

# RealSense™ Depth Camera D555

Datasheet  
v1.1



## 3D Computer Vision Powered Over Ethernet

The RealSense<sup>™</sup> Depth Camera D555 is the first camera powered by the new RealSense Vision SoC V5. V5 is a small low power vision SoC with power vision SoC with industry leading stereo disparity processing and motion estimation, Vision DSP optimized for computer vision and best-computer vision and best-in-class Image Signal Processor (ISP) IPU7.

The ISP IPU7 enhances the RGB with Geometric Distortion Correction (GDC) and Temporal Noise Reduction (TNR).

D555 introduces Power over Ethernet interface. This is an addition to the D400 product family with USB and GMSL/FAKRA interfaces. Ethernet interfaces. Ethernet interface is typically used in robotics, retail and restaurant market segments.

This depth camera is composed of the long range global shutter D450 optical module with IMU.

D555 is supported by the Intel RealSense SDK 2.0 using Data Distribution Service (DDS), allowing ease of integration and backward backward compatibility to the product over Ethernet.

Minimum System Requirements: Host supporting Ethernet, PoE PSE (Power can also come from the USB port).

## System Components

The RealSense Depth Camera D555 For D450 Optical module specifications, specifications, refer to [datasheet](#)

Host System Supporting PoE D555 is platform independent and can be connected to any platform supporting PoE or Ethernet with power power over USB, including Intel platform, NVIDIA platform and more. more.

Host System Ethernet Ethernet Port Gigabit Ethernet 1000BASE-T<sup>(1)</sup> Jumbo frame size, 9000 bytes, supported<sup>(2)</sup>

Ethernet Cable Category 6 (Cat6) or above with RJ45 RJ45 connector

PoE Switch/Router/ Injector Minimum requirements:

- PoE standard IEEE802.3at 15W or or higher
- Gigabit Ethernet 1000BASE-T ports<sup>(1)</sup> ports<sup>(1)</sup>
- Jumbo frame size, 9000 bytes, supported<sup>(2)</sup>

USB Cable (optional) For Power over USB, and HW Sync

## Features

Use Environment Indoor/Outdoor

IP Grade IP65

Depth Technology Active Stereo

Image Sensor Technology Global Shutter; 3 μm x 3 μm pixel size

Depth Field of View (FOV), H x V HD 16:9 87° x 58° (±3°)

Depth Output Resolution & Frame rate Up to 1280 x 720. Up to 60 FPS.

Minimum Depth Distance (Min-Z) 26cm (VGA)

RGB Resolution Up to 1280 x 800. Up to 60 FPS.

RGB Field of View (FOV), H x V 90° x 65° (±3°)

Operating Case Temperature -20°C to 50°C



## D555 Camera Main Components

Camera Module RealSense Depth Module D450

Vision Processor Board RealSense Vision SoC V5 Board 1

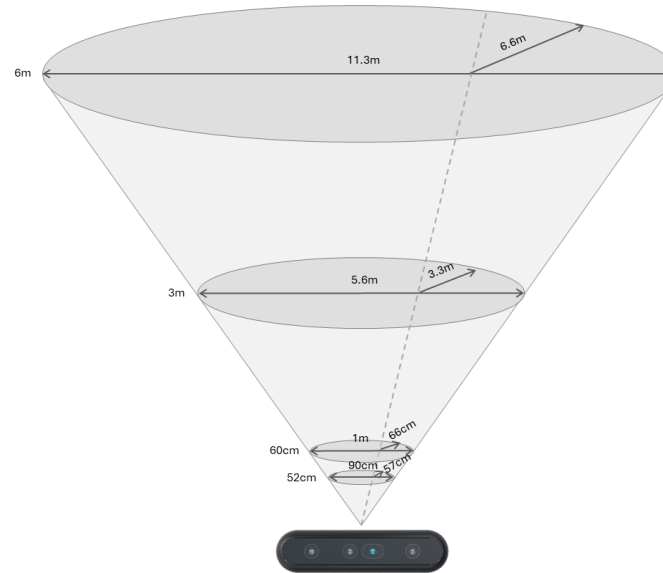
Interface Ethernet and USB (for production line & debug)



# Depth Camera D555 Specifications

| Property                              | Value   |
|---------------------------------------|---|
| Product Name                          | RealSense Depth Camera D555   |
| Technology                            | Active Stereo   |
| Product Code (Box)                    | IVS110DSD555  |
| Product Code (Multi Pack)             | IVS110DSD555MP  |
| MMID Box/Multi Pack                   | 99CD06/99CD07   |
| Code-Manufacture Configuration Code   | N38334-200  |
| Vendor ID / Device ID                 | 8086 / 0x0B56   |
| Baseline                              | 95mm  |
| Left/Right Imagers Type               | Global Shutter  |
| Typical Power                         | 3.5W  |
| Connectors                            | RJ45 (USB 3 for debug and production line)  |
| Dimensions (Length x Height x Depth ) | 167 mm x 42 mm x 48 mm  |
| Storage (Ambient) not Powered         | Short Exposure: -40°C - 70°C;<br>Sustained, Controlled: 0°C - 50°C, Temperature/ RH:<br>40oC / 90% (non-condensing) |
| Weight (Nominal)                      | 337 gr  |

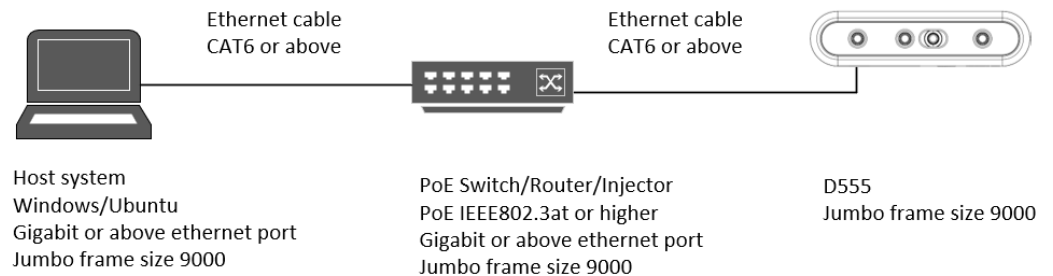
## Effective Detectable Depth Area



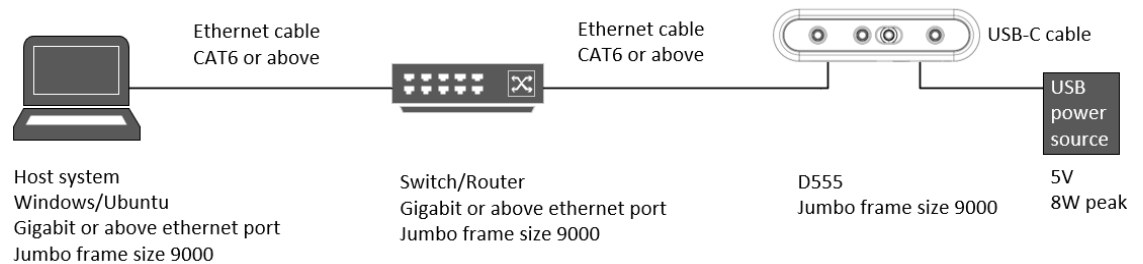
| Features  | Specifications              |
|---|-----------------------------|
| Depth Field of View (FOV)                               | 87° × 58°                   |
| Minimum Depth Distance (Min- (Min-Z) at Max Resolution) | ~52 cm                      |
| Ideal Range   | 60 cm to 6 m <sup>(3)</sup> |
| Detectable Depth Area at minZ 52cm                      | 89.2 x 57.6 cm              |
| Detectable Depth Area at Min Ideal Range                | 104.4 x 66.5 cm             |
| Detectable Depth Area at Max Ideal Range                | 1129.3 x 665.2 cm           |

| Format  | Resolution | Frame Rate (Fps) | Comment                                  |
|---|------------|------------------|--|
| Z [16 bits]   | 1280x720   | 5,15,30          | Depth                                    |
|   | 896x504    | 5,15,30,60       |  |
|   | 640x360    | 5,15,30,60       |  |
|   | 448x252    | 5,15,30,60       |  |
| Y8 [8 bits]   | 1280x720   | 5,15,30          | Luminance<br>Left and Right Imager       |
|   | 896x504    | 5,15,30,60       |  |
|   | 640x360    | 5,15,30,60       |  |
|   | 448x252    | 5,15,30,60       |  |
| Color Raw (Bayer 10-bit bit embedded in 16-bit bit) | 1280x720   | 15               | Color Stream from RGB Camera Undistorted |
| YUY2 [16 bits interleaved]                          | 1280x720   | 5,15,30          | Color Stream from RGB Camera Undistorted |
|   | 896x504    | 5,15,30,60       |  |
|   | 640x360    | 5,15,30,60       |  |
|   | 448x252    | 5,15,30,60       |  |
| Calibration IR Imager Y126I [16 bits]               | 1280x800   | 15               | Production and OEM Calibration           |

## D555 System Overview – Power Over Ethernet (PoE)



## D555 System Overview – Power Over USB



## Compatible with SDK 2.0

RealSense Depth Camera D555 is supported by the RealSense SDK 2.0 using Data Distribution Service (DDS), allowing ease of integration and backward compatibility to the RealSense product family.

## RealSense SDK 2.0

Open-source cross-platform library for all RealSense cameras and modules  
Download from [github](#)



## Platforms



## Programming Languages & Wrappers



## Regulatory Compliance

This product is classified as a Class 1 Laser Product under the EN/IEC 60825-1, Edition 3 (2014) (2014) internationally.

This product complies with FDA performance standards for laser products except for conformance with conformance with IEC 60825-1 Ed. 3 as described in Laser Notice No. 56, dated May 8, 2019.

U.S. FDA accession number: 1420260



This device complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.



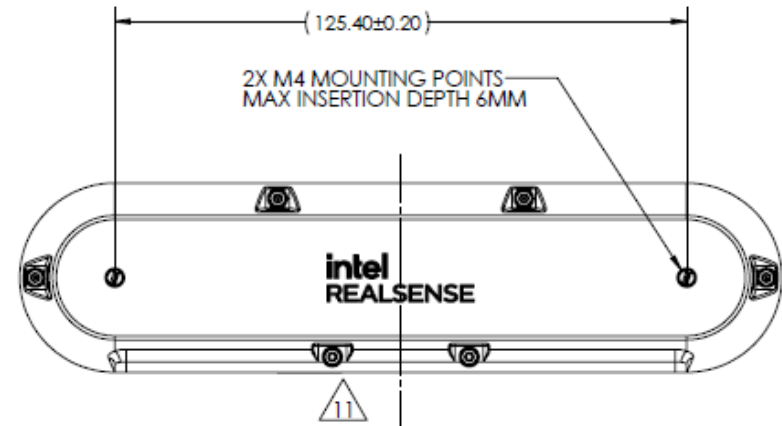
Canada  
CAN ICES-3  
(B)/NMB-3(B)



FCC Supplier's Declaration of  
Conformity - 47 CFR § 2.1077  
Compliance Information



## D555 Screw Mounting/End Mounting



## Ecology Compliance

Please refer to <https://www.realsenseai.com/regulatory-information/> for Material Declaration Data Sheets (MDDS).

RoHS 2.0, WEEE, Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur



# Depth Camera D555 Specifications Additional

## Additional Information



### Footnotes and References

- (1) If multiple cameras are connected to the same switch, the data bandwidth to the host system is shared between the cameras. To achieve the best performance, a higher data speed rate switch and a host system should be considered, like a 2.5GB, 5GB or 10GB.
- (2) If the switch supports only 1500 bytes frame sizes, the camera performance is very limited, and limited, and the camera's Maximum Transmission Unit (MTU) must be reconfigured accordingly.
- (3) Stereo cameras can see further but accuracy degrades with distance and varies depending on scene and lighting conditions.

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