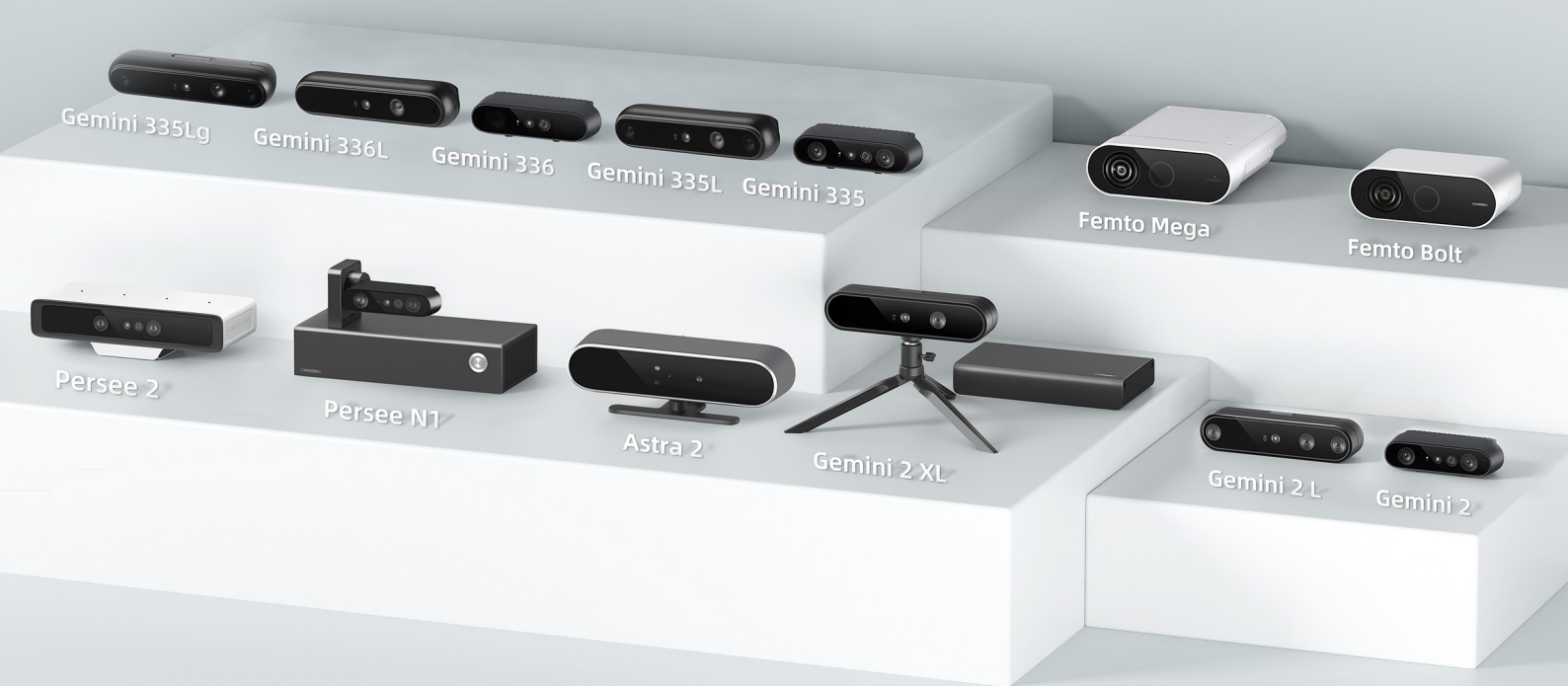


Central Platform for Robotics and AI Vision Industry

ROBOTICS VISION

PRODUCTS HANDBOOK



Preview



Orbbec Gemini 330 Series P05



Orbbec Gemini 2 Series P17



Orbbec Femto Series P25



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The Next Generation Universal Stereo Vision 3D Camera

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Industry Leader

Founded in 2013, Orbbec has been on a mission to democratize robotics and AI vision technology, offering products with exceptional performance and value spanning structured light, stereo vision and ToF technologies.

As an industry leader in robotics and AI vision technology, Orbbec is committed to building a central platform for the robotics and AI vision industry, providing robots with advanced "eyes."

Orbbec's technology enables thousands of robots, manufacturing, logistics, retail, 3D scanning, healthtech and fitness solutions. With in-house R&D, state-of-the-art factory, supply chain management and global support, Orbbec also offers ODM/OEM engagements for custom and embedded designs.



No.1

70%+ market share in China's service robot 3D sensor market, serving 100+ robotics customers



1 million ft²

A manufacturing base of over 1 million sq. ft. located in the Shunde District of Foshan City



5,000,000+

Million-unit shipments of 3D modules for retail and smartphones, with a cumulative production of 5M+ sensors



Patent Strength

1,800+ 3D vision patent applications, 900+ authorized patents, comparable to Apple and Microsoft, ranking among the top in the world



National Qualifications

National High-Tech Enterprise, Top Performers Among Specialized, High-end and Innovation-driven SMEs, National Intellectual Property Advantage Enterprise



Major National Projects

Entrusted with numerous major project construction tasks at the national, provincial, and municipal levels

In-Depth Partnership

Orbbec, in collaboration with Microsoft and NVIDIA, has launched the Femto series of high-performance iToF cameras. These cameras are authorized under Microsoft's Azure Kinect DK product line, providing access to over a decade of developer and customer insights accumulated by Microsoft. Furthermore, Orbbec's 3D sensor array has been integrated into NVIDIA's robotics development platform, addressing the critical needs of millions of robotics developers.



Field Excellence

According to statistics from GGII, Orbbec holds over 70% of the market share in the 3D vision sensor sector for service robots in China, ranking first in the industry and leading the global 3D vision perception market. Orbbec has partnered with more than 100 robotics companies, serving sectors including service robots, industrial robots, educational robots, and humanoid robots.



Development and Compatibility Support

- Orbbec SDK
- Orbbec Viewer
- Orbbec Pose SDK
- Orbbec Reconstruction SDK




Orbbec Gemini 330 Series

The Next Generation Universal Stereo Vision 3D Camera

Integrating Orbbec's latest custom ASIC MX6800, the Gemini 330 series combines active and passive stereo vision technologies to deliver consistent high-quality depth data in dynamic environments and various lighting conditions, from pitch black to full sunshine. The series offers up to 1M resolution at 60 FPS, with a field of view exceeding 100° and a maximum range of over 20 meters, making it ideal for indoor and outdoor applications like AMRs, inspection robots, delivery robots, humanoid robots, robotic arms, drones, and body reconstruction.

The series also provides exceptional adaptability through modular expansions to meet diverse application needs. Current models include the versatile Gemini 335 and Gemini 335L, and the enhanced depth imaging models Gemini 336 and Gemini 336L, which feature IR-Pass filters to improve depth imaging quality in specific scenarios. The latest Gemini 335Lg model, equipped with GMSL2/FAKRA, ensures more secure and stable robotic vision transmission.

Gemini 330 Series Comparison

Feature	Gemini 335 / 336		Gemini 335L / 336L		Gemini 335Lg	
Model						
Use Environment	Indoor / Outdoor					
Depth Range [1]	0.10 - 20m+		0.17 - 20m+			
Ideal Range	0.26 - 3.0m		0.25 - 6m			
IMU	Support					
GMSL Camera	N/A				Support	
UVC Camera	Yes					
SDK	Orbbec SDK					
Depth						
Technology	Active & Passive Stereo					
Baseline	50 mm		95 mm			
Spatial Precision [2]	≤ 1.5% (1280 x 800 @ 2m & 90% x 90% ROI)		≤ 0.8% (1280 x 800 @ 2m & 90% x 90% ROI) ≤ 1.6% (1280 x 800 @ 4m & 80% x 80% ROI)			
Field of View (FOV)	90° x 65° @ 2m (1280 x 800)					
Resolution @ Frame Rate	Up to: 1280 x 800 @ 30fps					
Shutter Type	Global Shutter					
RGB						
Field of View (FOV)	86° x 55°		94° x 68°			
Resolution @ Frame Rate	Up to: 1920 x 1080 @ 30fps		Up to: 1280 x 800 @ 60fps			
Image Format	YUYV & MJPEG				YUYV	
Shutter Type	Rolling Shutter		Global Shutter			
Electrical						
Power Supply for Best Performance	DC 5V & ≥ 1.5A Laser Energy Level: 6				DC 12V & ≥ 0.7A Laser Energy Level: 6	
Power Supply for Default Performance	DC 5V & ≥ 1.5A Laser Energy Level: 6				DC 12V & ≥ 0.5A [3] Laser Energy Level: 4	
Average Power Consumption	< 3 W				≤ 3.8 W	
Physical						
Depth Filter	Gemini 335: N/A Gemini 336: IR-Pass		Gemini 335L: N/A Gemini 336L: IR-Pass		N/A	
Ambient Temperature	-10 - 45°C		-10 - 50°C			
Ingress Protection [4]	IP5X		IP65			
Dimensions (W*H*D)	Gemini 335: 90 mm x 25 mm x 30 mm Gemini 336: 90 mm x 25 mm x 30.7 mm		Gemini 335L: 124 mm x 29mm x 27 mm Gemini 336L: 124 mm x 29mm x 27.7 mm		124 mm x 29mm x 36 mm	
Weight	Gemini 335: 97g Gemini 336: 99g		Gemini 335L: 133g Gemini 336L: 135g		164g	
Data & Power Connection	USB Type-C				GMSL Mode: FAKRA-Z USB Mode: USB Type-C	
Multi-camera Sync Interface	8-Pin Interface				GMSL Mode: FAKRA-Z & 8-Pin Interface USB Mode: 8-Pin Interface	
Installation	Bottom: 1 x 1/4-20 UNC, Depth 5mm Back: 2 x M3 screws, Depth 3mm		Bottom: 1 x 1/4-20 UNC, Depth 8mm Back: 2 x M4 screws, Depth 5mm		Bottom: 1 x 1/4-20 UNC, Depth 8mm Back: 2 x M4 screws, Depth 6mm	

Note:[1] Theoretical maximum depth range up to 65 meters;

[2] Data measured during factory calibration;

[3] Gemini 335Lg default laser energy level is set to Level 4 to reduce peak power consumption and prevent operational failures. When sufficient power is available, users can manually adjust the laser to the maximum Level 6 to achieve optimal performance.

[4] Both Gemini 335L & 335Lg require the use of IP65-compliant cables during power-on operations to achieve IP65 protection.



Gemini 335

Orbbec Gemini 335 is one of the flagship products of Gemini 330 series. Featuring a 50mm baseline and an IP5X rating, Gemini 335 delivers highly accurate and reliable data across various lighting conditions, from pitch darkness to bright outdoor environments. It is also designed for easy setup and operation using the Orbbec SDK. This camera is ideal for applications such as autonomous mobile robots (AMRs), delivery robots, collaborative robots, and shelf inspection robots.

Explore Everywhere with Confidence

Designed for indoor and outdoor; Reliable depth data for a broad range of lighting conditions; IP5X rated; Pre-set depth modes for various scenarios



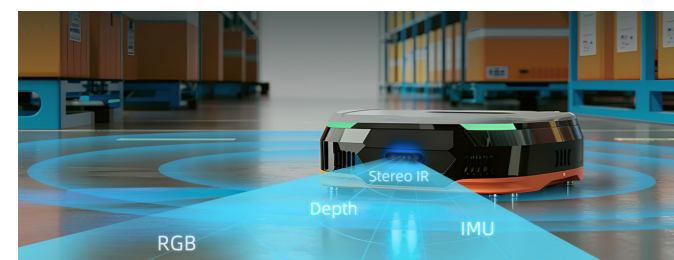
Broad and Clear Vision

Maximum depth range > 20m; Diagonal FoV > 100°; RGB FoV equivalent to depth FoV



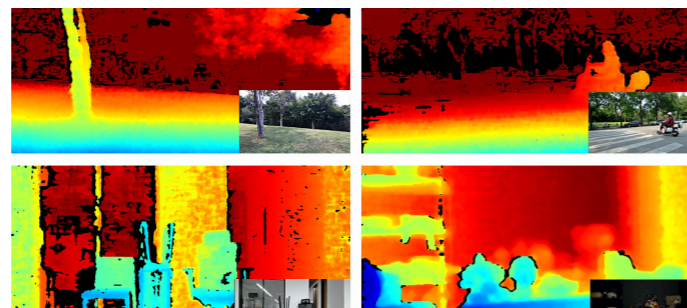
Compact Synchronized Excellence

Integrates depth, stereo, RGB, and IMU; Supports simultaneous execution of diverse tasks such as VSLAM and 3D scene reconstruction



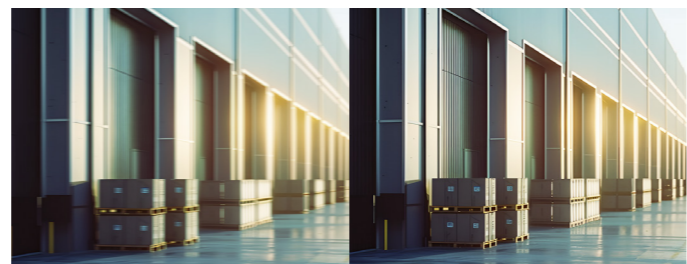
Reliable Performance in Complex Environments

Stable and reliable depth data in bright sunlight; Handles coexistence of high & low-reflective objects; Effective with translucent materials and small objects



Dynamic Precision

High clarity and accuracy in motion capture; Image frame rate up to 60fps; Significantly reduces motion blur



Comprehensive Tech Support

- Rich metadata
- OTA upgrade support
- Compatible with mainstream platforms and systems
- Flexible multi-device synchronization
- Comprehensive SDK and detailed documentation
- Professional technical support

Applications



Autonomous Mobile Robots (AMRs)



Delivery Robots



Collaborative Robots



Shelf Inspection Robots

Product Specifications

Note:[1] Theoretical maximum depth range up to 65meters.

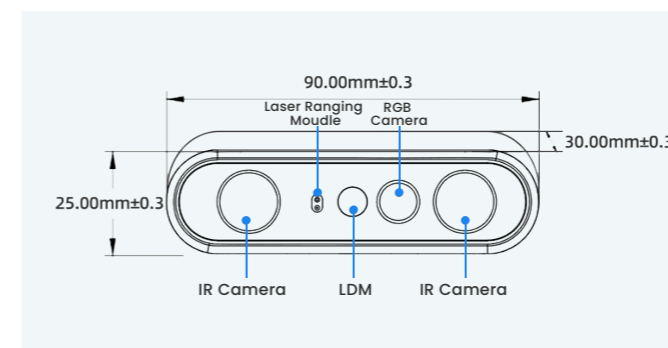
Feature	
Operating Environment	Indoor/Outdoor
Depth Range [1]	0.10 - 20m+
Ideal Range	0.26 - 3.0m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK

Depth	
Technology	Active & Passive Stereo
Baseline	50 mm
Spatial Precision	≤ 1.5% (1280 x 800 @ 2m & 90° x 90% ROI)
FoV	90° x 65° @ 2m (1280 x 800)
Resolution and Frame Rate	Up to: 1280 x 800 @ 30fps
Shutter Type	Global Shutter

RGB	
FoV	86° x 55°
Resolution and Frame Rate	Up to: 1920 x 1080 @ 30fps
Image Format	YUYV & MJPEG
Shutter Type	Rolling Shutter

Electrical	
Power Supply	DC 5V & ≥ 1.5A
Power Consumption	< 3 W

Physical	
IR Filter Cover	N/A
Operating Environment	-10 - 45°C
Protection	IP5X
Dimensions	90 mm x 25 mm x 30 mm
Weight	97g
Connector	USB 3.0 & USB 2.0 Type-C
Multi-device Sync port	8-pin
Installation	Bottom: 1x 1/4-20 UNC, Max Torque: 4.0 N.m; Back: 2x M3, Max Torque: 0.4 N.m



Scan the code to view more product information



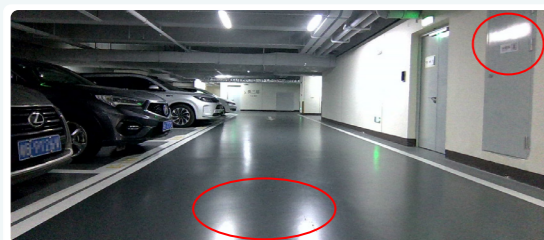
Gemini 336

Orbbec Gemini 336 is the latest addition to Orbbec's Gemini 330 series. Building on the exceptional depth performance and quality of the Gemini 335, the Gemini 336 enhances active infrared imaging by filtering out the visible light spectrum. This improvement ensures stable and precise imaging even in challenging lighting conditions, such as indoor reflective surfaces causing glare, brightly-lit scenes with shadows, and strong outdoor lighting.



Infrared Enhanced: Superior Depth Imaging in Specific Scenarios

Challenges Faced in Real-world Scenarios

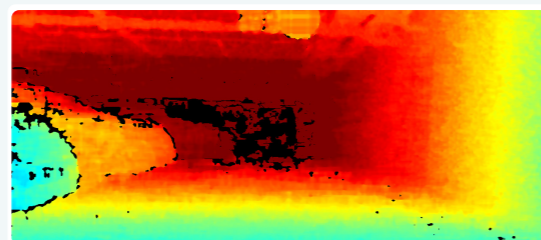


! Reflections caused by light shining on the floor or other objects

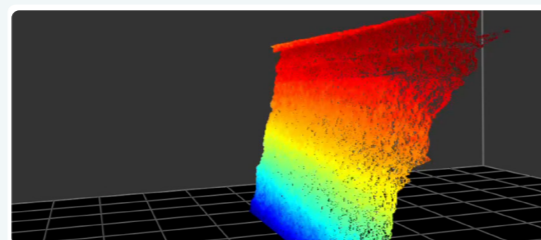


! Brightly-lit scenes with shadows

Gemini 336 Depth Performance



✓ Unaffected by light reflections, depth information remains complete and accurate



✓ The depth information in this shadowed area remains complete and accurate

Applications

Autonomous Mobile Robots (AMRs)

Targeted enhancement of depth imaging quality in reflective areas of high-gloss floor paint or tiled floors under indoor incandescent lighting, as in well as in shadowed areas of high dynamic range scenes with sunlight exposure.



Retail Shelf Robots

Targeted enhancement of depth imaging quality in shadowed areas of high dynamic range scenes with sunlight exposure.



Outdoor Delivery Robots

Targeted enhancement of depth imaging quality under strong outdoor lighting.

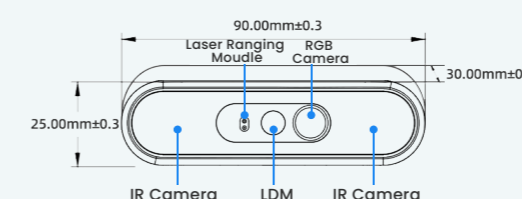


Product Specifications

Note:[1] Theoretical maximum depth range up to 65meters.

Feature	
Operating Environment	Indoor/Outdoor
Depth Range [1]	0.10 - 20m+
Ideal Range	0.26 - 3.0m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK
Depth	
Technology	Active & Passive Stereo
Baseline	50mm
Spatial Precision	≤ 1.5% (1280 x 800 @ 2m & 90% x 90% ROI)
FoV	90° x 65° @ 2m (1280 x 800)
Resolution and Frame Rate	Up to: 1280 x 800 @ 30fps
Shutter Type	Global Shutter

RGB	
FoV	86° x 55°
Resolution and Frame Rate	Up to: 1920 x 1080 @ 30fps
Image Format	YUYV & MJPEG
Shutter Type	Rolling Shutter
Electrical	
Power Supply	DC 5V & ≥ 1.5A
Power Consumption	< 3 W
Physical	
IR Filter Cover	IR-Pass
Operating Environment	-10 - 45°C
Protection	IP5X
Dimensions	90mm x 25mm x 30.7mm
Weight	99g
Connector	USB 3.0 & USB 2.0 Type-C
Multi-device Sync Port	8-pin
Installation	Bottom: 1x 1/4-20 UNC, Max Torque: 4.0 N.m; Back: 2x M3, Max Torque:0.4 N.m



Scan the code to view more product information



Gemini 335L

Orbbec Gemini 335L is one of the flagship products of Gemini 330 series. It is easy to set up and operate with the Orbbec SDK. Featuring a 95mm baseline and an IP65 rating, Gemini 335L delivers extremely accurate and reliable data in various lighting conditions, ranging from pitch black to outdoor environments.

It is perfect for applications such as inspection robots, autonomous mobile robots (AMRs), robotic arms, and 3D scanning.

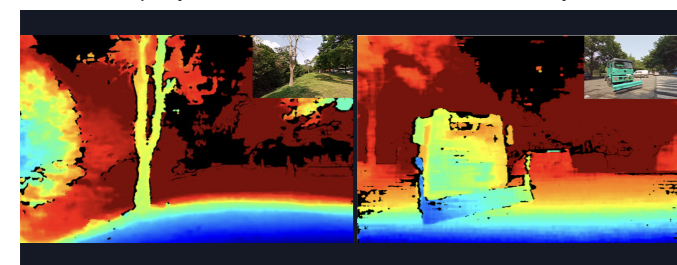
Adapt Everywhere

Designed to excel both indoors and outdoors;
Reliable depth data across a broad range of lighting conditions;
Sustaining up to 100K Lux illumination



Reliable in Complex Environments

Consistently delivers stable and reliable depth data in challenging scenarios: outdoor full sunshine, coexistence of high and low reflectivity objects, translucent materials, and small objects



Dynamic Precision

Captures and analyzes motion with exceptional clarity and accuracy;
Supports image frame rates up to 60fps



IP65 Rated Industrial Use



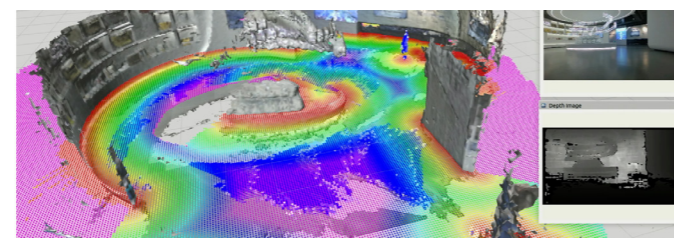
Broad and Clear Vision

Maximum depth range > 20m; Diagonal FoV > 100°; RGB FoV equivalent to depth FoV



Compact Synchronized Excellence

Integrates depth, stereo, RGB, and IMU; Supports simultaneous execution of diverse tasks such as VSLAM and 3D scene reconstruction. Outputs high-quality point cloud, texture, color, motion, and timestamp information



Applications



Autonomous Mobile Robots (AMRs)



Outdoor Inspection Robots



Robotic Arms



Humanoid Robots

Product Specifications

Note:[1] Theoretical maximum depth range up to 65meters.

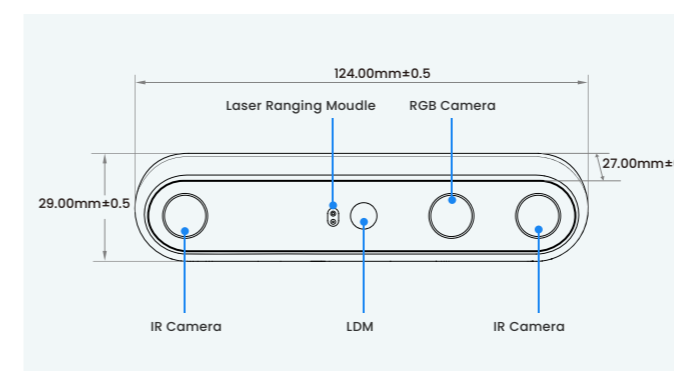
Feature	
Operating Environment	Indoor/Outdoor
Depth Range [1]	0.17 - 20m+
Ideal Range	0.25 - 6m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK

Depth	
Technology	Active & Passive Stereo
Baseline	95 mm
Spatial Precision	≤ 0.8% (1280 x 800 @ 2m & 90° x 90° ROI) ≤ 1.6% (1280 x 800 @ 4m & 80° x 80° ROI)
FoV	90° x 65° @ 2m (1280 x 800)
Resolution and Frame Rate	Up to: 1280 x 800 @ 30fps
Shutter Type	Global Shutter

RGB	
FoV	94° x 68°
Resolution and Frame Rate	Up to: 1280 x 800 @ 60fps
Image Format	YUYV & MJPEG
Shutter Type	Global Shutter

Electrical	
Power Supply	DC 5V & ≥ 1.5A
Power Consumption	< 3 W

Physical	
IR Filter Cover	N/A
Operating Environment	-10 - 50°C
Protection	IP65
Dimensions	124 mm x 29 mm x 27 mm
Weight	133g
Connector	USB 3.0 & USB 2.0 Type-C
Multi-device Sync Port	8-pin
Installation	Bottom: 1x 1/4-20 UNC, Max Torque: 4.0 N.m Back: 2x M4, Max Torque: 0.4 N.m



Scan the code to view more product information



Gemini 336L

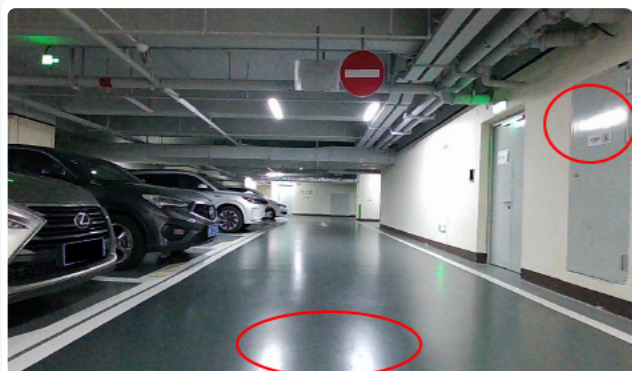
Gemini 336L is the latest addition to Orbbec's Gemini 330 series.

Building on the outstanding depth performance and quality of the Gemini 335L, the Gemini 336L improves active infrared imaging by filtering out the visible light spectrum. This enhancement ensures stable and precise imaging even under challenging lighting conditions, such as reflective indoor surfaces that cause glare.



Infrared Enhanced: Superior Depth Imaging in Specific Scenarios

Challenges Faced in Real-world Scenarios



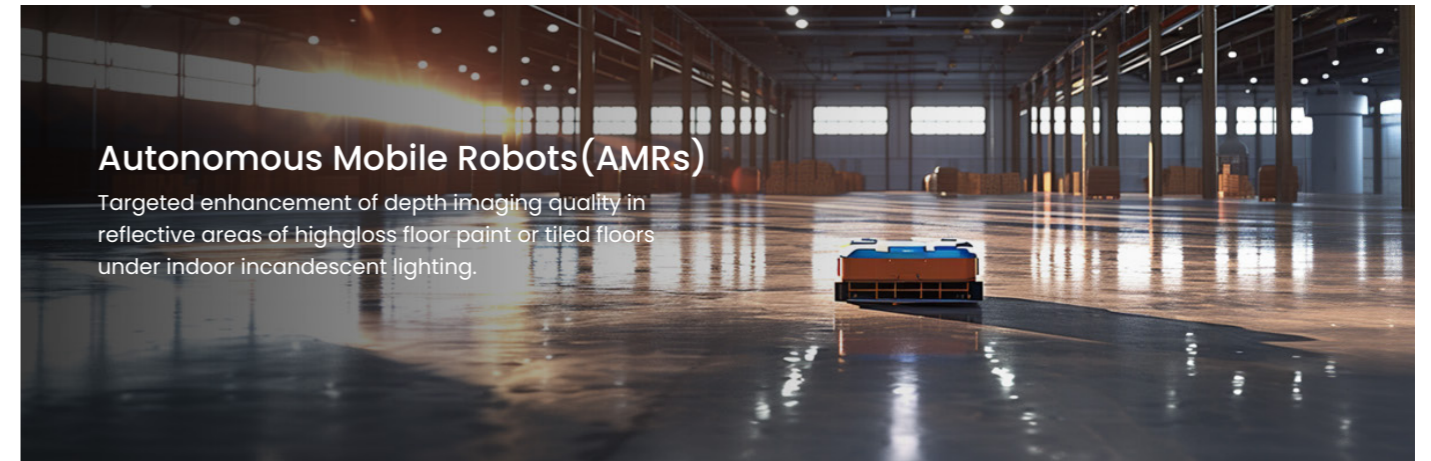
❗ Reflections caused by light shining on the floor or other objects

Gemini 336L Depth Performance



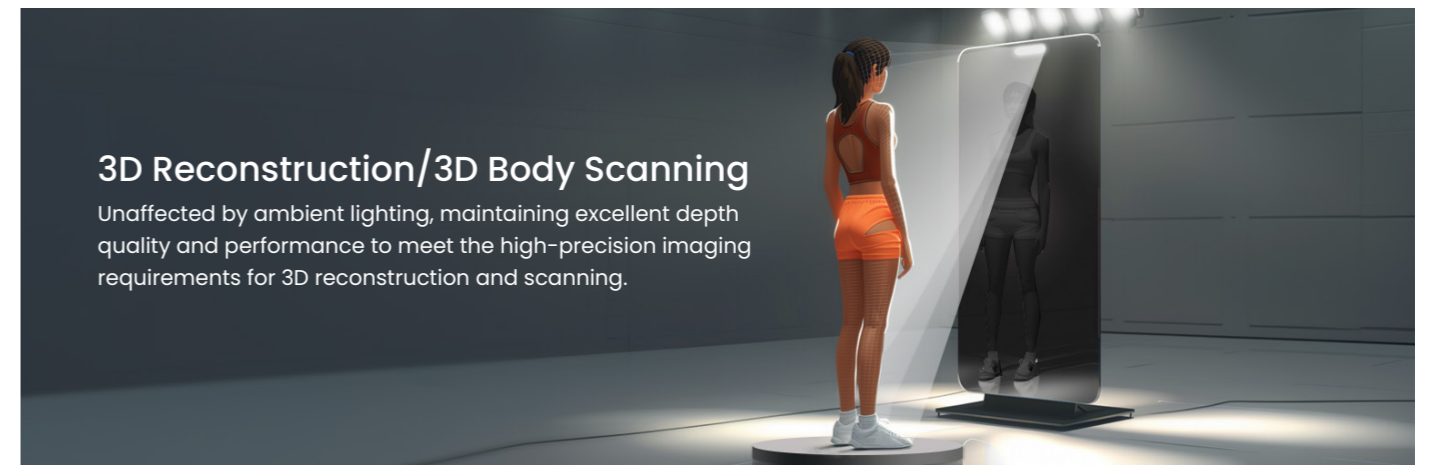
✅ Unaffected by light reflections, depth information remains complete and accurate

Applications



Autonomous Mobile Robots (AMRs)

Targeted enhancement of depth imaging quality in reflective areas of highgloss floor paint or tiled floors under indoor incandescent lighting.



3D Reconstruction/3D Body Scanning

Unaffected by ambient lighting, maintaining excellent depth quality and performance to meet the high-precision imaging requirements for 3D reconstruction and scanning.

Product Specifications

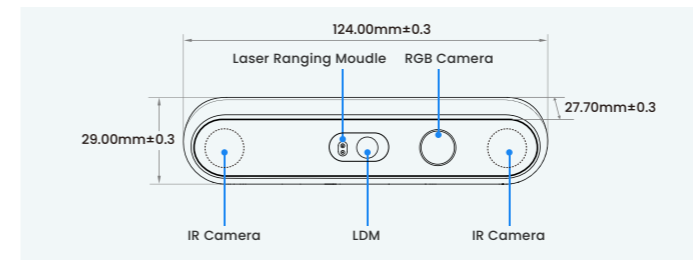
Note:[1] Theoretical maximum depth range up to 65meters.

Feature	
Operating Environment	Indoor / Outdoor
Depth Range [1]	0.17 - 20m+
Ideal Range	0.25 - 6m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK

RGB	
FoV	94° x 68°
Resolution and Frame Rate	Up to: 1280 x 800 @ 60fps
Image Format	YUYV & MJPEG
Shutter Type	Global Shutter

Depth	
Technology	Active & Passive Stereo
Baseline	95mm
Spatial Precision	≤ 0.8% (1280 x 800 @ 2m & 90% x 90% ROI) ≤ 1.6% (1280 x 800 @ 4m & 80% x 80% ROI)
FoV	90° x 65°@2m (1280 x 800)
Resolution and Frame Rate	Up to: 1280 x 800 @ 30fps
Shutter Type	Global Shutter

Electrical	
Power Supply	DC 5V & ≥ 1.5A
Power Consumption	< 3 W



Physical	
IR Filter Cover	IR-Pass
Operating Environment	-10 - 50°C
Protection	IP65
Dimensions	124 mm x 29mm x 27.7 mm
Weight	135g
Connector	USB 3.0 & USB 2.0 Type-C
Multi-device Sync Port	8-pin
Installation	Bottom: 1x1/4-20 UNC, Max Torque: 4.0 N.m Back: 2x M4, Max Torque: 0.4 N.m



Scan the code to view more product information



Gemini 335Lg

Gemini 335Lg is a standout model in the Gemini 330 series, serving as the GMSL2/FAKRA version of the industry-proven Gemini 335L. The GMSL2 serializer combined with the FAKRA connector ensures secure and reliable connectivity for autonomous mobile robots (AMRs) navigating complex environments and robotic arms requiring flexible cabling.

GMSL2/FAKRA

Better for Robots in Motion



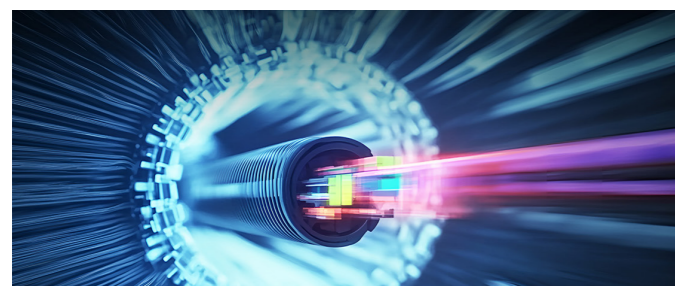
Resilient in Harsh Environments

IP65 waterproof and dustproof | Industrial EMC Compliant



High-speed Transmission

Higher bandwidth of up to 6Gbps | Higher transmission speed than mainstream GigE cameras | Support high frame rates and high resolution



Vibration Resistance

FAKRA ensures a stable connection. The camera is also designed to withstand vibrations



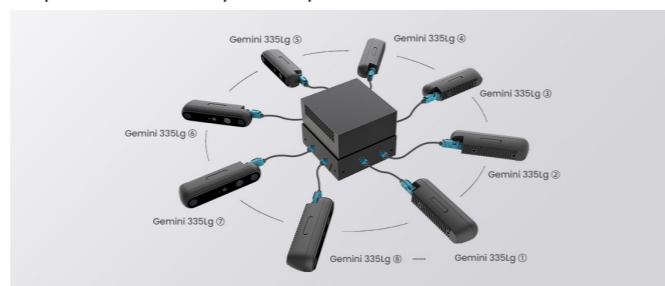
Long-distance Connection

GMSL2: max. 15 meters (without extension cables)
USB: max. 3 meters (without extension cables)

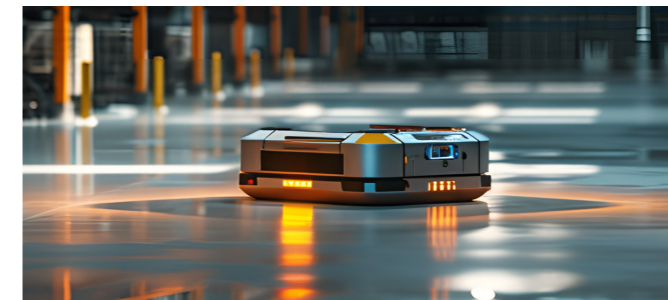


Streamlined and Precise Multi-device Collaboration

Support simultaneous connection of up to 16 Gemini 335Lg to the host platform; Precise sync of depth and RGB streams across devices



Applications



Fulfillment Centers



Warehouses & Factories



Lawn Mowers



Robotic Arms

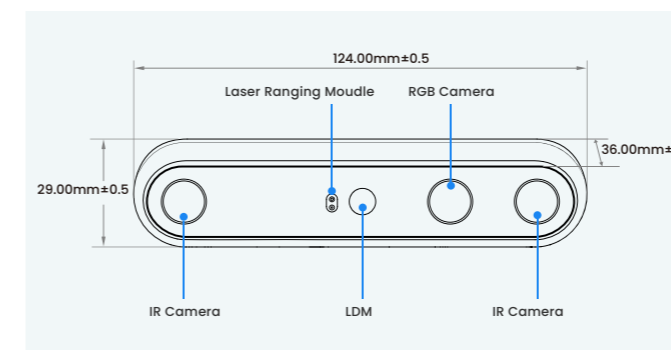
Note:[1] Theoretical maximum depth range up to 65 meters;
[2] Data measured during factory calibration;
[3] Gemini 335Lg default laser energy level is set to level 4 to reduce peak power consumption and prevent operational failures. When sufficient power is available, users can manually adjust the laser to the maximum level 6 to achieve optimal performance.
[4] Both Gemini 335L & 335Lg require the use of IP65-compliant cables during power-on operations to achieve IP65 protection;
[5] No more than 10h working per day

Product Specifications

Feature	
Use Environment	Indoor & Outdoor
Technology	Active & Passive Stereo
Baseline	95mm
Data Connection	GMSL2 FAKRA & USB 3
Camera Protocol	USB & GMSL 2
UVC Compliant	Yes
IMU	Support
SDK	Orbbec SDK
Lifespan [5]	5 years

Depth	
Depth Range [1]	0.17m - 20m+
Ideal Range	0.25m - 6m
Depth Resolution @ Frame Rate	Up to: 1280 x 800 @ 30fps 848 x 480 @ 60fps
Depth FOV (H x V)	90° x 65° @ 2m
Depth FOV (H x V) with D2C	Up to: 94° x 68° @ 2m
Spatial Precision [2]	≤0.8% @ 2m; ≤1.6% @ 4m
Depth Sensor Technology	Global Shutter
Depth Filter	N/A

IR	
IR Resolution @ Frame Rate	Up to: 1280 x 800 @ 30fps 848 x 480 @ 60fps
IR FOV (H x V)	91° x 65°



RGB	
RGB Resolution @ Frame Rate	Up to: 1280 x 800 @ 60fps 1280 x 720 @ 60fps
RGB Sensor FOV (H x V)	94° x 68°
RGB Sensor Technology	Global Shutter

Electrical	
Power Consumption	GMSL2: Average ≤ 3.8W (Peak ≤ 8.4W) USB 3: Average ≤ 3.0W (Peak ≤ 7.5W)
Power Supply	GMSL2: For Best Performance: DC 12V & ≥ 0.7A (Laser Energy Level: 6) For Default Performance DC 12V & ≥ 0.5A [3] (Laser Energy Level: 4) USB 3: DC 5V & ≥ 1.5A

Physical	
Multi-camera Hardware Sync	8-pin & FAKRA-Z
Dimensions (W x H x D)	124 mm x 29 mm x 36 mm
Weight	164g
Ingress Protection Rating [4]	IP65
Installation	Bottom: 1 x 1/4-20 UNC; Back: 2 x M4

Environmental	
Ambient Temperature	-10°C - 50°C @ 15fps; -10°C - 45°C @ 30/ 60fps
EMC Requirement	EN61000-6-2; EN61000-6-4
Vibration	3.8Grms @ 5 ~ 500 Hz, random, 2 hr/axis



Scan the code to view more product information

Orbbec Gemini 2 Series




The General-Purpose High-Performance Stereo Vision 3D Camera

The Gemini 2 Series represent the flagship of Orbbec's stereo vision 3D camera portfolio, integrating Orbbec's latest custom ASIC MX6600 and a proprietary high-performance optical system. Engineered for versatility, scalability, and ease of use, the Gemini 2 Series excels in rapid prototyping and diverse industrial applications.

The Gemini 2 Series features multiple preset depth operation modes, hardware D2C functionality, synchronized depth and RGB frames, multi-camera synchronization, and a high-performance six-axis IMU. These capabilities ensure robots to achieve precise and reliable environmental perception. Moreover, with UVC protocol support and the cross-platform ORBBEC SDK, the series makes development and integration seamless and efficient.

The series currently offers three models to cater to different needs: the compact and versatile Gemini 2 with a small baseline for indoor applications, the long-baseline Gemini 2 L for enhanced measurement precision over greater distances, and the adaptable Gemini 2 XL, designed for both indoor and outdoor environments.

Product Specifications

Feature	  		
Model	Gemini 2	Gemini 2 L	Gemini 2 XL
Operating Environment	Indoor / Semi-outdoor		Indoor / Outdoor
Depth Range	0.15m - 10m	0.2m - 10m	0.4m - 20m
Ideal Range	0.2m - 5m	0.25m - 7m	0.4m - 10m
IMU	Supported		
Camera Driver	UVC		
SDK	Orbbec SDK		
Depth			
Technology	Active Stereo IR		Active & Passive Stereo
Baseline	50 mm	100mm	
Depth Accuracy	≤ 2% (1280x800@2m & 81% ROI)		≤ 2% (1280x800@4m & 81% ROI)
FoV	91° x 66°		
Resolution and Frame Rate	Up to: 1280 x 800@30fps		Up to: 1280 x 800@10fps
Shutter Type	Global Shutter		
RGB			
FoV	86° x 55°	94° x 68°	
Resolution and Frame Rate	Up to: 1920 x 1080@30fps	Up to: 1280 x 800@30fps	Up to: 1280x800@20fps
Image Format	YUYV & MJPEG		
Shutter Type	Rolling Shutter	Global Shutter	
Electrical			
Power Supply	DC 5V ≥1.5A	DC 5V ≥ 2A	DC: 12V ≥ 2A POE: 802.3at (30W max)
Power Consumption	< 2.5W	< 3W	DC: < 6W PoE: < 7W
Physical			
Operating Environment	0°C - 40°C		
Dimensions	90 x 25 x 30 mm	124 x 29 x 26 mm	Camera: 124 x 29 x 26mm OBox: 130 x 71 x 22.5mm
Weight	98g	152g	Camera: 152g OBox: 279g
Connector	USB Type-C	USB Type-C	USB 2.0 Type-C & Gigabit Ethernet
Multi-device Sync Port	8-Pin		Camera:
Installation	Bottom: 1x 1/4-20 UNC Back: 2x M3	Bottom: 1x 1/4-20 UNC Back: 2x M4	Bottom: 1 x 1/4-20 UNC Back: 2 x M4 OBox: Bottom: 4 x M3



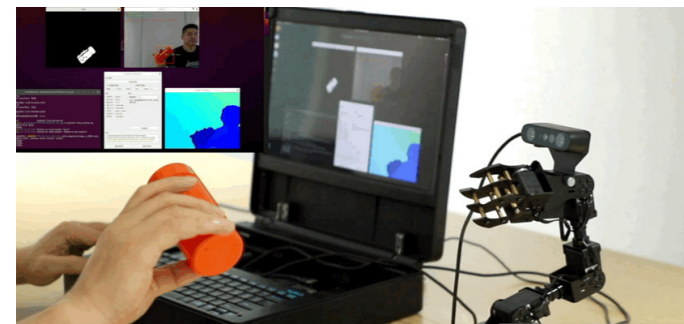
Gemini 2

The Gemini 2 is the pioneering model in Orbbec's Gemini 2 Series. Based on active stereo IR technology, this compact camera is equipped with Orbbec's custom ASIC MX6600 for high-quality depth processing, an integrated IMU, and single cable USB 3.0 for power and connectivity. It delivers exceptional depth point cloud flatness and is resistant to indoor light interference.

With a depth field of view (FoV) of up to 101° and zero blind spots up to 10 meters, the Gemini 2 achieves an RMSE accuracy of less than 2% at 2 meters. Featuring an integrated hardware D2C function to reduce the host computer's computational load and multi-camera synchronization capability, it is ideal for indoor applications such as patient positioning and collaborative robotics. The Gemini 2 is also easy to set up and operate with the Orbbec SDK.

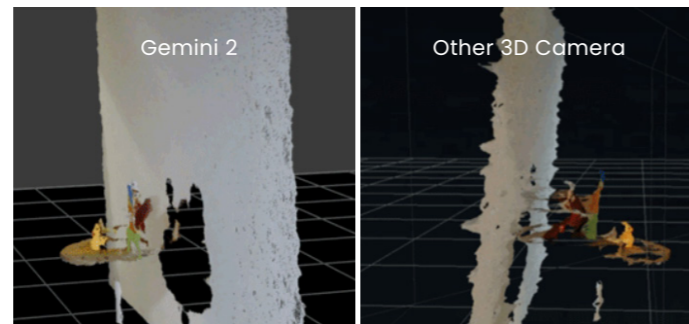
Compact Design

Perfect for various robotic integrations



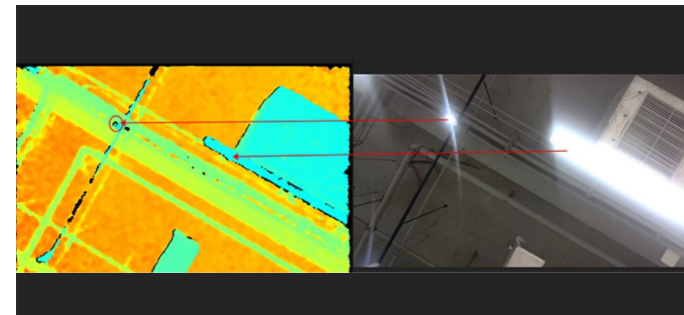
High-Quality Point Cloud Data

Ensures stable depth information



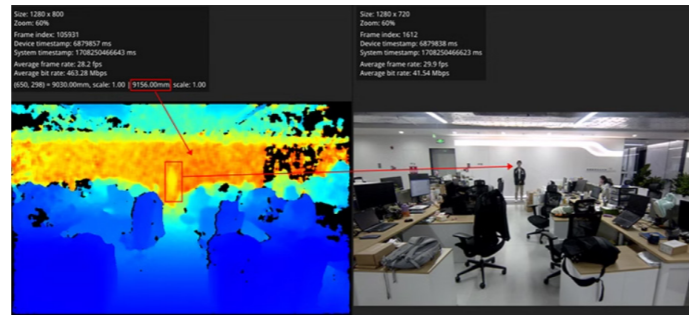
Resistant to Indoor Light Interference

Maintains depth accuracy



Wide Zero-Blind Spot Depth Measurement

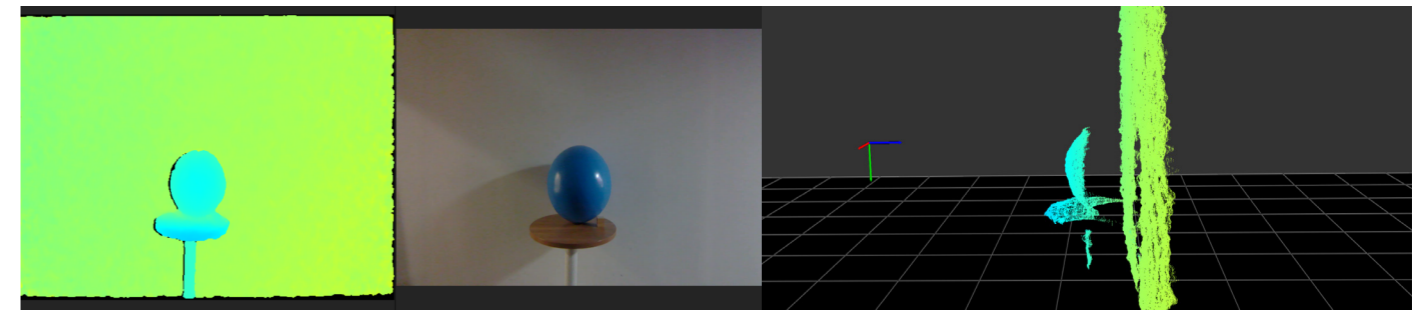
Up to 101° depth FoV



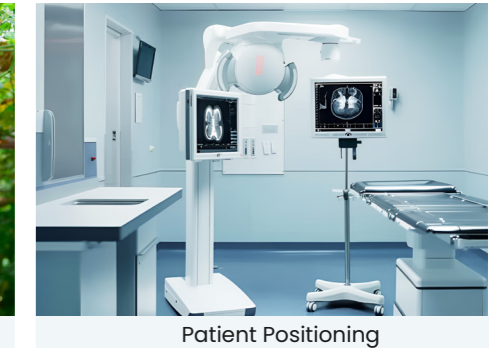
Reduced Computational Load on The Host Computer by Aligning Depth and Color Information at Multiple Resolutions

Comprehensive Tech Support

Depth Point Cloud Output



Applications



Product Specifications

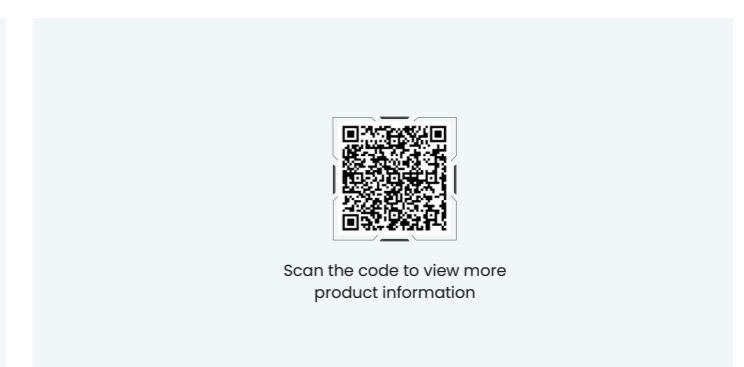
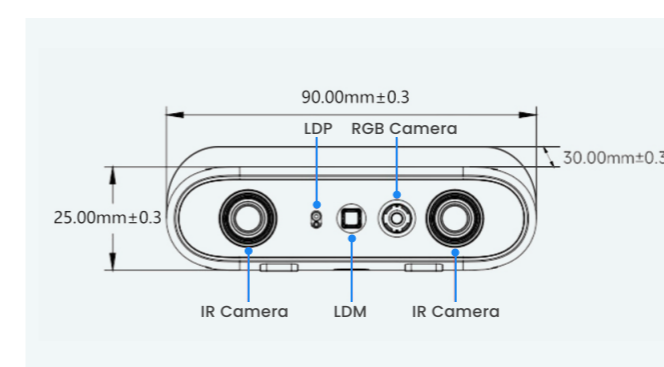
Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.15m - 10m
Ideal Range	0.2m - 5m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK

RGB	
FoV	86° x 55°
Resolution and Frame Rate	Up to: 1920 x 1080@30fps
Image Format	YUYV & MJPEG
Shutter Type	Rolling Shutter

Depth	
Technology	Active Stereo IR
Baseline	50mm
Depth Accuracy	≤ 2% (1280 x 800@2m & 81% ROI)
FoV	91° x 66°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Shutter Type	Global Shutter

Electrical	
Power Supply	DC 5V & ≥1.5A
Power Consumption	< 2.5W

Physical	
Operating Environment	0°C - 40°C
Dimensions	90 x 25 x 30 mm
Weight	98g
Connector	USB Type-C
Multi-device Sync Port	8-Pin
Installation	Bottom: 1x 1/4-20 UNC Back: 2x M3





Gemini 2 L

The Gemini 2L enhances the design and performance of the Gemini 2, extending the baseline to 100mm to support longer measurement distances and higher accuracy. With an RMSE accuracy of less than 2% at 4 meters, it meets the demands of applications requiring precision in measurement and reconstruction.

Featuring global shutter imaging technology for both depth and RGB cameras, the Gemini 2L prevents motion-induced image distortion. Combined with precise Depth to Color (D2C) functionality, it ensures depth and RGB images are perfectly synchronized in space and time, enhancing reliable environmental perception for robots.

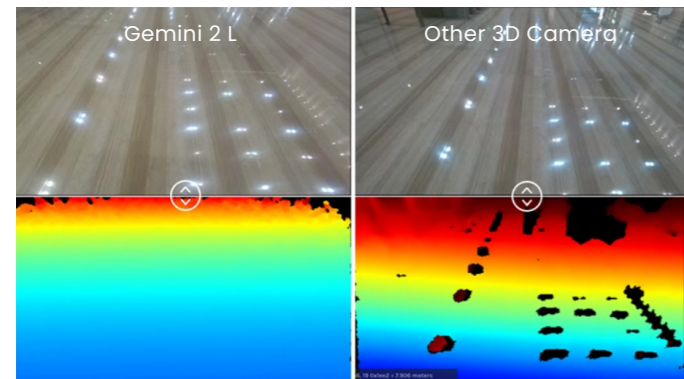
100mm Long Baseline

Greater Depth Measurement Range and Higher Depth Accuracy



Resistant to Indoor Light Interference

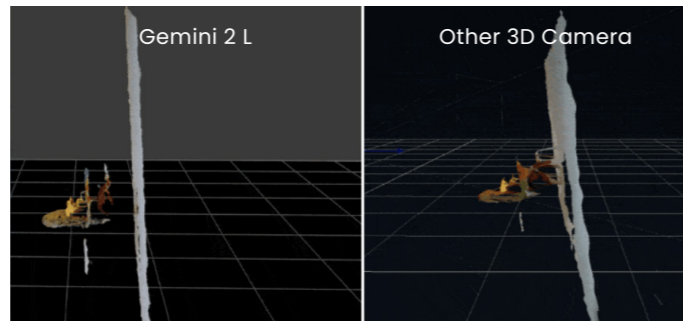
Maintains depth accuracy



Reduced Computational Load on The Host Computer by Aligning Depth and Color Information at Multiple Resolutions

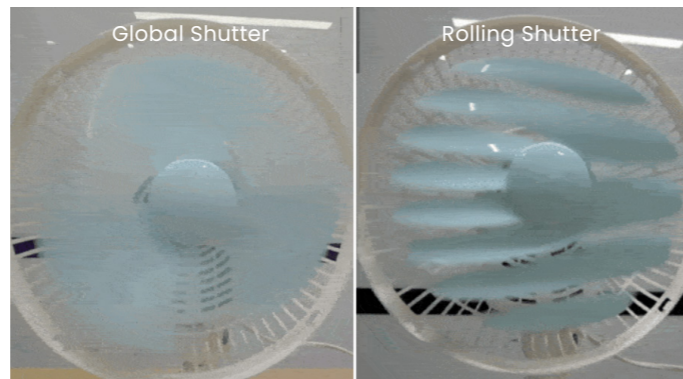
High-quality Point Cloud Data

Ensures stable depth information



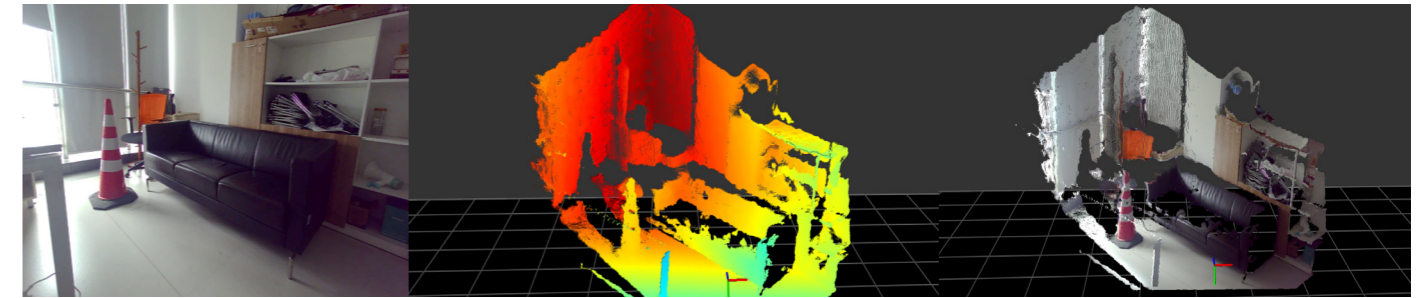
Enhanced Motion Compatibility

Depth & RGB cameras implement global shutter imaging technology, Free from motion distortion



Comprehensive Tech Support

Depth Point Cloud Output



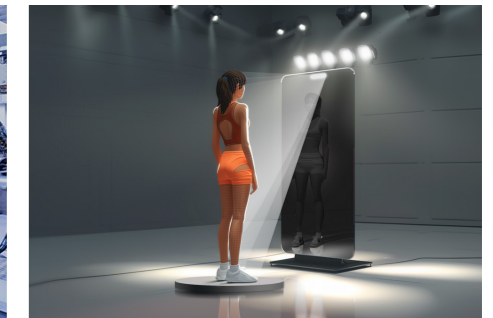
Applications



Indoor AMR



Collaborative Robot Pick-and-Place

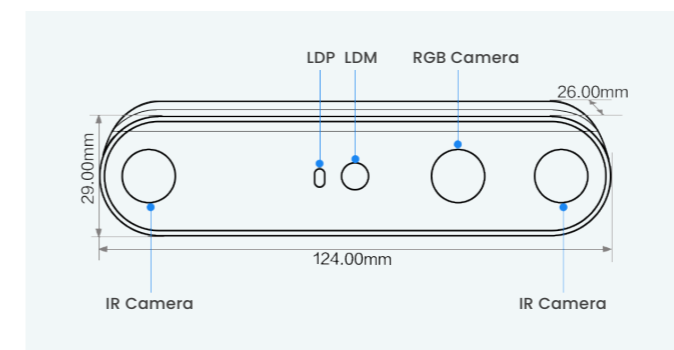


Human Body Reconstruction

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.2m - 10m
Ideal Range	0.25m - 7m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK
Depth	
Technology	Active Stereo IR
Baseline	100mm
Depth Accuracy	≤ 2% (1280 x 800@4m & 81% ROI)
FoV	91° x 66°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Shutter Type	Global Shutter

RGB	
FoV	94° x 68°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Image Format	YUYV & MJPEG
Shutter Type	Global Shutter
Electrical	
Power Supply	DC 5V & ≥ 2A
Power Consumption	< 3W
Physical	
Operating Environment	0°C - 40°C
Dimensions	124 x 29 x 26 mm
Weight	152g
Connector	USB Type-C
Multi-device Sync Port	8-Pin
Installation	Bottom: 1x 1/4-20 UNC Back: 2x M4



Scan the code to view more product information

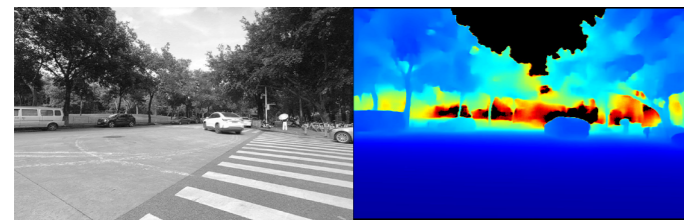


Gemini 2 XL

The Gemini 2 XL is an advanced long-range 3D camera with a working distance of up to 20 meters and a wide depth field of view (FoV) of up to 101°. This camera delivers precise depth information even in challenging conditions, such as high and low reflectivity objects, indoor dim light, and strong outdoor light. It consistently provides high-precision depth images and RGB quality throughout its entire 20-meter range. Equipped with both a USB interface and a gigabit Ethernet port that supports Power over Ethernet (PoE), the Gemini 2 XL meets the imaging needs of intelligent robots in complex and variable application scenarios. The camera is easy to set up and operate using the Orbbec SDK.

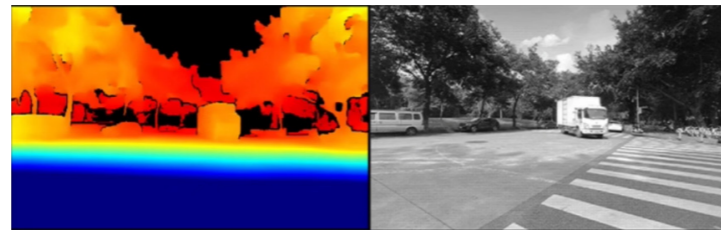
Resistant to Strong Light

Stable and reliable accuracy in outdoor scenarios

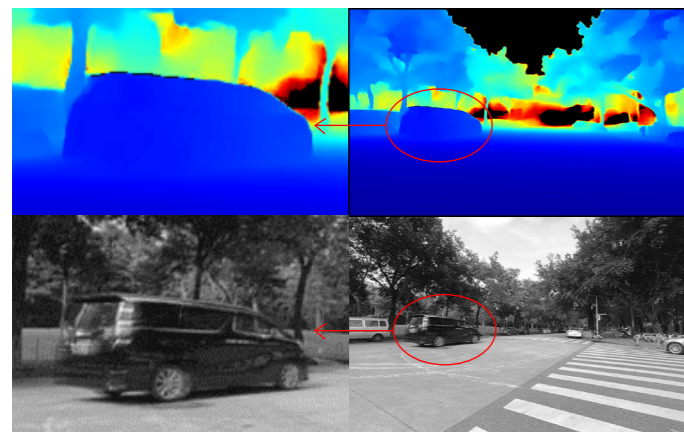


Broad Measurement Range

A depth FoV of up to 101° and high quality depth data over 20m

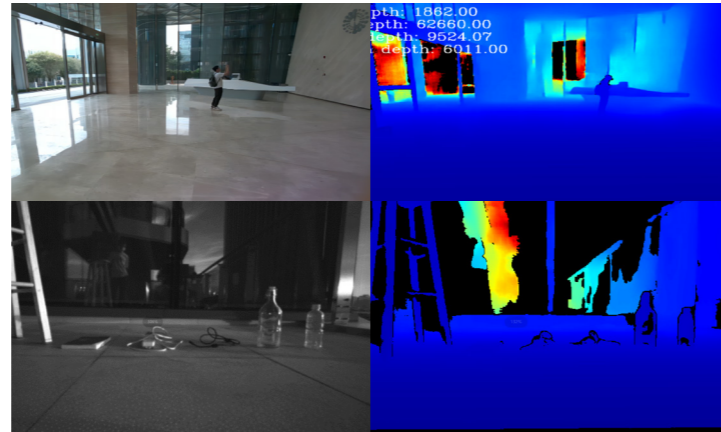


Superior RGB-D Output Quality



Handles Diverse Surface Types

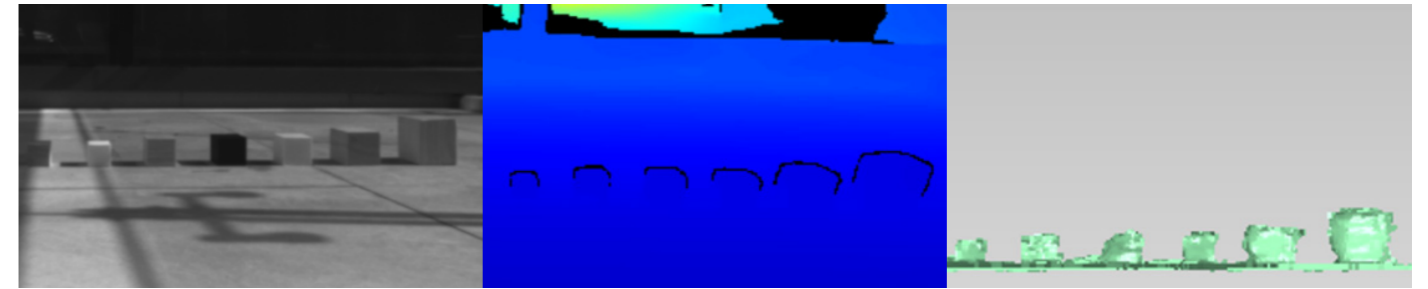
Adapts to high and low-reflective objects, semi-transparent, weak texture, and reflective surfaces



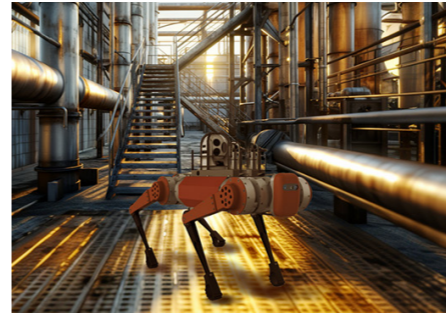
Multiple Hardware Interfaces

Gigabit Ethernet Port with PoE functionality, expanding application scenarios

Depth Point Cloud Output



Applications



Outdoor Inspection Robots



Warehouse Logistics: Pallet Recognition

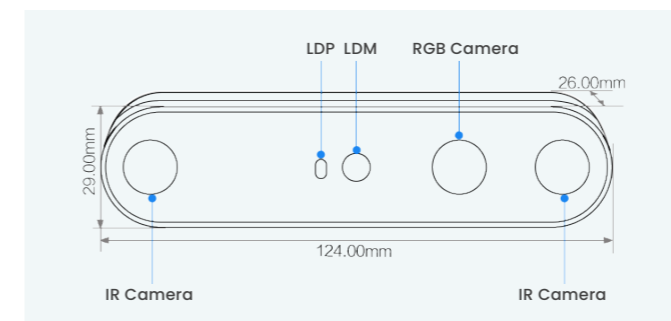


Retail: Behavioral Analysis

Product Specifications

Feature	
Operating Environment	Indoor / Outdoor
Depth Range	0.4m - 20m
Ideal Range	0.4m - 10m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK
Depth	
Technology	Active & Passive Stereo
Baseline	100mm
Depth Accuracy	≤ 2% (1280 x 800@4m & 81% ROI)
FoV	91° x 66°
Resolution and Frame Rate	Up to: 1280 x 800@10fps
Shutter Type	Global Shutter
Electrical	
Power Supply	DC: 12V & ≥ 2A POE: 802.3at (30W Max)
Power Consumption	DC: < 6W PoE: < 7W

RGB	
FoV	94° x 68°
Resolution and Frame Rate	Up to: 1280x800@20fps
Image Format	YUYV & MJPEG
Shutter Type	Global Shutter
Physical	
Operating Environment	0°C - 40°C
Dimensions	Camera: 124 x 29 x 26mm OBox: 130 x 71 x 22.5mm
Weight	Camera: 152g OBox: 279g
Connector	USB 2.0 Type-C & Gigabit Ethernet
Multi-device Sync Port	8-pin
Installation	Camera: Bottom: 1x 1/4-20 UNC Back: 2x M4 OBox: Bottom: 4 x M3



Scan the code to view more product information

Orbbec Femto Series

The General-Purpose High-Precision iToF 3D Camera

To meet the increasing development demands in the 3D vision field, Orbbec has partnered with Microsoft to develop the high-performance Femto series iToF 3D cameras. This series significantly broadens the global application of high-performance 3D cameras in industries such as logistics, robotics, manufacturing, retail, healthcare, and fitness.

The Femto series includes Femto Bolt, Femto Mega, and Femto Mega I, delivering comprehensive functionality and exceptional performance while maintaining the benchmark user experience of Azure Kinect DK.

Femto Bolt is designed for customers interested in solutions like the Azure Kinect Developer Kit and can serve as a direct replacement. It offers compatibility with the depth camera and architecture layers, features a more compact form factor, easier installation, and enhanced HDR capabilities.

Femto Mega, an advanced alternative to Azure Kinect DK, is equipped with an NVIDIA® Jetson™ Nano to run depth vision algorithms, converting raw data into precise depth images. This addresses issues of excessive bandwidth and high host computing power requirements and offers a gigabit Ethernet port with PoE functionality.

Femto Mega I, the industrial version of Femto Mega, features an IP65 protection rating, making it ideal for use in warehouses, manufacturing, and other demanding environments.

Product Specifications

Feature			
Model	Femto Bolt	Femto Mega	Femto Mega I
Operating Environment	Indoor / Semi-outdoor		
Depth Range	0.25-5.46m		
IMU	Supported		
SDK	Orbbec SDK K4A Wrapper Orbbec SDK		Orbbec SDK
Depth			
Technology	iToF		
FoV	WFoV: 120° x 120° HFoV: 75° x 65°		
Depth Accuracy	<11 mm+0.1% distance		
Resolution and Frame Rate	Up to : 1024 x 1024@15fps	Up to : 1024 x 1024@10fps	
Shutter Type	Global Shutter		
RGB			
FoV	80° x 51°		
Resolution and Frame Rate	Up to : 3840 x 2160@15fps	Up to : 3840 x 2160@3fps	
Shutter Type	Rolling Shutter		
Electrical			
Power Supply	DC: 12V / 2A USB: 5V / 3A	DC: 12V / 2A USB: 5V / 3A POE: 802.3at (24W)	DC: 12 - 24V POE: 802.3at (24W)
Power Consumption	DC Power + USB data: 4.7W USB power + data: 4.3W	DC Power + USB data: 11W USB power + data: 10W POE power + Gigabit Ethernet data: 13W	< 11.0W
Physical			
Operating Environment	10°C - 25°C		0°C - 45°C
Dimensions	115 x 40 x 65mm	115 x 40 x 145mm	180 x 110 x 50mm
Connector	USB 3.0 Type-C	USB 3.0 Type-C Gigabit Ethernet	Gigabit Ethernet
Protection	N/A		IP65
Multi-device Sync Port	8-pin	8-pin	12-Pin A-code
Weight	348g	560g	1080g
Installation	1x 1/4-20 UNC 4x M2.5		8 x M5



Femto Bolt

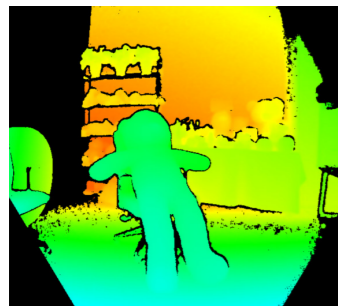
Microsoft-Recommended Alternative to Azure Kinect DK

Femto Bolt is a compact, high-performance iToF 3D camera co-developed by Orbbec and Microsoft. It integrates multiple sensing capabilities, including a multi-mode depth camera, color video camera, and inertial sensor. Utilizing Microsoft's industry-proven ToF technology, the depth camera offers identical operating modes and performance to the Microsoft Azure Kinect.

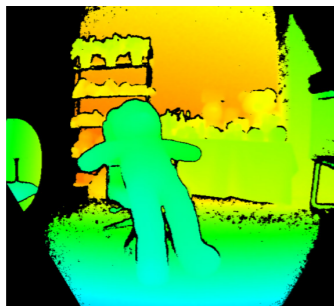
The Femto Bolt supports simultaneous data transmission and power supply through a single USB Type-C connection. Its versatility and competitive pricing make it an attractive option for AI developers working on 3D vision applications.

Full Compatibility with Azure Kinect DK

Identical depth modes and performance as the Azure Kinect DK



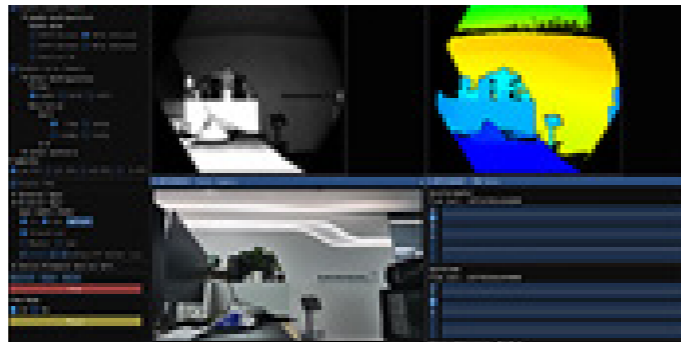
Femto Bolt



Azure Kinect Developer Kit

High Adaptability

The same API interface for easy integration with existing Azure Kinect DK applications

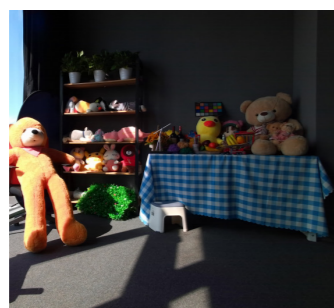


High-performance RGB

High-quality 4K RGB with HDR support



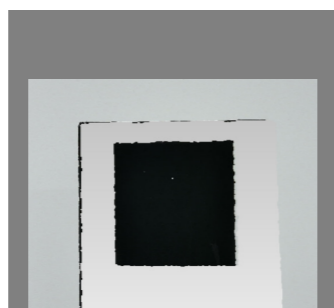
Femto Bolt



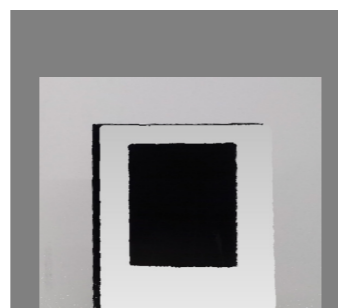
Azure Kinect Developer Kit

Enhanced Alignment Precision

Four times the alignment accuracy compared to Azure Kinect DK



Femto Bolt



Azure Kinect Developer Kit

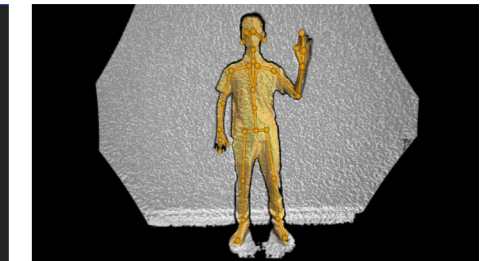
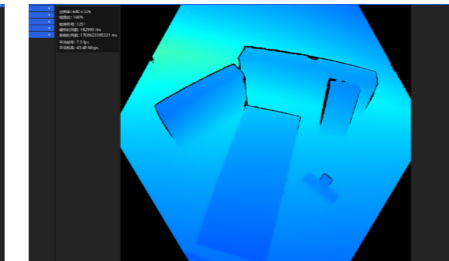
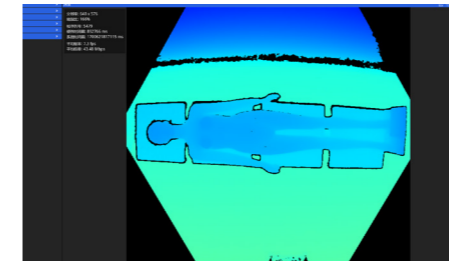
Easy Integration

Compact design with a form factor half the original size

Stable Data Transmission

Locking USB-C port for increased mechanical stability, supporting both power and data transmission

Depth Point Cloud Output



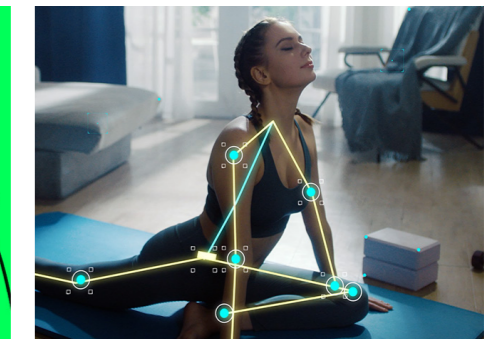
Applications



Medical Imaging



Volumetric Video

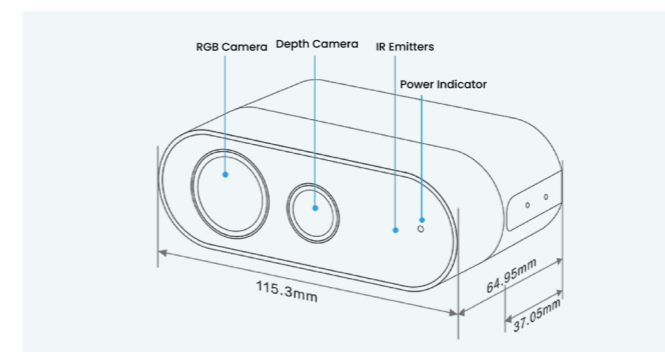


Rehabilitation and Fitness

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.25-5.46m
IMU	Supported
SDK	Orbbec SDK K4A Wrapper Orbbec SDK
Depth	
Technology	iToF
FoV	WFoV: 120° x 120° HFoV: 75° x 65°
Depth Accuracy	<11 mm+0.1% distance
Resolution and Frame Rate	Up to : 1024 x 1024@15fps
Shutter Type	Global Shutter

RGB	
FoV	80° x 51°
Resolution and Frame Rate	Up to : 3840 x 2160@15fps
Shutter Type	Rolling Shutter
Electrical	
Power supply	DC: 12V / 2A USB: 5V / 3A
Power Consumption	DC Power + USB data: 4.7W USB power + data: 4.3W
Physical	
Operating Environment	10°C - 25°C
Dimensions	115 x 40 x 65mm
Connector	USB 3.0 Type-C
Protection	N/A
Multi-device Sync port	8-pin
Weight	348g
Installation	1x 1/4-20 UNC ; 4x M2.5



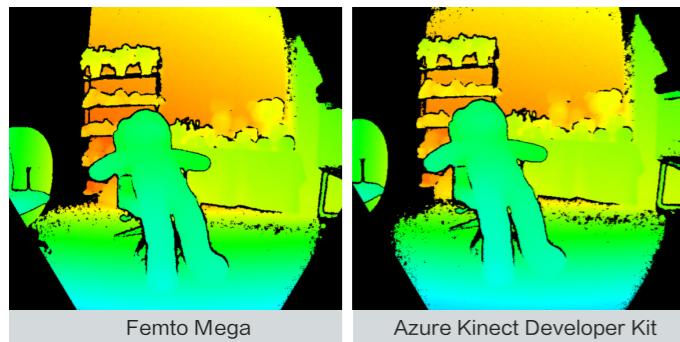


Femto Mega

Femto Mega is a next-generation iToF camera co-developed by Orbbec, Microsoft, and NVIDIA. This programmable multi-mode depth and RGB camera offers real-time streaming of processed images over Ethernet or USB connections. It utilizes Microsoft's industry-proven ToF technology and the NVIDIA® Jetson™ platform to deliver a comprehensive depth and RGB vision solution without requiring additional processing power. Femto Mega not only provides OrbbecSDK for enhanced PoE performance but also offers a fully compatible API interface with Microsoft Azure Kinect ecosystem applications. Migration documentation are provided for easy transition. Femto Mega has achieved large-scale and stable mass production, meeting the needs of applications in logistics, robotic arms, manufacturing, retail, healthcare, and fitness.

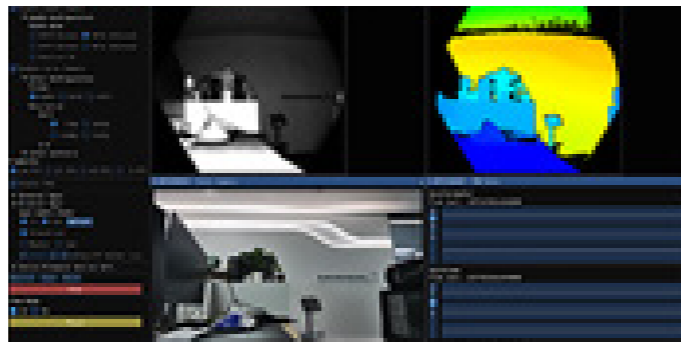
Full Compatibility with Azure Kinect DK

Identical depth modes and performance as the Azure Kinect DK



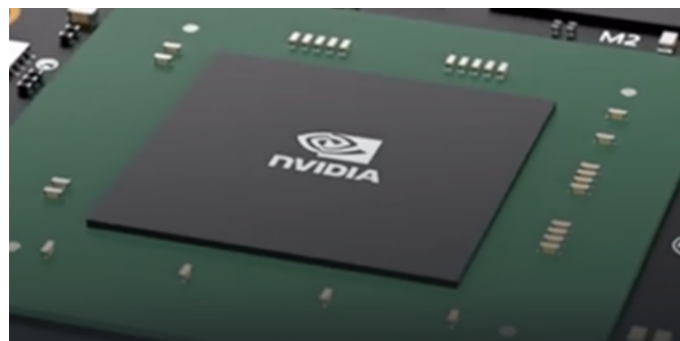
High Adaptability

The same API interface for easy integration with existing Azure Kinect DK applications



No Computer or System Limitations

Built-in computing power delivers direct depth results



Supports Long-Distance Stable Data Transmission

Supports Gigabit Ethernet and PoE Supply



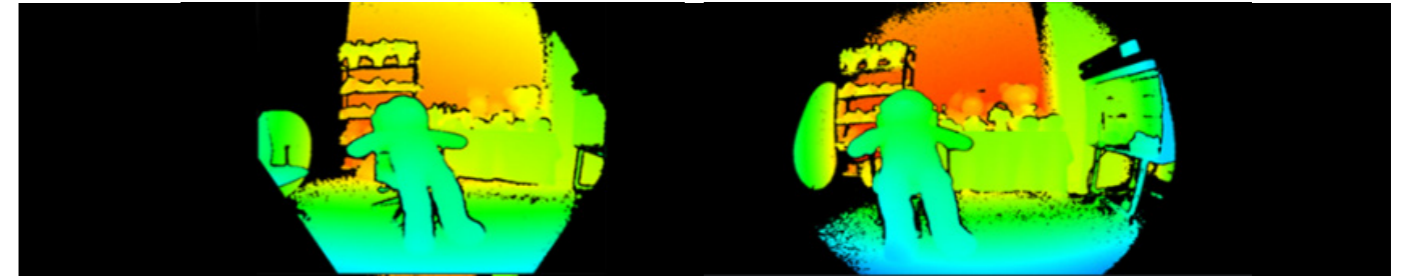
Enhanced Alignment Precision

Four times the alignment accuracy compared to Azure Kinect DK

Comprehensive Development support

Easy multi-camera synchronization

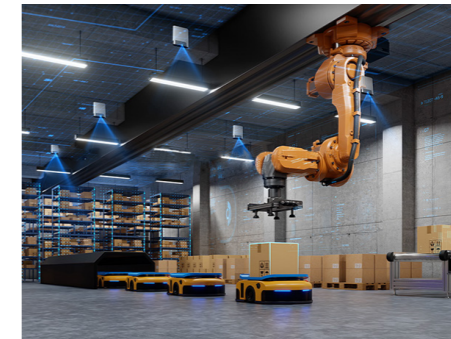
Depth Point Cloud Output



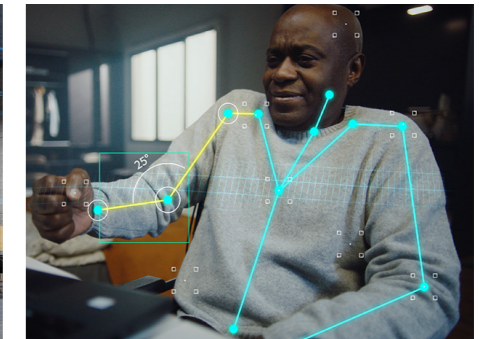
Applications



Dimensioning - Warehouse Management



Industrial Robotic Arms

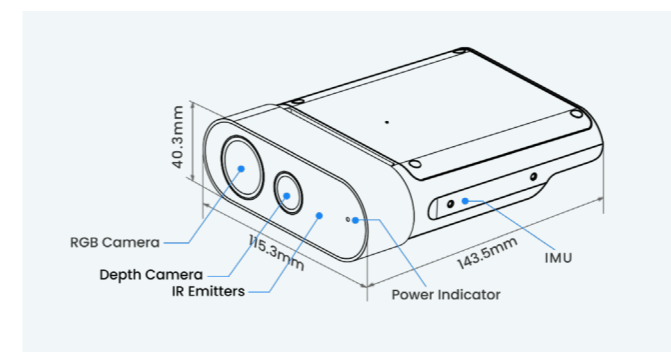


Rehabilitation

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.25-5.46m
IMU	Supported
SDK	Orbbec SDK K4A Wrapper Orbbec SDK
Depth	
Technology	iToF
FoV	WFoV: 120° x 120° HFOV: 75° x 65°
Depth Accuracy	<11 mm+0.1% distance
Resolution and Frame Rate	Up to : 1024 x 1024@15fps
Shutter Type	Global Shutter
RGB	
FoV	80° x 51°
Resolution and Frame Rate	Up to : 3840 x 2160@15fps
Shutter Type	Rolling Shutter

Electrical	
Power Supply	DC: 12V / 2A USB: 5V / 3A POE: 802.3at (24W)
Power Consumption	DC Power + USB data: 11W USB power + data: 10W POE power + Gigabit Ethernet data: 13W
Physical	
Operating Environment	10°C - 25°C
Dimensions	115 x 40 x 145mm
Connector	USB 3.0 Type-C Gigabit Ethernet
Protection	N/A
Multi-device Sync Port	8-pin
Weight	560g
Installation	1x 1/4-20 UNC 4x M2.5



Scan the code to view more product information



Femto Mega I

The Femto Mega I is the industrial-grade version of the Femto Mega, featuring an IP65 rating. This programmable multi-mode depth and RGB camera offers real-time streaming of processed images over Ethernet connections. It combines Microsoft's cutting-edge ToF technology with NVIDIA's superior computing power, enhanced by high-precision depth algorithms to create a robust software-defined vision system capable of flexible depth perception and image processing. The camera is equipped with million-level iToF and 4K RGB sensors, delivering high-quality RGB-D image data. The Femto Mega I meets the needs of AI and computer vision developers and is well-suited for industrial automation scenarios, such as warehouse logistics automation, production line material handling, and the measurement of dimensions and volumes of large objects.

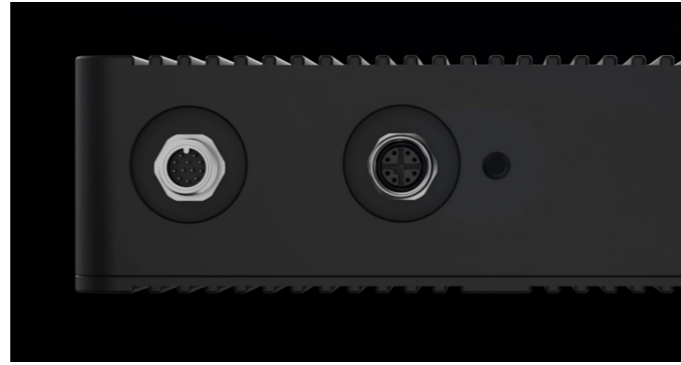
IP65 Protection

Industrial-grade dust and water resistance



Industrial Aviation Connectors

Supports Gigabit Ethernet and PoE Supply



Covering Ultra-wide Field of View for Close-range Scenarios

Supporting long-distance operations

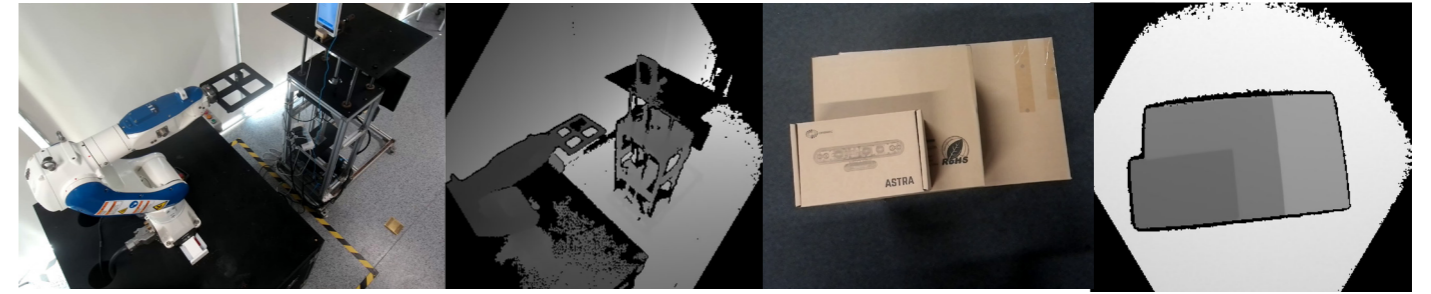


Ambient Light Resistance Improved by 100%

Ideal for various logistics and material handling environments



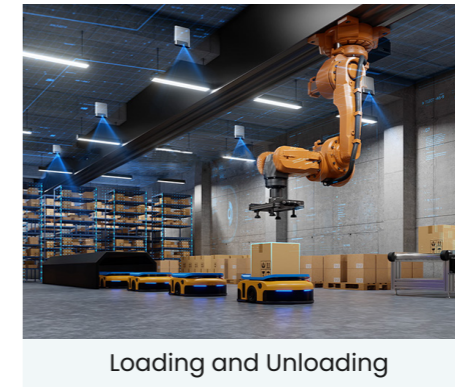
Depth Point Cloud Output



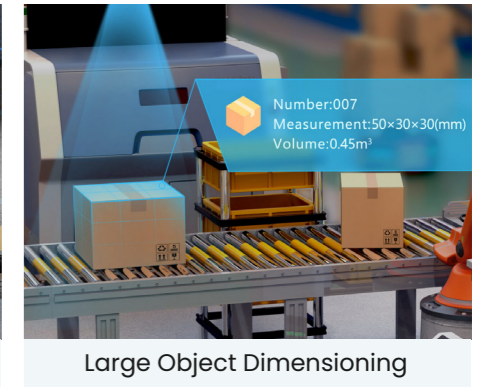
Applications



Depalletizing



Loading and Unloading

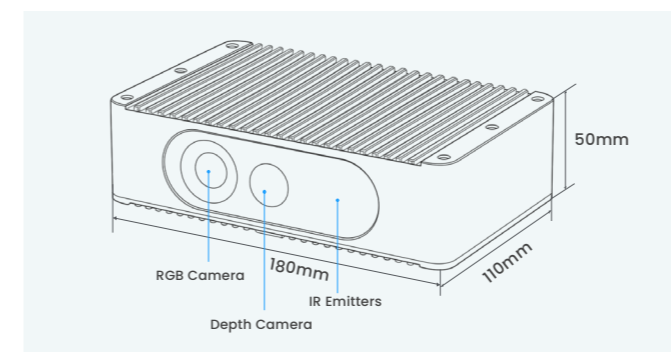


Large Object Dimensioning

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.25-5.46m
IMU	Supported
SDK	Orbbec SDK
Depth	
Technology	iToF
FoV	WFoV: 120° x 120° HFoV: 75° x 65°
Depth Accuracy	<11 mm+0.1% distance
Resolution and Frame Rate	Up to : 1024 x 1024@10fps
Shutter Type	Global Shutter

RGB	
FoV	80° x 51°
Resolution and Frame Rate	Up to : 3840 x 2160@3fps
Shutter Type	Rolling Shutter
Electrical	
Power supply	DC: 12 - 24V POE: 802.3at (24W)
Power Consumption	< 11.0W
Physical	
Operating Environment	0°C - 45°C
Dimensions	180 x 110 x 50mm
Connector	Gigabit Ethernet
Protection	IP65
Multi-device Sync port	12-Pin A-code
Weight	1080g
Installation	8 x M5



Orbbec Astra Series

General-Purpose High-Performance Monocular Structured Light 3D Camera

The Orbbec Astra Series represents the next generation monocular structured light 3D cameras, including the Astra Mini S Pro and Astra 2. These cameras leverage extensive application experience from previous Astra series models, offering enhanced performance and versatility for various industrial and interactive applications.



The Astra Mini S Pro, the latest addition to the Orbbec Astra Mini Series, is designed for compatibility with both the Astra Mini Pro and Astra Mini S models. It offers configurable working distance ranges to meet the specific requirements of the Astra Mini S and Astra Mini Pro, ensuring optimal performance across various applications.

As the flagship model of the Astra Series, the Astra 2 supports the UVC protocol, simplifying integration and providing a more user-friendly experience. Its hardware D2C functionality aligns depth and color information across different resolutions, reducing the computational load on the host system.

Additionally, the Astra 2 features an integrated 6-axis IMU, enabling the camera to track its own motion and rotation for enhanced pose tracking. The camera supports synchronization of depth and RGB frames, as well as multi-camera setups, allowing for flexible configurations and eliminating common issues of multi-camera interference. This expands the field of view and measurement range, making it ideal for complex setups.

The Astra 2 provides real-time high-resolution depth measurement with resolutions up to 1600x1200 at 30fps, and it also supports 1920x1080 at 30fps for color images. This combination of high-quality color and depth data makes the Astra 2 ideal for applications such as dimensioning, interactive display, and indoor scanning.

Product Specifications

Feature		
Model	 Astra 2	 Astra Mini S Pro
Operating Environment	Indoor / Semi-outdoor	Indoor
Depth Range	0.6m - 8m	0.4m - 4m
Description of Depth Measurement Range	Ideal Range: 0.6m - 5m	Default is 0.4m - 2m, (to use 2m - 4m you need to set the gain to 8000 via the SDK interface)
IMU	Supported	N/A
Camera Driver	USB 3.0 & USB 2.0	OpenNI
SDK	Orbbec SDK	Orbbec SDK & OpenNI 2
Depth		
Technology	Structured Light	
Baseline	75mm	55mm
Depth Accuracy	Typical depth accuracy: ≤0.16% (1600x1200@1m & 81% ROI) ≤0.3% (1600x1200@2m & 81% ROI)	3mm@1m
FoV	58° x 45°	
Resolution and Frame Rate	Up to : 1600x1200@30fps	Up to : 1280x1024@7fps
Shutter Type	Rolling Shutter	
RGB		
FoV	16:9 74°x 46° 4:3 59°x 46°	62° x 49°
Resolution and Frame Rate	Up to : 1920x1080@30 fps	Up to : 1280x960@7 fps
Shutter Type	Rolling Shutter	
Electrical		
Power Supply	DC 5V & ≥1.5A	DC 5V & ≥0.5A
Power Consumption	≤3.0W	<2.0W
Physical		
Operating Environment	0°C - 35°C	10°C - 40°C
Dimensions	144.5 x 34.6 x 35.8 mm 144.5 x 45.3 x 38.6 mm (with mounting base)	84.90 x 20.00 x 19.92 mm
Weight	195g 240g (with mounting base)	34g
Connector	USB Type-C	USB 2.0 DF13 Connector
Multi-device Sync port	8-pin	N/A
Installation	Bottom: 1x 1/4-20 UNC Back: 2x M3	Embedded

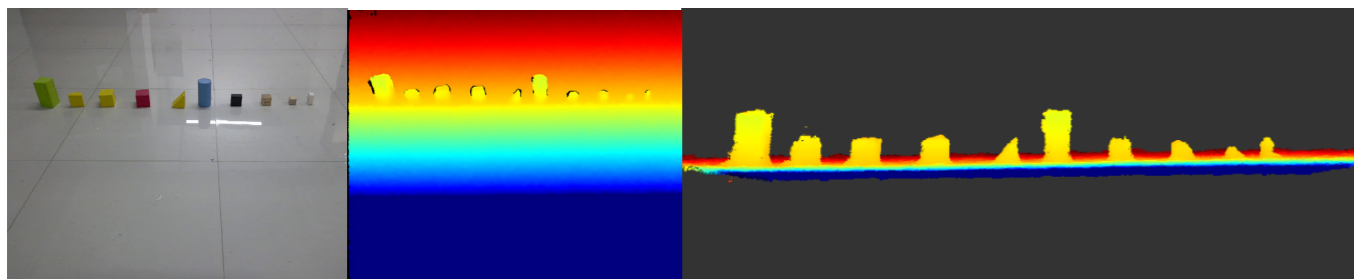


Astra 2

The Astra 2 is the flagship model of the Orbbec Astra Series, leveraging structured light technology. It is equipped with Orbbec's custom ASIC MX6600, delivering high-quality depth processing. The Astra 2 retains the FoV and depth measurement range of its predecessors while featuring a fully upgraded optical system that enhances measurement accuracy and stability. Additionally, it supports multi-camera synchronization to prevent interference when multiple cameras are used simultaneously.

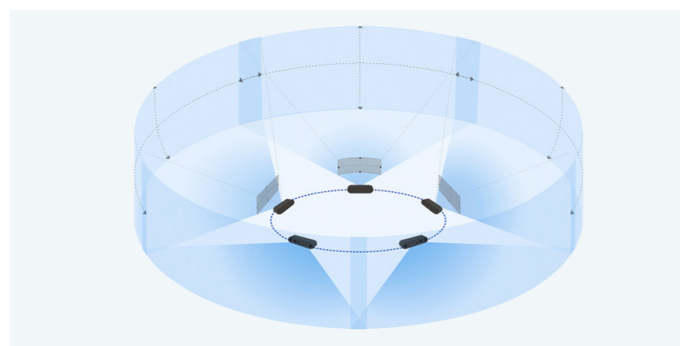
High-Resolution Depth Measurement up to 1600x1200 @ 30fps

Ideal for recognizing small objects



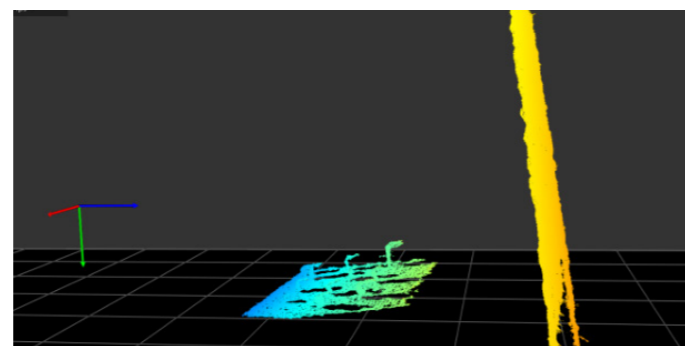
Multi-Camera Synchronization

Prevents interference and allows for seamless operation of multiple cameras in the same environment



Stable and Accurate Depth Measurement

$\leq 0.16\%$ (1600 x 1200 @ 1m & 81% ROI)



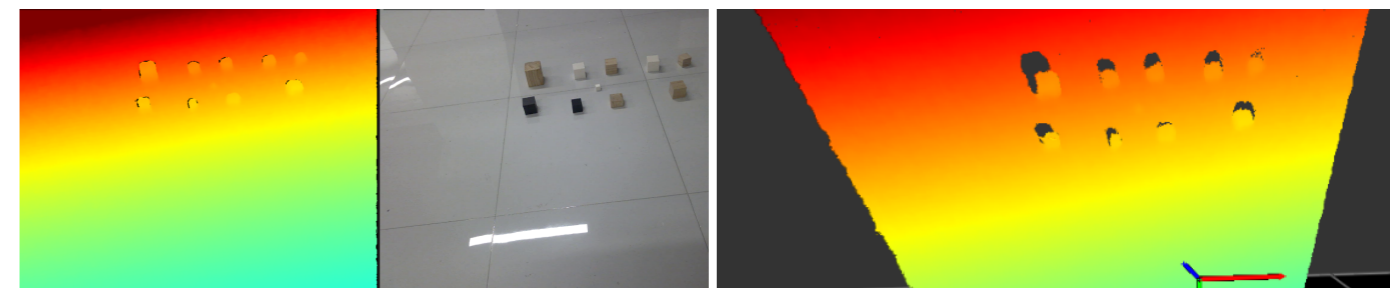
Low Power Consumption: Average Consumption below 2W Depth and Color Information Alignment

Reduces computational load on host systems

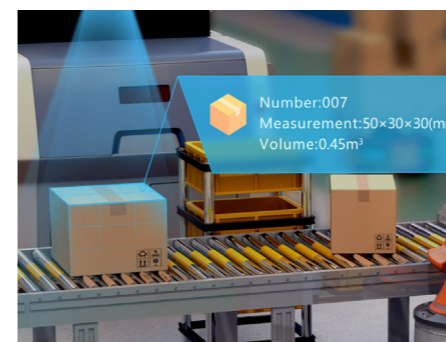
Integrated

With high performance 6-axis IMU

Depth Point Cloud Output



Applications



Dimensioning



Indoor Scanning



Interactive Display

Product Specifications

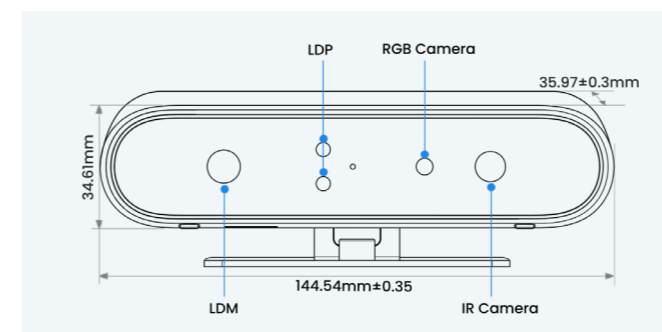
Feature	
Operating Environment	Indoor / Semi-outdoor
Depth Range	0.6m - 8m
Ideal Range	0.6m - 5m
IMU	Supported
Camera Driver	USB 3.0 & USB 2.0
SDK	Orbbec SDK

Depth	
Technology	Structured Light
Baseline	75mm
Typical depth accuracy	$\leq 0.16\%$ (1600 x 1200 @ 1m & 81% ROI) $\leq 0.3\%$ (1600 x 1200 @ 2m & 81% ROI)
FoV	58° x 45°
Resolution and Frame Rate	Up to : 1600x1200@30fps
Shutter Type	Global Shutter

RGB	
FoV	16:9 74° x 46°
Resolution and Frame Rate	4:3 59° x 46°
Shutter Type	Up to : 1920x1080@30 fps Rolling Shutter

Electrical	
Power supply	DC 5V & $\geq 1.5A$
Power Consumption	$\leq 3.0W$

Physical	
Operating Environment	0°C - 35°C
Dimensions	144.5 x 34.6 x 35.8 mm 144.5 x 45.3 x 38.6 mm (with mounting base)
Weight	195g 240g (with mounting base)
Connector	USB Type-C
Multi-device Sync port	8-pin
Installation	Bottom: 1x 1/4-20 UNC Back: 2x M3



Scan the code to view more product information

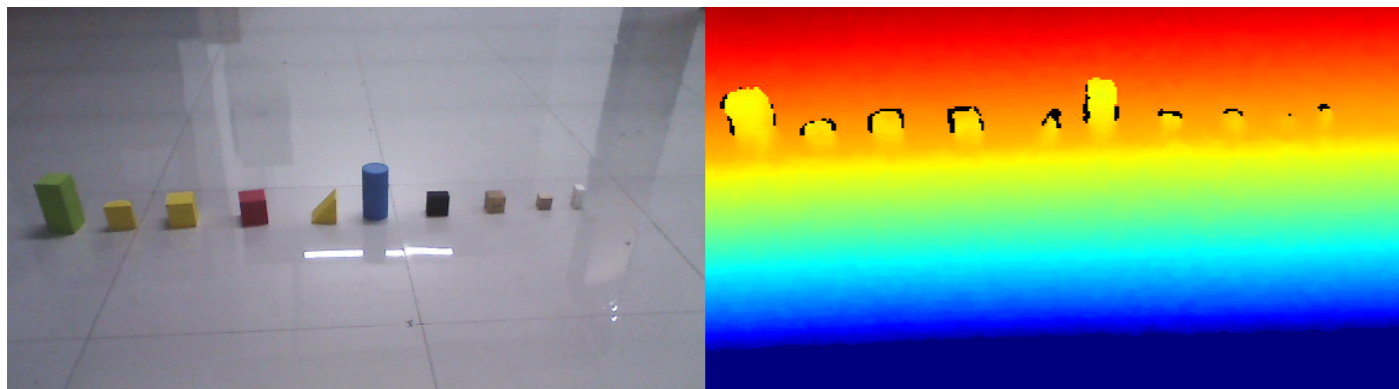


Astra Mini S Pro

The Astra Mini S Pro, as a compatible product to the Orbbec Astra Mini series which includes the Astra Mini Pro and Astra Mini S, offers an optimal working distance range that can be tailored through parameter configuration to meet the specific operational distance requirements of both the Astra Mini S and Astra Mini Pro.

The Orbbec Astra Mini series, as Orbbec's embedded product line targeted at the robotics industry, has been in consistent and stable supply for over six years. Target markets of this series include service robots, gesture interaction, and volumetric measurement.

High Precision, Relative Accuracy $\leq 3\text{mm}$ @ 1m



Compact and Embedded Design, Easy Integration for Various Applications

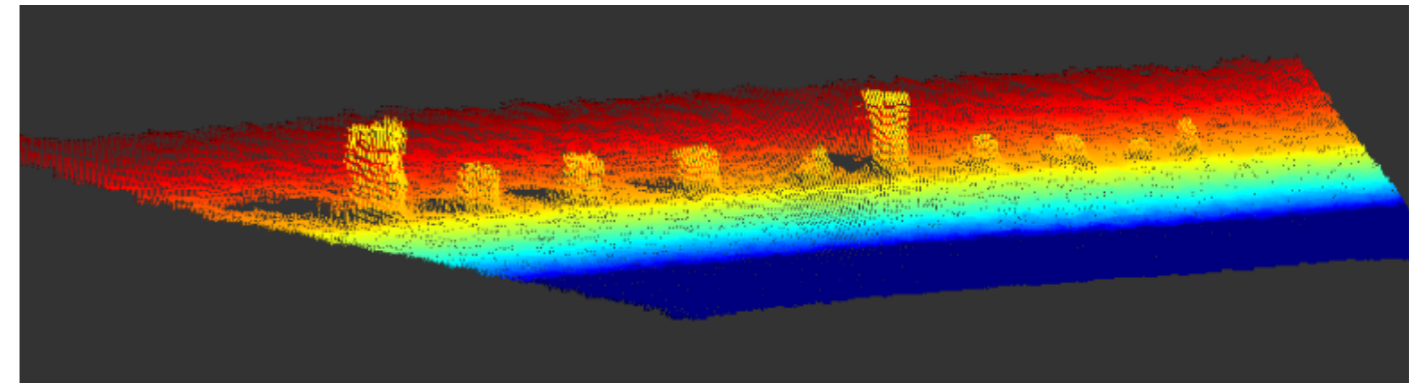


Low Power Consumption: Average Consumption below 2W

Depth and Color Information Alignment

Reduces computational load on host systems

Depth Point Cloud Output



Applications



Service Robots



Dimensioning



Interactive Display

Product Specifications

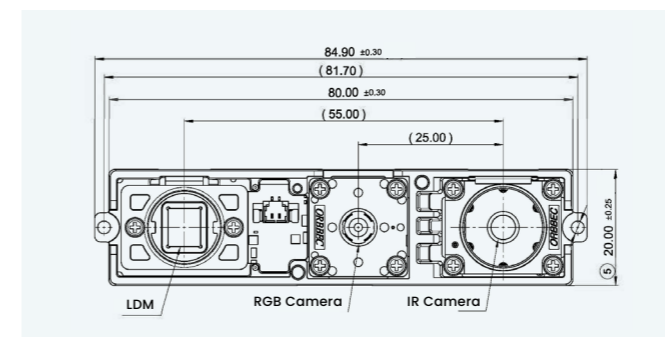
Feature	
Operating Environment	Indoor
Depth Range	0.4m - 4m
Description of depth measurement range	Default is 0.4m - 2m, (to use 2m - 4m you need to set the gain to 8000 via the SDK interface)
IMU	N/A
Camera Driver	OpenNI
SDK	Orbbec SDK & OpenNI 2

Depth	
Technology	Structured light
Baseline	55mm
Typical depth accuracy	3mm@1m
FoV	58° x 45°
Resolution and Frame Rate	Up to: 1280x1024@7fps
Shutter Type	Rolling Shutter

RGB	
FoV	62° x 49°
Resolution and Frame Rate	Up to: 1280x960@7 fps
Shutter Type	Rolling Shutter

Electrical	
Power supply	DC 5V & $\geq 0.5\text{A}$
Power Consumption	<2.0W

Physical	
Operating Environment	10°C - 40°C
Dimensions	84.90 × 20.00 × 19.92 mm
Weight	34g
Connector	USB 2.0 DF13 Connector
Multi-device Sync port	N/A
Installation	Embedded



Exclusive for Enterprise Customers

Orbbec Persee Series

High-Performance Intelligent 3D Suite

The Orbbec Persee series is an intelligent 3D camera lineup designed for the AIOT market, aiming to provide developers and industry customers with comprehensive hardware support and reliable 3D vision data output. This enables users to focus on software applications and algorithm development, accelerating project validation and product deployment.

The series currently includes the Persee N1 3D development kit, co-developed with NVIDIA, and the Persee 2, a 3D smart camera based on a high-performance AI ARM platform.

Product Specifications

Feature		
Model	Persee N1	Persee 2
Operating Environment	Indoor / Semi-outdoor	
Processor	NVIDIA Jetson Nano	Amlogic A311D
Depth technology	Active Stereo IR	
Depth Range	0.15m-10m	0.2m-10m
Ideal Range	0.2m - 5m	0.25m- 7.0m
IMU	Supported	
Camera Driver	UVC	
SDK	Orbbec SDK	
Algorithm SDK	Orbbec Face Reconstruction SDK	N/A
Depth		
Baseline	50mm	100mm
Depth Accuracy	≤ 2% (1280x800@2m & 81% ROI)	≤ 2% (1280x800@4m & 81% ROI)
FoV	91° x 66°	
Resolution and Frame Rate	Up to: 1280 x 800@30fps	
Shutter Type	Global Shutter	
RGB		
FoV	86° x 55°	94° x 68°
Resolution and Frame Rate	Up to: 1920 x 1080@30fps	Up to: 1280 x 800@30fps
Shutter Type	Rolling Shutter	Global Shutter
Electrical		
Power supply	DC 12V & ≥3A	DC: 12V & ≥2A
Power Consumption	<12W	< 7.0W
Physical		
Operating Environment	0°C - 40°C	
Dimensions	200 x 100 x 90 mm	180 x 76.5 x 45mm
Data Connector	USB: USB 3.0 Type A x 2 USB 2.0 Type A x 2 USB 3.0 Type C Male x 1 (Camera) USB 2.0 Type-C Female x 1 (System Installation) UART : 6-Pin GPIO: 40-Pin Display Output: HDMI x 1, DisplayPort x 1 Micro SD: Up to 128GB Storage : 16GB eMMC with M.2 M key expansion slot Ethernet: RJ45 Gigabit Ethernet, supports 802.3 at PoE RTC : CR2032, 3V	Display Output: HDMI 2.0 Audio Output: 3.5mm RTC : CR2032, 3V USB 2.0 Type C (Debug and Firmware Update) Micro SD: Up to 128GB Storage : 32GB eMMC Wifi/BT: 802.11a/b/g/n/ac, Bluetooth 5.0 Ethernet: RJ45 Gigabit Ethernet Microphone: 4 Microphone Linear Microphone Array
Power Connector	12V DC 802.3.at POE	12V DC



Persee N1

The Persee N1, co-developed by Orbbec and NVIDIA, is a 3D development kit that integrates the high-performance Gemini 2 stereo camera with the versatile NVIDIA Jetson Nano platform. In addition to its default configuration, this kit supports flexible integration of various Orbbec 3D cameras and NVIDIA computing platforms to meet user needs.

The kit features a diverse range of hardware interfaces, catering to robotics, smart vehicles, and human reconstruction control requirements. It also supports software platforms such as NVIDIA Jetpack, VisionWorks, and DeepStream, enabling the development, validation, deployment, and optimization of 3D-related projects from the NVIDIA open-source community, including motion sensing, obstacle avoidance, and volume measurement. This reduces development costs and further promotes innovation in 3D applications and the commercialization of smart camera products.

Plug and Play

Flexible compatibility with various Orbbec 3D cameras



Rich Hardware Interfaces

Supports connection to various hardware peripherals to meet diverse application needs



Support NVIDIA Jetson Nano

Enables flexible and rapid 3D application development and product validation

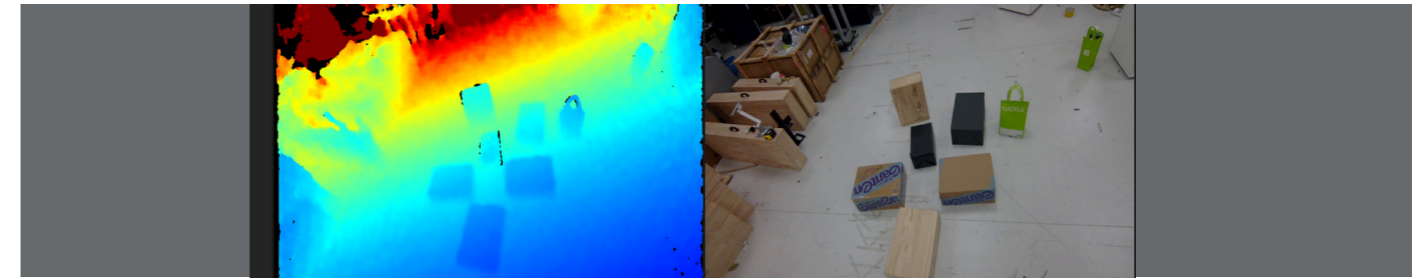


ODM/OEM Services

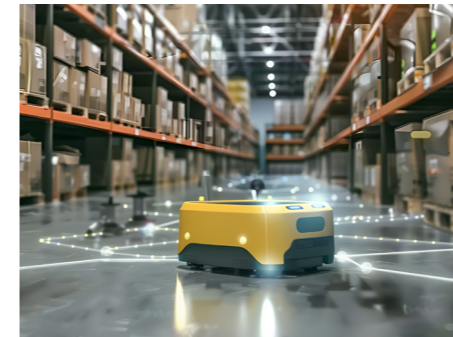
Offers ODM/OEM services for customers using the NVIDIA ecosystem



Depth Point Cloud Output



Applications



Autonomous Mobile Robot (AMR)



Human Body Reconstruction

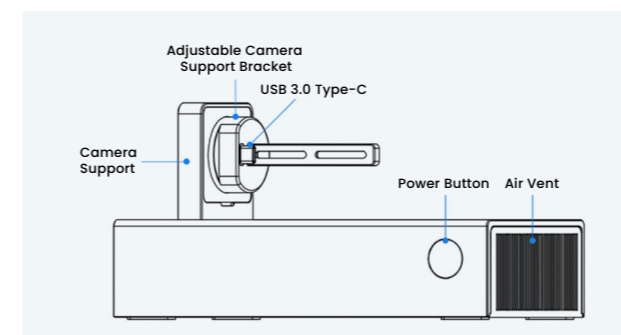


Collaborative Robots

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Processor	NVIDIA Jetson Nano
Depth technology	Active Stereo IR
Depth Range	0.15m-10m
Ideal Range	0.2m - 5m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK
Algorithm SDK	Orbbec Face Reconstruction SDK
Depth	
Baseline	50mm
Depth Accuracy	≤ 2% (1280x800@2m & 81% ROI)
FoV	91° x 66°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Shutter Type	Global Shutter
RGB	
FoV	86° x 55°
Resolution and Frame Rate	Up to: 1920 x 1080@30fps
Shutter Type	Rolling Shutter

Electrical	
Power supply	DC 12V & ≥3A
Power Consumption	<12W
Physical	
Operating Environment	0°C - 40°C
Dimensions	200 x 100 x 90 mm
Data Connector	USB:
	USB 3.0 Type A x 2
	USB 2.0 Type A x 2
	USB 3.0 Type C Male x 1 (Camera)
	USB 2.0 Type-C Female x 1 (System Installation)
	UART: 6-Pin
	GPIO: 40-Pin
	Display Output: HDMI x 1, DisplayPort x 1
	Micro SD: Up to 128GB
	Storage: 16GB eMMC with M.2 M key expansion slot
	Ethernet: RJ45 Gigabit Ethernet, supports 802.3 at PoE
	RTC: CR2032, 3V
Power Connector	12V DC
	802.3.at POE



Scan the code to view more product information



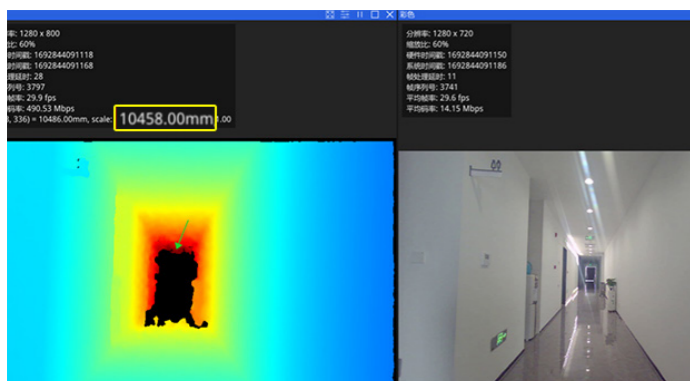
Persee 2

Persee 2 is Orbbec's next-generation 3D smart camera. It is equipped with a high-performance AI ARM platform (Amlogic A311D), supporting up to 5 TOPS computing power and achieving depth measurement with zero blind spots up to 10 meters. The camera features a built-in IMU, integrated hardware D2C functionality, and supports various depth operating modes to suit different application scenarios.

Pre-installed with Orbbec Viewer and Orbbec Pose SDK, the Persee 2 can quickly and accurately perform human skeleton tracking and output various types of data, such as depth maps, color images, IR images, and point clouds. Additionally, the camera supports the cross-platform development toolkit Orbbec SDK, enabling developers and enterprise customers to rapidly develop and validate application-specific products.

High-Precision Depth Measurement

Enables zero-blind-spot depth measurement up to 10 meters



Dual System Support (Android 9 and Ubuntu 18.04)

Rich hardware interfaces to meet diverse customer needs



Flexible and Versatile Mounting Options

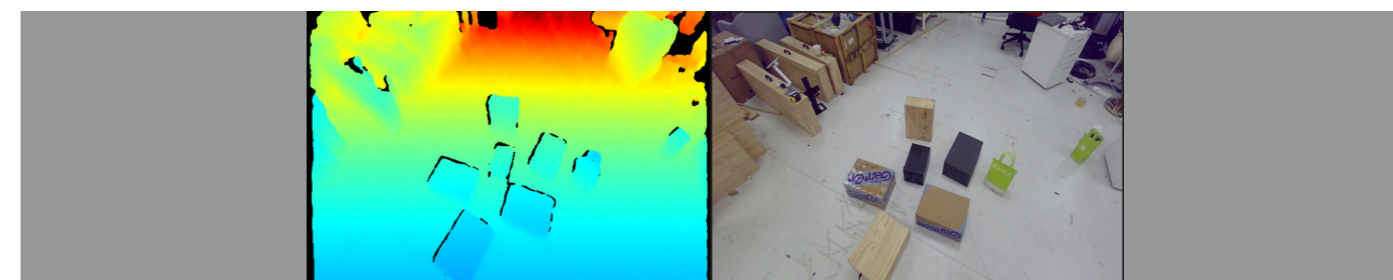
Supports vertical, horizontal, and hanging installations with a detachable mounting bracket



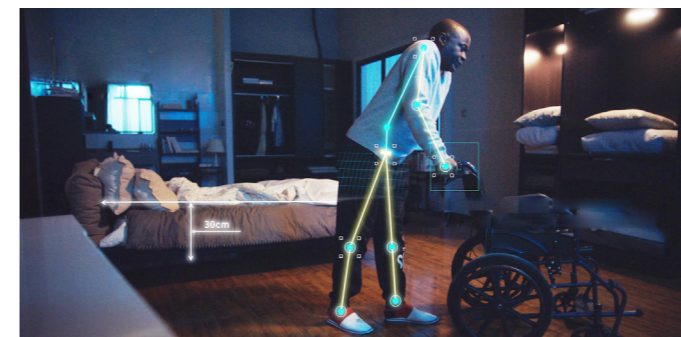
Comprehensive Functionality

Supports RTC (Real-Time Clock), WOL (Wake on LAN), and dual-band 2.4G/5G WiFi

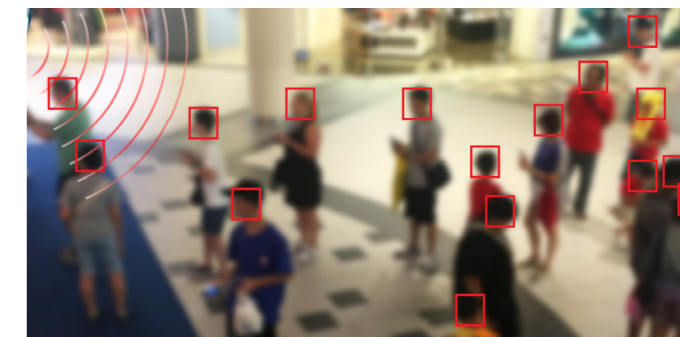
Depth Point Cloud Output



Applications



Elderly Care – Body Motion Analysis

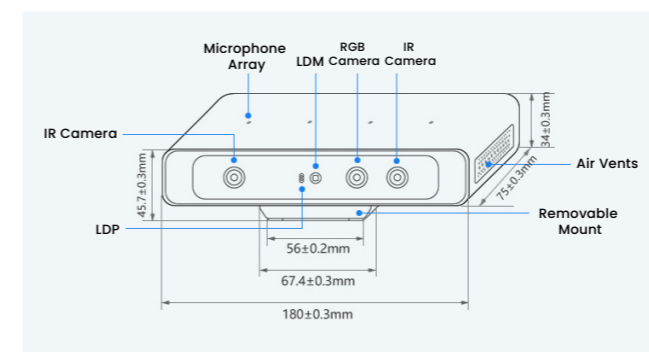


Retail Traffic Analysis

Product Specifications

Feature	
Operating Environment	Indoor / Semi-outdoor
Processor	Amlogic A311D
Depth technology	Active Stereo IR
Depth Range	0.2m-10m
Ideal Range	0.25m- 7.0m
IMU	Supported
Camera Driver	UVC
SDK	Orbbec SDK
Algorithm SDK	N/A
Depth	
Baseline	100mm
Depth Accuracy	≤ 2% (1280x800@4m & 81% ROI)
FoV	91° x 66°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Shutter Type	Global Shutter
RGB	
FoV	94° x 68°
Resolution and Frame Rate	Up to: 1280 x 800@30fps
Shutter Type	Global Shutter

Electrical	
Power supply	DC: 12V & ≥2A
Power Consumption	< 7.0W
Physical	
Operating Environment	0°C - 40°C
Dimensions	180 x 76.5 x 45mm
Data Connector	Display Output: HDMI 2.0 Audio Output: 3.5mm RTC: CR2032, 3V USB 2.0 Type C (Debug and Firmware Update) Micro SD: Up to 128GB Storage: 32GB eMMC Wifi/BT: 802.11a/b/g/n/ac, Bluetooth 5.0 Ethernet: RJ45 Gigabit Ethernet Microphone: 4 Microphone Linear Microphone Array
Power Connector	12V DC



Scan the code to view more product information



| ORBEC INC.

Tel: +86 755-86722886

E-mail: business@orbbec.com

Web: www.orbbec.com

Add: Orbbec Technology Building, No. 88 High-tech
North 1st Road, Nanshan District, Shenzhen, China

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