

Deptrum[®] Libra 1000

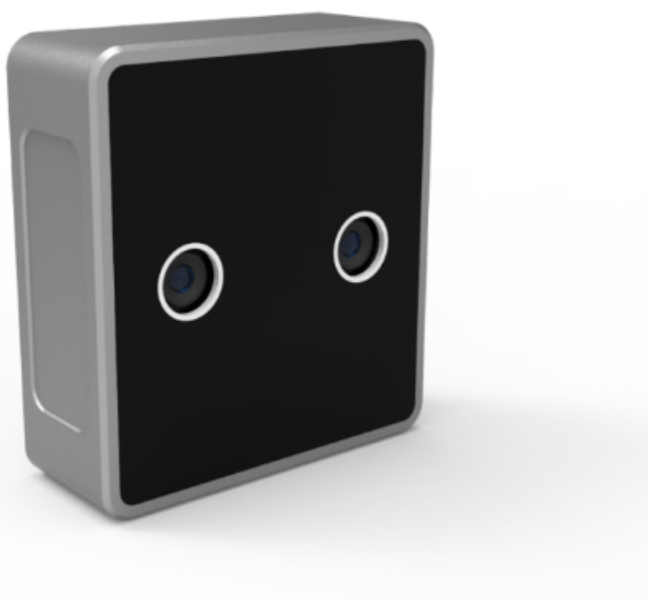
Product Specification

V0.1 - 2026/09/30

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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 1,000 ~ 100,000 lux
- Flexible compute configuration

Applications

- Embodied AI wrist camera
- Robotic arm grasping

3 Core Specifications

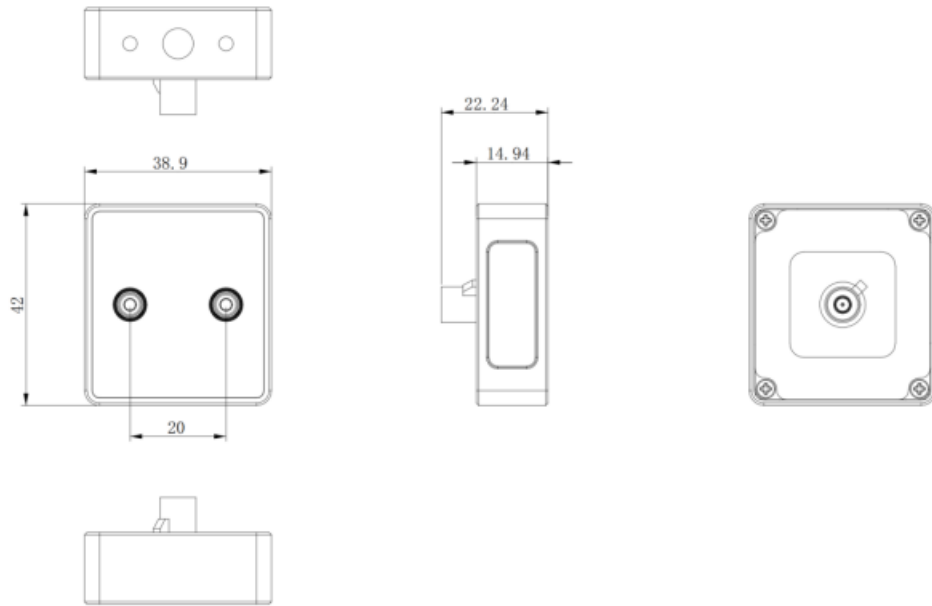
Libra 1000 Specifications

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	1,000 ~ 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

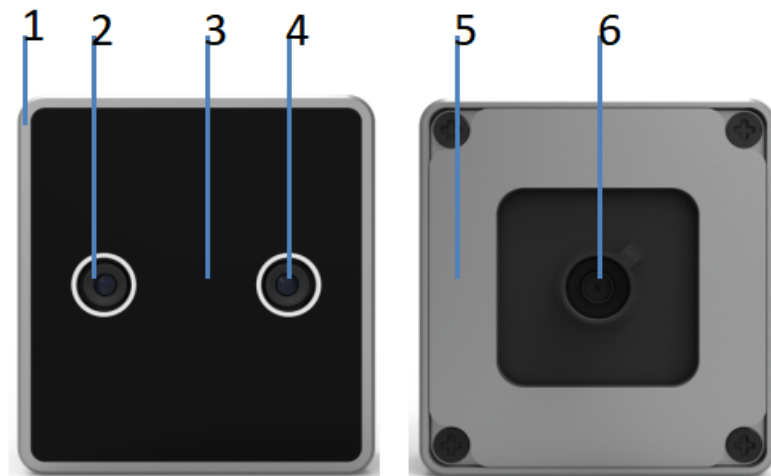
4 Module Dimensions & Structure



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

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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.