



IMEX ROTATING LASERS OPERATING MANUAL



77R 88R and 88G



OPERATING MANUAL ROTATING LASER

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Introduction

Congratulations on your purchase of a quality Imex rotating laser.

These lasers have been designed for the professional and incorporate the latest laser technology with a robust and simple construction for years of trouble-free use.

These instruments are suitable for all interior and exterior general construction leveling applications and feature quick set-up, excellent accuracy and ease of use.

The following operating manual has been designed to assist you in getting the optimum performance from your instrument. Please read carefully before using the instrument, and observe all safety conditions.





OPERATING MANUAL ROTATING LASER

77R 88R and 88G

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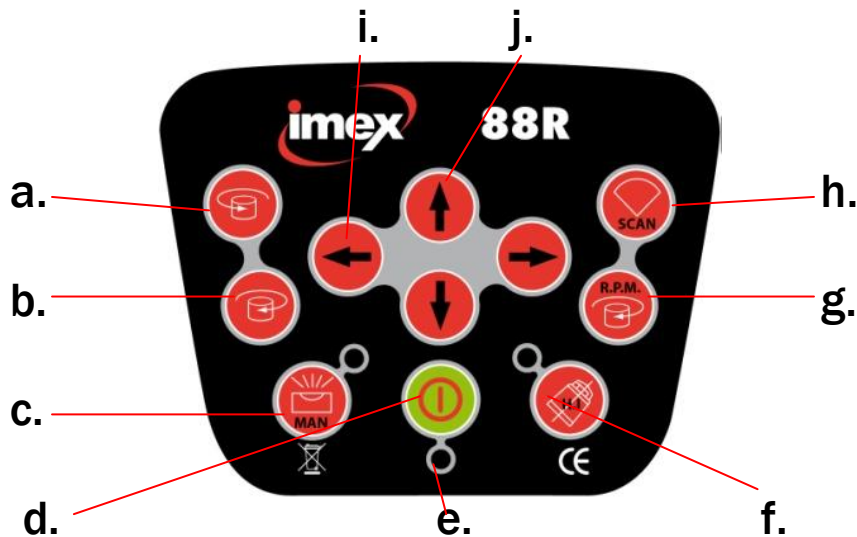
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1. About the Instrument - Functions

1.1 Instrument Overview



1.2 Control Panel



- | | |
|-----------------------------------|---|
| a) Left scan mode direction | f) Out of level warning light |
| b) Right scan mode direction | g) Rotation speed control |
| c) Manual/Automatic level setting | h) Scan mode |
| d) On/Off switch | i) x-axis(88R and 88G only) grade slope |
| e) On/Off light | j) y-axis grade slope |

1.3 Function

The instrument is equipped with a semi-conductor diode with wavelength of 635nm on the red beam models and 532 on the green beam model. The laser beam is clearly visible, and the laser module rotates freely to form a laser scanning surface.

In the upright position, ideally placed on a standard aluminium tripod the laser beam emits a horizontal line which can be detected by the instruments receiver.

On the 88 models, if the unit is placed in a horizontal position, the laser emits a vertical beam.

A plumb spot at 90° to the main beam is emitted from the base and the top of the instrument.



Horizontal operation



Vertical Operation

A remote control is provided which works on an infra-red system up to 20m-30m from the instrument. The control panel has the same functions as the control panel on the instrument itself.

2. Basic Operation

2.1 Standard Set-up Leveling (see dia over page)

Place unit on tripod and roughly set up so that the instrument is within 5% of level.

Switch the unit on (d).

The unit will then level itself and the diode will emit a beam and commence spinning. The instrument will commence spinning at its maximum speed of 600rpm.

If the unit is bumped or moved the laser will stop and the out of level warning light (f) will flash. After the instrument has re-leveled itself the laser will recommence spinning.

Warning – If the unit has been bumped or moved and the unit recommences spinning, the instrument may not automatically be at the original level. Re-check on a datum point.

2.2 Rotation Speed

If a slower speed is required, i.e. for better visibility; press the speed control button (g).

Speed will revert to 0rpm, press button again to get required speed.

2.3 Receiver Set-up

Using the bracket included, mount this onto a staff or grade rod.

Turn the receiver on and raise or lower the receiver on staff until it makes a continuous beeping sound. This is the point level of with the instrument.

2. Basic Operation cont:

The receiver has two settings; a course and a fine setting. The band width and the audio volume can be adjusted using the receiver's buttons.



Standard Leveling Set-up

When set up the instrument will create a laser beam across the entire work site to a radius of 250m and the receiver will give a signal in all points within the instruments range

3. Manual Grade Operation

The instruments have an incorporated grade slope function to 5°. For the 88R and 88G this is a dual direction in X and Y axis.

This allows for the following tasks to be performed; Sloped concrete slabs, drainage slope, ceiling and grid slopes, fencing slopes.

For additional slope i.e. 10-15° the instrument can be set on a domed tripod and used with the manual button on.

3.1 Manual Mode

For best results use the remote control. Set up the instrument in the direction of slope required.

Turn on manual mode using button (c).

To adjust slope up or down on the X axis use the (i) buttons.

To adjust slope up or down on the Y axis use the (j) buttons.

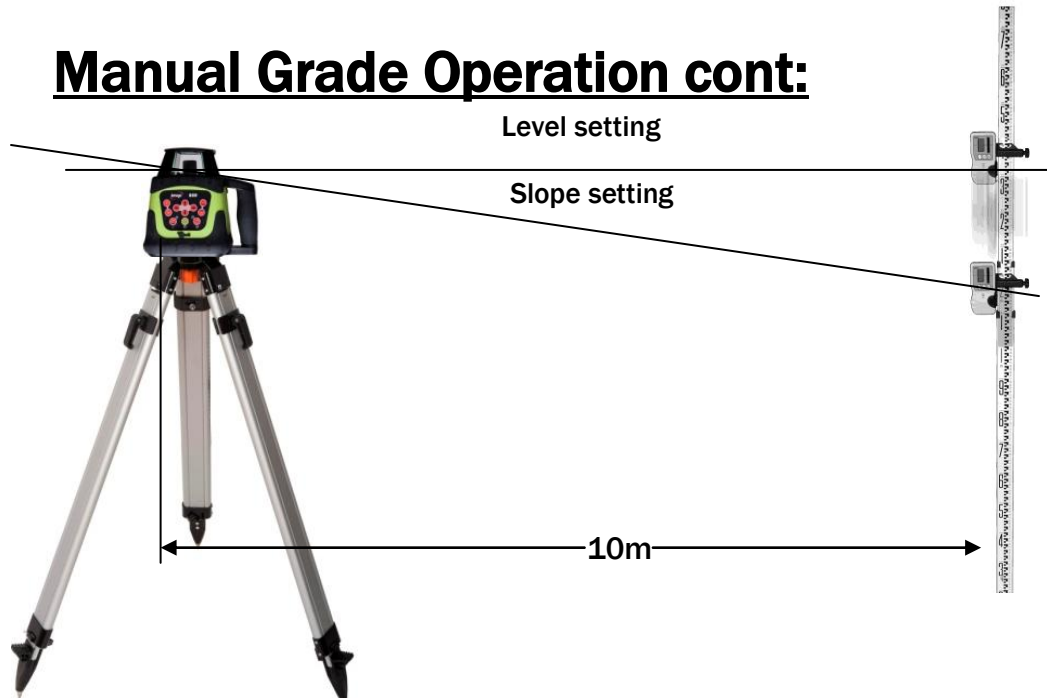
3.2 Setting a Slope

To set a slope as a percentage use the table included for assistance.

To set a 1% fall;

- Position instrument at the start of your run.
- Turn on manual mode.
- Measure out 10m from the unit and get level right.
- When level is right move receiver 100mm down you staff.
- Now use your slope button (i or j) on your remote to bring beam down the middle of your receiver.

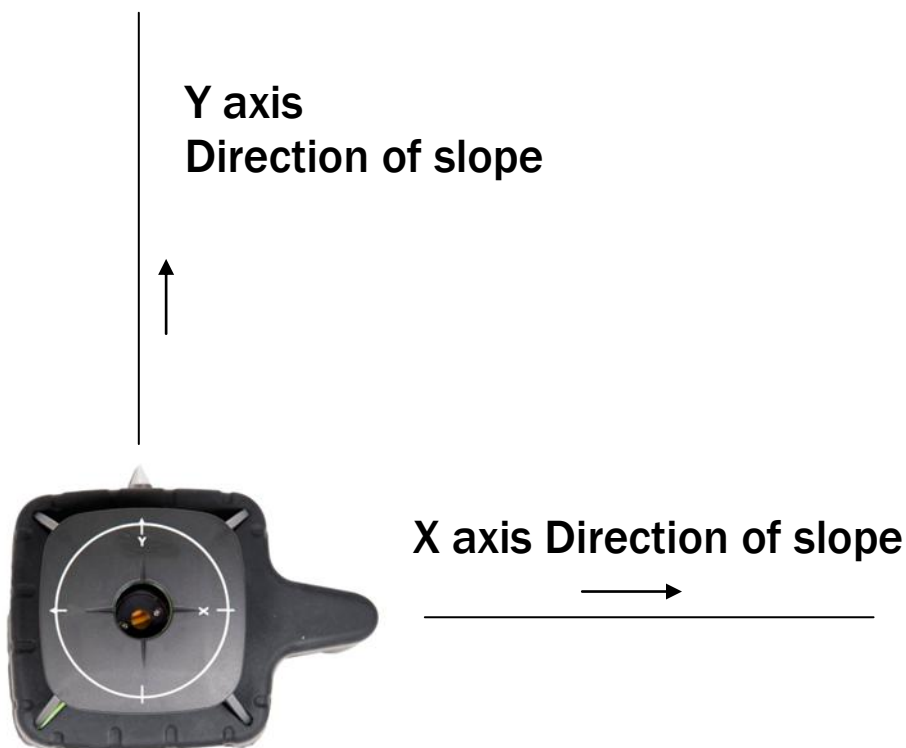
Manual Grade Operation cont:



3.3 Dual Grade Sloping – (88R & 88G only)

Used for areas where a fall is made simultaneously to a point 90° to the other axis.

Ideally, site instrument to one corner of the worksite. Set Y axis as shown. At 90° to the Y axis set the X axis in the same manner. The grade is now set for both runs.



4. Scan Mode Operation (88R & 88G only)

The scan mode function allows the laser beam to emit only in a restricted radius.

This function is useful for;

- Internal layout work where work is being carried out in single runs or sections i.e. wall or ceilings
- On restricted sites internal or external where other laser or electrical equipment may be in use
- On busy sites where eye safety with other workers may be an OH & S issue
- On single long external runs i.e. pipe laying where full 360° is not required
- Especially useful in vertical mode 180° operation

4.1 Operating the Scan

With the unit on, press the scan button (h). Set the width required 0°, 10°, 45°, 90° or 180° by pressing the button once for every scan width increment.

To change the direction or position of the scan use the left spinning and right spinning buttons (a and b). Press either of these buttons until the desired position is reached.



5. Vertical Function – 88R & 88G only

The vertical function allows for the instrument to be laid horizontally and a vertical line is emitted.

This function is used for;

- Alignment of formwork or pipeline runs in external situations
- Alignment of internal wall, floor and ceiling layout
- In conjunction with the plumb spot beam, which is always 90° to the rotating beam, a set-up reference point can be determined.

Alignment of internal wall, floor and ceiling layout

5.1 Using the Vertical Mode

Lay the instrument on a floor or board. Make sure the instrument is approximately level $\pm 5^\circ$ and turn on.

Instrument will level as in standard position.

All functions which can be carried out in standard position can be performed in the vertical position i.e. scanning, grade slope, vary speed etc.

5.2 External use with Receiver

The vertical beam can be picked up with the use of the receiver in vertical position or 90° to normal position to check formwork or pipeline alignment set up instrument at the end of the run in a horizontal plane.

Determine datum point at end of run with the receiver.
Instrument is now set to give a straight laser beam over the full length of the run.



Outdoor vertical function

6. Batteries

The instrument is powered by 4 DC4.8-6V Nimh rechargeable batteries that allow for approximately 20 hours continuous use in standard conditions (20°-25°). Alternatively you can use the alkaline battery pack supplied.

6.1 Battery Situation

The battery case is located on the base of the instrument. If changing batteries; undo the cover by unscrewing centre nut, replace batteries checking polarity.

6.2 Recharging Batteries

A low battery warning light is emitted from the On/Off light (e) approximately four hours before recharge.

DO NOT OVER CHARGE BATTERIES!

DO NOT CHARGE ALKALINE BATTERIES!

Plug the charger provided into the recharging point on the instrument, located immediately below the control panel.

The charger plugs into a standard 240V outlet.

6.3 Battery Charging Time

Standard full Charge time is approximately 7 hours.

However the instrument can be charged and used simultaneously. In some instances a car charger accessory kit is an advantage.

7. Checking Accuracy

Your Imex instrument has been pre-set and calibrated for accuracy before dispatch and should perform within the stated accuracy tolerance in standard conditions. However if the instrument is knocked, poorly transported or mistreated in any way the accuracy may be compromised and unit may need re-calibration.

On commencement of a task it is advisable to carry out a simple control check.

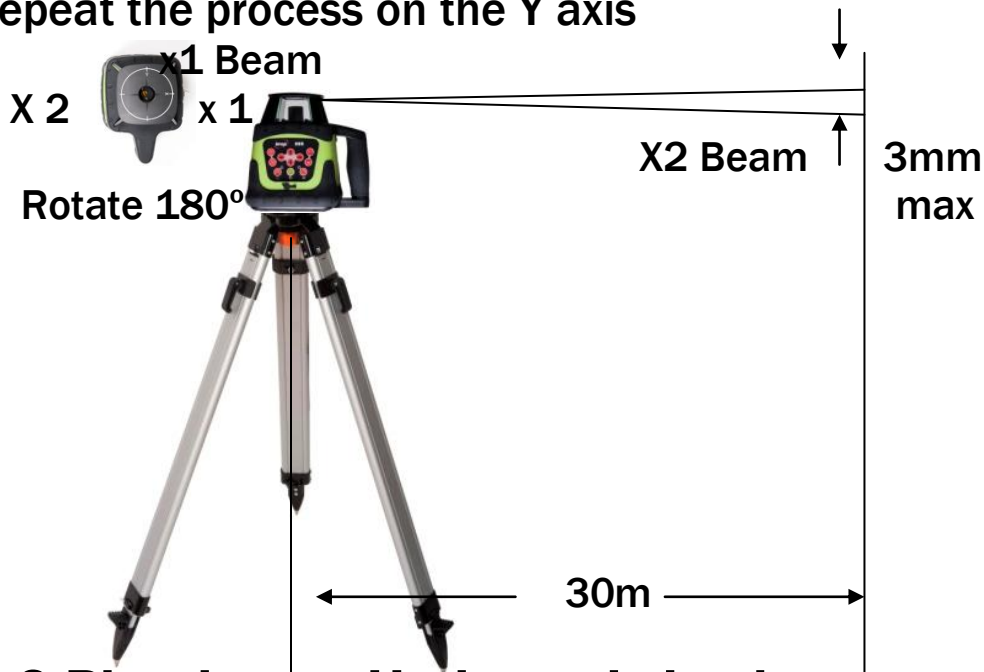
7.1 Level Checking – Horizontal

Place instrument approximately 30m from a blank wall and with X1 axis square to the wall project a line onto the wall and mark line with a fine pencil or similar.

Turn the instrument 180° to X2 and repeat

The value or the difference between the two points should not exceed 3mm

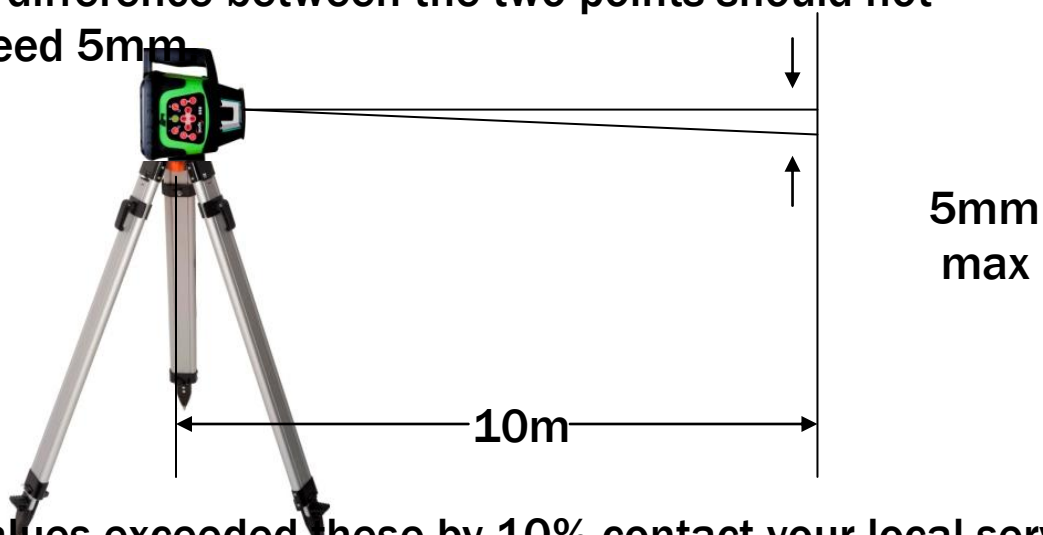
Repeat the process on the Y axis



7.2 Plumb spot Horizontal check

- Place instrument on horizontal axis on tripod or similar, 10m from a wall
- Mark the spot on the wall
- Turn unit 180° and repeat

The difference between the two points should not exceed 5mm



If values exceeded these by 10% contact your local service centre or 1800 669 110 to organise service and calibration.

8. Trouble Shooting

Problem	Possible Cause/Solution
Out of level alert – unit won't self level	<ul style="list-style-type: none">- Check that instrument is within 5° of level, before switching on- Check that manual level switch is not on- Check that unit hasn't been bumped or moved
Low battery light flashing. No power, unit won't operate	<ul style="list-style-type: none">- Re-charge batteries- If batteries are fully charged and still won't operate, open battery terminals and check terminals are clean and polarity correct- Batteries may need replacing if over charged too often
Out of level and battery light on. Instrument not working properly	<ul style="list-style-type: none">- Environment and direct sunlight may be too harsh and instrument can't operate without damaging the laser- Place unit in shaded area and below 50°C
Receiver not working or functioning properly	<ul style="list-style-type: none">- Check receiver batteries. Change if necessary- Check that receiver is within working range. 250m radius from unit- Check that windows of the laser are not obstructed and are clean and free of dust
Remote Control not working	<ul style="list-style-type: none">- Check remote control batteries- Check that remote is in working range of the unit (20m outdoors 30m Indoors)- Check that instrument is turned on

9. Warranty Service and Care

9.1 Warranty

The Imex rotating laser range is covered with a 5 year warranty as detailed on the warranty form. For registration please visit: www.imexlasers.com

9.2 Service and Calibration

It is recommended that in general use, laser equipment should be calibrated by a registered service centre every 12 months. For less frequent use 24 months is permissible.

9.3 Care of Instrument

For optimum results from your instrument care must be taken to prevent damage. Laser instruments contain sensitive optical assemblies and need to be treated carefully.

- **Storage** – Store in an area away from direct sunlight and under the storage temperature limit of 70 °C
- **Transport** – Lasers are affected by vibration and shock; never transport loose on the back of a vehicle.
- **Cleaning** – When working in a dusty environment always clean instrument before packing away.
- If working in wet environment, completely dry unit with dry cloth before packing away. To prevent damage to instrument. **Failure to do this will void warranty.**

10. Technical Specifications

Model	77R Red Beam	Horizontal/Vertical	NO
Self-Levelling Range	±5°	Water proof	IP64
Accuracy	1.5mm @ 30m	Power	DC 4.8-6v (Ni-MH) / 4 'C' cell alkaline
Working Distance	Dia 500m with included detector	Working time between charge	20 hours (Ni-MH) 60 hours (Alkaline)
Rotation Speeds	0, 60, 120, 300, 600 rpm	Low Battery Light	Yes, approx 1 hour warning
Scan Mode	NO	Battery Charger	240V
Grade Slope	±5° (Y axis only)	Working Temperature	-20°C - +50°C
Plumb Spot	YES -accuracy ± 1mm @ 2m	Detector	Double sided operation fine & course setting
Light Source	Red laser diode, 635nm	Unit Weight	2.2kgs
Remote Control	YES - Working range approx 20m	Set Inclusions	Laser unit, detector and bracket Remote, charger, Hard carry case

Model	88R & 88G	Horizontal/Vertical	YES
Self-Levelling Range	±5°	Water proof	IP64
Accuracy	1.5mm @ 30m	Power	DC 4.8-6v (Ni-MH) / 4 'C' cell alkaline
Working Distance	Dia 500m with included detector	Working time between charge	20 hours (Ni-MH) 60 hours (Alkaline)
Rotation Speeds	0, 60, 120, 300, 600 rpm	Low Battery Light	Yes, approx 1 hour warning
Scan Mode	YES 10°,45°,90°,180°	Battery Charger	240V
Grade Slope	±5° (Y and Y axis)	Working Temperature	-20°C - +50°C
Plumb Spot	YES -accuracy ± 1mm @ 2m	Detector	Double sided operation fine & course setting
Light Source	88R Red laser diode, 635nm, 88G Green laser diode 532nm	Unit Weight	2.2kgs
Remote Control	YES - Working range approx 20m	Set Inclusions	Laser unit, detector and bracket Remote, charger, Hard carry case

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