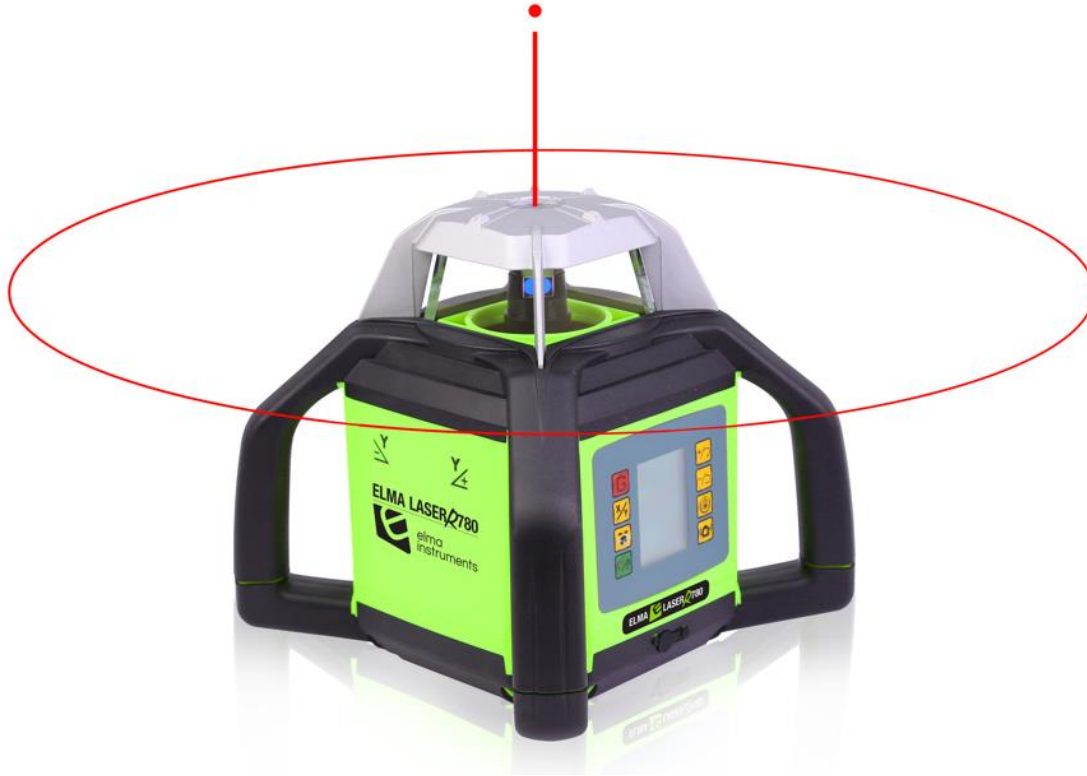


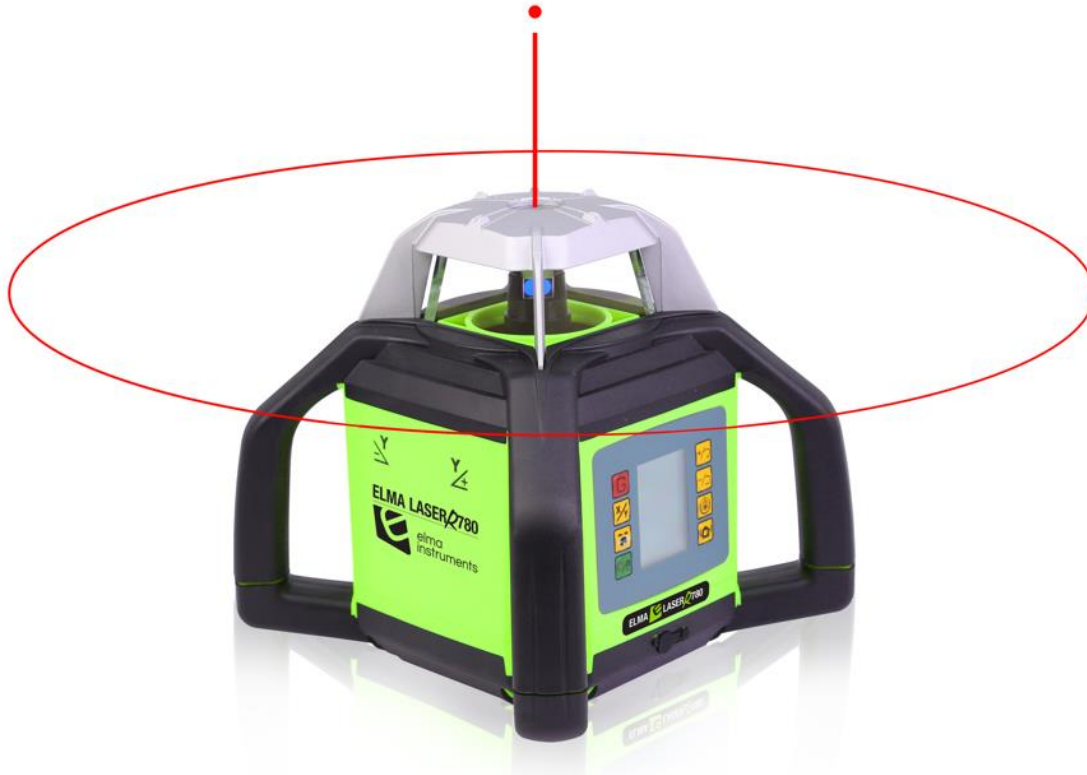
Digital Dual Grade Laser R780



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1) What is included with your R780



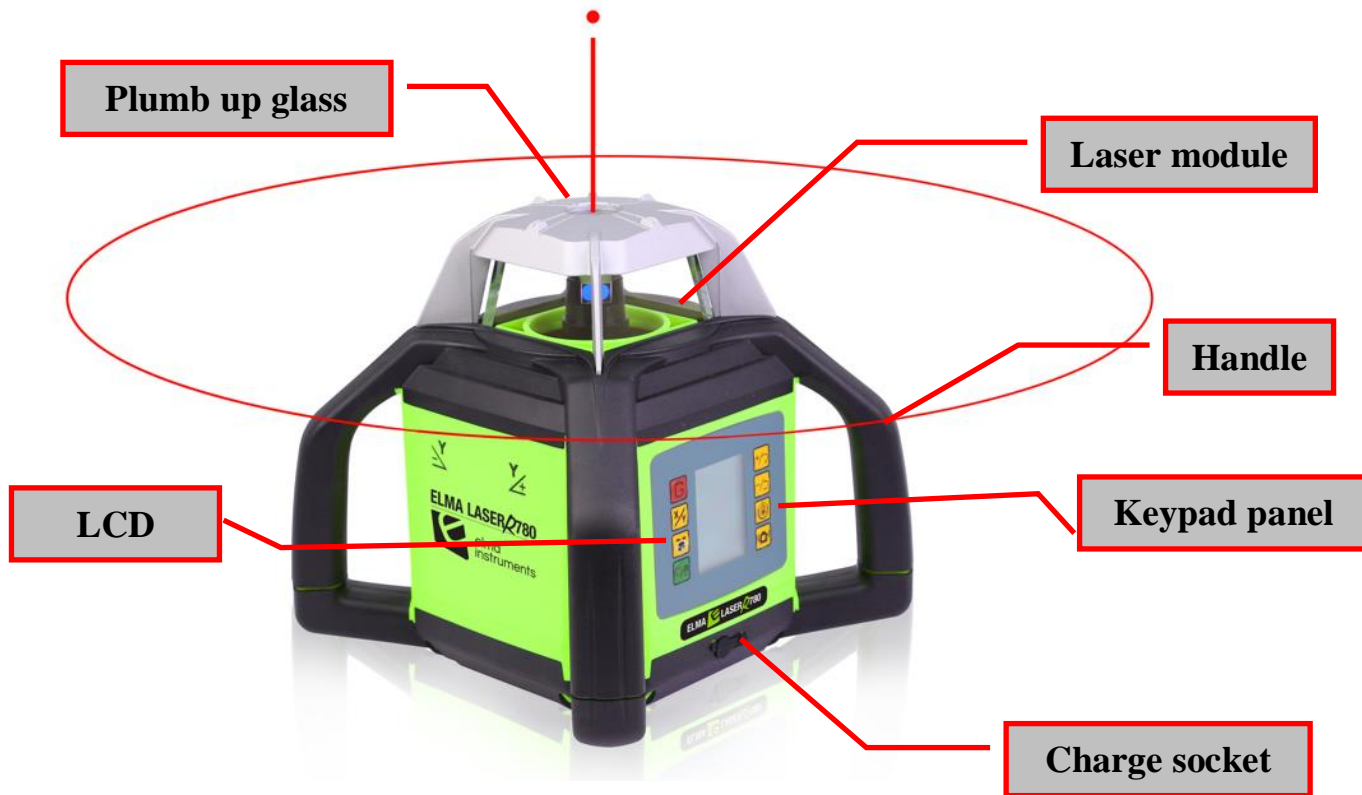
Page 2

Your R780 includes the following parts:-

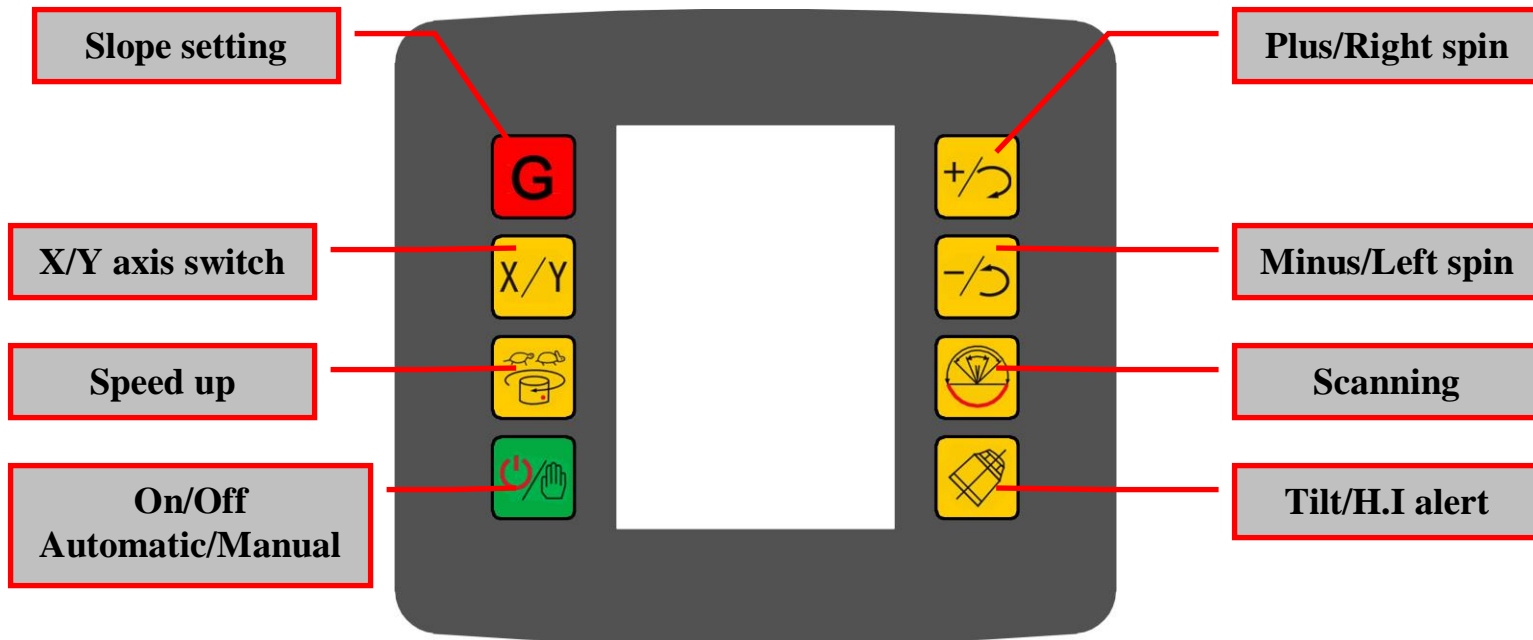
- A) Main Instrument
- B) Laser detector and Bracket
- C) Remote Control
- D) Charger & Replaceable alkaline battery pack
- E) Magnetic Target
- F) Glasses
- G) Hard Case with Foam Insert

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

2) Find your way around the R780



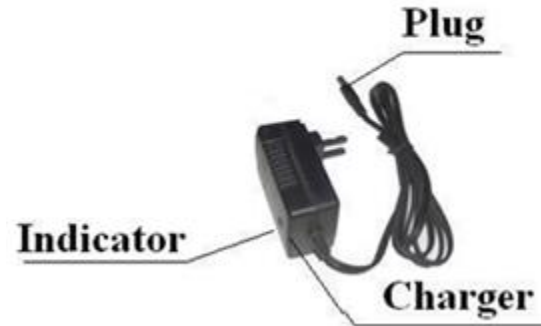
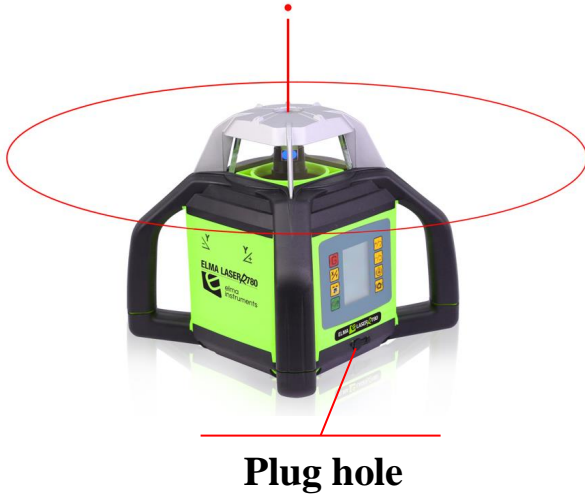
Control panel



3) Getting set up.

Charging the Battery

It is strongly recommended to fully charge the battery before initially using this instrument.



Page 6

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.

Low Power	- Battery not charging
Recharging	- Battery on Charge
Full Power	- Battery fully charged

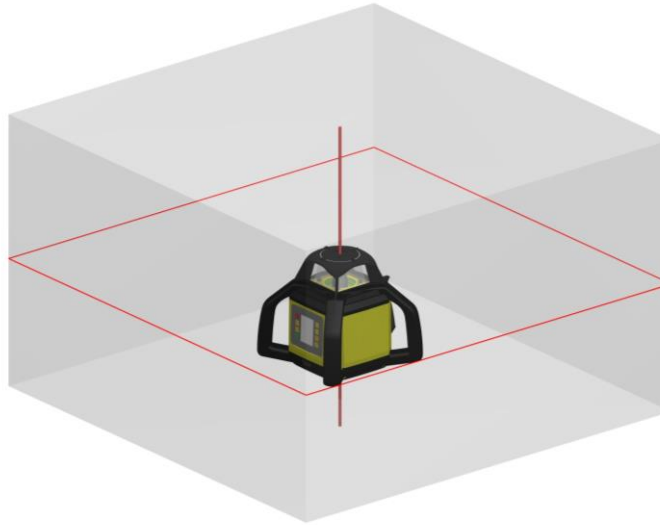
Once the Full power shows the instrument is fully charged- charging normally takes 7 hours to give 15 hours of use.

Setting up the instrument in horizontal mode.

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

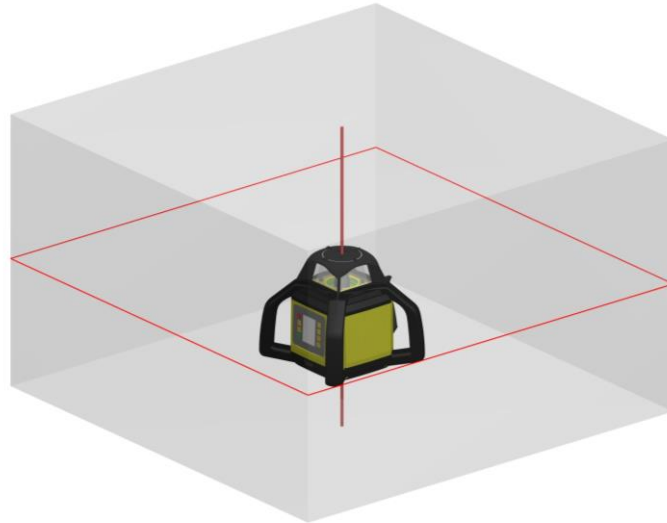
Page 7

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.



4) Horizontal Leveling

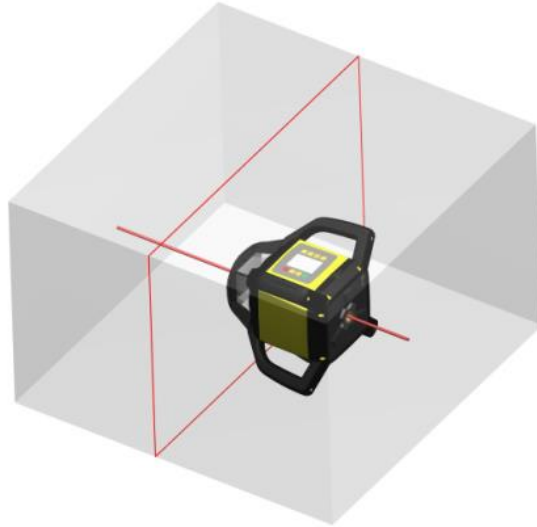
- a) Set up the instrument as shown on the previous page.
- b) Press the button on the bottom left hand side of the panel (auto/manual).
- c) The instrument will Auto level and start spinning giving a Horizontal beam.



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 top left button (slope) to get the “X” value flashing on the screen.
- c) Use the left spin and right spin 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 left spin and right spin 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 bottom left hand button on 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° and 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 120rpm, 300rpm and 600rpm can be obtained.

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) R 117 MM 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 with 3 settings – off – low – high
- 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 4*AA alkaline batteries.



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

Accuracy	$\pm 20'' (\pm 3 \text{ mm @ } 30 \text{ m})$
Slope range	$\pm 10.00\%$ (Dual)
Automatic self-leveling range	$\pm 5^\circ$
Laser source	Visible Laser Diode 635nm
Classification	Class II
Operational range	500m dia. (with detector)
Rotational head speed	60, 120, 300, 600 R.P.M
Approximate scan angles	$10^\circ ; 45^\circ ; 90^\circ ; 180^\circ$
IR Remote control	Available remote distance: 20m
Operation temperature	$-10^\circ \text{C} \sim +50^\circ \text{C}$
Power supply	DC 4.8-6V (4 sections NI-MH battery) Battery pack replaceable (Ni-MH battery pack or Alkaline battery pack, selectable)
Continuous working time	15 hours
Waterproof and dustproof	IP56
Dimensions	206 (L) X 206 (W) X 211 (H) mm
Weight	3.0kg (w/batteries)

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
- 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.

- 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.