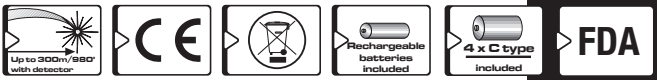
KAPRO®
TOOLS WITH VISION

PROLASER® ELECTROTA™ GREEN
Self-leveling Rotary Laser Level
Model No. 8991G

User Manual



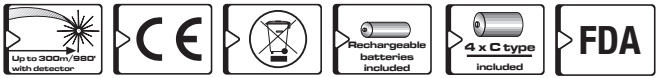


Thank you for purchasing the 8991G Prolaser® Electrota™ GREEN Self-Leveling Rotary Laser Level. You are now the owner of one of our innovative, state of the art tools. These tools incorporate new laser technology, enabling the professional user and the serious DIY enthusiast to achieve accurate results and reduce valuable work time.

APPLICATIONS

The 8991G Prolaser® Electrota™ GREEN has been designed for use in most areas of construction, for example:

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



NOTE

Keep this user manual for future reference.

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FEATURES

- Self-leveling electronic mechanism on slopes of ±5°
- 360° rotation generates a horizontal or vertical level plane
- Generates an inclined plane of up to ±5° in both the X and Y planes
- Five variable speeds (0, 60,120, 300, 600 rpm)
- Scan modes create visible laser lines
- Supplied with rechargeable batteries and battery Charger-AC/DC Converter
- IP-65 rated for water and dust resistance
- Plumb Down/Plumb Up point
- Rugged design with protective handles.
- Freestanding or fits onto standard tripod (5/8" thread)
- Remote control included
- Laser Detector included
- Shockproof protective case included
- Laser beam enhancement Beamfinder™ glasses included

NOTE

This device contains precision components that are sensitive to external shock, impact or falls which may compromise its functionality –handle with care to maintain its accuracy.

SAFETY INSTRUCTIONS

WARNING

This product is emitting radiation that is classified as class II according to EN 60825 -1



The laser radiation can cause serious eye injury

- Do not stare into the laser beam
- Do not position the laser beam so that it unintentionally blinds you or others.
- Do not operate the laser level near children or let children operate the laser level.
- Do not look into a laser beam using magnifying optical devices such as binoculars or a telescope, as this will increase the level of eye injury.

WARNING: This product contains lead in solder and certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.
(California Health & Safety Code Section 25249.6- Proposition 65)

NOTE

The green goggles are intended to enhance the visibility of the laser beam. They will not protect your eyes against laser radiation.

- Do not remove or deface warning labels on the laser level.
- Do not disassemble the laser level.
- Do not drop the laser.
- Do not use solvents to clean the laser.
- Do not use in temperatures below -20°C or above 50°C (-4°F / 122°F)
- Do not operate the laser in explosive atmospheres such as flammable liquids, gases or dust. Sparks from the tool can cause ignition.
- When not in use remove the batteries, engage the pendulum lock and place the laser in the carrying case.
- Make sure the pendulum lock mechanism is engaged before transporting the laser.

NOTE

If the laser level is not in use for a prolonged period of time, remove the batteries from the battery compartment to prevent leakage or/ and corrosion damage.

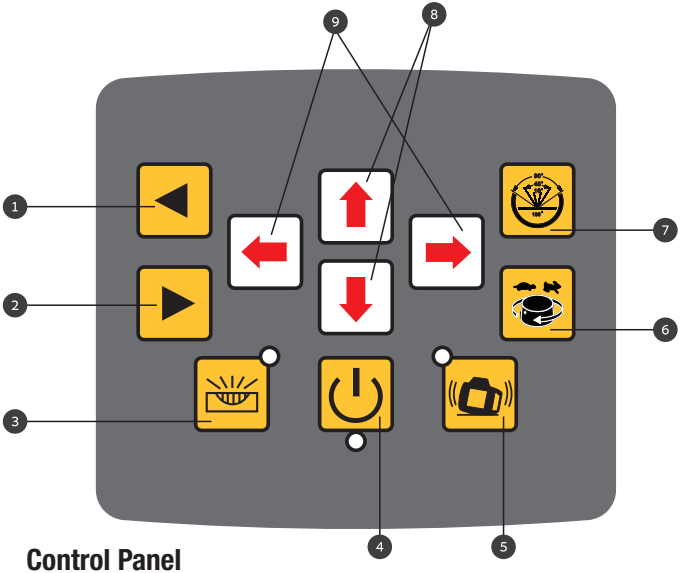
If the pendulum lock mechanism is not engaged before transportation, internal mechanical damage may occur.

OVERVIEW



Main body

1. Laser Diode.
2. Plumb Up Beam window.
3. Control Panel.
4. Carrying Handle.
5. Charger Socket.



Control Panel

1. Rotation left
2. Rotation right
3. Manual/Auto (in manual mode the self leveling is disabled)
4. Power On/Off
5. Automatic Drift System
6. Rotation Speed Control
7. Direction Scanning
8. Y-AXIS
9. X-AXIS

OPERATING INSTRUCTIONS

To get the most out of your 8991G Prolaser® Electrota™ 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)

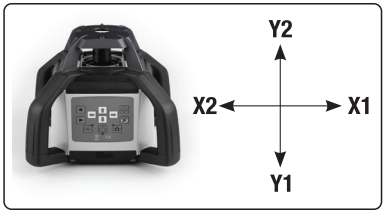
Place the Rotary Laser on a dry, flat, vibration free surface or on a standard 5/8" tripod (not included) or ceiling to floor leveling pole (not included) or on any wall mount accessory (not included).

1. Set up the Rotary Laser approximately level; the instrument can compensate for up to ±5° from the horizontal plane.
2. Press the **On/Off** button. The power indicator will light up and the laser beam will blink. If the instrument is set up outside the ±5° limit, the manual indicator will blink and rotation will not begin.
3. Verify that the Rotary Laser is in automatic mode - the manual indicator must be unlit.
4. The Rotary Laser is ready to work when the laser beam no longer flashes. The instrument is now level and the laser head will rotate at 600 rpm.
5. To make the beam more visible, change the rotating speed (see page 13), change scanning mode (see page 14), or use the Laser Detector to detect the laser beam (see page 15).
6. You can use the remote control to control the Rotary Laser (see page 16). This option is very useful for trench work or when laying concrete.
7. To turn the Rotary Laser off, press the **On/Off** button.

Inclined Plane

The Rotary Laser can be set up to create a single or dual directional inclined planed at ±5° from the horizontal plane. This is very helpful for laying inclined concrete surfaces, ensuring run-off pathways as well as laying water and sewage lines.

1. Set up the Rotary Laser approximately level; the instrument can compensate for up to ±5° from the horizontal plane.
2. Press the On/Off button. The power indicator will light up and the laser beam will blink. If the instrument is set up outside the ±5° limit the manual indicator will blink and rotation will not begin.
3. The Rotary Laser is ready to work when the laser beam no longer flashes. The instrument is now level and the laser head will rotate at 600 rpm.
4. Press the Manual/Automatic button to change the rotating laser to Manual Mode.
5. Verify that the Manual indicator is lit.
6. For X direction slope: Position X axis parallel to plane requiring slope setup. Press ◀ to raise X1 and lower X2. Press ▶ to raise X2 and lower X1.
   For Y direction slope: Position Y axis parallel to plane requiring slope setup. Press ▲ to raise Y2 and lower Y1. Press ▼ to raise Y1 and lower Y2.



7. To make the beam more visible, change the rotating speed (see page 13), change scanning mode (see page 14), or use the Laser Detector to detect the laser beam (see page 15).
8. You can use the remote control to control the Rotary Laser (see page 16). This option is very useful for trench work or when laying concrete.
9. To turn the Rotary Laser off, press the **On/Off** button.

Manual Mode

If the Manual/Auto button is pressed and the LED indicator, next to it, is lit then the self-leveling is disabled and the laser beam will rotate regardless of the position of the level. The level can be set as required and used to mark the line at any angle.

Vertical Setup

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 a dry, flat, vibration free surface or on a standard 5/8" tripod (not included) or ceiling to floor leveling pole (not included) or on any wall mount accessory (not included). Set up the Rotary Laser approximately level; the instrument can compensate for a variance of up to ±5° from the vertical plane.
2. Press the **On/Off** power button to turn the Rotary Laser on. The power indicator will light up and the laser beam will start to blink.
3. Verify that the Rotary Laser is in Automatic mode - the manual indicator must not be lit.
4. The Rotary Laser is ready to work when the laser beam has stopped flashing. The instrument is now level and the laser head will rotate at 600 rpm.
5. If the laser beam is not sufficiently visible, adjust the rotation speed (see page 13), or use the Laser Detector to detect the laser beam (see page 15).
6. You can use the remote control to control the Rotary Laser (see page 16). This option is very useful when working at heights or on scaffolding.
7. To turn the Rotary Laser off, press the **On/Off** button.

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. Turn the Rotary Laser **On**.
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 rotation speed is slower. Change the speed of the rotating laser head by pressing the Speed control button. The default option is 600 rpm. Pressing on the Speed control button moves the speed cycle a step forward (600→0→60→120→300→600 rpm)

To transfer a level mark over long distances or in poor visibility, the rotation can be stopped (speed = 0 rpm). The laser beam can then be accurately positioned using the Rotation Left and Rotation Right buttons.

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 a 360° rotation, which provides a horizontal or inclined beam throughout the work area or room. The scan button changes the mode from a 360° rotation to a 0°→10°→45°→90°→180° scanning. Press the scan button until the laser is set at the desired scan mode. The scan mark can then be accurately positioned using the clockwise and counterclockwise rotation controls.

Manual Rotation

When the laser beam is at 0° rpm or in scan mode you can manually rotate the beam using Rotation left and Rotation right keys.

Automatic Drift System

Use this function to prevent misaligning the laser level while in automatic mode.

Press the Automatic drift system key after turning the laser level on automatic mode. The LED indicator, near the key, will flash, and automatic drift system will turn on. The laser level will not re-level itself or spin again after any displacement while on automatic mode. If the laser level does not rotate while the LED indicator near the Automatic drift system key flashes more frequently, then the level was shifted during its operation. Check the position of the laser beam and readjust it, if needed, before turning it on again. Disengage the automatic drift system, check / readjust the position of the device and turn it on again.

Laser Detector

The 8991G Prolaser® Electrota™ GREEN is effective up to 300m (980ft) when used together with the Laser Detector. Use the Laser Detector when it is hard to see the light 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 **On/Off** button.
2. Press to select the fine or coarse detection mode (a symbol appears on the right of the LCD, displaying which mode was selected).
3. Select the sound or mute mode. The sound symbol appears on the display when you select the sound option. No symbol, indicates that you are in mute mode.
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).

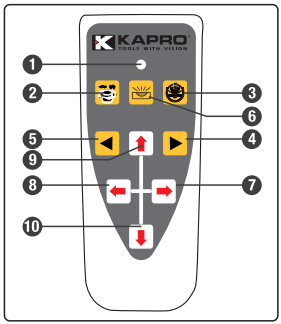


1. Sound/mute mode
2. **On/Off** button
3. Fine adjustment button

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 20m.
The Remote Signal Indicator flashes when a signal has been sent.

1. Remote Signal Indicator
2. Rotation speed control button
3. Scanning mode control button
4. Rotation right button
5. Rotation left button
6. Manual/Automatic mode button
7, 8. X-AXIS
9, 10. Y-AXIS

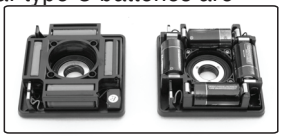


POWER SUPPLY

Rotary Laser

The Prolaser® Electrota™ 8991G is supplied with on-board internal rechargeable batteries and a battery charger (AC/DC Converter).
Note: A bracket and a set of four regular type C batteries are also supplied for optional use.

1. Recharge the batteries when the power indicator on the control panel starts to flash.
2. Plug the battery charger into a power source.
3. Insert the plug of the battery charger into the socket on the laser level or on the battery pack.





1. Battery charger
2. Bottom of laser
3. Rechargeable batteries

Note: You can charge the rechargeable battery pack inside or outside of the laser level. The Rotary Laser can be operated while recharging. It takes approximately seven hours to fully charge the batteries. Brand new or unused rechargeable batteries require three recharge / discharge cycles to attain full capacity.

4. The indicator LED on the battery charger lights steady red while charging and steady green when fully charged. The indicator LED will flash if not connected to the batteries.
5. The battery pack can be removed from the Rotary Laser by unscrewing the locking nut, holding the battery pack in place.

Note: If the laser level is not in use for a long period of time, remove the battery pack from the battery compartment. This will prevent leakage or/and corrosion damage.

Laser Detector

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

Remote Control

1. Slide off the battery compartment cover.
2. Remove the spent batteries.
3. Replace them with two "AAA" batteries.
4. Close the cover.

External Power Supply

The 8991G Prolaser® Electrota™ GREEN can use an external DC 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, 100VAC-240VAC.

CARE AND MAINTENANCE

Preventative Maintenance

- Store in a clean dry place.
- If the Rotary Laser 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 Rotary Laser by fire or with an electric dryer.
- Do not drop the Rotary Laser, avoid rough treatment, and avoid constant vibration.
- Periodically check the calibration of the Rotary Laser.
- 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 of the Rotary Laser clean by wiping it with a lint-free cloth moistened with isopropyl (rubbing) alcohol.
- Keep the Detection window of the Laser Detector clean by wiping it with a soft cloth moistened with glass cleaner.

Repairs

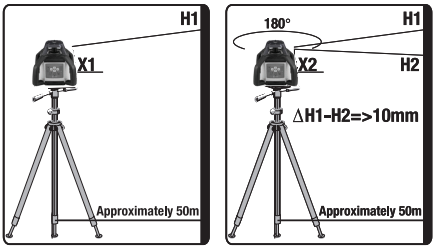
- See the Warranty section at the end of this manual.
- Do not take the 8991G Prolaser® Electrota™ GREEN apart or permit any unqualified person to take the laser level apart. Unauthorized servicing may cause bodily injury, irreparably damage the Rotary Laser and invalidate the warranty.

FIELD CALIBRATION TEST

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

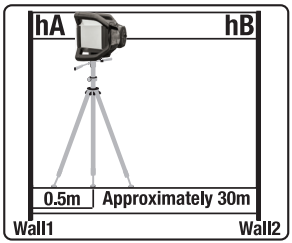
Horizontal Plane Calibration Test

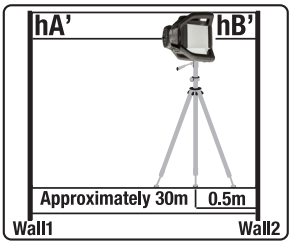
1. Set up the Rotary Laser approximately 50m (165ft) from a wall or measuring staff.
2. Position the Rotary Laser so that the X-axis is pointing in the direction of the measuring staff or wall.
3. Turn on the Rotary Laser.
4. Mark the height of the laser beam on the wall or measuring staff (h1).
5. Rotate the Rotary Laser 180°.
6. Mark the height of the laser beam on the wall or measuring staff (h2). The difference between the heights should not exceed 10mm (3/8 inch).
7. Repeat the procedure for the Y-axis.



Horizontal Line Calibration Test

1.Set up the Rotary Laser on a level surface, between two walls or measuring staffs that are about 30m (100ft) apart.
2. Position the laser about 0.5m (1.5ft) from 1st wall/staff.
3. Position the laser on vertical leveling side.
4. Turn on the Rotary Laser, with the Plumb up/Plumb down projecting onto walls. Check and mark points (hA and hB) on both walls.
5. Reposition the laser 0.5m (1.5ft) from 2nd wall/staff, pointing in opposite direction. Check and mark points (hA' and hB') on both walls.
6. Δ1=hA-hA'
   Δ2=hB-hB'
7. The difference between Δ1 and Δ2 should be less than 6mm (1/4 inch).





SPECIFICATIONS

Horizontal/Vertical Beam Accuracy	± 0.1mm/m (0.0001"/")
Self Leveling Range	±5°
Waterproof / Dustproof	Standard IP 65 (International Electrotechnical Commission)
Recommended Working Range	Indoor 50m (160 ft) Outdoor 300m (980 ft) with Laser Detector
Laser Source	530 ± 10nm laser diode Plumb down point 650 ±5nm laser diode
Classification	Laser 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°
Setting slope	±5° (dual axis)
Effective Working Temperature	-4°F —122°F (-20°C — 50°C)
Remote Control Distance	Approx. 20m
Remote Control Power Supply	2 x "AAA" batteries
Laser Power Supply	DC 4.8-6V Ni-MH Rechargeable or 4 C type alkaline
Laser Battery Life	Approx. 12 hours of continuous use
Laser Detector Power Supply	One 9V alkaline battery
Laser Detector Battery Life	50 hours of continuous use
Weight	2.45 kg ±0.1kg with batteries
Dimensions (LxWxH)	206(L) X 206(W) X 211(H)mm

WARRANTY

This product is covered by a two-year limited warranty against defects in materials and workmanship. The warranty does not cover products that are used improperly, altered or repaired without Kapro Tool's approval. In the event of a problem with the laser level, please return the product to the place of purchase with proof of purchase.

Model #8991G
The serial number sticker is positioned inside the battery compartment.

CE CONFORMITY CERTIFICATE
This product meets the standards of the Electromagnetic Compatibility (EMC) established by the European Directive 2014/30/EU and the Low Voltage Directive (LVD) 2014/35/EU

EC DECLARATION OF CONFORMITY
We declare under our responsibility that the product 8991G is in accordance with the requirements of the Community Directives and Regulations:
2014/30/EU
2011/65/EU
EN60825-1: 2014
EN61326-1: 2013

Rev. 1.0

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