

LLC "FARVISION"

**BINOCULAR**

**WITH IMAGE STABILIZATION**

**БКСШ 20X50**

**USER GUIDE**

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<b>Contents</b>		<b>Page</b>
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Introduction

**1. Description and work**

1.1 Function

1.2 Technical characteristics

1.3 Device components

1.4 Device and work

1.5 Marking

1.6 Wrap

**2. Proper use**

2.1 Operating restrictions

2.2 Preparation for use

2.3 Device use

2.4 Possible malfunctions and troubleshooting

**3. Technical support**

**4. Storage**

**5. Transportation**

**6. Utilization**

This user guide is aimed at studying of capabilities and right exploitation of БКСIII 20X50 binocular. It will help to use the binocular in a right way for a long time and to avoid troubles.

The user guide contents information on binocular components, working principle, device use, storage, transportation and possible troubles and troubleshooting methods.

## 1. DESCRIPTION AND WORK

### 1.1 Function

20x binocular with image stabilization (hereafter – “Binocular”) aimed at visual tracking and detecting of distance objects including mechanical impact on the binocular by hand shake or work on the unstable platform.

Binocular with image stabilization provides the possibility of full-scale tracking when working in the moving car or a helicopter, on the ship or other moving platforms.

Binocular is water- and weatherproof.

**Notice** - observer-target range and detection depends on the natural illumination, target type, atmosphere transparency and target contrast in relation to background.

With high level of illumination target detecting distance increases and with low level of illumination, low level of atmosphere transparency and when the target is situated on the dark background target detecting distance decreases.

### БКСIII 20x50 binocular features

1. Weather- , shock- and corrosion-proof body
2. No time lapse when switching on image stabilization
3. No power source needed
4. Wide field of view
5. Socket for tripod with ¼” connecting thread
6. Soft anti-shock seals
7. Pupil distance setting by eye base
8. Separate dioptic ocular setting
9. Neck strap
10. Weather- and waterproof
11. Original design, ergonomic body

### Technical characteristics

Name	Meaning
Zoom, arm	$20 \pm 1$
Lens diameter, mm	$50 \pm 1$
Viewing angle, arm	$4.1 \pm 0.2$
Eye relief, mm	$10.0 \pm 1$
Dioptic ocular setting, diopter	Max: from -5 Up to: till +5
Pupil distance setting range, mm	$56 \div 74$
Working temperature range, mm	-40...+50
Parameters, mm	$211 \pm 3 \times 163 \pm 3 \times 75 \pm 3$
Weight, kg	$1.3 \pm 0.1$

### 1.3 Device components

BKCIИ 20X50 binocular	1 unit
Neck strap	1 unit
Body cover	1 unit
User guide	1 piece
Passport	1 piece

### 1.4 Device and work

BKCIИ 20X50 is a complicated optical device, which consists of body 1 (Fig. 1), stabilization mode trigger 5, ocular blocks 3, dioptic settings socket 4, lenses 2 and protective covers 1.

Binocular has reliable and weatherproof body with shockproof seals and non-slip cover.

Binocular working principle is based on target image tracking through the optical system and provides comfortable observing while hand shake and work on an unstable platform.

Stabilization inertia mechanism provides wide correction angle and improves resolution quality in comparison to gyroscopic image stabilization system.

Binocular has no fast-turning elements, produces no acoustic noise, and maintains high reliability and long life cycle, no energy consumption (no power source).

1 - protective covers

2 – lenses

3 – ocular blocks

4 – ocular focusing sockets

5 – image stabilization mode trigger

6 – tripod plug

Figure 1 – Binocular outlook

### 1.5 Marking

Binocular marking consists of a code and serial number placed on a nameplate on the bottom of the device.

### 1.6 Wrap

During storage and transportation image stabilization mode shall be switched off, protective covers shall be put on and binocular shall be placed in the case.

Neck strap and accompanying documents shall be put inside the plastic bags and placed in the case.

## 2. PROPER USE

Full operational readiness and good condition during life cycle is provided by skillful and safe operating during exploitation, timely service check and correct use.

## **2.1 Operating restrictions**

### **It is prohibited:**

- To store and transport the binocular with image stabilization mode switched on
- To wipe optical elements surface with dirty towels and other improvised materials
- To use different dissolvent, except for alcohol and alcohol and ethereal mix
- To store the binocular without protective blends put on, outside of the case and near the heating units
- To dismantle the binocular on your own

## **2.2 Preparation for use**

### **2.2.1 Preparation for work**

2.2.1.1 Take the binocular out of the case

2.2.1.2 Fasten the neck belt from the kit

2.2.1.3 Take off covers 1 from the lenses 2 (Fig. 1)

2.2.1.4 Set the binocular on the eye base by turning ocular blocks 3, i.e. combine the images of the left and right channels.

2.2.1.5 Set sharp image by turning blocks 4, separate from the right and left ocular.

The binocular is ready for work.

### **2.2.2 Image stabilization mechanism check**

2.2.2.1 Turn on image stabilization mode by turning trigger 5 into position “1”. Trigger will be fixed in this position.

2.2.2.2 Track the object, the image shall be sharp.

2.2.2.3 Turn off stabilization mode by turning the trigger in the opposite direction in 1/3 sector and it will return into the start position “0” automatically. Stabilization mode will turn off and the binocular can be used as a simple tracking device.

The binocular is functioning properly and ready for use.

### **Attention!**

1. Do not look at the bright light sources or at the sun through binocular subject to eye damage.
2. For a long-time tracking the binocular can be mounted on a tripod with ¼” connecting thread.
3. Protect the binocular from the bumps, dirt and mechanical damages of the optical elements.

## **2.3 Device use**

2.3.1 Take the device out of the case.

2.3.2 Take off the covers 1 from the lenses 2.

2.3.4 Point the binocular at the tracking object. By turning ocular blocks 3 set the necessary inter-pupil direction by combining both oculars’ fields of view.

2.3.5 Set sharp image by turning blocks 4 for the right and left oculars separately.

2.3.6 Immediately turn the binocular from the bright light sources.

2.3.7 Switch on image stabilization mode by turning trigger 5 in the “1” position. The trigger will be fixed in this position.

2.3.8 Install the binocular on the tripod in case of necessity

### 2.3.9 After the work:

- turn off the image stabilization mode by turning the trigger in the opposite direction on 1/3 sector;
- put on the lenses 3 covers 1;
- put the binocular into the case.

### **Attention!**

Protect the binocular from the prolonged exposure of sun rays.

Do not leave unattended when mounted on the tripod.

Use neck strap for preventing damage from bumps.

## **2.4 Possible malfunctions and troubleshooting**

Possible malfunction	Possible reason	Troubleshooting
No image	Lenses are protected with the covers	Take off protective covers
Split field of view	Inter-pupil distance of the oculars does not correspond with the viewer's eyes	By turning ocular blocks 3 combine field of views of both oculars
No sharp image of the tracked objects	No ocular blocks diopter set	By turning dioptic setting blocks 4 set sharp image
Images are blurred, not sharp	1. Outer optical surfaces are dirtied 2. Image stabilization turned off	1. Clean optical surfaces with a clean towel, wet in alcohol 2. Switch on image stabilization by turning trigger 5 into position "1".

In case of other malfunctions please sent the binocular to the manufacturer.

Do not dismantle the binocular on your own.

### **Attention!**

Binocular optical elements are made of specific optical glass. During the process of glass manufacturing gas-bubbles appear. These bubbles do not affect the image quality.

## **3. TECHNICAL SUPPORT**

Technical support is provided during the process of use and it is necessary for maintaining device operable condition.

Technical support includes:

- Visual check
- Operable condition check
- Operational maintenance

There should be no cracks, corrosion, dirt and other defects on the device surface.

Dust on the lenses as well as sand, water drops and finger prints worsen the image quality (sharpness and contrast).

Functional check order is presented in a sub article 2.2.2 of the present User guide.

The following technical service includes the following works:

- Binocular outer surfaces cleaning from dust and dirt;
- Binocular outer optical and ocular surfaces cleaning from fatty spew and contamination with a towel wetted in alcohol or alcohol and ethereal mix

Technical service average time – 1 person per hour.

**Attention!**

Abrasive particles should be removed with the soft brush before rubbing the lenses. Use special towels for optic elements to avoid lenses surface damage, to remove dirt and finger prints.

Do not use crude materials for cleaning. They can damage the surface of the lenses. Do not clean the surface of the lenses with the towel previously used for cleaning the body.

Clean the body with the soft clean towel. Do not use benzol, dissolvent and other organic compounds, because they can damage the body or destroy its rubber parts.

**4. STORAGE**

The binocular with the covers on the lenses, with image stabilization mode turned off, should be stored in the case. Storage temperature from 5 to 35 °C and relative humidity up to 85%.

**5. TRANSPORTATION**

Binocular shall be placed in the manufacturer's case during transportation by all transportation means, including air post in a pressurized portion.

**6. UTILIZATION**

Binocular does not include harmful substances, it is not harmful for human health and environment and does not require special utilization technologies.

Binocular elements are made of materials (steel, copper, aluminum alloys) which can be externally reprocessed and can be used at the consumer's discretion.