



THERMAL IMAGING BINOCULAR WITH RANGEFINDER TG1R



**USER'S GUIDE
CERTIFICATE**

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1. Package

| | | | |
|----------------------------|------------------------------|------------------------------|-------|
| Thermal binocular TG1R | | | 1 pc. |
| Objective | <input type="checkbox"/> F50 | <input type="checkbox"/> F75 | |
| Case | | | 1 pc. |
| Lens cleaning cloth | | | 1 pc. |
| User's guide (certificate) | | | 1 pc. |

2. Precautions

- Protect the device from shock.
- Don't wipe objective and eyepiece lenses with hard abrasive materials.
- Don't store the device with power sources.

IMPORTANT!

It is strongly forbidden to direct thermal device to the sun and other sources of intensive thermal radiation temperature of which exceeds 500 C°!

3. Purpose

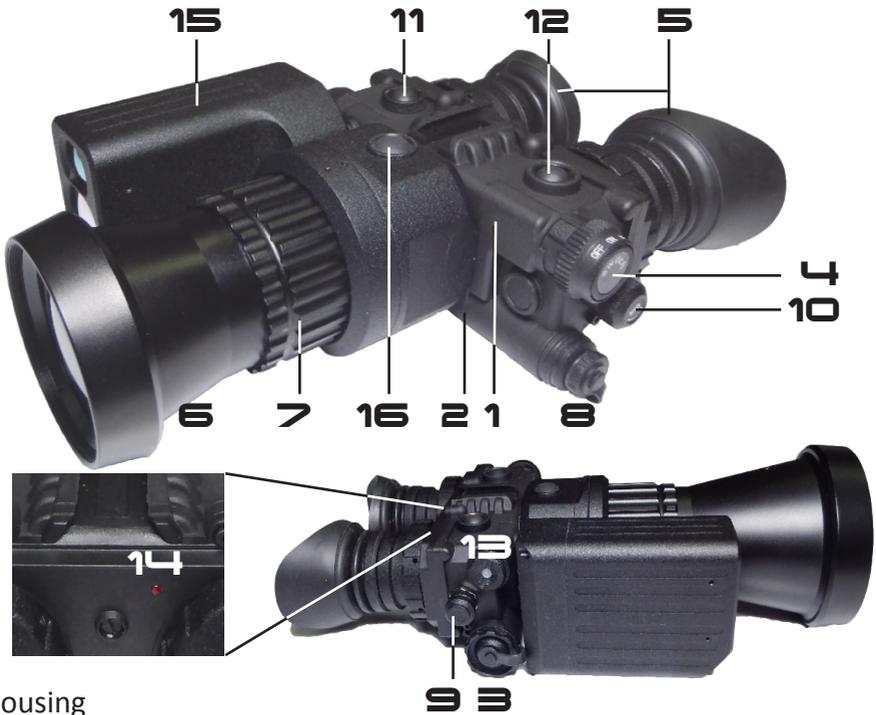
The binocular is intended to observe movable and immovable objects in conditions of various illumination and limited visibility (fog, dust, etc.) or complete darkness and measure distance to them.

With the help of the device one can indicate places having temperature background different from natural, for example, hot liquid, gas leakage, heating of local surfaces etc.

4. Technical characteristics

| Model | TG1R | |
|--|-------------------------|------------|
| Sensor: pixels / detector pitch | 384x288 / 17um | |
| Microdisplays: type / pixels | OLED / 1024x768 | |
| Focal, length/aperture ratio | F50 /1,0 | F75 /1,0 |
| Magnification, X | 3,5 | 5,3 |
| Angle of view, degra | 7,5°x5,6° | 5°x3.8° |
| Digital zoom | x2, x4 | |
| Detection range (obj.0.5x1.8m), m | up to 1200 | up to 1700 |
| Rangefinder, measurement, m | up to 800 | |
| Spectral range, micrometer | 8 - 14 | |
| Frequency, Hz | 50 | |
| Palette | 9 types | |
| Diopter adjustment, diopters | ±4 | |
| Voltage/Battery type | 9V / 3 x CR123A Lithium | |
| Operating time (+20°C), hours | 4,5 | |
| Operation temperature range, °C | -40 ... +50 | |
| Degree of protection according to IEC 60529 (optional) | IPX5 (IPX7) | |
| Dimensions, mm | 241x139x87 | 241x143x87 |
| Weight, kg | 1,2 | 1,4 |
| Plug for external power supply | present | |
| Manual adjustment of sensor reinforcement | present | |
| Manual adjustment of microdisplay brightness | present | |
| Video output | present | |

5. Design and control



1. Housing
2. Battery compartment
3. Battery compartment cap
4. On/off-switcher
5. Eyepieces with diopter adjustment rings
6. Objective
7. Objective adjustment ring
8. Outer power source slot
9. Video output
10. Reinforcement/brightness adjustment
11. Digital zoom button
12. Image polarity button
13. Cartridge of dehydrator
14. Switch-on indicator
15. Rangefinder
16. Rangefinder measurement button

6. Setting-up procedures and performance inspection

Insert power elements due to polarity indicated on the battery compartment body.

Turn on the switcher (4) and make sure that on-indication lights (14). If on-indication doesn't light change power elements. After the device has been switched-on wait till an image appears on display (in the eyepieces).

Time of switching-on displays and readiness of the device is not more than 5-7 seconds.

With the help of diopter adjustment rings (5) reach maximal possible sharp image. Guide yourself by service inscriptions and marks on display.

After it direct the device to the selected object and reach sharp image of the observed object rotate objective adjustment ring (7).

For choose optimal magnification (chosen multiplicity is reflected on display as 1x, 2x, 4x) press Zoom button (11).

Choose optimal polarity of image with the help of polarity change button (12) (it is displayed  or ).

Hot black/ hot white palette is used in the monocular like basic one. For palette change press and hold INVERT (8) button during 3-5 sec until **PLx** will be displayed (**x** - palette number). Then press the button (8) sequentially for necessary palette change. To save palette change press INVERT button during 3-5 sec again (the message WORK will be displayed).

Pay your attention that the device settings will not change after the power is off.

For sensor reinforcement, sensor sensitivity or display brightness adjustments press handle GAIN (4) shortly. In the center of display you will see the last setting - GN or SN or BR. To select the desired setting press handle (4) shortly again. By rotating the handle (4) choose suitable range.

Power source indication is displayed in down right corner (battery in case batteries (yellow color sign)/accumulators (blue color sign) using, plug in case external power using). Indicator will be accumulators When battery charge is lower than 7,7 V on-indicator starts blinking. Power elements are to be changed.

To measure distance to the selected object you should shortly press button (16). Sight mark of rangefinder  will appear in the field of view. Match rangefinder sight and the object, after it, press shortly button (16) once again. Hold on the object in the sight during 1-2 sec. Result of measurement will appear in the field of view.

7. Use of the device with additional accessories

There is an opportunity in the device to connect outer power source with 10...14,6 V (car embedded network) through the slot (8) or outer power source with 8-14,5 V and plug of JACK 2.1. standard.

To record image you should use standard video cable with RCA plug to connect the binocular and corresponding plug for the used video recording device. When the binocular is switched on (first position of switcher (4)) video is given to the plug (9).

You may switch off microdisplays during video mode by rotating the switcher (4) to the next position.

When recording the image, guide yourself by the instructions (menu) of video recording device.

Video type given from the binocular to video recording device is CVBS.

8. Possible defects and methods of their removal

Your binocular is a complex optomechanical device. Its repair and service may be fulfilled only in conditions of manufacturer.

If switch-on indicator (14) doesn't shine or blink after switching- on the binocular, and image is absent or blinks in the eyepiece, so may be power elements are uncharged or junctions in battery compartment are broken.

Change power elements; inspect junction at the battery compartment cap (3) and junction inside the battery compartment.

There shouldn't be any corrosion traces and any dirtying. If power elements are changed and junction cleaning doesn't help, if any other defects or failures appear, don't try to disassemble the binocular by yourself and repair it. It may lead to greater failures and warranty loss. Turn it to the seller or to the manufacturer.

9. Storage and transportation

Device is to be kept in case in dry heated and aired room with relative humidity up to 80% with temperature 5°C - 30°C.

In the room there shouldn't be any acid fumes, alkali and other aggressive dirt in the air.

While preparing the device for long-term storage, you need to do the following things:

- lubricate with any gun oil uncolored metal parts, lubricate cap thread of battery contact, battery compartment thread, lubricate inner contact of battery compartment with any a gun oil, dry up the device.

Transportation conditions depend on climatic factors (temperature -50 - + 50 °C, relative humidity not more than 98 % at 25 °C).

Device can be transported by any kind of transport, in roofed vehicles according to transportation rules at the given kind of transport.

10. Quality test certificate

Thermal imaging binocular **TG1R**

Serial №

Sensor №

Release date.....

Representative of quality department

11. Warranty

Manufacturer guarantees that the thermal binocular quality corresponds to technical demands if storage, transportation and operation rules and conditions are adhered to.

Warranty period is 12 months.

Manufacturer repairs the binocular or changes it in case of producer - caused failure during warranty period.

12. Manufacturer

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For notes

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