DEPTRUM
光鉴科技

Deptrum® Libra 2000 Lite

Product Specification

V0.2 - 2026/08/29

1 Revision History

Version	Description	Date	Author
V0.1	Initial release	2026/07/25	Hutao
V0.2	Updated specifications and document format	2026/08/29	Hutao



Figure: Libra 2000 Lite product rendering

2 Product Overview

Introduction	Key Features
The Deptrum® Libra 2000 Lite series depth camera uses stereo 3D imaging technology to capture the three-dimensional structure of objects and space. With its built-in high-performance ISP and depth engine, it outputs raw stereo color images and depth images, providing an RGBD obstacle-avoidance solution for household lawn mowers. **System Requirements** Supports 2-Lane MIPI input; CPU usage approximately 0.5 × A53 @ 1.6GHz.	• Global-shutter VGA RGB stereo module • High-performance stereo dense depth reconstruction • Compatible with adaptive illumination technology • Supports 0~100,000 Lux ambient illuminance **Typical Applications** • Obstacle avoidance & SLAM for residential lawn mowers • Obstacle avoidance for commercial robots

3 Key Specifications

Libra 2000 Lite Specifications		
Module Parameters	Module Dimensions	132mm × 55.69mm × 46.93mm
	Baseline	7cm
	Interface	MIPI interface, 2-Lane
	Operating Temperature	-20°C ~ 60°C

	Operating Humidity	0% ~ 95%, non-condensing
	Operating Illuminance	3 ~ 100,000 Lux
	Power Supply	> 1.2A @ 5V
	Power Consumption	Whole-module average power Avg < 1W (illumination off)
	Waterproof Rating	IPx6 waterproof
Imaging & Optical Performance	Depth Data Format	Raw 16
	Depth Range	15cm ~ 2m
	Depth Accuracy	<1cm @ 0.15~0.5m; <2% @ 0.5~1m; <3% @ 1~2m
	Depth Resolution / Frame Rate	640 × 480 @ 10fps
	RGB Data Format	YUV
	Illumination LED	FOV: H130° × V103°, adjustable current
	Raw L/R RGB Resolution / Frame Rate / FOV	⩾ 640 × 480 / 30fps / H115° × V93° (±3°)
	Obstacle Recognition Accuracy	⩾ 5cm @ 1m
Firmware Performance	Firmware Upgrade	Remote OTA supported
System Compatibility	System Compatibility	Armv8

3.1 Image Performance Notes

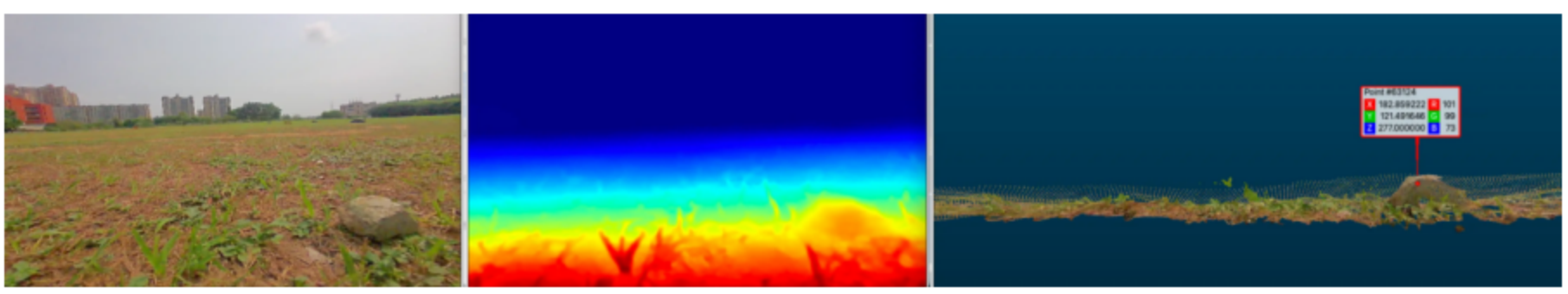


Figure: Image output examples: undistorted image / depth map / point cloud

4 Module Dimensions & Structure

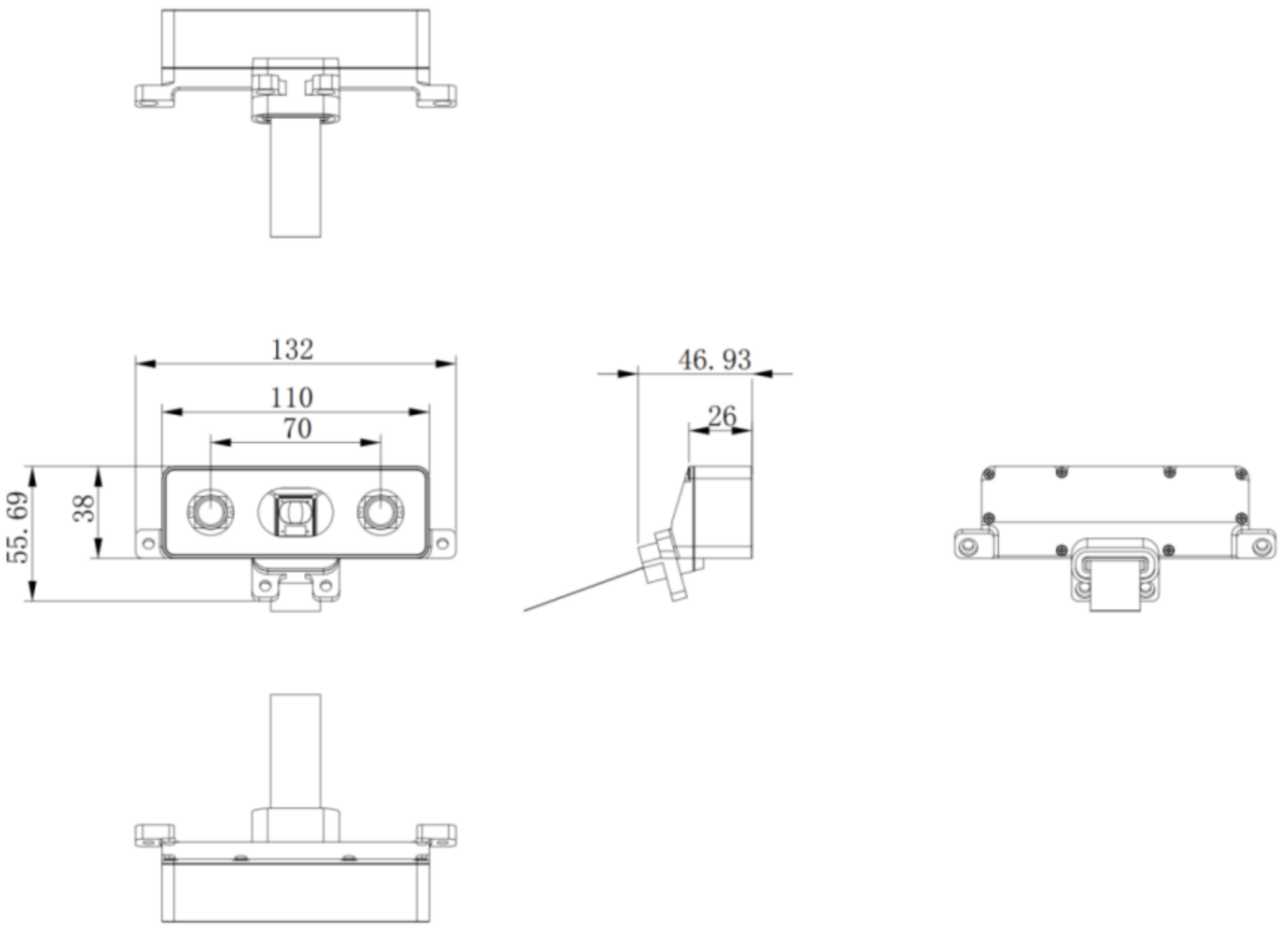


Figure: Module structure and dimensions

4.1 Module Description

Built on the Libra 2000, the Libra 2000 Lite module adopts global-shutter VGA RGB stereo sensors. Power consumption and cost are reduced through a shortened baseline and an IMU-free design, while the IPx6 waterproof enclosure and adaptive white-light illumination are retained. The module communicates with the host via a 2-Lane MIPI interface and is intended for obstacle avoidance in household lawn-mowing robots.

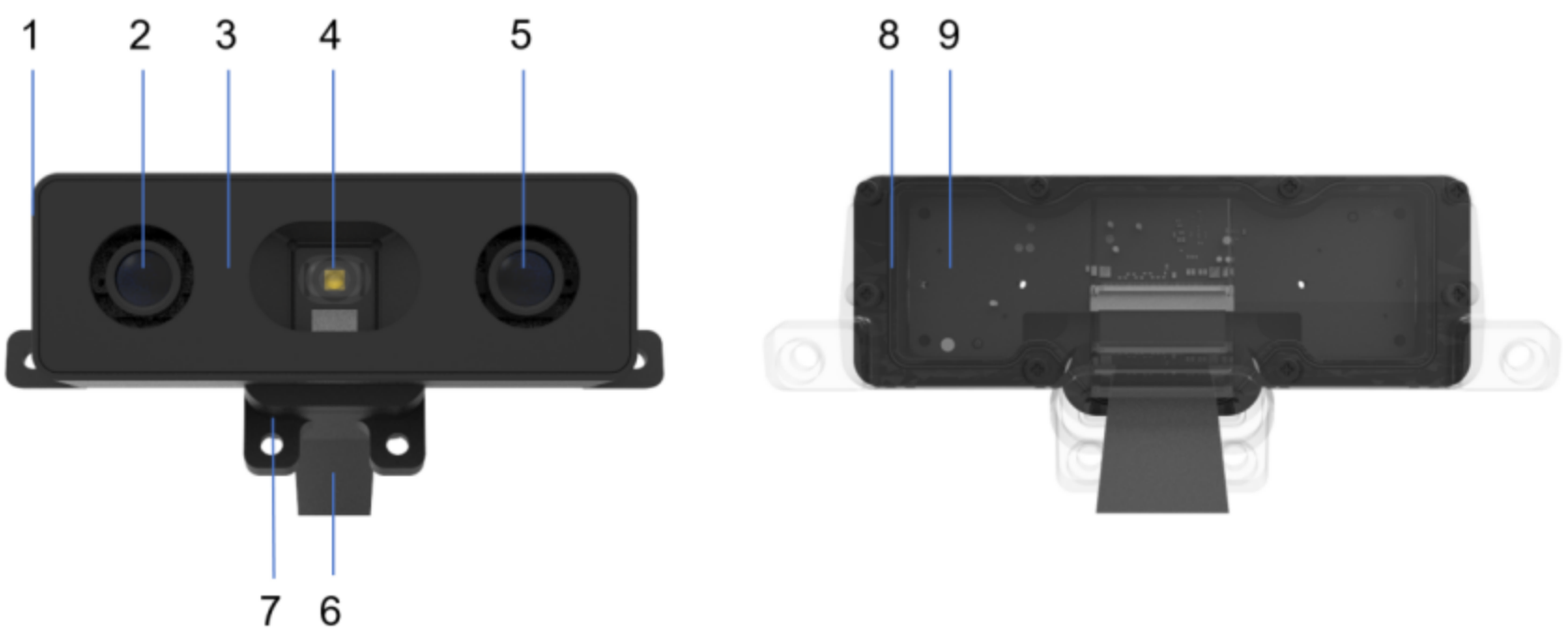


Figure: Exploded view of the module

System Component	No.
Enclosure	1
Right RGB Camera	2
Glass Cover	3
White-light LED	4
Left RGB Camera	5
FPC	6
Rear Cover	7
Sealing Ring	8
PCBA	9

5 Environment & Reliability

Item	Item	Specification
Operating Environment	Temperature	-20°C ~ 60°C
	Humidity	Relative humidity: 0% ~ 95%, non-

		condensing
	Illuminance	0 - 100,000 Lux
Storage Environment	Temperature	-40°C ~ 65℃
	Humidity	Relative humidity: 10% ~ 90%, non-condensing

6 Certification

Item	Specification
Environmental Compliance	RoHS 2.0

7 Software Development

Customers can perform secondary development using the Deptrum Stream SDK. The SDK supports the Windows/Linux/Android platforms and x86_64 and ARMv7 / ARMv8 architectures, with performance optimizations specifically tailored for embedded platforms. For detailed usage instructions, please refer to the accompanying documentation in the SDK.

8 Disclaimer

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9 Technical Support

You can obtain support through the following channels:

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

10 Precautions

- Do not heat this product with any other heat source.
- Do not drop or strike this product, as this may damage internal components and degrade accuracy; improper handling may cause damage to internal components.
- Do not attempt to modify or disassemble this device in any way, as this may damage the module and degrade its accuracy.
- The module may heat up after being used for some time; this is normal, and heat dissipation may be applied to the rear surface of the module.
- Do not store the module in high-temperature or high-humidity environments, as this may degrade module accuracy or cause depth reconstruction to fail.