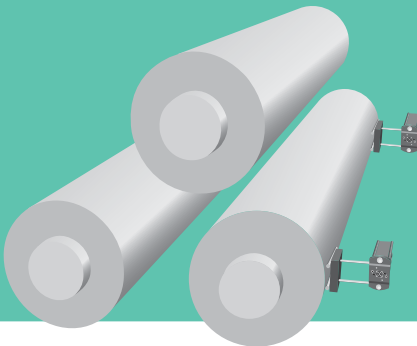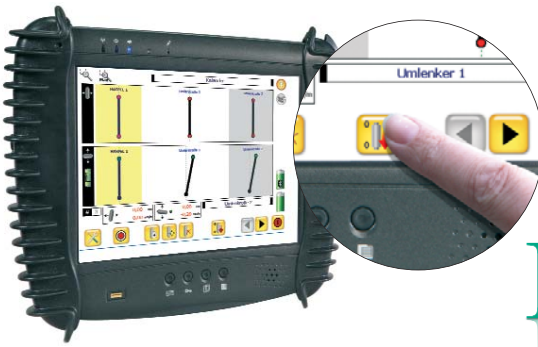# Pro*Roll* v2

Parallel Roll Alignment Software

ProRoll v2

You have made a good choice …

Pro*Roll* v2, in combination with the display unit, is the optimum solution for the alignment of parallel rolls.

The following functions and characteristics will convince you:
- Excellent user interface.
- Wireless sensor interface. No Cables.
- Automatic sensor detection.
- A new Reference Roll or line can be chosen during the measurement.
- Easy-to-use touchscreen, no keyboard needed.
- Reports and measured data can be stored on USB stick.
- Hundreds of rolls can be managed at the same time. Zoom in and out for clarity.
- High-performance display unit is robust and yet lightweight.

Contents

Measurement setup

Roll parallelism is one of the greatest disciplines within industrial surveying techniques. We combine 2 different sensor types and the rotating laser to optimize this procedure.

The basic idea is that we use the rotating beam to buck-in to the machine line. We use the IR Laser control in conjunction with the R310 receivers to make this quick. Then we use the standing beam which is always at right angles to the Rotating plane to pick up each roll position.

Choosing a reference.
1. Use an external reference line
2. Use one of the rolls
3. Make a new reference

## Setup:

Option 1

Pro*Roll* v2
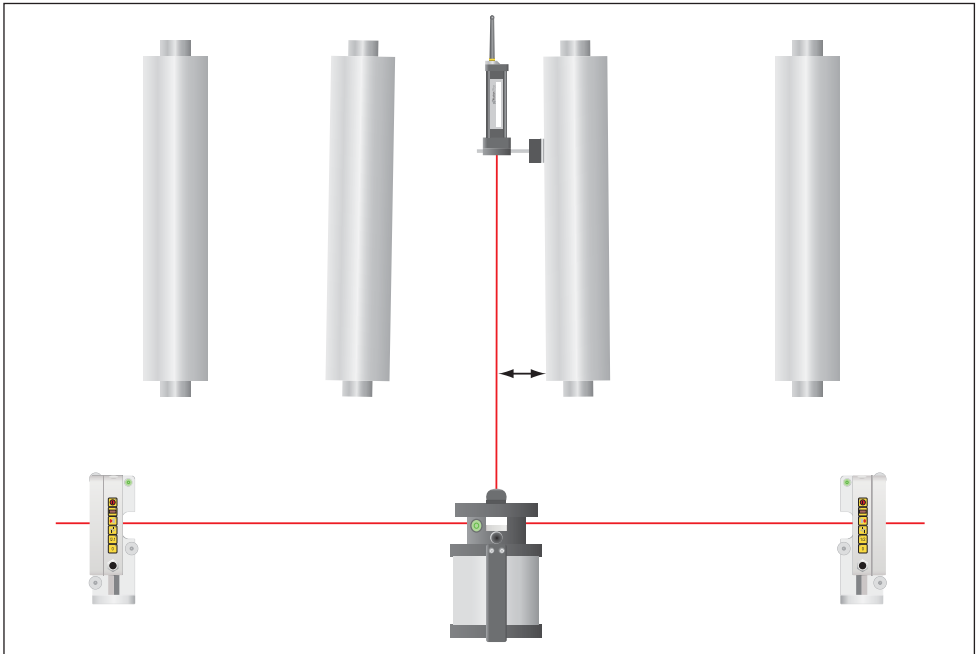
Using an external reference line:

Pick up the line with the centering pin of the R310 floor adapter BG 830119. Use the sensor further away from the laser to buck-in the beam. Use the offset screw on the laser mount to buck-in the near side. That's it.

With a little practice you can buck-in in 2 minutes.
Now turn off the rotating beam and use the standing beam to measure two points on the Roll. Repeat this procedure on each roll.

Option 2
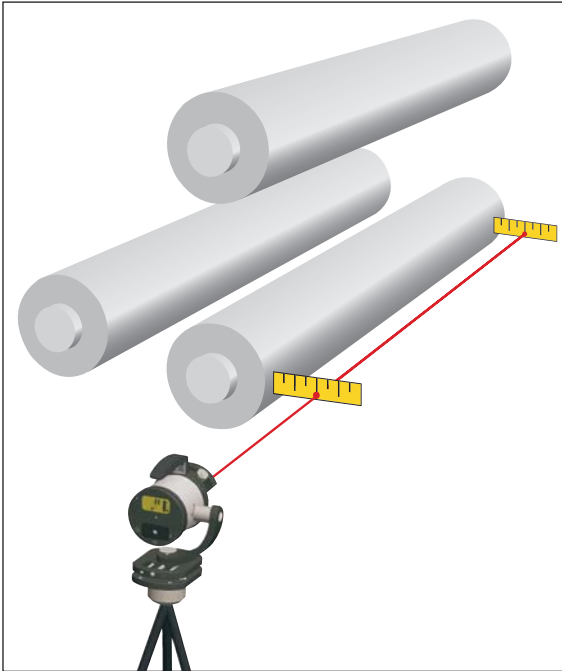
Using a roll as reference:

Buck-in the standing beam of the T310 laser with the remote control so that you measure nearly 0.0 at both ends.

Start rotation and place the R310 receivers left and right of the T310. Zero the R310.
They are now your reference.

Option 3
You can redefine the reference with the ProRoll software anytime and as often as you wish. Thus, you can chose your reference freely.
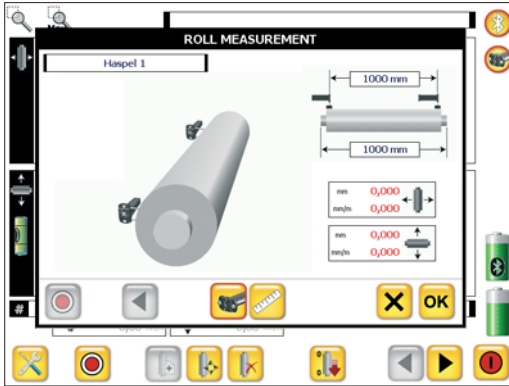
The software – first steps

Start the ProRoll v2 software via the desktop icon 🌀. The software automatically establishes a connection to the sensor.
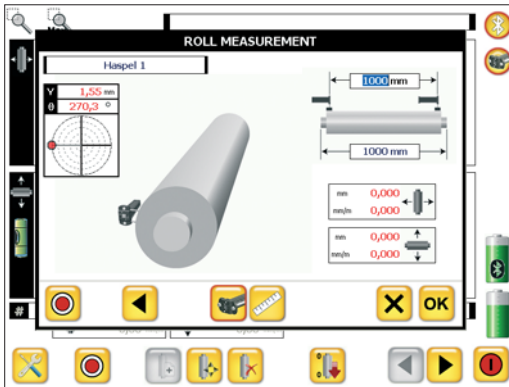
You will notice that in the upper right area, the Bluetooth symbol and the symbols for the receiver indicate an active connection.
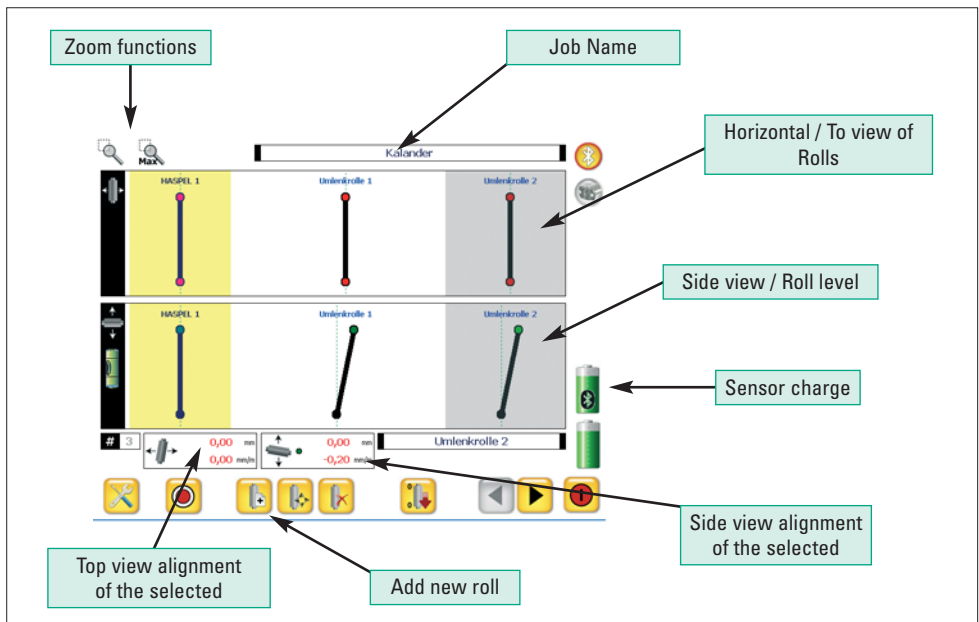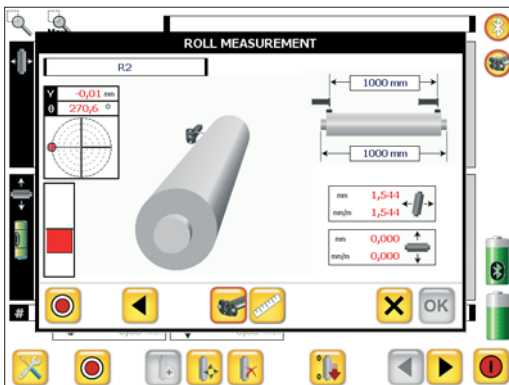

To measure press 🔴.

This is the measurement screen. Enter the roll length and the measurement length (if they differ). Touch the sensor symbol where you want to measure first.

Postion your sensor.
The sensor has a inclinometer in it so it "knows" the angle.
The current angle and measurement value is displayed top left.
Press "Measure".

The sensor symbol will jump to the other end of the roll. Position your sensor there.
The red bar meter will ensure that you are at the same angle as the first measurement.
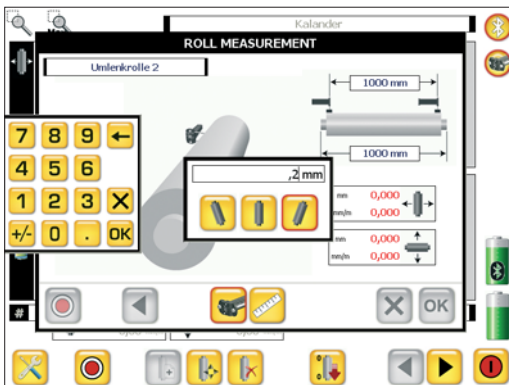When you are positioned correctly press "Measure".
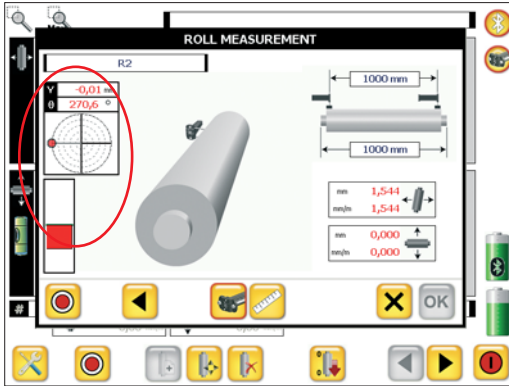
Tip: This bar graph tip means that you do not have to measure at exactly 3 or 9 o clock.
Sometimes that is not possible. You can go as far as 45 degrees away from the ideal position.
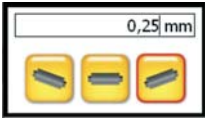This can be a big help.
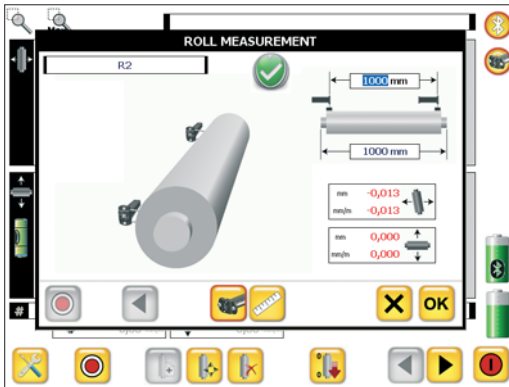
When you are finished, the roll will get a green OK symbol . The results are then visible in red.

Measuring the vertical plane
This can be done either with a water level or with the T310 in a standing position.
The result is entered as read in mm/m or mils/inch. Just touch the field to open the dialog box.

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This field is used to avoid confusion regarding + and -. Normally we use the convention that ⬜ means the ND side is too low and ⬜ means the ND side is too high.

Manual input

During first installation or major overhaul we often require a quick and rough alignment. It is often helpful to do this with the laser beam and a tape measure. If we can mount from a crain with an accuracy of +/- 0.04 inch in this way we will save a lot of time doing the fine adjustment with the sensor later.
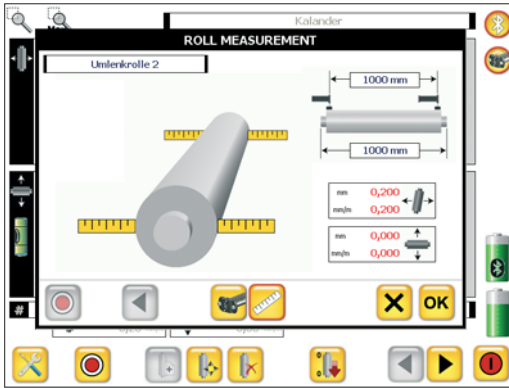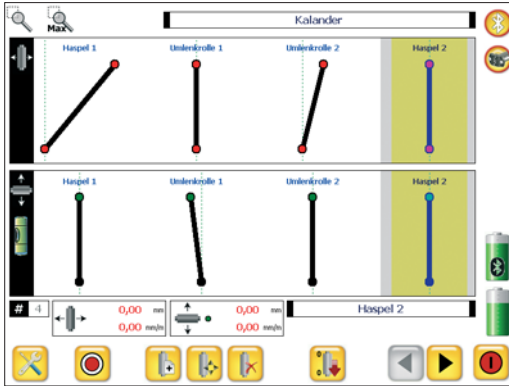
Choose the ruler button ⬜ rather than the sensor button.
Then just as before, select your measuring point just by touching the appropriate ruler.
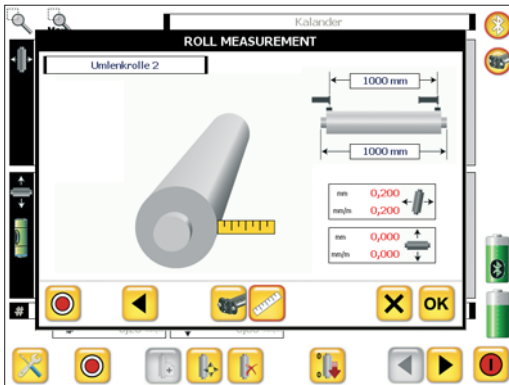
Just as before, you will be prompted to the next postion. Touch the remaining ruler and enter the measurement.

After you have measured a few rolls, you will notice that each one can be seen in the overview screen.
This is very helpful. Here we can zoom in and out , slide back and forward and choose a new reference .
Select a Roll by touching it; then select a reference. You will notice that this roll is zeroed and all other rolls shift accoringly.

Go to the next page with to see a table of information on each roll. You can export this to Excel using the button.

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Tips and tricks

The above method is not mysterious. Having an understanding of the basics, we can now combine this technique with a few traditional tips and tricks which can be very useful in real world applications.

Part No. BT 989050   Part No. BT 943510   Part No. BT 943501

Setting floor reference points
Buck-in your laser in to the reference roll. Place the R310 in the rotating beam and shift until it reads 0.0, mark the point with the Floor adapter pin. Use the BG 989050 to bore the hole. Place the floor point with the rawl plug.
Now shift the R310 again over the floor point to 0.0. Now mark the brass floor point with the Floor adapter pin. Perfect.
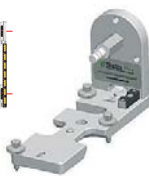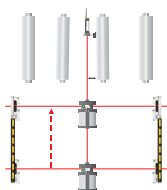
Part No. BG 830119

Shifting Center Lines
Often the center line is in the middle of the machine and therefore difficult to reach. It can be useful to shift it out several feet to a more convenient place. The floor adapter has a slot to hold a tape measure. Thus you can conveniently shift the line out at the extremities of the machine. Make sure the reference is long with respect to the roll length.

The Reference Line is really a plane.
If you use the Autolevel function on the T310, the rotating beam makes a plane out of the reference line. This is often useful for aligning roll stacks or guides along the product path.

value 0.00   value 0.00
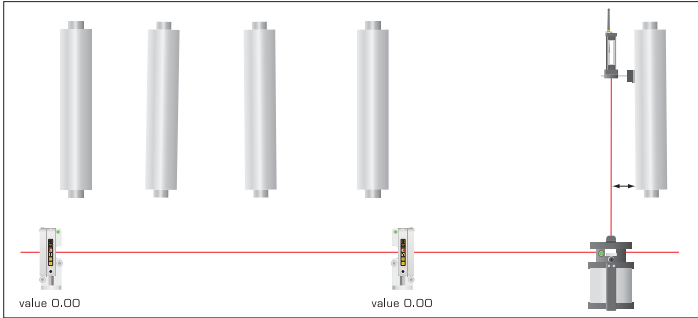
Laser position.
You do not have to put the laser between the two reference receivers. Remember, two points define a line. You can of course use this technique to extend your reference points in either direction. The resolution of the R310 at 0.001 inch is good enough to keep the errors under control.

Error Estimation:
Imagine our machine is 98 feet long and our rolls are 6.5 feet long. We place our reference points beyond the machine extremities 131 feet apart. An error of 0.3 feet at a reference point then is an angular error of 0.004 in/131 ft = 0.00009 in/ft. This causes a parallel error of 0.0002 inch on our Roll.
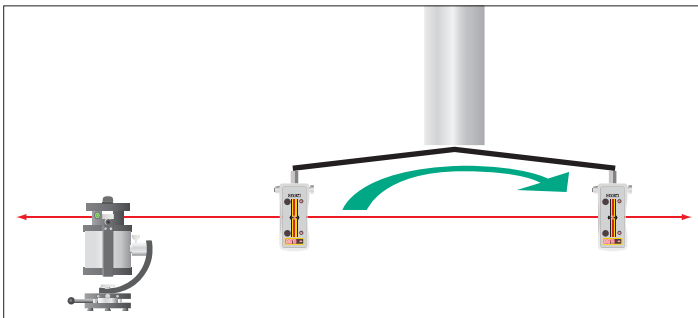
Using the reference plane of the T310 and a sensor arm, fix the R310 to an arm. Attach the arm to the roll stub. Now rotate the roll. This is a very easy way to measure the vertical and horizontal angular deviation with respect to the reference plane. This method is used often for hidden rolls or wheels.

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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 ProRoll 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

Open / close settings

Set pause for current measured value display

Save a comment to the measuring

Create new measuring data file

Open measuring date file

Save results of measurement

Previous / next page

Search for sensors

Delete measurement results

Raw data

Info

Export results for reports

Save measurement

Choose unit

Set selected roll as Reference

Delete roll

Set new roll

Position roll

Define averaging time of the display

Define averaging time of the measuring pick-up

Define tolerance range

Bluetooth active / inactive

Sensors active / inactive

No connection

Charge condition of receiver / DU310

Enter sensor connection code (required only once for new sensors)

End program

Pro*Roll* v2

DU310 UMPC

Part No. IT 200310

Operating system	Windows XP prof. (UMPC Edition), XP embedded or CE 5.0
Processor	AMD Geode LX800
Memory	512 MB - 1 GB RAM
Mass storage	512 MB - 8 GB Flash or 30 GB hard disk
Display	10.4" TFT, 1024x768, HiBrite
Touch Screen	Control with pen or finger
Interfaces	USB 2.0, CardBus PCMCIA Type II, CF-Card Slot, Bluetooth integrated, WLAN integrated, VGA
Security	Fingerprint reader, Intel WLAN Security
Rechargeable battery	Li-Ion 14 Wh internal, external extra battery 28 Wh replaceable or 74 Wh battery pack in carry bag
Housing	Magnesium/aluminum with rubber guard
Operating environment	Temperature 0–104 °F, relative humidity 0–90 % n.c.
Dimensions & weight	appr. 8.3x10.3x0.7 in, 2 lbs incl standard rechargeable battery
Special features	Front is splash & water proof, shock proof from as high as 4 feet (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	**Replacement control pen** Quantity of 3 / package
	IT 200205	**Rubber guard handle** for holding the UMPC with one hand; is fastened on back on rubber guard
	IT 200206	**Carrying strap for rubber guard handle** is fastened on back on rubber guard
	IT 200207	**External extra battery Li-Ion 28W** can be replaced during operation
	IT 200208	**1-compartment charging station for external battery**
	IT 200209	**Car DC-DC converter 12V / 24V** for connecting to docking station / car mounts or directly to the unit
	IT 200211	**External expansion battery pack** Li-ion 73W, charge level display

Pro*Roll* v2

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!
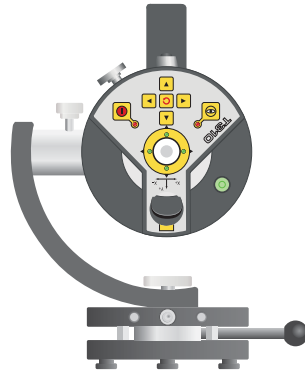
Control of the T310
The control keys control various functions. In addition, LEDs function as displays.

1. IR-receiver with folding mirror

2. Leveling status -LED for Y-axis (or Z-axis in case of laying arrangement) Green 1x: Leveling < 0.0016 in/ft; 2x: Leveling < 0.001 in/ft; Red LED: Actuator motor working

3. Leveling status LED for X-axis Green 1x: Leveling < 0.0016 in/ft; 2x: Leveling < 0.001 in/ft; 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 5(+) / 6(-) As well as 3(+) /4(-)

8. Self-leveling on/off

9. Leveling status LED on/off

10. Level for rough leveling of the appliance

![Status Pro logo]

The sensors

R525

R525 is a battery-operated, wireless high-precision laser receiver for perfect straightness measurements of the chain guideways. This makes it possible to measure and document a 33-feet guideway in sections in five minutes.

20x20mm PSD,
without optics

Part No. SP-R525-P

Measuring range	20x20mm
Resolution	1µm in X & Y
Accuracy	+/- 2µm
Inclinometer	Resolution 0,1°
Laser sensitivity	650nm / modulated
Wireless	Bluetooth class 1a (range: 30m (98 ft))
Interface	Rs232 / Bluetooth
Power supply	12V rechargeable battery
Operation with battery	8 hours
Charging time	2 hours – 90%
Protection class	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 262.5 feet.

Measuring range	80mm (3.15 in)
Resolution	0.01mm
Accuracy	+/- 0.02 + 0.3% linearity
IR control	Range: 50m (164 ft)
Interface	Rs232 / Bluetooth (optional)
Power supply	(rechargeable) battery 6x AA
Temperature range	0-50°C (0-122°F)

Part No. BG 830100

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