
ADD-ON RECHARGEABLE BATTERY RBLI 2900

**for the *RIEGL* VZ-i Series
Laser Scanners**

Technical Data and User Instructions



ADD-ON RECHARGEABLE BATTERY RBLI 2900 for the *RIEGL* VZ-i Series Laser Scanners

Technical Data

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AT 504 119, AT 504 580, US 7 697 120, AT 505 037, AT 507 684, EP 2 199 828, EP 2 216 657, EP 2 140 286, WO2009/129552, AT 508 344, EP 2 293 013, AT 508 635, WO2011/022741, EP 2 306 219, EP 2 315 053, AT 509 180, AT 508 910, AT 509 309, AT 509 103, AT 509 649, AT 509 215, US 8 307 705, AT 510 515, AT 510 066, AT 510 045, WO2012/040749, EP 2 469 297, AT 510 579, EP 2 694 996, WO2012/135874, US 9 268 013, AT 511 474, AT 511 733, EP 2 605 034, AT 512 768, AT 513 950, AT 512 782, AT 531 402, EP 2 881 706, EP 2 889 642, AT 515 927, EP 3 051 310, US 10 126 425, EP 3 048 453, AT 517 300, EP 3 182 159, EP 3 220 160, AT 517 701, AT 519 103, EP 3 267 224, AT 519 953, AT 519 765, EP 3 489 715, US 11 360 194, EP 3 792 653, EP 3 825 722, EP 3 869 151, EP 3 929 617, EP 4 012 441, EP 4 020 373, and other granted patents, and patents pending.

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1 General

1.1 Warnings, Signs, and Symbols

DANGER



The “DANGER” information indicates an immediate danger. If the danger is not avoided it will result in **death or serious injuries**.

WARNING



The “WARNING” information indicates a hazardous situation. If the danger is not avoided it may result in **serious injuries or serious physical damage**.

CAUTION



The “CAUTION” information indicates a hazardous situation. If the danger is not avoided it may result in **slight injuries or minor physical damage**.

NOTE



The “NOTE” information alerts to a situation that may cause **equipment damage but no personal injury**.

	GENERAL WARNING		OPTICAL RADIATION
	ELECTRICITY		TEMPERATURE RELATED HAZARDS
	LASER RADIATION		EXPLOSION

NOTE

The **Add-On Rechargeable Battery RBLI 2900** consists of the Battery Mount / Charging Station **RBLI 2900** and up to 3 battery packs **AP-RBLI 2903**.

The Add-On Rechargeable Battery RBLI 2900 is herein referred to as **Add-On Rechargeable Li-Ion Battery**.

This manual provides detailed technical data including safety directions, installation instructions, operational directions including maintenance, as well as information about the electromagnetic compatibility.

Improper use or use in contradiction to the instructions given may cause danger and/or injury. It is imperative to read these operating instructions as well as the complete Scanner's Manual and the General Warnings & Instructions for *RIEGL* Laser Measurement Instruments carefully before using the device.

WARNING

Improper handling or usage of the **Add-on Rechargeable Li-Ion Battery** may lead to severe injury!

The **Add-On Rechargeable Battery RBLI 2900** can be used with the following *RIEGL* VZ-i Series laser scanners:

<i>RIEGL</i> VZ-6000i ²⁶
<i>RIEGL</i> VZ-4000i ²⁵
<i>RIEGL</i> VZ-2000i
<i>RIEGL</i> VZ-400i

1.2 Description and Technical Specifications

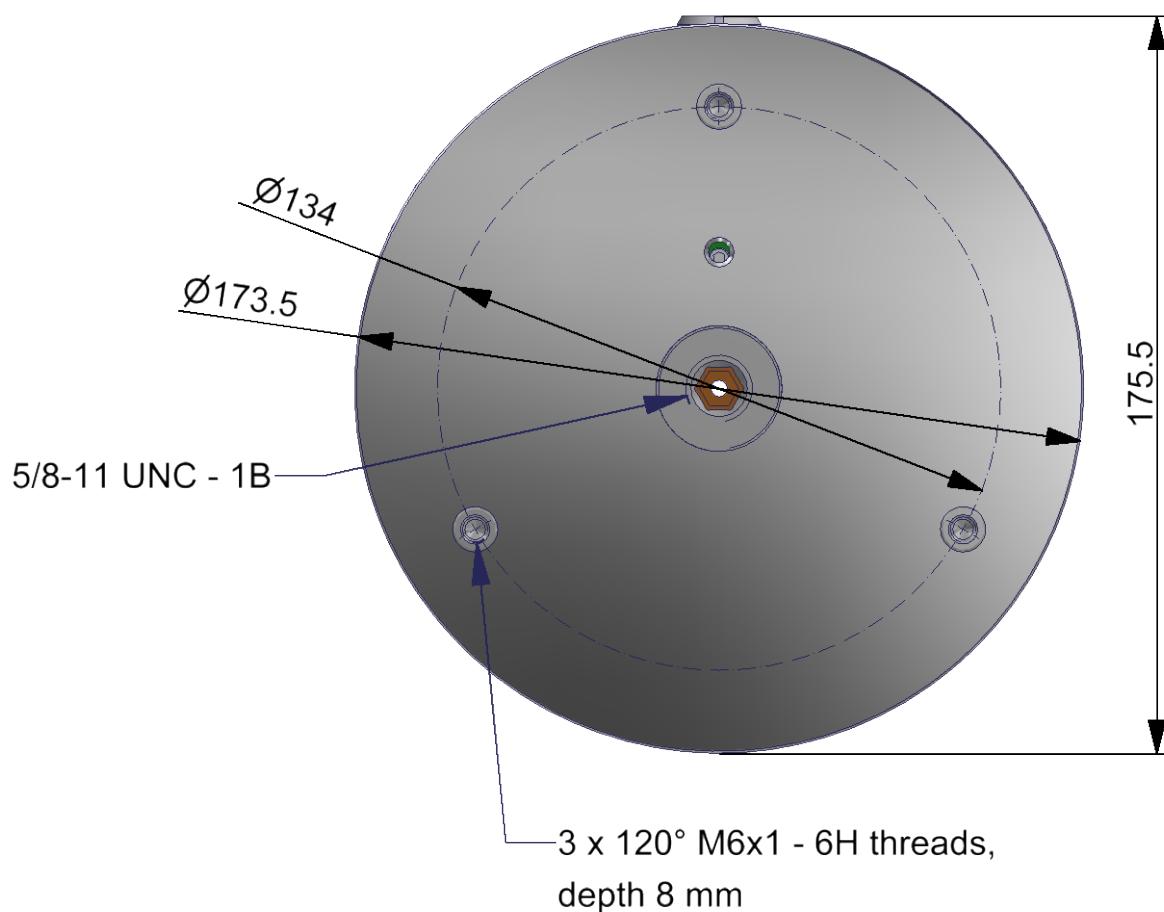
1.2.1 Mechanical Specifications



Fig. 1 Add-on Rechargeable Li-Ion Battery; Battery Mount / Charging Station RBLI 2900 with 3 battery packs AP-RBLI 2903

Dimension	
Diameter / Height	173.5 mm / 67.3 mm
Weight:	
without battery packs	820 g
with 1 battery pack + 2 dummy packs	1,500 g
with 3 battery packs	2,200 g

bottom view



side view



Fig. 2 Bottom view and side view of the Battery Mount / Charging Station RBLI 2900

1.2.2 AP-RBLI 2903 Battery Pack



Dimension	
W x H x D	74 x 58 x 67 mm
Weight:	
AP-RBLI 2903 battery pack	about 460 g
AP-RBLI 2903 dummy pack	about 110 g

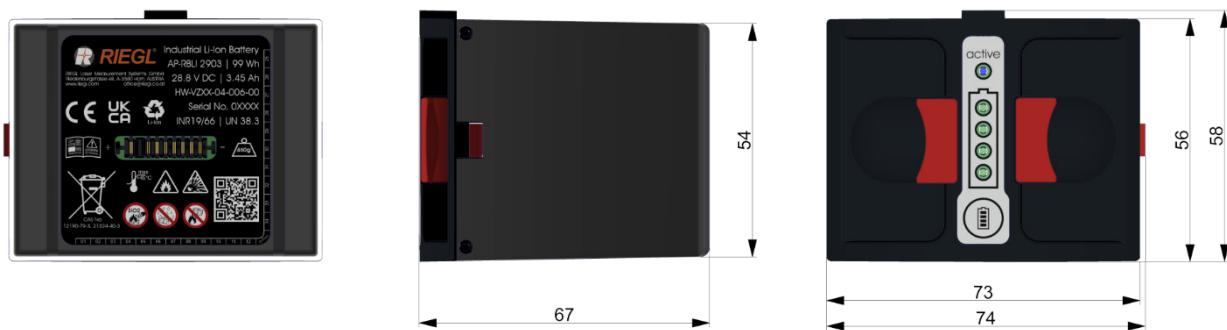


Fig. 3 battery pack AP-RBLI 2903

1.2.3 Electrical Specifications

Technology	Li-Ion 28.8 V ¹⁾
Capacity 3x battery pack AP-RBLI 2903	3x 99 Wh, 3.45 Ah ²⁾
Battery Pack Life	Typ. 500 – 600 charging cycles
Self-Discharge per Month	approx. 8 %
Voltage	28.8 V DC nominal
Max. Output Current for Scanner Supply	7 A DC
Max. Charging Current per slot	1.5 A DC
Charging Conditions (CCCV)	33.2 V / 1.5 A
Charge Voltage	11 – 34 V DC
Typical Charging Time for 1-3 battery packs inserted	approx. 3 h

¹⁾ The consideration of country-specific transport conditions (especially for air transport) lies fully within customer's responsibility.

²⁾ The value given is the capacity of the battery according to the cell manufacturer's specifications. The capacity available in the application is lower.

1.2.3.1 Position of the Poles



Fig. 4 Position of the poles, plus and minus pole, two pins each

NOTE	
	<p>The poles may only be cleaned by trained personnel! For more details, please contact support@riegl.com for further details.</p>

1.2.4 Operating Time Capacity

	1 battery pack	3 battery packs
VZ-400i (typ. scan @ 1200 kHz "Panorama 40")	typ. 1 h 40 min ¹⁾	typ. 5 h ¹⁾
VZ-2000i (typ. scan @ 50 kHz "long range")	typ. 1 h 35 min ¹⁾	typ. 4 h 45 min ¹⁾
VZ-4000i²⁵ (typ. scan @ 70 kHz)	typ. 1 h 10 min ¹⁾	typ. 3 h 30 min ¹⁾
VZ-6000i²⁶ (typ. scan @ 70 kHz)	typ. 1 h 10 min ¹⁾	typ. 3 h 30 min ¹⁾

¹⁾ The times given above are rough guideline values to give examples. In practice, they depend on several factors such as ambient temperature, use of additional equipment, etc.

1.2.5 Environmental Specifications

Temperature Range:	
Operation (Discharge):	-5°C up to +45°C
Charge:	0°C up to +40°C
Storage:	-10°C up to +45°C ¹⁾

¹⁾ For further information concerning long time storage / storage of the battery pack itself, please see chapter 2.6 "Storage".

NOTE



The upper temperature limit of the **Add-on Rechargeable Li-Ion Battery** is lower than the temperature limit of the VZ-i scanner!

1.2.6 Internal Grounding

- All ground terminals (Gnd) of the **Add-on Rechargeable Li-Ion Battery** are connected internally.
- These internal connections between the ground terminals and the housing are not suitable to drain off potential differences.

1.2.7 Short Circuit Protection of the Main Connector

The main connector with its 8 pins supplies power to the scanner and serves as interface. All pins are protected against short-circuiting, which means that an unintended connection of pins (e.g., by small metal parts, coins...) does not damage the battery.

Nevertheless, intentional short-circuiting must be avoided!

2 Operating Notes and Requirements

The **Add-On Rechargeable Li-Ion Battery** is designed to be attached to the bottom of the *RIEGL VZ-i Series* Laser Scanner. Operation with the **Add-On Rechargeable Li-Ion Battery** enables comfortable **standalone usage** of the scanner without any inconvenient cables around.



Fig. 5 Top view and bottom view of the Add-on Rechargeable Li-Ion Battery

2.1 Delivery Status

NOTE	
	After receiving the Add-on Rechargeable Li-Ion Battery , please immediately charge the battery packs AP-RBLI 2903 fully.

Due to transport conditions and self-discharge, the battery may not be fully charged on receipt of delivery. E.g., for transport by air flight the battery may only be charged to 24%.

2.2 Significance of the LEDs On Battery Pack AP-RBLI 2903



Fig. 6 Battery Pack AP-RBLI 2903 with 5 LEDs positioned on the front side

1	Activity LED
2	Capacity LEDs
3	Capacity Test Button

2.2.1 Activity LED

The LED (1) - positioned on the front side of the battery pack **AP-RBLI 2903** - indicates discharging of the battery pack **AP-RBLI 2903**.

LED status	Color	Meaning
LED, ON	blue	Discharging
LED, regularly blinking - discharging	blue	Discharging below a limit, which can be defined by the user via the scanner ¹⁾
LED, blinking - charging (blinking 2 times every 2 sec.)	blue	Indicates a previous deep discharging as soon as charging of the battery pack AP-RBLI 2903 has been started.

¹⁾ Details given in the respective scanner manual

2.2.2 Capacity LEDs

2.2.2.1 Capacity State

There are 4 LEDs (2) positioned on the front side of the battery pack **AP-RBLI 2903**. If the capacity test button (3) is pressed, the LEDs indicate the charging state of the battery. (Each LED represents the state of approximately 25% of the full capacity.)

LED status	Color	Meaning
4 LEDs on	green	Capacity \geq 75%
3 LEDs on	green	Capacity \geq 50 % < 75%
2 LEDs on	green	Capacity \geq 25 % < 50%
1 LED on	green	Capacity \geq 10 % < 25%
1 LED, blinking	Green	Capacity < 10 %

2.2.2.2 Charging State

During the charging process the charging state is indicated in 4 steps. Each step is shown with one LED on (each LED signals 25% of the charging capability).

If the charging state exceeds on sequence, the LED of the finished sequence and all LEDs of the sequences below, are on.

Charging states between two sequences are indicated by a blinking LED of the current sequence.

All LEDs above the blinking LED are off.

If the charging process is successfully completed, all LEDs are off.

For Example:

If the two lower LEDs are on and the third one is blinking, the charging state is between 50 and 75%.

2.3 Battery Mount / Charging Station RBLI 2900 LED

The LED (4) positioned on the Battery Mount / Charging Station **RBLI 2900** indicates the status of charging power supply.

Power LED color and status	Meaning
Green, permanent	The power connection is active and ok, charging was finished.
Green, blinking	One or more battery packs are charged.
Orange, permanent	The power connection is active and in warning range ¹⁾
Red, permanent	Charging process has been stopped. CAUTION: An error has occurred!
Red, blinking	Charging process has been stopped. CAUTION: Voltage or temperature are out of specification ²⁾ (try again later or use other power supply source)

¹⁾ see 1.2.5 “Environmental Specifications”



Fig. 7 Front side of the Battery Mount / Charging Station RBLI 2900 showing 1 LED

2.4 Charging

CAUTION	
	<p>For charging of the battery pack AP-RBLI 2903 you must only use the Battery Mount / Charging Station RBLI 2900! Do not leave the battery unattended during the charging process!</p>

NOTE	
	<p>Recharge the battery pack AP-RBLI 2903 immediately after discharging it. An empty battery pack AP-RBLI 2903 should not be stored for more than one month before recharging. Ignoring this can damage the battery or make it unusable!</p>

Connect the original **RIEGL power supply unit** provided with the **RIEGL VZ-i Series** scanner to the **Charging Connector** (5) of the Battery Mount / Charging Station **RBLI 2900**. Otherwise use the optionally available **RIEGL power supply cable cigarette lighter plug**.



Fig. 8 Front side of the RBLI 2900 showing the Charging Connector

NOTE	
	<p>When you use a car battery as power supply source and the according power supply cable for cigarette lighter plug for charging the Add-on Rechargeable Li-Ion Battery, please ensure not to discharge the car battery below the level required to start the car.</p>

NOTE	
	<p>We do not recommend using battery packs provided by the customer for charging the Add-on Rechargeable Li-Ion Battery. Such external, customer provided batteries are not protected against deep discharge by the Add-on Rechargeable Li-Ion Battery. The electronics inside the Add-on Rechargeable Li-Ion Battery is able to work down to voltages as low as 10V, which can damage your battery pack. Also, the power supply range of the Add-on Rechargeable Li-Ion Battery is independent of the scanner power supply setting. The usage of an external battery pack for charging the Add-on Rechargeable Li-Ion Battery lays only in the customer's responsibility.</p>

2.4.1 Optional Equipment



HW-VXX-03-052-00	Power Supply Cable 2-pole to cigarette lighter plug; 2m
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If only one or two battery packs **AP-RBLI 2903** are used, the unused slots can be protected from dirt with the Dummy Cartridge **AP-RBLI 2903**.



HW-VZXX-04-008-00	Dummy Cartridge AP-RBLI 2903 for Add-on Rechargeable Li-Ion Battery
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2.5 Life Cycle

The life time of the battery pack **AP-RBLI 2903** is up to 600 cycles (charge/discharge). The life cycle of the **Add-on Rechargeable Li-Ion Battery** depends on ambient temperature, storage conditions, and the use of the battery itself.

2.6 Storage

The capacity level of a battery that is intended for storage should be more than 40 %. Batteries in long time storage (1 year plus) need refresh charging (see 2.7 "Refresh Charging Cycles").

Temperature limitation during long time storage is between -10°C and +20°C.

WARNING	
	<p>Avoid storing the battery pack AP-RBLI 2903 at higher or lower temperature than given in the specifications!</p> <p>Failure to observe this may result in permanent damage to the battery pack AP-RBLI 2903!</p>

Due to the cell technology of Li-Ion cells, which have a self-discharge rate of between 5% and 10%, the battery's operational life can be impaired when storing an empty battery pack **AP-RBLI 2903** (charging level <5%) for a longer period.

NOTE	
	<p>To avoid self-discharging during storage of the AP-RBLI 2903 and to extend their lifetime, remove the AP-RBLI 2903 battery packs from the Battery Mount/Charging Station RBLI 2900 during a longer storage period.</p> <p>Please see also chapter 2.7 Refresh Charge Cycles!</p>

2.7 Refresh Charging Cycles

This type of battery does not experience memory effect.

However, it is recommended to **fully charge stored batteries once every 3 months**.

3 Installation

Please note:

Installation is shown on the example of a *RIEGL* VZ-400i Laser Scanner and an Add-On Rechargeable Battery RBNE 2210, which is equal to the mounting of the **Add-On Rechargeable Li-Ion Battery**.



Fig. 9 *RIEGL* VZ-400i

Position all antennas, e.g. the WLAN antenna, horizontally or disconnect them.



Fig. 10 *RIEGL* VZ-400i upside down,
unscrew protection cap

Turn the scanner upside down.

If a camera is installed to the scanner:
Lay the scanner to the side and protect it
from rolling (e.g. use of books).

Unscrew the **protection cap of the
scanner** by means of a coin to uncover
the contacts.

Note: Usually, the battery is installed
before the first use of the scanner and
stays there even when the scanner is
stowed in its carrying case.



Fig. 11 RIEGL VZ-400i upside down,
Fig. 11 installing of the protection cap



Fig. 12 Unscrew the protection cap of
Fig. 12 the Add-on Rechargeable
Fig. 12 Battery



Fig. 13 Add-on Rechargeable Battery
with installed protection cap

Install the protection-cap of the scanner onto its designated position on the opposite side. Fasten it there to ensure that it does not get lost.

Unscrew the protection cap of the Add-on Rechargeable Battery.

Note:

If the Add-On Rechargeable Battery is not installed to the scanner, the protection cap must be put in its position to protect the contacts against short circuit at all times.



Attach the Add-On Rechargeable Battery to the scanner.

Fig. 14 Attach the Add-on Rechargeable battery onto the VZ-400i



Use the accompanying allen wrench to tighten the bolt of the Add-On Rechargeable Battery.

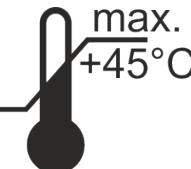
Fig. 15 Fix Add-on Rechargeable Battery



Fig. 16 RIEGL VZ-2000i scanner with Add-on Rechargeable Li-Ion Battery

4 Safety Instructions

4.1 Safety Instructions for Battery Pack AP-RBLI 2903

	Highly flammable liquids are included!
	In case of improper handling, explosions can occur!
	Protect from rain, water, moisture and other liquids!
	Keep away from open fire and heat sources!
	In case of fire, extinguish the Add-on Rechargeable Li-Ion Battery and / or the Battery Pack AP-RBLI 2903 with SiO ₂ silicium dioxide.
	The requirements for electromagnetic compatibility are fulfilled. Please see chapter 4.3 "Electromagnetic Compatibility" for further details.
	The requirements for UK Conformity Assessed are fulfilled. For details please see the certificate, which is part of the manual package.
	The specified temperature must be observed, in particular the maximum temperature! For further details please see chapter 2.3 "Environmental Specifications".

 Li-Ion	The included Li-Ion cells can be recycled!
	Note the safety instructions in the user's manual, read through it carefully and keep it for future!
	The total weight of one batter pack AP-RBLI 2903 are 460g.
	Ensure proper disposal! Do not dispose in household waste!

4.2 General Safety

The **Add-on Rechargeable Li-Ion Battery** meets or exceeds the requirements of the following European Standard: **EN 61010-1:2010** Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General Requirements

Note the following explanations and important instructions:

Temperature	The unit is specified for a temperature range as to be seen in chapter 1.2.5 Environmental Specification.
Altitude	The unit is specified for an altitude up to 2000 m (operation or storage).
Relative Humidity	The unit is specified for a maximum relative humidity of 80 % at or below +30°C.
Enclosure	The battery must not be subjected to rain or dripping water or submerged under water or any other fluid. Moreover, it has to be protected against chemical influences.

NOTE

Never apply mechanical force or shock to the battery!
Furthermore, the battery should be protected from being shaken or knocked.

DANGER

The battery itself **must never** be connected to 110, 230, or 400 V AC! Opening the battery is unacceptable due to the danger presented by the chemical substances, and must therefore be avoided at all costs.

WARNING

ANY USE OF THE **ADD-ON RECHARGEABLE LI-ION BATTERY** IN CONTRADICTION TO THE INSTRUCTIONS AS GIVEN IN THE MANUAL CAN BE DANGEROUS AND IS, THEREFORE, STRICTLY FORBIDDEN!

CAUTION

Do not use any other battery packs than the battery packs **AP-RBLI 2903** together with the Battery Mount / Charging Station **RBLI 2900**!

4.3 Electromagnetic Compatibility

The **Add-on Rechargeable Li-Ion Battery** meets or exceeds the requirements of the following European Standard:

EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

The **Add-on Rechargeable Li-Ion Battery** has passed the tests for class A equipment (industrial environment).

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Definition of the performance criteria and acceptable degradations:

Performance Criterion A:

During testing, normal performance within the specified limits / nominal values. Nominal values to be found in chapter 1.2 " Description and Technical Specifications".

Performance Criterion B:

During testing, temporary degradation or loss of function or performance which is self-recovering

- loss or heavy degradation of functionalities during testing with self-recovery after finishing the test;
- loss of the TCP-connection with the following readiness for acceptance of a new start of connection;

Performance Criterion C:

During testing, temporary degradation, or loss of function or performance which requires operator intervention or system reset occurs

- loss or heavy degradation of functionalities during testing with self-recovery after finishing the test; a system reset may occur;
- loss or heavy degradation of functionalities, which require simple user intervention, e.g. replacement of a fuse, switching the device Off and On, restoration of settings;

The requirements for CE conformity assessed are fulfilled. For details, please refer to the corresponding CE declaration document of the **Add-on Rechargeable Li-Ion Battery**, which is part of the manual package on the USB-Stick delivered with the respective **RIEGL VZ-i** Series laser scanner.

4.4 Transportation

Shipping or transporting the batteries is subject to dangerous goods regulations, and must be carried out by your specially trained danger good officer.

WARNING	
	<p>It lies within the purchaser(s)/user(s) responsibility to get informed and comply with the applicable national and international regulatory framework when importing, storing, using, handling and shipping or otherwise transporting the Li-Ion batteries.</p> <p>For more information, consult your local competent authority.</p>

The battery pack AP-RBLI 2903 is UN 38.3 certified. Please refer to the corresponding certificate, which is part of the manual package.

NOTE	
	<p>Any local and international transport regulations for the transport of Li-Ion batteries needs to be considered.</p>

NOTE	
	<p>If the Add-On Rechargeable Li-Ion Battery is transported separately, it is mandatory to put the protective cap on the socket of the battery. Non-observance may cause a short circuit and damage the battery.</p>

CAUTION	
	<p>Please observe the special regulations if you transport the Add-On Rechargeable Li-Ion Battery separately (not together with the scanner).</p>

NOTE	
	To ensure the full performance of the respective <i>RIEGL</i> VZ-i Series laser scanner in operation, 2 pieces of Li-Ion batteries AP-RBLI 2903 are required. <i>RIEGL</i> recommends taking 2 more with you as a reserve. This enables continuous scanning operation even for larger projects and throughout the workday.

4.4.1 Transportation Together with the Scanner

4.4.1.1 Example for Packaging Labeling

When packaging the **Add-on Rechargeable Li-Ion Battery** together with the scanner the following two labels have to be affixed:

- label with packaging instruction number (1)
- label with lithium-battery mark (2)



Fig. 17 Correct labeling of the packaging of the Add-On Rechargeable Li-Ion Battery and a RIEGL VZ-i Scanner (current status of January 2026 – regulations may change)

4.4.1.2 Transportation Using the Heavy-Duty Scanner Carrying Case

If the **Add-On Rechargeable Li-Ion Battery** stays attached to the scanner for transportation, the scanner with mounted **Add-on Rechargeable Li-Ion Battery** has to be secured and transported in the scanners original foam inserts.

NOTE	
	For detailed information, consult your local competent authority.

Especially for air-transport in the scanner carrying case, only one battery back AP-RBLI 2903 may remain in the Battery Mount / Charging Station RBLI 2900!

The other two battery packs **AP-RBLI 2903**, if available, have to be placed separately in the according foam-lined recesses in the scanner carrying case.



Fig. 18 Battery Mount / Charging Station RBLI 2900 with only one battery pack AP-RBLI 2903 inside

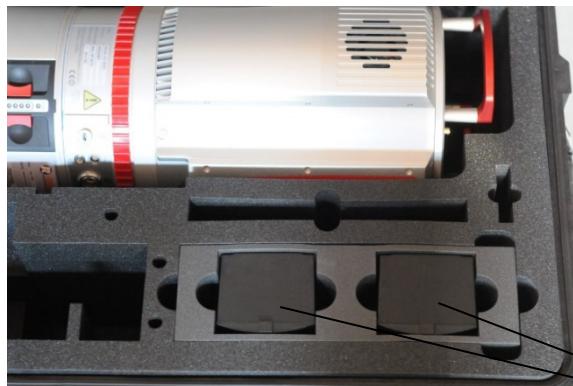


Fig. 19 Further battery packs AP-RBLI 2903 have to be placed in separate foam-lined recesses

NOTE



To ensure the full performance of the respective *RIEGL* VZ-i Series laser scanner in operation, 2 pieces of Li-Ion batteries AP-RBLI 2903 are required. *RIEGL* recommends taking 2 more with you as a reserve. This enables continuous scanning operation even for larger projects and throughout the workday.

5 Additional Safety Hints and Requirements

5.1 Environment and Conditions

DANGER	
	<p>Do not put the Add-on Rechargeable Li-Ion Battery into airtight containers or bags. The battery cells tend to generate flammable gas upon excess charge which may cause an explosion if enclosed in an airtight container.</p>
WARNING	
	<p>Do not place the Add-on Rechargeable Li-Ion Battery near a device that may generate sparks (such as a switch or fuse) and do not place the Add-on Rechargeable Li-Ion Battery close to open fire. The Add-on Rechargeable Li-Ion Battery may generate a flammable gas when overcharged. The gas may ignite and burn or explode upon contact with a spark or flame.</p>
CAUTION	
	<ul style="list-style-type: none">• The battery must not be subjected to rain or dripping water or submerged under water or any other fluid.• Avoid placing the Add-on Rechargeable Li-Ion Battery near a heat-generating device (such as a transformer) which may cause the Add-on Rechargeable Li-Ion Battery to generate excessive heat, leak or explode.• Do not allow the Add-on Rechargeable Li-Ion Battery to be exposed to rain or sea water. If the battery terminals should get wet, they may corrode.• Do not use or store the Add-on Rechargeable Li-Ion Battery in a car under the blazing sun or in direct sunlight. To do so may cause the Add-on Rechargeable Li-Ion Battery to leak, generate excessive heat, or explode.• Do not use or store the Add-on Rechargeable Li-Ion Battery in a dusty place as dust may cause a short circuit between the terminals. When using the Add-on Rechargeable Li-Ion Battery in a dusty place, check the terminals periodically.

5.2 Handling and Operation

WARNING	
	Never disassemble, modify, puncture, mechanically shock, crash and/or short circuit the Add-On Rechargeable Li-Ion Battery , otherwise leakage, smoke emission, ignition, explosion, or fire, may occur which may result in personal injury and/or property damage.

CAUTION	
	Keep the Add-on Rechargeable Li-Ion Battery out of the reach of small children at all times.

NOTE	
	Fully recharge the Add-on Rechargeable Li-Ion Battery upon receipt. Recharge discharged battery packs AP-RBLI 2903 immediately. For more details, please see chapter 2.4 "Charging"

5.3 Storage

NOTE	
	Before storing the Add-on Rechargeable Li-Ion Battery , charge the battery pack AP-RBLI 2903 to 40 %. Store the Add-on Rechargeable Li-Ion Battery in a dry place to prevent rust from forming on the terminals. Recharge the Add-on Rechargeable Li-Ion Battery every 3 months.

CAUTION	
	Keep the Add-on Rechargeable Li-Ion Battery away from rainwater that could cause corrosion on the terminals of the Add-on Rechargeable Li-Ion Battery . Store the Add-on Rechargeable Li-Ion Battery at room temperature or lower temperature. Do not store the Add-on Rechargeable Li-Ion Battery in direct sunlight, higher temperature or high humidity. To do so causes the Add-on Rechargeable Li-Ion Battery to shorten its life-span, performance deterioration or corrosion on terminals.

NOTE	
	Depending on the storage temperature, refresh the Add-on Rechargeable Li-Ion Battery in intervals as described in chapter 2.6 Storage.

5.4 Warranty

Batteries that have been mishandled, abused, or damaged by the user are not covered under warranty. *RIEGL* LMS GmbH shall not be liable for any loss or damage, whether direct or indirect, special, incidental or consequential, arising from the use, misuse, or abuse of the Li-Ion batteries.

5.5 Disposal

When your *RIEGL* instrument finally reaches the end of its life-cycle, please take care for proper disposal according to *Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators* as well as *Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE)*.



RIEGL is prepared to take back waste *RIEGL* instruments and their accessories free of charge in the production plant at Horn for proper treatment in compliance with the objectives of the above listed directives (please see 4.4 "Transportation").

You may also dispose damaged Li-Ion batteries at your local Hazardous Waste Facility.

NOTE	
	For detailed information, consult your local competent authority.