

User Manual

PLRF10 / PLRF15

Pocket Laser Range Finder

PLRF10/15 - Pocket Laser Range Finder

Purpose of Equipment

The PLRF10/15 is a pocket size, handheld, button operated laser rangefinder with an internal sighting optic and range display.



For safe use of the device, please note the safety directions included in the User Manual.

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General Information

Safety Notices

Safety Class: 1

according to IEC60825-1 (2001-08)



Nominal Ocular Hazard Distance

Unaided eye 0 meter

Aided (7 x 50 binocular) 0 meter

Inappropriate use

- Device deployment without prior knowledge of the operating instructions and safety notices.
- Changes and modifications to the device by the customer.
- Use of third-party accessories not expressly approved by Vectronix AG.

Inappropriate use brings the risk of

- injuries;
- instrument errors;
- damage to property;
- malfunction;

Blinding hazard

- Do not look into powerful light sources with the device.
- Do not open the device. The built-in laser can cause eye injuries.

Explosion hazard

The battery must not be

- short-circuited;
- recharged;
- mechanically modified;
- placed in fire or heated above +85°C with the device.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Care and cleaning

The devices performance and serviceability are conditional on regular care and immediate attention to problems:

- Do not touch glass lenses with fingers.
- Do not soil the operating keys with oil or grease.
- Avoid abrupt temperature transition, since these can cause condensation moisture to develop inside the device.

The device does not need special care or cleansers.

Therefore

- do not use any kind of impregnated cloth intended for cleaning spectacle lenses,
- do not use any solvent except water, e.g. no alcohol or cleansers.

Lens cleaning

Particles of dirt should be blown off or removed using a soft brush.

Finger prints may be cleaned first by wiping with a damp cloth, followed by soft, clean optical tissue or chamois leather.

Cleaning the casing

Wipe the casing with a damp cloth. Pay special attention to dirt and grease around the keys.

Blow out the device interface cable socket, and clean it carefully.

Allow the device to dry fully before packing.

Technical Data

Optics

Configuration	monocular
Magnification	6x
Objective diameter	27 mm
Field of view	106mil / 6°
Focus	fixed
Dioptric setting	>+2dpt to -4dpt

Rangefinder	PLRF10	PLRF15
Laser type: IR diode	905 nm	1550 nm
Eye safety	Class 1	Class 1
Standard	IEC60825-1 Ed. 1.2 (2001-08)	IEC60825-1 Ed. 1.2 (2001-08)
Range Performance	5m - 2500m	5m - 3000m
Specified Performance	1800m*	2500m*
Accuracy (1 σ)	± 2 m	± 2 m (>50m to <1500m) ± 5 m (<50m / >1500m)
Beam divergence	0.3 x 1.5mil	0.5 x 2.0mil
Display Resolution	1m / 1ft / 1yd	1m / 1ft / 1yd

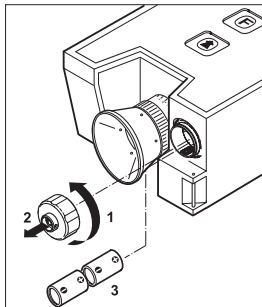
* at visibility 15km, 2.3 x 2.3m target size, albedo 0.4, detection probability >90%

Miscellaneous

Power supply	2x 3V lithium battery, type CR123A (IEC 60086-2 (2004-02))
Battery capacity	> 10000 measurements
Immersion	1m, 30min
Operational temperature range	-35°C to +63°C -31°F to +145°F
Storage temperature range (without battery)	-40°C to +85°C -40°F to +185°F
Weight with batteries and rubberized cover	< 620g / 1.4lbs
Dimensions with rubberized cover	
length	125mm / 5.0in
width	101mm / 4.0in
height	50mm / 2.0in
Tripod interface	1/4 inch thread
Data interface:	RS 232

Getting started

Changing the batteries



Open the battery compartment.

Insert two lithium batteries type CR123 with +(positive) pole ahead.

Refit the battery cover. **Tighten it completely until it stops.**

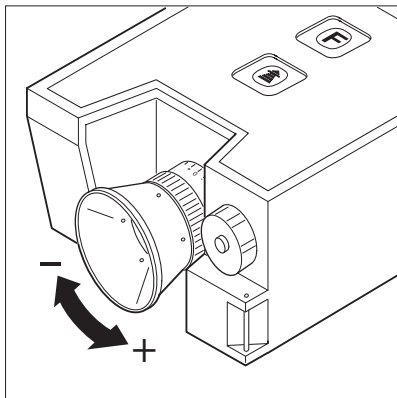
The device monitors the condition of the batteries. If the display shows "LobA", this indicates that the batteries are used up. You can still get readings, but the batteries need to be replaced.

The "LobA" display may also appear under cold conditions, since low temperature reduces the performance of the batteries.



Remove batteries before storing.

Diopter adjustment

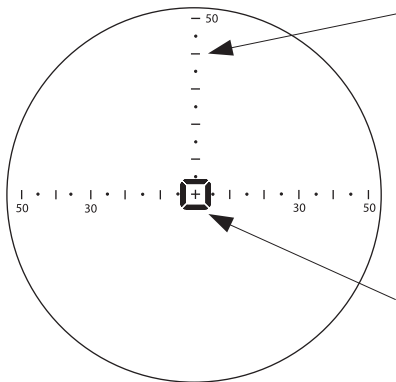


Sight on an object farther than 100 m away and rotate the eyepiece to obtain a sharp image.
Standard setting: 0



If the device is being used by different people, remember your personal diopter setting.

Reticle



Glass reticle

An engraved reticle can be used in place of the electronic aiming mark.

Line spacing: 10 mils

Line-point spacing: 5 mils

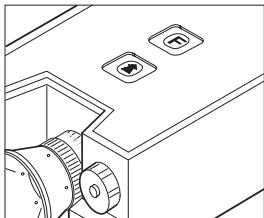


1 mil corresponds to 1 m spacing at a distance of 1 km.



Electronic reticle

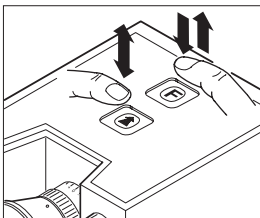
An illuminated aiming mark can be activated for the use under poor lighting conditions.

General Operations






The device is operated entirely by means of the two keys.

-  : function key
 : distance key



Key operation is indicated by the following symbols:

-  press and hold key
 release key
 press and release key (click)

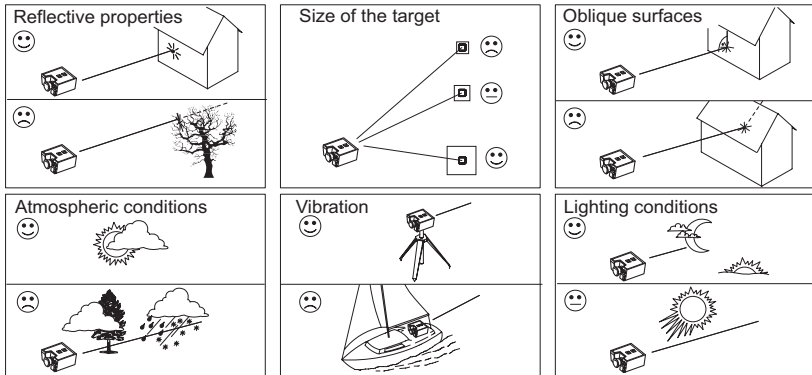
Hold the device steady during measurement.
The device displays the measurement result, then switches itself off automatically after a few seconds.



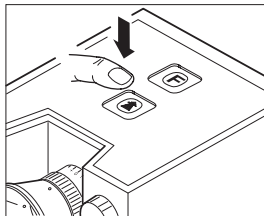
You can prolong the display period by holding down the range key while the result is displayed.

Distance Measurements

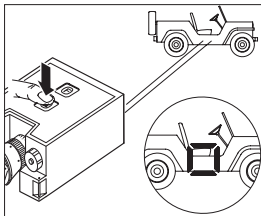
Factors affecting measurement range



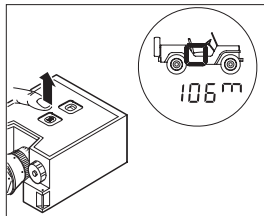
Slope distance



Press and hold the distance key.

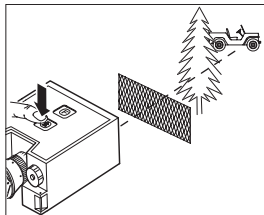


Sight the object with the aiming mark.

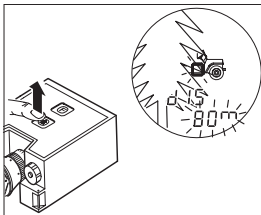


Hold the instrument steady as you release the key. The slope distance appears. If "----" is displayed, the object lies outside the measuring range or the measuring conditions are poor.

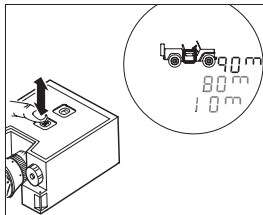
Multiple object measurement



Up to three separate distances in the line of sight can be obtained with a single measurement.



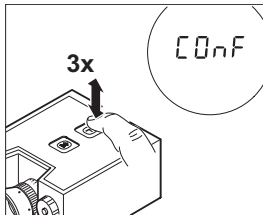
To use this feature, “3dOn” must be activated via the configuration menu (see page 18)
A flashing display indicates that more than one distance has been detected.



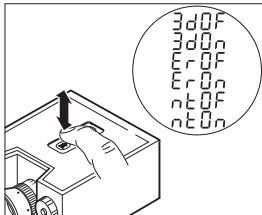
Click the distance key repeatedly to scroll through all obtained distances.
The order of the displayed ranges is: strongest, second strongest and third strongest detected echo.

Configuration

Making adjustments



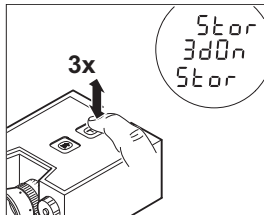
Various instrument functions are switched on and off via the configuration menu. Click the function key three times in rapid succession. "ConF" appears for a short instant.



Click the distance key until the desired setting appears.

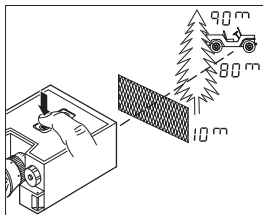


The various functions are described in detail on the following pages.



Click the function key three times in rapid succession to save your setting. The setting is not changed when "OldC" is displayed.

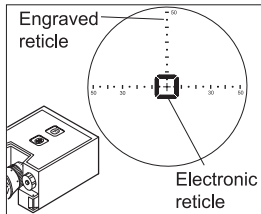
Measuring 3 distances



Function: 3dOn / 3dOF

"3dOn" allows to obtain up to three distances in the line of sight with a single measurement (see page 17)

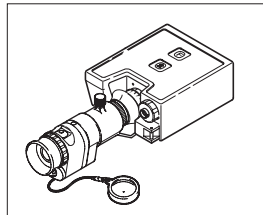
Electronic reticle



Function: ErOn / Er OF

"ErOn" activates the electronic aiming mark which is useful for poor lightning conditions.

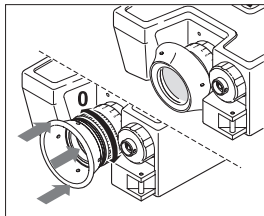
Night vision device



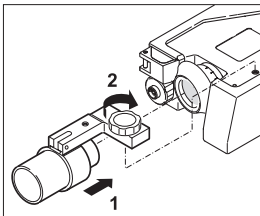
Function: ntOn / ntOF

"ntOn" reduces the display brightness, which is needed only in combination with an attached night vision device.

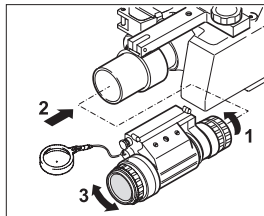
Night vision operation - Mount



Activate "ntOn" in the configuration menu (see page 18, 19)
Set the diopter to "0".
Turn the eyecup inside out.

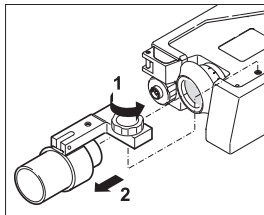


1. Attach the night vision adapter.
2. Tighten the screw.

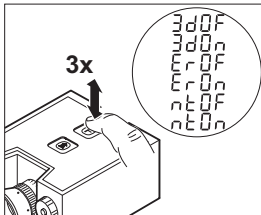


1. Rotate the lens on the night vision device to infinity position.
2. Attach the night vision device.
3. Adjust the eyepiece to suit your eyesight.

Night vision operation - Remove



1. Loosen the screw and remove night vision adapter.
2. Turn the eyecup outside in.



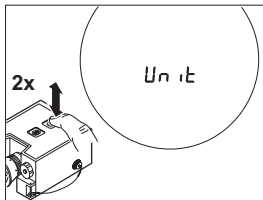
Set "ntOF" in the configuration menu for use without night vision device (see page 18, 19).



If the function is set to "ntOn" and the device is used in daylight conditions, the message "ntOn" is displayed for a short instant.

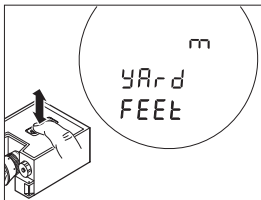
Settings

Measurement units



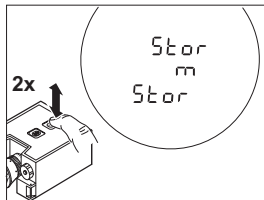
Meters, yards or feet can be selected as measurement unit.

Click the function key two times in rapid succession.
"Unit" appears briefly.



Click the distance key until the desired unit appears.

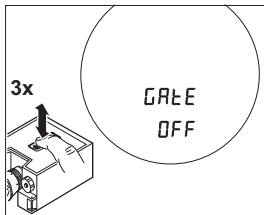
"m": Meter
"YAr d": Yard
"FEET" Feet



Click the function key two times in rapid succession to store the selection.

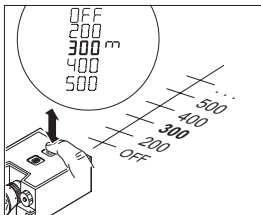
The setting is not changed when "OldU" is displayed.

Distance gate



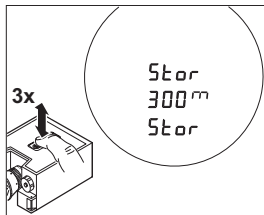
In certain cases, it may be useful to limit the closest distance the device will measure.

Click the distance key 3 times in rapid succession. "GAtE" appears briefly followed by the current setting. (e.g. "OFF")



Click the function key until the desired minimum distance appears (e.g. 300m)

Setting "OFF" disables the distance gate.

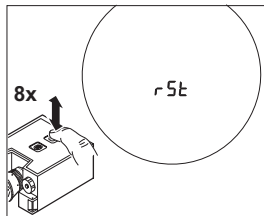


Click the distance key three times in rapid succession to store the setting. The setting is not changed when "OldC" is displayed.

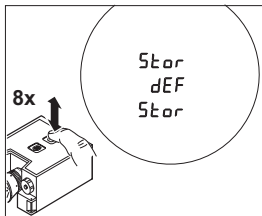


"GAtE" is displayed briefly when closer ranges are measured.

Set Factory Settings - Reset to default



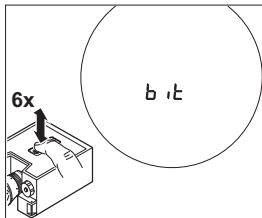
Click the function key eight times in rapid succession. "rSt" for reset appears.



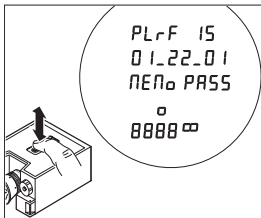
Click the function key eight times again to store the default factory settings. "Stor" - "dEF" - "Stor" appears.
If not done correctly, the settings remain unchanged and "Old C" is displayed.

The default factory settings are:
Electronic aiming mark "off"
Distance gate "off"
Night mode "off"
Multiple object measure. "Off"
Distance unit "meter"
Angular unit "degree"
Interface setting "PC".

Built-in-Test



Click the distance key six time in rapid succession.
"bit" appears briefly, the built in test starts automatically.



The distance key can be used to scroll through the test.
Keeping the distance key pressed prolongs the display time.

1. Model (e.g. PLRF15)
2. Software version (e.g. 01-22-01)
3. Memory test
"MEMo" "PASS" or "FAIL"
4. Display Test
all segments on

Troubleshooting

Problem	Possible cause	Solution
Measurements can not be taken - no function at all	The batteries have run out Battery contacts corroded Low temperature reduces performance of batteries Extreme heat shortens batteries life	Replace batteries (see page 11) Clean battery contacts Warm up batteries Do not store the batteries at temperature over +70°C
"- - -" is displayed after distance measurement	Distance is outside the specified range Object too small or inaccurately targeted Bad weather conditions	Respect specified measurement range (see page 9) Respect factors affecting measurement range (page 15)

Problem	Possible cause	Solution
The electronic reticle is not visible	"ErOF" is set in the configuration menu	Select "ErOn" in the configuration menu (see page 18)
"LobA" is displayed	The battery is almost used up	Replace battery (see page 11)
The device measures objects in front or behind the intended object	"3dOF" is set in the configuration menu, only the distance with the highest return signal is displayed	Select "3dOn" in the configuration menu (see page 18)
"ntOn" is displayed after a measurement	The device is used during daylight conditions with "ntOn" selected in the configuration menu	Select "ntOF" in the configuration menu (see page 18)

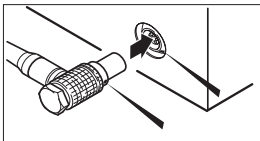
Connecting the interface cable

On the side of the device is a socket for connecting the device to a personal computer or laptop.

The interface is used for service purposes only.

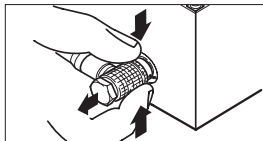
Caution:

Incorrect handling can damage the socket or optional interface cable.



To plug:

1. Remove protection cap.
2. Align the respective markings on the plug and socket.
3. Slide the plug carefully into the socket until the locking mechanism engages

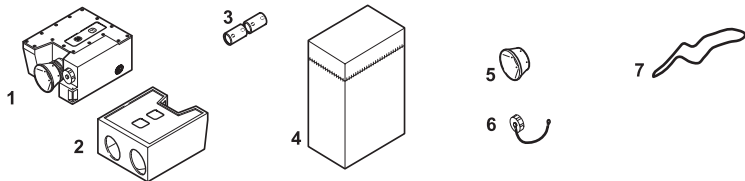


To unplug:

1. Grasp the plug grip between two fingers,
2. draw it carefully back to the stop to disengage the locking mechanism,
3. pull back a little harder until the plug slips out of the socket
4. Attach the protection cap.

Equipment

Parts List



Standard extent of delivery:

- | | |
|-----------|--|
| 1 | PLRF10 / PLRF15 |
| 2 731 207 | Rubberized cover |
| 3 667 002 | SEB51 lithium battery, 3V,
CR123A (2x required) |
| 4 724 828 | Pouch for PLRF |

Spare parts:

- | | |
|-----------|---------------|
| 5 723 791 | Eye cap |
| 6 727 539 | Battery cover |
| 7 725 020 | Lanyard |

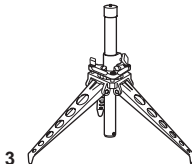
Accessories



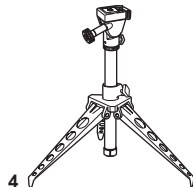
1



2



3



4

Optional:

- 1 706 271 SEV48 data cable to PC
- 2 Night vision adapter PLRF (upon request)
- 3 664 868 SST3-1 mini-tripod, non magnetic
- 4 729 452 SST3-2 mini-tripod, non magnetic with pan/tilt head

Customer service

Our customer and information service will be glad to offer assistance if your instrument requires maintenance, if it sustains damage, or if you require any other information:

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Quality system

SQS certification attests that Vectronix operates a quality management system that complies with international standards for quality and quality management systems (ISO 9001) and environmental management systems (ISO 14001).



Total Quality Management - our commitment to total customer satisfaction. Ask your local Vectronix representative for more information about our TQM programme.

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