DEPTRUM
光鉴科技

Deptrum® Libra 1000

Product Specification

V0.1 - 2026/09/30

1 Revision History

Version	Description	Date	Revised By
V0.1	Initial release	2026/09/30	Hu Tao



Product rendering (front view)

2 Product Overview

Product Introduction

The Deptrum® Libra 1000 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 image processing engine, it outputs binocular preprocessed images; paired with a high-performance depth reconstruction algorithm SDK, it enables ultra-high-precision binocular depth reconstruction at close range.

System Requirements

The camera can be used with a GMSL compute box; the algorithm SDK runs on Jetson AGX Orin / Orin NX platforms.[1]

Product Features

- High-performance binocular dense depth reconstruction at close range
- 2 cm baseline
- Supports an illuminance range of 500 ~ 100,000 lux
- Flexible compute configuration

Applications

- Embodied AI wrist camera
- Robotic arm grasping

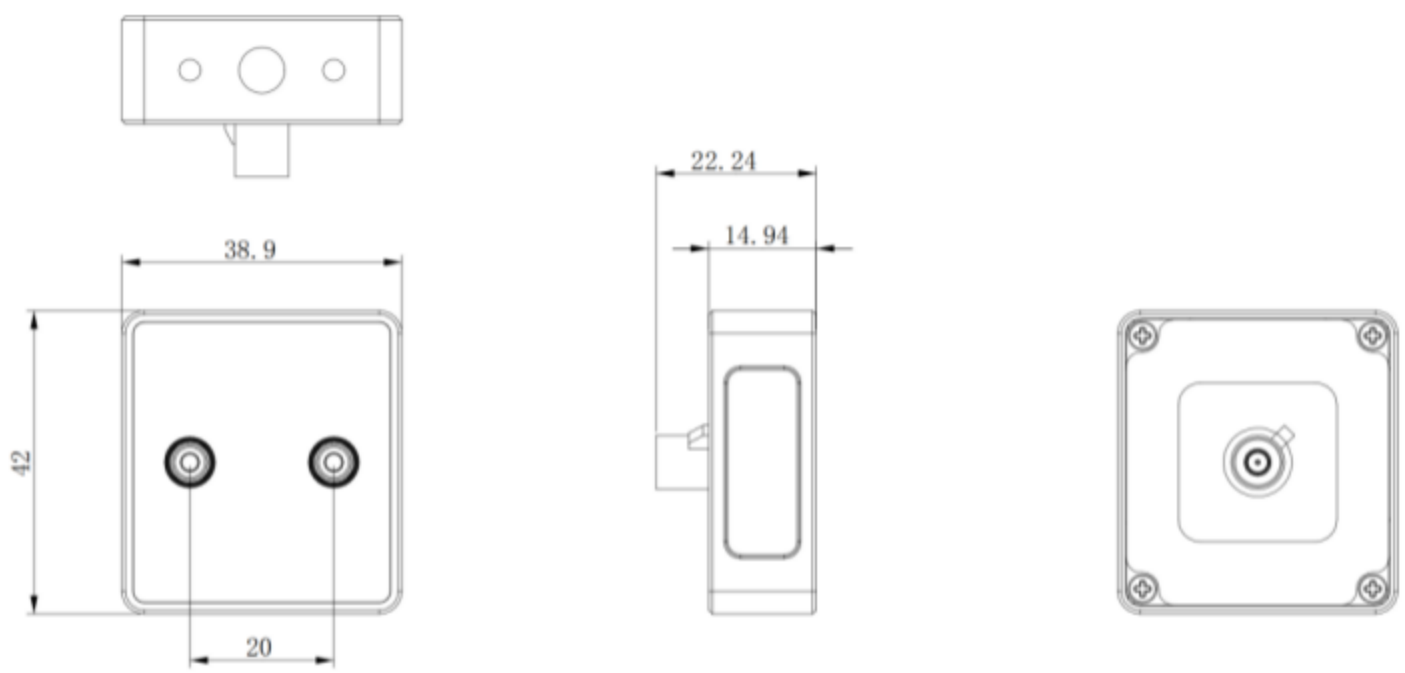
3 Core Specifications

Libra 1000 Specifications		
Module Parameters	Overall Dimensions	38.9 × 42 × 22.24 mm
	Baseline	20 mm
	Interface	GMSL2 / FAKRA
	Operating Temperature	-10°C ~ +55°C

[1] ISP and image preprocessing are completed inside the Libra 1000; the depth computation model runs on the upper computer, with single-frame inference latency less than 20 ms @ 1280x1080 on the Orin NX platform

	Operating Humidity	0% ~ 95% RH, non-condensing
	Operating Illuminance	500 ~ 100,000 lux; external fill-in illumination required in dark conditions
	Power Supply Requirements	> 1.2 A @ 5 V DC
	Power Consumption	Average power consumption Avg < 1.2 W
	IMU	Optional integrated high-performance IMU, > 300 Hz, hardware-synchronized with the camera
Image Performance	Depth Data Format	Raw 16
	Depth Range	4 cm ~ 1.5 m
	Depth Accuracy	< 1 mm @ [4 cm~20 cm]; < 1% @(20 cm~1 m]; < 1.5% @(1 m~1.5 m]
	Depth Resolution / Frame Rate	640 × 540 @ 30 fps
	RGB Data Format (GMSL transmission)	YUV422 8 bit, 1,080 × 2,560, 30 fps
	Left/Right RGB Resolution / Frame Rate / FOV	⩾ 1,280 × 1,080 / 30 fps / H91° × V78° (±3°)
Firmware Capabilities	Firmware Upgrade	Remote OTA supported
System Compatibility	System Compatibility	Armv8

4 Module Dimensions & Structure

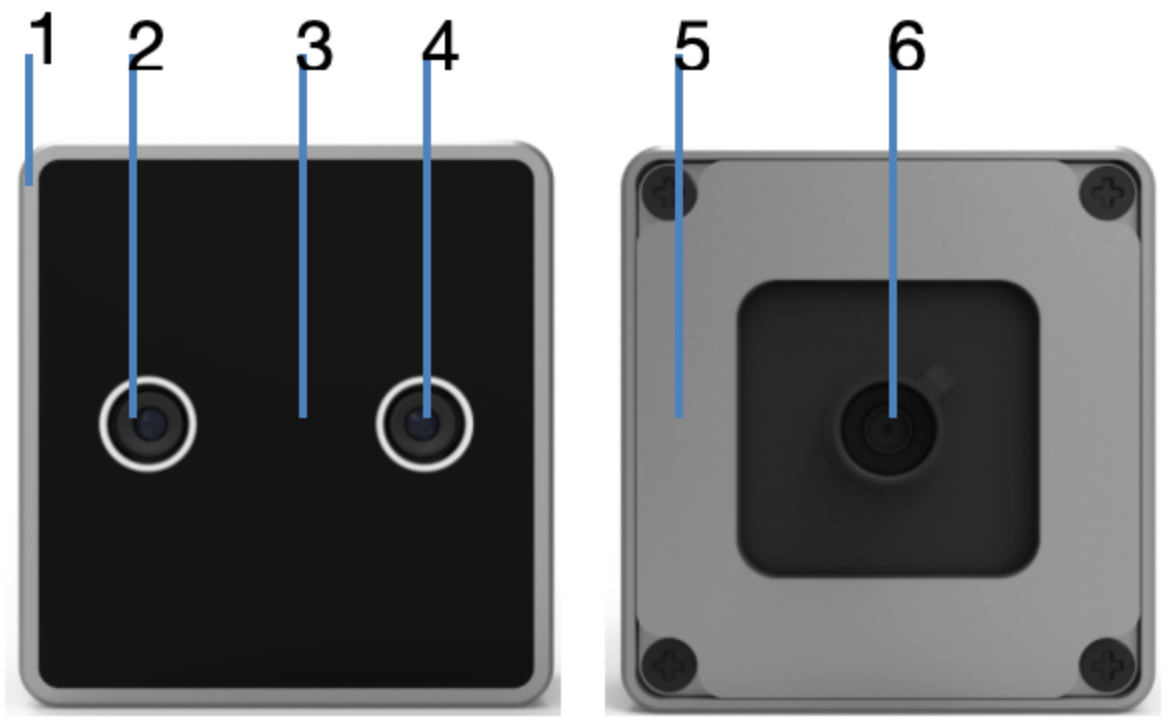




Module dimension drawing (38.9 × 42 × 22.24 mm)

4.1 Module Description

The Libra 1000 module consists of a housing, right RGB camera, glass cover, left RGB camera, rear housing, and GMSL connector. Its compact design facilitates integration into space-constrained applications such as embodied AI wrist cameras and robotic arm end-effectors. The module measures 38.9 × 42 × 22.24 mm; refer to the 3D drawings for the detailed stacking design.



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

System Components	No.
Housing	1
Right RGB Camera	2
Glass Cover	3
Left RGB Camera	4
Rear Housing	5
GMSL Connector	6

5 Environment & Reliability

Item	Parameter	Specification
Operating Environment	Temperature	-10°C ~ +55°C
	Humidity	0% ~ 95% RH, non-condensing
	Illuminance	1,000 ~ 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.