

VOLKSWAGEN

AKTIENGESELLSCHAFT



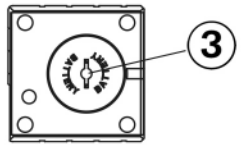
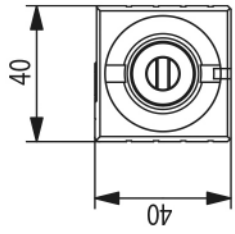
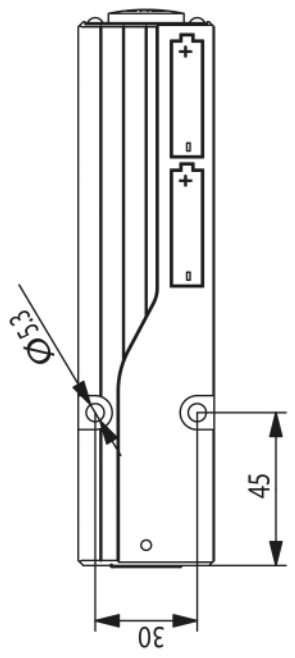
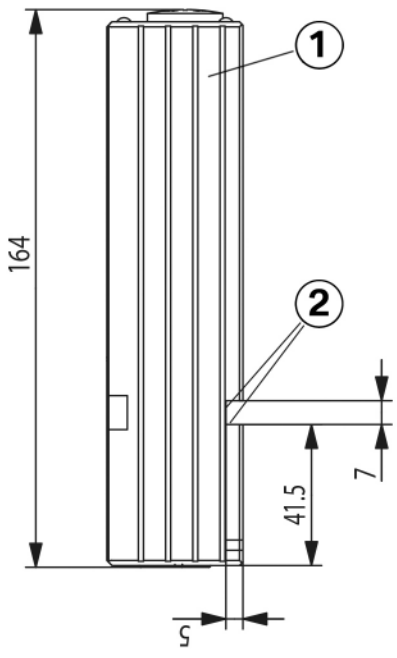
Betriebsanleitung

Linienlaser VAS 6350/3A

Operations manual

Line laser VAS 6350/3A





11 FCC-Hinweis (gültig in USA) / IC-Hinweis (gültig in Kanada)

i Dieses Gerät hat in Tests die Grenzwerte eingehalten, die in Abschnitt 15 der FCC-Bestimmungen für digitale Geräte der Klasse A festgeschrieben sind. Diese Grenzwerte sollen einen angemessenen Schutz gegen elektromagnetische Störungen beim Betrieb in gewerblich genutzten Gebieten gewährleisten. Geräte dieser Art erzeugen und verwenden Hochfrequenzen und können diese auch abstrahlen. Sie können daher, wenn sie nicht den Anweisungen entsprechend installiert und betrieben werden, Störungen des Rundfunkempfangs verursachen. Der Betrieb dieses Gerätes in Wohngebieten kann zu Störungen führen, für deren Behebung der Anwender aufkommen muss.

Diese Vorrichtung entspricht Paragraph 15 der FCC-Bestimmungen und den RSS-210 Spezifikationen der ISCED.

Die Inbetriebnahme unterliegt folgenden zwei Bedingungen:

- Dieses Gerät sollte keine schädigende Abstrahlung erzeugen.
- Das Gerät muss jegliche Abstrahlung aufnehmen, inklusive Abstrahlungen, die unerwünschte Operationen bewirken.

i Änderungen oder Modifikationen, die nicht ausdrücklich von **Hilti** erlaubt wurden, können das Recht des Anwenders einschränken, das Gerät in Betrieb zu nehmen.

Original operating instructions**1 Information about the operating instructions****1.1 About these operating instructions**

- Read these operating instructions before the product is used or operated for the first time. This is a prerequisite for safe, trouble-free handling and use of the product.
- Observe the safety instructions and warnings in these operating instructions and on the product.
- Always keep the operating instructions with the product and make sure that the product is accompanied by these operating instructions only, when the product 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 personal injury or damage to the equipment or other property.

1.2.2 Symbols in the operating instructions

The following symbols are used in these operating instructions:



Comply with the operating instructions



	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 illustrations

The following symbols are used in illustrations:

	These numbers refer to the illustrations at the beginning of these operating instructions.
3	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 overview illustration and refer to the numbers used in the key in the product overview section.
	These characters are intended to specifically draw your 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:

	Direct current (DC)
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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

Line laser module	LL 05
Generation	02
Serial no.	

1.5 Declaration of conformity

The manufacturer declares, on his sole responsibility, that the product described here complies with the applicable legislation and standards. A copy of the declaration of conformity can be found at the end of this documentation.

The technical documentation is filed here:

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

1.6 Sticker on the product

Laser information

	Laser class 2 based on standard IEC60825-1 / EN60825-1:2014 and compliant with CFR 21 § 1040.10 and 1040.11 (Laser Notice 56). Do not look straight into the laser beam.
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2.1 General safety instructions, measuring tools

⚠ WARNING! Read all safety precautions and other instructions. Measuring tools can present hazards if handled incorrectly. Failure to observe the safety instructions and other instructions can result in damage to the measuring tool and/or serious injury.

Keep all safety precautions and instructions for future reference.

Work area safety

- ▶ **Keep your workplace clean and well lit.** Cluttered or poorly lit workplaces invite accidents.
- ▶ **Do not operate the product in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.**
- ▶ **Keep children and other persons clear when the product is in use.**
- ▶ **Use the product only within its specified limits.**
- ▶ **Comply with your national accident prevention regulations.**

Electrical safety

- ▶ **Do not expose the product to rain or moisture.** Penetrating moisture can cause short circuits, electrical shock, burns or explosions.
- ▶ **Wipe the product dry before stowing it in the transport container.**

Personal safety

- ▶ **Stay alert, watch what you are doing and use common sense when operating a measuring tool. Do not use a measuring tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating the measuring tool can result in serious personal injury.
- ▶ **Avoid unusual body positions. Keep proper footing and balance at all times.**
- ▶ **Do not render safety devices ineffective and do not remove information and warning notices.**
- ▶ **Avoid accidental starting. Make sure that the measuring tool is switched off before connecting it to the power source (rechargeable battery, non-rechargeable battery, etc.) and before picking it up or carrying it.**
- ▶ **Use the product and accessories in accordance with these instructions and in the way specified for this special type of tool. Take the working conditions and the work to be performed into account.** Use of products for applications different from those intended could result in hazardous situations.
- ▶ **Do not lull yourself into a false sense of security and do not flout the safety rules for measuring tools, even if you are familiar with the measuring tool after using it many times.** Carelessness can result in serious injury within a fraction of a second.
- ▶ **Do not use the measuring tool in the vicinity of medical devices.**

Using and handling the scanning tool

- ▶ **Use the product and accessories only when they are in perfect working order.**
- ▶ **Store measuring tools out of reach of children when not in use. Do not allow persons who are not familiar with the product or these instructions to operate it.** Measuring tools are dangerous in the hands of inexperienced persons.
- ▶ **Measuring tools need care and attention. Check that moving parts operate satisfactorily and do not jam, and make sure that no parts are broken or damaged in such a way that the measuring tool might no longer function correctly. Have damaged parts repaired before using the measuring tool.** Many accidents are caused by poorly maintained measuring tools.
- ▶ **Do not under any circumstances modify or tamper with the product.** Changes or modifications not expressly approved by Hilti may restrict the user's authorization to operate the product.
- ▶ **Check the accuracy of the measuring tool before using it for important measurements, and if it has been dropped or subjected to other mechanical stresses.**
- ▶ **Due to the measuring principle employed, the results of measurements can be negatively affected by certain ambient conditions.** These include, for example, the proximity of devices that produce strong magnetic or electro-magnetic fields, vibrations and temperature changes.
- ▶ **Rapidly changing measuring conditions can falsify the results.**
- ▶ **When the product is brought into a warm environment from very cold conditions, or vice-versa, allow it to become acclimatized before use.** Big differences in temperature can lead to incorrect operation and incorrect results.
- ▶ **When adapters or accessories are used, make sure they are mounted securely.**
- ▶ **The measuring tool is designed for the tough conditions of jobsite use, but as with other optical and electrical products (e.g. binoculars, spectacles, cameras) it must be handled with care.**
- ▶ **The specified operating and storage temperatures must be observed.**



2.2 Additional safety instructions for laser measuring tools

- ▶ **Laser radiation in excess of Class 2 can be emitted if the product is opened without correct procedure being followed.** Have the product repaired only by **Hilti Service**.
- ▶ **Secure the area in which you will be taking measurements. While setting up the product, make sure that you do not direct the laser beam toward yourself or others.** Laser beams should be projected well above or well below eye height.
- ▶ Keep the laser aperture clean to avoid measurement errors.
- ▶ Readings taken in the vicinity of reflective objects or surfaces, through panes of glass or similar materials can falsify the result of measurement.
- ▶ Do not permit the laser beam to project beyond the controlled area.

2.3 Additional safety instructions

- ▶ Use the product and accessories only when they are in perfect working order.
- ▶ Never tamper with or modify the product or accessories in any way.

2.4 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).

2.5 Laser classification for Class 2 laser products

The product corresponds to Laser Class 2 in accordance with IEC/EN 60825-1:2014 and in accordance with CFR 21 § 1040 (FDA). This product may be used without need for 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.

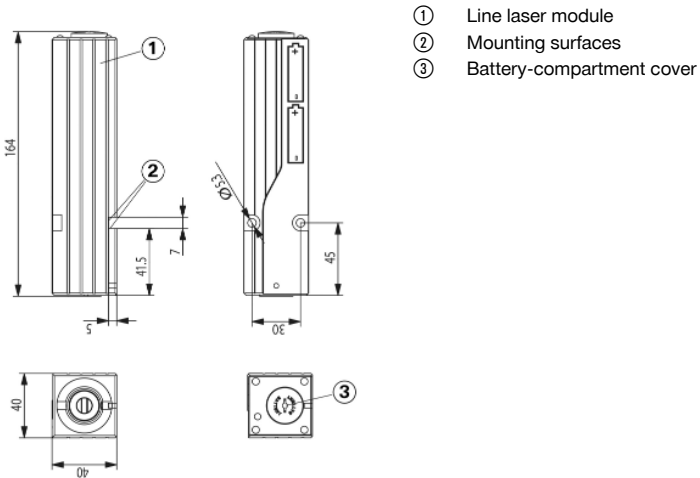
2.6 Careful handling and use of batteries

- ▶ Remove the batteries from the product if it is to remain unused for a lengthy period of time. Batteries can corrode and self-discharge during prolonged storage.
- ▶ Make sure that batteries are inaccessible to children.
- ▶ Do not mix old and new batteries. Always replace all batteries at the same time. Do not mix batteries of different makes or types.
- ▶ Do not use damaged batteries.
- ▶ Use only the battery type intended for this product. Use of other batteries may create a risk of injury and fire.
- ▶ When changing batteries, make sure that polarity is correct. There is a risk of explosion.
- ▶ Do not allow batteries to overheat and do not expose them to fire. Batteries can explode and release toxic substances.
- ▶ Do not attempt to charge non-rechargeable batteries.
- ▶ Do not solder batteries into the product.
- ▶ Do not discharge batteries by short-circuiting. Batteries can develop a leak, explode, catch fire and injure persons.
- ▶ Do not damage batteries and do not attempt to take batteries apart. Batteries can develop a leak, explode, catch fire and injure persons.



3 Description

3.1 Product overview



3.2 Intended use

The LL 05 line laser module is a beam source that is used to project a vertical or horizontal red line on to suitable facilities (target plates, etc.).

The line laser module is intended exclusively for use in combination with the VAS 6350/3 unit from **VOLKSWAGEN AG**.

3.3 Items supplied

Line laser module, target eyeglasses, 2x AA batteries (not in all markets), operating instructions

Other system products approved for use with this product can be found at your local **Hilti Store** or at: www.hilti.group

4 Technical data

Laser class	Class 2, visible, 635 nm (IEC 60825-1:2014)
Range	≤ 10 m
Beam diameter at 2 m (6.5 ft) working distance	1.75 mm
Accuracy at 2 m (6.5 ft)	< 1 mm
Aperture angle of the laser	120°
Current input	40 mA
Power source	2x 1.5V AA battery
Battery life (typical)	≈ 20 h
Automatic power-off after	8 min
Weight without batteries	430 g
Dimensions (L×W×H)	164 mm × 40 mm × 40 mm
Operating temperature	-10 °C ... 40 °C



Storage temperature	-25 °C ... 63 °C
Degree of protection	IP50 (without battery housing)

5 Operation

5.1 Inserting/changing batteries



- Make sure that battery polarity is correct.
- Changes all the batteries at the same time.
- Use only batteries that have been manufactured in accordance with international standards.

1. Open the battery compartment.
2. Remove the spent batteries, if applicable.
3. Insert the new batteries.
4. Close the battery compartment.

5.2 Installing line laser module

- ▶ Secure the line laser module with two screws to the holding fixture (not supplied with the tool).

Materials
Screw M5 x 35 mm
Holding fixture VAS 6350/3 unit from VOLKSWAGEN AG

5.3 Switching on and off

1. Press the on/off button to switch the product on.
2. Press the on/off button again to switch the product off.



The product switches off automatically after 8 minutes. Press the on/off button and hold it down for longer than 5 seconds to deactivate automatic switch-off.

5.4 Using line laser module

- Vertical smooth surfaces are suitable as projection surfaces, for example building walls or surfaces set up specifically for projection.
- Make sure there are no persons or objects present between line laser module and projection surface, because their presence would cause disruptions preventing correct projection of the line.
- The target eyeglasses supplied for the purpose can be worn to make the laser line easier to see.
- ▶ The line laser module must be secured to the appropriately aligned holding fixture. → page 13
- ▶ The mounting elements on which the line laser module is secured and positioned must be precision-aligned vertically and horizontally.
 - ▶ The angular accuracy of protection on to the target plate depends on the accuracy of this alignment.



The line laser module is adjusted such that the projection planes are, respectively, perpendicular to and parallel with the defined mounting surfaces.

- ▶ Vertical alignment of the line laser module permits sufficiently accurate projection of the red laser line.
- ▶ To switch from a vertical to a horizontal line, turn the line laser module through 90 °.

6 Care and maintenance



WARNING

Risk of injury with batteries installed !

- ▶ Always remove all the batteries before carrying out care and maintenance tasks!



Care of the product

- Carefully remove stubborn dirt.
- Carefully clean the air vents, if present, with a dry, soft brush.
- Use only a slightly damp cloth to clean the housing. Do not use cleaning agents containing silicone as these can attack the plastic parts.
- Use a dry, clean cloth to clean the contacts of the product.

Maintenance

- Check all visible parts and controls for signs of damage at regular intervals and make sure that they all function correctly.
- Do not use the product if signs of damage are found or if parts malfunction. Immediately have the product repaired by **Hilti Service**.
- After cleaning and maintenance, install all guards and protective devices and check that they are in full working order.



To help ensure safe and reliable operation, use only genuine Hilti spare parts and consumables. Spare parts, consumables and accessories approved by **Hilti** for use with your product can be found at your **Hilti Store** or online at: www.hilti.group

7 Transport and storage**Transport of the measuring tool****CAUTION****Accidental starting during transport !**

- ▶ Always transport your products with the batteries removed!
- ▶ Remove the batteries.
- ▶ Prior to each use and before and after prolonged transport, check the product and the batteries for damage.

Storage of the measuring tool**WARNING****Accidental damage caused by defective or leaking batteries !**

- ▶ Always store your products with the batteries removed!
- ▶ Store the product and the batteries in a cool and dry place. Comply with the temperature limits stated in the technical data.
- ▶ Store the product where it cannot be accessed by children or unauthorized persons.
- ▶ Prior to each use and before and after prolonged storage, check the product and the batteries for damage.

8 Troubleshooting

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

Trouble or fault	Possible cause	Action to be taken
The product can't be switched on.	The batteries are exhausted	▶ Replace the batteries.
	Incorrect battery polarity	▶ Insert the batteries correctly.
	Battery compartment is not closed	▶ Close the battery compartment.
	Product or on/off switch is faulty	▶ Contact Hilti Service.
The intensity of the laser line diminishes.	The batteries are almost exhausted.	▶ Replace the batteries.

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 has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are intended to ensure adequate protection against electromagnetic interference when the device is operated in areas used for commercial purposes. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. The user must bear costs incurred due to interference that operation of this device in residential areas can cause.

This device is in compliance with paragraph 15 of the FCC rules and the RSS-210 specifications of ISSED. Operation is subject to the following two conditions:

- This device shall cause no harmful interference.
- 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.

Originele handleiding

1 Informatie over de handleiding

1.1 Bij deze handleiding

- Lees voor ingebruikname deze handleiding door. Dit is vereist voor veilig werken en storingsvrij gebruik.
- De veiligheidsinstructies en waarschuwingsaanwijzingen in deze handleiding en op het product in acht nemen.
- De handleiding altijd bij het product bewaren en het product alleen met deze handleiding aan andere personen doorgeven.

1.2 Verklaring van de tekens

1.2.1 Waarschuwingsaanwijzingen

Waarschuwingsaanwijzingen waarschuwen voor gevaren bij de omgang met het product. De volgende signaalwoorden worden gebruikt:



GEVAAR

GEVAAR !

- ▶ Voor een direct dreigend gevaar dat tot ernstig letsel of tot de dood leidt.



WAARSCHUWING

WAARSCHUWING !

- ▶ Voor een mogelijke gevaar dat tot ernstig letsel of tot de dood kan leiden.



ATTENTIE

ATTENTIE !

- ▶ Voor een eventueel gevaarlijke situatie die tot letsel of tot materiële schade kan leiden.





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