



INNOVATIONS FOR THE SAFETY OF THE POPULATION





PCO S.A. is a leading manufacturer of technically advanced optoelectronic equipment in Poland, based on night vision, thermal imaging, and laser technologies.

The technologies applied by the company are a result of current scientific discoveries, and the products manufactured by the company are appreciated both by the army and by Polish and foreign manufacturers cooperating with the military. We can prove the high quality of our products by the certificates and awards won over the years.

OUR OFFER







MU-3M KOLIBER

Designed for the individual user to observe the scenery during the night. Can be installed on every type of helmet.

Without a battery, Monocular MU-3M weights 265g

Can operate with a thermal imaging adachment, thus allowing observations the scenery in fusion mode: night vision and thermal modes blended together.

Design based on 16mm Intens[™], a new-generation image intensifier.





MU-3M KOLIBER MINIATURISED UNIVERSAL MONOCULAR

	WITHOUT LENS	LENS	LENS
Magnifica]on	1x	Зx	5x
Field of view	> 40°	≤ 11,5°	≤ 6,5°
Focus adjustment	from 0,25 m to ∞	from 2,5 m to ∞	from 7 m to ∞
Image intensifier type	Intens <u>™</u> 16 mm		
Dioptre adjustment	from -5 to +2 dpt		
Interpupillary Adjustment	58 mm ÷72 mm		
Power supply	1x AA 1,5V or 1x rechargeable battery AA 1,2V lub 1x 3,6V or 1x D123 3,0		
Battery life in normal temperature	ca. 40h (1x lithium battery3.6V)		
Operating temperature range	-35°C ÷ +50°C		
Weight - monocular	ca. 265 g		
Weight - goggles	ca. 630 g		

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WG-Sir 1750m





Designed for the individual user to observe the scenery during the night. Can be installed on every type of helmet.

Can operate with a thermal imaging adachment, thus allowing observations the scenery in fusion mode: night vision and thermal modes blended together.

Design based on 16mm Intens[™], a new-generation image intensifier.





MU-ADM MINIATURISED UNIVERSAL MONOCULAR

	WITHOUT LENS	LENS	LENS
Magnifica]on	1x	Зx	5x
Field of view	> 40°	≤ 11,5°	≤ 6,5°
Focus adjustment	from 0,25 m to ∞	from 2,5 m to ∞	from 7 m to ∞
Image intensifier type	Intens™ 16 mm		
Dioptre adjustment	from -5 to +2 dpt		
Interpupillary Adjustment	58 mm ÷72 mm		
Power supply	1x AA 1,5V or 1x rechargeable battery AA 1,2V lub 1x 3,6V or 1x D123 3,0		
Battery life in normal temperature	ca. 40h (1x lithium battery3.6V)		
Operating temperature range	-35°C ÷ +50°C		
Weight - monocular	ca. 265 g		
Weight - goggles	ca. 630 g		



PNL-2AD SOKOL



Convenient two-eye observation. Natural shapes and sizes in the scenery retained.

Night vision with two independent optical channels.

Possibility to mount an IR illuminator.

Lightweight night vision goggles designed for use under night conditions.



PNL-2AD SOKOL

NIGHT VISION GOGGLES

Magnification	1x
Field of view	> 40°
Focus adjustment	from 0,25 m to ∞
Image intensifier type	XD4/XR5
Dioptre adjustment	from -6 to +2 dpt
Interpupillary Adjustment	60 mm ÷72 mm
Power supply – on-board network	2x AA 1,5V or 1x 3,6V
Battery life in normal temperature	ca. 12h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	са. 1050 g



PNL-2ADM SZPAK



Three power sources: in the goggle set, fixed at the back of the helmet, and from the onboard network of the luggage

Built-in IR illuminator allows seeing in complete darkness

Universal mounting, adapted for every type of land forces helmet

> White phosphorus increases the distinguishing of details approximately by 20% compared to a standard night vision



PNL-2ADM SZPAK

NIGHT VISION GOGGLES

Magnification	1x
Field of view	> 40°
Focus adjustment	from 0,25 m to ∞
Image intensifier type	Intens <u>™</u> 16 mm
Dioptre adjustment	from -5 to +2 dpt
Interpupillary Adjustment	58 mm ÷72 mm
Power supply – on-board network	1xAA 1,5V or 1x rechargeable battery AA 1,2V or 1x 3,6V
Battery life in normal temperature	ca. 15h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	ca. 700 g



NPL-2

Designed for observing the scenery in poor visibility at night

Equipped with addi]onal IR illumination, allowing for operation in closed premises. A small, lightweight night vision device

KRUK

With dedicated NPL-2 google adachment, you can use the device as manual observation instrument at greater distances

> Can be used as a handheld device, fixed on any type of helmet, or on the head with a special harness





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GGLES		
WITHOUT LENS	LENS	LENS
1x	Зx	5x
> 40°	≤ 11,5°	≤ 6,5°
from 0,25 m to ∞	from 2,5 m to a	∞ from 7 m to ∘
	XD4/XR5	
	from -6 to +2 d	dpt
	60 mm ÷72 mr	m
1x AA 1,5V or 1x rechar	rgeable battery.	AA 1,2V or 1x 3
	or 1x D123 3,0	VC
ca. 20h (1x	lithium battery	3.6V)
	-35°C ÷ +50°C	2
2		
	VITHOUT LENS 1x 1x > 40° from 0,25 m to ∞ 1x AA 1,5V or 1x recha ca. 20h (1x)	WITHOUT LENSLENS1x3x> 40° \leq 11,5°from 0,25 m to ∞from 2,5 m to ∞from 0,25 m to ∞from -6 to +2 o60 mm ÷72 mm \leq 00 mm ÷72 mm1x AA 1,5V or 1x rechargeable battery or 1x D123 3,0ca. 20h (1x lithium battery -35°C ÷ +50°C



The newest night vision device.

Lightweight – 840g

Designed for helicopter pilots and crew to observe the scenery and detecting targets during the night flights.

16mm image state-of-theart Intens™ intensifier with autogating system Compatible with the following aviator helmets: THL-5NV, Alpha, HGU-55/56, Gallet LH-250/350

Allows for a comfortable, stereoscopic observation with the feeling of natural shapes and sizes of scenery and objects

The device can be perfectly adjusted to the head and individual features of the pilot's eyesight







PNL-4 NIGHT VISION GOGGLES

Magnification	1x
Field of view	> 40°
Focus adjustment	from 0,25 m to ∞
Image intensifier type	Intens <u>™</u> 16 mm
Dioptre adjustment	from -5 to +2 dpt
Interpupillary Adjustment	51 mm ÷72 mm
Power supply – on-board network	2x AA 1.5V, 2x rechargeable battery AA 1.2V
	or 1x 3,6V
Battery life in normal temperature	ca. 15h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	ca. 840 g

NIGHT VISION GOGGLES PNL-3M

The newest night vision device.

Lightweight – 840g

Designed for helicopter pilots and crew to observe the scenery and detecting targets during the night flights.

16mm image state-of-theart Intens™ intensifier with autogating system ORLIK

certyfikat easa

Compa]ble with the following aviator helmets: THL-5NV, Alpha, HGU-55/56, Gallet LH-250/350



The device can be perfectly adjusted to the head and individual features of the pilot's eyesight

Designed for civil aviation. Certified by EASA





PNL-3M ORLIK

NIGHT VISION GOGGLES

Magnification	1x
Field of view	> 36°
Focus adjustment	from 0,25 m to ∞
Image intensifier type	Intens <u>™</u> 16 mm
Dioptre adjustment	from -5 to +2 dpt
Interpupillary Adjustment	51 mm ÷72 mm
Power supply – on-board network	2x AA 1.5V, 2x rechargeable battery AA 1.2V
	or 1x 3,6V
Battery life in normal temperature	ca. 15h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	ca. 840 g





Nowoczesne urządzenia umożliwiające wykonywanie nocnych zadań taktycznych pilotom i załogom śmigłowców

Przystosowany do montażu na hełmie lotnicznym

Komfortowa stereoskopowa

obserwacja dwuoczna

Zachowanie naturalnych kształtów i wielkości obserowawnych przedmiotów i scenerii





PNL-3 BIELIK

NIGHT VISION GOGGLES

Magnification	1x
Field of view	≤ 38°
Focus adjustment	od 0,25 m do ∞
Image intensifier type	XD4/XR5/Intens™
Dioptre adjustment	od -6 do +2 dpt
Interpupillary Adjustment	60 mm ÷72 mm
Power supply – on-board network	2x AA 1.5V, 2x rechargeable battery AA 1.2V
	or 1x3.6V
Battery life in normal temperature	ca. 15h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	ca. 840 g



15 -

NPL-1M BROM







NPL-1M BROM NIGHT VISION BINOCULARS

Magnification	3x
Field of view	≤ 12°
Focus adjustment	from 5 m to ∞
Image intensifier type	XD4/XR5
Dioptre adjustment	from -6 to +2 dpt
Interpupillary Adjustment	60 mm ÷72 mm
Power supply – on-board network	1x AA 1,5V lub 1xrechargeable battery AA 1,2V
	or 1x 3,6V or 1x D123 3,0V
Battery life in normal temperature	ca. 20 h (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight of the goggles	ca. 860 g

THERMAL IMAGING BINOCULARS

AGAT



TSO-1



TECHNICAL SPECIFICATION:



THERMAL OBSERVATION SYSTEM

Detector type	microbolometrical
Detector resolution	640 x 480 pixels
Pixel size	17 µm
Spectral range	8 μm ÷ 14 μm
Sensitivity	< 50 mK
Field of view	12° x 9°
Field of view with a clip-on	6° x 4,5°
Digital output	RGB24, 60Hz, FPD Link III
Control interface	RS422 full duplex
Image memory	do 32
Operating temperature range	-30°C ÷ +50°C
Dimensions	190mm x 150mm x 100mm
Weight	800 g
Power supply	4 x AA 1.5V
External power supply	8V÷32V
Power consumption	1,25 W

Additional functions: reticles, digital zoom x2, x4, image polarization, manual or automatic image parameters adjustment, image details sharpening option, indicative measuring of distances, up to 32 images storage, a digital video output, input from an external military GPS receiver, input for external power supply, the possibility of connecting an additional helmet-mounted display, neck belt, arm grip





SCT sizes (L/W/H):

300 x 85 x 110mm

B

SCT

Weight with the batteries < 1.3kg

RUBIN

Thermal image displayed in the built-in monocular

Designed for observation and firing small arms in poor light and bad weather

Display - resolution 800x600 pix -size 92x45x60



SCT RUBIN

WEAPON SIGHT

Spectral range	7 ÷ 14 µm
Detector resolution	384 x 288 pixels
NETD	≤ 80 mK
Horizontal field of view	≤ 7,5°
Focus adjustment range of the lens	from 3 to ∞
Dioptric change	from -4 dpt to +2 dpt
Power	6 x AA rechargeable battery or 6 x AA battery 1.5 V
Video output	CCIR PAL-B
Operating time in normal temperatu	ıre> 8h
Operating temperature range	-30°C ÷ +50°C
Weight	са. 1300 g
Functions	Digital zoom 2x, Polarity change B/W, picture saving
HELMET-MOUNTED DISPLAY:	
Size (L/W/H)	92 mm / 45 mm / 60 mm
Weight	<0,3 kg
Dioptric change	-4 dpt ÷ +2 dpt
Power	from SCT weapon sight

(e.g. building, wall, vehicle etc.) The National Centre for Research and Development

Additional equipment: helmetmounted external display allows for observing and firing

from behind a field obstacle

Power saving functions



PCS-5, PCS-5M



Lightweight telescopic sight with a built-in XR5 image intensifier

PCS-5 can be used on many types of weapons and antitank grenade launchers with side mounting system "dovetail" PCS-5/Zs.15 is designed to be used on weapons with universal rail MIL-STD-1913 (Pitcanny)

GABRO

Used for battlefield observation, detection, and target recognition

PC	CS-5, PC	S-5M gabro		
NIG	NIGHT VISION WEAPON SIGHT			
(Ju				
	Magnification	2,2x		
	Field of view	> 12°		
Ž	Focus adjustment	from 5 m to ∞		
<u>o</u>	Image intensifier type	XD4/XR5		
ATA	Dioptre adjustment	from -4 dpt to +4 dpt		
\underline{O}	Power supply	1x lithium battery 3.6V or 1x D123 3.0V		
루 뜻	Battery life in normal temperature	ca. 30 hrs (1x lithium battery 3.6V)		
<u> </u>	Operating temperature range	-35°C ÷ +50°C		
ĒS	Weight	ca. 1450 g		



CKW, CWKW BAZALT



Aiming sight for individual or team weapon - assault rifles, machine guns, sniper rifles (anti materiel rifles)

Easy aiming in both good and poor visibility, also in the night, with XD4/XR5 light intensifier

Easy change of day-night operating mode by replacing the monocular with an image intensifier module



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CKW		C	WKW	
DAY	NIGHT	DAY	NIGHT	
1,5x-6x	1,8x-7,5x	3x-12x	3,6x-14,7x	
9° - 4,2°	7° - 1,4°	4,2° - 2,1°	3,3° - 0,7°	
from 50 m to ∞		from 100 m to ∞		
XD4/XR5				
from -6 dpt o +2 dpt				
1x lithium battery 3.6V or 1x D123 3.0V				
ca. 30 hrs (1x lithium battery 3.6V)				
-30°C ÷ +50°C				
ca. 1100 g		ca. 2	ca. 2500 g	
	DAY 1,5x-6x 9° - 4,2° from 1x ca. 1:	CKW DAY NIGHT 1,5x-6x 1,8x-7,5x 9° - 4,2° 7° - 1,4° from 50 m to ∞ XD4. from -6 1x lithium battery ca. 30 hrs (1x lit -30°C ca. 1100 g 100 g	CKW CC DAY NIGHT DAY 1,5x-6x 1,8x-7,5x 3x-12x 9° - 4,2° 7° - 1,4° 4,2° - 2,1° from 50 m to ∞ from XD4/XR5 from 1x lithium battery 3.6V or 1x D12 ca. 30 hrs (1x lithium battery 3.6V -30°C ÷ +50°C ca. 1100 g ca. 21	



DCM-1 SZAFIR

Good ergonomics

Designed for installing on various types of weapons with MIL-1913 standard

Compact and solid design with constant magnification 4x and reticle illumination

Size of connected sights: 134 (L) x 68.5 (W) x 85 (H) mm





Magnification	4x
Field of view	≤ 7°
Power supply	1x AA battery 1.5V, 1x AA rechargeable battery 1.2V,
	1 x lithium battery 3.6V
Battery life in normal temperature	ca. 100 hrs (1x lithium battery 3.6V)
Operating temperature range	-35°C ÷ +50°C
Weight	ca. 400 g

LDK-4 sight with magnification 4x

connected with collimator sight MK-1

NIGHT VISION PERISCOPE

Can be used with the following types of vehicles: - tanks: T-55, T-55A, T-55AM, T-72, T-72M

- infantry fighting vehicles: BWP-1, BWP-2
- "GOŹDZIK" self-propelled howitzer
- armoured recovery vehicles: WZT-1, WZT-2, and WZT-3 - "Rosomak" Wheeled Armoured Vehicle
- venicie

Dual eye-piece night observation device for various armoured vehicles.

RADOMKA

PNK

PNR0722

Allows the driver to observe the road and the surroundings in the night

Includes two independent optical channels with passive image intensifiers XD4/XR5

Replaces all the active night vision devices of the driver without the need to make any modifications of the fitting





PNK radomka

DRIVER'S NIGHT VISION PERISCOPE

Magnification	1x
Field of view	≤ 30°
Image intensifier type	XD4/XR5
Interpupillary distance	64 mm
Power supply	On-board network
Operating temperature range	-30°C ÷ +50°C

NIGHT VISION PERISCOPE



LISWARTA



Designed for T-72 tanks. Can be used with T-55 tanks, and with BWP-1 and BWP-2 infantry fighting vehicles, as well as with their derivatives.

Robust and resistant to detrimental climatic and mechanic factors

Includes two independent optical channels with passive image intensifiers XD4/XR5

POD makes it possible to: - observe the scenery in day and night - identify the targets and distances - aiming the tank gun during a night drive



POD LISWARTA

PASSIVE DAY-NIGHT COMMANDER'S OBSERVATION DEVICE

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<u> </u>	С

	DAY	NIGHT
lagnification	5x	5x
ield of view	≥ 9,9°	≥ 7,9°
nage intensifier type		XD4/XR5
ioptre adjustment	fro	m -4 dpt to ± 5 dpt
nterpupillary adjustment		58 - 71 mm
ower supply		on-board network
perating temperature range		-30°C ÷ +50°C

MODERNIZATION SET FOR COMBAT VEHICLES

ZMKT



KLW-1 Thermal Imaging Camera with adapter and display

Designed for PT-91 tanks with SKO 1T (DRAWA-1) firing control system

ZMKT allows for identifying and following targets in the night and in the poor visibility, while remaining hidden





MODERNIZATION SET FOR COMBAT VEHICLES

ZMKT set with its main component, KLW-1 thermal imaging camera, is designed to be used in PT-91 tanks, equipped with SKO 1T (DRAWA-1) firing control systems as the gunner's sight.

THE SET INCLUDES THE FOLLOWING SUBASSEMBLIES:

- adapter
- KLW-1 thermal imaging camera
- WD-1 gunner's display
- MD-1 gunner's screen
- MFM-2 multi-function screen
- KZ1 ÷ KZ3 cables

The use of third-generation thermal imaging camera allows for identification and following targets in the night and in the poor visibility during the day, while remaining hidden from the enemy.

PERISCOPIC THERMAL IMAGING SIGHT







PCT-72 PERISCOPIC THERMAL IMAGING SIGHT

PCT-72 allows for identifying and following targets in the night and in poor visibility, while remaining hidden from the enemy. PCT-72 thermal imaging sight can be used in all T-72 family tanks, in place of previously used TPN-1-23-11 night sight.

PCT-72 SET INCLUDES:

- KLW-1 thermal imaging camera
- Periscopic head with adapter for pantograph
- WD-1 gunner's display with cantilever and head protection
- MFM-2 multi-function display (of the commander)
- Electric bundles
- Assembly rings



SSP-1

OBRA-3



Optical and acoustic signal system, informing about detected radiation, indicates: - direction - laser source type - time from the beginning of radiation

Can be operated by any crew member

Update of the direction of the laser source

Producing a smoke-screen in the direction of the laser source

> Launching smoke grenades in the following modes: - manual - semi-automatic - automatic Impulse rangefinders and laser illuminators detect laser beams on vehicles and military objects.

81.8 8 8 ONS TECHNIC/ SPECIFIC/

SSP-1 OBRA-3

Number of detection heads	from 4 to 8
Spectral range of detected radiation sources	0,6 µm ÷ 11 µm
Detection angular range in the vertical plane	-6° +30°
Detection angular range in the horizontal plane	0° ÷ 360°
Number of detected directions	20 sectors, 18° each
Number of smoke grenade launchers	up to 24
Voltage supply	18V÷30V
Power consumption	2,3∨
Operating temperature range	from -30°C to +55°C
Head's weight	1,2 kg
Electronic units weight	5,6 kg
Number of smoke grenade launchers	2,1 kg

KDN-1 NYKS

Day-night observation device

Allows the crew of the vehicle to observe the surroundings, e.g. before a landing operation or a raid

Communicates with any analogue monitor in CCIR monochrome standard.



DAY-NIGHT OBSERVATION CAMERA



	DAY	NIGHT	
Horizontal field of view	≥ 53°	≥ 53°	
Detector	CCD 1/3"	XD4/XR5	
Power supply	on-boa	rd network	
Operating temperature range	-10°C	÷+50°C	
Video output signal	CC	IR PAL	



Built-in light level measurement system protecting the night channel image intensifier.

www.pcosa.com.p

KLW-1 ASTERIA



High-quality cooled detector of III generation, operating in 8-12µm band





Easy to integrate with the majority of sights used in military combat vehicles

High stability of position of the aiming line

Cooled thermal imaging camera KLW-1, designed for fire controlling and operation-surveillance systems

KLW-1 ASTERIA

THERMAL IMAGING CAMERA





Spectral range	7,7 ÷ 9,4 µm		
Resolution	640 x 512 pixels		
NETD	≤ 30 mK		
Field of view (horizontal)	NFOV ≤ 3° WFOV ≤ 10°		
Focus range	NFOV from 30m to∞; WFOV from 5m to∞		
Power supply	on-board network		
Operating temperature range	-30°C ÷ +50°C		
Functions	change of image polarization		
	change of image orientation		
	pointing marks		
	electronic zoom x2, x4		
	contrast and brightness adjustments: manual/automatic		
Video output signal	CCIR PAL		

KMW-3 **TEMIDA**

High-quality cooled detector of III generation

KMW-3 thermal imaging camera with cooled detector operates in 3-5µm band, and it is designed to be used in fire controlling systems of the anti-aircraft sets.



Cooled photon detector matrix allows for a clearer image, making even the smallest details of the object visible

Spectral range

3.7 ÷ 4.8µm



TECHNICAL SPECIFICATIONS

KMW-3 TEMIDA

THERMAL IMAGING CAMERA

Spectral range	3,7 ÷ 4,8 μm		
Resolution	640 x 512 pixels		
NETD	≤ 40 mK		
Field of view (horizontal)	NFOV ≤ 2,5°		
	WFOV ≤ 12°		
Focus range	NFOV from 100m to ∞, WFOV from 30m to ∞		
Power supply	on-board network		
Operating temperature range	-30°C ÷ +50°C		
Functions	change of image polarization		
	change of image orientation		
	pointing marks		
	electronic zoom x2, x4		
	contrast and brightness adjustments: manual/automatic		
Video output signal	CCIR PAL		

KTVD-1M

Tracking and aiming head of POPRAD self-propelled anti-aircraft missile system.



Possibility to install on selfpropelled wheeled and tracked vehicles.

HELIOS

KDTV-1M is designed for detecting and tracking planes, helicopters, and land objects, in daylight conditions.



KTVD-1M HELIOS

Field of view (horizontal)	NFOV 2°; WFOV 7,5°
Detector	CCD 1/3"
Power supply	on-board network
Operating temperature range	-35°C ÷ +50°C
Video output signal	CCIR PAL



INTEGRATED OPTOELECTRONIC MODULE

ZMO-1 SFINKS

Uses of Integrated Optoelectronic Modules: - fire controlling systems of remote-controlled weapon modules - stationary observation systems - fire controlling systems of onboard armament The module includes a laser rangefinder, allowing for measuring the distance to the target.

The functions of the module are operated from multifunction panels used in a given system.

The module is equipped with the following detectors: - bolometrical thermal imaging camera; - television camera set, laser rangefinder

ZMO-1 SFINKS

INTEGRATED OPTOELECTRONIC MODULE

- allows to work with autonomous multifunction screen or external on-board screen,
- allows for observation of land in television channel, thermal channel and to measure the distance to the target,
- high resolution of the uncooled matrix in thermal imaging channel,
- small size of the device,
- long range of observation,
- operating temperature range: -30°C ÷ +55°C.

OPTOELECTRONIC HEAD FOR TURRET AND ANTI-AIRCRAFT SYSTEMS



State-of-the art technology



High-quality stabilisation parameters.

The head can be used: - in fire controlling systems - in observation and aiming systems

GOS-1 AURORA

TRACKING OPTOELECTRONIC HEAD

- precise target tracking in cooperation with video tracker
- broad range of homing and tracking (from the minimal speed below 100µrad/s up to more than 2 rad/s)
- solid construction controlling electronics and mechanics all in one device
- small size and weight allowing for integrating easily with combat platforms (vehicles, weapon modules e.g. aircraft sets)
- possibility of setting and integrating sensors: i.e. thermal imaging cameras, TV cameras, and laser rangefinder, tailored to the needs of an individual user



OPTOELECTRONIC HEAD FOR TURRET

GOD-1 IRIS

Controlling the functions of the module from multifunctional panels used in a given system

Observation range: elevation: -200 - +600 azimuth: n x 3600

Allows for detecting, recognizes, identifies, tracks, and measures the distance to the target detected



GOD-1 IRIS

STABILIZED OBSERVATION AND TRACKING OPTOELECTRONIC HEAD

- allows for observing the scenery in TV and thermal imaging channel, as well as for measuring the distance to the target
- allows for tracking objects
- allows for communicating with multi-functional on-board control panel
- high resolution of the matrix in thermal imaging channel
- small size
- long range of observation
- operating temperature range: -30° +50°

OPTOELECTRONIC HEAD FOR TURRET AND ANTI-AIRCRAFT SYSTEMS



Uses of the head: - remote-controlled weapon modules installed on various platforms (e.g. armoured transporting vehicles, reconnaissance vehicles, unmanned platforms, warships) - in fire controlling systems of on-board weaponry - in observation systems



Allows for detecting, recognizes, identifies, tracks, and measures the distance to the target detected Controlling the functions of the module with multifunctional panels used in a given system

Observation range: elevation: -20° - +60° azimuth: n x 360° GOC-1 NIKE

STABILIZED OBSERVATION AND TRACKING OPTOELECTRONIC HEAD

- allows for observing the scenery in TV and thermal imaging channel, as well as for measuring the distance to the target
- allows for tracking objects
- allows for communicating with multi-functional on-board control panel
- high resolution of the matrix in thermal imaging channel
- small size
- long range of observation
- operating temperature range: -30° +50°

OBSERVATION SYSTEM

SOD

ATENA



360-monitoring, daynight, designed for wide-angle observation of the immediate surroundings of the vehicles, monitoring the surroundings of objects and detecting movement.

44

Thermal imaging and TV channel can operate fully independently or the observe the same fragment of space with a possibility of combining thermal image with TV image in a chosen pair of cameras







hub
systems protecting the lenses
power supply and screen switch installed the commander's place

hander's pla Ps

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TECHNICAL SPECIFICATIONS

SOD ATENA

360-MONITORING SYSTEM

Monitor	
Touch interface	Yes
Min resolution	1024 x 768 pixels
Power supply	18-32 VDC in the on—board network
Weight	Max 4,5 kg
TV-thermal-imaging module	
Total view field of the module	110° x 40° (±10%)
Power supply	18-32 VDC in the on—board network
Output video signal	Digital, Ethernet
Weight	6 kg
Max size (H/W/L)	150 m / 235 mm / 70 mm
Output video signal	
Weight	CMOS
Max sizes	1280 x 960 pikseli
Pixel size	3,75 μm x 3,75 μm
Thermal imaging channel	
Detector type	uncooled microbolometrical matrix
Spectral range	640x480 pixels (FPA)
Pixel size	8 - 14 µm
Thermal resolution	17 x 17 µm
Image polarisation	80 mK
Computer – Hub	YES
Komputer - Koncentrator	
Power supply	18-32 VDC in the network
Weight	Max. 4,5 kg

SOLDIERS OF THE FUTURE SOLDIER

SOLDIERS OF THE FUTURE SOLDIER

SYSTEM C4I:

Radio transmitter.

communicator, power supply,

navigation, helmet-mounted

display, headphone set



INTEGRATED INDIVIDUAL COMBAT SYSTEM

UNIFORM SYSTEM: combat clothes, thermos-active wear, protections for joints, biomedical sensors

PROTECTION SYSTEM: bullet-proof vest (various configurations), modular helmet, gas mask

WEAPON SYSTEM: Rifle, rifle-grenade-launcher, revolver, handgun, bayonet knife, hand grenades, ammunition OBSERVATION AND SURVEILLANCE SYSTEM: aiming sights, system of cameras, night vision device, warning-identifying system installed in the helmet, headphone set

CARRYING SYSTEM:

Integrated with the protection subsystem: pockets and containers for ammunition and equipment

SOLDIERS OF THE FUTURE

INTEGRATED INDIVIDUAL COMBAT SYSTEM CN "TYTAN"

Soldier of the Future programme program is carried out by the scientific-industrial consortium, including are defence industry companies, military research and science institutes.

PCO S.A. is currently the leader of the consortium. The main goal of the program of the consortium is to provide a soldier with the equipment which meets the requirements of the modern battlefield. Soldier of the Future is very important for Polish economy. The technologies developed in the program determine the effectiveness and safety of the soldiers on the battlefield, as well as the general safety of the population.

INDIVIDUAL EQUIPMENT INCLUDES

* WEAPON SYSTEM

* C4I SYSTEM

* OBSERVATION AND SURVEILLANCE SYSTEM * PROTECTION SYSTEM * PROTECTION SYSTEM * UNIFORM SYSTEM * CARRYING SYSTEM

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SWPL-1

CYKLOP

Displaying information necessary for the helicopter's mission in the form of graphic symbols (MIL-STD1787B standard) and digital

Downloading information from the on-board systems from the data bus of the helicopter in MIL-1553 standard



System for displaying information and flight parameters for the pilots of Mi-17 helicopters

Warning in case of a dangerous situation on board.

Signalling failures - FAIL

Improving the safety of the flight – controlling the flight without the need to look at the gauges



SWPL-1 CYKLOP FLIGHT PARAMETERS DISPLAY SYSTEM



Magnification	1x
Angular dimension of the picture	with DWN-1 ≥20°
Angular dimension of the picture	with NWN-1 >24°
The field of view DWN-1	180° horizontal, 45° vertical
The field of view goggles with NWN-1	>36,5°
Power consumption of the system (computer)	1,1A
Operating temperature range	-30°C - +50°C
Computer weight	3,35 kg
Display weight	DWN-1 0,44 kg
Display weight	NWN-10,2 kg

FOR YOU. FOR THE REGION. FOR POLAND.

OFFER OF PCO S.A. FOR THE TERRITORIAL DEFENCE FORCES



INNOVATIONS FOR THE SAFETY OF THE POPULATION



TERRITORIAL DEFENCE FORCES

The leader in manufacturing optoelectronic equipment, PCO S.A. offers a wide range of products prepared specially for the fifth type of forces: Territorial Defence. With over 40 years of experience, we are always ready to provide our army with the highest-quality equipment, allowing the Polish soldier to fulfil his duties on the service of the Republic of Poland.







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