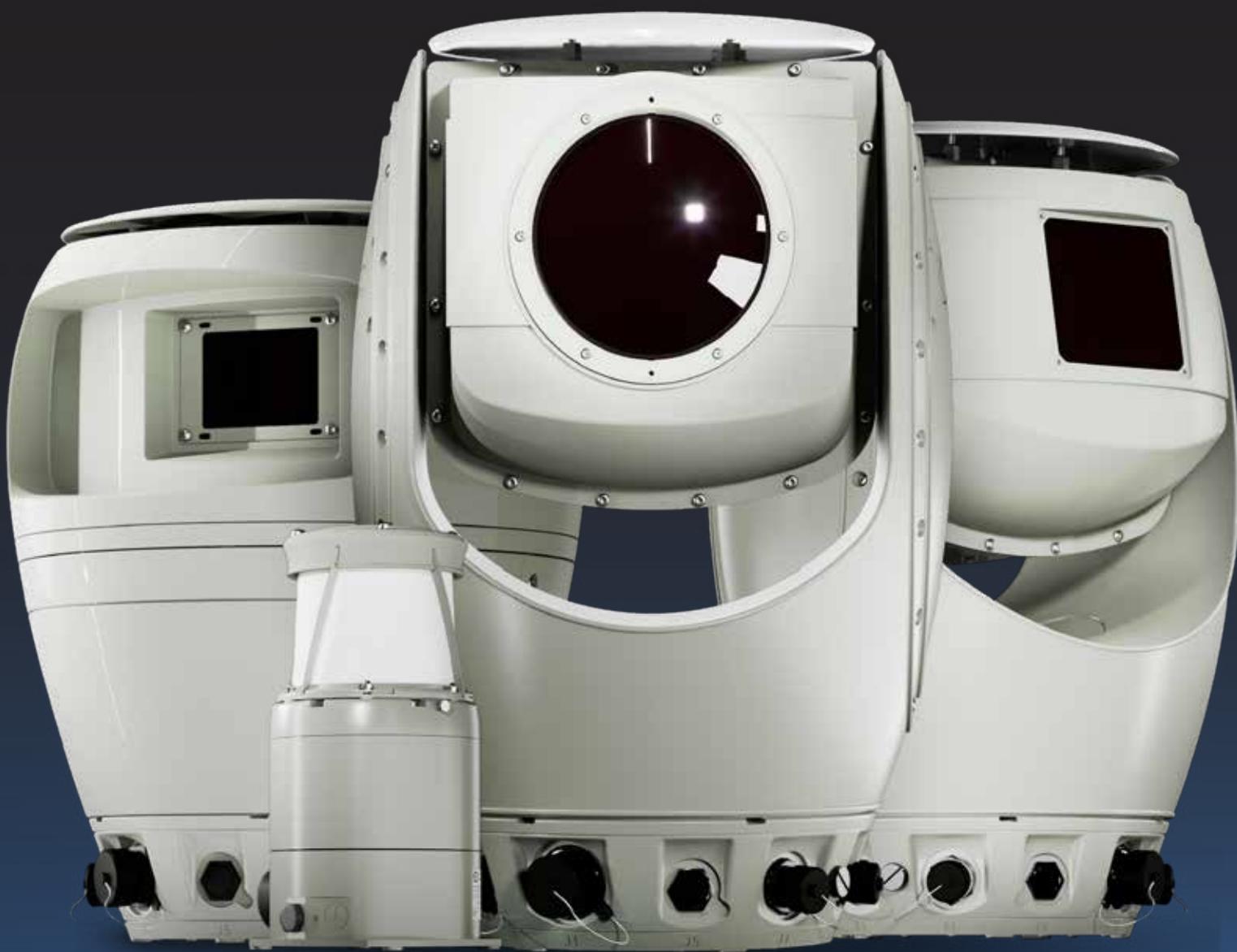




Enlighten the Unseen

# SPYNEL SERIES

Wide Area Surveillance Solutions



[hgh-infrared.com](http://hgh-infrared.com)

## 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 **M**



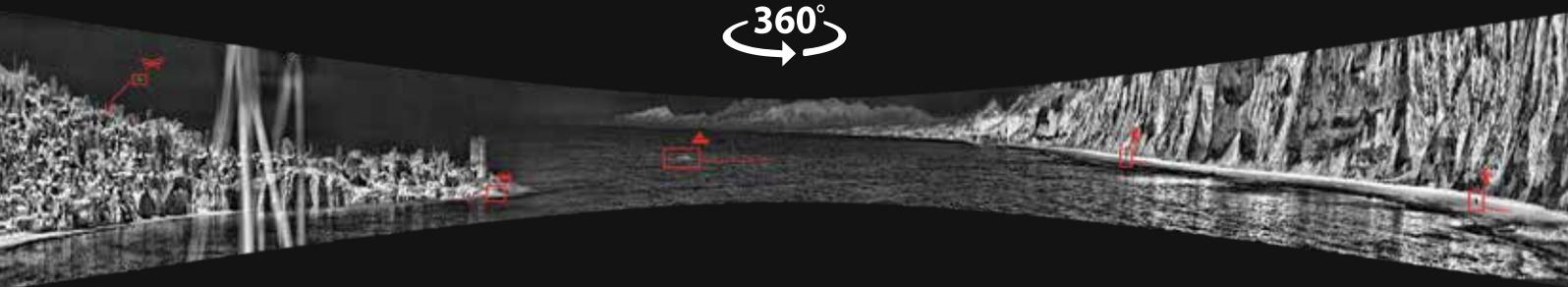
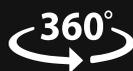
SPYNEL **U**



SPYNEL **S**



SPYNEL **X**



# APPLICATIONS

## LAND



## SEA



## AIR



## CRITICAL INFRASTRUCTURES



## 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

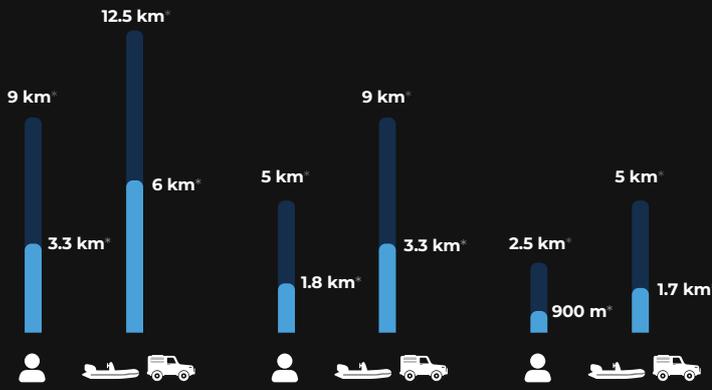


### HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

Recognition Range
 Detection Range

#### SPYNEL X

MWIR Mpix. FPA  
\*Up to



#### SPYNEL X 8000

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

#### SPYNEL X 6000

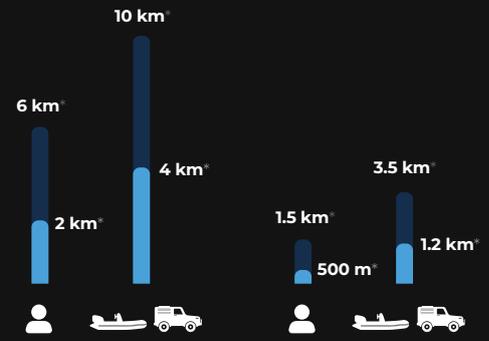
Video size = 360° (H) x 10° (V)  
Scan rate = 1 Hz for 360°  
Image Resolution = 46 000 (H) x 1280 (V)

#### 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



#### 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)

#### 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 STANAC 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



Horizontal FOV



Vertical motorized tilt



MWIR FPA



Stirling microcooler



Protection standard



Video output and control



385 x 580mm



<40kg



-40°C to 71°C



24V DC / 10 Amps max at startup

# SPYNEL

## WIDE AREA SURVEILLANCE SOLUTION



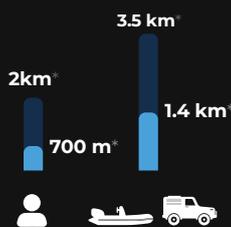
### HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

 Recognition Range  Detection Range

#### SPYNEL

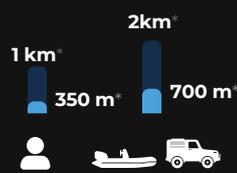
LWIR FPA  $\geq 600\text{px H}$

\*Up to



#### SPYNEL 2500

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 1000

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

Panoramic IR channel

Panoramic visible channel



DRI ranges according to Johnson criterium and STANAC 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



Horizontal FOV



Uncooled LWIR FPA  
 (600 pixels horizontally)



Visible detector type  
 2048x1536



Protection  
 standard



Video output  
 and control



400 x 500 mm



25 kg



24V DC / 10 Amps  
 max at startup

# SPYNEL

## WIDE AREA SURVEILLANCE SOLUTION



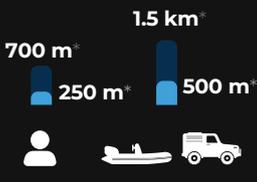
### HUMAN / VEHICLE / RHIB DETECTION & RECOGNITION RANGES

 Recognition Range  Detection Range

## SPYNEL

LWIR FPA  $\geq 600\text{px H}$

\*Up to



### SPYNEL 600N

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



### SPYNEL 600W

Video size =  $360^\circ$  (H) x  $35.5^\circ$  (V)  
 Scan rate = 1 Hz ( $360^\circ / \text{sec}$ )  
 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.

Above information is subject to changes without notice.

### TECHNICAL SPECIFICATIONS

 Horizontal FOV	 Sector scanning mode	 Uncooled LWIR FPA (600 pixels horizontally)	 Mobility pack (standalone operation)	 Protection standard
 Video output and control	 125 x 200mm	 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 Artificial Intelligence to guarantee a very low false alarm rate.

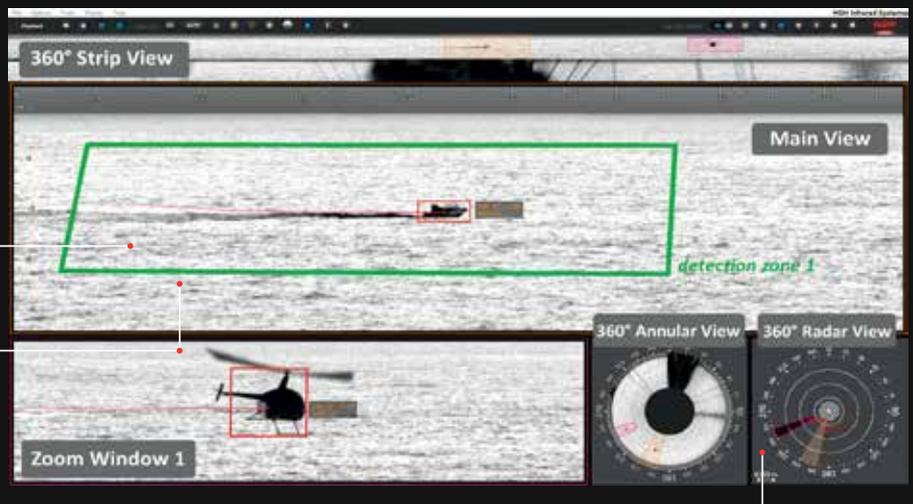
ONVIF compliant, CYCLOPE can also be fully integrated in a Third Party software (VMS, CMS, C2, PSIM platform...).

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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**Contact us :** [hgh@hgh-infrared.com](mailto:hgh@hgh-infrared.com) | [hgh-infrared.com](http://hgh-infrared.com)

**EUROPE**

10 rue Maryse Bastié  
91430 Igny, FRANCE  
Phone: +33 1 69 35 47 70

**USA**

1240 E Campbell Rd Ste. 200,  
Richardson, TX 75081, USA  
Tel: +1 805 965 6701

**ASIA**

1 Paya Lebar Link, #04-01  
Singapore 408533  
Phone: +65 6955 8585