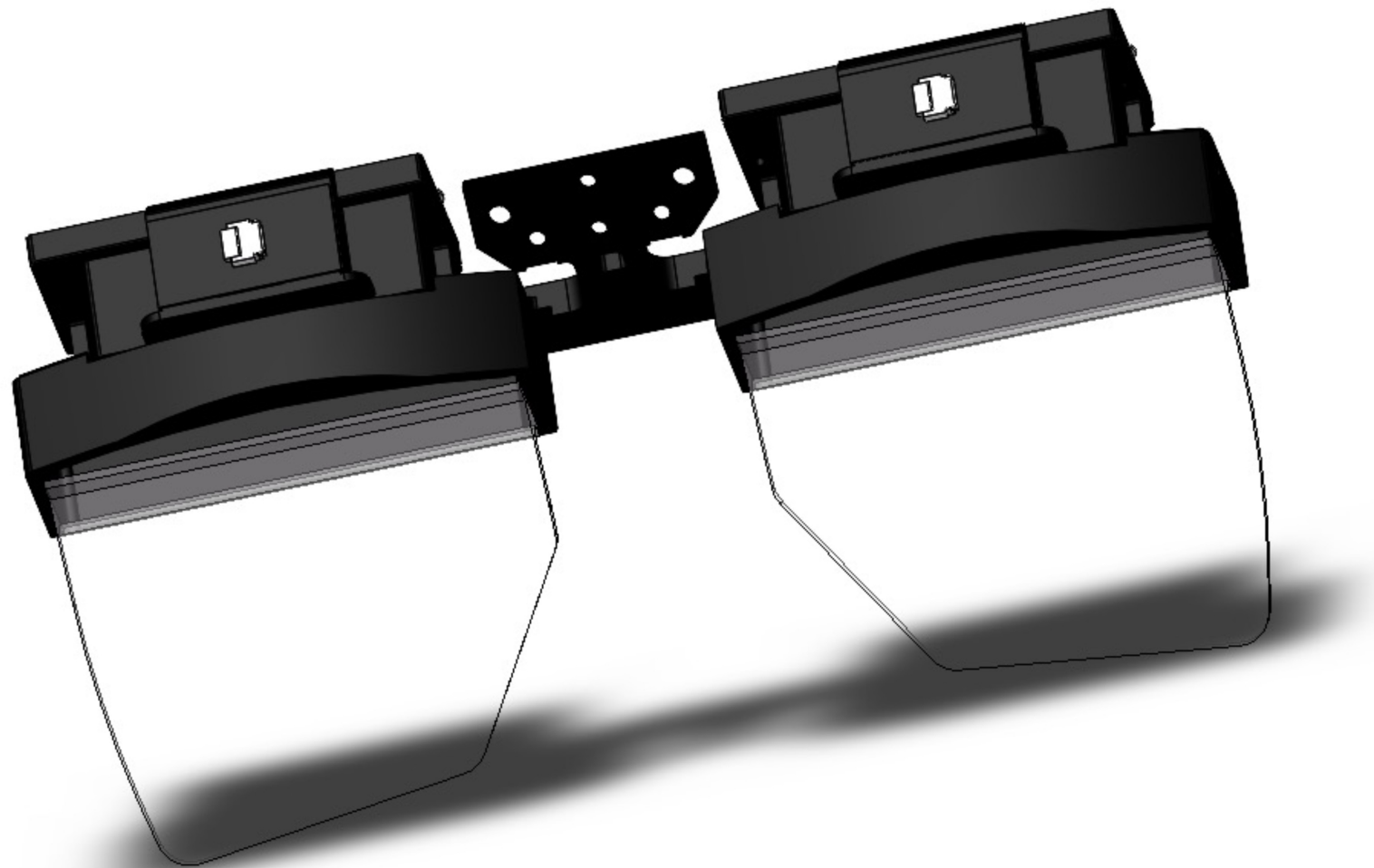


AR Optical Waveguide Module

ARM-103

Product display



ARM-102 Optical Parameters Table

Parameter	Specification
Field of View	60°=50°±1° (monocular diagonal)
Resolution	1920 x 1080
Color	Full-color RGB
Brightness	Peak 300 nits (to be tested)
Grayscale	8-bit
Eye Movement Range	15x10 (mm) @20mm exit pupil distance
Exit Pupil Distance	20mm
MTF (Modulation Transfer Function)	>0.3 (avg) @35lp/mm
TV Distortion	<2%
Transmittance	85%
Refresh	60Hz
Projection Method	Upward and downward projection

Development instructions for optoelectronics

- LCOS model: Tianmu-I-050-B
- Power consumption: Less than 150mW
- 1080p LCOS driver chip: SVC2KAMR4B
- Input: 4-lane MIPI
- Output: RGB
- LCOS display input signal: RGB 24-bit
- LCOS connector model: FH35C-35S-0.3SHW(50) (0.3mm Pitch FPC Connector)
- LED backlight connector model: AYF530435

Reference materials provided by the development kit

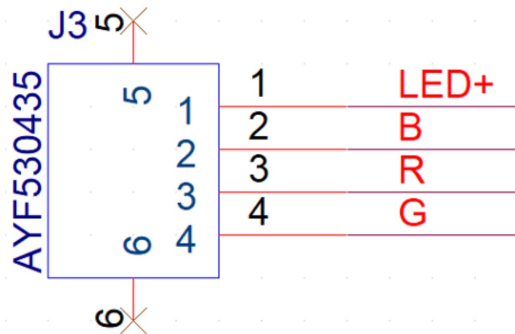
- 1.LCOS: Tianmu-I-050-B Datasheet
- 2.LCOS driver chip: SVC2KAMR4B_V1.0 Datasheet
- 3.LCOS: 2K69_D Edition Three-View & 3D Drawing
- 4.Reference schematic: D02_RGB_69

LED Specifications

Recommended Current

- R:60mA
- G:53mA
- B:45mA

(Adjustable in LED Driver Register according to the needed Brightness)



LED backlight connector schematic

Parameter	Maximum Value	Unit
Power Dissipation	R:560	mW
	G:680	
	B:680	
Pulse Current (1/10 Duty,0.1ms pulse)	R:300	mA
	G:300	
	B:300	
Forward Current	R:150	mA
	G:150	
	B:150	
Reverse Voltage	5	V
Junction Temperature	100°C	
Operating Temperature	-40°C to +85°C	
Storage Temperature	-40°C to +90°C	
Soldering Temperature	255°C for 10 Seconds	
ESD (Classification acc AEC Q101)	ESDHEM	R:2000V
		G:1000V
		B:1000V
	ESD	200V

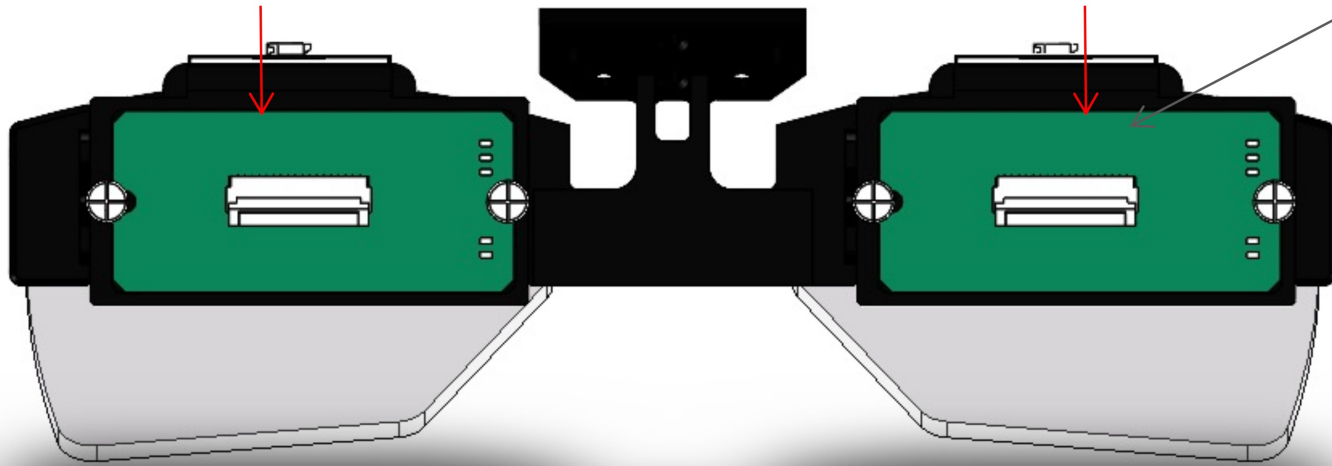
Optical Interface Instructions

LCOS (Liquid Crystal on Silicon) interface definition

LCOS-FPC insertion direction

LCOS-FPC insertion direction

LED wiring sequence

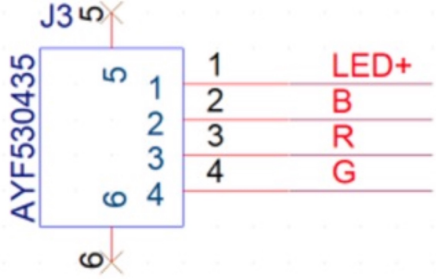


1	GND
2	VDDIO1.8V
3	GND
4	RGB_DE
5	RGB_CLK
6	RGB_B7
7	RGB_B6
8	RGB_B5
9	RGB_B4
10	RGB_B3
11	RGB_B2
12	RGB_B1
13	RGB_B0
14	RGB_G7
15	RGB_G6
16	RGB_G5
17	RGB_G4
18	RGB_G3
19	RGB_G2
20	RGB_G1
21	RGB_G0
22	RGB_R7
23	RGB_R6
24	RGB_R5
25	RGB_R4
26	RGB_R3
27	RGB_R2
28	RGB_R1
29	RGB_R0
30	RGB_HS
31	I2C_SCL
32	I2C_SDA
33	RGB_VS
34	GND
35	VDD_4.5V

Optical Interface Instructions

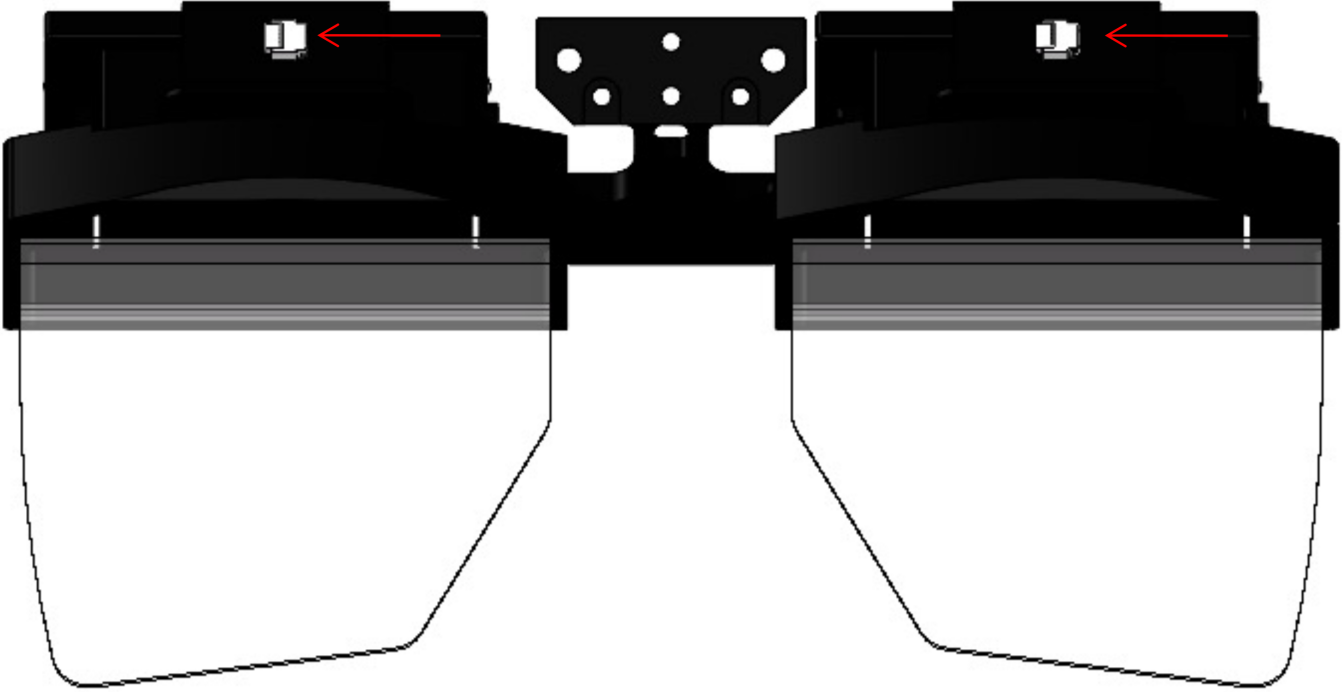
LED backlight interface definition

LED wiring sequence

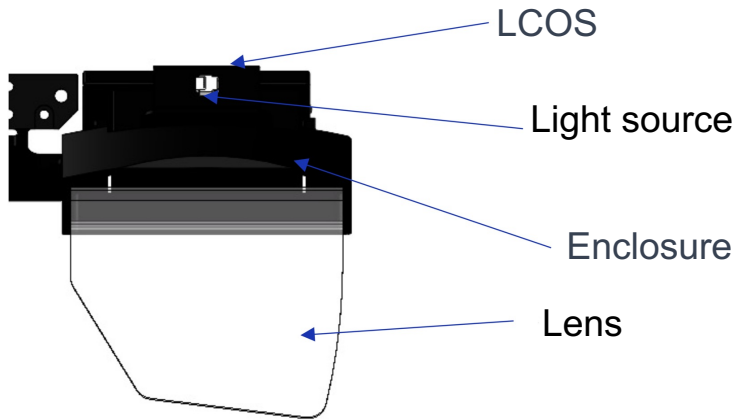


LCOS-FPC insertion direction

LCOS-FPC insertion direction

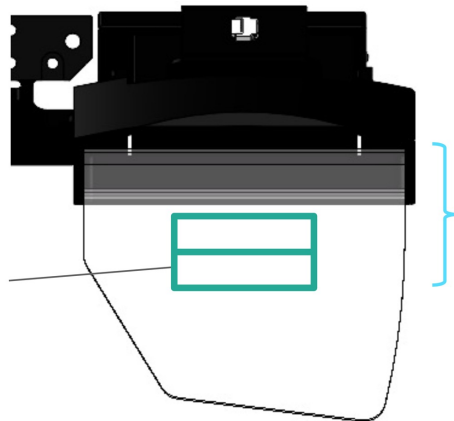


Optical Mechanism/Components



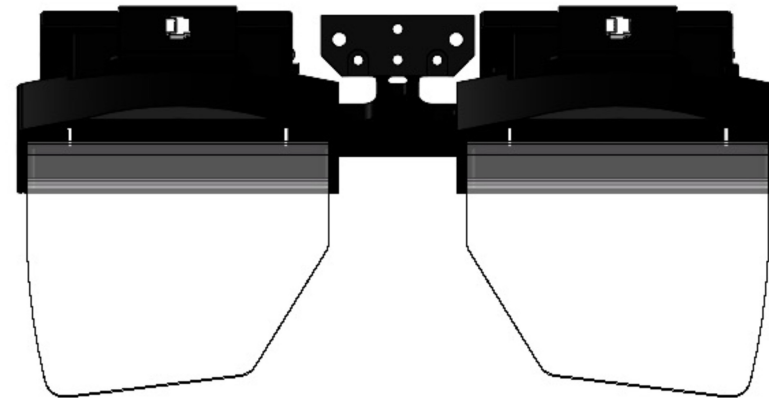
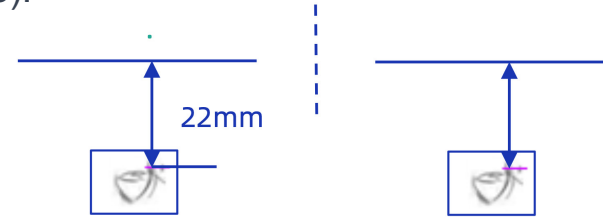
Optical Display Area

(Display center, designed to be directly aligned with the human eye (refer to the diagram for details))

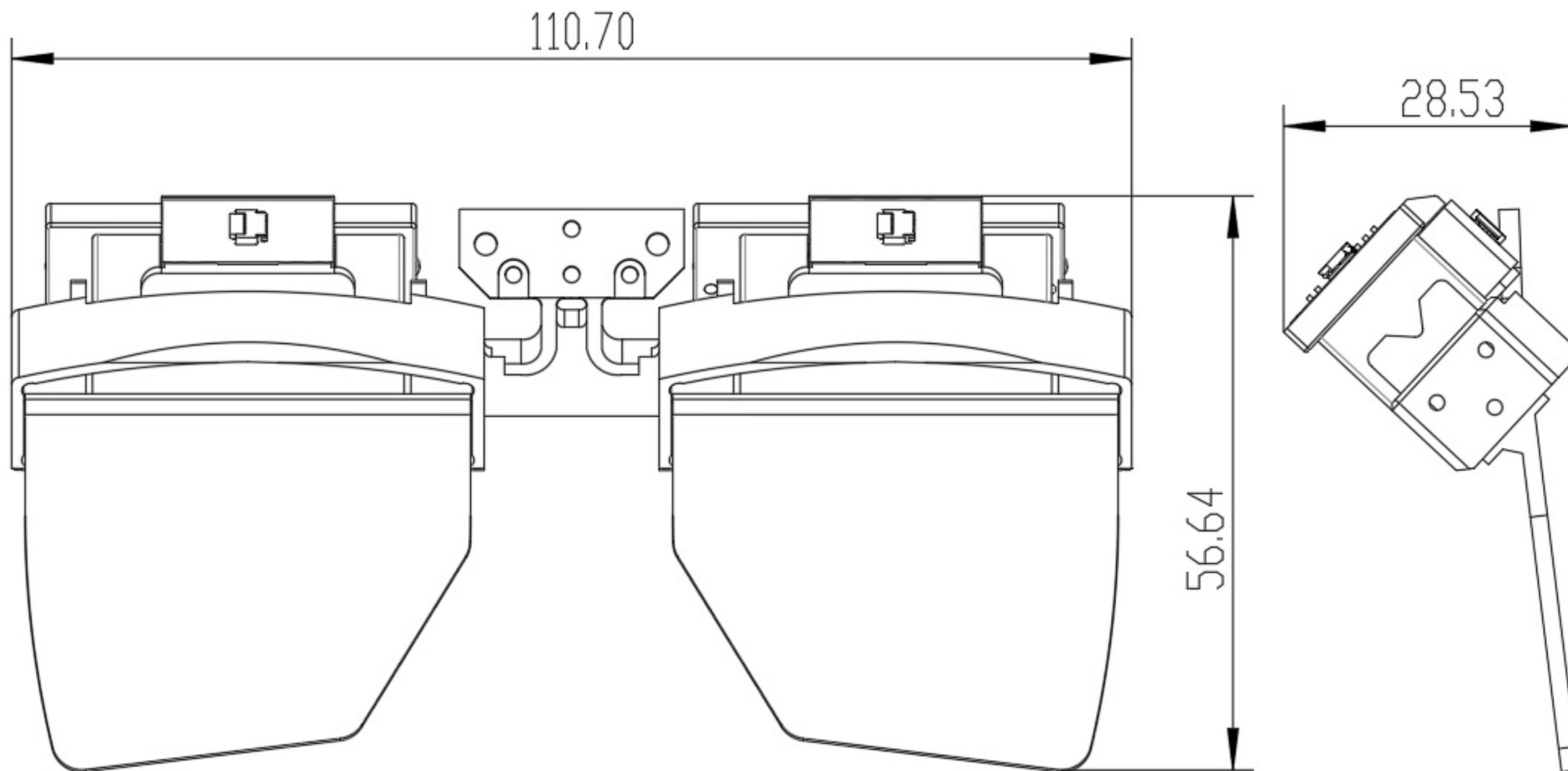


MIPI Video Timing Table

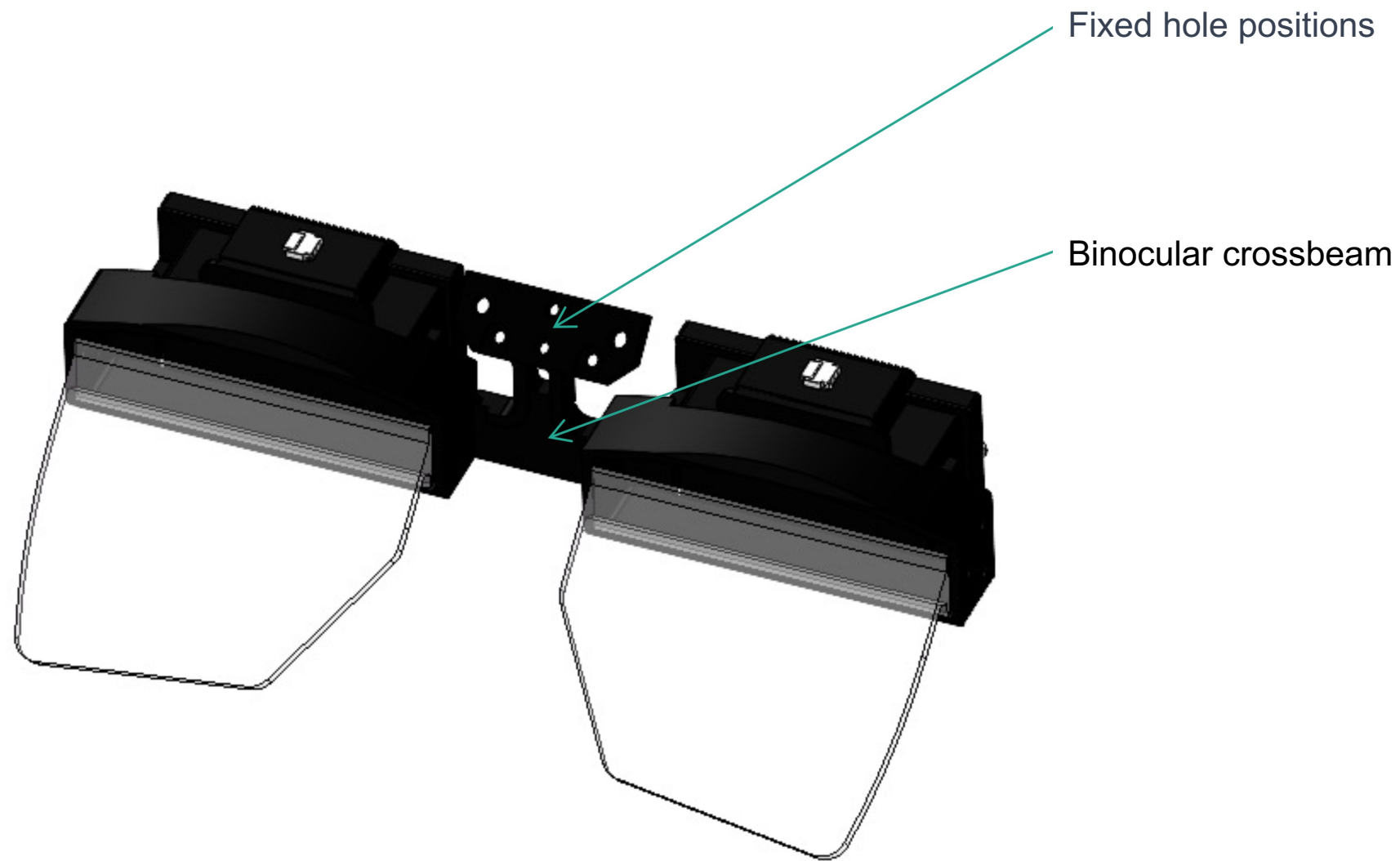
- 1.The light guide LOE (Light Outcoupling Efficiency) structure of the left and right optical modules is symmetrically designed.
- 2.The recommended distance between the eyeball and LOE is not greater than 22mm.
- 3.The recommended design value for the distance between the display centers of the left and right eyes is 64mm (corresponding to the interpupillary distance of the human eye).



Structural Reference



Hole Position Description



Operating Temperature/Humidity of The Optical Module

It is recommended to use the optical module under the conditions of -10°C to 70°C / 45% to 70% relative humidity (RH).