have noticed that the selection of points 1 and 3 as reference points was not ideal.

Alternatively you can use the button  to automatically create the optimum reference line. This minimizes the necessity of correcting all points. After starting this function, you see that this button is highlighted . Also, the current sensor position is indicated by a red line. You will also have noticed the blue circle at the current position. This circle tells us that the "auto edit" limit for this point has been reached. This means that this point will be replaced when a new measurement is conducted.





If you now examine your measurements, you will see that point 9 (measuring distance 1.5 m) deviates strongly and is outside of the tolerance range.






The relevance of this error can be checked by a few measurements to the left and right of the deviation. Therefore, you determine that new measurements can be conducted at any location and at any time. When the blue circle appears, the previous measuring point is replaced by a new one. This is very useful for the alignment correction.



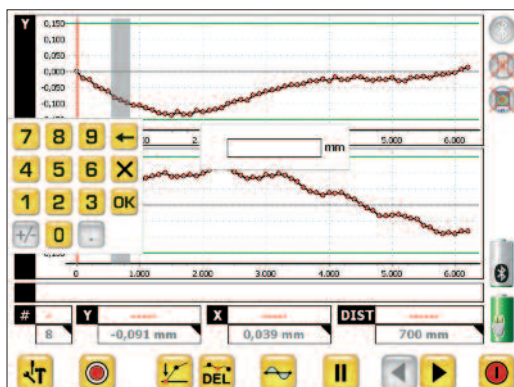
It is also possible to write comments for all points, e.g. to describe the position of the measuring point. You only have to touch the comment field (framed in red here) and a keyboard appears. You can use the keyboard to name the measuring points.

Nr	Dist	delta	Y	X	
1	0 mm	—	0,014 mm	0,095 mm	
2	185 mm	185 mm	-0,012 mm	0,107 mm	Feed in section
3	404 mm	218 mm	0,100 mm	0,135 mm	
4	603 mm	199 mm	0,048 mm	0,144 mm	
5	796 mm	193 mm	-0,036 mm	-0,002 mm	Preout section 1
6	996 mm	200 mm	-0,029 mm	0,044 mm	
7	1196 mm	200 mm	0,025 mm	0,008 mm	
8	1390 mm	194 mm	0,021 mm	-0,089 mm	
9	1444 mm	54 mm	0,008 mm	-0,128 mm	
10	1520 mm	76 mm	-0,007 mm	-0,149 mm	
11	1604 mm	84 mm	-0,004 mm	-0,165 mm	
12	1698 mm	94 mm	0,001 mm	-0,111 mm	Edge cut section start
13	1807 mm	109 mm	-0,011 mm	-0,067 mm	
14	2003 mm	196 mm	-0,038 mm	-0,045 mm	
15	2199 mm	196 mm	-0,025 mm	-0,055 mm	
16	2402 mm	203 mm	0,011 mm	-0,003 mm	
17	2597 mm	196 mm	0,007 mm	0,089 mm	Edge cut 2
18	2810 mm	213 mm	-0,086 mm	-0,019 mm	
19	3000 mm	190 mm	-0,062 mm	0,018 mm	
20	3209 mm	209 mm	-0,004 mm	-0,037 mm	
21	3399 mm	190 mm	0,028 mm	-0,029 mm	
22	3605 mm	206 mm	-0,002 mm	0,009 mm	

By pressing the button  (next page), you can view the list of measured values. Here you can save  the values for documentation purposes or export  them.



By clicking the black X or Y bar you can leave only one axis.



If the measuring distances are entered manually without the Disto™, the distances can be entered via the field **DIST** as a total dimension.

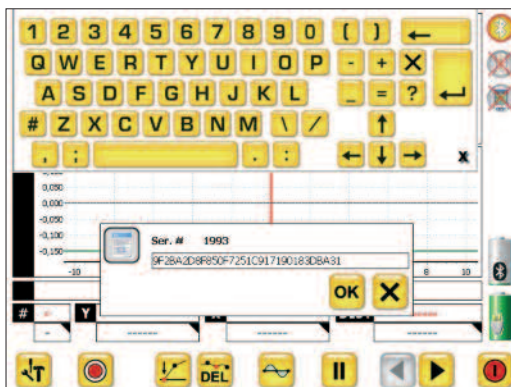
## Register new sensors – license key

When you order a measuring package with a display unit from Status Pro, all components are ready to use when you receive them. If you wish to use your own computer or add additional sensors later, they have to be registered in the software in order to enable communication.































With your sensors, you receive a delivery note that includes a license key.

When you start ProLine® v2, the new sensor is found and the software prompts you to enter the license key.



Enter and confirm the license key that you received for the sensor. The unit is now ready for operation.

## Description of program symbols

-  Record measuring point
-  Set point to zero
-  Delete measuring point
-  Set pause for current measured value display
-  Compensating curve ("best fit")  
- all deviations in +/- with same total
-  Previous / next page
-  Settings
-  Retrieve event log
-  Bluetooth search  
(search and combination of new sensors)
-  Save results of measurement
-  Export results of measurements for reports
-  Definition of the X/Y coordinate system
-  Define Z-direction
-  Definition of the displayed resolution
-  Work with / without Disto
-  Manually define Z for each point
-  Dot pitch in Z-direction constant
-  Define averaging time of the display
-  Define averaging time for recording of the measured value
-  Define mean value for two measuring points
-  Define straightness tolerance
-  Bluetooth active / inactive
-  Disto active / inactive
-  Sensors active / inactive
-  Disto / sensor connection
-  Charge condition of receiver / DU310
-  Enter sensor connection code  
(required only once for new sensors)
-  End program








## DU310 UMPC



Part No. IT 200310

<b>Operating system</b>	Windows XP prof. (UMPC Edition), XP embedded or CE 5.0
<b>Processor</b>	AMD Geode LX800
<b>Memory</b>	512 MB - 1 GB RAM
<b>Mass storage</b>	512 MB - 8 GB Flash or 30 GB hard disk
<b>Display</b>	10.4" TFT, 1024x768, HiBrite
<b>Touch Screen</b>	Control with pen or finger
<b>Interfaces</b>	USB 2.0, CardBus PCMCIA Type II, CF-Card Slot, Bluetooth integrated, WLAN integrated, VGA
<b>Security</b>	Fingerprint reader, Intel WLAN Security
<b>Rechargeable battery</b>	Li-Ion 14 Wh internal, external extra battery 28 Wh replaceable or 74 Wh battery pack in carry bag
<b>Housing</b>	Magnesium/aluminum with rubber guard
<b>Operating environment</b>	Temperature 0-40 °C, relative humidity 0–90 % n.c.
<b>Dimensions &amp; weight</b>	appr. 210x261x18 mm, 0.93 kg incl standard rechargeable battery
<b>Special features</b>	Front is splash & water proof, shock proof from as high as 1.2 m (with rubber guard), 5 configurable keys, up to 4 hours of operation; Optional: multi-language, daylight display

## Accessories for DU310 UMPC

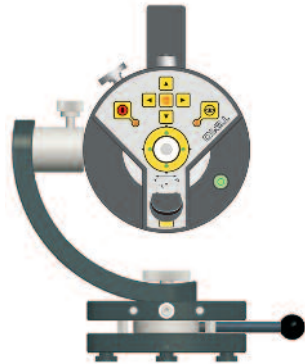
Illustration	Part No.	Name
	IT 200202	<b>Replacement control pen</b> Quantity of 3 / package
	IT 200205	<b>Rubber guard handle</b> for holding the UMPC with one hand; is fastened on back on rubber guard
	IT 200206	<b>Carrying strap for rubber guard handle</b> is fastened on back on rubber guard
	IT 200207	<b>External extra battery Li-Ion 28W</b> can be replaced during operation
	IT 200208	<b>1-compartment charging station for external battery</b>
	IT 200209	<b>Car DC-DC converter 12V / 24V</b> for connecting to docking station / car mounts or directly to the unit
	IT 200211	<b>External expansion battery pack</b> Li-ion 73Wh, charge level display



Part No. BG 830200/1

## Rotational laser T310

The T310 leveling laser makes even difficult measuring tasks easy! A laser transmitter transmits the signal and a detector measures the beam position. Done!



### Control of the T310

The control keys control various functions. In addition, LEDs function as displays.

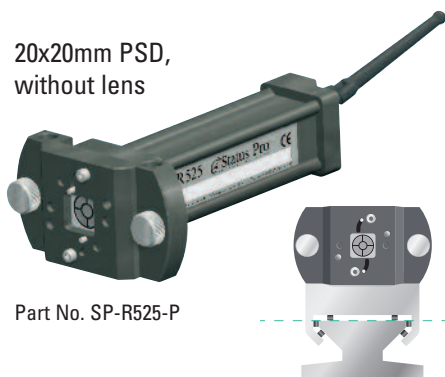
1. IR-receiver with folding mirror
2. Leveling status -LED for Y-axis (or Z-axis in case of laying arrangement)  
Green 1x: Leveling < 0.04 mm/m;  
2x: Leveling < 0.025 mm/m;  
Red LED: Actuator motor working
3. Leveling status LED for X-axis  
Green 1x: Leveling < 0.04 mm/m;  
2x: Leveling < 0.025 mm/m;  
Red LED: Actuator motor working
4. Power status LED on / off
5. Power key on/off
6. Laser rotation on/off
7. Key cross for setting the laser level  $\blacktriangle$  (+) /  $\blacktriangledown$  (-)  
As well as  $\blacktriangleleft$  (+) /  $\blacktriangleright$  (-)
8. Self-leveling on/off
9. Leveling status LED on/off
10. Level for rough leveling of the appliance

## The sensors

**R525 & R510** are battery-operated, wireless high-precision laser receivers for perfect straightness measurements of the chain guideways. This makes it possible to measure and document a 10-meter guideway in centimeter sections in five minutes.

### R525

20x20mm PSD,  
without lens

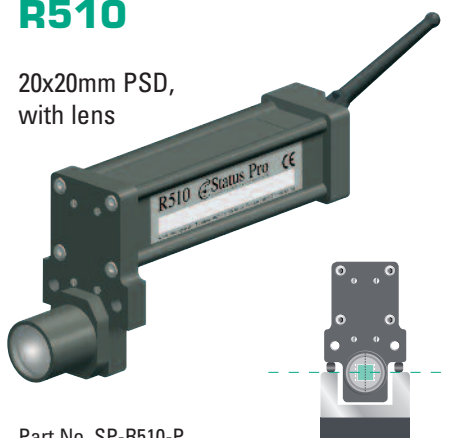


Part No. SP-R525-P

<b>Measuring range</b>	20x20 mm
<b>Resolution</b>	1µm in X & Y
<b>Accuracy</b>	+/- 2µm
<b>Inclinometer</b>	Resolution 0,1°
<b>Laser sensitivity</b>	650nm / modulated
<b>Wireless</b>	Bluetooth class 1a (range: 30m)
<b>Interface</b>	Rs232 / Bluetooth
<b>Power supply</b>	12V rechargeable battery
<b>Operation with battery</b>	8 hours
<b>Charging time</b>	2 hours – 90%
<b>Protection class</b>	IP 65

### R510

20x20mm PSD,  
with lens



Part No. SP-R510-P

<b>Measuring range</b>	20x20 mm
<b>Resolution</b>	1µm in X & Y
<b>Accuracy</b>	+/- 2µm
<b>Laser sensitivity</b>	650nm / modulated
<b>Wireless</b>	Bluetooth class 1a (range: 30m)
<b>Interface</b>	Rs232 / Bluetooth
<b>Power supply</b>	12V rechargeable battery
<b>Operation with battery</b>	8 hours
<b>Charging time</b>	2 hours – 90%
<b>Protection class</b>	IP 65

## R310

The R310 measures the position of the rotating laser beam as a dial gauge from the work-piece for reference. The beam forms an entire reference plane and not just a line like a wire. The R310 is wireless and has a range of up to 80 m.



<b>Measuring range</b>	80 mm
<b>Resolution</b>	0.01 mm
<b>Accuracy</b>	+/- 0.02 + 0.3% linearity
<b>IR control</b>	Range: 50m
<b>Interface</b>	Rs232 / Bluetooth (optional)
<b>Power supply</b>	(rechargeable) battery 6x AA
<b>Temperature range</b>	0-50°C

Part No. BG 830100

## Leica DISTO™

### Bluetooth® data transfer - for perfect transfer of measured values!

With the Leica DISTO™ A6, measuring does not stop with the display of the measured value: the data can be processed immediately with a pocket PC or a laptop. The DISTO™ transfer software is included in the scope of delivery.



Part No. FIX DISTO-P

- Measuring range 0.05 to 200m, typical accuracy  $\pm 1.5$  mm
- Power Range Technology™
- Integrated telescope viewfinder with 2x magnification
- Integrated BLUETOOTH® technology
- Navigation keys
- IP54
- Precise, fast and reliable measurements
- Enables measurement of large distances
- Wireless and error-free data transfer to pocket PCs or laptops
- Protected against splash, water and dust



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The technical details are subject to change without notification. We would appreciate being informed of any errors in this manual.

Distributor