HGH
Enlighten the Unseen

WIDE AREA **SURVEILLANCE**

SPYNEL SERIES

Wide Area Surveillance Solutions

360-DEGREE SITUATIONAL AWARENESS,
NIGHT & DAY, UP TO THE HORIZON

SPYNEL® sensors are unique **passive wide-area surveillance** systems for **automatic intrusion detection, tracking and classification of an unlimited number of threats,** coming from any direction (land, air or sea). Scanning the panorama at 360°, these thermal cameras provide outstanding image quality with very high spatial resolution, up to 120 Mpixels, at fast frame rate (up to 2 Hz).

Featuring high integration capabilities, SPYNEL® Series address the requirements of permanent or temporary surveillance in a scalable and flexible way, adapting to ground based or embarked applications.

Based on its live video analytics processed by Cyclope software suite, SPYNEL® solution provides unprecedented situational awareness, day and night, 24/7, helping for rapid assesment of unwanted events.

SPYNEL® wide area surveillance solution helps tackle the most challenging security applications by detecting any types of intrusions and both conventional and asymmetrical threats, including crawling men, vehicles, swimmers, RHIBs, skiffs, UAVs and low altitude or stealth aircrafts.

SPYNEL® Series is the ultimate solution for a wide range of applications including perimeter security of industrial sites, critical infrastructure protection, naval, coastal and maritime surveillance, border passive surveillance, military bases protection, airport/seaport security, onshore/offshore oil&gas sites security...
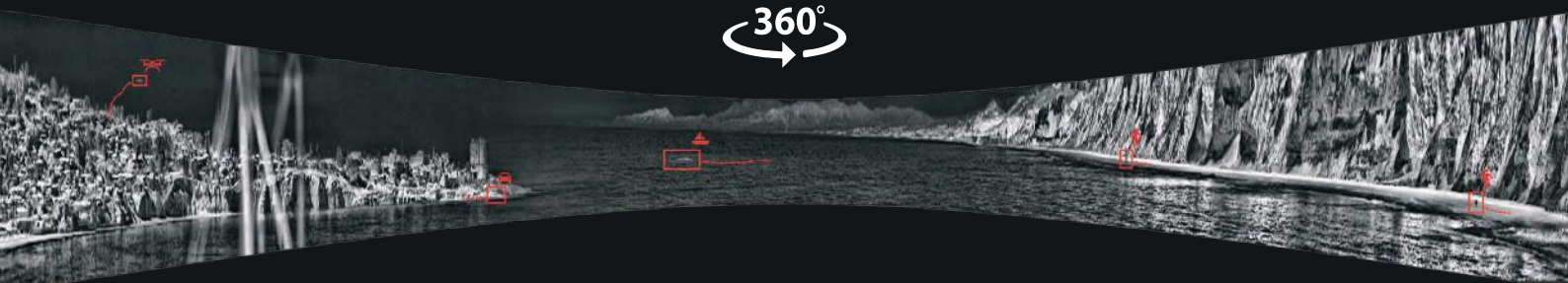
SPYNEL Ⓜ   **SPYNEL** Ⓤ   **SPYNEL** Ⓢ   **SPYNEL** Ⓧ

360°

APPLICATIONS

LAND

Military Base Protection

Border Surveillance

Special Forces

Military mobile station surveillance

SEA

Naval Base & Coastal Surveillance

Self-protection of ships (IRST)

Collision avoidance for USV

Seaport Surveillance

AIR

Counter-UAS

Ground Based Air Defense

CRITICAL INFRASTRUCTURES

Airport Perimeter Security

Industrial Sensitive Site

Energy Site

Offshore Platforms and Oil Rigs Security

BENEFITS

- Day & night panoramic imaging in total darkness in any weather conditions
- Human, vehicle, RHIB or UAV detection capabilities
- Automatic tracking and classification of any ground/sea /air threats
- Passive operation unlike radars (undetectable, no EM disturbance)

- Proven, reliable and COTS technology
- Robust and rapidly deployable
- Motorized tilt for fine-tuned installations
- All events recorded over 360°

SPYNEL X / S
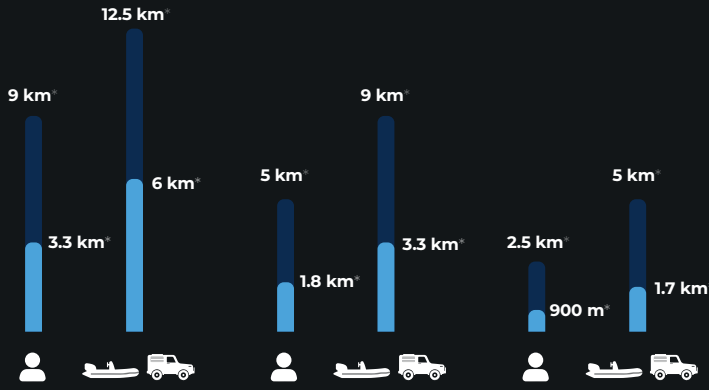## WIDE AREA SURVEILLANCE SOLUTION

HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

○ ● Recognition Range   ◉ ● Detection Range

SPYNEL X
MWIR Mpix. FPA
*Up to

12.5 km*
9 km*
6 km*
3.3 km*

SPYNEL X 8000
Video size = 360° (H) x 5° (V)
Scan rate = 0.5Hz for 360°
Image Resolution =
92 000 (H) x 1280 (V)

9 km*
5 km*
3.3 km*
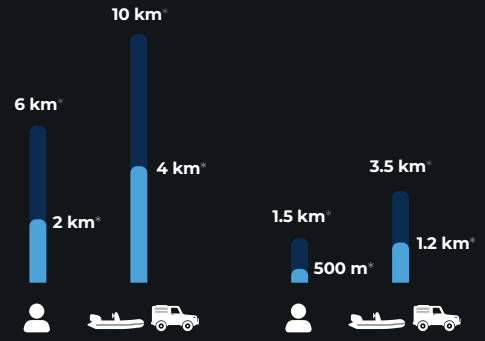**1.8 km***

SPYNEL X 6000
Video size = 360° (H) x 10°(V)
Scan rate = 1 Hz for 360°
Image Resolution =
46 000 (H) x 1280 (V)

5 km*
2.5 km*
1.7 km*
900 m*

SPYNEL X 3500
Video size = 360° (H) x 20° (V)
Scan rate = 2 Hz for 360°
Image Resolution =
23 000 (H) x 1280 (V)

SPYNEL S
MWIR 640x512 FPA
*Up to

10 km*
6 km*
4 km*
2 km*

SPYNEL S 6000
Video size = 360° (H) x 5° (V)
Scan rate = 0.5 Hz for 360°
Image Resolution =
46 000 (H) x 640 (V)

3.5 km*
1.5 km*
1.2 km*
500 m*

SPYNEL S 2000
Video size = 360° (H) x 20° (V)
Scan rate = 2 Hz for 360°
Image Resolution =
11 500 (H) x 640 (V)

DRI ranges according to Johnson criterium and STANAG standards.
Range values represent optimal performance, which will vary depending on target size, clutter environment, atmospheric conditions and sensor operational settings.

Above information is subject to changes without notice.

TECHNICAL SPECIFICATIONS

360° Horizontal FOV

± 45° Vertical motorized tilt

MWIR FPA

Stirling microcooler

IP66 Protection standard

IP Video output and control

385 x 580mm

KG <40kg

-40°C to 71°C

24V DC / 10 Amps max at startup
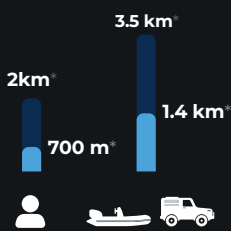
SPYNEL U

WIDE AREA SURVEILLANCE SOLUTION

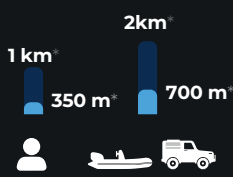## HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

[ ] ● Recognition Range   (◎) ● Detection Range

SPYNEL U

LWIR FPA ≥ 600px H
*Up to

Panoramic IR channel

Panoramic visible channel

SPYNEL U 2500
3.5 km*
2km*
700 m*
1.4 km*

Video size = 360° (H) x 9° (V)
Scan rate = 0.25 Hz for 360°
IR Image Resolution = 10 Mpixels
Visible Image Resolution = 100 Mpixels

SPYNEL U 1000
2km*
1 km*
350 m*
700 m*

Video size = 360° (H) x 18° (V)
Scan rate = 0.5 Hz for 360°
IR Image Resolution = 5 Mpixels
Visible Image Resolution =50 Mpixels

DRI ranges according to Johnson criterium and STANAG standards.
Range values represent optimal performance, which will vary depending on target size, clutter environment, atmospheric conditions and sensor operational settings.

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TECHNICAL SPECIFICATIONS

360°
Horizontal FOV

Uncooled LWIR FPA
(600 pixels horizontally)

Visible detector type
2048x1536

IP66
Protection
standard

TCP/IP
Video output
and control

400 x 500 mm

KG
25 kg

24V DC / 10 Amps
max at startup
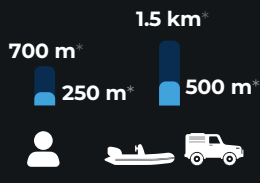
SPYNEL M

WIDE AREA SURVEILLANCE SOLUTION

HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

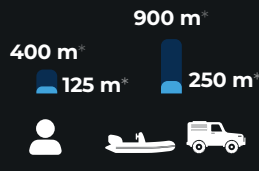Recognition Range · Detection Range

SPYNEL M

LWIR FPA ≥ 600px H

*Up to

SPYNEL M 600N

		1.5 km*
700 m*		
250 m*		500 m*

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Video size = 360° (H) x 18° (V)
Scan rate = 0.5 Hz (360° / 2sec)
Image resolution = 5.2 Mpixels
Sector scan rate:
• 0.8Hz on 180-degree sector
• 1.5Hz on 90-degree sector

SPYNEL M 600W

		900 m*
400 m*		
	125 m*	250 m*

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Video size = 360° (H) x 35,5° (V)
Scan rate =1 Hz (360° / sec)
Image resolution = 2.6 Mpixels
Sector scan rate:
• 1.5Hz on 180-degree sector
• 2.5Hz on 90-degree sector

DRI ranges according to Johnson criterium and STANAG standards.
Range values represent optimal performance, which will vary depending on target size, clutter environment, atmospheric conditions and sensor operational settings.

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TECHNICAL SPECIFICATIONS

360° Horizontal FOV	Sector scanning mode	Uncooled LWIR FPA (600 pixels horizontally)	Mobility pack (standalone operation)	**IP66** Protection standard
IP Video output and control	125 x 200mm	**KG** 1.8kg	-40°C to +60°C	24V / PoE+ 8W

CYCLOPE
VIDEO ANALYTICS SOFTWARE SUITE

INTRUSION DETECTION, TRACKING AND CLASSIFICATION OVER 360°

CYCLOPE is an advanced software suite processing thermal panoramic images captured by the SPYNEL® Wide Area Surveillance sensors in real-time. It consists of software modules (Server, Client, Hypervisor) enabling to process the SPYNEL panoramic videos for a wide range of ground based or embarked applications, for any type of temporary or permanent installations, and from the simplest up to the most complex network architectures.
Designed to automatically detect, track and classify an unlimited number of ground/air/maritime intruders simultaneously, including hardly detectable threats, such as crawling men, RHIBs, jet-skis, stealth or low altitude aircrafts (like UAVs), CYCLOPE provides advanced data analysis and classification based on GAIA Artifical Intelligence to guarantee a very low false alarm rate.
ONVIF compliant, CYCLOPE can also be fully integrated in a Third Party software (VMS, CMS, C2, PSIM platform...).

The Graphical User Interface is fully customizable: preset or user-defined layouts of an unlimited number of zoom windows, panoramic, annular or radar views can be displayed on multiple screens.

User-defined detection zones according to the missions and potential threats

Unlimited number of windows to display multiple intruders simultaneously

Radar view with 2-D map overlay and geolocation of detected threats

CONTROL AND DISPLAY SOFTWARE

Advanced video processing
Artificial Intelligence, smart image enhancements, detection/classification algorithms, data fusion

Multi-layer display
Real-time panoramic or zoom display, geolocation of threats

High integration capabilities
ONVIF, H264, XML, MIME, TCP/IP, Client/Server

Advanced Alarm Management
Track analysis to trigger alarms and customized security actions

Automatic classification of maritime ships with GAIA Artificial Intelligence

Zones with smart alarm conditions for human intrusion detection and tracking

WIDE AREA
SURVEILLANCE

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