

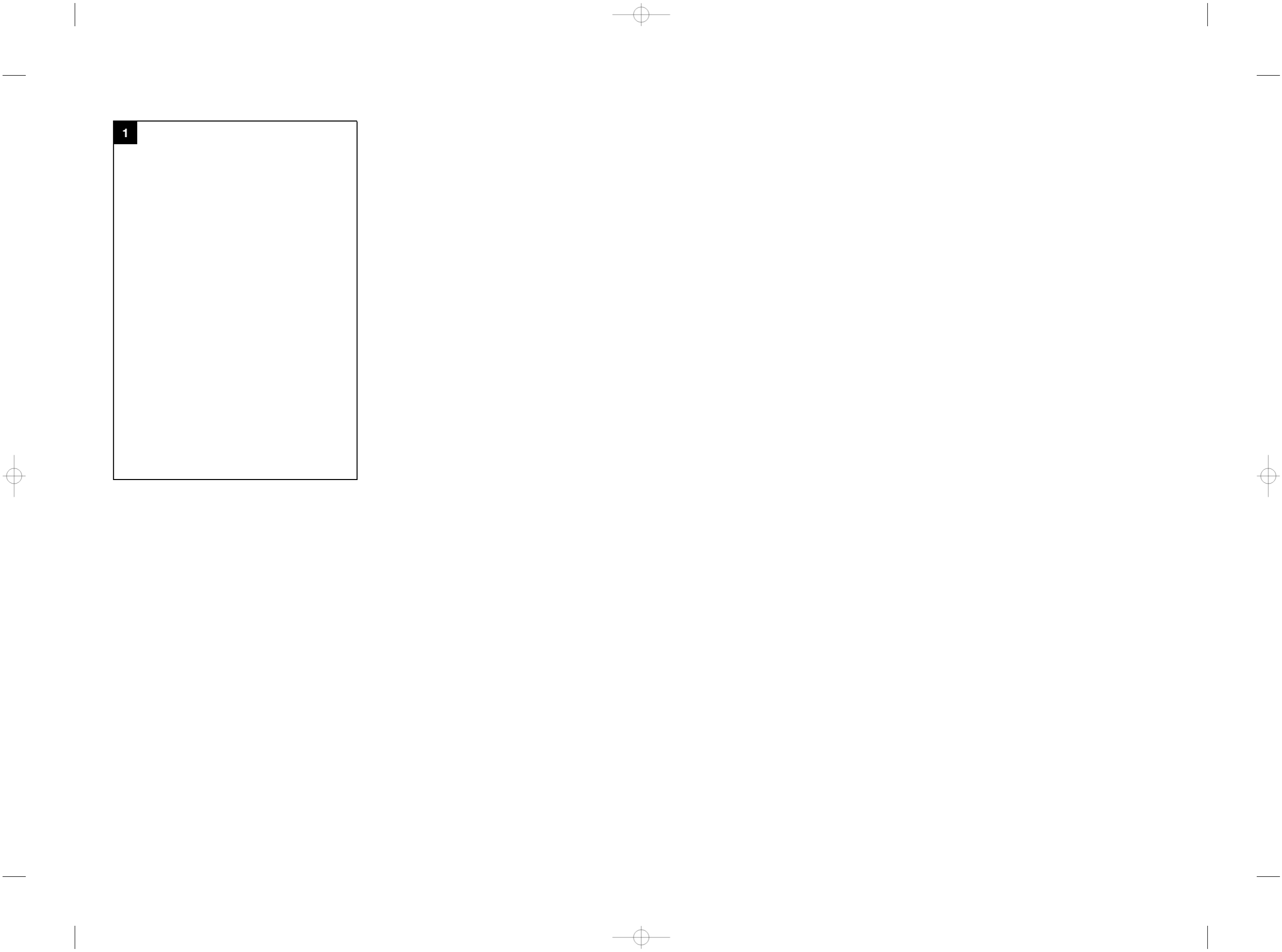
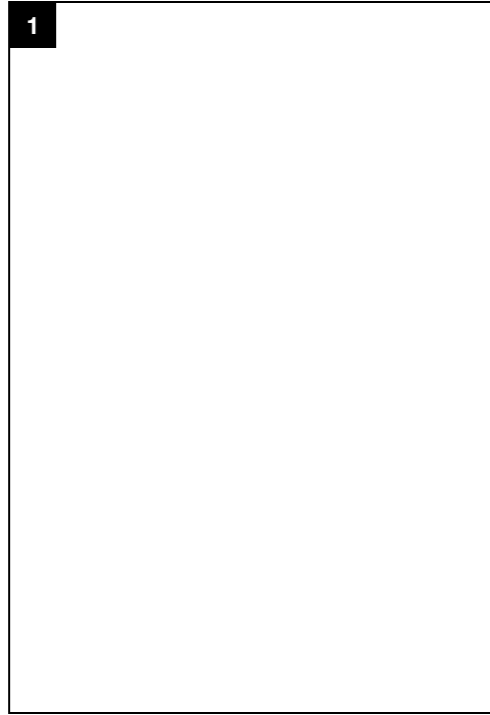
**Hilti Corporation**

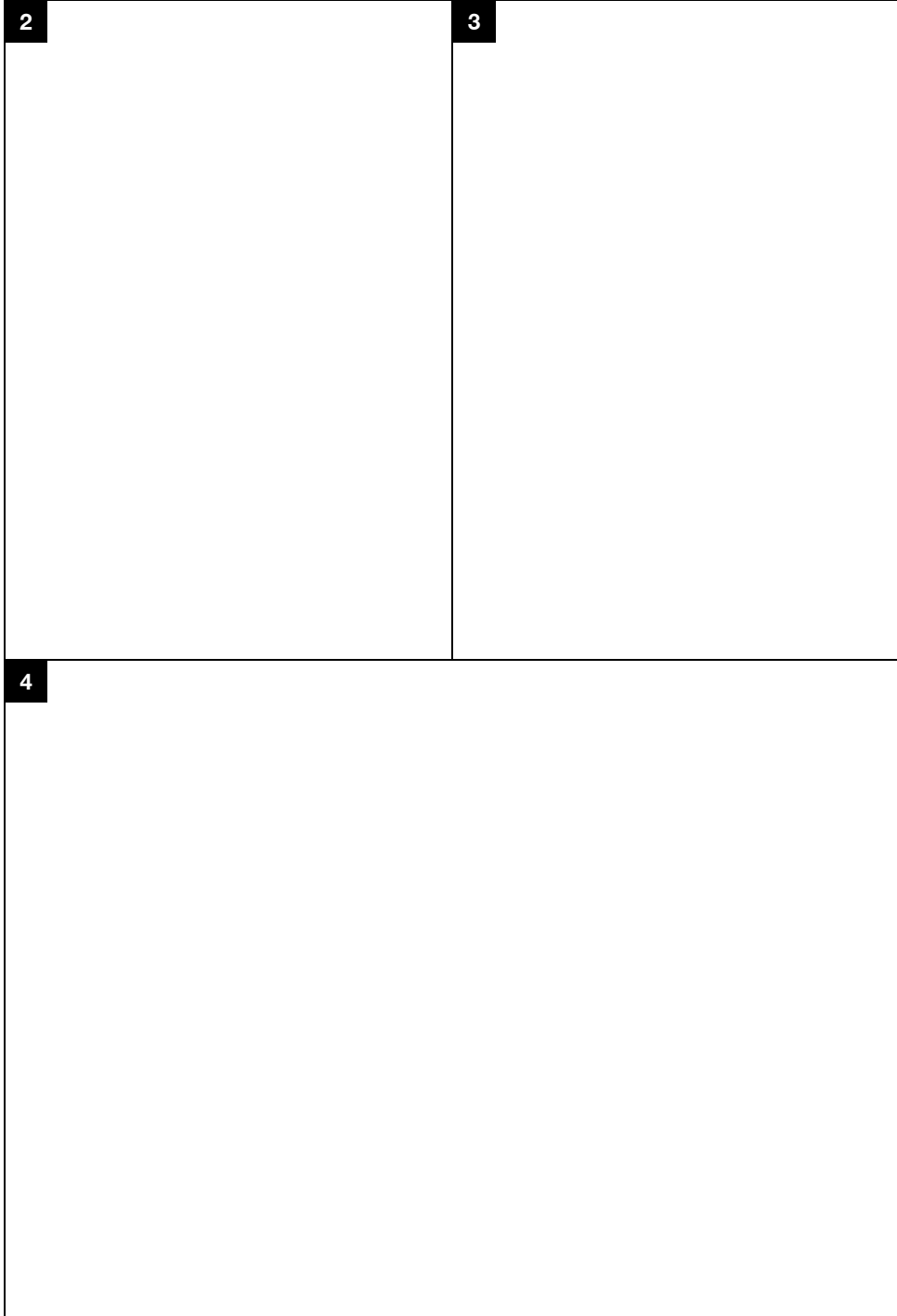
FL-9494 Schaan  
Tel: +423 / 234 21 11  
Fax: +423 / 234 29 65  
www.hilti.com

# PRA 300

Operating instructions en

DOC-ARTIKELNR/REF-STAND







## ORIGINAL OPERATING INSTRUCTIONS

### PRA 300 laser receiver

**It is essential that the operating instructions are read before the tool is operated for the first time.**

**Always keep these operating instructions together with the tool.**

**Ensure that the operating instructions are with the tool when it is given to other persons.**

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**1** These numbers refer to the illustrations. You can find the illustrations at the beginning of the operating instructions.

In these operating instructions, the designation "the tool" always refers to the PRA 300 (01) laser receiver.

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#### Control panel **1**

- ① On/off button
- ② Inclination entry key (Plus / Right or Up arrow key) (with the PRA 90)
- ③ Confirmation button (OK)
- ④ "Menu" button
- ⑤ Inclination entry key (Minus / Left or Down arrow key) (with the PRA 90:
- ⑥ Automatic alignment / surveillance mode key (vertical) (double click)
- ⑦ Receiving area
- ⑧ Marking notch
- ⑨ Display

#### Display on the PRA 300 laser receiver / remote control unit **2**

- ① Display showing the position of the receiver relative to the height of the laser plane
- ② Indication of accuracy
- ③ Battery status indicator
- ④ Activation / deactivation virtual beam shields
- ⑤ Volume
- ⑥ Indicator showing distance from laser plane

## 1 General information

### 1.1 Safety notices and their meaning

#### DANGER

Draws attention to imminent danger that will lead to serious bodily injury or fatality.

#### WARNING

Draws attention to a potentially dangerous situation that could lead to serious personal injury or fatality.

#### CAUTION

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

#### NOTE

Draws attention to an instruction or other useful information.

### 1.2 Explanation of the pictograms and other information

#### Warning signs



General warning



Warning: caustic substances

#### Obligation signs



Read the operating instructions before use.

## Symbols



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Return waste material for recycling.

## Location of identification data on the tool

The type designation and serial number can be found on the type identification plate on the tool. Make a note of this data in your operating instructions and always refer to it when making an enquiry to your Hilti representative or service department.

Type: \_\_\_\_\_

Generation: 01 \_\_\_\_\_

Serial no.: \_\_\_\_\_

## 2 Safety instructions

### 2.1 Basic information concerning safety

In addition to the information relevant to safety given in each of the sections of these operating instructions, the following points must be strictly observed at all times.

### 2.2 General safety rules

- a) Keep other persons, especially children, away from the area in which the work is being carried out.
- b) Check the condition of the tool before use. If the tool is damaged, have it repaired at a Hilti Service Center.
- c) Have the tool repaired only at a Hilti service center.
- d) Do not render safety devices ineffective and do not remove information and warning notices.
- e) The tool must be checked at a Hilti service center after it has been dropped or subjected to other mechanical stresses.
- f) If mounting on an adapter, check that the tool is fitted correctly.
- g) Keep the receiving area clean in order to avoid measurement errors.
- h) Although the tool is designed for the tough conditions of jobsite use, as with other optical and electronic instruments (e.g. binoculars, spectacles, cameras) it should be treated with care.
- i) Although the tool is protected against the entry of moisture, it should be wiped dry before being put away in its transport container.
- j) Operation of the tool close to the ears may cause hearing damage. Do not position the tool close to the ears.

### 2.2.1 Electrical

- a) Keep the batteries out of reach of children.
- b) Do not allow the batteries to overheat and do not expose them to fire. The batteries may explode or release toxic substances.
- c) Do not charge the batteries.
- d) Do not solder the batteries into the tool.
- e) Do not discharge the batteries by short circuiting as this may cause them to overheat and present a risk of personal injury (burns).
- f) Do not attempt to open the batteries and do not subject them to excessive mechanical stress.

### 2.3 Proper organization of the work area

- a) Avoid unfavorable body positions when working on ladders or scaffolding. Make sure you work from a safe stance and stay in balance at all times.
- b) Use the tool only within its specified limits.
- c) Measurements taken through or from panes of glass or through other objects may be inaccurate.
- d) Use of the telescopic staff in the vicinity of overhead high voltage cables is not permissible.

### 2.4 Electromagnetic compatibility

Although the tool complies with the strict requirements of the applicable directives, Hilti cannot entirely rule out the possibility of the tool being subject to interference caused by powerful electromagnetic radiation, leading to incorrect operation. Check the accuracy of the tool 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).



### 3 Description

#### 3.1 Use of the product as directed

The tool can be used to remotely control the PR 300-HV2S rotating laser and to detect and locate the laser beam. These operating instructions apply only to operation of the PRA 300 laser receiver. For information about the remote control functions, please refer to the operating instructions for the PR 300-HV2S.

In conjunction with the PR 300-HV2S, the tool can be used to determine, transfer and check horizontal levels and heights, verticals, inclined planes and right angles. Examples of its uses are: transferring datums and benchmark heights, determining right angles for walls, vertical alignment on reference points and setting out slopes.

Observe the information printed in the operating instructions concerning operation, care and maintenance.

Take the influences of the surrounding area into account. Do not use the tool where there is a risk of fire or explosion.

**Modification of the tool or tampering with its parts is not permissible.**

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#### 3.2 Features

The tool can be held by hand or mounted on a leveling staff, timber batten or frame etc., using the applicable holder.

#### 3.3 Indicators

##### NOTE

The display incorporates several symbols that indicate various circumstances.

Position of the laser receiver relative to the height of the laser plane	The position of the laser receiver relative to the height of the laser plane is shown by an arrow indicating the direction in which the laser receiver has to be moved in order to bring it exactly into alignment with the laser.
Battery status indicator	The battery status indicator shows the remaining battery capacity.
Volume level	If no volume symbol is shown, the signal tone is switched off. If one segment is shown, the volume is set to "Low" (quiet). If two segments are shown, the volume is set to "Normal". If three segments are shown, the volume is set to "High" (loud).
Offset indicator	Shows the exact distance of the laser receiver from the laser plane in the desired unit of measurement.
Other indicators	Other indicators in the display refer to the PR 300-HV2S rotating laser when controlled remotely. For further information, please refer to the PR 300-HV2S operating instructions.

#### 3.4 Items supplied

- 1 PRA 300 (01) laser receiver / remote control
- 1 PRA 300 operating instructions
- 2 Batteries (size AA cells)
- 1 Manufacturer's certificate

### 4 Technical data

Right of technical changes reserved.

Detection range (area diameter)	With the PR 300-HV2S (typical): 2...600 m (6 to 1968 ft)
Signal tone generator	3 volume levels plus mute setting
Liquid crystal display	On both sides
Indicator range, distance from zero	±52 mm (±2 in)
Laser plane indication area	±2 mm (±0.01 in), ±5 mm (±0.2 in), ±10 mm (±0.4 in), ±25 mm (±1 in)
Length of the receiving area	120 mm (5 in)

<sup>1</sup> The drop test was carried out using the PRA 83 receiver holder, dropped onto flat concrete under standard ambient conditions (MIL-STD-810G).



Casing top edge center indicator	75 mm (3 in)
Marking notches	On both sides
Time without detection before automatic power off	15 min
Weight (including batteries)	0.25 kg (0.6 lbs)
Power source	2 AA-size batteries
Battery life (alkaline)	Temperature +20°C (+68 °F): Approx. 40 h (depending on the quality of the alkaline batteries used)
Operating temperature range	-20...+50°C (-4 to +122 °F)
Storage temperature	-25...+60°C (-13 to +140 °F)
Protection class	IP 66 (in accordance with IEC 60529), except battery compartment
Drop test height <sup>1</sup>	2 m (6.5 ft)

<sup>1</sup> The drop test was carried out using the PRA 83 receiver holder, dropped onto flat concrete under standard ambient conditions (MIL-STD-810G).

## 5 Before use

### 5.1 Inserting the batteries

#### **DANGER**

**Do not use damaged batteries.**

#### **DANGER**

**Do not mix old and new batteries. Do not mix batteries of different makes or types.**

#### **NOTE**

The tool may be powered only by batteries manufactured in accordance with the applicable international standards.

1. Open the tool's battery compartment.
2. Insert the batteries in the tool.

**NOTE** Check to ensure correct polarity when inserting the batteries.

3. Close the battery compartment.

## 6 Operation

### 6.1 Switching the tool off and on

Press the on / off button.

Please note that all remote control buttons on the PRA 300 function only in conjunction with a PR 300-HV2S rotating laser. For information about the button functions, please refer to the PR 300-HV2S operating instructions.

### 6.2 Working with the laser receiver

The laser receiver can be used at distances (radiuses) of up to 300 m (980 ft). The laser beam is indicated visually and by a signal tone.

#### 6.2.1 Using the laser receiver as a hand-held tool

1. Press the on / off button.
2. Hold the tool in the plane of the rotating laser beam.

#### 6.2.2 Working with the laser receiver in the PRA 83 receiver holder

1. Push the tool into the rubber sleeve of the PRA 83 at an angle until it fully encloses the tool. Take care to ensure that the receiving area and the buttons are facing the front.
2. Fit the tool, complete with the rubber sleeve, onto the grip section. The cover and grip section are joined together by the magnetic holder.
3. Switch the tool on by pressing the on/off button.
4. Rotate the grip to bring it into the open position.
5. Secure the PRA 83 receiver holder on the telescopic staff or leveling staff by tightening the clamping knob.
6. Hold the tool with the receiving area in the plane of the rotating laser beam.

















### 6.2.3 Working with the PRA 81



1. Open the locking mechanism on the PRA 81.
2. Insert the tool in the PRA 81 height transfer device.
3. Close the locking mechanism on the PRA 81.
4. Switch the tool on by pressing the on/off button.
5. Hold the tool with the receiving area in the plane of the rotating laser beam.
6. Position the tool so that the distance display shows "0".
7. Use the measuring tape to measure the desired offset distance.

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### 6.3 Menu options on the PRA 300 laser receiver / remote control unit





1. The "Menu" key  may be pressed at any time during operation. The menu is then shown in the display.
2. Use the arrow keys  or , as required, to select the individual items from the menu.  
**NOTE** The arrow keys  or  let you select the various settings. Press the **OK** key to save your settings.


	Volume level
	Units
	
	System setup
	Tool setting
	Information
	Back

3. You can leave the menu again at any time by pressing the "Menu" key  or the "Back" key .


#### 6.3.1 Setting the volume level

The laser receiver is set to "Normal" volume every time it is switched on. The volume can be adjusted by way of the "Volume" function in the menu. One of four settings can be selected: "Low", "Normal", "High" or "Off". After making a selection you are returned automatically to the normal operating mode.

	Volume high
	Volume normal
	Volume low
	Volume off

Press the "Back" key  if you wish to return to the menu.

#### 6.3.2 Setting the units

Using the units function from the menu you can set the desired accuracy of the digital display in millimeters or inches. After making each selection you are returned automatically to the normal operating mode or, alternatively, pressing the "Back" key  will take you back to the menu.

##### Units

	1 mm		1/16"
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	2 mm		1/8"
	5 mm		1/4"
	10 mm		1/2"
	25 mm		1"

### 6.3.3 System setup

The following items appear in the menu: "Activate / deactivate beam shields" and "Sleep mode" . These functions are available only when the PRA 300 and PRA 300-HV2S are switched on and both devices have been paired with each other.

#### 6.3.3.1 Activating/deactivating the beam shields

The laser beam from the PR 300-HV2S can be shut off at one or more sides of the tool. This function is useful when more than one laser tool is in use on a construction site and you wish to avoid detecting the beam from more than one laser at a time. The laser plane is divided into four quadrants. These are marked on the casing of the tool and can be set as follows:

1. In the menu select the system settings and confirm your selection by pressing the **OK** key.
2. Select the "Activate / deactivate beam shields" function and confirm your selection by pressing the **OK** key.
3. Use the arrow keys to navigate to the correct quadrant.
4. Activate / deactivate the desired quadrants by pressing the OK key **OK**.
5. Confirm this setting by pressing the OK key .  
If the quadrant is visible its status is "On". If the quadrant is not visible its status is "Off".
6. Press the "Back" key to return to the "System setup" menu item or press the "Menu" key to return to normal operating mode.

**NOTE** Settings that affect the rotating laser only become effective when the rotating laser is switched on and a wireless connection has been established.















#### 6.3.3.2 Activating / deactivating sleep mode

The PR 300-HV2S saves power when in sleep mode. The laser is switched off, thereby extending battery life. The rotating laser is still leveled.


1. Press the "Menu" key on the PRA 300.
2. Select system setup .
3. Use the arrow keys to navigate to the option "Sleep mode" .
4. Confirm your selection by pressing the OK key **OK**.
5. Activate / deactivate sleep mode by pressing the OK key .

**NOTE** All settings remain saved.


### 6.3.4 Tool settings

 Shock warning sensitivity		High vibration, low sensitivity to shock
		Medium
		Low
 Inclined plane mode units		Percent
		Degrees
		Per mille
 Units		Millimeters
		Inches
 Wireless connection		On
		Off

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Settings that affect the rotating laser only become effective when the rotating laser is switched on and a wireless connection has been established. Pressing the "Back" key  takes you back to the main menu.


#### 6.3.4.1 Deactivating the shock warning function

1. Switch the rotating laser on (see ??).
2. Press the "Deactivate shock warning" key .  
The shock warning deactivation LED lights constantly, indicating that the function has been deactivated.  
If the shock warning function is deactivated, the tool no longer reacts to shock (i.e. when bumped or shaken).
3. To return to standard operating mode, switch the tool off and then switch it back on again.

#### 6.3.4.2 Inclined plane mode units

Under "Inclined plane mode units" the units to be used when entering an inclination can be set to percent, degrees or per mille.



1. Press the "Menu" key  on the PRA 300.

2. Choose the "Settings" key .
3. Use the arrow keys to select "Inclined plane mode units"  $\frac{\%}{\text{‰}}$ .
4. Confirm your selection by pressing the **OK** key.
5. Choose the correct units and activate these by pressing the **OK** key.

#### 6.3.4.3 Units




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This item in the menu lets you choose between metric and imperial units.

1. Press the "Menu" key  on the PRA 300.
2. Choose the "Settings" key .
3. Press one of the arrow keys to select "Units"  $\frac{\text{mm}}{\text{in}}$ .
4. Confirm your selection by pressing the **OK** key.
5. Choose the correct units and activate these by pressing the **OK** key.




#### 6.3.4.4 Wireless connection

If necessary, you can deactivate the receiver's wireless connection and then use the receiver / remote control unit simply as a receiver.

1. Press the "Menu" key  on the PRA 300.
2. Choose the "Settings" key .
3. Use the arrow keys to select the "Wireless connection" option .
4. Confirm your selection by pressing the **OK** key.
5. Choose the correct wireless connection and activate this by pressing the **OK** key.

#### 6.3.5 Information

When this menu item is selected you have the following options:

 Software version	Shows the software version of the tool, receiver and PRA 90.
 Date of last calibration	Shows the date of the last calibration.
 QR code	The QR code, which can be scanned with a smartphone, is linked to animation videos that explain how to operate the system.

You can leave the menu again at any time by pressing the "Menu" key  or the "Back" key .

#### NOTE

All other operating functions are described in the PR 300-HV2S rotating laser operating instructions.

## 7 Care and maintenance

### 7.1 Cleaning and drying

1. Blow dust off the surfaces.
2. Do not touch the display areas or the receiving area with the fingers.
3. Use only a clean, soft cloth for cleaning. If necessary, moisten the cloth slightly with pure alcohol or a little water.  
**NOTE** Do not use any other liquids as these may damage the plastic components.
4. Dry the equipment, observing the maximum temperatures given in the technical data.  
**NOTE** Especially in summer and winter, take care that the given maximum and minimum temperatures are not exceeded, e.g. when the equipment is stored in a motor vehicle.



### 7.2 Storage

Remove the tool from its case if it has become wet. Dry and clean the tool, its transport container and accessories (while observing the permissible temperature range). Repack the equipment only once it is completely dry. Check the accuracy of the equipment before it is used after a long period of storage or transportation. Remove the batteries from the tool before storing it for a long period. Leaking batteries may damage the tool.

### 7.3 Transport

Use the original Hilti packaging or packaging of equivalent quality for transporting or shipping your equipment.

#### CAUTION

Remove the batteries from the laser receiver before transporting or shipping it.

### 7.4 Hilti Measuring Systems Service

Hilti Measuring Systems Service checks the tool and, if deviations from the specified accuracy are found, recalibrates the tool and checks it again 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:

1. The tool should be checked at suitable intervals, depending on the frequency of normal use.
2. The tool should be checked at least once a year by a Hilti Measuring Systems Service Center.
3. The tool should be checked by a Hilti Measuring Systems Service Center if it has been abused in any way.
4. The tool should be checked by a Hilti Measuring Systems Service Center before being used for particularly important work.

Having the tool checked by a Hilti Measuring Systems Service Center does not relieve the user of his/her obligation to check the tool before and during use.

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## 8 Disposal

#### DANGER

Improper disposal of the equipment may have serious consequences:

The burning of plastic components generates toxic fumes which may present a health hazard.

Batteries may explode if damaged or exposed to very high temperatures, causing poisoning, burns, acid burns or environmental pollution.

Careless disposal may permit unauthorized and improper use of the equipment. This may result in serious personal injury, injury to third parties and pollution of the environment.



Most of the materials from which Hilti tools or appliances are manufactured can be recycled. The materials must be correctly separated before they can be recycled. In many countries, Hilti has already made arrangements for taking back old tools and appliances for recycling. Ask Hilti customer service or your Hilti representative for further information.



For EC countries only

Do not dispose of electronic measuring tools or appliances together with household waste.

In observance of the European Directive on waste electrical and electronic equipment and its implementation in accordance with national law, electrical appliances and batteries that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.



Dispose of the batteries in accordance with national regulations.



## 9 Manufacturer's warranty - tools

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

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

### CAUTION

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 radiofrequency 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 on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

Re-orient or relocate the receiving antenna.

Increase the distance between the equipment and receiver.

Connect the equipment to a power outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced TV/radio technician for assistance.

### NOTE

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

This device complies with part 15 of the FCC Rules and RSS-210 of the IC.

Operation is subject to the following two conditions:

This device shall cause no cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

## 11 EC declaration of conformity (original)

Designation:	Laser receiver
Type:	PRA 300
Generation:	01
Year of design:	2015

We declare, on our sole responsibility, that this product complies with the following directives and standards: until 19th April 2016: 2004/108/EC, from 20th April 2016: 2014/30/EU, 2011/65/EU, 1999/5/EC, EN 300 440-2 V1.4.1, EN 301 489-1 V1.9.2, EN 301 489-17 V2.2.1, EN ISO 12100.

Hilti Corporation, Feldkircherstrasse 100,  
FL-9494 Schaan



**Paolo Luccini**  
Head of BA Quality and Process Management  
Business Area Electric Tools & Accessories  
05/2015

**Edward Przybyłowicz**  
Head of BU Measuring Systems  
BU Measuring Systems  
05/2015

### Technical documentation filed at:

Hilti Entwicklungsgesellschaft mbH  
Zulassung Elektrowerkzeuge  
Hiltistrasse 6  
86916 Kaufering  
Deutschland