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RBF-15L

User Manual

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# User guide of lens finder camera

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## **Introduction**

Portable binocular laser lens finder camera, RBF-15L/L1 is used for active and passive camera lens detection in day or night. The camera enables users to discover the location of the concealed sniper. In fact this device help the user to detect the sniper's camera before being hit by enemy and in this way, protect himself and the persons under his control from bullet risk.

The other advantageous of RBF-15L/L1 laser lens finder includes:

- ✓ Various sniper rifle scope detection capabilities such as thermal, night vision and CCD cameras.
- ✓ The possibility of Detection of sniper rifle scope despite camouflage or concealment of sniper.
- ✓ Video output feature enables recording or connection to monitor.
- ✓ Detection possibility even if the riflescope is behind the glass.
- ✓ Usable in day and night

This device is very sensitive, so it is strongly recommended to read this manual carefully.

Note: In any case of problems contact the manufacture and do not attend to repair the system, otherwise the warranty will be void.

Read this instruction carefully and completely before using this device and keep this manual available

## Technical specification

	<b>RBF15L</b>	<b>RBF15L1</b>
<b>Effective focal length of camera lens</b>	<b>3.4~ 115.6mm</b>	
<b>Camera FOV(wide angle)</b>	<b>61.22° ×47.16°</b>	
<b>Camera FOV(narrow angle)</b>	<b>1.47° ×1.10°</b>	
<b>Optical magnification</b>	<b>43X</b>	
<b>Beam divergence range</b>	<b>13° ~35°</b>	
<b>Laser power</b>	<b>4W</b>	<b>1W</b>
<b>Laser wavelength</b>	<b>808 nm</b>	<b>830 nm</b>
<b>Camera weight</b>	<b>2.5Kg</b>	
<b>Camera dimensions</b>	<b>260mmx210mmx110mm</b>	
<b>Camera color</b>	<b>black</b>	
<b>Power Consumption</b>	<b>7.6W</b>	
<b>Battery mat</b>	<b>chargeable li-ion</b>	
<b>Battery spec</b>	<b>14.8 V,2100mAh</b>	
<b>Working time of battery with fully charge</b>	<b>2 hour</b>	
<b>Storage temperature range</b>	<b>-30°C +60°C</b>	
<b>Camera operational temperature range</b>	<b>-20°C +50°C</b>	
<b>Output video frequency</b>	<b>50Hz</b>	
<b>Power supply adaptor</b>	<b>Input :220V (AC)- Output :14.8 V (DC),4A</b>	
<b>Eyepiece image monitor resolution</b>	<b>OLED 600x852 pixel</b>	
<b>Output video format</b>	<b>PAL</b>	
<b>Resolvable power of camera</b>	<b>600 TV lines</b>	

## Lens finder components

1-command keys

2- visible entrance aperture

3-laser beam output aperture



4-battery case

5-output connector (power, video and serial)

6-eyepiec focus adjuster (diopter<sup>1</sup>)

7-turn on/off key of lens finder camera

8-Accordionian rubber for eye protection

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<sup>1</sup> A measure of lens power in refraction of light here meaning that how much eyepiece lens power must varies for correction of user's eyesight. If you use the glass you must adjust the eyepiece proportional with your glass number.



5

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8

7

6



### Lens finder camera command keys

As can be seen in above picture this camera has 8 command keys that distributed on both side of it. For using each one see the following table.

key	task	key	task
U	Upside movement on menu bar	Lr	Laser shot
D	Downside movement on menu bar	M	CCD menu
R/F+	Wireless focus moves to the right	Z+	Laser beam divergence
R/F-	Left nearly burnt	Z-	Amplification laser beams together

Lr key (laser shot key): it is possible to activate the laser beam in two mode manually and automatic.

Manual mode: by pushing and holding the Lr key the laser will shoot till releasing the key.

Automatic mode: by just push and releasing the Lr key immediately, the laser will shoot continuously till you push the Lr key for 3 seconds to stop the laser shooting.

Note: in automatic mode if you leave the system without any function for 60 second the laser will turn off automatically.

M key: with pushing this key for 3 seconds above, equipment display interface will be by the "Auto" mode into "Manual" mode. Then you can manually adjust the zoom value. Press the M key again and return to the "Auto" mode.

## Accessories



*(AC Adaptor)*



*Power/Video/RS232*



*Chargeable battery*



*Battery charger*

### **Adaptor and cable connection to camera**

A connector is mounted under the lens finder camera buddy that includes following input and outputs:

◆ Input

1- power supply adaptor (AC adaptor)

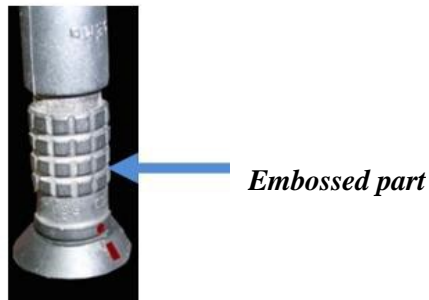
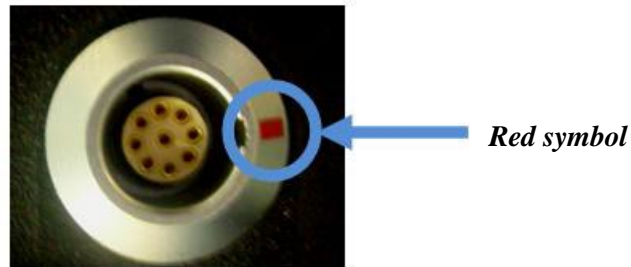
◆ Outputs

1- ideo (on monitor)



2-Sending the command from computer by serial RS232 in order to adjust the camera parameters

Note: in order to insert the male connector to the female connector (assembled on camera body) the red marks should be aligned together and then push it. For releasing the connector pull back the shell of the male connector.



## Camera setup

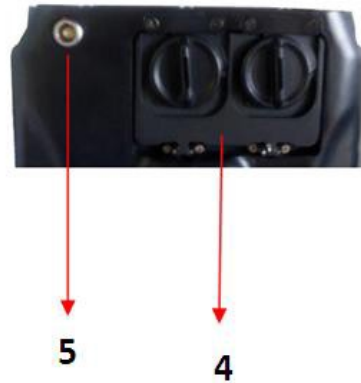
For turning on the lens finder you can use two difference power supplies as we mention as follow:

1-adaptor (AC)



2-li-ion battery 14.8 volt

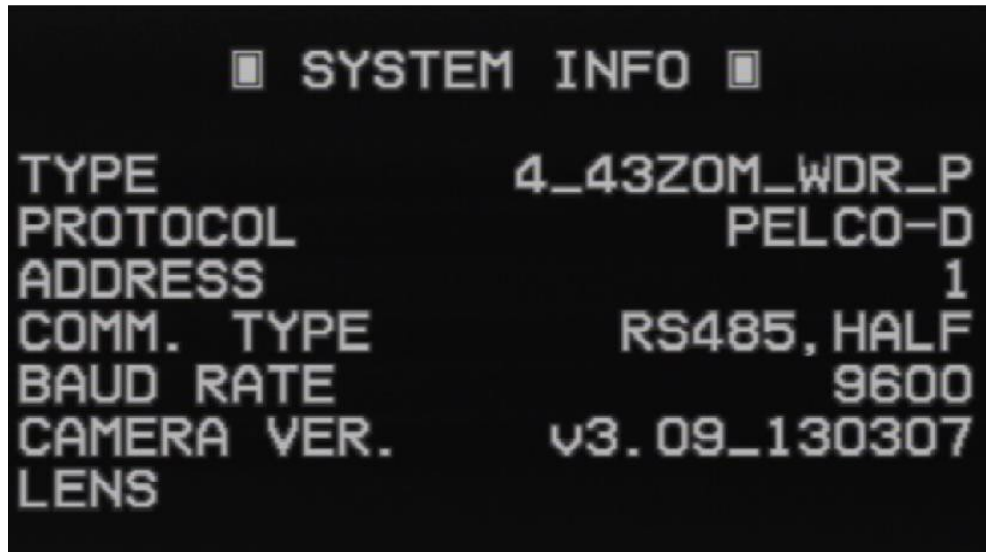
To insert the batteries inside the camera open the battery case by turning the rotary knobs (4), according to pin direction inside the case, push the battery in its place and make sure that the direction of battery is correct and turn the rotary knobs to close the battery door.



In the accessories there is an interface cable which used as power supply, video output and serial connection. This cable is known as an output interface cable or power/video/RS232. Connect this cable to the connector which is under the camera. Connect the video output of the cable to the monitor to watch the camera images on monitor or if it is necessary to change the parameter of the camera via computer commands connect the serial port cable (which has 9 pin) to the PC.

Turn on the camera by Pushing the turn on/off key for 3 seconds. As soon as the camera starting to boot up, the system information will be appear (following picture) on screen for several seconds and will disappear, and the camera is functional.

For turning off the camera just pushing the turn on/off key for 3 seconds.



At the first step if you use the external monitor for seeing the image you can focus on the subject by using of keys to having the clear and cleaner image of scene but if you use the eyepiece OLED monitor, it is better push the menu key and with seeing the menu bar. Adjust your eyesight with using the focus adjuster rings. If the eyepiece is adjust for your eyes so you must see the clear image of menu bar on the OLEDs monitor. After this step there is no need to adjust the eyepiece again and you must use only keys for focusing on your target. At the second step push the to put the laser beam at the narrowest state or in minimum FOV .now put the laser beam on a near target (not alive creature or ignitable material) if laser performance be correct you must see a flashing luminous circle in back ground.

#### Mention

Under no circumstances (such as making Sure from laser performance) don't see directly or indirectly to the laser output aperture.

At third step after seeing the laser beam on monitor and making Sure from correction of laser performance, by using the zoom keys: and focus keys: start searching in locations you are suspect that may be a sniper is concealed in this locations. You must have a clear image from these locations. Finally by using the: keys change slowly the opening of laser beam from largest to closest position. In this situation if your camera be able to detect a concealed optical system you must

see one or two flashing luminous spot (depend on number of entrance aperture).  
The following images show detection process of concealed optical system for better understanding.



*Fig1.A vision camera in 2km distance*



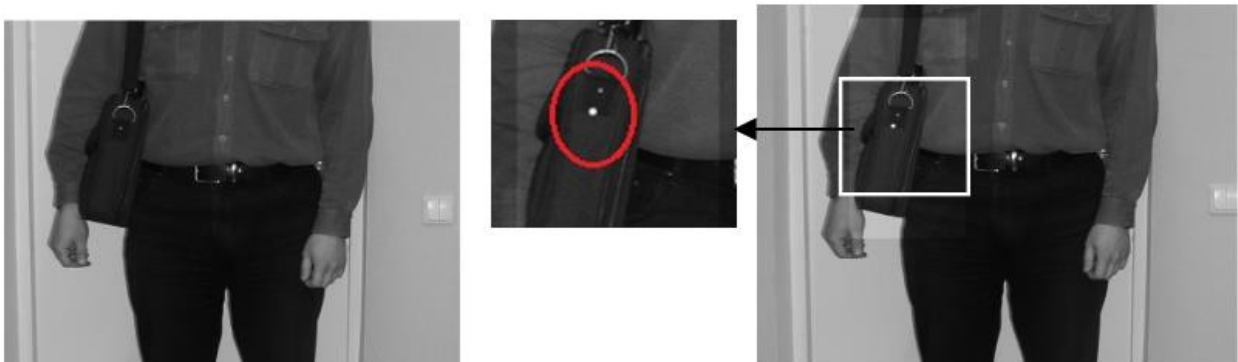
*Fig2.sniper rifle scope (PO4x34) at 500m distance*



*Fig3.*



*Fig4.*



*Fig5.detection of recorder cam*

## Mention

**If optical aperture of concealed sniper be small or distance between user and target is too much, it is possible that flashing spot be too small or its intensity be low so precise searching is necessary here.**

### Camera settings for day or night

This camera lens finder could be used in day or night. For setting the camera image appropriate for day or night, at first you must hold the menu key (M) and (F-)for three seconds , And then click on the M button again until you see an image exactly the same with the following picture 6 on the monitor. Then with the help of U and D keys move on the menu bar. When you reach to “PROFILE” option, push the menu bottom again. In this situation you must see an image exactly the same with the following figure 7 .For day light setting moving on the “PROFILE” options with using U and D keys again. As can be seen in figure 8 you must find the “BACKLIGHT” option and push the menu bottom this time. Here you will see a star symbol beside the “BACKLIGHT” option.

For night situation setting you must select the “DAY/NIGHT” sub profile option (fig8) instead of “BACKLIGTH”. After selecting it, with using the D and U keys go back to “PROFILE” and using the keys go to “CAMERA SET” option (fig9). Now with using the D and U keys as can be seen in fig10 go to page two of this option and in this page change the “DAY/NIGHT” from DAY to NIGTH. After these steps go back by selecting undo sign by pushing “M” bottom. Here you must see two option “SAVE” and “quit”. Go to “SAVE” option using the keys and push the “M” key again to saving your process (fig11).

## Mention

**Under no circumstances, don't enter to other option of menu bar and don't change previous setting. If you change any option just push the “quit” while you want exit from menu bar.**



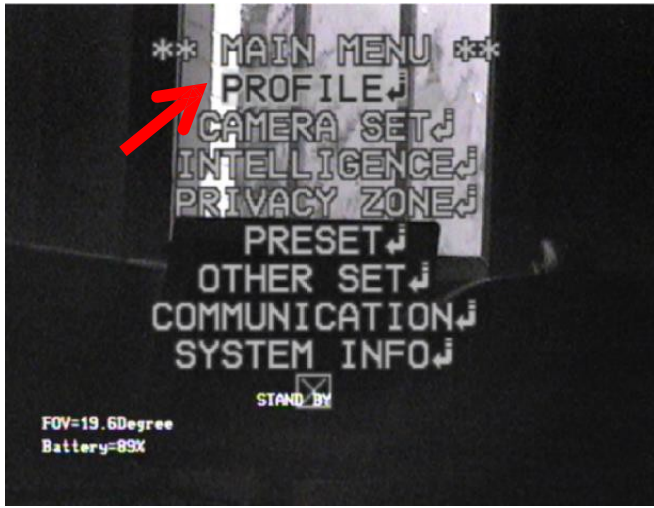


Fig6.



Fig7.



Fig 8.

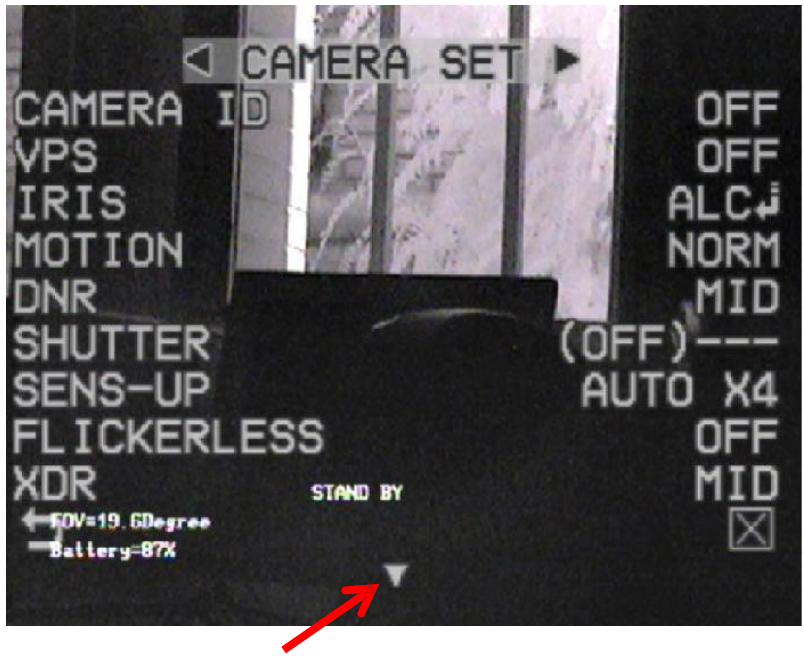
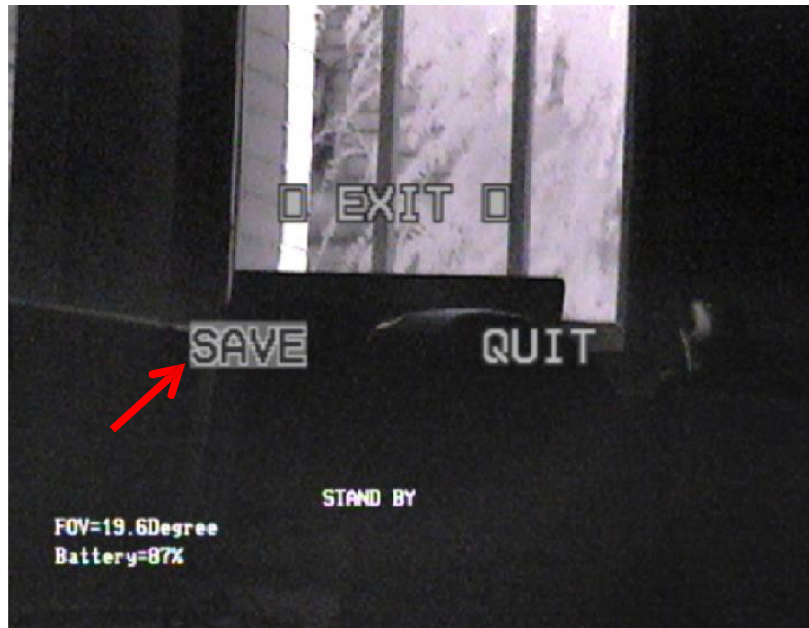


Fig 9



Fig 10





*Fig 11*

## **Cautions**

Important point you must do them before or after using the lens finder camera

- ❖ Don't turn on the laser in indoor environment such as room.
- ❖ Never look at the laser beam straightly and in case of repairing the laser always using safety glasses.
- ❖ Don't aim the laser beam on the flammable material.
- ❖ Do not aim the camera directly to the sun.
- ❖ In case of storing the camera for a long time remove the batteries.
- ❖ This camera has electrostatic sensitive electro optical components so don't leave it without special bag.
- ❖ In case of having any problem with this product, don't open the camera body by yourself, just inform the customer service.

❖ The following issues will void the guaranty:

- Any physical damage or observable burning
- Any substitution or damage in hologram.
- Any problems happened by un appropriated application.
- Trying to open and repair the product.

**Product Care and Maintenance note:**

- Only use the power supply adapter comes with this product as accessories otherwise it may damage the camera electronic boards.
- In case of using Interface cable such as external power supply cable or video cable, make sure the cable is not damaged and connect it before turning on the camera, and disconnect it after turning off the camera.
- For cleaning the optical surfaces only use a soft dry fabric.
- Don't use of chemical solvents such as alcohol, ether, acetone, etc. for cleaning the optical surfaces.
- The surfaces of lenses are coated by antireflection material so just when this surfaces is dirty clean them. Too much cleaning may damage the lens coating.
- Do not touch the lenses by bare hand. Skin sweat may cause the surfaces hazy.
- In case of cleaning the optical surfaces use a soft tissue and alcohol.

**Notes on batteries which used in lens finder**

- ◆ Fully charged the batteries will cause longer life time.

- ◆ It is normal for adaptor to become warm.

### **Trouble shooting**

This device is very sensitive, so if something wrong happened just check the following instructions otherwise return it to the factory for repair.

- ◆ Use a fully charge battery
- ◆ Clean the pins inside the battery case.
- ◆ Make sure the power adaptor works fine .