



# SIGHTLWIR

**SIGHT** is our cutting edge weapon sight which was specially developed for remote control Weapon systems (RCWS).

SIGHT is a multi sensor electro-optical payload designed for easy integration in remote controlled weapon stations and long range surveillance.

## **SIGHT25-225 SYSTEM INCLUDES**

|                    |   |
|--------------------|---|
| <b>DAY Sensor</b>  | <b>Full HD x92 Zoom FOV 65.5° to 0.78°</b>  |
| <b>LWIR Sensor</b> | <b>LWIR 1280x1024 12µm 25-225mm Cont. x9<br/>Zoom FOV 25.0°x19.9 to 2.7°x2.2°</b>   |
| <b>LRF</b>         | <b>8.6 KM NATO TARGET, 0.5-0.01m PRECISION</b>  |
| <b>PSU</b>         | <b>9-40 VDC MIL-STD-461; MIL-STD-1275; MIL-STD-704</b>  |
| <b>CHASSIS</b>     | <b>RAL 7004, Nitrogen purged, MIL.STD, CNC aluminum<br/>with hermetic D38999 Stainless Steel connector<br/>Internal Ethernet Switch</b> |
| <b>INTERFACE</b>   | <b>Ethernet, ONVIF, RTSP</b>  |
| <b>SOFTWARE</b>    | <b>Ex-Sight Application, SDK Open Source C#</b>   |



# LWIR WEAPON SIGHT SYSTEM



# SIGHTLWIR

## FULLHD GLOBAL SHUTTER X36 or x92 DAY SENSOR

**x36**  
1/2.8" 2MP SONY GLOBAL SHUTTER FULL-HD 1920x1080p, MAX.RESOLUTION 1600x1300@30fps, H.265/H.264 COMPRESSION, 6-216mm x36 ZOOM GLOBAL SHUTTER, FOCAL LENS f=4.5mm~162mm, APERTURE RATOP F1.5(wide) ~F4.0(tele), ICR, X36 H.FOV 59°-2.4°, SAPPHIRE WINDOW

**x92**  
Up to 2PM (1920\*1080) FULL HD 1920\*1080@30fps Live Image, H.265/H.264/MJPEG, 1/1.8" PROGRESSIVE CMOS IMAGE SENSOR, ZOOM 90x OPTICAL ZOOM, 16x DIGITAL ZOOM, FOCAL LENGTH f=6.1mm~561mm, F1.4(wide)~F4.7(tele), FOV 65.5°~ 0.78°, VIDEO BITRATE 32Kbps~16Mbps

## 4K OVERVIEW MODULE 4mm

SONY IMX678, 1/1.8" PROGRESSIVE SCAN CMOS SENSOR, 120dB, VIDEO RESOLUTION 8MP/3840\*2160, VIDEO ENCODING H.265/H.264/MJPEG, VIDEO BIT RATE 32kbps~80Mbps, CBR/VBR adjustable, ≥52dB, MIN.ILLUMINATION COLOR 0.0001 Lux@F1.2

## 1280x1024 LWIR SENSOR

UNCOOLED LWIR 12um 25-225mm x10.2 ZOOM NETD<50mK SPECTRAL RESPONSE 8-14 μm

## 32km LRF (LASER RANGE FINDER)

EYE SAFE 8.6KM NATO TARGET, 0.5-0.01m PRECISION, 0.6MRAD BEAM DIVERGENCE 1m RESOLUTION, <30m TARGET DISCRIMINATION, ALIGNMENT POINTER, SAPPHIRE WINDOW

## CONNECTION INTERFACE

HERMETIC Type C: D38999/23YE35PN, ETHERNET/RTSP/ONVIF VIDEO & CONTROL

## PSU (POWER SUPPLY UNIT)

18-32VDC 120W Max. MIL.STD704, MIL.STD810G POWER STABILIZER

## EMBEDDED VIDEO TRACKER\*

DUAL CHANNEL EMBEDDED VIDEO ANALYTICS TRACKER (NON NEURAL NETWORK) PTZ ETHERNET TELEMETRY INTERFACE CONNECTION

## DIGITAL VIDEO STABILIZER\*

DUAL CHANNEL DIGITAL VIDEO STABILIZER INCLUDING ROLL CORRECTION

## ENVIRONMENTAL

IP-67, NITROGEN PURGED, HERMETIC SEALED, ALUMINUM CHASSIS (6061) STAINLESS STEEL SCREWS (N316) ,GROUND PIN CONNECTOR, OPTIONAL SHOCK ABSORBERS

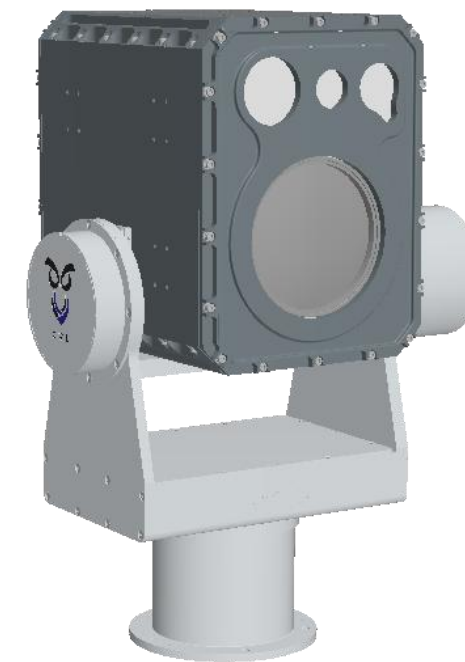
## OPEN SOURCE API

VIDEO CONTROL OPEN SOURCE API, PTZ TRACKING SAMPLE APP (C#.NET)

## DIMENSIONS

(LxWxH, mm) 352x275x360mm

\*Optional on digital versions only



# LWIR CONTINUOUS ZOOM LENS



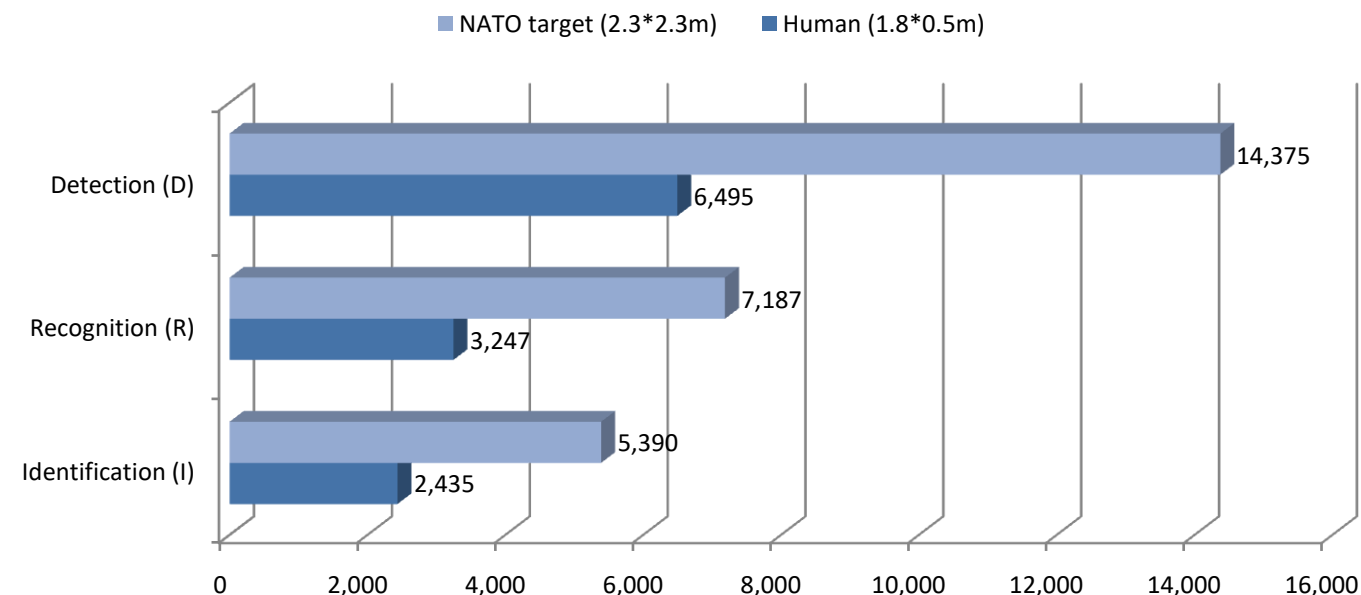
# SIGHTLWIR

| OPTICAL PROPERTY      | VALUE                |
|-----------------------|----------------------|
| FOCAL LENGTH          | 25mm~225mm           |
| F#                    | 0.95~1.5             |
| TRANSMISSION (8-12μm) | 85%                  |
| WAVELENGTH            | 8-14μm               |
| FOV                   | 25.0°x19.9~2.7°x2.2° |

| APPLICABLE ENVIRONMENT | VALUE             |
|------------------------|-------------------|
| OPERATING TEMPERATURE  | -40°C~+60°C       |
| STORAGE TEMPERATURE    | -45°C~+65°C       |
| SEALING                | IP67 (Front Lens) |

| MECHANICAL PROPERTY   | VALUE              |
|-----------------------|--------------------|
| FOCUS TYPE            | ELECTRONIC FOCUS   |
| FOCUS RANGE           | 10m~∞              |
| MOUNT TYPE            | FLANGE INTERFACE   |
| BACK WORKING DISTANCE | 14.5mm             |
| DIMENSIONS            | Φ189.5mm, L259.9mm |
| WEIGHT                | ≤3750g             |

## SIGHT25-225 DRI LWIR (meters)



Calculation according to Johnson Criteria

# SYSTEM OVERVIEW



# SIGHTLWIR

## PART NUMBERING INDEX

| # | PART        | DESCRIPTION   |
|---|-------------|---|
| 1 | LRF         | LASER RANGE FINDER<br>SAPPHIRE Window                             |
| 2 | DAY Sensor  | FULLHD GLOBAL SHUTTER X36<br>or x92 DAY SENSOR<br>SAPPHIRE Window |
| 3 | DAY Sensor  | Camera Scene 90° 4K<br>SAPPHIRE Window                            |
| 4 | LWIR Sensor | LWIR Sensor & LWIR LENS   |

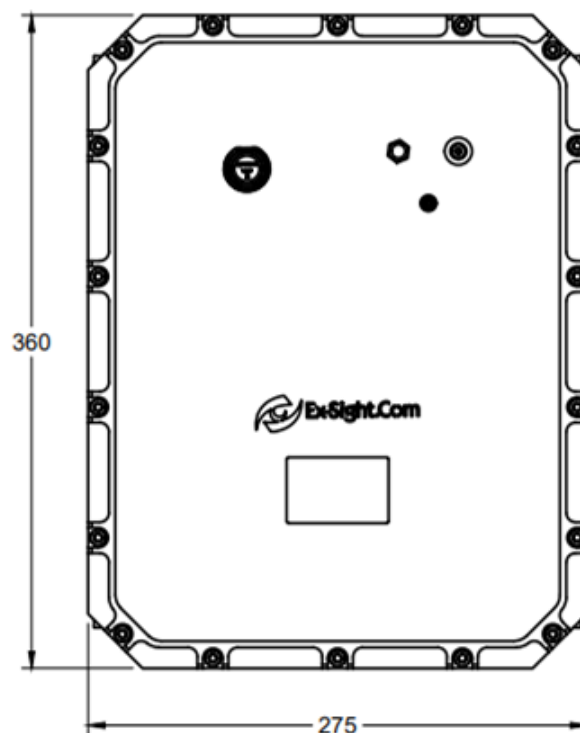
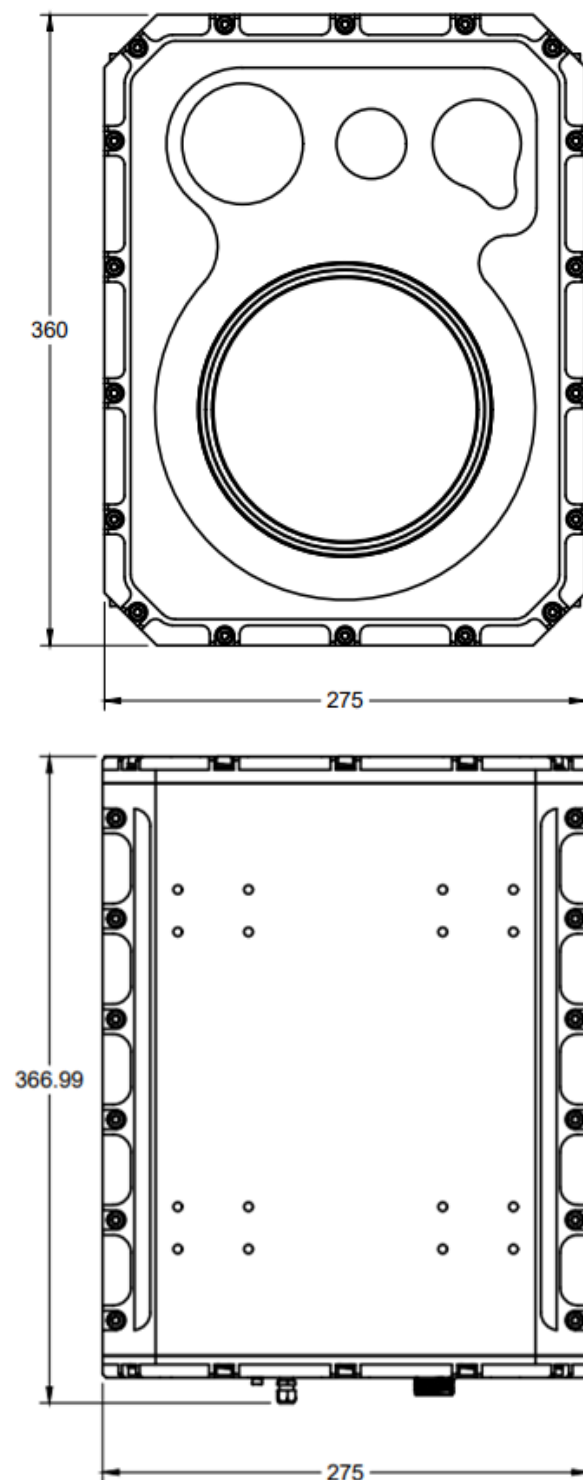


# SYSTEM OVERVIEW



# SIGHTLWIR

## DIMENSIONS (mm)



### SIGHTLWIR PART NUMBERING:

SL-1280-225-36-N

SL-[RES]-[LENS]-[ZOOM-DS]-[LRF]

#### [RES] LWIR RESOLUTION

640 (LWIR 640x512 , 5.8mm)

1280 (LWIR 1280x1024 , 13mm)

#### [LENS] LWIR LENS

225 - Focal Length 25mm~225mm

#### [ZOOM-DS] ZOOM DAY SENSOR

36 – x36 Optical Zoom, Global Shutter

92 – x92 Optical Zoom, 16x Digital Zoom

#### [LRF]

N – NONE

LRF1 – 32Km Range LRF

LRF2 – 6Km Range LRF



# SYSTEM OVERVIEW



# SIGHTLWIR

## PART NUMBERING INDEX

| # | P/N                                 | DESCRIPTION   |
|---|-------------------------------------|---|
| 1 | D38999/23YE35PN                     | Mil. Std Stainless Steel connector                            |
| 2 | MS3212-25                           | Nitrogen Screw  |
| 3 | MS51377-2<br>MS51607-1<br>MS20813-1 | Nitrogen Valve Core<br>Nitrogen MS Valves<br>Nitrogen Fitting |
| 4 | Ground Screw                        | Ground Screw  |



## PANEL PIN LAYOUT

### D38999/23YC35PN

### Stainless Steel Hermetic Connector

| PIN# | DESCRIPTION                |
|------|----------------------------|
| 1    | NC                         |
| 2    | NC                         |
| 3    | (+9 TO +36VDC) INPUT POWER |
| 4    | GND INPUT POWER            |
| 5    | (+9 TO +36VDC) INPUT POWER |
| 6    | GND INPUT POWER            |
| 7    | NC                         |
| 8    | NC                         |
| 9    | ETHERNET2 (1) TX+          |
| 10   | ETHERNET2 (2) TX-          |
| 11   | ETHERNET2 (3) RX+          |
| 12   | ETHERNET2 (6) RX-          |
| 13   | NC                         |
| 14   | NC                         |
| 15   | ETHERNET1 (1) TX+          |
| 16   | ETHERNET1 (2) TX-          |
| 17   | ETHERNET1 (3) RX+          |
| 18   | ETHERNET1 (6) RX-          |
| 19   | DAY VIDEO CVBS SIGNAL      |
| 20   | DAY VIDEO CVBS GND         |
| 21   | THERMAL VIDEO CVBS SIGNAL  |
| 22   | THERMAL VIDEO CVBS GND     |

# SYSTEM OVERVIEW



# SIGHTLWIR

## Johnson Criteria

| 12.0micron    |     |     |
|---------------|-----|-----|
| Detector Size | 640 | 512 |

| Detection | Recognition | Identification |   |
|-----------|-------------|----------------|---|
| Lines     | 3           | 6              | 8 |

| Optics Focal Length in mm | IFOV Rad | HFOV Deg | VFOV Deg | Diagonal | Nato Target Size (m) |                       |                    | Human Target Size (m) |                       |                    |
|---------------------------|----------|----------|----------|----------|----------------------|-----------------------|--------------------|-----------------------|-----------------------|--------------------|
|                           |          |          |          |          | 2.3                  | 2.3                   |                    | 1.8                   | 0.6                   |                    |
|                           |          |          |          |          | Nato Target          |                       |                    | Human Target          |                       |                    |
|                           |          |          |          |          | Detection in meters  | Recognition in meters | Identify in meters | Detection in meters   | Recognition in meters | Identify in meters |
| 20                        | 0.000600 | 21.7     | 16.3     | 27.2     | 1277.8               | 638.9                 | 479.2              | 577.4                 | 288.7                 | 216.5              |
| 40                        | 0.000300 | 11.0     | 8.2      | 13.7     | 2555.6               | 1277.8                | 958.3              | 1154.7                | 577.4                 | 433.0              |
| 50                        | 0.000240 | 8.8      | 6.6      | 11.0     | 3194.4               | 1597.2                | 1197.9             | 1443.4                | 721.7                 | 541.3              |
| 60                        | 0.000200 | 7.3      | 5.5      | 9.2      | 3833.3               | 1916.7                | 1437.5             | 1732.1                | 866.0                 | 649.5              |
| 70                        | 0.000171 | 6.3      | 4.7      | 7.9      | 4472.2               | 2236.1                | 1677.1             | 2020.7                | 1010.4                | 757.8              |
| 80                        | 0.000150 | 5.5      | 4.1      | 6.9      | 5111.1               | 2555.6                | 1916.7             | 2309.4                | 1154.7                | 866.0              |
| 90                        | 0.000133 | 4.9      | 3.7      | 6.1      | 5750.0               | 2875.0                | 2156.3             | 2598.1                | 1299.0                | 974.3              |
| 100                       | 0.000120 | 4.4      | 3.3      | 5.5      | 6388.9               | 3194.4                | 2395.8             | 2886.8                | 1443.4                | 1082.5             |
| 150                       | 0.000080 | 2.9      | 2.2      | 3.7      | 9583.3               | 4791.7                | 3593.8             | 4330.1                | 2165.1                | 1623.8             |
| 180                       | 0.000067 | 2.4      | 1.8      | 3.1      | 11500.0              | 5750.0                | 4312.5             | 5196.2                | 2598.1                | 1948.6             |
| 225                       | 0.000053 | 2.0      | 1.5      | 2.4      | 14375.0              | 7187.5                | 5390.6             | 6495.2                | 3247.6                | 2435.7             |
| 260                       | 0.000046 | 1.7      | 1.3      | 2.1      | 16611.1              | 8305.6                | 6229.2             | 7505.6                | 3752.8                | 2814.6             |
| 300                       | 0.000040 | 1.5      | 1.1      | 1.8      | 19166.7              | 9583.3                | 7187.5             | 8660.3                | 4330.1                | 3247.6             |
| 340                       | 0.000035 | 1.3      | 1.0      | 1.6      | 21722.2              | 10861.1               | 8145.8             | 9815.0                | 4907.5                | 3680.6             |
| 380                       | 0.000032 | 1.2      | 0.9      | 1.4      | 24277.8              | 12138.9               | 9104.2             | 10969.7               | 5484.8                | 4113.6             |
| 420                       | 0.000029 | 1.0      | 0.8      | 1.3      | 26833.3              | 13416.7               | 10062.5            | 12124.4               | 6062.2                | 4546.6             |
| 460                       | 0.000026 | 1.0      | 0.7      | 1.2      | 29388.9              | 14694.4               | 11020.8            | 13279.1               | 6639.5                | 4979.6             |
| 500                       | 0.000024 | 0.9      | 0.7      | 1.1      | 31944.4              | 15972.2               | 11979.2            | 14433.8               | 7216.9                | 5412.7             |
| 540                       | 0.000022 | 0.8      | 0.6      | 1.0      | 34500.0              | 17250.0               | 12937.5            | 15588.5               | 7794.2                | 5845.7             |
| 550                       | 0.000022 | 0.8      | 0.6      | 1.0      | 35138.9              | 17569.4               | 13177.1            | 15877.1               | 7938.6                | 5953.9             |