DEPTRUM
光鉴科技

Deptrum® Libra 3000

Product Specification

V0.3 - 2026/11/25

1 Revision History

Version	Description	Date	Author
V0.2	Initial official release	2026/09/30	Hu Tao
V0.3	Updated latency and power consumption notes	2026/11/25	Hu Tao



Figure: Product render (front view)

2 Product Overview

Product Introduction

The Deptrum® Libra 3000 series depth cameras capture the 3D structure of objects and spaces using stereo 3D imaging. With an integrated high-performance ISP and depth computing engine, they deliver highly accurate dense stereo depth reconstruction and output high-frame-rate RGB-D images.

System Requirements

Depth computation is self-contained on the module and requires no host compute resources. Two output interfaces are supported: GMSL2 / FAKRA and USB Type-C 2.0.

Key Features

- High-performance dense stereo depth reconstruction from 10 cm to 5 m
- 65 mm baseline
- 0 – 100,000 lux operating illuminance range
- Low-light illuminator support
- GMSL 2.0 and USB 2.0 output support

Use Cases

- Head-mounted camera for embodied AI
- General-purpose stereo camera

3 Core Specifications

Libra 3000 Product Specifications		
Module Parameters	Module Dimensions	90 × 25 × 32.99 mm
	Baseline	65 mm
	Interface	GMSL2 / FAKRA; USB Type-C 2.0
	Operating Temperature	-10℃ ~ +55℃
	Operating Humidity	0% – 95% RH, non-condensing

	Operating Illuminance	500 – 100,000 lux (minimum effective illuminance for 3D reconstruction with the illuminator off)
	Power Supply Requirement	> 1.5 A @ 5 V DC (power delivery via GMSL or USB port supported)
	Power Consumption	Average module power consumption < 3.2 W[1]
	IMU	Integrated high-performance IMU, > 200 Hz, hardware-synchronized with the cameras
Image Performance	Depth Data Format	Raw 16-bit
	Depth Range	10 cm – 5 m
	Depth Accuracy	< 1% @ [10 cm – 1 m]; < 2% @ (1 m – 2 m]; < 3% @ (2 m – 5 m];
	Depth Resolution / Frame Rate / FOV	640 × 512 @ 30 fps / H115° × V95° (±3°)
	Stereo RGB Resolution / Frame Rate / FOV	1,280 × 1,024 / 30 fps / H115° × V95° (±3°)
Firmware Features	Typical RGB/Depth Latency[2]	70ms/120ms
	Firmware Update	OTA via USB supported
	Communication Interface	Switchable between GMSL and USB[3]
Platform Compatibility	Platform Compatibility	x86, Armv8

[1] Typical average power consumption at 640 × 512, 30 fps RGB-D output

[2] Time from camera exposure to data available on the host; at VGA resolution, RGB is approximately 70 ms and Depth is within 120 ms

[3] USB and GMSL can be connected to the camera simultaneously, but only one interface can stream at a time. OTA updates are supported over USB only

4 Module Dimensions & Structure

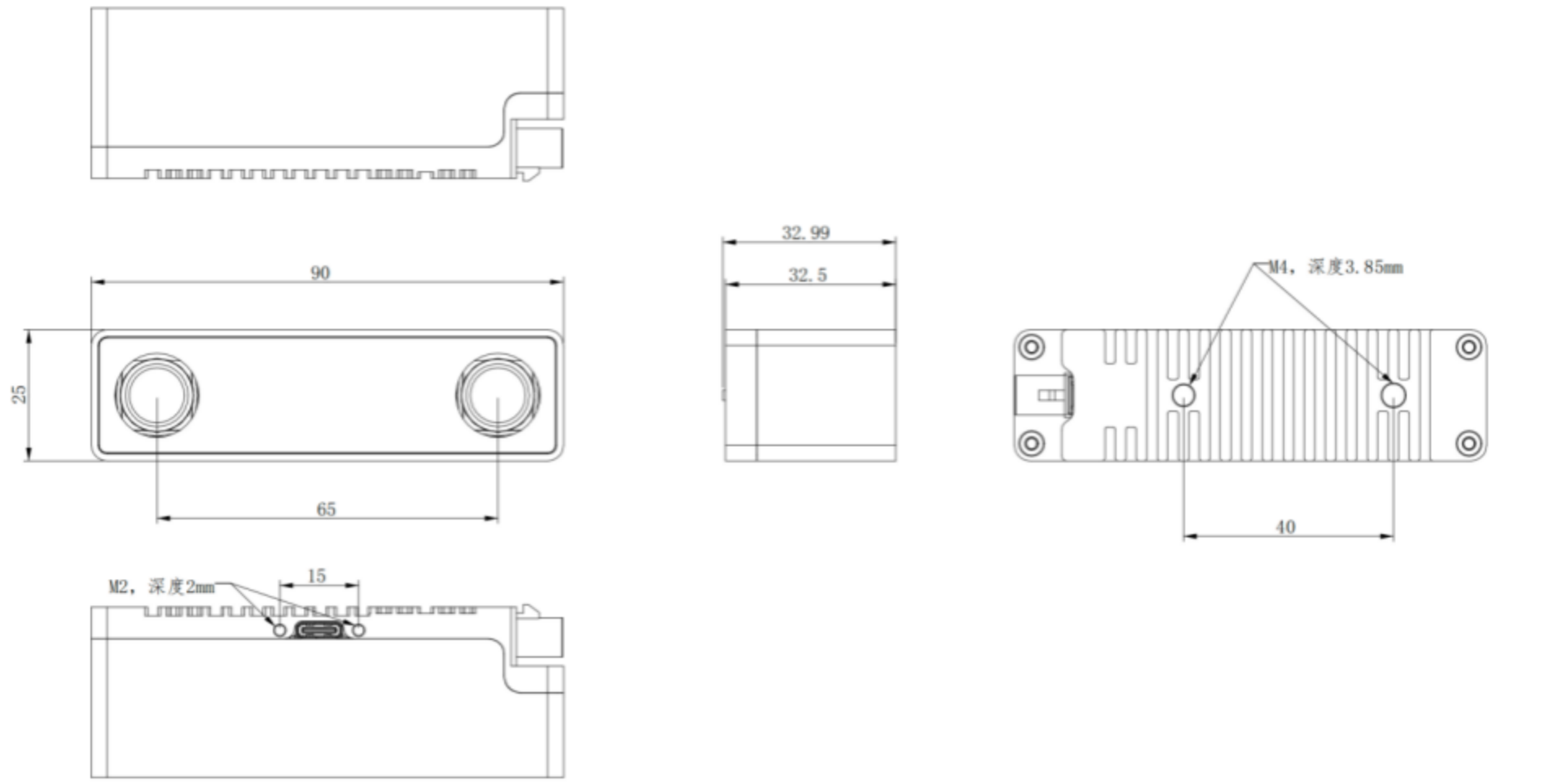


Figure: Module dimensions (90 × 25 × 32.99 mm)

4.1 Module Description

The Libra 3000 module consists of an enclosure, right RGB camera, cover glass, left RGB camera, GMSL connector, rear cover, and Type-C connector. It supports dual output over GMSL2 and USB 2.0 and is designed for head-mounted cameras in embodied AI systems and general-purpose stereo camera applications.



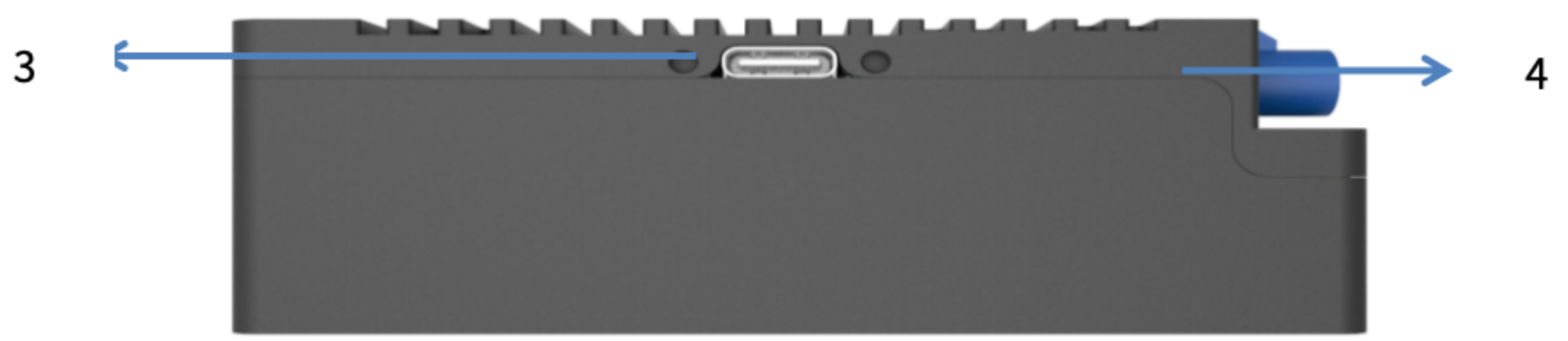


Figure: Module components (numbers correspond to the system component table)

System Component	No.
Right RGB Camera	1
Left RGB Camera	2
Type-C Connector	3
GMSL Connector	4

5 Environment & Reliability

Item	Parameter	Specification
Operating Environment	Temperature	-10°C ~ +55°C
	Humidity	0% – 95% RH, non-condensing
	Illuminance	500 – 100,000 lux
Storage Environment	Temperature	-40°C ~ +65°C
	Humidity	10% – 90% RH, non-condensing

6 Software Development

Customers can develop applications with the Deptrum Stream SDK, which supports Windows, Linux, and Android on x86_64, ARMv7, and ARMv8 architectures and includes dedicated performance optimizations for embedded platforms. Refer to the documentation supplied with the SDK for detailed usage instructions.

7 Disclaimer

The device application information and other similar content in this publication are provided for your convenience only and may be superseded by updated information. Ensuring that your application complies with technical specifications is your own responsibility. Shenzhen Deptrum Technology Co., Ltd. makes no representation or warranty, express or implied, written or oral, statutory or otherwise, regarding this information, including but not limited to any warranty as to its use, quality, performance, merchantability, or fitness for a particular purpose. Deptrum assumes no liability for consequences arising from this information or its use. Deptrum products may not be used as critical components in life-support systems without the written approval of Shenzhen Deptrum Technology Co., Ltd. No license is granted, implicitly or otherwise, under Deptrum intellectual property rights.

8 Technical Support

Support is available through the following channels:

- Email Support: Send detailed inquiries to support@deptrum.com
- FAE Support: Contact our sales team to arrange FAE support

9 Precautions

- Do not heat this product with any external heat source.
- Do not drop or strike this product; impact may damage internal components and degrade accuracy. Improper handling may damage internal parts.

- Do not attempt to modify or disassemble this device in any way, as this may damage the module and degrade accuracy.
- The module warms up after extended operation; this is normal. Heat dissipation may be applied to the rear of the module.
- Do not store the module in high-temperature or high-humidity environments, as this may degrade accuracy or cause depth reconstruction failure.