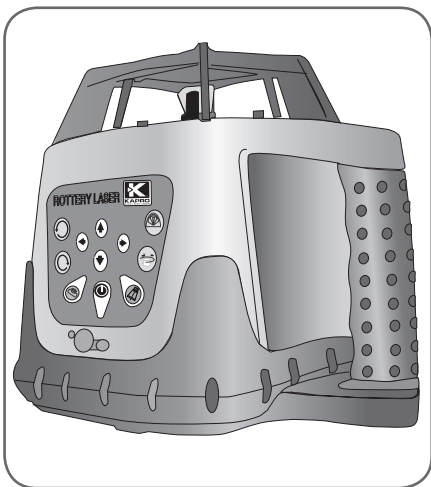




897 Prolaser® Self-Leveling Electronic Rotary Laser

User Manual



360°



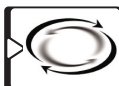


Thank you for purchasing the Prolaser® 897 Self-Leveling Rota-Line, Electronic Rotary Laser. You are now the owner of one of our innovative range of state of the art tools. These tools incorporate new laser technology, enabling the professional user and the serious D.I.Y enthusiast to achieve accurate results and reduce valuable work time.

Applications

The Prolaser® 897 Self-Leveling Rota-Line has been designed for use in most areas of construction, for example:

- Laying foundations
- Wall and fence construction
- Laying sloped water and sewerage lines
- Laying flooring
- Hanging acoustic ceilings
- Installing partitions and drywall



360°

Note

Keep this user manual in a safe place for future reference.

Contents

Features	4
Safety Instructions	5
Overview	6-7
Operating Instructions	8-16
Horizontal Plane (Automatic Mode)	
Vertical Plane (Automatic Mode)	
Inclined Plane (Manual Mode)	
Plumb Down	
Changing Rotating Speed	
Scan Function	
Laser Detector	
Using the Remote Control	
Power Supply	17
Care and Maintenance	19
Field Calibration Test	20-21
Specifications	22-23
Warranty	24



Features

- Self-leveling electronic mechanism on slopes of $\pm 4^\circ$
- 360° rotation generates a horizontal or vertical level plane
- Generates an inclined plane of any angle in both the X and Y planes (manual mode)
- Four variable speeds (0 - 600 rpm)
- Adjustable scan modes create visible laser lines
- Plumb Down/Plumb Up lines
- Standard tripod thread (5/8") for vertical or horizontal use, and for attachment to angle bracket (not included)
- Work-site tough rubber bumpers and ergonomic handle
- Remote Control and Laser Detector included
- Supplied with on-board internal batteries and Battery Charger-AC/DC Converter
- Shockproof protective carry case included
- Laser beam enhancement Beamfinder® glasses included

Safety Instructions

WARNING

The Prolaser® 897 Self-Leveling Rota-Line is a Class II Laser.

It is manufactured to comply with IEC international rules of safety. Do not deface or remove warning labels from the laser level.

Read this user guide thoroughly before using your Prolaser® Rota-Line. Always operate the Rotary Laser according to the procedures and warnings in this manual.



Laser Radiation: Serious eye injury could be caused by looking directly into the beam or by projecting the beam into the eyes of others.

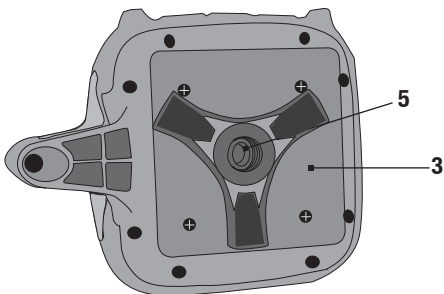
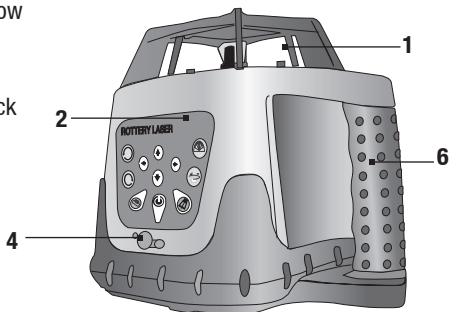
- The use of protective eyewear is recommended.
- Do not look into a laser beam using magnifying optical equipment, such as binoculars or telescope, as this will increase the level of eye injury.
- Always position the laser beam so that it does not cause anyone to directly stare into it.
- Do not operate the laser level near children or let children operate the laser level.



Overview

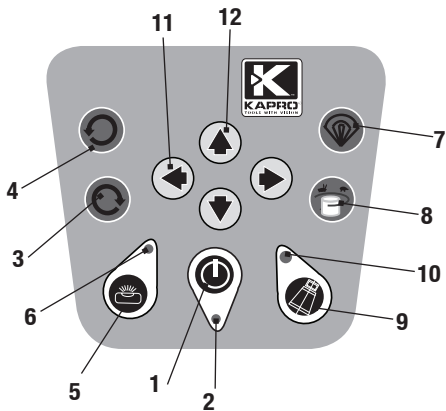
Laser Level

1. Laser output window
2. Keypad
3. Battery cover
4. Battery charger jack
5. 5/8" tripod thread
6. Handle



Keypad

- | | |
|----------------------------------|--------------------------|
| 1. Power Key | 7. Scan Mode/Scan Width |
| 2. Power Indicator | 8. Speed Key |
| 3. Clockwise Rotation Key | 9. Auto-Drift Key |
| 4. Counterclockwise Rotation Key | 10. Auto-Drift Indicator |
| 5. Auto/Manual Key | 11. X-Axis arrows |
| 6. Manual Indicator | 12. Y-Axis arrows |





Operating Instructions

To get the most out of your Prolaser® 897 Self-Leveling Rota-Line, please adhere carefully to the following instructions.

Note

Avoid setting up the laser near heavy machinery or sources of vibration that may adversely affect the leveling of the Laser.

Horizontal Plane (Automatic Mode)

Place the Rotary Laser on firm and dry ground or on a standard 5/8" tripod (not included) or ceiling to floor leveling pole (not included) or wall mount accessory (not included).

1. Set up the Rotary Laser approximately level; the instrument can compensate for up to $\pm 4^\circ$ from the horizontal plane.
2. Press the Power key. The Power Indicator will light up. If the instrument is set up outside the $\pm 4^\circ$ limit the Manual Indicator will blink, the laser beams will not be projected and rotation will not begin. Please turn off the instrument and set up again.
3. Verify that the Rotary Laser is in automatic mode – the Manual Indicator must be unlit.
4. The Rotary Laser is ready for work when the Power Indicator is lit, the Manual Indicator has stopped blinking, and the laser beams are projected. The instrument is now level and the laser head will rotate clockwise at 600 rpm.

5. To make the beam more visible, change the rotating speed using the speed key, or use the Laser Detector to detect the laser beam (see Laser Detector).
6. Change the rotation direction by pressing the Clockwise Rotation or Counterclockwise Rotation key.
7. Press the Auto-Drift key to automatically stop the laser beams while the unit is self-leveling. The laser beams will automatically restart when the unit is leveled.
8. You can use the remote control to control the Rotary Laser (see Using the Remote Control). This option is very useful for trench work or when laying concrete.
9. To turn the Rotary Laser off, press the Power key.

Vertical Plane (Automatic Mode)

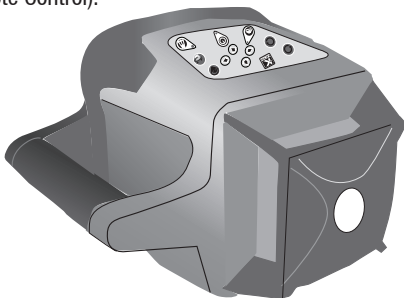
The Rotary Laser can be set up to create a vertical laser line to check the vertical alignment of a wall or fence pole.

1. Position the Rotary Laser on its side on the ground, on any stable surface or on a standard 5/8" tripod (not included). Set up the Rotary Laser approximately level by adjusting the legs or the tripod; the instrument can compensate for a variance of up to $\pm 4^\circ$ from the vertical plane.
2. Press the **Power** key. The **Power Indicator** will light up. If the instrument is set up outside the $\pm 4^\circ$ limit the **Manual Indicator** will blink, the laser beams will not be projected and rotation will not begin. Please turn off the instrument and set up again.

3. Verify that the Rotary Laser is in automatic mode – the **Manual Indicator** must be unlit.
4. The Rotary Laser is ready for work when the **Power Indicator** is lit, the **Manual Indicator** has stopped blinking, and the laser beams are projected. The instrument is now level and the laser head will rotate clockwise at 600 rpm.
5. To make the beam more visible, change the rotating speed using the speed key, or use the Laser Detector to detect the laser beam (see Laser Detector).
6. Change the rotation direction by pressing the **Clockwise Rotation** or **Counterclockwise Rotation** key.
7. Press the **Auto-Drift** key to automatically stop the laser beams while the unit is self-leveling. The laser beams will automatically restart when the unit is leveled.
8. You can use the remote control to control the Rotary Laser (see Using the Remote Control).

This option is very useful for trench work or when laying concrete.

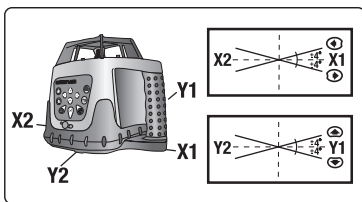
9. To turn the Rotary Laser off, press the **Power** key.



Inclined Plane (Manual Mode)

The Rotary Laser can be set up to create a single or dual directional incline plane at any angle. This is very helpful for laying inclined concrete surfaces, ensuring run-off from pathways, and laying water and sewage lines. The Rotary Laser can be used with an angle bracket (not included), and set to any angle greater than $\pm 4^\circ$.

1. Set up the Rotary Laser approximately level.
2. Press the Power key. The power indicator will light up.
3. Press the Auto/Manual Key. When the Manual Indicator lights, the Rotary Laser is in manual mode.
4. Chose the X & Y direction by pressing the Clockwise Rotation or Counterclockwise Rotation Key.
5. Using the X-Axis and Y-Axis arrows, adjust the slope until it suits your requirements.
6. To make the beam more visible, change the rotating speed (see Changing Rotating Speed), change scanning mode (see Scan Function), or use the Laser Detector to detect the laser beam (see Laser Detector).
7. You can use the remote control to control the Rotary Laser (see Using the Remote Control).
8. To return to Automatic mode, press the Auto/Manual key. The Manual Indicator will turn off.
9. To turn the Rotary Laser off, press the Power key.





Plumb Down

The Plumb Down feature enables you to center the Rotary Laser onto a selected point. It is much easier to use this feature if you set up the Rotary Laser on a tripod with a hollow connecting bolt.

1. Set up the Rotary Laser on a tripod.
2. Move the tripod and Rotary Laser so that they are approximately above the selected point.
3. Level the Rotary Laser as in Horizontal Setup.
4. Press the Power key to turn the Rotary Laser.
5. Move the Plumb Down beam onto the selected point on the ground by raising and lowering the tripod legs.
6. Level the Rotary Laser again, and adjust the Plumb Down beam with the tripod legs as in step 5.
7. Repeat step 6 until the Plumb Down beam is sufficiently accurate for your purposes.
8. If you wish to transfer a point to the ceiling, use the Plumb Up beam once the Rotary Laser is accurately centered.

Changing Rotation Speed

The laser beam is more visible when the rotating speed is slower. Change the speed of the rotating laser head by pressing the Speed key. The default option is 600 rpm. Pressing the key moves a step forward in the speed cycle (600→0→60→120→300→600→ rpm).

Scan Function

The Scan function is used to limit the area covered by the laser beam, for safety reasons or to improve visibility and sensitivity. A smaller scan segment will be more visible than a larger one.

The default mode is 360° rotation, which provides a horizontal or inclined beam throughout the work area or room.

The Scan Key changes the mode from 360° rotation to 360°→180°→90°→45°→10°→ rotation.

1. Press the **Scan** Key to change the scan width.
2. The **scan** mark can be accurately positioned using the Clockwise and Counterclockwise Rotation keys. Change the direction of rotation if there is an obstruction creating a “dead” area that no laser beam can reach.

Laser Detector


The Prolaser® 897 Self-Leveling Rota-Line is effective at 500ft (150m) when used together with the Laser Detector (250ft/75m radius)

Use the Laser Detector when it is hard to see the laser beam, such as outdoors or in bright rooms.

Attach the Laser Detector to a rod if the laser unit is positioned above head height.



Using the Laser Detector

1. Press the Power key to turn on the detector.
2. Press to select the fine or coarse detection mode: a symbol appears on the top of the LCD displaying which mode has been selected (course mode – top left, fine mode – top right).
3. Select the mute or sound mode. The sound symbol on the LCD appears with lines  when you select the sound option.
4. Turn the detection window towards the laser beam and move the detector up and down following the direction of the arrow on the LCD.
 - Lower the Laser Detector if the arrow points down (Beeping Sound).
 - Raise the Laser Detector if the arrow points up (Beeping Sound).
5. The level marks on the sides of the Laser Detector are level with the laser beam when the horizontal beam is displayed on the LCD (Continuous Sound).



Using the Remote Control

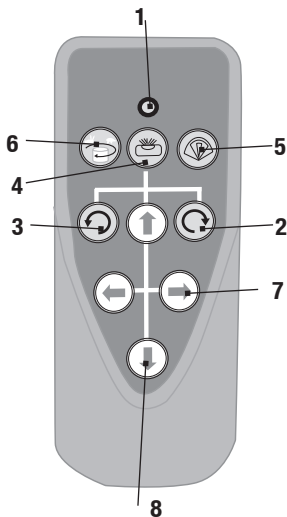
The laser can be operated by an infra-red remote control.

The remote control will only work if there is an uninterrupted line of sight between the infra-red control and the remote control sensor on the control panel.

The effective range of the remote control is 65 ft (20m).

The Remote Signal Indicator flashes when a signal has been sent.

1. Remote Signal Indicator
2. Clockwise Rotation Key
3. Counterclockwise Rotation Key
4. Auto/Manual Key
5. Scan Mode/Scan Width
6. Speed Key/Stop Key
7. X-Axis arrows
8. Y-Axis arrows





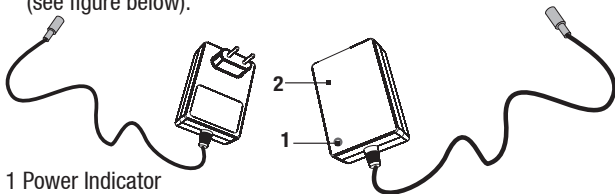
Power Supply

Rotary Laser

The Prolaser® 897 Self-Leveling Rota-Line is supplied with on-board internal rechargeable batteries and battery charger (AC/DC Converter).

Warning: Non-rechargeable "C" batteries are not to be used!

1. Recharge the batteries when the Power Indicator on the keypad flashes.
2. Plug the battery charger into a power source.
3. Insert the plug of the battery charger into the Battery Charger Jack (see figure below).



- 1 Power Indicator
- 2 Battery Charger
- 3 Battery Charger Jack

Note

The Rotary Laser can be operated while recharging. It takes approximately seven hours to fully charge a battery.

4. The indicator lamp on the battery charger illuminates when charging. The indicator lamp will flash when the battery is fully charged.
5. The batteries can be removed from the Rotary Laser by unscrewing the screws holding the battery compartment cover in place.

Laser Detector

1. Press the battery compartment lock and remove the battery compartment cover.
2. Remove the 9V alkaline battery.
3. Replace with a new 9V alkaline battery.

Remote Control

1. The battery compartment is situated in the back of the remote control.
2. Slide off the battery compartment cover.
3. Remove the spent batteries.
4. Replace them with two “AAA” batteries.
5. Replace the cover.

External Power Supply

The Prolaser® 897 Self-Leveling Rota-Line can use an external DC external power source. This will minimize the risk of battery failure during operation.

Use only the combined Battery Charger-AC/DC Converter supplied with the Rotary Laser, otherwise irreparable damage will be caused to the instrument and your warranty will be invalid.

The suitable power range of the combined Battery Charger-AC/DC Converter is 50 – 60Hz, voltage 110 – 220 VAC.



Care and Maintenance

Preventative Maintenance

- Store in a clean dry place, between 5°F – 131°F (-15°C – 55°C)
- Before moving or transporting the unit, ensure that it is turned off/locked.
- If the Laser Level is wet, dry off with a dry cloth. Do not seal the laser in the carrying case until completely dry.
- Do not attempt to dry the Laser Level with fire or with an electric dryer.
- Do not drop the Laser Level, avoid rough treatment, and avoid constant vibration.
- Periodically check the calibration of the Laser Level.
- Clean with a soft cloth, slightly dampened with a soap and water solution. Do not use harsh chemicals, cleaning solvents or strong detergents.
- Keep the laser aperture clean by wiping it gently with a soft lint-free cloth.
- Keep the detection window of the Laser Detector clean by wiping it with a soft cloth moistened with glass cleaner.
- Remove batteries from the Laser Level during lengthy periods of non-use, and store in carrying case.
- Ensure that the Laser Level is turned off before removing batteries.

Repairs

- See the Warranty section at the end of this manual.
- Do not take the Laser Level apart or permit any unqualified person to take the laser level apart. Unauthorized servicing may cause bodily injury, irreparably damage the Laser Level, and invalidate the warranty.

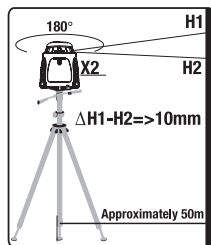
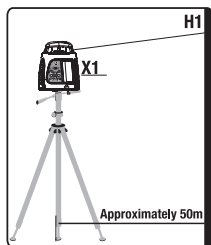


Field Calibration Test

The Rotary Laser leaves the factory fully calibrated. Kapro recommends that the level is checked regularly, and after the unit has been dropped or mishandled.

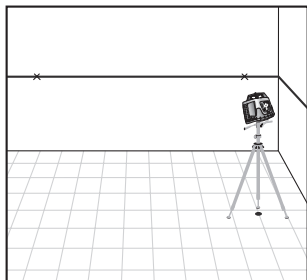
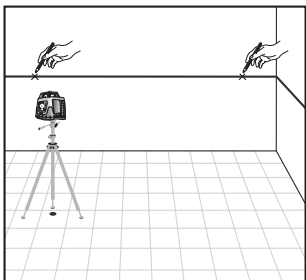
Horizontal Plane Calibration Test

1. Set up the Rotary Laser approximately 150ft (50m) from a wall or a measuring staff.
2. Level the Rotary Laser as accurately as possible. Position it so that the X-axis is pointing in the direction of the measuring staff or wall.
3. Turn on the Rotary Laser.
4. Note the height of the laser beam on the measuring staff or make a mark on the wall.
5. Rotate the Rotary Laser 180°.
6. Note the height of the laser beam on the measuring staff or make a new mark on the wall. The difference between the heights or marks should not exceed ½ inch (10mm).
7. Repeat the procedure for the Y axis.



Horizontal Line Calibration Test

1. Set up the Rotary Laser on a level surface, next to an unobstructed 100ft (30m) long wall.
2. Level the Rotary Laser as accurately as possible.
3. Turn on the Rotary Laser, mark the position of the beam next to the laser, and mark the position of the beam at a point approximately 100ft (30m) away.
4. Move the Rotary Laser next to the point that you marked at a distance of 100ft (30m).
5. Level the Rotary Laser as accurately as possible.
6. Turn on the Rotary Laser, mark the position of the beam next to the laser, and mark the position of the beam next to the original point.
7. Measure the height difference between both sets of points. Ideally the two measurements should be identical; however under field conditions a difference of up to $\frac{1}{4}$ inch (6mm) is acceptable.





Specifications

Product	Prolaser® 897 Self-Leveling Rota-Line Electronic Rotary Laser
Horizontal/Vertical Beam Accuracy	$\pm 0.1\text{mm/m}$ $\pm 1/8''$ at 100'
Plumb Down/ Up Point Accuracy	$\pm 1.5\text{mm}/1.5\text{m}$ $\pm 5/8''$ at 50'
Self Leveling Range	$\pm 4^\circ$
Water & dust-proof	Indoor/outdoor IP 54 (International Electrotechnical Commission)
Recommended Working Range	Indoor 160 ft (50m), Outdoor 500 ft (150m) with Laser Detector
Laser Source	635 nm laser diode
Classification	Class II
Rotational Speed (rpm)	0 (stationary point), 60, 120, 300, 600 rpm
Rotational Coverage (scanning function)	0° (stationary point), 10° , 45° , 90° , 180° , 360°

Effective Working Temperature	-14°F – 113°F (-10°C – 45°C)
Remote Control Distance	Approx. 65 ft (20m)
Remote Control Power Supply	2 x “AAA” batteries
Laser Power Supply	DC 4.8-6V 4x1.2V (Ni-MH Rechargeable)
Laser Battery Life	Approx. 20 hours of continuous use
Laser Detector Power Supply	One 9V alkaline battery
Laser Detector Battery Life	50 hours of continuous use
Weight	2.0 kg with batteries
Dimensions (L x W x H)	160(L) x 160(W) x 185(H)mm



Warranty

This product is covered by a two-year limited warranty against defects in materials and workmanship. It does not cover products that are used improperly, altered, or repaired.

In the event of a problem with the laser level you have purchased, please return the product to the place of purchase with proof of purchase.



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....





.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



©2011 Kapro Industries Ltd.