DEPTRUM
光鉴科技

Deptrum® Libra 3000

Product Specification

V0.2 - 2026/09/30

1 Revision History

Version	Description	Date	Revised By
V0.2	Initial official release	2026/09/30	Hu Tao



Figure: Product rendering (front view)

2 Product Overview

Product Introduction	Product Features
The Deptrum® Libra 3000 series depth camera uses binocular 3D imaging technology to capture the three-dimensional structure of objects and spaces. With a built-in high-performance ISP and depth computing engine, it achieves ultra-high-precision binocular depth reconstruction and outputs high-frame-rate RGBD images. **System Requirements** Depth computation is fully self-contained within the module, requiring no compute resources from the host PC; two output interfaces are supported: GMSL2 / FAKRA and USB Type-C 2.0.	• High-performance binocular dense depth reconstruction from 10 cm to 5 m • 65 mm baseline • Supports an illuminance range of 0 ~ 100,000 lux • Supports fill-in illumination for low-light conditions • Supports GMSL 2.0 and USB 2.0 output **Applications** • Embodied AI head camera • General-purpose binocular camera

3 Core Specifications

Libra 3000 Specifications		
Module Parameters	Overall 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 without the fill-in illuminator)
	Power Supply Requirements	> 1.5 A @ 5 V DC (power supply via GMSL / USB port supported)
	Power Consumption	Average power consumption Avg < 3.5 W
	IMU	Integrated high-performance IMU, > 200 Hz, hardware-synchronized with the camera
Image Performance	Depth Data Format	Raw 16
	Depth Range	10 cm ~ 5m
	Depth Accuracy	< 1% @ [10 cm~1 m]; < 1.5% @(1 m~2 m]; < 2% @(2 m~5 m];
	Depth Resolution / Frame Rate / FOV	640 × 540 @ 30 fps / H115° × V99° (±3°) @ 50 cm
	Left/Right RGB Resolution / Frame Rate / FOV	1,280 × 1,080 / 30 fps / H115° × V99° (±3°)
Firmware Capabilities	Firmware Upgrade	Remote OTA supported
System Compatibility	System Compatibility	x86, Armv8

4 Module Dimensions & Structure

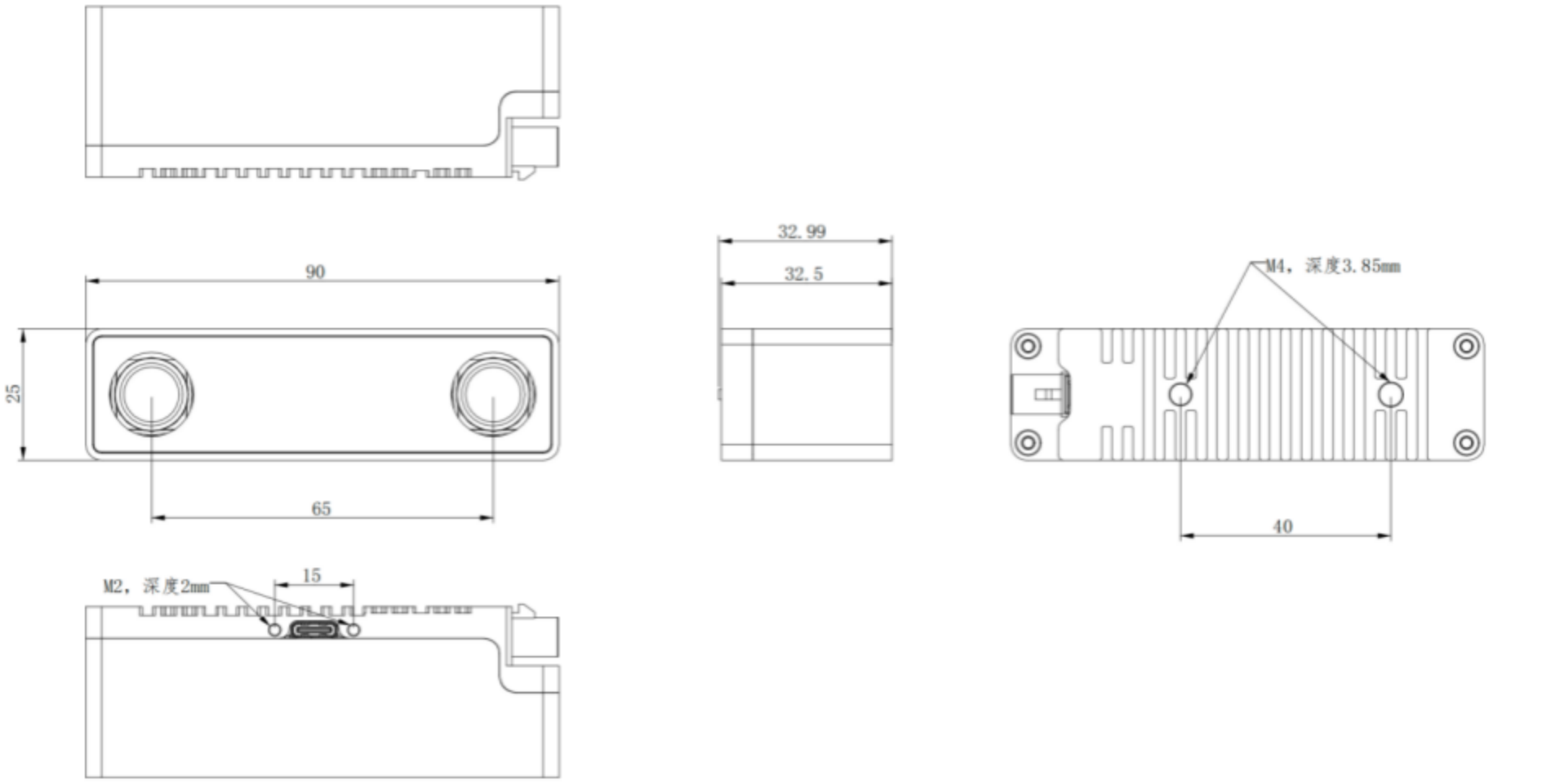


Figure: Module dimension drawing (90 × 25 × 32.99 mm)

4.1 Module Description

The Libra 3000 module consists of a housing, right RGB camera, glass cover, left RGB camera, GMSL interface, rear cover, and Type-C interface. It supports dual-interface output via GMSL2 and USB 2.0, and is suitable for embodied AI head camera and general-purpose binocular camera applications.

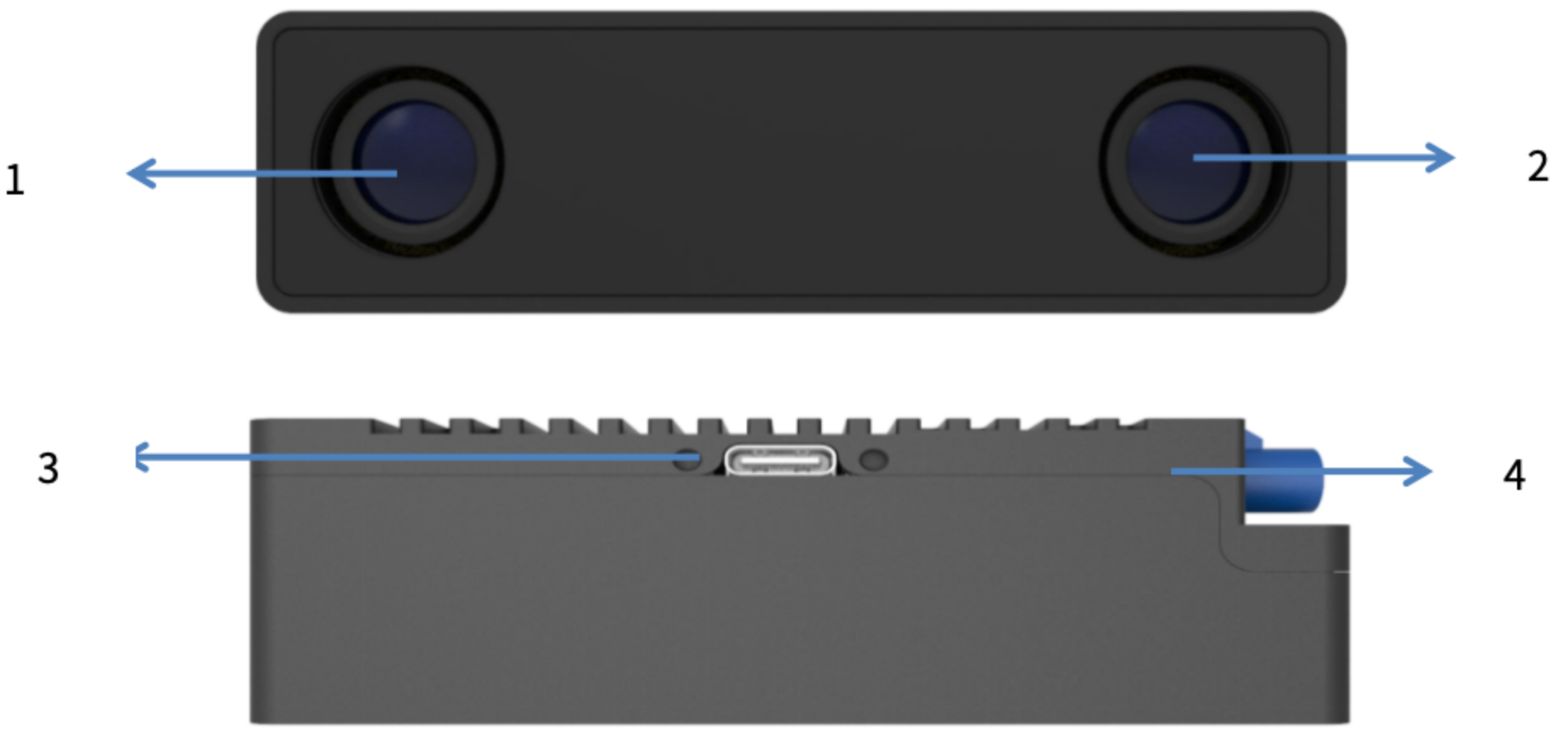


Figure: Module layout diagram (numbers correspond to the System Components table)

System Components	No.
Right RGB Camera	1
Left RGB Camera	2
Type-C Interface	3
GMSL Interface	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 use the Deptrum Stream SDK for secondary development. The SDK supports Windows/Linux/Android platforms and x86_64, ARMv7, and ARMv8 architectures, with performance optimizations specific to embedded architectures. For detailed usage

instructions, refer to the documentation included with the SDK.

7 Disclaimer

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

8 Technical Support

Support is available through the following channels:

- Email support: please send your specific questions to support@deptrum.com
- FAE support: please contact our sales team for FAE support arrangements

9 Precautions

- Do not heat this product with any other heat source.
- Do not drop or subject this product to impact, as this may damage internal components and degrade accuracy; improper handling may cause damage to internal elements.
- Do not attempt to modify or disassemble this device in any way, as this may damage the module and degrade accuracy.

- The module heats up after a period of use, which is normal. Heat dissipation measures can be applied to the back of the module.
- Do not store the module in high-temperature, high-humidity environments, as this may degrade module accuracy or cause depth reconstruction failure.