



PM 30-MG

English



# PM 30-MG

Original operating instructions



# 1 Information about the documentation

## 1.1 About this documentation

- Read this documentation before initial operation or use. This is a prerequisite for safe, trouble-free handling and use of the product.
- Observe the safety instructions and warnings in this documentation and on the product.
- Always keep the operating instructions with the product and make sure that the operating instructions are with the product when it is given to other persons.

## 1.2 Explanation of symbols used

### 1.2.1 Warnings

Warnings alert persons to hazards that occur when handling or using the product. The following signal words are used:

#### **DANGER**

##### **DANGER !**

- ▶ Draws attention to imminent danger that will lead to serious personal injury or fatality.

#### **WARNING**

##### **WARNING !**

- ▶ Draws attention to a potential threat of danger that can lead to serious injury or fatality.





#### **CAUTION**

##### **CAUTION !**

- ▶ Draws attention to a potentially dangerous situation that could lead to slight personal injury or damage to the equipment or other property.





### 1.2.2 Symbols in the documentation

The following symbols are used in this document:

	Read the operating instructions before use.
	Instructions for use and other useful information
	Dealing with recyclable materials
	Do not dispose of electric equipment and batteries as household waste

### 1.2.3 Symbols in the illustrations

The following symbols are used in illustrations:

	These numbers refer to the corresponding illustrations found at the beginning of these operating instructions
	The numbering reflects the sequence of operations shown in the illustrations and may deviate from the steps described in the text
	Item reference numbers are used in the <b>overview illustrations</b> and refer to the numbers used in the <b>product overview section</b>
	This symbol is intended to draw special attention to certain points when handling the product.

## 1.3 Product-dependent symbols

### 1.3.1 Symbols on the product

The following symbols can be used on the product:

	Wireless data transfer
	Hilti Li-ion battery type series used. Observe the information given in the section headed <b>Intended use</b>
	Pendulum locked (laser beam inclined)
	Pendulum unlocked (self-leveling system active)

#### 1.4 Product information

products are designed for professional users and only trained, authorized personnel are permitted to operate, service and maintain the products. This personnel must be specifically informed about the possible hazards. The product and its ancillary equipment can present hazards if used incorrectly by untrained personnel or if used not in accordance with the intended use.

The type designation and serial number are printed on the rating plate.

- ▶ Write down the serial number in the table below. You will be required to state the product details when contacting Hilti Service or your local Hilti organization to inquire about the product.

##### Product information

Multi-line laser	PM 30-MG
Generation	01
Serial no.	

#### 1.5 Declaration of conformity

We declare, on our sole responsibility, that the product described here complies with the applicable directives and standards. A copy of the declaration of conformity can be found at the end of this documentation.

The technical documentation is filed and stored here:

**Hilti** Entwicklungsgesellschaft mbH | Tool Certification | Hiltistrasse 6 | D-86916 Kaufering, Germany

## 2 Safety

### 2.1 Safety instructions

**In addition to the warnings given in the various sections of these operating instructions, the following points must be strictly observed at all times.** The product and its ancillary equipment may present hazards when used incorrectly by untrained personnel or when used not as directed.

- ▶ Keep all safety instructions and information for future reference.
- ▶ Check the accuracy of the tool before use and several times during use.
- ▶ Stay alert, watch what you are doing and use common sense when operating the tool. Do not use the tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating the tool may result in serious personal injury.
- ▶ Tampering with or modification of the tool is not permitted.
- ▶ Do not render safety devices ineffective and do not remove information and warning notices.
- ▶ Keep children and other persons away from the area while the tool or appliance is in use.
- ▶ Take the influences of the surrounding area into account. Do not use the tool where there is a risk of fire or explosion.
- ▶ The laser plane should be well above or well below eye height.
- ▶ You must check the accuracy of the device after it has been dropped or subjected to other mechanical stresses.
- ▶ To achieve maximum accuracy, project the line onto a vertical, flat surface. When doing so, set up the tool at 90° to the surface.
- ▶ Keep the laser exit aperture clean to avoid measurement errors.
- ▶ Observe the information printed in the operating instructions concerning operation, care and maintenance.
- ▶ When not in use, tools must be stored in a dry, high place or locked away out of reach of children.
- ▶ Observe the national health and safety requirements.

## 2.2 Proper preparation of the working area

- ▶ Avoid awkward body positions when working from ladders. Make sure you work from a safe stance and stay in balance at all times.
- ▶ Secure the site in which you are taking measurements and take care to avoid directing the beam towards other persons or towards yourself when setting up the tool.
- ▶ Measurements taken through panes of glass or other objects may be inaccurate.
- ▶ Ensure that the tool is set up on a stable, level surface (not subject to vibration).
- ▶ Use the tool only within its specified limits.
- ▶ If several laser tools are used in the same working area, care must be taken to avoid confusing the beams.
- ▶ Strong magnetic fields may affect the accuracy of the tool. Magnetic objects should thus be kept away from the measuring tool. Hilti magnetic adapters may be used.
- ▶ When the tool is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.

## 2.3 Electromagnetic compatibility

Although the device complies with the strict requirements of the applicable directives, **Hilti** cannot entirely rule out the possibility of interference to the device caused by powerful electromagnetic radiation, possibly leading to incorrect operation. Check the accuracy of the device by taking measurements by other means when working under such conditions, or if you are unsure. Likewise, **Hilti** cannot rule out the possibility of interference with other devices (e.g. aircraft navigation equipment).

## 2.4 Laser classification for Class 2 laser products

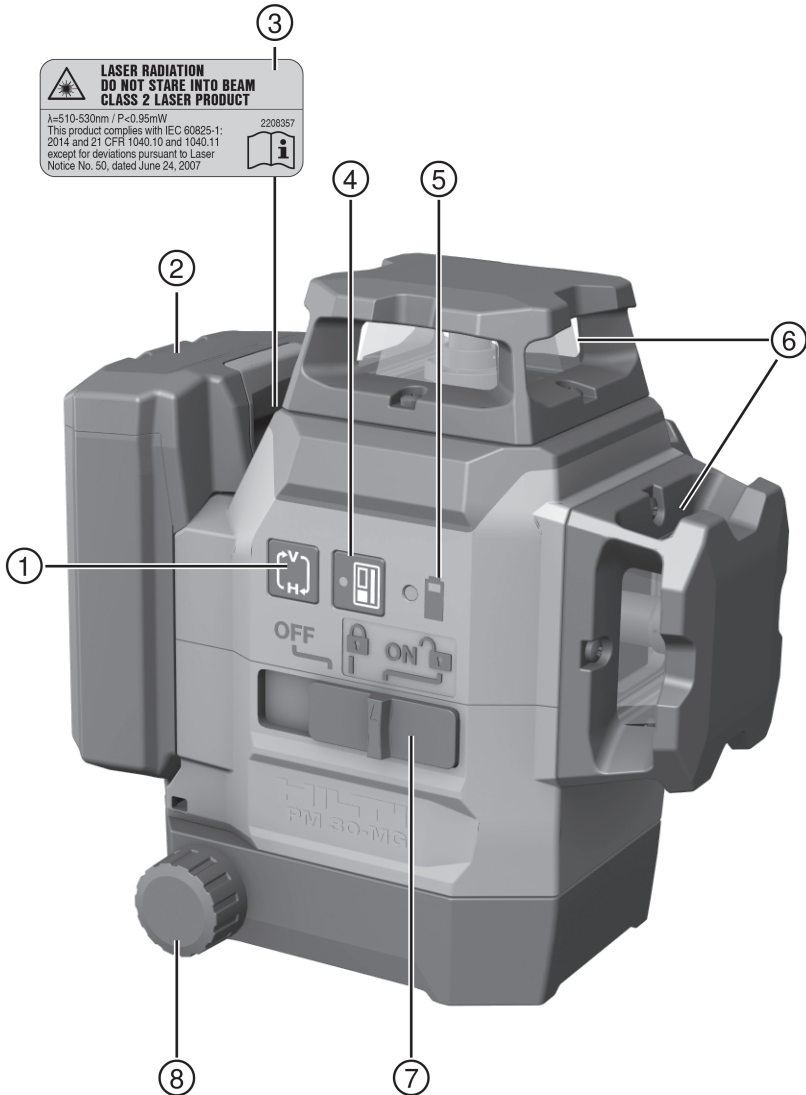
The tool complies with Laser Class 2 in accordance with IEC / EN 60825-1: 2014 and in accordance with CFR 21 Sec. 1040 (FDA). These devices can be used without further protective measures. Nevertheless, as with the sun, do not look directly into the light source. If you do inadvertently look into the laser beam, immediately close your eyes and move your head clear of the laser beam. Do not aim the laser beam at persons.

## 2.5 Battery use and care

- ▶ Observe the special regulations and instructions applicable to the transport, storage and use of Li-ion batteries.
- ▶ Do not expose batteries to high temperatures, direct sunlight or fire.
- ▶ Do not disassemble, crush or incinerate batteries and do not subject them to temperatures over 80 °C.
- ▶ Do not use or charge batteries that have suffered mechanical impact, have been dropped from a height or show signs of damage. In this case, always contact your **Hilti Service**.
- ▶ If the battery is too hot to touch it may be defective. In this case, place the product in a non-flammable location, well away from flammable materials, where it can be kept under observation and allowed to cool down. In this case, always contact your **Hilti Service**.

### 3 Description

#### 3.1 Product overview



- |   |                      |   |   |
|---|----------------------|---|---|
| ① | Line mode button     | ⑤ | Battery state of charge indicator                       |
| ② | Li-ion battery       | ⑥ | Laser exit window                                       |
| ③ | Warning sticker      | ⑦ | Selector switch for ON / OFF and lock / unlock pendulum |
| ④ | Receiver mode button | ⑧ | Knob for fine adjustment                                |



### 3.2 Intended use

This tool is a self-leveling multi-line laser level that allows a single person to transfer right angles, level horizontally, carry out alignment work and plumb accurately.

The product has three green 360° laser lines, a reference point directed downward on the right-hand front of the measuring device, as well as four beam intersection points (front, back, left, right and above) with a range of approx. 20 m. Range depends on the brightness of ambient light.

The product is designed for mainly indoor use and is no substitute for a rotating laser. If used for outdoor applications, care must be taken to ensure that the conditions are the same as for indoor applications. If this is not the case, the **Hilti PMA 31G** laser receiver should be used.

Possible applications are:

- Marking the position of partition walls (at right angles and in the vertical plane).
- Checking and transferring right angles.
- Aligning components to be installed or sections of a structure in three axes.
- Transferring points marked on the floor to the ceiling.

The laser lines can be switched on either separately (vertical or horizontal line only) or together. When used with inclination angle, the pendulum for self-leveling is blocked.

- ▶ Use only **Hilti** Li-ion batteries of the B 12 series with this product.
- ▶ Use only the **Hilti C4/12-50** charger to charge these batteries.

### 3.3 Features

The product is self-leveling to within typically approx. 4.0° in all directions. Self-leveling time is about 3 seconds.

When the self-leveling range is exceeded, the laser beams blink as a warning.

When switched on, the product defaults to visibility mode with high line brightness. Horizontal and vertical lines can be switched on and off with the line mode button. To use the **PMA 31G** laser receiver, activate receiver mode by pressing the receiver mode button.

### 3.4 Items supplied

Multi-line laser, magnetic holder, wall-mount holder, retaining strap, case, manufacturer's certificate.

Other system products approved for use with this product can be found at your local **Hilti Store** or online at [www.hilti.group](http://www.hilti.group).

### 3.5 Information displayed during operation

Status	Meaning
The laser beam blinks twice every 10 seconds (pendulum not locked) or every 2 seconds (pendulum locked).	The batteries are almost exhausted.
The laser beam blinks five times and then remains permanently on.	Activation or deactivation of receiver mode.
The laser beam blinks very rapidly.	The tool cannot level itself.
The laser beam blinks every 5 seconds.	Inclined line operating mode; the pendulum is locked, so the lines are not leveled.

## 4 Technical data

<b>Range of the lines and intersection point without laser receiver</b>	20 m (65 ft - 10 in)
<b>Range, lines and intersection point with laser receiver</b>	2 m ... 50 m (6 ft - 10 in ... 164 ft)
<b>Self-leveling time (typical)</b>	3 s
<b>Self-leveling range</b>	±4.0° (typical)
<b>Accuracy</b>	± 3 mm at 10 m (± 0.1 in at 32 ft - 10 in)

<b>Line thickness</b>	< 2.2 mm at 5 m (typical) < 0.09 in at 16 ft (typical))
<b>Laser class</b>	Class 2, visible, 510-530 nm
<b>Operating status indicator</b>	Laser beams and the switch positions "Off", "On locked" and "On unlocked"
<b>Power source</b>	<b>Hilti B 12 Li-ion battery</b>
<b>Battery life (all lines on)</b>	<b>Hilti B12 Li-ion battery 2600 mAh, temperature +24 °C (+72 °F): 8 h (typical)</b>
<b>Battery life (horizontal or vertical lines on)</b>	<b>Hilti B 12 Li-ion battery, 2600 mAh, temperature +24 °C (+72 °F): 12 h (typical)</b>
<b>Operating temperature</b>	-10 °C ... 40 °C (14 °F ... 104 °F)
<b>Storage temperature</b>	-25 °C ... 63 °C (-13 °F ... 145 °F)
<b>Dust and water spray protection (except battery compartment)</b>	IP 54
<b>Tripod thread</b>	BSW 5/8"   UNC 1/4"
<b>Beam divergence</b>	0.05 mrad * 360°
<b>Average output power (max.)</b>	< 0.95 mW
<b>Weight including battery</b>	1.28 kg (2.82 lb)

## 5 Operation

### CAUTION

**Risk of injury!** Do not direct the laser beam toward persons.

- ▶ Never look directly into the source of the laser beam. In the event of direct eye contact, close your eyes and move your head out of the path of the laser beam.

### 5.1 Charging the battery

1. Before charging the battery, read the operating instructions for the charger.
2. Make sure that the contacts on the battery and the contacts on the charger are clean and dry.
3. Use an approved charger to charge the battery.

### 5.2 Inserting the battery

#### CAUTION

**Risk of injury by short circuit or falling battery!**

- ▶ Before inserting the battery, make sure that the contacts on the battery and the contacts on the product are free of foreign matter.
- ▶ Make sure that the battery always engages correctly.

1. Charge the battery fully before using it for the first time.
2. Push the battery into the battery holder until it engages with an audible click.
3. Check that the battery is seated securely.


### 5.3 Removing the battery

- ▶ Pull the battery out of its holder in the device.

### 5.4 Matching two points over distance by fine adjustment

1. Position the device with the lower plumbing beam centered on the reference cross on the ground.
2. Turn the knob for fine adjustment until the vertical laser beam is aligned with the second, remote control point.

## 5.5 Switching the laser beams on

1. Set the selector switch to the  position (ON / unlocked).
  - ↳ The vertical laser lines are switched on.
2. Press the line mode button repeatedly until the desired line mode is set.
  - ↳ The operating modes change in the following sequence and the sequence repeats itself: vertical lines, vertical side line, horizontal line, vertical and horizontal lines.

## 5.6 Switching the laser beams off


1. Set the selector switch to the **OFF** position.
  - ↳ The laser beam is switched off and the pendulum is locked.

### CAUTION

#### Risk of injury by unintended starting!

- ▶ Before inserting the battery, make sure that the product is switched off.
- 
2. The laser beam is switched off automatically when the battery is low.

## 5.7 Setting the laser beam for the "Inclined line" function

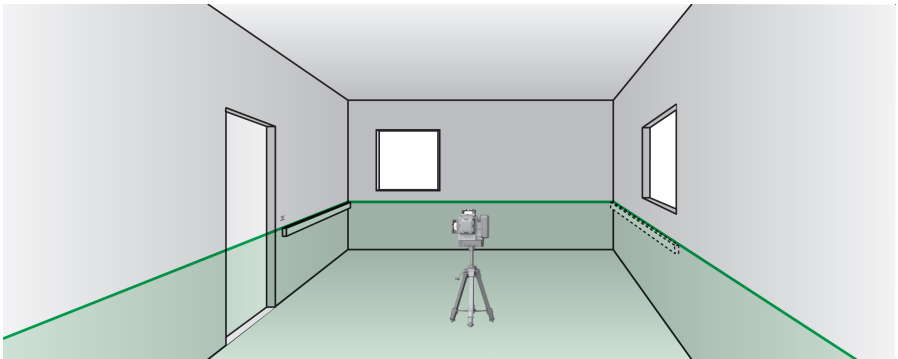
1. Set the selector switch to the  position (ON / locked).
2. Press the line mode button repeatedly until the desired line mode is set. → page 7



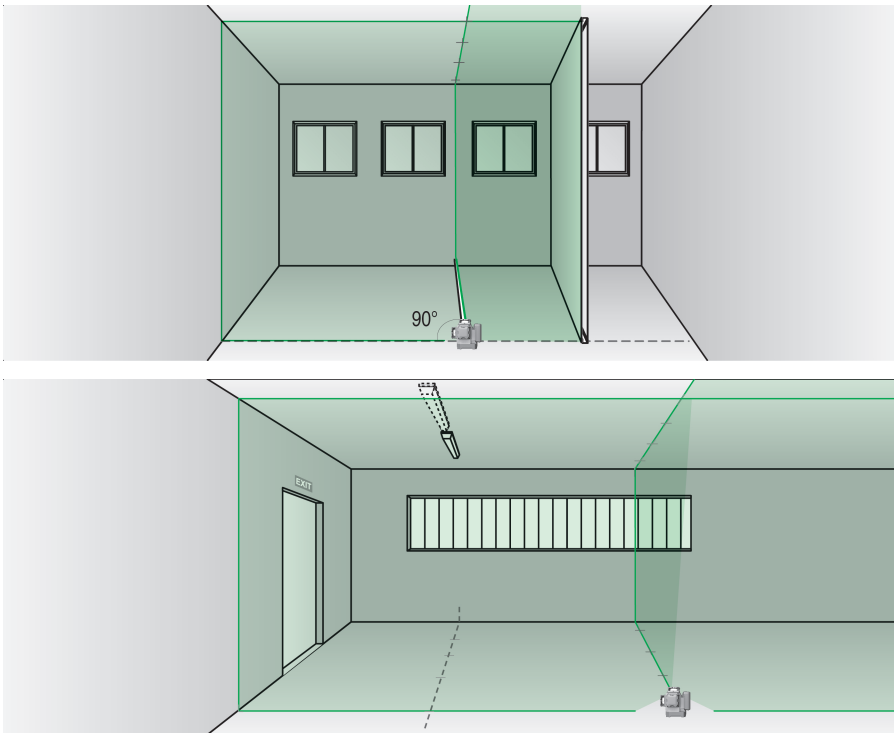
When the "Inclined line" function is active, the pendulum is locked and the laser is not leveled. The laser beam(s) blink every 5 seconds.

## 5.8 Examples of applications

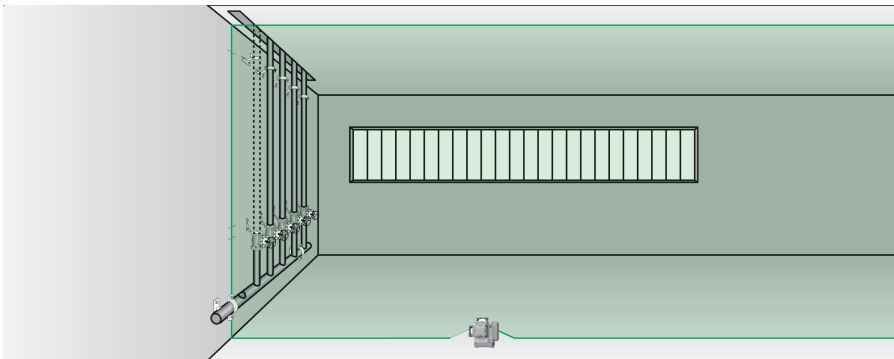
### 5.8.1 Transferring heights



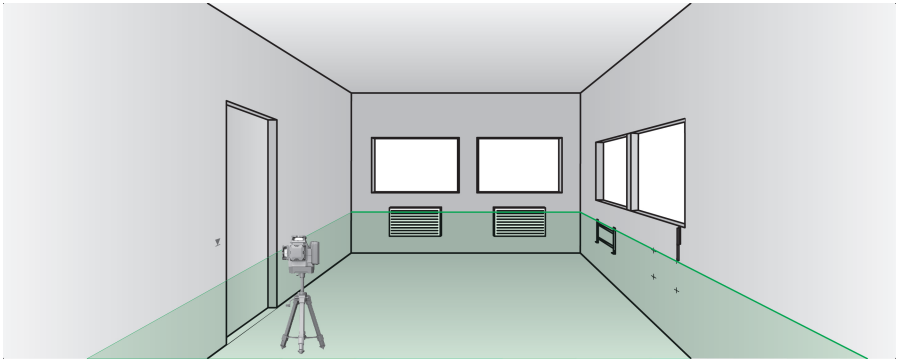
### 5.8.2 Setting up drywall track for a partition wall



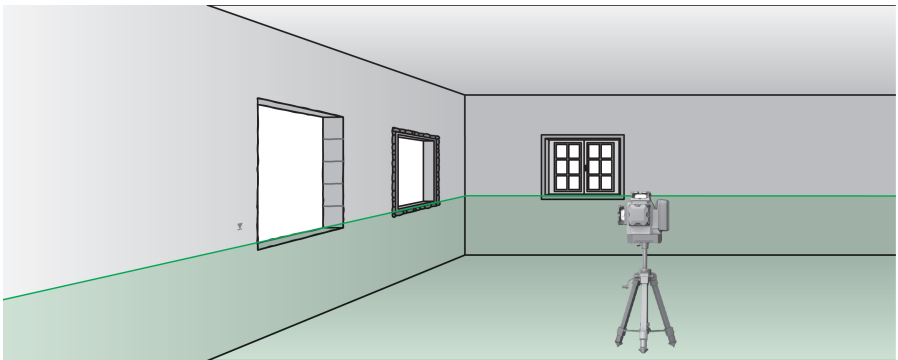
### 5.8.3 Vertical alignment of pipes



### 5.8.4 Aligning heating units

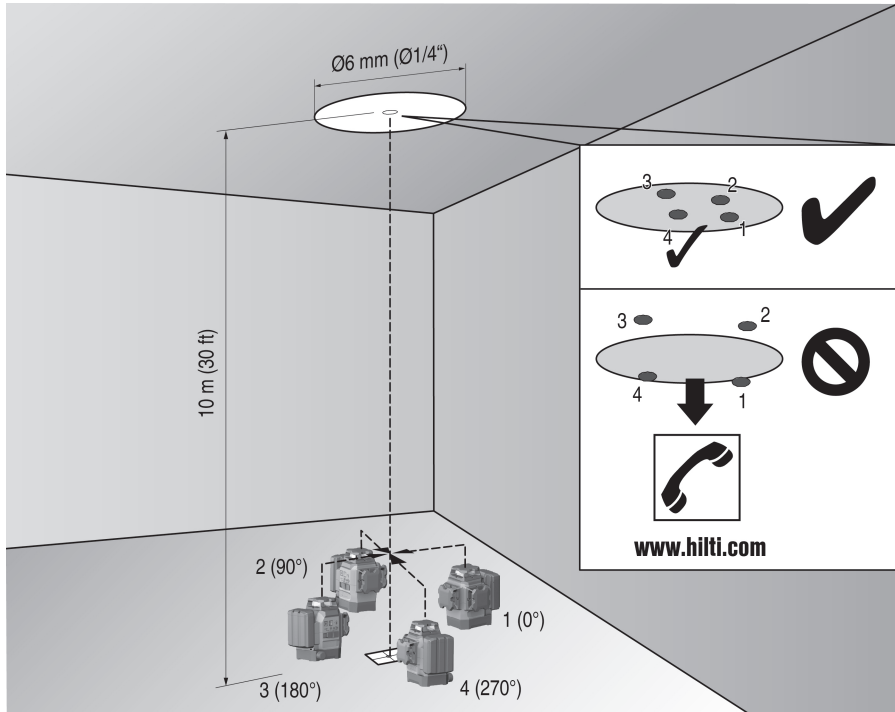


### 5.8.5 Aligning door and window frames



## 5.9 Checking

### 5.9.1 Checking the plumb point



1. In a high room (for example in a stairwell with a height of 10 m), make a mark (a cross) on the floor.
2. Place the tool on an even, level surface.
3. Switch the tool on and unlock the pendulum.
4. Position the tool so that the lower plumb beam coincides with the center of the cross marked on the floor.
5. Mark the top point of intersection of the laser lines on the ceiling.
6. Pivot the tool through 90°.



The lower intersection must remain on the center of the cross.

7. Mark the top point of intersection of the laser lines on the ceiling.
8. Repeat the procedure after pivoting the tool through 180° and 270°.



Form a circle on the ceiling from the 4 marked points. Measure the diameter of the circle  $D$  in millimeters or inches and the height of the room in meters or feet.

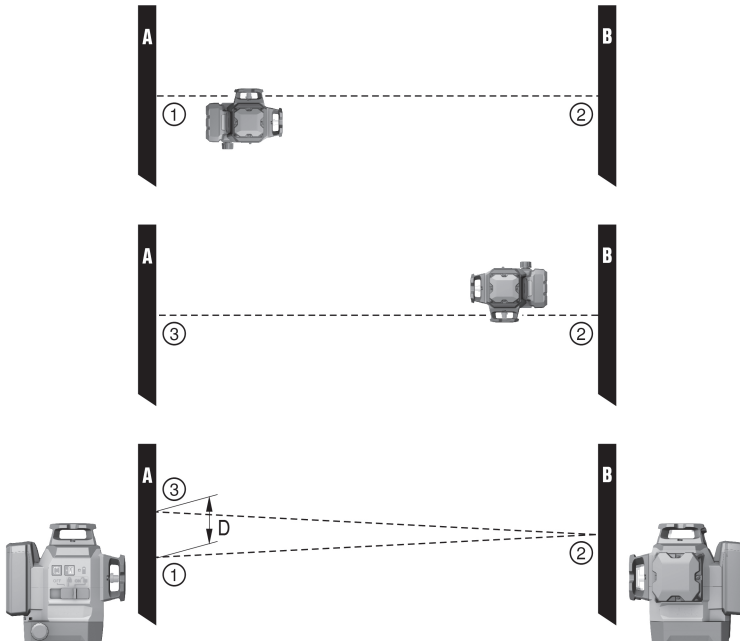
9. Calculate the value R.

- ↳ The value R should be less than 3 mm (corresponds to 3 mm at 10 m).
- ↳ The value R should be less than 1/8".

$$R = \frac{D \text{ [mm]}}{2} \times \frac{10}{RH \text{ [m]}} \quad (1)$$

$$R = \frac{D[1/8 \text{ in}]}{2} \times \frac{30}{RH \text{ [ft]}} \quad (2)$$

### 5.9.2 Checking the leveling of the laser beam



1. The distance between the walls must be at least 10 m.
2. Place the tool on an even, level surface approx. 20 cm from the wall (A) with the point of intersection of the laser lines directed toward the wall (B).
3. Mark the point of intersection of the laser lines with a cross (1) on wall (A) and with a cross (2) on wall (B).
4. Place the tool on an even, level surface approx. 20 cm from wall (B) and carefully aim the point of intersection of the laser lines at cross (1) on wall (A).
5. Use the adjustable feet to adjust the height of the point of intersection of the laser lines so that the point of intersection coincides exactly with the mark (2) on the wall (B). In doing so, make sure that the bubble level remains centered.
6. Mark the point of intersection of the laser lines again with a cross (3) on the wall (A).
7. Measure the offset D between the crosses (1) and (3) on the wall (A) (RL = room length).

8. Calculate the value R.

- ↳ The value R should be less than 3 mm.
- ↳ The value R should be less than 1/8".

$$R = \frac{D [\text{mm}]}{2} \times \frac{10}{RL [\text{m}]} \quad (1)$$

$$R = \frac{D [1/8 \text{ in}]}{2} \times \frac{30}{RL [\text{ft}]} \quad (2)$$

### 5.9.3 Checking perpendicularity (horizontal)

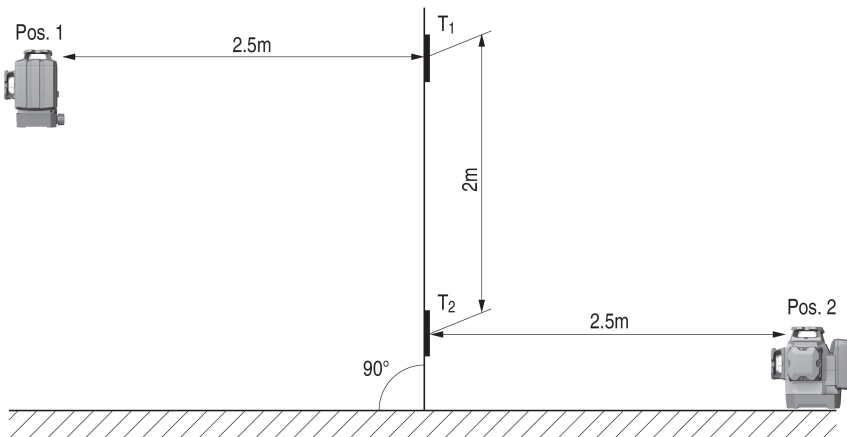
1. Position the tool so that the lower plumb beam coincides with the center of a reference cross marked in the middle of a room at a distance of about 5 m from the walls.
2. Mark all 4 points of intersection on the four walls.
3. Rotate the tool through 90° and make sure that the center of the point of intersection coincides with the first reference point (A).
4. Mark each new point of intersection and measure each offset (R1, R2, R3, R4 [mm]).
5. Calculate the offset R (RL = room length).

- ↳ The value R should be less than 3 mm or 1/8".

$$R = \frac{(R1+R2+R3+R4) [\text{mm}]}{4} \times \frac{10}{RL [\text{m}]} \quad (1)$$

$$R = \frac{(R1+R2+R3+R4) [1/8 \text{ in}]}{4} \times \frac{30}{RL [\text{ft}]} \quad (2)$$

### 5.9.4 Checking the accuracy of the vertical line



1. Position the tool at a height of 2 m (pos.1).
2. Switch the tool on.
3. Position the first target plate T1 (vertical) at a distance of 2.5 meters from the tool at the same height (2 meters), so that the vertical laser beam strikes the plate. Mark this position.
4. Then place the second target plate T2 at a position 2 meters below the first target plate, so that the vertical laser beam strikes the plate. Mark this position.
5. Mark position 2 at the opposite side of the test setup (mirror image) on the laser line on the floor at a distance of 5 meters from the tool.
6. Now place the tool on the previously marked position (pos. 2) on the floor.



7. Align the laser beam so that it strikes the target plate T1 and the position marked on it.
8. Mark the new position on target plate T2.
9. Read the distance D between the two marks on target plate T2.



If the difference D is greater than 3 mm, the tool must be returned to a **Hilti** repair center for adjustment.

## 6 Care and maintenance

### 6.1 Cleaning and drying

- ▶ Blow any dust off the glass.
- ▶ Do not touch the glass surfaces with your fingers.
- ▶ Use only a soft, clean cloth to clean the tool. If necessary, moisten the cloth with a little alcohol or water.
- ▶ Observe the specified temperature limits when storing your equipment, above all in winter and summer, especially if the equipment is stored in a motor vehicle.

### 6.2 Hilti Measuring Systems Service

**Hilti** Measuring Systems Service checks the scanning tool and, if deviations from the specified accuracy are found, recalibrates it and rechecks to ensure conformity with specifications. The service certificate provides written confirmation of conformity with specifications at the time of the test. The following is recommended:

- Choose a test/inspection interval that matches usage of the device.
- Have the product checked by **Hilti** Measuring Systems Service after exceptionally heavy use or subjection to unusual conditions or stress, before important work or at least once a year.

Testing and inspection by **Hilti** Measuring Systems Service does not relieve the user of the obligation to check the scanning tool before and during use.

## 7 Transport and storage of cordless tools

### Transport



#### Accidental starting during transport !

- ▶ Always transport your products with the batteries removed!
- ▶ Remove the battery.
- ▶ Never transport batteries in bulk form (loose, unprotected).
- ▶ Check the tool and batteries for damage before use after long periods of transport.

### Storage



#### Accidental damage caused by defective or leaking batteries !

- ▶ Always store your products with the batteries removed!
- ▶ Store the tool and batteries in a place that is as cool and dry as possible.
- ▶ Never store batteries in direct sunlight, on heating units or behind a window pane.
- ▶ Store the tool and batteries in a place where they cannot be accessed by children or unauthorized persons.
- ▶ Check the tool and batteries for damage before use after long periods of storage.

## 8 Troubleshooting

If the trouble you are experiencing is not listed in this table or you are unable to remedy the problem by yourself, please contact **Hilti** Service.

Trouble or fault	Possible cause	Action to be taken
The tool can't be switched on.	The battery is low.	▶ Charge the battery.
	The battery is not fitted correctly.	▶ Fit the battery and check that the battery is securely seated in the tool.

Trouble or fault	Possible cause	Action to be taken
The tool can't be switched on.	Device or selector switch faulty.	▶ Have the tool repaired by <b>Hilti Service</b> .
Individual laser beams don't function.	The laser source or laser control unit is faulty.	▶ Have the tool repaired by <b>Hilti Service</b> .
The tool can be switched on but no laser beam is visible.	The laser source or laser control unit is faulty.	▶ Have the tool repaired by <b>Hilti Service</b> .
	The temperature is too high or too low.	▶ Allow the tool to cool down or warm up.
Automatic leveling doesn't work.	The tool is standing on an excessively inclined surface.	▶ Set the device on a flat, horizontal surface.
	Selector switch in the  position.	▶ Set the selector switch to the  position.
	The inclination sensor is faulty.	▶ Have the tool repaired by <b>Hilti Service</b> .

## 9 Disposal

Most of the materials from which **Hilti** tools and appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, your old tools, machines or appliances can be returned to **Hilti** for recycling. Ask **Hilti Service** or your Hilti representative for further information.



- ▶ Do not dispose of power tools, electronic equipment or batteries as household waste!

## 10 Manufacturer's warranty

- ▶ Please contact your local **Hilti** representative if you have questions about the warranty conditions.

## 11 FCC statement (applicable in US) / IC statement (applicable in Canada)

This device complies with Part 15 of the FCC Rules and CAN ICES-3 (B) / NMB-3 (B). Operation is subject to the following two conditions:

1. This device shall cause no harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



Changes or modifications not expressly approved by **Hilti** may restrict the user's authorization to operate the equipment.



**Hilti Corporation**  
Feldkircherstraße 100  
9494 Schaan | Liechtenstein

**PM 30-MG (01)**

[2018]

2014/30/EU

EN ISO 12100

2011/65/EU

Schaan, 12/2018

A handwritten signature in black ink, appearing to read "Paolo Luccini".

**Paolo Luccini**

Head of Quality and  
Process-Management  
BA Electric Tools & Accessories

A handwritten signature in black ink, appearing to read "Thomas Hillbrand".

**Thomas Hillbrand**

Head of BU Measuring Systems  
Business Unit Measuring Systems



Hilti Corporation  
LI-9494 Schaan  
Tel.:+423 234 21 11  
Fax:+423 234 29 65  
[www.hilti.group](http://www.hilti.group)



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Hilti Connect