

UNCOOLED LWIR DVE SYSTEM



FUSION-F

FUSION-F is a powerful pure digital dual sensor vision system for superior situational awareness

Product Highlights

- Embedded network switch
- Sensor daisy chain via Ethernet to save cabling
- Two Analog Out CVBS interfaces – Day + LWIR
- ONVIF Low Light Day Sensor 1080x1920
- ONVIF LWIR 12 μ m Sensor
- Hermetic IP-67, Nitrogen Purged, Military Grade
- Hermetic MIL.STD D38999/23YC35PN Connector
- Black Hard Anodized CNC Aluminum Chassis
- Easy Sensor-To-Screen, Sensor-To-PC Installation
- Optional SD card recording
- 9-36VDC Embedded Power Stabilizer



UNCOOLED LWIR DVE SYSTEM



FUSION-F

THERMAL SENSOR

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)

SONY IMX327 1920x1080/2MP FULL HD, H.265/H.264/MJPEG, Video Frame Main stream 1920*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, UPNP 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

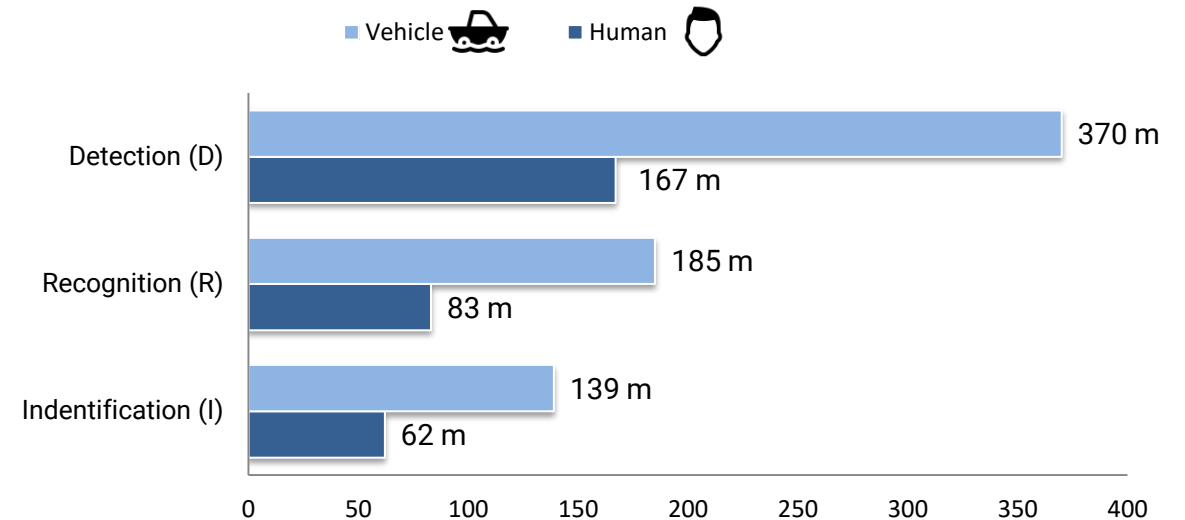
ENVIRONMENTAL

OPERATING TEMP -20°C to +80°C

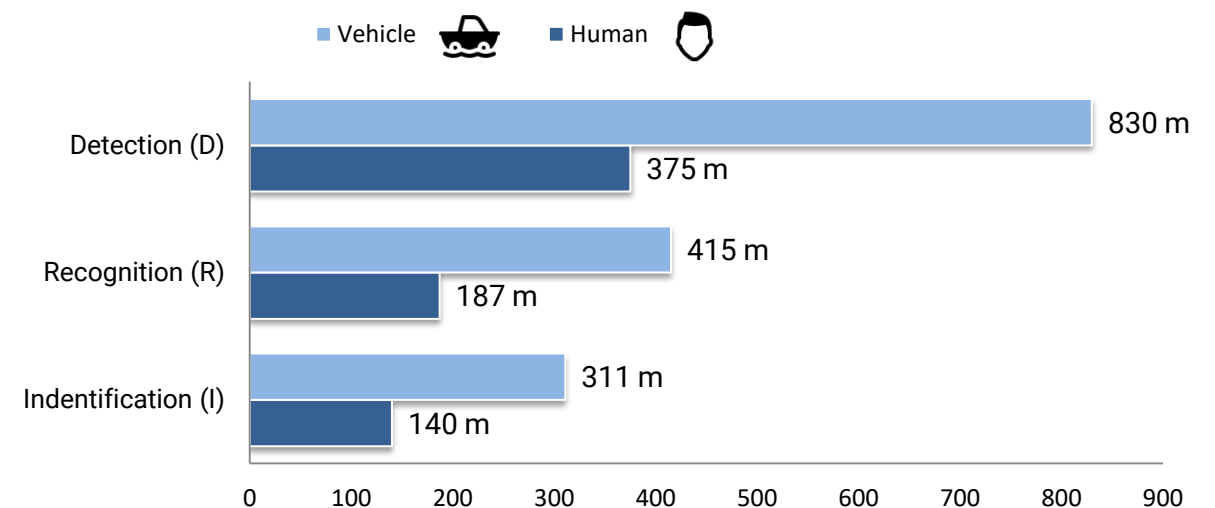
DIMENSIONS

(LxWxH, mm) 147x119x96mm, WEIGHT 2,300 gm

FUSION-F640 DRI LWIR (m)

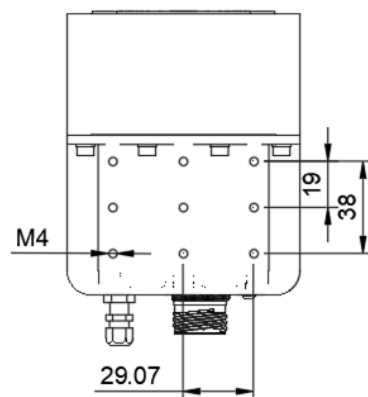
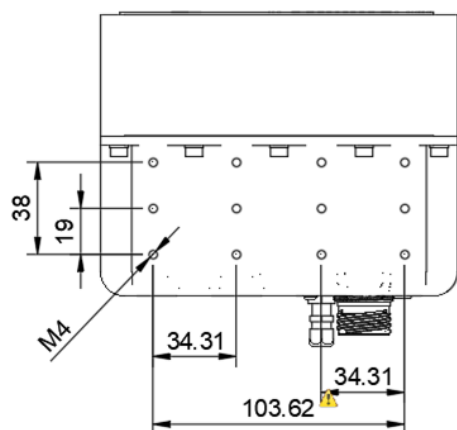
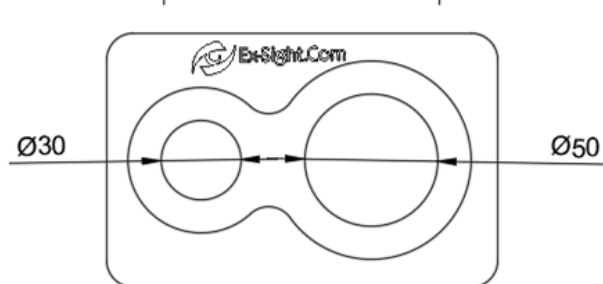
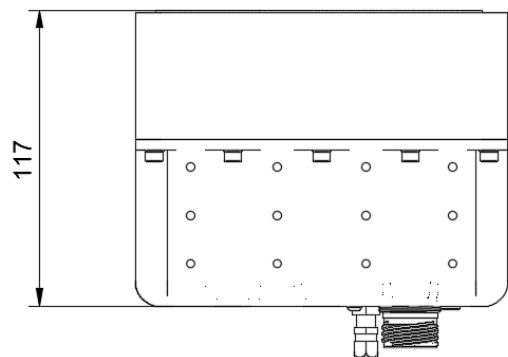
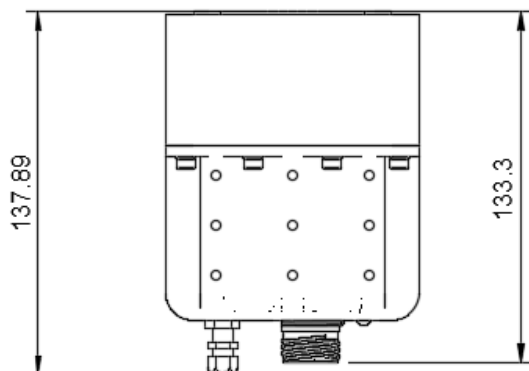
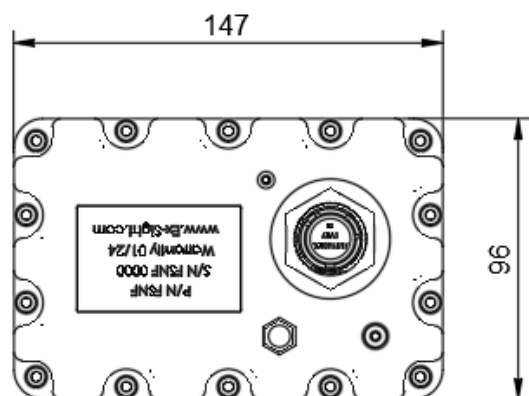


FUSION-F1280 DRI LWIR (m)



Calculation according to Johnson Criteria

DIMENSIONS (mm)



FUSION-F

FUSION-F PART NUMBERING:

FUSION-F[RES]-[FOV]-[POS]

[RES] LWIR RESOLUTION

- 640 (LWIR 640x512 , 5.8mm)
- 1280 (LWIR 1280x1024 , 13mm)

[FOV] FIELD OF VIEW

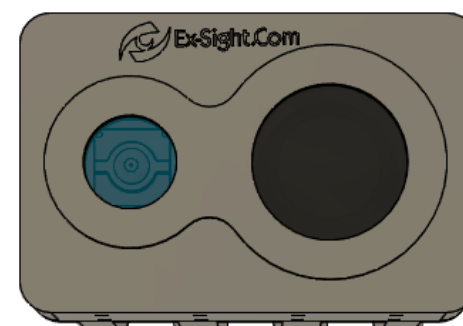
- 70 - 70° LWIR (69.4° x 57.3°), 90° DAY (84.6°x45.9°)
- S - 70° LWIR (69.4° x 57.3°), 70° DAY (70.7°x43.5) SYNC

[POS] CAMERA POSITION

- H (HORIZONTAL)
- V (VERTICAL)

SENSOR POSITIONING

HORIZONTAL



VERTICAL



PRODUCT PIN LAYOUT

PANEL Pin Layout
D38999/23YC35PN
Stainless Steel Hermetic Connector

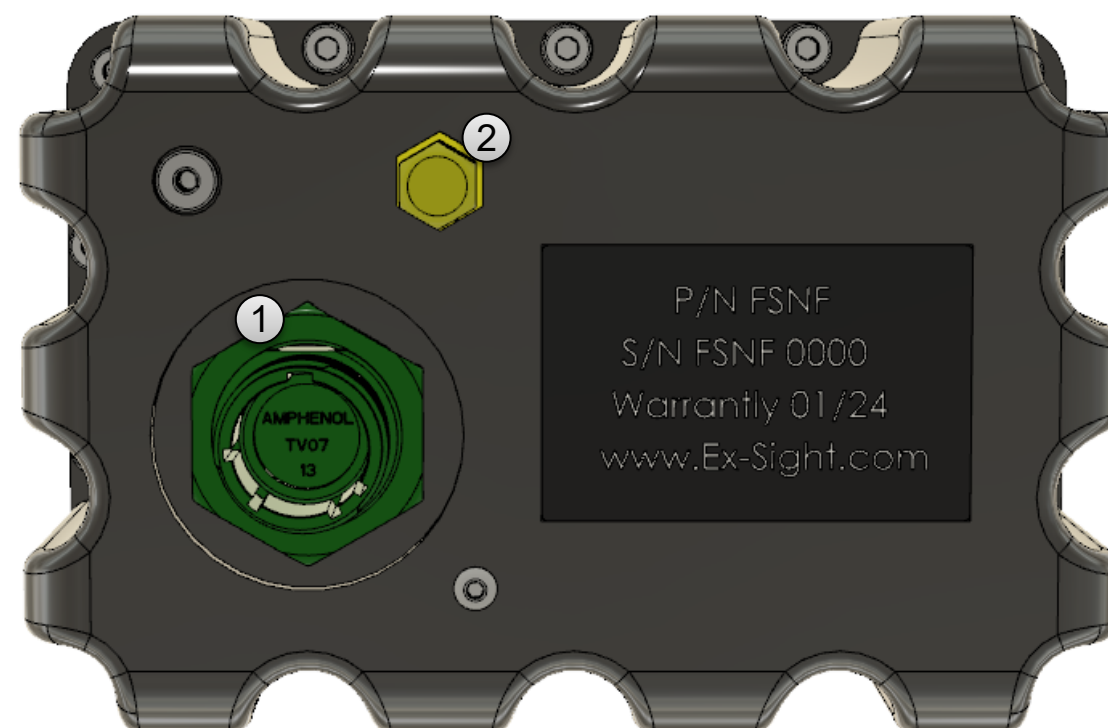


FUSION-F

PART Numbering Index

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 MS51607-1 MS20813-1	Nitrogen Valve Core Nitrogen MS Valves Nitrogen Fitting

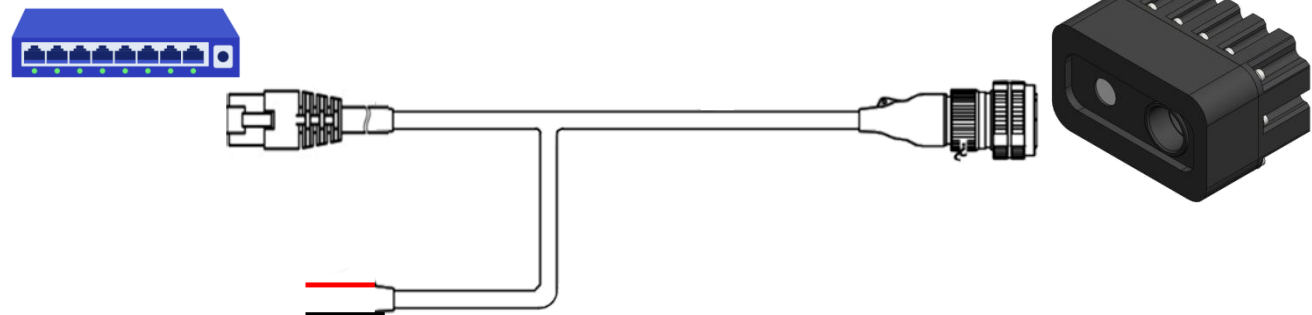


CABLE PART NUMBERING



FUSION-F-CABLE

SC Cable



CABLE PART NUMBERING:

FUSION-F-CABLE-[CT]-[LEN1]-[LEN2]

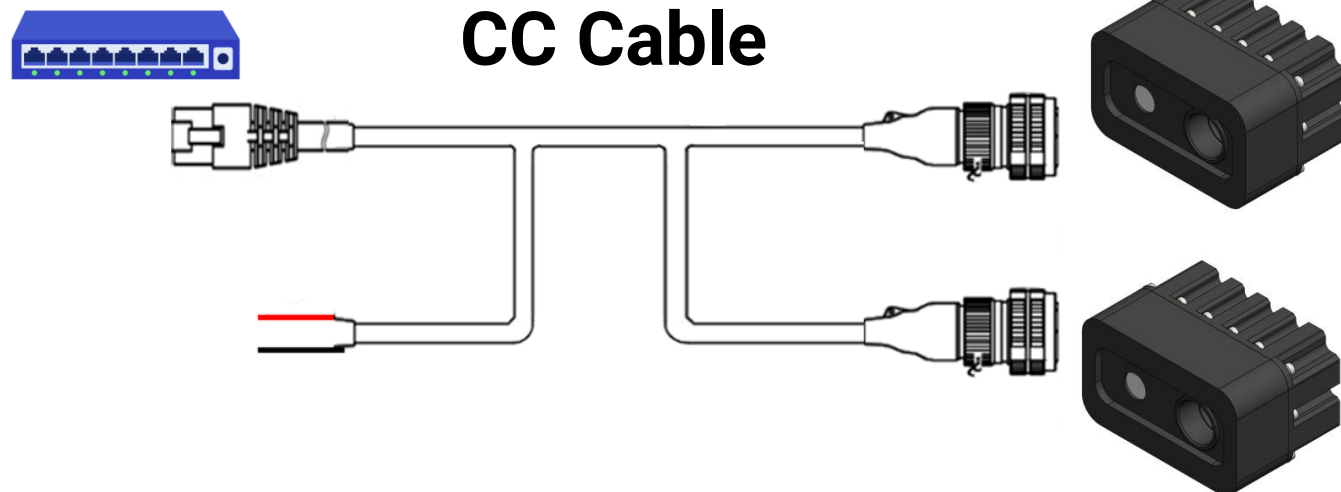
[CT] CABLE TYPE:

- SC (SINGLE CABLE)
- CC (CHAINED CABLE)

[LEN1] CABLE LENGTH in Meters

[LEN2] CHAINED CABLE LENGTH in Meters (CC cable only)

CC Cable



RQT1601875 CABLE

Cable Specification



FUSION-F-CABLE

22 Conductor Cable

Components:

Cat. 5e Cable:

Conductor: 24 AWG 7/32 Tinned Copper.
 Insulation: XLPE, OD 1.3mm.
 Color Code: Blue X White, Orange X White, Green X White, Brown X White.
 Shield: Aluminum foil + Tinned cooper braid 80% Min coverage.
 Jacket: PTX, OD 7.6 mm, Black, Numbered 1-2.

20 AWG pairs:

Conductor: 20 AWG 19/32 Tinned Copper.
 Insulation: ETFE, OD 1.4 mm.
 Color Code: Black, Red.

Cable:

Two (2) Cat. 5e 4X2X24 AWG SF/UTP.
 Three (3) 20 AWG unshielded twisted pairs.

Jacket:

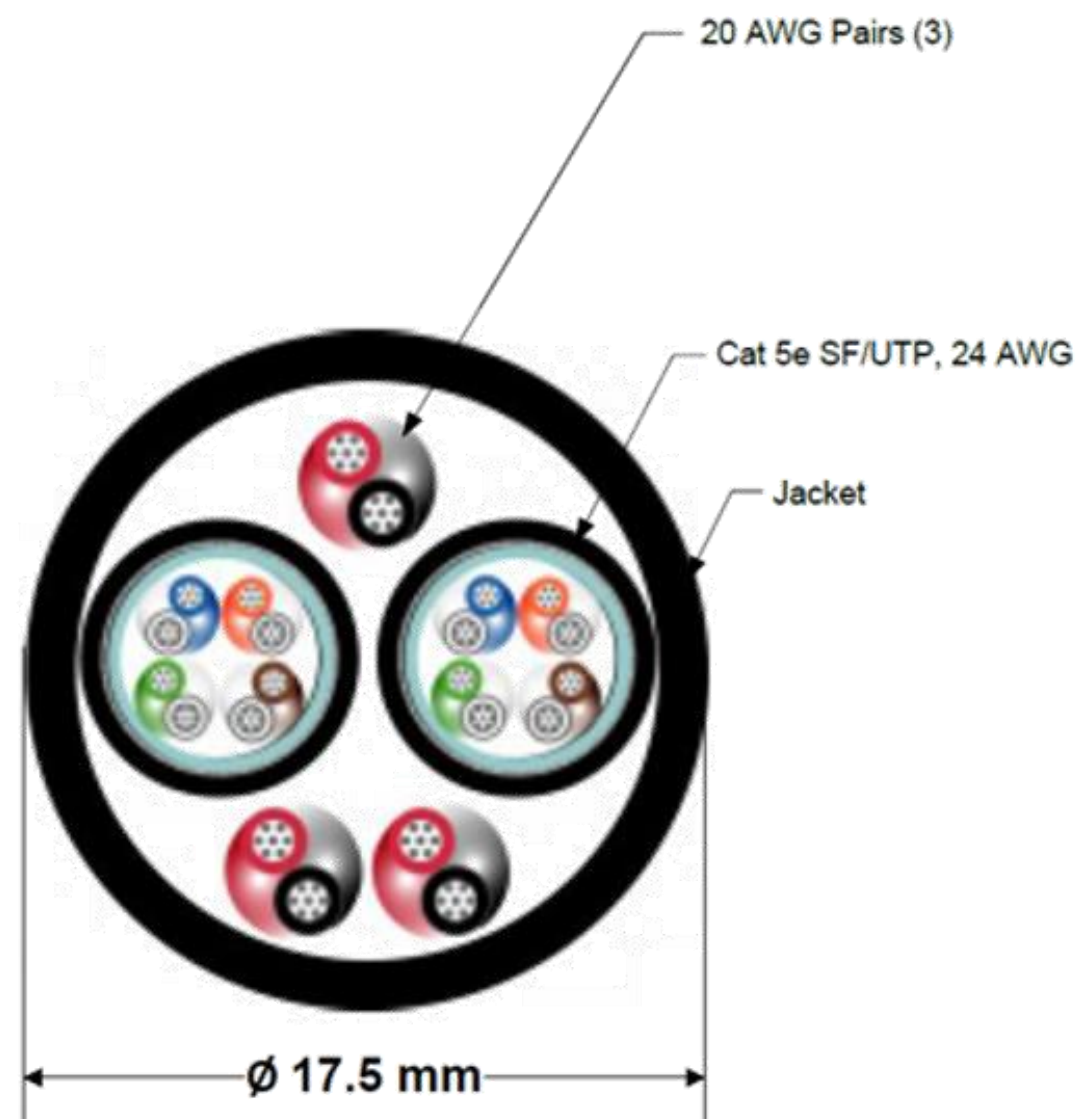
Halogen-free, flame retardant, Cross Linked Thermoplastic Elastomer.
 to 17.5 mm nom – Black

Marking:

Jacket marked 'RQT1601875 – Week & Year of Manufacture' at 1000mm intervals.

Performance:

Min. Bend Radius:	180 mm
Min. Band Radius for Operation:	150°mm
Max. Operation Temperature:	+90 C
Min. Operation Temperature:	- 40 C
UV Resistance:	Yes
Weight:	260 Kg/Km



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	Cable RQT1601875	6*20AWG + SPEC55 (RAYCHEM DR-25)
6	Cable RQT1601875	6*20AWG + SPEC55 (1m) (RAYCHEM DR-25)
7	RJ45 Ethernet	Main Ethernet connector
8	Power Wires	20AWG For 9V-36V input



FUSION-F-CABLE

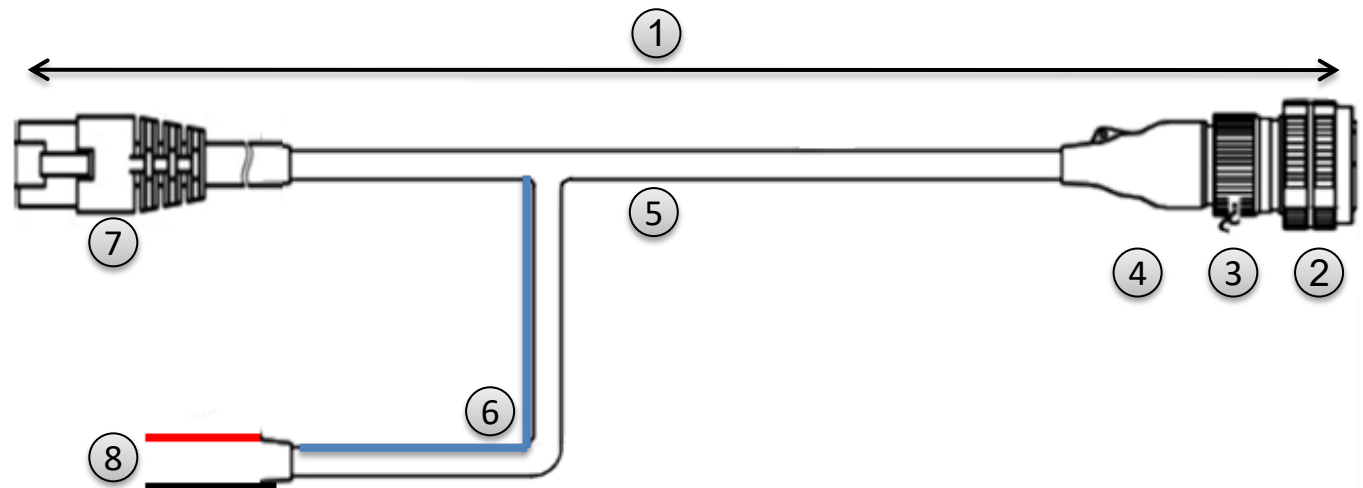
FUSION-F-CABLE-SC-[LEN1]

FUSION-F-CABLE is RQT1601875 Cable (6*20AWG + SPEC 55) with specified length.

The cable includes connector D38999/26KC35SN Mil. Std Stainless Steel that connects to the connector D38999/23YC35PN on the FUSION-F.

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



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	ETHERNET2 (1) TX+
5	(+9 TO +36VDC) INPUT POWER	16	ETHERNET2 (2) TX-
6	GND INPUT POWER	17	ETHERNET2 (3) RX+
7	NC	18	ETHERNET2 (6) RX-
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



FUSION-F-CABLE

FUSION-F-CABLE-CC-[LEN1]-[LEN2]

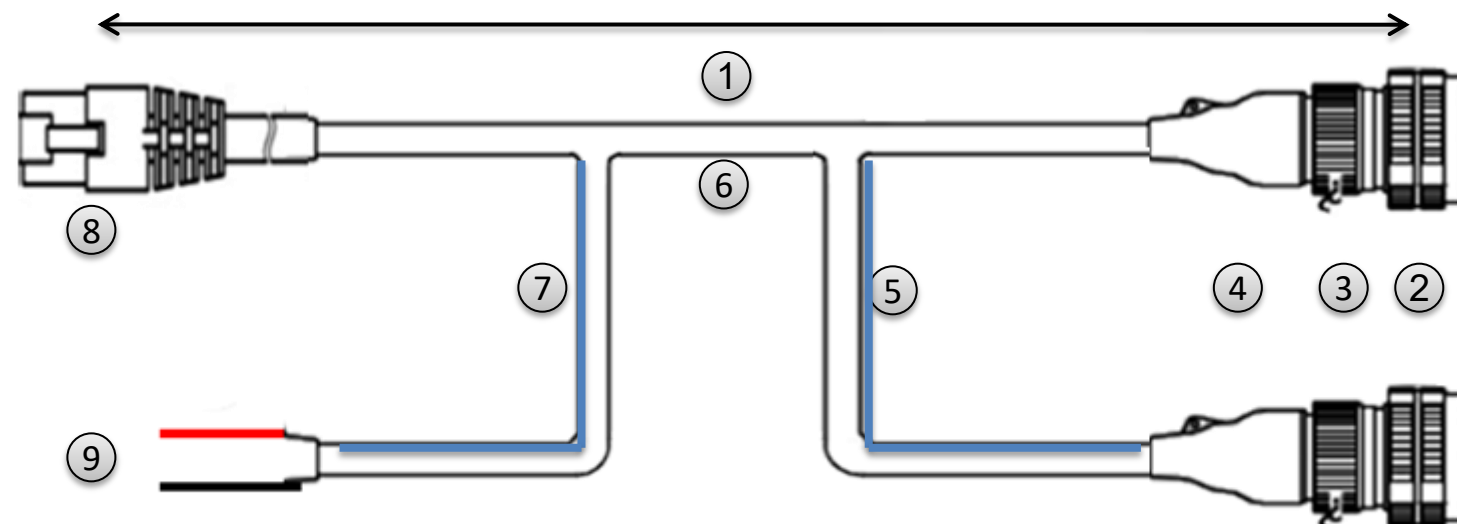
FUSION-F-CABLE is RQT1601875 Cable (6*20AWG + SPEC 55) with specified length and Additional Chained sensor connector.

The cable includes two connectors D38999/26KC35SN Mil. Std Stainless Steel that connects to the connectors

D38999/23YC35PN on the two FUSION-F.

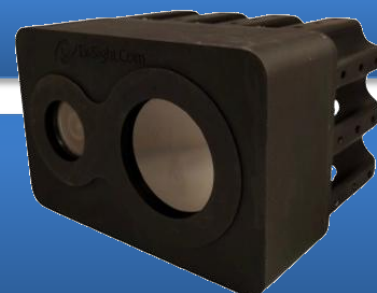
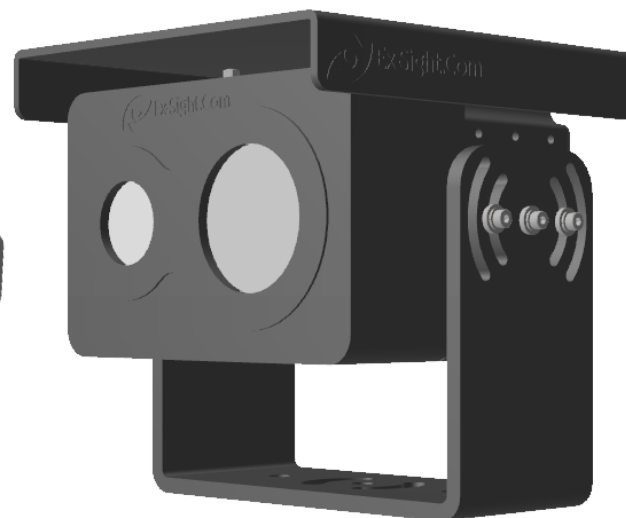
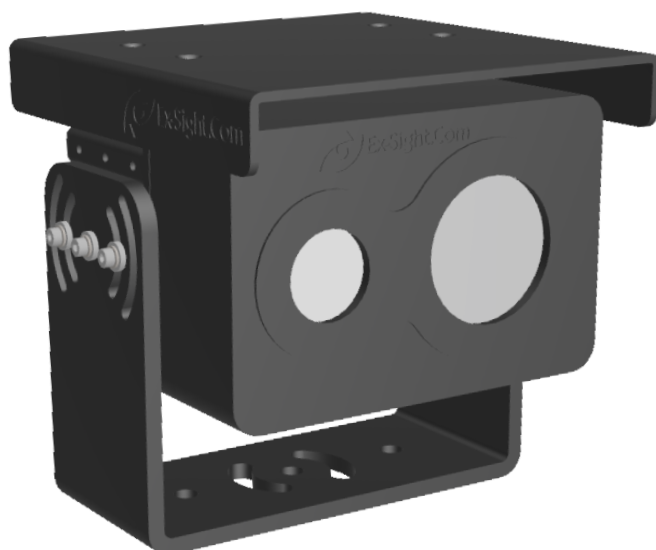
On the other side of the cable there is a connection to Power 9-36V (open black wire + open red wire) and RJ45 Giga Ethernet connection.

MECHANICAL DRAWING



INSTALLATION

FUSION-F-BRKT-01



FUSION-F-BRKT

BRACKET PART NUMBERING:

FUSION-F-BRKT-[BT]

[BT] BRACKET TYPE:

- 01 MATTE BLACK RAL 9005 ALUMINUM BRACKET
(one line assembly)**
- 02 MATTE BLACK RAL 9005 ALUMINUM BRACKET
(one or two lines assembly)**
- 02S BLACK STEEL BRACKET
(one or two lines assembly)**

FUSION-F-BRKT-02

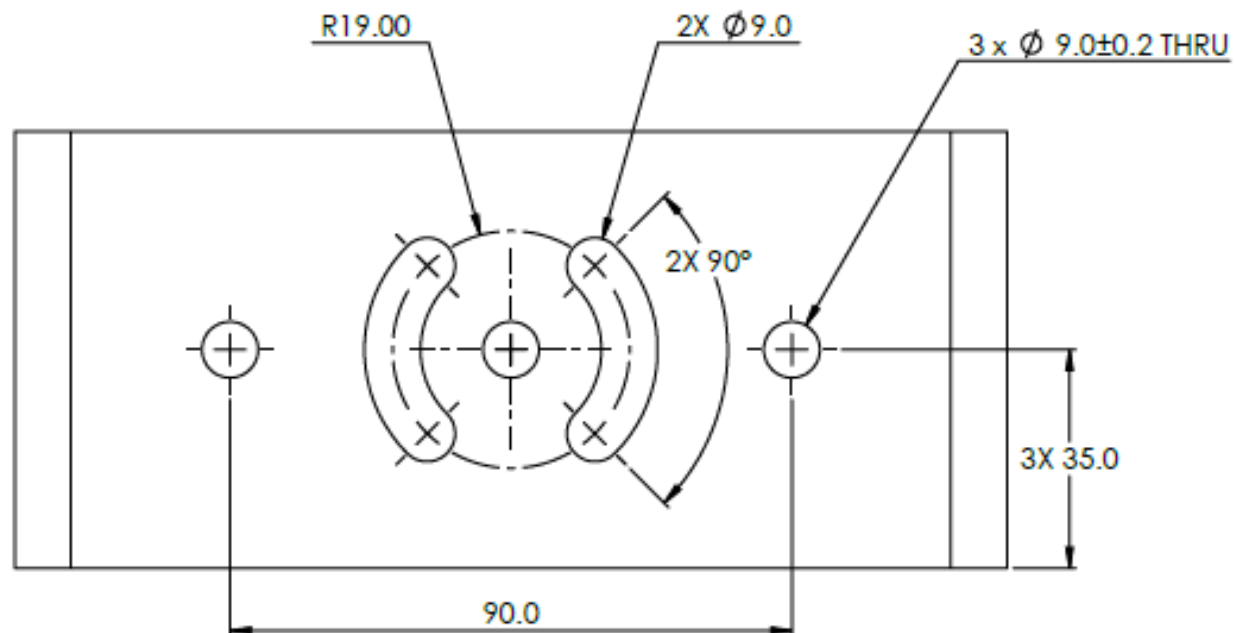


CAMERA INSTALLATION OPTIONS

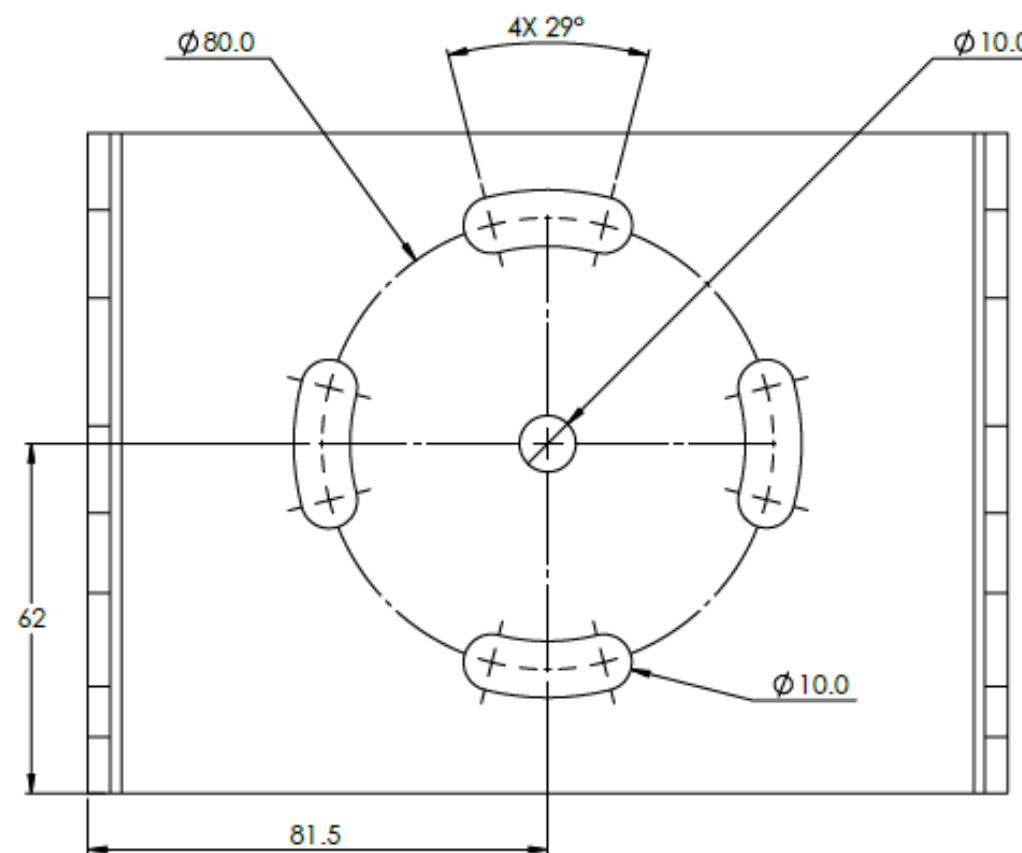


FUSION-F-BRKT

FUSION-F-BRKT-01
(FOR INSTALLATION USE M8 SCREWS)



FUSION-F-BRKT-02
(FOR INSTALLATION USE M8 SCREWS)

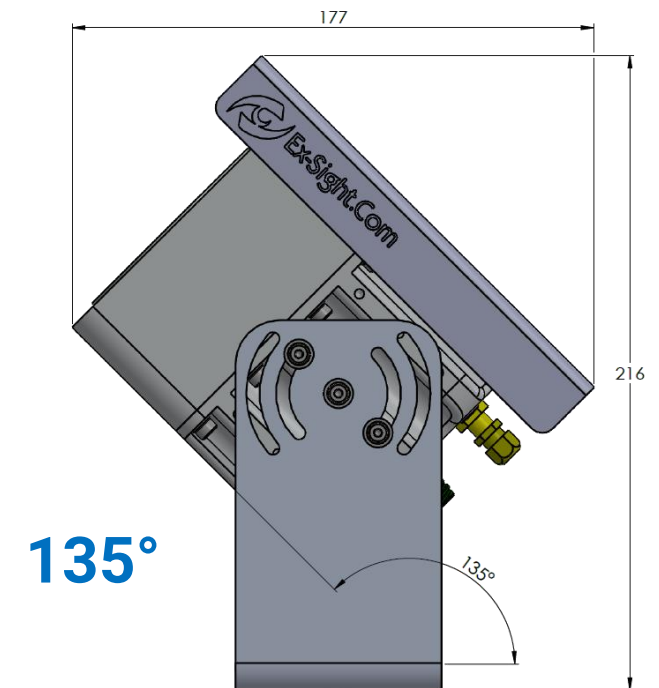
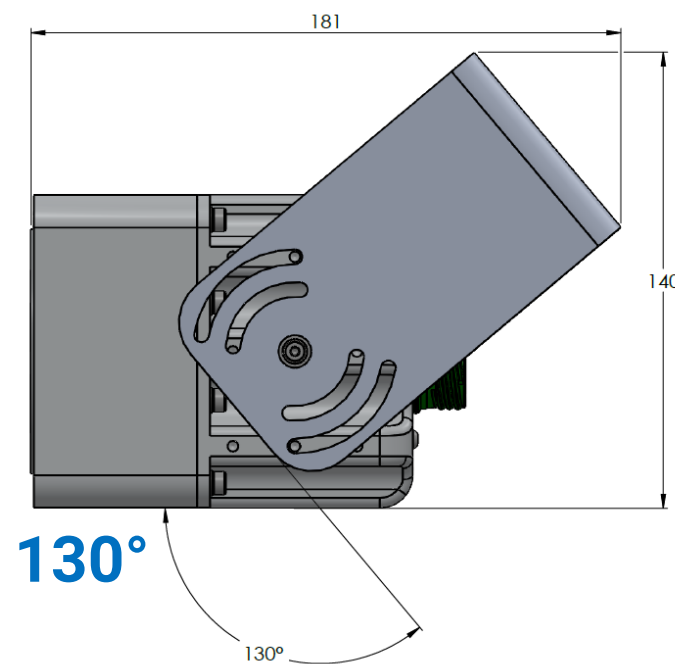
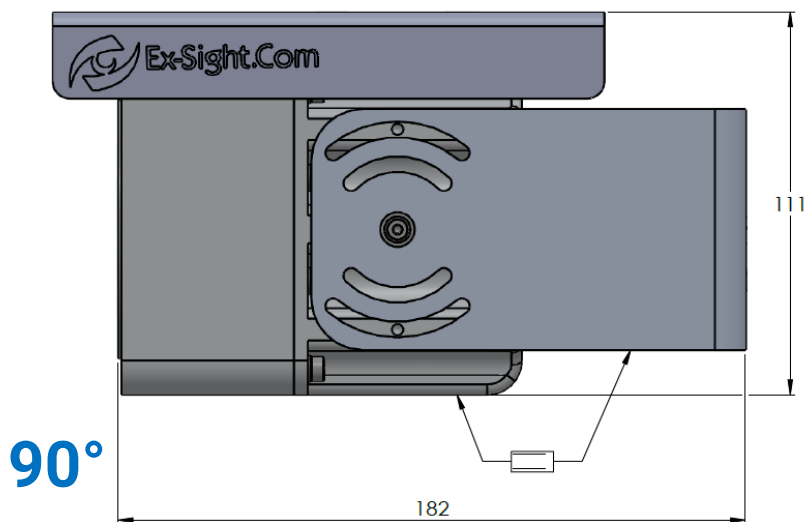
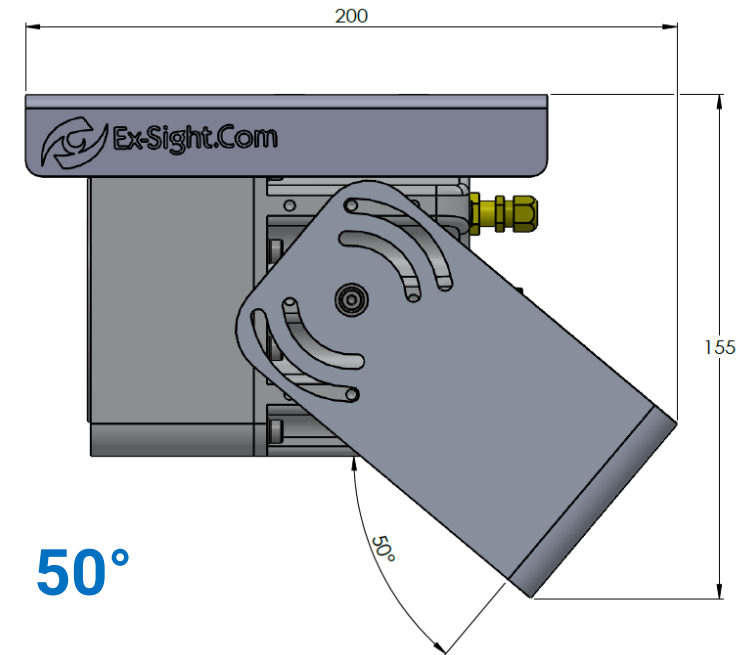
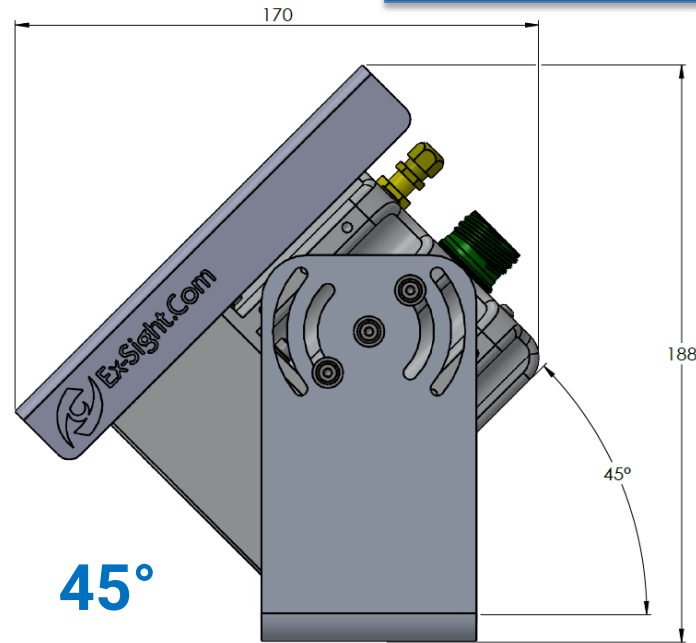
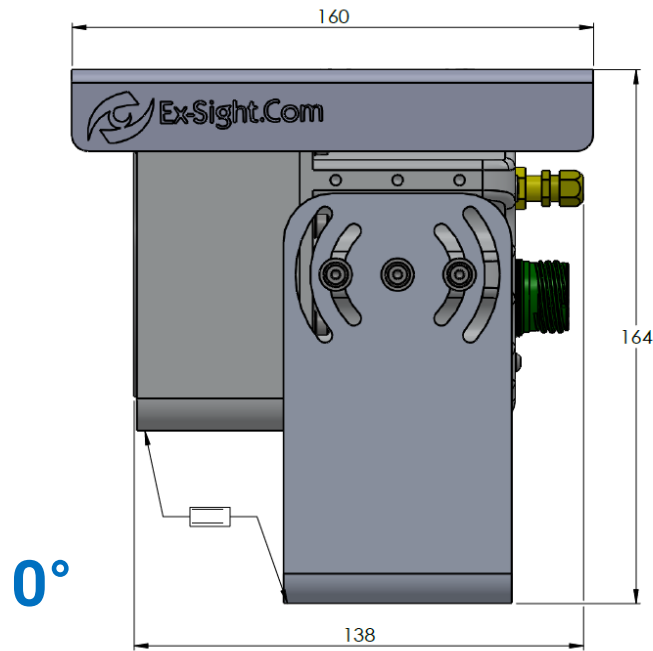


INSTALLATION

POSSIBLE INSTALLATION ANGLES



FUSION-F-BRKT-01



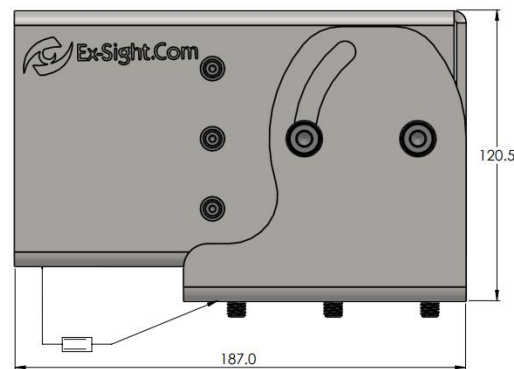
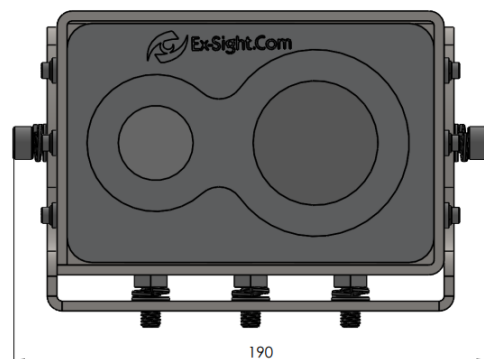
INSTALLATION



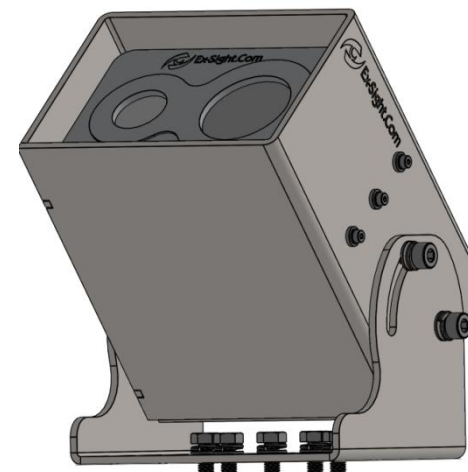
FUSION-F-BRKT-02

INSTALLATION ANGLES LIMITATIONS

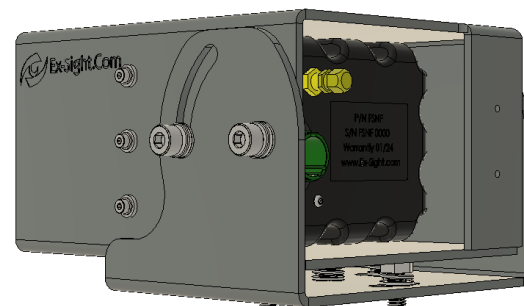
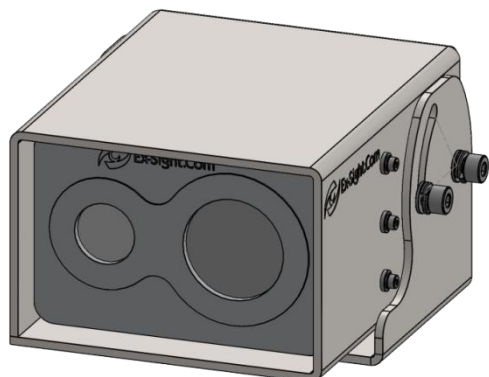
0°



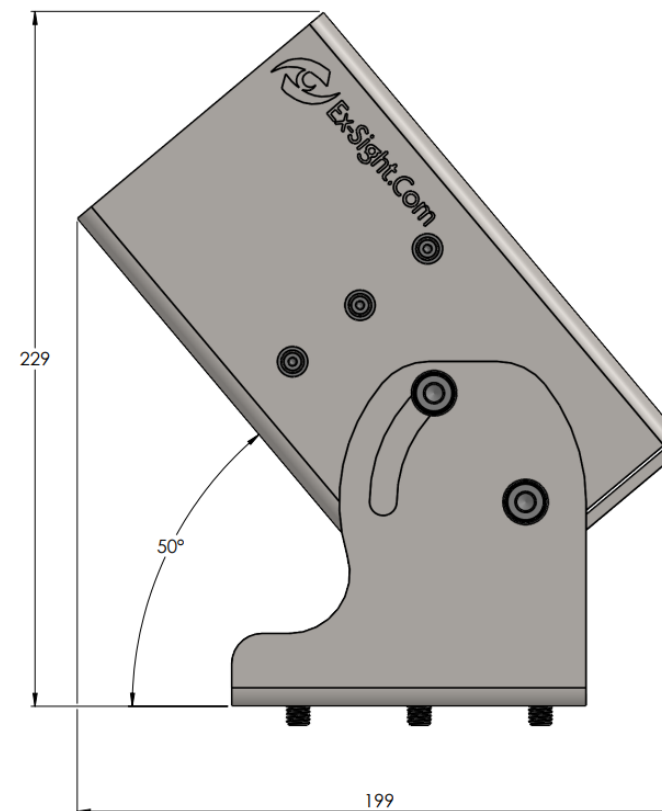
50°



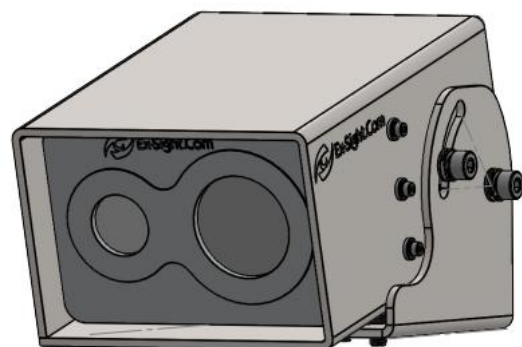
0°



50°



-15°



-15°

