

# Self-leveling Rotary Laser

# Operating Manual



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Page 1

1) What is included



**Page 2**

**It includes the following parts:**

- A) Main Instrument
- B) Laser line detector and Bracket
- C) Remote Control for Instrument
- D) Charger
- E) Target
- F) Glasses
- G) Hard Case with Foam Insert
- H) A replaceable battery pack

**Please contact your supplier if any of the above parts are missing.**

2) Find your way around the rotary laser level



Control panel



3) Getting set up.

Charging the Battery

The instrument normally comes with some charge in the battery, however it is recommended before initial use the battery is fully charged.



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Insert the charger into the mains and the charging socket into the instrument or the battery pack.

Turn on the power. The charger will show one of 3 modes.

Red Light                    -Battery not charging

Red flashing light        -Battery on Charge

Green Light                -Battery charged

If the red light shows check the connection.

If the light is flashing please wait for charging to complete.

Once the green light shows the instrument is fully charged,charging normally takes 7 hours to give 20 hours of use.

### Setting up the instrument in horizontal mode.

The instrument should be set on a solid base, ideally a tripod which is stable. The instrument should be attached to the tripod using the screw that inserts into the underside of the instrument.

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The instrument will only self level if it is set up within 5 degrees of horizontal. If the Instrument appears level by eye then it should be within this range. Using the horizon as a datum will help with this assessment. If the instrument looks tilted then adjust the tripod to suit.



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**4) Horizontal Leveling**

- a) Set up the instrument as shown on the previous page.
- b) Press the (red) button on the bottom left hand side of the panel.
- c) The instrument will Auto level and start spinning giving a Horizontal beam.

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**5) Sloping Leveling**

- a) Set up the instrument to work horizontally as shown in stages (a to c) on the previous page.
- b) Press the “CAL” button to get the “X” value flashing on the screen.
- c) Use the “+” and “-” buttons to get the required gradient in the X direction (the X direction is parallel to the screen/digital panel)
- d) Press the “X/Y” button to get the “Y” figure flashing.
- e) Use the “+” and “-” buttons to get the required gradient in the Y direction (the Y direction is at right angles to the screen/digital panel).
- f) Press the “X/Y” button again so that neither the X or Y letters are flashing.
- g) After a few seconds the instrument should start counting up to the preset values. Once the values are reached the instrument can be used.

6) Vertical Lines



- a) Once the instrument is in the position shown above press the green button on the bottom left hand side of the panel.
- b) The instrument will Auto level and start spinning giving a Vertical beam.

7) Other Functions

A) Scan Mode

- a) The Scan Mode is to be used when you want the beam focused on a smaller range.
- b) Press the [Scan Button] for a single point.
- c) Press the same button to get angles of approximately 10°- 45°- 90°- 180°.
- d) To change the direction of the point/scan you can press the “+” or “-” button to move the direction the beam is pointing.

B) Speed Control

- a) To change the speed of the rotating beam press the [Hair/Tortoise Button].
- b) Speeds of 60rpm ,120rpm ,300rpm, 600rpm can be obtained.

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### C) Plumb up and down beams

- a) The Instrument has both a plumb up beam and a plumb down beam.
- b) These will be Vertical when the instrument is set up as per Page 4.
- c) The spots cannot be picked up by a detector and must be visually located.

### D) Automatic drifts System/Tilt

- a) Warns the user for a misaligned device.
- b) When the instrument is in this mode, there will be a signal on the LCD display to alert user that the position of the instrument has changed.

## 8) The Detector

The Detector will pick up a spinning beam when it crosses the electronic sensor window.

The detector has 3 buttons:

- a) On/Off button.
- b) A Sound button.
- c) A sensitivity button. This will either give a narrow or a broader range of detection.



When the detector is too high a slower beep will be emitted, when too low, a fast beep will be emitted, when same level as beam a continuous pitch will sound- at this point the centre of the detector is at the same alignment as the beam.

To get accurate results use the spirit bubble to keep the detector level.

The detector is powered by a standard 9v battery.

**9) Trouble shooting**

The majority of problems that occur arise from the power source.

- 1) Check the batteries are installed correctly with the “+”and“-”in the correct orientation.
  
- 2) Check the power rating of the batteries are correct particularly if you are using rechargeable batteries.
  
- 3) Please use the charger supplied with the instrument. While similar charges may fit the instrument socket they may not be charging the batteries if the rating is not correct.

10) Specifications

Leveling Accuracy	Horizontal:±20" Vertical:±20"
Slope Range	±10%
Measuring Range	Diameter:750m(Using the laser detector)
Spinning Speed	0、 100、 200、 400、 800 r.p.m
Directional-Scanning Angle	0°、 10 °、 45 °、 90 °、 180 °
Self-leveling Range	5°
Light Source	Laser Diode, wavelength: 635nm(green: 520nm)
Classification	Class 2 or Class 3R
Remote controlling Distance	Approximately 20m
Working Temperature	-10℃-- 45℃(14°F-- 113°F)
Power Supply	DC 4.8-6V(4 section of NI-MH batteries or 4 section of NI-MH rechargeable batteries)
Hours in continuous use	Approximately 20 hours
Water-proof	IP 54
Dimension	160(L)×160(W)×185(H)mm
Weight	5kg

**Warnings and Precautions**

- While the instrument is in operation be careful to avoid exposing your eyes to the laser beam for long periods. A long exposure may be hazardous to your eyesight-the laser beam is equivalent to a Class 2 laser.
- Try to set the instrument at a height that is above eye level. This will help avoid accidental exposure to the beam by both the user and passers by.
- When the instrument is not in use remove the batteries to avoid internal damage.
- Do not try to repair the instrument yourself. Have it repaired by an Authorized professional.
- When setting up the instrument on a tripod please ensure that the Tripod is placed firmly on/into the ground, that the tripod legs are securely fastened and that the instrument is securely screwed to the top of the tripod.

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- The instrument should not be used or stored in temperatures about 50 degrees Celsius or below -20 degrees Celsius.
- Store the instrument inside its carrying case and away from moisture, dust and vibration. (Do not store in the back of your vehicle)
- Avoid sudden changes in temperature. Allow the instrument to acclimatize before use.
- Transport the instrument in its carrying case and always handle with care.
- Please follow the instructions given in this manual.