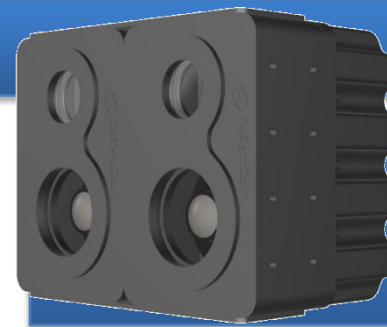




# 3DVDVE

## 3D Day & LWIR Stereoscopic Vision System

3DV is a 3D stereoscopic vision system for driver vision enhancement. It integrates both LWIR and Day sensors for 3D depth perception.

The system give binocular disparity due to the position of each camera that provides horizontal disparity vision. The video from each day or LWIR sensor is projected on each eye separately in real time.

**Depth Perception:** The processes of these disparate images give perceive depth and distance.

**Applications:** Stereoscopic vision is crucial for tasks such as judging distances, navigating through space, and interacting with objects in the environment. It is also important in fields such as photography, cinematography, virtual reality, and robotics.

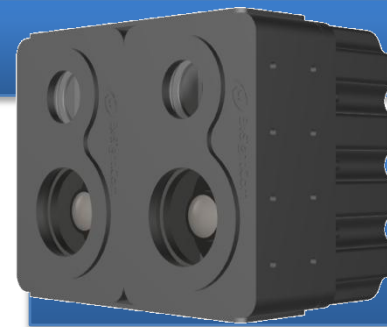
Working in a similar way to 3D sensing in human vision, the system enables to extract depth information of a scene for precise risks evaluation during day or night blind driving

External AI Interface capability (Non Neural network AI)

## SYSTEM INSTALLATION OPTIONS

### OPTION 1:

The Stereo Day and Lwir Sensors (1) installed on the UGV (2) connected to the UGV Computer, and the operator use the head Display (3) and the tablet (4) for driving the UGV.



# 3DV DVE

### OPTION 2:

The Stereo Day and Lwir Sensors (1) installed on the vehicle (2), and the operator inside the vehicle use the head Display (3) for driving the vehicle.



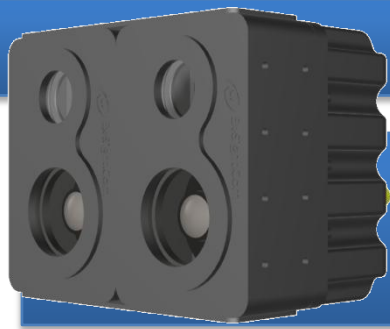
## SYSTEM INSTALLATION OPTIONS

### OPTION 3:

The Stereo Day and Lwir Sensors (1) installed on the USV (2) connected to the USV Computer, and the operator use the head Display (3) and the tablet (4) for driving the USV.



# 3D DAY & LWIR STEREOSCOPIC VISION SYSTEM



# 3DV DVE

### THERMAL SENSOR X2

UNCOOLED LWIR 12 μm, RESOLUTION (PIXELS) 640x512/1280x1024, LENS (640) 5.8mm / (1280) 13mm, FOV 67° (69.4° x57.3° )/ 61° x50°, PITCH 12μm, SPECTRAL BAND 8-14 μm/ 7.5-13.5μm , FRAME RATE 50 FPS, SENSITIVITY (NEDT) <50mK at F/1.0, GERMANIUM WINDOW

### DAY SENSOR (VIS) X2

SONY IMX327 1920x1080/2MP FULL HD, H.265/H.264/MJPEG, Video Frame Main stream1920\*1080(30fps), Sub stream: 1280\*720/704\*576 640\*480 352\*288(30fps), Video Bit rate 16kbps~20Mbps, CBR/VBR, S/N Ratio ≥60dB, Min Illumination 0.001Lux@F1.2 , Ethernet Interface 1PCS RJ45 10M/100M TCP/IP, UDP, RTP, RTSP, RTCP, RTMP, HTTP, DNS, DDNS, DHCP, NTP, PPPOE, SMTP, UP NP SAPPHIRE WINDOW 3mm

### FOV DAY SENSOR

LENS 4mm DC DRIVE M12, FOV (H) 84.6° (V) 45.9° (D) 100.0°

### INTERFACES

ANALOG OUT FORMAT:2 OUTPUTS X PAL (DAY + LWIR) , ETHERNET SINGLE CONNECTION, INTERNAL EMBEDDED SWITCH, SDK WEB INTERFACE , VIDEO COMPRESSION RTSP H.264 / H.265 STREAMING, CAMERA CONTROL - SDK (CODE EXAMPLES INCLUDED) , VIDEO STREAM : 2 SEPARATE DIGITAL VIDEO CHANNELS FROM EACH CAMERA WITH DIFFERENT SETUPS, HERMETIC D38999/23YC35PN CONNECTOR

### PSU (POWER SUPPLY UNIT)

9-36VDC, NOMINAL 5.6W, (MAX on LOAD 12W)

### HOUSING

BLACK HARD ANODIZED ALUMINUM, STAINLESS STEEL N316 SCREWS, NITROGEN VALVE IN, SEALED OUTPUT SCREW , IP-67, NITROGEN PURGED, “O” RINGS

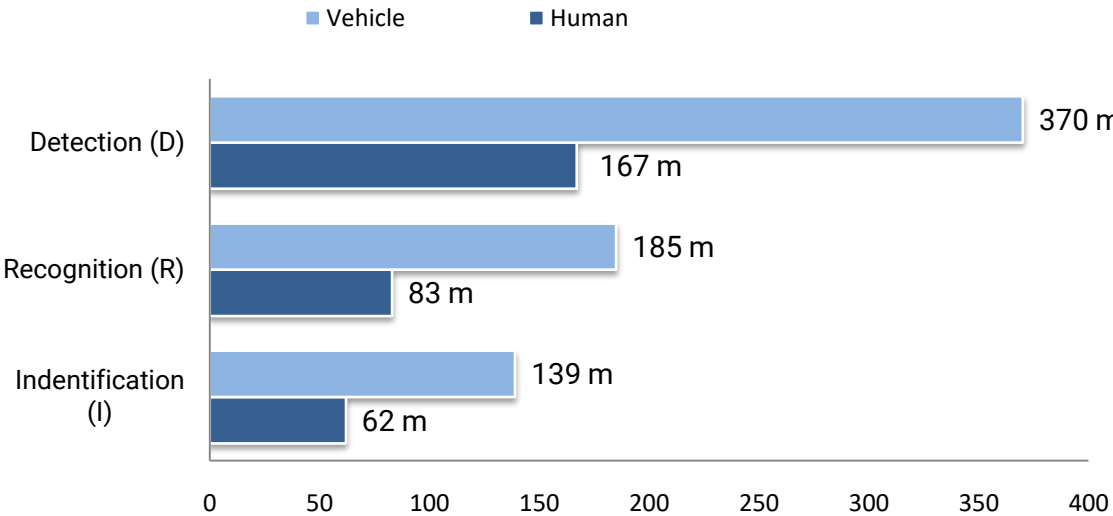
### ENVIRONMENTAL

OPERATING TEMP -20°C to +80°C

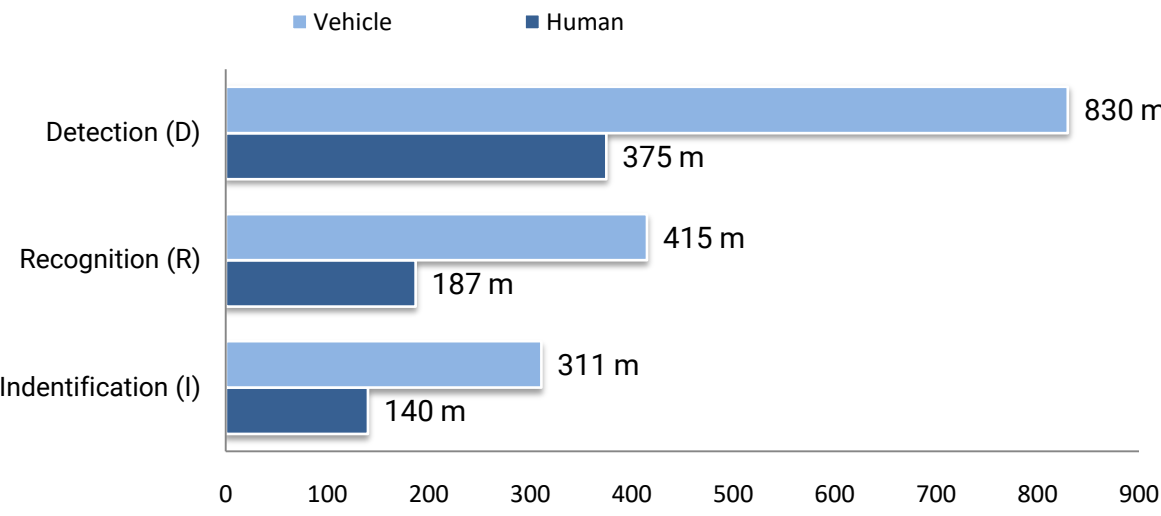
### DIMENSIONS

(LxWxH, mm) 192x1140x152mm, WEIGHT 4,600 gm

## 3DV DVE 640 DRI LWIR (m)

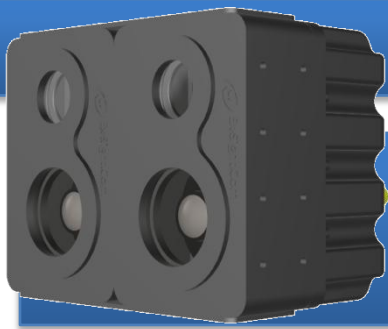
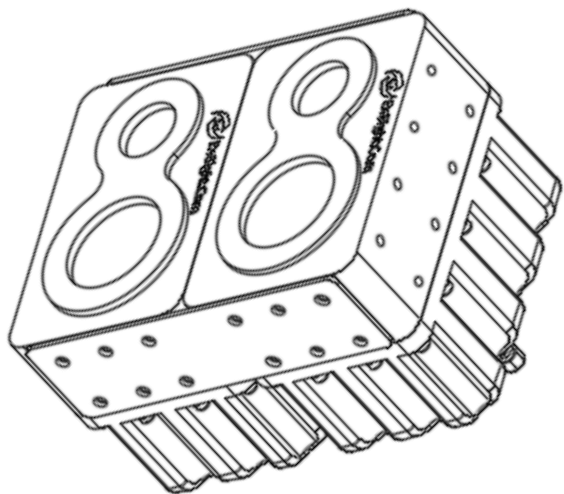
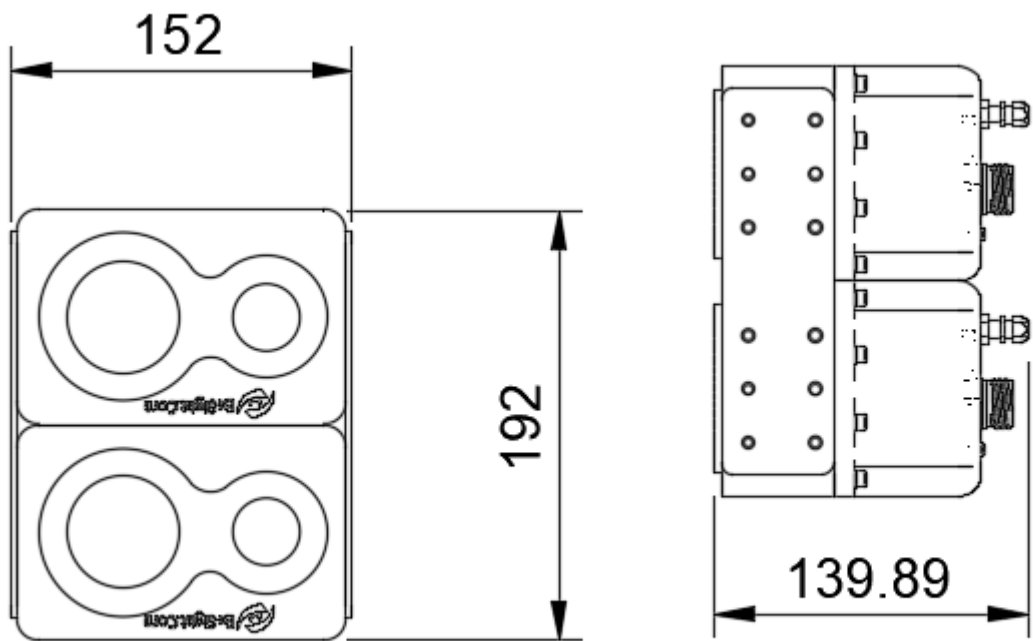


## 3DV DVE 1280 DRI LWIR (m)



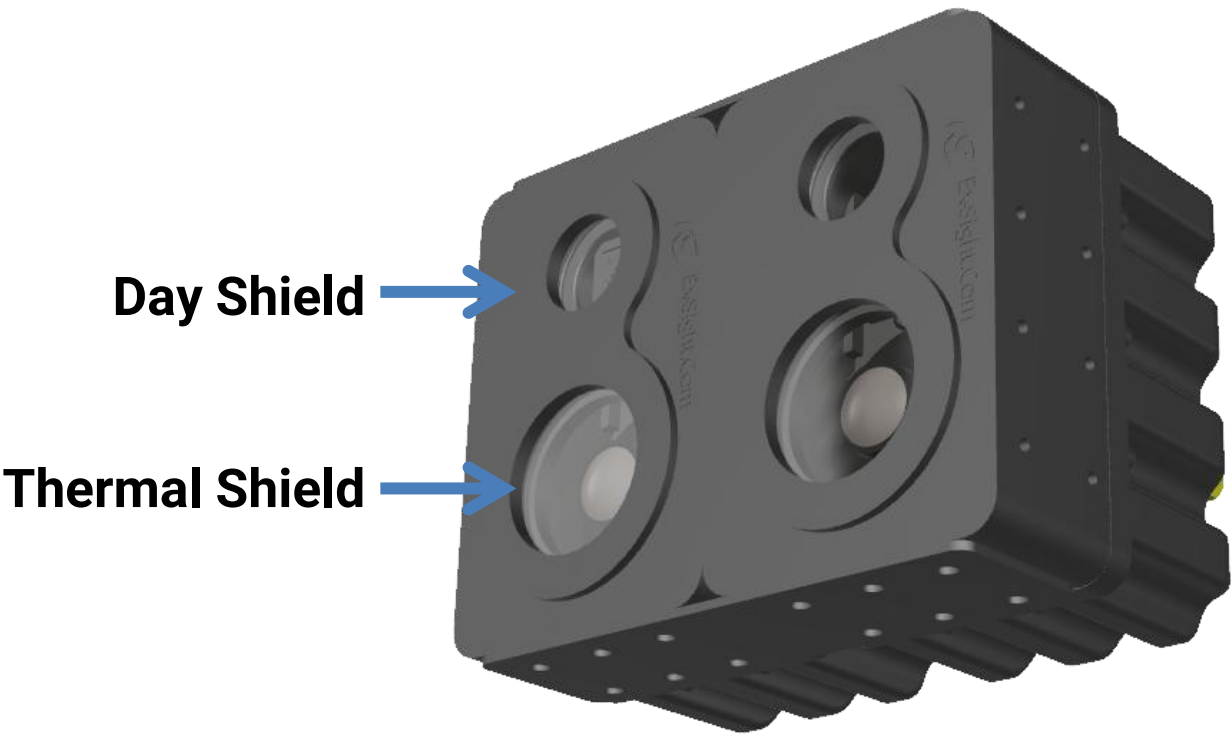
Calculation according to Johnson Criteria

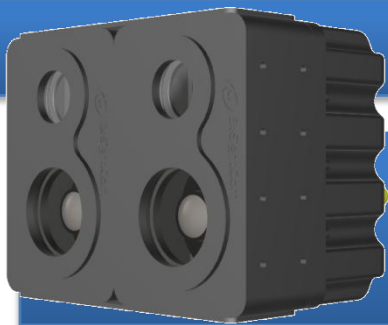
**DIMENSIONS (mm)**



# 3DV DVE

**PART Numbering Index**





3DV DVE

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     |

| # | P/N                                 | DESCRIPTION                                                   |
|---|-------------------------------------|---------------------------------------------------------------|
| 1 | D38999/23YC35PN                     | Mil. Std Stainless Steel connector                            |
| 2 | MS51377-2<br>MS51607-1<br>MS20813-1 | Nitrogen Valve Core<br>Nitrogen MS Valves<br>Nitrogen Fitting |



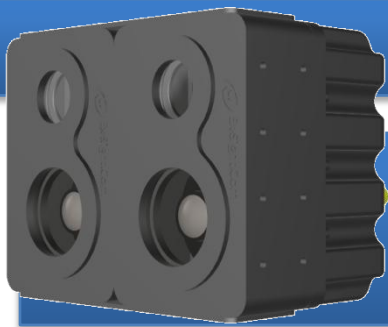
# CABLE PIN LAYOUT

## CABLE PIN LAYOUT D38999/26KC35SN Stainless Steel Hermetic Connector

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

## CABLE PART NUMBERING INDEX

| # | P/N              | DESCRIPTION                                                                                     |
|---|------------------|-------------------------------------------------------------------------------------------------|
| 1 | [LEN1]           | Total Cable length (meters)                                                                     |
| 2 | D38999/26KC35SN  | Mil. Std Stainless Steel connector (200°C, firewall capability, 500 hour salt spray resistance) |
| 3 | RQND-40S2-S-1307 | Stainless Steel Backshell                                                                       |
| 4 | 202K121-25-0     | Boot                                                                                            |
| 5 | [LEN2]           | Chained Cable Length (meter) from split                                                         |
| 6 | Cable RQT1601875 | 6*20AWG + SPEC55 (RAYCHEM DR-25)                                                                |
| 7 | Cable RQT1601875 | 6*20AWG + SPEC55 (1m) (RAYCHEM DR-25)                                                           |
| 8 | RJ45 Ethernet    | Main Ethernet connector                                                                         |
| 9 | Power Wires      | 20AWG For 9V-36V input                                                                          |



# 3DV DVE

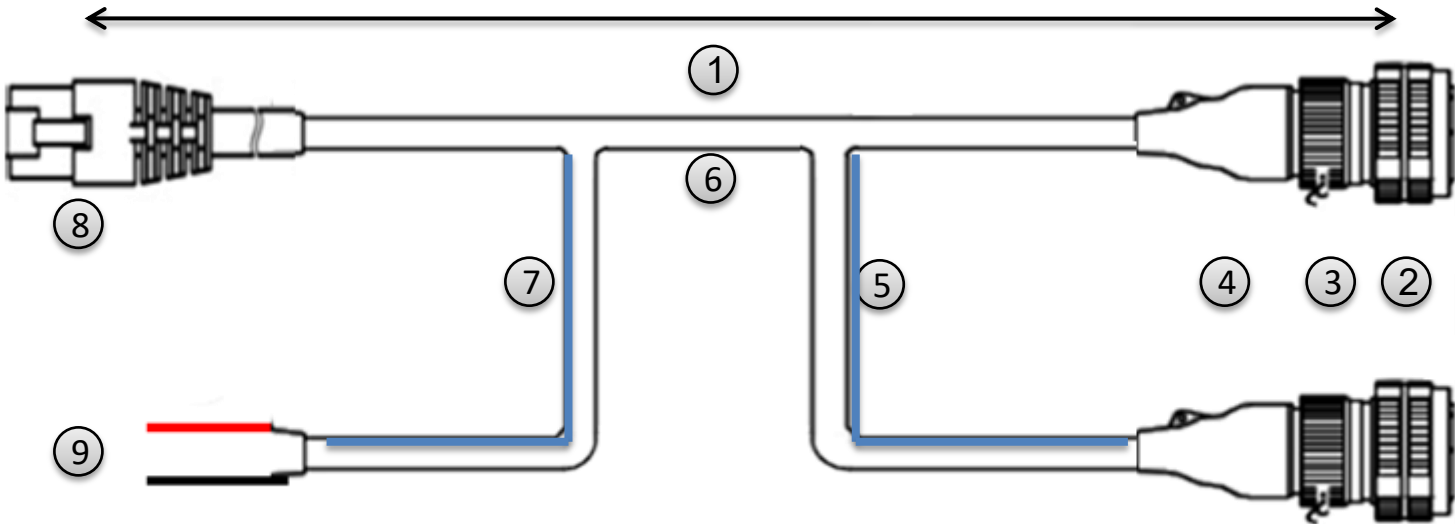
### 3DV DVE-CABLE

3DV-CABLE is RQT1601875 Cable (6\*20AWG + SPEC 55) with specified length and Additional Chained sensor connector.

The cable includes two connectors D38999/26KC35SN Mil. Std Stainless Steel that connects to the connectors D38999/23YC35PN on the 3DV DVE.

On the other side of the cable there is a connection to Power 9-36V (open black wire + open red wire) and RJ45 Giga Ethernet connection.

### MECHANICAL DRAWING



# HMD

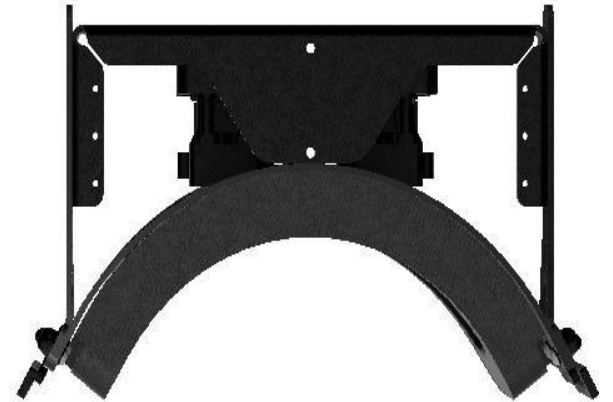
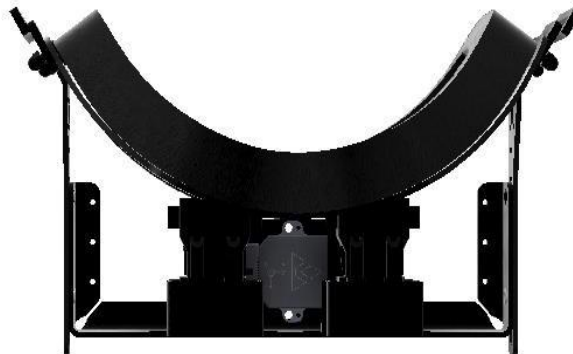
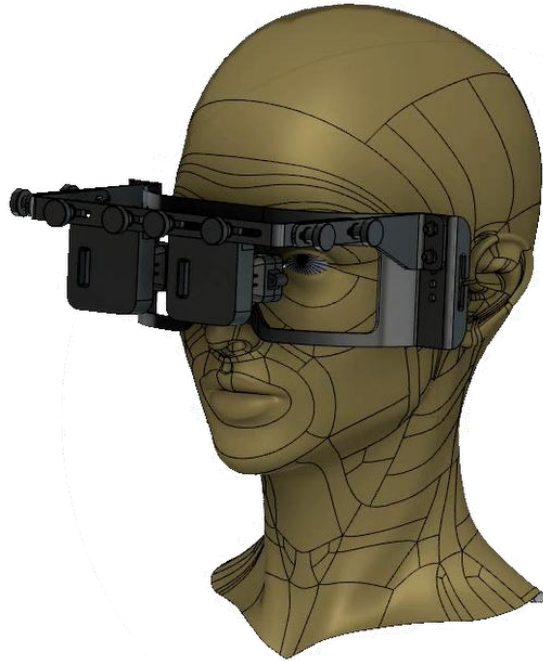
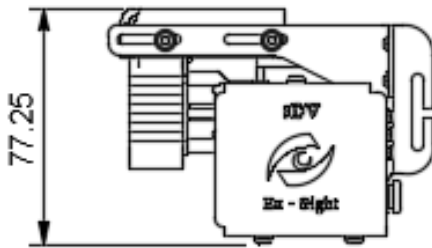
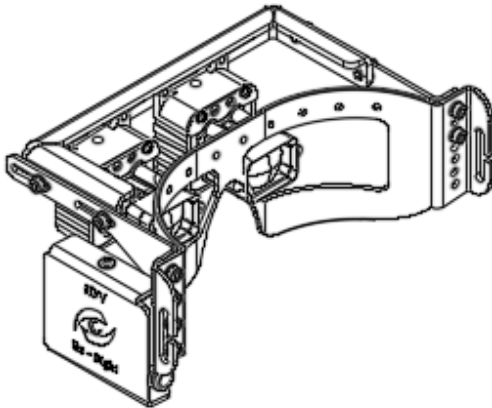
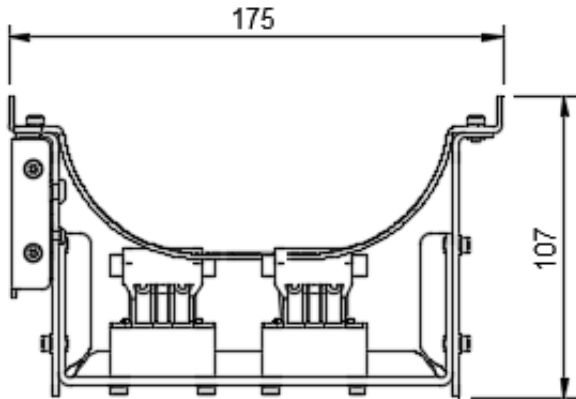
## HEAD MOUNTED DISPLAY

### CHARACTERISTICS

- LIGHT WEIGHT
- REAL TIME STEREOSCOPIC VISION
- 3D DAY / LWIR DEPTH PERCEPTION
- TWO AXIS EYE ADJUSTMENT
- 2 X SVGA SUPER HIGH QUALITY MICRO DISPLAY
- EMBEDDED OSD MARKUPS
- GYRO

### DIMENSIONS (LxWxH, mm)

107x175x77mm, WEIGHT 200 gm



# 3DV DVE