

TRL550

User manual



Measure up to the world



Congratulations on purchasing the TRL550 rotary laser level. Before using the device for the first time, please carefully read the safety instructions provided in this manual.

SAFETY INSTRUCTIONS

Attention! This user manual is an essential part of your device. Before starting work, carefully read the manual. If the instrument is given to someone for temporary use, be sure to enclose user manual to it.

- Do not misuse the instrument.
- Do not remove warning signs and protect them from abrasion, because they contain information about safe operation of the instrument.



- Do not look directly into the laser beam or its reflection, either with the naked eye or through optical instruments. Do not aim the laser beam at people or animals without the need, as it may cause blindness.
- To protect your eyes close them or look aside.
- Always set up the device so that the laser beams are projected above or below eye level.
- Do not allow unauthorized persons into the working area of the device.
- Keep the device beyond reach of children and unauthorized people.
- Do not disassemble or repair the device yourself. Servicing and repairs should only be carried out by qualified personnel using original spare parts.
- Do not operate the device in explosive environments, close to flammable materials.
- Laser glasses are used for better recognition of the laser beam. Do not use them for other purposes. Laser glasses do not protect against laser radiation, are not intended for UV protection, and impair colour perception.
- Do not allow the batteries to overheat to avoid explosion and electrolyte leakage. If liquid comes into contact with the skin, wash the affected area immediately with soap and water. In case of eye contact, rinse thoroughly with clean water for 10 minutes and consult a doctor.

System Description

INTENDED USE

TRL550 is a self-levelling rotary laser, designed for construction workers, plasterers, and contractors, intended to project vertical and horizontal planes as well as plumb dots.

The device features exceptional accuracy of ± 0.025 mm/m. It reaches 3000 rpm with a single button press which generates a static laser line effect.

Slope setting function allows to project inclined planes tilted up to $\pm 10\%$ for the axes X and Y.

RC300 digital remote allows to set the tilt angle of the laser plane. LP700 digital receiver provides millimeter-level accuracy in beam positioning.

This rotary laser is suitable for use at both indoor and outdoor building areas.

DELIVERY PACKAGE

Rotary laser, laser receiver, remote control, charger, glasses, user manual, hard case.



TECHNICAL SPECIFICATIONS

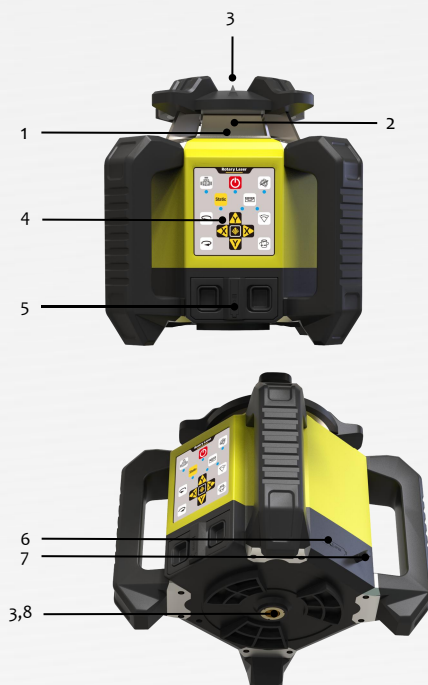
Operating range with detector (diameter)	1000m
Accuracy	1.2mm/30m
Electronic self-leveling range	$\pm 5^\circ$
Tilt angle for axes X Y	$\pm 10\%$
Rotation speed	0, 300, 600, 1000 rpm
Scanning mode	Scanning sector $5^\circ, 10^\circ, 30^\circ, 90^\circ$
Maximum remote control operating distance	350m
Battery operating time	22h

Dust and water protection	IP65
Laser type	Class II 515 nm <1 mW; Class II 635 nm <1 mW (laser plumb dots)
Operating temperature	$-10^\circ\text{C} \sim +50^\circ\text{C}$
Storage temperature	$-20^\circ\text{C} \sim +50^\circ\text{C}$
Device power supply	16,8 V 2000 mAh rechargeable Li-Ion battery
Tripod mounting thread	5/8"
Dimensions	24*20*22cm
Weight	2.45kg

PRODUCT DESCRIPTION

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1. Laser exit windows
2. Rotary head
3. Laser dot exit window
4. Control panel
5. Battery compartment
6. Power connector
7. Antenna
8. 5/8" tripod thread

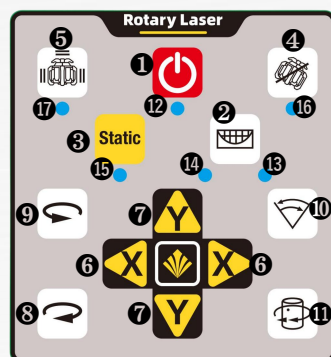


Control Panel

1. Switch on/off rotary laser
2. Manual mode
3. Static line projecti on mode
4. Deactivated self-levelling after misalignment
5. Repeated self-levelling after misalignment
6. Tilt adjustment along X-axis
7. Tilt adjustment along Y-axis
8. Shifting scan sector clockwise
9. Shifting scan sector counterclockwise
10. Scanning mode/selection of scanning sector
11. Rotation speed adjustment

LED indicators:

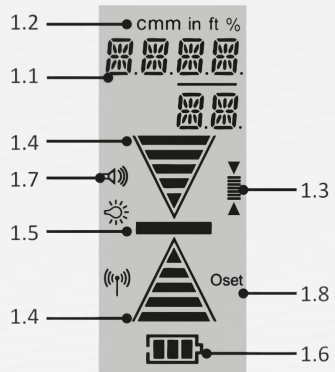
12. Power indicator
13. Self-levelling mode indicator
14. Manual mode indicator
15. Static line projecti on indicator
16. Indicator of deactivated self-levelling after misalignment
17. Indicator of repeated self-levelling after misalignment



Laser Receiver

Laser Receiver

1. Display
- 1.1 Distance indication to the laser line
- 1.2 Measuring unit
- 1.3 Accuracy indicator (high/standard/low/minimal)
- 1.4 Direction indicator
- 1.5 Laser line detection indicator
- 1.6 Battery level indicator
- 1.7 Sound signal indicator
- 1.8 Zero setting



2. Keypad:



Switch on/off / LCD backlight



Accuracy setting



Switch on/off sound signal

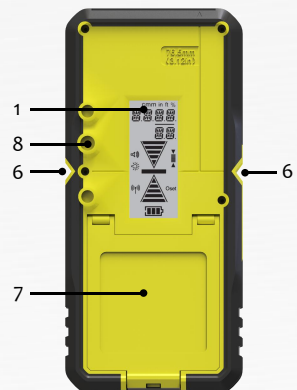


Unit selection



Zero setting

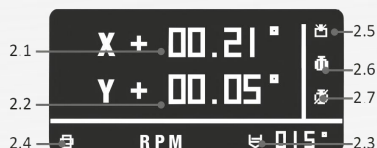
3. Receiver sensor
4. Bubble level
5. Magnets
6. Level marks
7. Battery cover
8. 1/4" thread



Remote Control

Control Panel

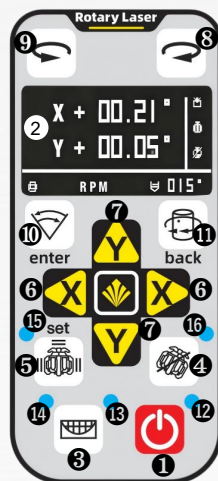
1. Switch on/off
2. Display
- 2.1 Instrument X mounting angle
- 2.2 Instrument Y mounting angle
- 2.3 Scan sector indicator
- 2.4 Rotati on speed indicator
- 2.5 Mode indicator
- 2.6 Indicator of repeated self-levelling after misalignment
- 2.7 Indicator of deacti vated self-levelling after misalignment



3. Manual mode
4. Deacti vated self-levelling after misalignment
5. Repeated self-levelling after misalignment / SET
6. Tilt adjustment along X-axis / Cursor movement left and right
7. Tilt adjustment along Y-axis / Setting slope angle value along X and Y axes
8. Shifting scan sector clockwise
9. Shifting scan sector counterclockwise
10. Scanning mode / selecti on of scanning sector
11. Rotation speed selecti on

LED indicators:

12. Switch on/off indicator
13. Self-levelling mode indicator
14. Manual mode
15. Slope setting mode indicator
16. Indicator of repeated self-levelling after misalignment
17. Indicator of deacti vated self-levelling after misalignment



OPERATION

Charging battery in the rotary laser

The device is powered by a built-in rechargeable lithium-ion battery.

If the power indicator on the control panel  starts flashing during operation, the battery must be charged. To charge the battery, connect the charger to a power source. Insert the charger into the Type-C charging port on the battery. Use only the charger supplied with the device to charge the battery pack. A full charge takes about 7 hours. It is allowed to operate the device while charging.

During charging, the power indicator on the charger will remain red. Wait until the green indicator lights up, indicating full charge, and then disconnect the charger.

Remove the batteries if the device will not be used for a long period of time.

Replacing batteries in the laser receiver

The receiver is powered by 4 × 1,5V AA alkaline batteries, included in the delivery package. The battery compartment is on the back side of the receiver.

Replace the batteries if the power indicator starts flashing. Open the battery compartment cover, remove the batteries, and insert new ones, observing the correct polarity. Refit the cover until it clicks into place.

Remove the batteries from the receiver if it will not be used for a long period to prevent corrosion and battery discharging.

Replacing batteries in the remote control

The device is powered by a 3,7 V 3000 mAh Li-Ion battery integrated into the device housing.

Charge the battery if the power indicator starts flashing. To charge the battery, connect the charger to a power source. Insert the charger into the Type-C port to begin charging.

To charge the battery, use the charger supplied with the product.

A full battery charge takes 3–4 hours. Operation of the device during charging is permitted.

Switch on/off the rotary laser

Press the button  to switch on the laser.

To switch it off, press and hold the button .

OPERATION

OPERATION MODES

Automatic mode (self-levelling)

Place the rotary laser on a flat, stable surface or a 5/8" tripod in vertical or horizontal position.

Switch on the rotary laser. The laser beam and levelling indicator will flash while self-levelling.

Once self-levelling is complete, the laser beam will stop flashing, and the rotary head will start rotating clockwise at 600 rpm.

If the rotary laser is out of self-levelling range of 5°, the laser beam and mode indicator will flash simultaneously, and the device will emit an audible signal. Switch off the rotary laser, reposition it, and restart.

Manual mode

This mode allows to project inclined planes tilted up to $\pm 10\%$ along the X and Y axes.

Place the device on a stable surface or 5/8" tripod in horizontal position.

Switch on the device.

Press the manual mode button ; the manual mode indicator will light up.

Press and hold   to adjust the tilt angle along the X-axis.

Press and hold   to adjust the tilt angle along the Y-axis.

To exit manual mode, press  again. The indicator will turn off, and the device will return to self-levelling mode.

Deactivation of automatic self-levelling after misalignment

If the device is misaligned by external action, it will stop levelling. The rotating head will stop, and the device will emit a continuous sound signal. Switch off the device, restart it, and repeat self-levelling.

To deactivate automatic self-levelling after misalignment, press the  button. The indicator will light green.

Repeated self-levelling after misalignment

This function allows continuous rotation of the rotary head in case of slight disturbances, ensuring stable operation.

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OPERATION

If the tilt exceeds the self-levelling range, the laser beam and mode indicator will flash simultaneously, and the device will emit a sound signal. Once the tilt returns within range, the device will resume operation.

To activate self-levelling after misalignment, press the button . The indicator will light green.

Rotation speed

Press the button  to change the rotation speed of the laser emitter. Rotation speed will change in the following way:
0 / 300 / 600 / 1000 rpm.

Attention! The slower the rotation speed, the brighter the beam.

Step movement

Press  to set rotation speed to 0. The head stops rotating.

Press  for single-step movement clockwise.

Press  for single-step movement counterclockwise.

Scan mode

Scan mode allows seeing laser line at long distance.

Press  to set rotation speed to 0. The head stops rotating.

Press  to activate scanning mode.

Repeatedly press the button  to select the scanning sector:
0°–5°–10°–30°–90°.

Press  to move the scanning sector clockwise, or  to move it counterclockwise.

To exit scanning mode, press  again.

Laser plumb dots

The device features an up&down dot (zenith).

The plumb dots are active in all operation modes.

OPERATION WITH THE LASER RECEIVER

Switch on/off

Press  to switch on the receiver.

Press and hold  for 3 seconds to switch it off.

Accuracy

By default, high accuracy is set.

Press  to select accuracy:

high ($\pm 1\text{mm}/50\text{m}$), standard ($\pm 2\text{mm}/50\text{m}$), low ($\pm 5\text{mm}/250\text{m}$), minimum ($\pm 10\text{mm}/350\text{m}$).

Sound indication

Press  to adjust volume.

Display backlight

By default, the backlight is off. Press the button  to turn the backlight on/off.

Measuring units

Press to $\frac{\text{MM}}{\text{IN}}$ select the measuring unit: mm, inches, fractional inches.

Zero setting

Press $\frac{0}{\text{SET}}$ within the receiver's detection range to set the current laser position as the zero reference point by default.

OPERATION WITH THE LASER RECEIVER

OPERATION

Switch on the laser receiver. Make the necessary settings. Mount the receiver on a leveling rod, metal surface, etc.

Place the receiver in front of the laser beam.

Move the receiver up/down following the arrows on the LCD display (front or back side, depending on what is more convenient) and the LED indicators. A downward arrow on the display indicates that the receiver must be moved down, an upward arrow indicates that it must be moved up.



indicator shows the exact distance to the laser line. When the laser beam reaches the center of the receiver sensor and the beam position matches the level marks, the receiver emits a sound signal (if sound is enabled) and the laser detection symbol appears on the display.

OPERATION WITH THE REMOTE CONTROL

The buttons on the remote duplicate the rotary laser control panel buttons, allowing remote operation up to 350 m.

CARE AND MAINTENANCE

ACCURACY CHECK

X-axis

1. Place the device 0.5 m from one wall and 10 m from the opposite wall, with the X-axis facing the wall.
2. Switch on the device. After levelling, mark the beam position on both walls as X1 and X2.
3. Switch off the device. Move it to the opposite wall without changing position of the device.
4. Switch on the device. Align the projected line with point X2.
5. Mark the beam on the opposite wall as X3.
6. If the distance between X1 and X3 exceeds 1.5 mm, switch off the device and contact the service center.

Y-axis

1. Place the device with the Y-axis facing the wall.
2. Switch on the device. After levelling, mark the beam position on both walls as Y1 and Y2.
3. Switch off the device. Move it to the opposite wall without rotating the housing.
4. Switch on the device. Align the projected line with point Y2.
5. Mark the beam on the opposite wall as Y3.
6. If the distance between Y1 and Y3 exceeds 1.5 mm, switch off the device and contact the service center.

CARE AND MAINTENANCE

The rotary laser level is a high-precision instrument and requires careful handling. Before use, and after any mechanical shock (falls, impacts), always check accuracy.

CARE AND MAINTENANCE

Observation of the following recommendations will extend the life of the device:

1. Keep the device, spare parts, and accessories out of reach of children and unauthorized persons.
2. Transport the device only when switched off and inside its hard case.
3. Do not store the device in dusty or dirty environments. The instrument is dust and dirt resistant, but long-time exposure to these elements may damage internal moving parts of the instrument.
4. Store the device in a dry place. The instrument is water resistant, but precipitate, humidity and liquids containing minerals may damage the electrical circuits of the instrument. Do not try to dry the instrument by fire or a hairdryer.
5. Do not store in temperatures above +50°C. High heat shortens electronics lifespan, damages batteries and deforms or melts plastic parts.
6. Do not store in temperatures below -20°C. After exposure to cold, condensation may form when moved indoors, damaging electronics.
7. Protect the device from impacts, falls, and strong vibrations to avoid accuracy loss.
8. Periodically check accuracy (see «Accuracy check»). If calibration is required, contact the service center.
9. Clean the device with a soft damp cloth. Do not use harsh chemicals, solvents, or detergents.
10. Clean the laser aperture with a lint-free cloth and isopropyl alcohol.
11. Remove batteries if the device will not be used for an extended period.
12. Store the battery in a dry place at 0°C to 30°C.
13. Do not leave discharged batteries inside the device.

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FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment, This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.