

NPER

Tester of night vision periscopes



Fig.1. Photo of NPER test station

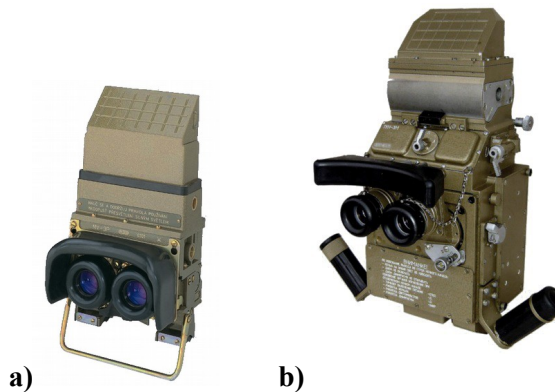


Fig.2. Samples night vision periscope: a)driver periscope, b)commander periscope

Basic information

Night vision periscope is a night vision device designed using a periscope optical system. These devices are used to enable at night condition for driver or commander of mechanical vehicles used by military, border guards, police or in some industrial heavy machinery.

Night vision periscopes are divided into two groups: 1)driver binocular night vision periscopes for drivers of wide FOV (from about 30° to 40°), 2) commander binocular/monocular night vision periscopes of narrow FOV (from about 8° to 14°). Both types are built using two channel concept: night channel and day channel. Testing night vision periscopes using standard systems for testing NVDs is difficult due periscope design. This design creates necessity to use large aperture collimators in order to project test images to both channels of tested night vision periscope.

How it works

NPER test station projects images of some standard targets into direction of tested night vision. The user can control light intensity and type of target to be projected. The tested NVD generates copies of the projected standard images. Images generated by tested NVD are evaluated by human observer or with help of some measuring tools and important parameters of night vision devices are determined.

NPER test station is equipped with a universal XNP10 platform for mounting tested periscopes.

The station enables step regulation of simulates distance to target of interest: 80m, 100m, 140m, 180m, 270m, infinity.

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Test capabilities:

Following tests or measurement of night vision periscopes:

1. focus checking (infinity or short distance)
2. measurement of resolution
3. measurement of collimation error
4. measurement of alignment error between day and night channels
5. FOV
6. adjustment checking of reticle on aiming line
7. measurement of ocular diopter range

Technical specifications

Blocks:	LAPER base module, CLAPER controller, set of targets, optical bridge OB21, power supply DC12V, XNP10 platform, DMP46 diopter meter laptop
Collimator type	Refractive
Collimator focal length	600 mm
Collimator aperture	120mm
Collimator resolution	At least 50 lp/mrad
FOV of collimator	16°
Simulated distance	Optical infinity (option 80m, 100m, 140m, 180m, 270m)
Light source	Monochromatic 660 nm
Dynamic of regulation of light source	At least 20000 (approximate range from 1 mlx to 20lx)
Temporal stability	Better than 2%
Targets	Resolution target (USAF 1951), Cross target, FOV target,
Resolution target	USAF1951 target - spatial range 0.6 lp/mrad to 17 lp/mrad
Power supply	230 VAC 50/60 Hz (or DC12)
Work temperature	5°C to 40°C
Storage temperature	-5°C to 50°C
Mass	38 kg

*specifications are subject to change without prior notice

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