

 **EVPÜ DEFENCE**



SECURITY

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EVPÚ DEFENCE A.S.

EVPÚ Defence was founded in 2001. The company is a member of the Defence and Security Industry Association of the Czech Republic and holds valid ISO 9001 and AQAP 2110 certificates. Our main activities include in-house development, design, production, service and sales of the products listed below.

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ELECTRO-OPTICAL SYSTEMS (EOS)

USE

- border surveillance, coastal surveillance, monitoring of airports, oil refineries, loading and warehousing sites, power plants etc.
- vessel traffic monitoring
- 24/7 protection against intruders

FEATURES

- pan tilt with integrated sensors such as day-night cameras, cooled or uncooled thermal imagers, laser rangefinders, radars, searchlights etc.
- suitable for short, mid- and long range applications
- reliable 360° solution for detecting, identifying and tracking multiple targets simultaneously over long distances
- long service life
- tailor-made for the environment of end use (humidity, coastal, inland, etc.), type of installation (tower, vehicle, ...) or individual technical requirements



LIRA SERIES UP TO 9,1 KM

Specifications

Pan tilt

Azimuth range

n × 360°

Elevation range

±90°

Azimuth speed

max. 60 °/s

Elevation speed

max. 60 °/s

Positioning accuracy

≤±2.5 mrad

Operating temperature

-32 °C to +55 °C

Storage temperature

-40 °C to +70 °C

Environmental protection

IP 66

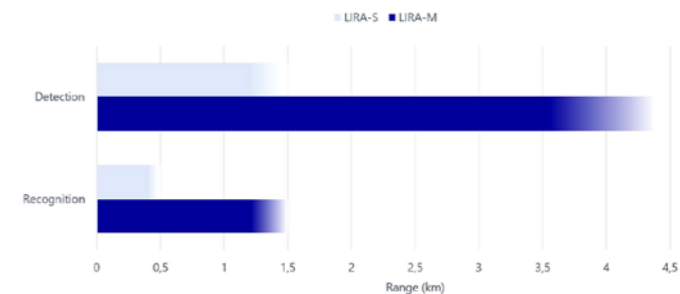
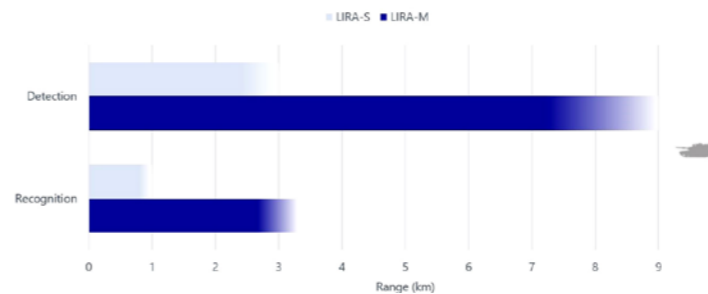
Laser rangefinder

Measuring distance

-

6 000 m

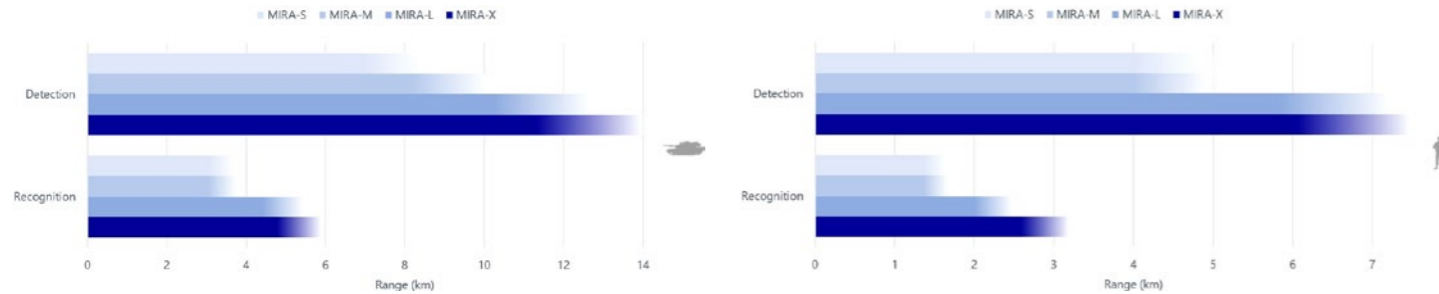
System range performance:



MIRA SERIES UP TO 14 KM

Specifications	MIRA-S	MIRA-M	MIRA-L	MIRA-X
Pan tilt				
Azimuth range		n × 360°		
Elevation range		±90°		±35°
Azimuth speed		max. 50 °/s		max. 70 °/s
Elevation speed		max. 50 °/s		max. 30 °/s
Positioning accuracy		≤±1.5 mrad		≤±0.5 mrad
Operating temperature	-32 °C to +55 °C			
Storage temperature	-40 °C to +70 °C			
Environmental protection	IP 66			
Laser rangefinder				
Measuring distance	6 000 m	6 000 m	10 000 m	20 000 m

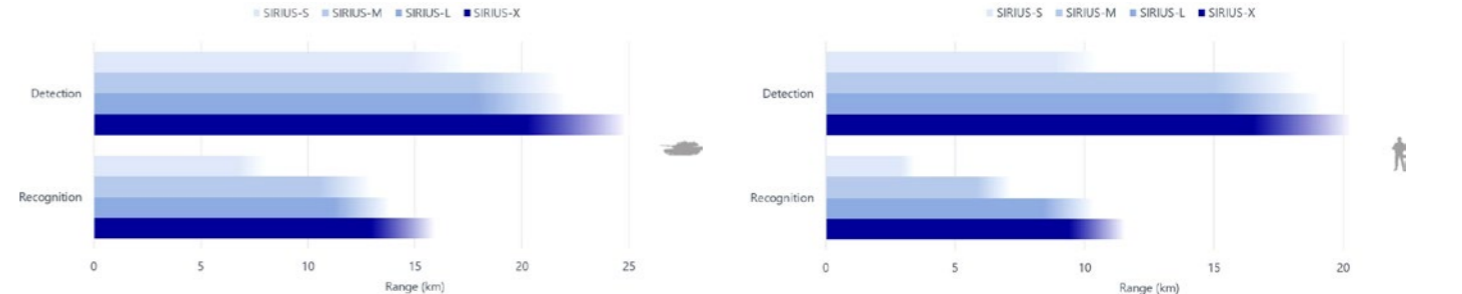
System range performance:



SIRIUS SERIES UP TO 25 KM

Specifications	SIRIUS-S	SIRIUS-M	SIRIUS-L	SIRIUS-X
Pan tilt				
Azimuth range		n × 360°		
Elevation range		±35°		±40°
Azimuth speed		max. 70 °/s		max. 120 °/s
Elevation speed		max. 30 °/s		max. 100 °/s
Positioning accuracy		≤±0.5 mrad		≤±0.2 mrad
Operating temperature	-32 °C to +55 °C			
Storage temperature	-40 °C to +70 °C			
Environmental protection	IP 66			
Laser rangefinder				
Measuring distance		32 000 m		

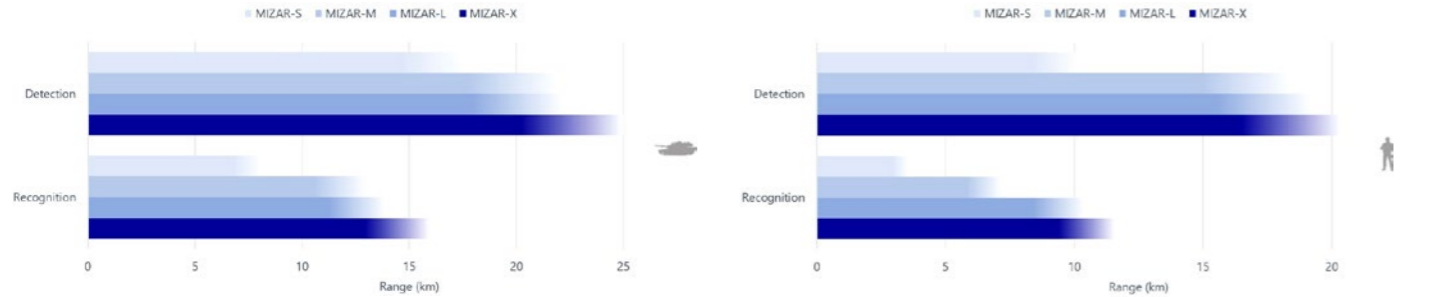
System range performance:



MIZAR SERIES UP TO 28 KM

Specifications	MIZAR-S	MIZAR-M	MIZAR-L	MIZAR-X
Pan tilt				
Azimuth range		n x 360°		
Elevation range		±90°		
Azimuth speed		max. 100 °/s		
Elevation speed		max. 100 °/s		
Positioning accuracy		≤±0.2 mrad		
Operating temperature		-32 °C to +55 °C		
Storage temperature		-40 °C to +70 °C		
Environmental protection		IP 66		
Laser rangefinder				
Measuring distance		32 000 m		

System range performance:



ALCOR UP TO 18 KM

USE

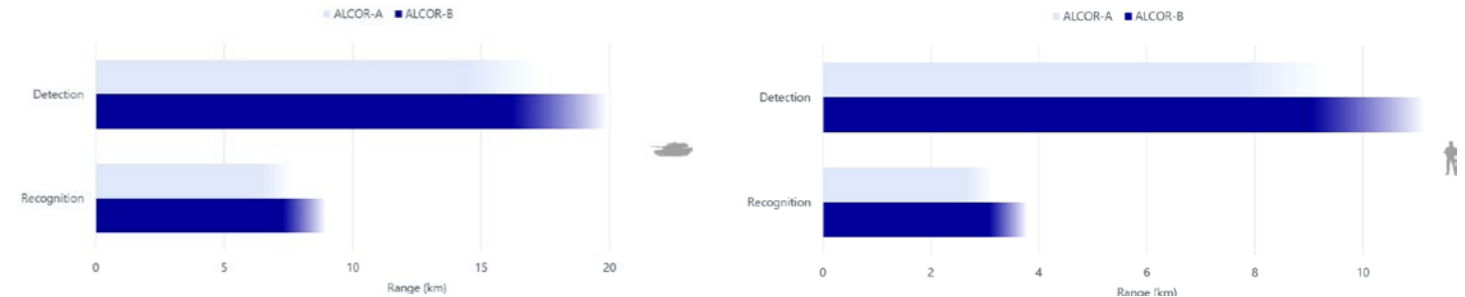
- panoramic sight without ARMOX shield for various types of vehicles
- provides the crew with an overview of the vehicle surroundings

FEATURES

- comprises a zoom camera for day surveillance, a cooled thermal imager for night surveillance and a laser rangefinder
- optical sensors are installed on a gyro stabilized pan tilt positioner
- the combination of sensitive sensors ensures the system's capability to see in all weather and light conditions
- ruggedized against shocks and vibrations
- option to choose between different types of cameras

Specifications	OPTION A	OPTION B
Pan tilt		
Azimuth range	n x 360°	
Elevation range	+70° to -90°	
Azimuth speed	0.004 °/s to 100 °/s	
Elevation speed	0.004 °/s to 100 °/s	
Positioning accuracy	<80 μrad	
Operating temperature	-32°C to +55°C	
Storage temperature	-40°C to +60°C	
Environmental protection	IP66	
Laser rangefinder		
Measuring distance	25 000 m	

System range performance:



MOBILE ELECTRO-OPTICAL SYSTEMS

USE

- border surveillance, prevention of illegal migration and smuggling
- search for missing persons
- monitoring large open-air cultural and sporting events
- mobile police station
- detection of people, vehicles and other objects of interest during day and night time, in difficult terrain and adverse weather conditions
- enabling the crew to effectively coordinate a rapid response to any event in the area of interest
- monitoring large areas with only a two-man crew, thereby significantly reducing costs



MONITORING OFFICE WITH CONNECTION TO CCTV

FEATURES

- electro-optical system consisting of a Full HD zoom camera and a cooled or uncooled thermal imaging camera on an extendable mast
- vehicle perimeter is guarded by a „fish-eye“ camera with IR illumination for use during night missions
- interior equipment includes control and display terminals, PC, radio station, LTE router for connection to the Internet or secure data network, DVR equipment for collecting video evidence, heating, air conditioning, etc.
- the entire system can be remotely controlled and information transmitted to the command and control centre
- city CCTV system is accessible from the vehicle, allowing the police to coordinate an effective rapid response to any incident in the area of interest
- type of vehicle and equipment can be adapted to customer requirements



SMV SURVEILLANCE AND MONITORING VEHICLE

FEATURES

- electro-optical system consisting of a Full HD zoom camera, a cooled or uncooled thermal imaging camera and an optional laser rangefinder
- independent power supply
- option to integrate radar
- interior equipment includes control and display terminals, PC, radio station, LTE router for connection to the Internet or secure data network, DVR equipment for collecting video evidence, heating, air conditioning, etc.
- type of vehicle and equipment can be adapted to customer requirements



RBOX ROOF BOX SURVEILLANCE SYSTEM

FEATURES

- portable electro-optical system in a roof box with a day camera and a thermal imager can be installed on any type of vehicle with sufficient mounting space (passenger car, SUV, van, etc.)
- system includes a control and display terminal for installation inside the vehicle and a battery that can be placed, for example, in the boot of the vehicle
- due to integration into the roof box, the pan tilt device's range of movement is limited
- roof box can be easily dismantled and transferred to another vehicle if necessary
- option to choose between the LIRA, MIRA (S, M, L) and SIRIUS (S, M) electro-optical systems
- type of roof box depends on the selected electro-optical system



TOWER ELECTRO-OPTICAL SYSTEM

FEATURES

- modular design and open architecture allow the use of various sensors
- comfortable operator workstation and powerful software
- all tower systems are built according to customer requirements with regard to the specific tower dimensions



PAN TILT POSITIONERS

USE

- wide range of security and science applications
- surveillance and monitoring systems, anti-drone systems, camera systems for vehicles, ships, unmanned vehicles, etc.

FEATURES

- ruggedized and durable design
- excellent reliability and quality of workmanship
- payload up to 150 kg
- long service life and first-class adaptation to the toughest operating conditions
- optional gyrostabilization for use on vehicles and vessels
- servo-driven dual-axis pan tilt devices
- wide range of options designed to carry sensors on the sides or on the top platform
- option to modify for operation in marine and coastal areas
- option to modify for integration of cameras, lasers, jammers, antennas, etc.



Specifications	MRP-2	MSM-2A	MSM-2B	NERO-2A	NERO-2B	MALLI-1A
Azimuth range	0 – 340°			n x 360°		
Elevation range	-	±25°		±40°	±90°	±90°
Azimuth speed	0.1 °/s to 90 °/s	0.1 °/s to 50 °/s		0.1 °/s to 50 °/s		0.1 °/s to 70 °/s
Elevation speed	-	0.1 °/s to 25 °/s		0.1°/s to 50 °/s		0.1 °/s to 50 °/s
Positioning accuracy	≤±2.5 mrad	≤±1 mrad		≤±1.5 mrad		≤±0.5 mrad
Control interface	RS-422	RS-422 (Ethernet TCP/IP)		RS-422 (Ethernet TCP/IP)		Ethernet TCP/IP
Power supply	24 V DC (18 - 32 V)	24 V DC (18 - 28 V)		24 V DC (18 - 32 V)		24 V DC (20 - 30 V)
Payload	10 kg	10 kg	2 x 7 kg	10 kg	2 x 7.5 kg + 2 kg	25 kg
Environmental protection	IP 67	IP 66		IP 66		IP 66
Operating temperature	-32 °C to +60 °C	32 °C to +55 °C		-40 °C to +60 °C		-32 °C to +70 °C
Dimensions (w x d x h)	206 x 241 x 133 mm	234 x 232 x 178 mm	453 x 232 x 178 mm	210 x 202 x 317 mm	576 x 202 x 317 mm	332 x 184 x 379 mm
Weight	6.5 kg	7 kg	10 kg	11 kg	16 kg	17.5 kg



Specifications	MSO-2A	MSO-2B	GEMA-1A	GEMA-1B	MTU-1A	MTU-1A with gyrostabilization
Azimuth range			n x 360°			
Elevation range	±40°	±35°	±90°		±40°	
Azimuth speed	0.03 °/s to 70 °/s		0.03 °/s to 120 °/s		0.005 °/s to 120 °/s	0.005 °/s to 30 °/s*
Elevation speed	0.03 °/s to 30 °/s		0.03 °/s to 100 °/s		0.005 °/s to 100 °/s	0.005 °/s to 30 °/s*
Positioning accuracy	≤±0.5 mrad		≤±0.25 mrad		≤±0.1 mrad	
Control interface	Ethernet TCP/IP (RS-422)		Ethernet TCP/IP (RS-422)		Ethernet TCP/IP	
Power supply	24 V DC (19 - 32 V)		24 V DC (18 - 32 V DC)		24 V DC (20 - 30 V)	
Payload	20 kg	2 x 17 kg	20 kg	2 x 20 kg + 10 kg	40 kg	
Environmental protection	IP 66		IP 66		IP 66	
Operating temperature	-32 °C to +70 °C		-32 °C to +70 °C		-32 °C to +70 °C	
Dimensions (w x d x h)	256 x 210 x 263 mm	708 x 331 x 275 mm	288 x 230 x 390 mm	758 x 241 x 390 mm	558 x 280 x 472 mm	
Weight	9.5 kg	18.5 kg	14 kg	21 kg	30 kg	

*in stabilized mode



Specifications	MST-1A	MST-1B	MST-2B	MST-2B with gyrostabilization	MSR-2B	MSR-2B with gyrostabilization
Azimuth range			n x 360°			
Elevation range	±40°		±40° (optionally up to ±95°)		±60° (optionally up to ±95°)	
Azimuth speed	0.03 °/s to 120 °/s		0.005 °/s to 120 °/s	0.005 °/s to 30 °/s*	0.03 °/s to 100 °/s	0.03 °/s to 30 °/s*
Elevation speed	0.03 °/s to 100 °/s		0.005 °/s to 100 °/s	0.005 °/s to 30 °/s*	0.03 °/s to 100 °/s	0.03 °/s to 30 °/s*
Positioning accuracy	≤±0.2 mrad		≤±0.1 mrad	≤±0.31 mrad / ≤±0.12 mrad*	≤±0.1 mrad	≤±0.31 mrad / ≤±0.12 mrad*
Control interface	Ethernet TCP/IP (RS-422)		Ethernet TCP/IP (RS-422)		Ethernet TCP/IP (RS-422)	
Power supply	24 V DC (20 - 30 V)		24 V DC (20 - 30 V)		24 V DC (20 - 30 V)	
Payload	25 kg	2 x 20 kg + 18 kg	80 kg		2 x 25 kg + 70 kg (optionally up to 2 x 40 kg + 70 kg)	
Environmental protection	IP 66		IP 66		IP 66	
Operating temperature	-32 °C to +70 °C		-40 °C to +70 °C		-32 °C to +70 °C	
Dimensions (w x d x h)	284 x 207 x 374 mm	744 x 343 x 384 mm	768 x 358 x 443 mm		770 x 292 x 527 mm	
Weight	18 kg	25 kg	29 kg		47 kg	

*in stabilized mode

DAY-NIGHT FULL HD CAMERAS

USE

- short, mid- and long range surveillance applications

FEATURES

- top quality high resolution image
- color and black and white modes
- available features: autofocus, image stabilization, backlight compensation, progressive scan, Auto ICR, wide dynamic range, 2D/3D noise reduction, de-fog etc.
- cost-effective solution
- lens with a large entrance aperture ensures sufficient light conditions
- sealed ruggedized enclosure protects optical and electrical parts in all weather conditions
- optional wiper



SUMO-HDV32



SUMO-HDV60

Specifications	SUMO-HD30	SUMO-HDV32	SUMO-HDV60
Sensor	1/2.8" Exmor R CMOS	1/3" CMOS	1/3" CMOS
Resolution	1920 x 1080	1920 x 1080	1920 x 1080
Sensitivity	color mode: 0.01 lx (f/1.6 AGC:MAX) B/W mode: 0.0015 lx (f/1.6 AGC:MAX)	color mode: 0.03 lx (f/1.2 AGC:MAX) B/W mode: 0.003 lx (f/1.2 AGC:MAX)	color mode: 0.03 lx (f/1.2 AGC:MAX) B/W mode: 0.003 lx (f/1.2 AGC:MAX)
S/N ratio	50 dB	50 dB	50 dB
Video output	HD-SDI	HD-SDI	HD-SDI
Lens	4.3 - 129 mm	HDV32C: 12.5 - 400 mm HDV32D: 15.6 - 500 mm	16.7 - 1000 mm (without extender) 33.4 - 2000 mm (with extender)
Zoom	30x optical, 12x digital	32x optical	60x optical, extender 2x
FOV	wide: 63°42' x 35°48' tele: 2°18' x 1°18'	HDV32C wide: 23°4' x 13°8' tele: 0°45' x 0°26' HDV32D wide: 18°34' x 10°29' tele: 0°36' x 0°22'	without extender: wide: 17°18' x 9°54' tele: 0°19' x 0°10' with extender: wide: 8°39' x 4°57' tele: 0°9' x 0°5'
Control interface	RS-232	RS-232	RS-232
Power supply	24 V DC (18 - 32 V)	24 V DC (18 - 32 V)	24 V DC (18 - 32 V)
Operating temperature	-32 °C to +55 °C	-32 °C to +55 °C	-32 °C to +55 °C
Dimensions	199 x 285 x 177 mm	198 x 520 x 184 mm	239 x 700 x 200 mm
Environmental protection	IP 66	IP 66	IP 66
Weight	7.5 kg	10 kg	16 kg

UNCOOLED THERMAL IMAGING CAMERAS

USE

- short and mid-range surveillance applications

FEATURES

- top quality high resolution image
- reliable solution for systems that require a fast start and low maintenance costs
- 24/7 hassle-free operation
- features: AGC, AGC parameter adjustment, wide dynamic range, autofocus, reticle and saving reticle position, progressive scan, 8x digital zoom, digital video enhancement etc.
- additional features of HD versions: image stabilization, sharpening, OSD + user text, noise reduction
- sealed ruggedized enclosure protects optical and electronical parts in all weather conditions
- optional protective sun shield is available



SUMO-U225



SUMO-U300

Specifications	SUMO-U105	SUMO-U105HD	SUMO-U150	SUMO-U150HD
Resolution	640 x 512	1280 x 720	640 x 512	1280 x 720
Spectral sensitivity	8 - 14 μ m		8 - 14 μ m	
Thermal sensitivity	<40 mK at f/1.0		<40 mK at f/1.0	
Pixel pitch	17 μ m	12 μ m	17 μ m	12 μ m
Lens	26 - 105 mm		25 - 150 mm	
Optical zoom	4x		6x	
FOV	wide: 25°18' x 20°21' tele: 5°54' x 4°42'	wide: 32°54' x 18°51' tele: 8°24' x 4°42'	wide: 25°18' x 18°58' tele: 4°6' x 3°4'	wide: 34°09' x 19°36' tele: 5°52' x 3°18'
F#	f/1.5		f/1.4	
Video output	PAL	HD-SDI	PAL	HD-SDI
Control interface	RS-232		RS-232	
Power supply	24 V DC (18 - 32 V)		24 V DC (18 - 32 V)	
Operating temperature	-32 °C to +55 °C		-32 °C to +55 °C	
Dimensions	191 x 150 x 150 mm	215 x 150 x 150 mm	192 x 247 x 170 mm	
Environmental protection	IP 66		IP 66	
Weight	3.5 kg		7 kg	

Specifications	SUMO-U225	SUMO-U225HD	SUMO-U300	SUMO-U300HD
Resolution	640 x 512	1280 x 720	640 x 512	1280 x 720
Spectral sensitivity	8 - 14 μ m		8 - 14 μ m	
Thermal sensitivity	<40 mK at f/1.0		<40 mK at f/1.0	
Pixel pitch	17 μ m	12 μ m	17 μ m	12 μ m
Lens	25 - 225 mm		40 - 300 mm	
Optical zoom	9x		7.5x	
FOV	wide: 22°15' x 16°42' tele: 2°46' x 2°5'	wide: 34°09' x 19°36' tele: 3°55' x 2°12'	wide: 15°29' x 12°25' tele: 2°05' x 1°40'	wide: 21°44' x 12°20' tele: 2°56' x 1°39'
F#	f/1.5		f/1.5	
Video output	PAL	HD-SDI	PAL	HD-SDI
Control interface	RS-232		RS-232	
Power supply	24 V DC (18 - 32 V)		24 V DC (18 - 32 V)	
Operating temperature	-32 °C to +60 °C		-32 °C to +60 °C	
Dimensions	222 x 387 x 219 mm		267 x 435 x 264 mm	
Environmental protection	IP 66		IP 66	
Weight	9 kg		15.5 kg	

UNCOOLED THERMAL CAMERAS WITH DUAL FOV

Specifications	SUMO-U135	SUMO-U180
Resolution	640 x 512	640 x 512
Spectral sensitivity	8 - 14 μ m	
Thermal sensitivity	<40 mK at f/1.0	
Pixel pitch	17 μ m	
Lens	45/135 mm	60/180 mm
Optical zoom	3x	
FOV	wide: 14°18' x 11°27' tele: 4°36' x 3°41'	wide: 10°30' x 8°24' tele: 3°30' x 2°48'
F#	f/1.6	f/1.4
Video output	PAL	
Control interface	RS-232	
Power supply	24 V DC (18 - 32 V)	
Operating temperature	-32 °C to +55 °C	
Dimensions	179 x 231 x 164 mm	209 x 387 x 229 mm
Environmental protection	IP 66	
Weight	4 kg	12 kg

COOLED THERMAL IMAGING CAMERAS

USE

- mid- and long range surveillance applications

FEATURES

- top quality high resolution image
- reliable solution that meets the specific requirements of police and armed forces
- 24/7 hassle-free operation
- features: AGC, AGC parameter adjustment, wide dynamic range, autofocus, sharpening, OSD + user text, noise reduction, reticle and saving reticle position, progressive scan, 8x digital zoom etc.
- optional features: lens de-frost
- sealed ruggedized enclosure protects optical and electronical parts in all weather conditions
- optional protective sun shield is available



Specifications	SUMO-C300	SUMO-C300HD	SUMO-C320	SUMO-C600	SUMO-C600HD	SUMO-C900	SUMO-C900HD
Resolution	640 x 512	1280 x 720	640 x 512	640 x 512	1280 x 720	640 x 512	1280 x 720
Spectral sensitivity	3 – 5 μm		3.7 – 5.1 μm	3 – 5 μm		3 – 5 μm	
Thermal sensitivity	<25 mK		<20 mK	<25 mK		<25 mK	
Pixel pitch	15 μm	10 μm	15 μm	15 μm	10 μm	15 μm	10 μm
Lens	15 – 300 mm		25 / 80 / 320 mm	30 – 600 mm	60 – 600 mm	45 – 900 mm	72 - 900 mm
Optical zoom	20x continuous		discrete	20x continuous	10x continuous	20x continuous	12.5x continuous
FOV	wide: 35°06' x 28°24' tele: 1°48' x 1°27'	wide: 44°54' x 26°10' tele: 2°24' x 1°21'	wide: 21°42' x 17°25' mid: 6°54' x 5°31' tele: 1°4' x 1°22'	wide: 17°12' x 13°48' tele: 0°54' x 0°43'	wide: 11°24' x 6°26' tele: 1°12' x 0°41'	wide: 11°24' x 9°08' tele: 0°36' x 0°29'	wide: 9°18' x 5°15' tele: 0°48' x 0°27'
F#	f/4.0		f/4.0	f/4.0		f/4.0	
Video output	PAL / NTSC / SD-SDI	HD-SDI	PAL / NTSC / SD-SDI	PAL / NTSC / SD-SDI	HD-SDI	PAL / NTSC / SD-SDI	HD-SDI
Control interface	RS-232		RS-232	RS-232		RS-232	
Power supply	24 V DC (18 - 32 V)		24 V DC (18 - 32 V)	24 V DC (18 - 32 V)		24 V DC (18 - 32 V)	
Operating temperature	-32 °C to +55 °C		-32 °C to +55 °C	-32 °C to +55 °C		-32 °C to +55 °C	
Dimensions	203 x 455 x 227 mm		145 x 240 x 153 mm	270 x 590 x 330 mm		300 x 651 x 357 mm	
Environmental protection	IP 66		open-frame	IP 66		IP 66	
Weight	7.5 kg		3.6 kg	13 kg		21.5 kg	

SOFTWARE

RCM

USE

- electro-optical system control software based on the Windows operating system
- fully controls all parts of the system including cameras, laser rangefinder, GPS or other optional sensors
- control of customer devices can be implemented if required

BASIC FEATURES

- full control of pan tilt and devices
- live video display
- scanning program
- recording video
- creating screenshots
- displaying captured video and screenshots
- drawing the camera crosshair
- simulation of joystick with mouse
- panoramic window

OPTIONAL FEATURES

- motion detection alarm
- image stabilization
- tracking
- raster maps
- vector maps (MapInfo format)
- user management
- foreign language



CNS.NET

USE

- complete network solution for remote controlled surveillance systems
- enables the operator to secure the target area comfortably from the control room
- several systems with various sensors (e.g. cameras, LRF, GPS etc.) can be controlled via joystick

FEATURES

- same as RCM excluding the panoramic window feature

ACCESSORIES

BASIC OPTIONS FOR INTEGRATION

- navigation (GNSS)
- digital magnetic compass (DMC)
- laser rangefinder (LRF)
- system and sensor cables according to customer requirements
- extendable masts

OPERATOR CONSOLE

- standalone unit based on Windows and designed to control electro-optical systems
- option to choose preferred control interface: touchscreen or joystick
- ruggedized enclosure enables use in harsh weather and climate conditions



Digital magnetic compass



Operator console



Global navigation satellite system



Laser rangefinder



System cable



Sensor cable



Electrical mast

COMPLETE TAILOR-MADE PROJECT SOLUTIONS

OUR FULL SERVICE INCLUDES:

- initial analysis
- customized solution
- production
- testing
- installation and commissioning
- operator training in various languages
- maintenance and service support including accessories throughout our product's operation lifetime

OUR EQUIPMENT AND RELATED SERVICES INCLUDE:

- collimators – measuring optical parameters and rectification of EOS
- environmental test chamber – simulation of temperature tests
- active black body – calibration of cooled and uncooled thermal imaging cameras
- overall analysis of cooled detectors
- maintenance of cooled detectors and replacement of the cooling medium





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