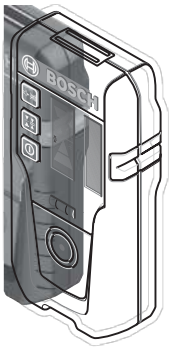
BOSCH

LR Professional

1|1 G



English

Safety Instructions

All instructions must be read and observed. The safeguards integrated into the measuring tool may be compromised if the measuring tool is not used in accordance with these instructions. STORE THESE INSTRUCTIONS IN A SAFE PLACE.

- ▶ **Have the measuring tool serviced only by a qualified specialist using only original replacement parts.** This will ensure that the safety of the measuring tool is maintained.
- ▶ **Do not use the measuring tool in explosive atmospheres which contain flammable liquids, gases or dust.** Sparks may be produced inside the measuring tool, which can ignite dust or fumes.
- ▶ **When operating the measuring tool, loud signal tones may sound under certain circumstances. For this reason, keep the measuring tool away from your ears and from other persons.** The loud sound can damage hearing.

Keep the magnet away from implants and other medical devices, e.g. pacemakers or insulin pumps. The magnet generates a field that can impair the function of implants and medical devices.

- ▶ **Keep the measuring tool away from magnetic storage media and magnetically-sensitive devices.** The effect of the magnets can lead to irreversible data loss.

Product Description and Specifications

Please observe the illustrations at the beginning of this operating manual.

Intended Use

The laser receiver is intended to quickly find rotating laser beams of the wavelength specified in the technical data.

The laser receiver is suitable for indoor and outdoor use.

Product Features

The numbering of the product features refers to the illustration of the laser receiver on the graphics page.

- **(1)** On/off button
- **(2)** Button for adjusting the reception accuracy
- **(3)** Audio signal button
- **(4)** Magnets
- **(5)** Centre mark
- **(6)** Laser beam reception area
- **(7)** Display (front and back)
- **(8)** Spirit level
- **(9)** Speaker
- **(10)** Battery compartment cover locking mechanism
- **(11)** Serial number
- **(12)** Battery compartment cover
- **(13)** Mount for holder
- **(14)** Rotary knob of holder[A)]
- **(15)** Measuring rod[A)]
- **(16)** Fastening screw of the holder[A)]
- **(17)** Holder[A)]
- **(18)** Centre line reference on the holder[A)]

A) **Accessories shown or described are not included with the product as standard. You can find the complete selection of accessories in our accessories range.**

Display Elements

- **(a)** "Laser beam over centre line" direction indicator
- **(b)** Indicator for reception accuracy "medium"
- **(c)** Battery warning
- **(d)** "Laser beam below centre line" direction indicator
- **(e)** Audio signal indicator

(f) Centre line indicator

(g) Indicator for reception accuracy "fine"

Technical Data

Laser receiver	LR 1	LR 1 G
Article number	**3 601 K15 40.**	**3 601 K69 70.**
Receivable wavelength	635–650 nm	532–535 nm
Suitable for rotary lasers	GRL 250 HV GRL 300 HV GRL 400 H	GRL 300 HVG
Working range (radius)[A)] with rotary laser		
– GRL 250 HV	0.5–125 m	–
– GRL 300 HV	0.5–150 m	–
– GRL 300 HVG	–	0.5–150 m
– GRL 400 H	0.5–200 m	–
Reception angle	120°	120°
Receivable rotation speed	> 200 min^{-1}	> 200 min^{-1}
Reception accuracy[B)C)]		
– "Fine"	±1 mm	±1 mm
– "Medium"	±3 mm	±3 mm
Operating temperature	–10 °C to +50 °C	–10 °C to +50 °C
Storage temperature	–20 °C to +70 °C	–20 °C to +70 °C
Max. altitude	2000 m	2000 m
Relative air humidity max.	90 %	90 %
Pollution degree according to IEC 61010-1	2[D)]	2[D)]
Battery	1 × 9 V 6LR61	1 × 9 V 6LR61
Approx. operating time	50 h	50 h
Weight according to EPTA-Procedure 01:2014	0.25 kg	0.25 kg
Dimensions (length × width × height)	148 × 73 × 30 mm	148 × 73 × 30 mm

Laser receiver	LR 1	LR 1 G
Protection rating	IP 65 (dust-proof and protected against powerful water jets)	IP 65 (dust-proof and protected against powerful water jets)

A) The working range may be reduced by unfavourable environmental conditions (e.g. direct sunlight).

B) Dependent on the distance between the laser receiver and the rotary laser and on the laser class and laser type of the rotary laser

C) The reception accuracy may be reduced by unfavourable environmental conditions (e.g. direct sunlight).

D) Only non-conductive deposits occur, whereby occasional temporary conductivity caused by condensation is expected.

For clear identification of your laser receiver, see the serial number **(11)** on the type plate.

Noise Information

The A-weighted sound pressure level of the audio signal is up to **95** dB(A) at **0.2** m away.
Do not hold the laser receiver close to your ear!

Assembly

Inserting/changing the battery

Alkali-manganese batteries are recommended for the laser receiver.

Pull the locking mechanism **(10)** of the battery compartment cover outwards and lift up the battery compartment cover **(12)**. Insert the battery.

When inserting the batteries, ensure that the polarity is correct according to the illustration on the inside of the battery compartment.

When the battery warning **(c)** first appears on the display **(7)**, the laser receiver can still be operated for approx. **3** hours.

- ▶ **Take the battery out of the laser receiver when you are not using it for a prolonged period of time.** When it is stored in the laser receiver for longer periods, the battery can corrode and discharge itself.

Operation

Starting operation

- ▶ **Protect the laser receiver against moisture and direct sunlight.**
- ▶ **Do not subject the laser receiver to extreme temperatures or variations in temperature.** As an example, do not leave it in vehicles for longer periods. In case of large variations in temperature, allow the laser receiver to adjust to the ambient temperature before putting it into operation. In case of extreme temperatures or variations in temperature, the accuracy of the laser receiver can be impaired.
- ▶ **Keep the work area free from obstacles that could reflect or obstruct the laser beam. For example, cover any reflective or shiny surfaces. Do not measure through panes of glass or similar materials.** The measurements may be distorted by a reflected or obstructed laser beam.

Setting up the laser receiver (see figure A)

Place the laser receiver at least **0.5** m away from the rotary laser. For rotary lasers with multiple operating modes, select the horizontal or vertical operation with the highest rotational speed.

Position the laser receiver so that the laser beam can reach the reception area **(6)**. Align it so that the laser beam runs straight through the reception area (as shown in the figure).

Switching On/Off

- ▶ **A loud audio signal sounds when switching on the laser receiver. Therefore, keep the laser receiver away from your ear or other persons when switching it on.** The loud sound can damage hearing.

To **switch on** the laser receiver, press the on/off button **(1)**. All display indicators light up briefly and two audio signals sound.

After the laser receiver is switched on, the measuring accuracy is always set to "medium" and the audio signal is always switched off.

To **switch off** the laser receiver, press the on/off button **(1)** again.

If no button on the laser receiver is pressed for approx. **10** min and no laser beam reaches the reception area **(6)** for **10** min, the laser receiver will automatically switch itself off to preserve battery life. An audio signal indicates when the laser receiver is switching off.

Selecting the setting of the centre line indicator

You can use the button adjusting the reception accuracy **(2)** to specify the accuracy with which the position of the laser beam is indicated as "centred" on the reception area:

- Measuring accuracy "fine" (indicator **(g)** on the display),
- Measuring accuracy "medium" (indicator **(b)** on the display).

An audio signal sounds every time the accuracy setting is changed.

Direction indicators

The position of the laser beam in the reception area **(6)** is indicated as follows:

- On the display **(7)** on the front and rear of the laser receiver by means of the "laser beam below centre line" direction indicator **(d)**, the "laser beam above centre line" direction indicator **(a)** and the centre line indicator **(f)**,
- By an audio signal (optional) (see "Laser Beam Indicator Audio Signal", page 19).

Laser receiver too low: If the laser beam hits the upper half of the reception area **(6)**, then the "laser beam above centre line" direction indicator **(a)** appears in the display. If the audio signal is switched on, a slow-beat signal sounds.
Move the laser receiver upwards in the direction of the arrow. When the laser beam is close to the centre line, only the tip of the "laser beam above centre line" direction indicator **(a)** is shown.

Laser receiver too high: If the laser beam hits the lower half of the reception area **(6)**, then the "laser beam below centre line" direction indicator **(d)** appears in the display. If the audio signal is switched on, a fast-beat signal sounds.
Move the laser receiver downwards in the direction of the arrow. When the laser beam is close to the centre line, only the tip of the "laser beam below centre line" direction indicator **(d)** is shown.

Laser receiver centred: If the laser beam hits the reception area **(6)** at the height of the centre mark **(5)**, then the centre line indicator **(f)** appears in the display. If the audio signal is switched on, a continuous signal sounds.

Laser Beam Indicator Audio Signal

The position of the laser beam on the reception area **(6)** can also be indicated by an audio signal.

You can select two different volumes for the audio signal.

To switch on the audio signal or change the volume level, push the audio signal button **(3)** until the required volume level is indicated on the display. At medium volume, the audio signal indicator **(e)** flashes on the display; at high volume, the indicator is continuously lit. When the audio signal is switched off, the indicator goes out.

Working Advice

Aligning with the spirit level

The laser receiver can be aligned vertically (plumb line) with the spirit level **(8)**. If a laser receiver is mounted at an angle, it will give incorrect measurements.

Marking

You can mark the position of the laser beam at the centre mark **(5)** on the left and right of the laser receiver when the beam hits the centre of the reception area **(6)**.

The centre mark is located 45 mm away from the top edge of the measuring tool.

When marking, take care to align the laser receiver so that it is exactly vertical (with a horizontal laser beam) or horizontal (with a vertical laser beam), as otherwise the marks are offset with respect to the laser beam.

Attaching using the holder (see figure B)

You can use the holder **(17)** to attach the laser receiver to a measuring rod **(15)** (accessory) as well as to other auxiliary tools with a width of up to **65** mm.

Screw the holder **(17)** to the mount **(13)** on the rear side of the laser receiver with the fastening screw **(16)**.

Loosen the rotary knob **(14)** on the holder, slide the holder onto the measuring rod **(15)** and retighten the rotary knob **(14)**.

The centre line reference **(18)** on the holder is situated at the same height as the centre marking **(5)** and can be used for marking the laser beam.

Attaching using a magnet (see figure C)

If an attachment is not required to be especially secure, the laser receiver can be attached to steel parts using the magnets **(4)**.

Maintenance and Service

Maintenance and Cleaning

Always keep the laser receiver clean.

Do not immerse the laser receiver in water or other liquids.

Wipe off any dirt using a damp, soft cloth. Do not use any detergents or solvents.

After-Sales Service and Application Service

Our after-sales service responds to your questions concerning maintenance and repair of your product as well as spare parts. You can find explosion drawings and information on

The Bosch product use advice team will be happy to help you with any questions about our products and their accessories.

In all correspondence and spare parts orders, please always include the 10-digit article number given on the nameplate of the product.

Disposal

The laser receiver, accessories and packaging should be recycled in an environmentally friendly manner.

Do not dispose of laser receivers or batteries with household waste.