奥比中光
ORBBEC

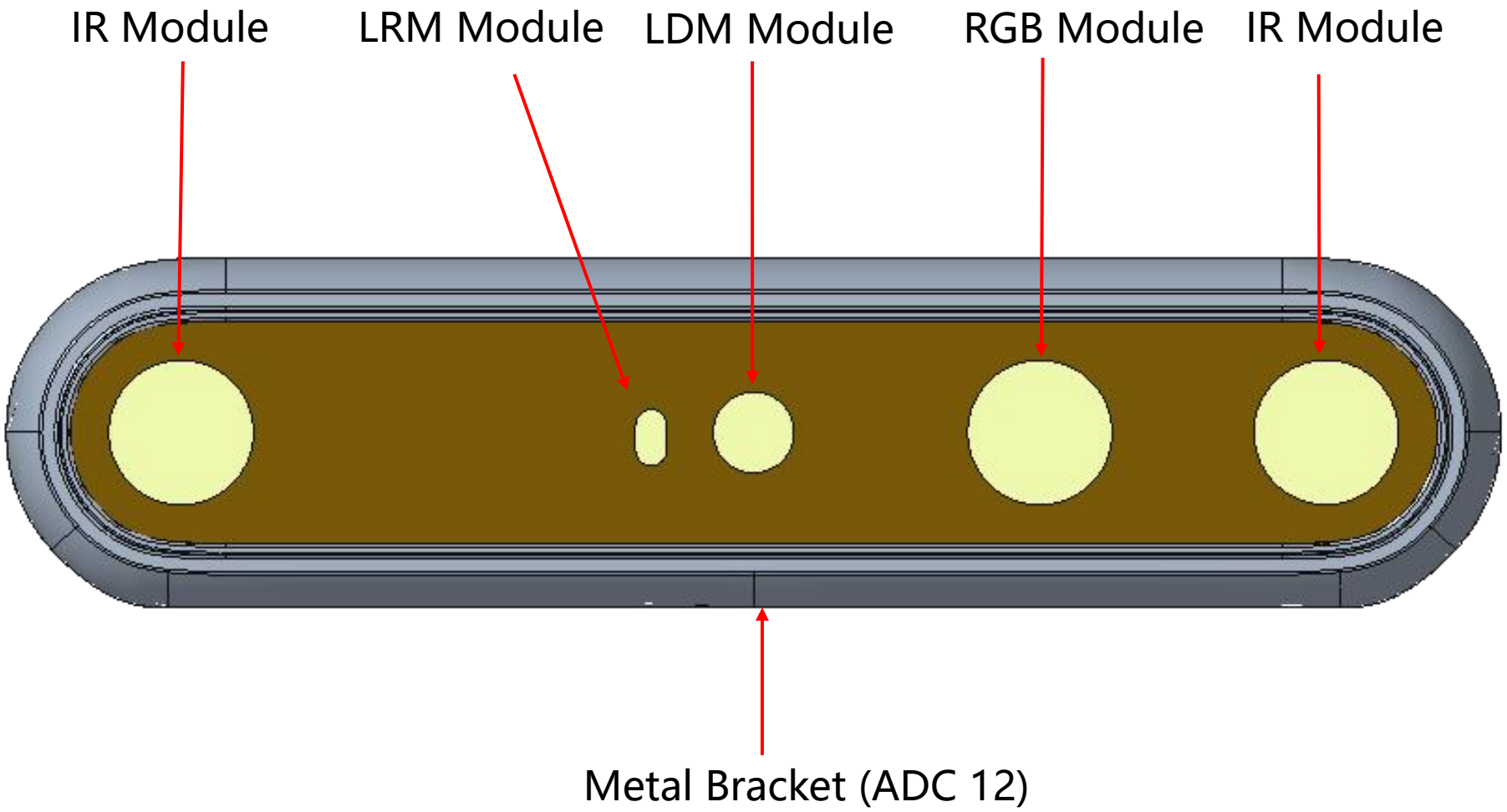
Gemini 335Le

ME Design Guideline

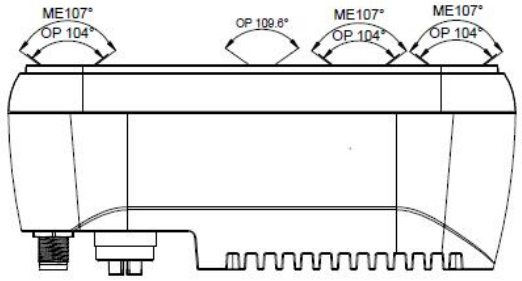
V1.2
Orbbec ME Team
2026-04-19

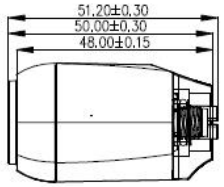
让 所 有 终 端 都 能 看 懂 世 界

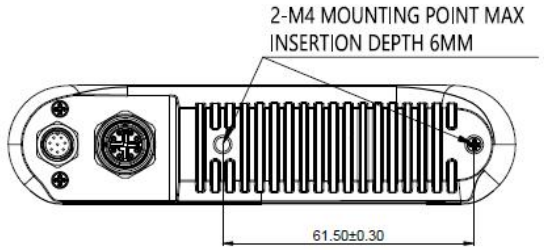
Key Modules

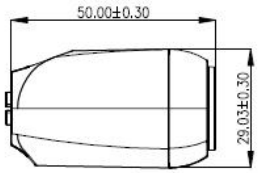

IR Module
LRM Module
LDM Module
RGB Module
IR Module
Metal Bracket (ADC 12)

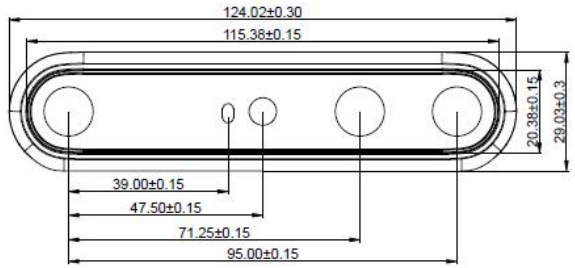
02 Dimension

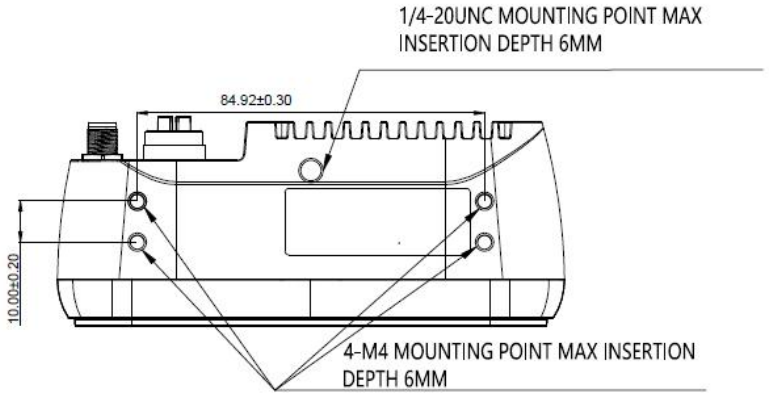






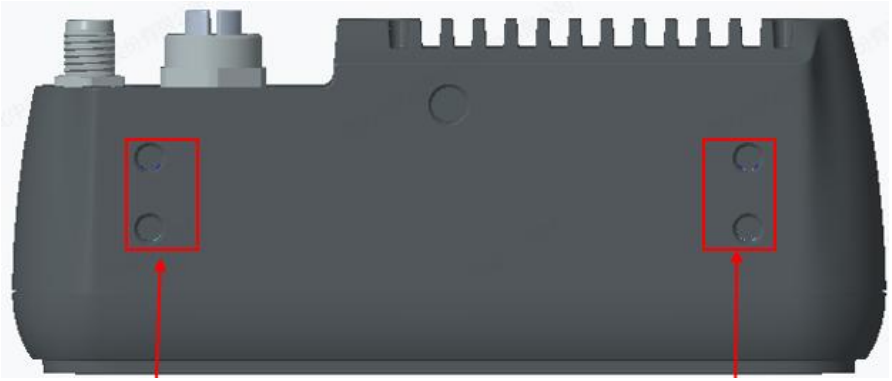






03 Installation

Installation Option A:



Fixed with 4 M4 holes on the side (hole depth 6 mm)

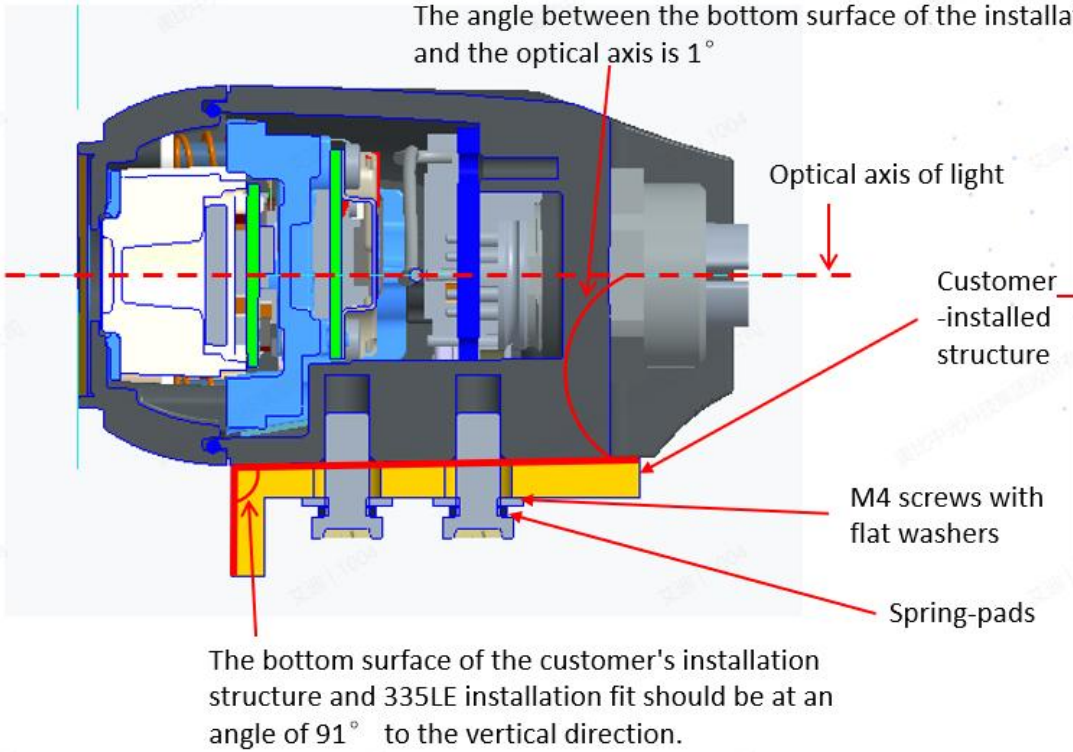
Installation Option B:

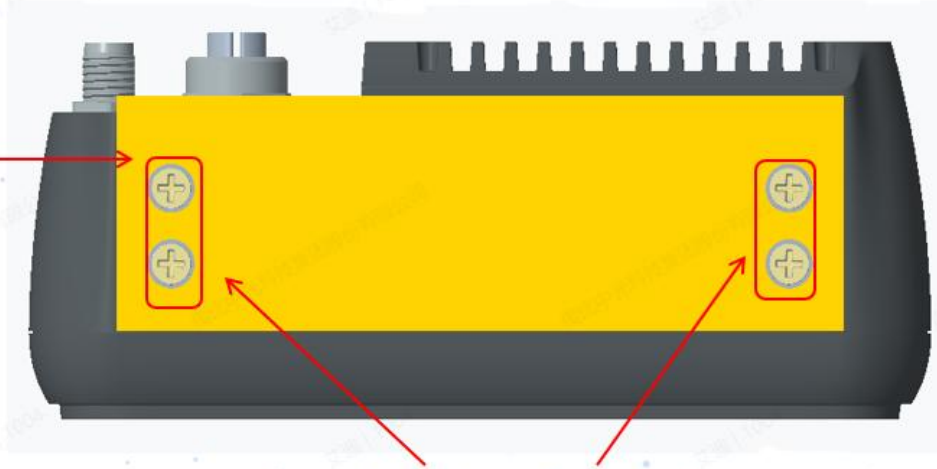
Fix the RGBD Module using two M4 thread holes on the rear side (Hole depth 6mm)

03 Installation

3.3 Precautions for taking installation option A:

Fix the RGBD Module using the shape or edges of the metal housing:





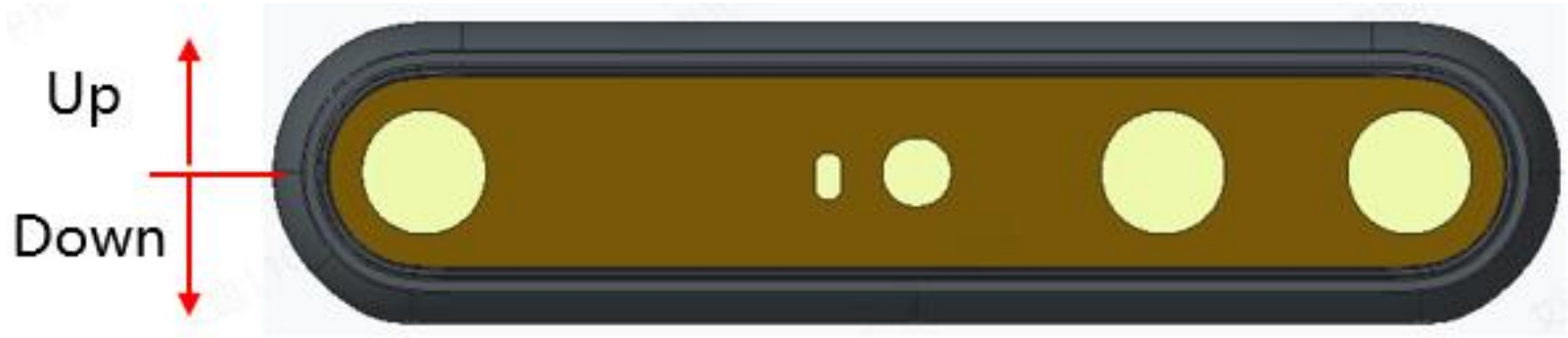
The customer installation needs to use the bottom four screw holes to lock the four screws to achieve the locking effect.

⚠

Note: The four screws for installation and locking are M4 screws, which need to be equipped with springs and spacers to prevent loosening.

03 Installation

3.4 Illustration for Module installation



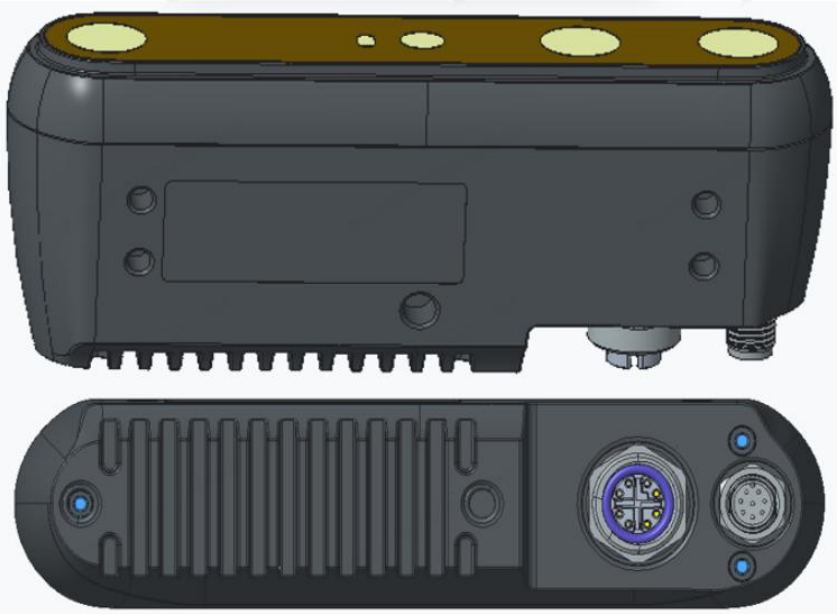
3.5 NOTES:

a.The module needs to be grounded using the side M4 hole;

b. After the module is assembled to the whole machine, the FOV viewing Angle cannot be blocked;

04 Cooling

4.1Active Cooling

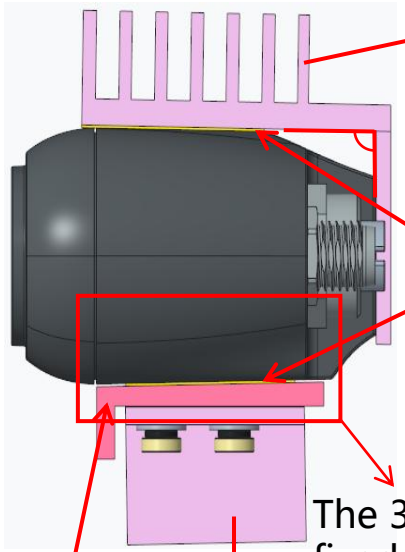


Heat dissipation：It is recommended to use a fan for active cooling.
OperatingTemperature Ranges：
a. LDM ＜ 70℃
b. IR ＜ 68℃
c. RGB ＜68℃
d. Key Chips of PCBA＜70℃

04 Cooling

4.2 Passive Cooling Reference

When you select
Installation Option A:



Thermal conductive medium

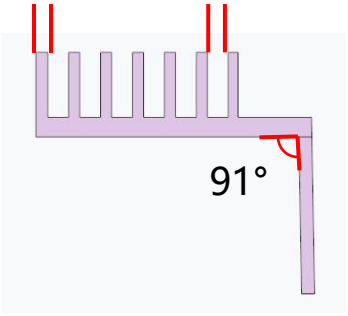
The 335Le and heatsink are fixed to the customer's enclosure together.

Customer's housing

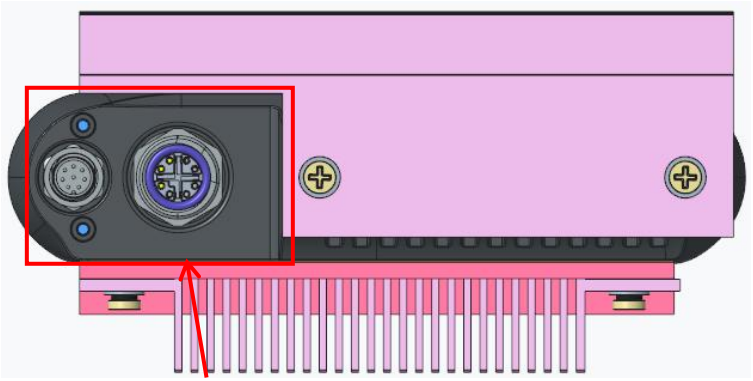
Bottom heatsink

Heatsink size1.5mm

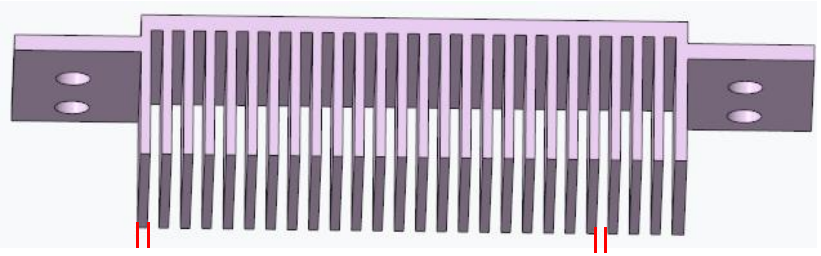
Heatsink spacing3.2mm



The effective heat dissipation area of the top heat sink should reach 2200mm².



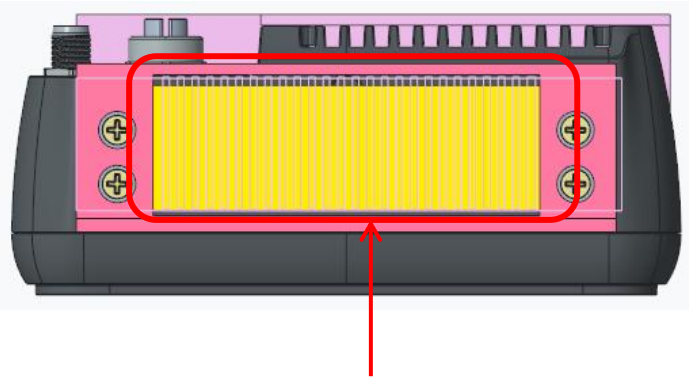
Be careful to avoid wiring positions.
The top heatsink is screwed to the 335Le back.



Heatsink size1.2mm

Heatsink spacing1.5mm

The effective heat dissipation area of the heat sink at the bottom is 1700mm².

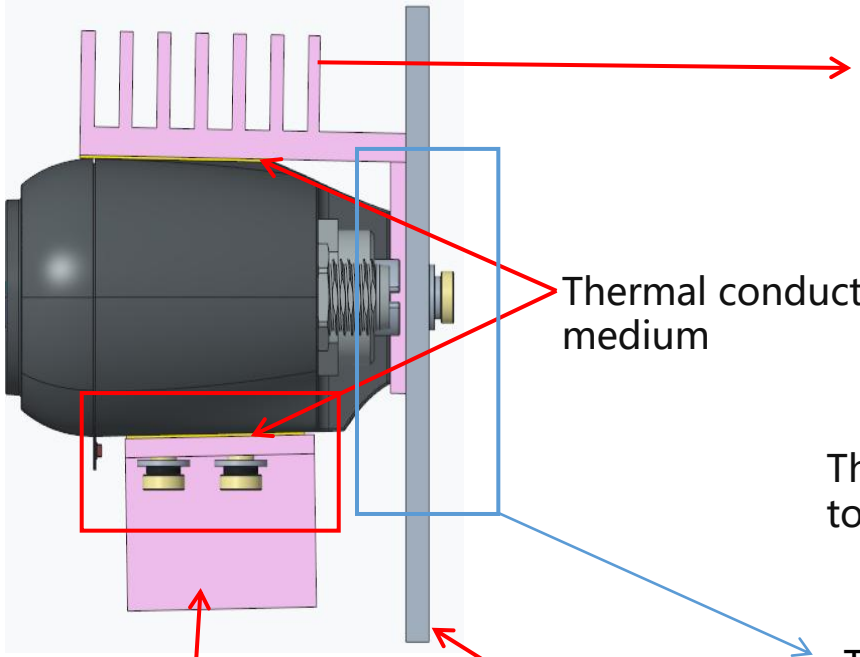


The customer's housing should be careful to avoid the fin position.

04 Cooling

4.2 Passive Cooling Reference

When you select
Installation Option B:



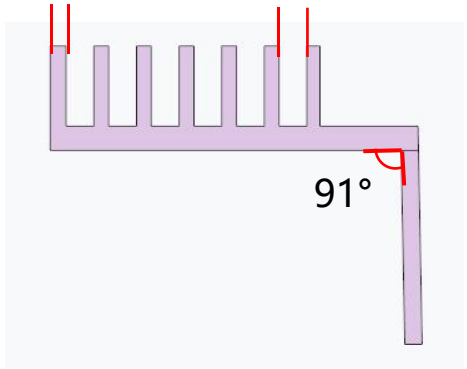
Thermal conductive medium

Customer's housing

The heatsink on the bottom is fixed directly to the side 4 screw holes of the 335Le.

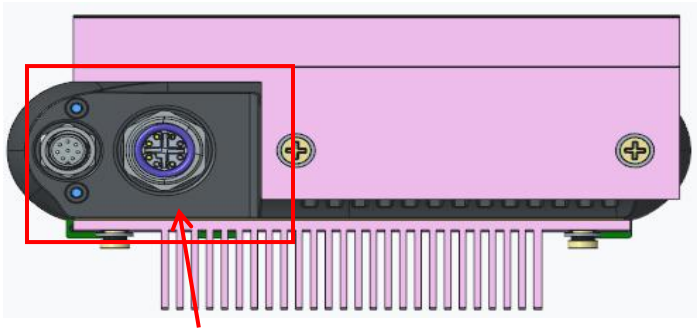
Heatsink size1.5mm

Heatsink spacing3.2mm



The effective heat dissipation area of the top heat sink should reach 2200mm².

The top heatsink and 335Le are attached to the customer-mounted enclosure by screws together.



Be careful to avoid wiring positions.
The top heatsink is screwed to the 335Le back.

Heatsink size1.2mm

Heatsink spacing1.5mm

The effective heat dissipation area of the heat sink at the bottom is 1700mm².

04 Cooling

4.2 Passive Cooling Reference

Precautions for heat dissipation of heat sinks：

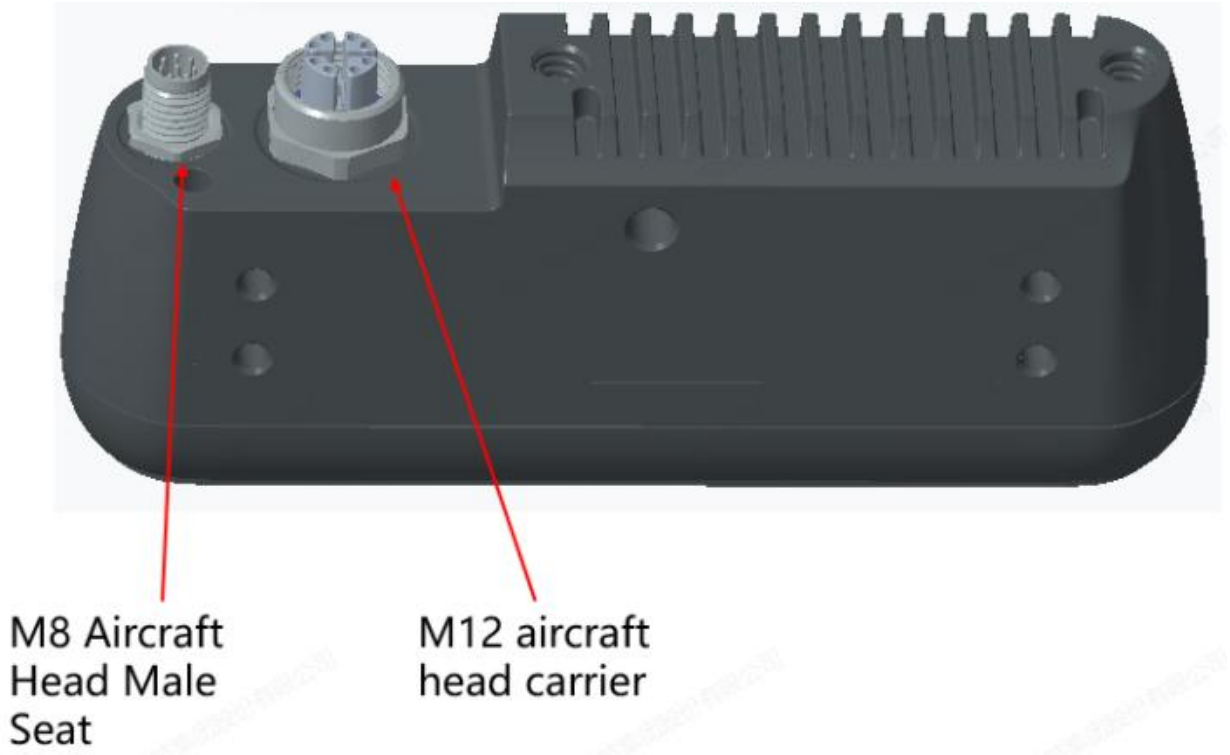
1.It is recommended to use a material with a thermal conductivity of 155-170 W/ (m·K) for heat dissipation fins.

2.The recommended thermal conductivity of the heat transfer medium is 5W/ (m·K).

3.The above design is for reference only, subject to the customer's installation environment, the reference design has been physically verified to reduce LDM by 3°C in the working environment of 50°C.

05 Others

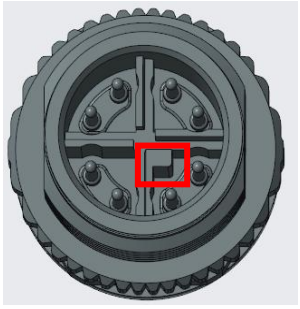
5.1 Connector



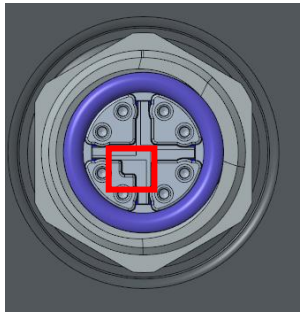
The recommended locking torque value for the wiring of the M8 aircraft head male seat: 4kgf*cm
The recommended locking torque value for the wiring of the M12 aircraft head female seat: 6kgf*cm

05 Others

- **M12 X-coded Ethernet cable Mounting Instructions**

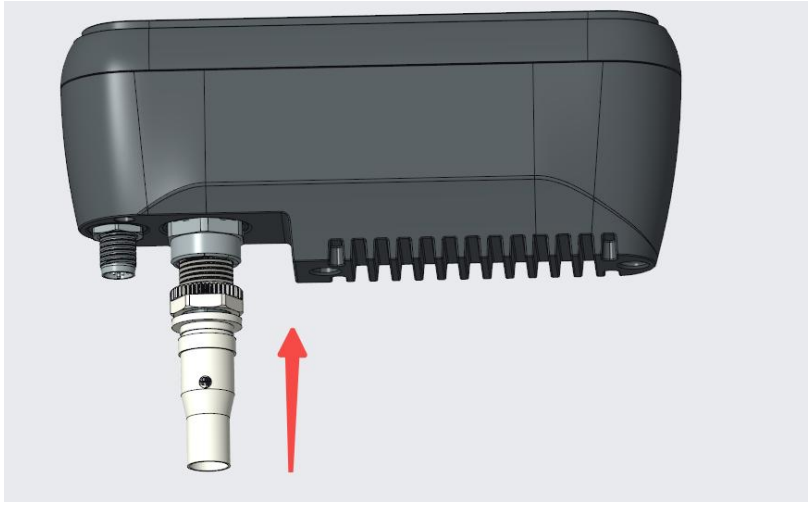


M12 X-coded Ethernet Cable

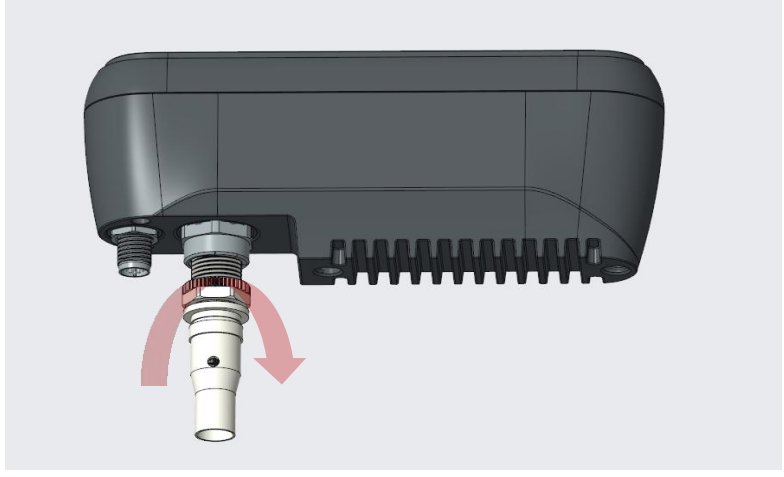


M12 X-coded Receptacle

Align the positioning key of the M12 male connector (cable side) with the keyway of the M12 female receptacle (camera side), then insert it to ensure preliminary fixation.



Insert the Ethernet cable in the direction indicated by the arrow. Then tighten the connector clockwise, as indicated, applying a torque of 0.6 Nm.



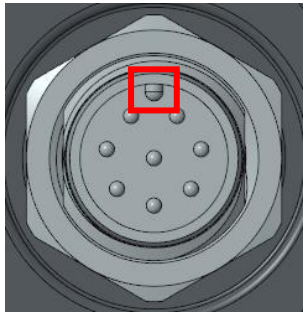
The connector is properly tightened when only two threads remain visible on the cable side.

Mounting Tool
M12 torque wrench：
https://us.rs-online.com/catalogsearch/result/?q=M12+torque+wrench+set+AF+13

05 Others

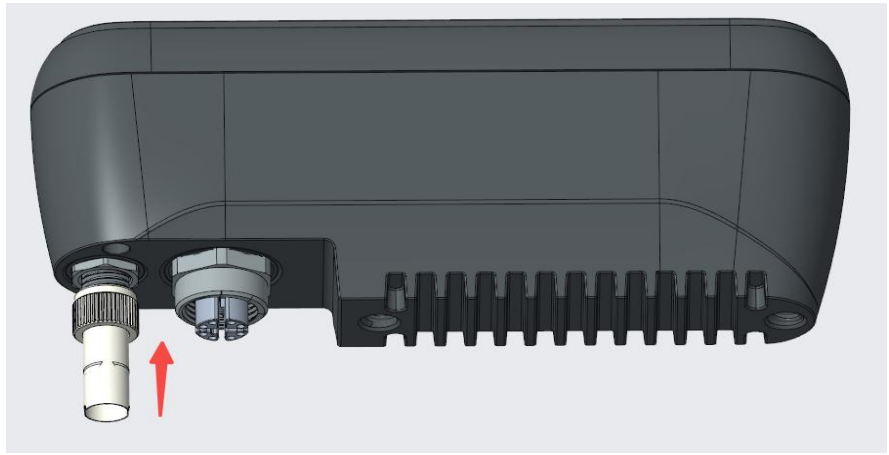
- **M8 A-coded Power cable Mounting Instructions**

M8 A-coded Power Cable

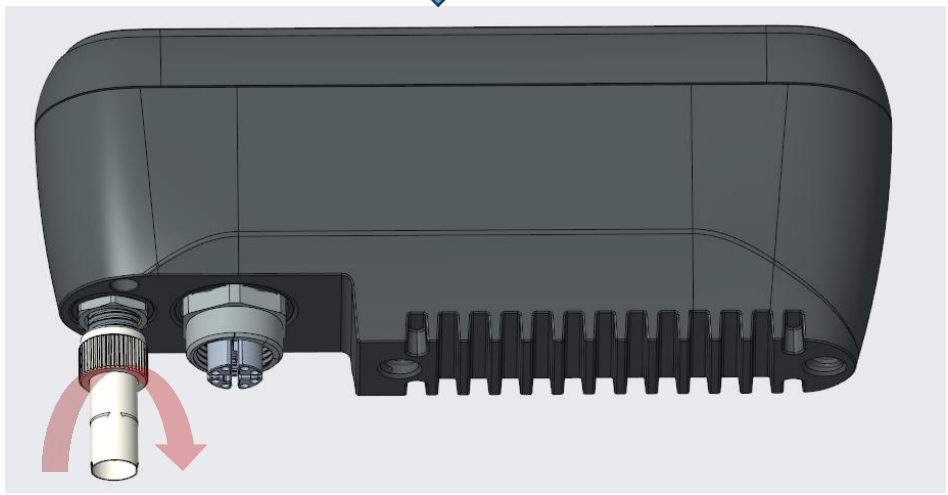


Camera-side M8 A-coded Connector

Align the positioning key of the M8 female connector on the power cable with the keyway of the M8 male connector on the camera, then insert it to achieve initial fastening.



Insert the power cable in the direction indicated by the arrow. Then tighten the connector clockwise, as shown, applying a torque of 0.4 Nm.



The connector is properly tightened when only two threads remain visible.

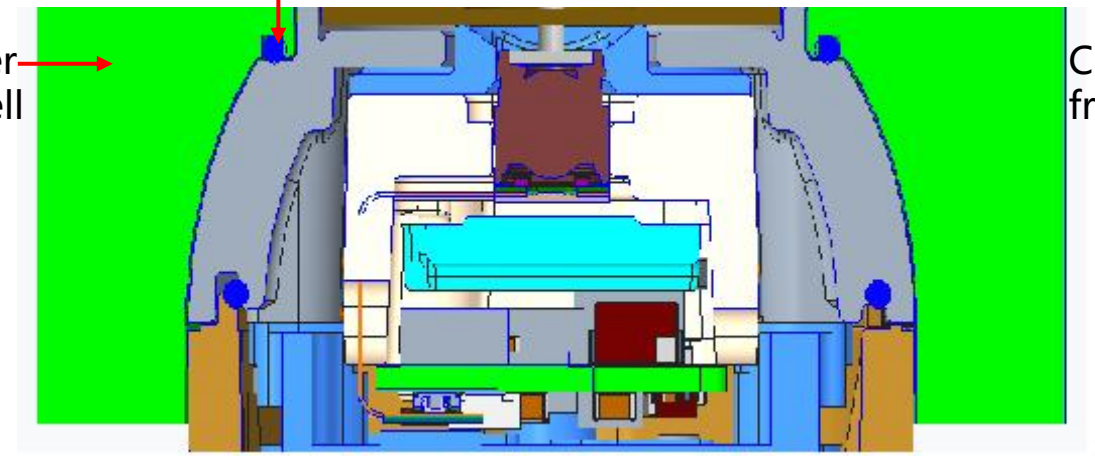
Mounting Tool
M8 torque wrench：
https://us.rs-online.com/catalogsearch/result/?q=M8+torque+wrench

05 Others

5.2 Method Of Sealing

Waterproof silicone ring

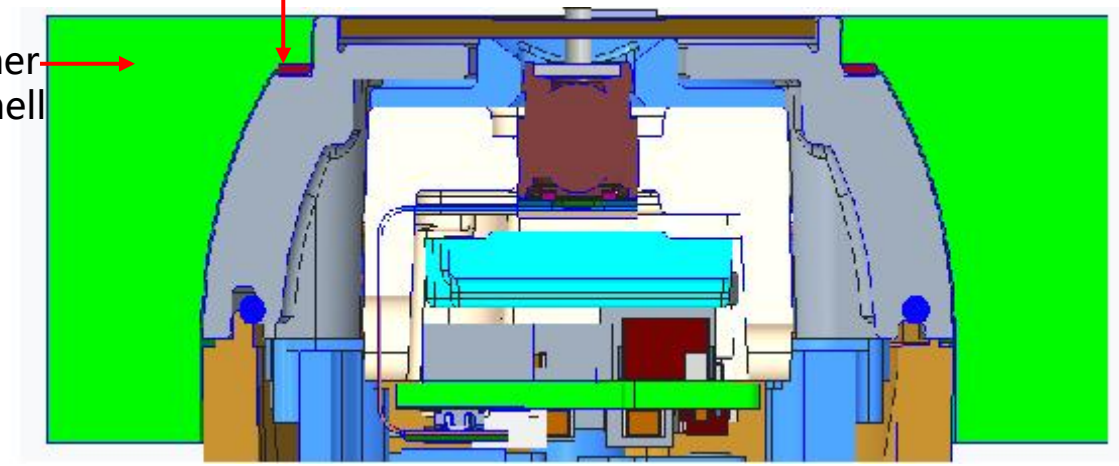
Customer front shell



Sealing scheme A: waterproof silicone ring is used to seal the module plane for dust and waterproof.

Water foam with collodion

Customer front shell



SealingSolution B: Use hydrofoam foam (recommended model 5230 PSB or 5230JSB) to seal the module plane.

05 Others

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5.3 Overall Design Guildeline

1.Sealing Requirements

a.Between the camera module and the customer's machine, water foam sealant or sealed silicone sleeve is used to prevent dust and water.

2. Cover Lens Requirements

No additional lenses or covers should be attached to the front of the RGBD camera, as they may obstruct the field of view (FOV) or degrade the optical performance.

3. Thermal Dissipation Requirements

a.RGBD Module shall be thermally connected to external metal components through heat-conductive materials to expand the heat dissipation area. Active cooling with fans is advised. please refer page 05 & 06 for details

b.Modules must not be heated by other heat sources.

4. Design Review.

Before Customer Tooling Please send the 3D(STP)for a mechanical design review before initiating the tooling process.

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THANK YOU !

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