

## Helios2 Wide ToF Camera Specifications

### INTERFACE AND POWER INFORMATION

Digital Interface	1000BASE-T GigE, M12 X-coded
GPIO Interface	8 pin M8 connector
Opto-Isolated I/O Ports	1 input (2.5V-24V and 10.5V-24V), 1 output
Non-Isolated I/O Ports	2 bi-directional
Power Requirement	18-24 V through GPIO
Power Consumption	12-24Vdc, Pavg <12W, <30W peak power

### SENSOR PROPERTIES

Sensor Model	Sony DepthSense IMX556PLR CMOS
Shutter Type	Global
Sensor Size	8 mm (Type 1/2")
Resolution	640 x 480 px, 0.3 MP
Pixel Size	10.0 $\mu\text{m}$ (H) x 10.0 $\mu\text{m}$ (V)
Framerate	30 FPS @ 0.3 MP (for all operating modes) 10 FPS @ 0.3 MP (for all operating modes using 3000 $\mu\text{s}$ exposure)

### NORMAL MODES – MAXIMUM FRAME RATES

Mode	Frequency	FPS @ Exposure 187.5 $\mu\text{s}$ & 750 $\mu\text{s}$ (3000 $\mu\text{s}$ )
1250 mm	120 MHz	30 FPS (10 FPS)
3000 mm	50 MHz	30 FPS (10 FPS)
4000 mm	37 MHz	30 FPS (10 FPS)
5000 mm	120 + 90 MHz	30 FPS (10 FPS)
6000 mm	25 MHz	30 FPS (10 FPS)
8300 mm	90 + 72 MHz	30 FPS (10 FPS)

### PHYSICAL PROPERTIES

Dimensions	60 x 60 x 77.5 mm
Weight	390 g
Ingress Protection	IP67 (For IP67 protection Helios2 must be used with IP67 cables)
Ambient Light Filter	Yes, integrated on-camera
Lens Field of View	108° x 78° (nominal)
Illumination	4 x VCSEL laser diodes, Class 1, @ 850nm

### STANDARD AND CERTIFICATIONS

Standard	GigE Vision v2.0, GenICam 3D
Compliance	CE, FCC, RoHS, REACH, WEEE, Eye Safety Class 1 IEC/EN 60825-1:2014
Operating Temperature	-20° to 50°C (Case Temperature)
Shock and Vibration	DIN EN 60068-2-27, DIN EN 60068-2-64*
Industrial EMC Immunity	DIN EN 61000-6-2
OS Support	Windows and Linux
Software Support	Arena SDK, C++, C, C#, Python

### PIXEL FORMATS

Range Data	
Coord3D_ABCY16	4-ch point cloud XYZ + Intensity, 16 bits per channel, unsigned
Coord3D_ABC16	3-ch point cloud XYZ, 16 bits per channel, unsigned
Coord3D_C16	Depth map Z plane, 16 bits, unsigned
Intensity Image	
Mono8	8 bit per pixel monochrome raw image
Mono12Packed	12 bit per pixel monochrome raw image
Mono12p	12 bit per pixel in bit stream, monochrome raw image
Mono16	16 bit per pixel monochrome raw image
Confidence Data	
Confidence16	Confidence map, 16 bits

### IMAGING PROPERTIES

Exposure Control	Manual, 3 settings: 187.5 $\mu\text{s}$ , 750 $\mu\text{s}$ , 3000 $\mu\text{s}$
Gain Control	Manual, 2 settings: High or Low
Synchronization	Software trigger, hardware trigger, PTP (IEEE 1588)
Output Format	Binary .PLY file (via Arena SDK)

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**CAMERA FEATURES**

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User Sets	1 default and 2 custom user set
Working Distance	0.3 m to 8.33 m
Operating Distance Modes	6 Modes: (1) 1250 mm, (2) 3000 mm, (3) 4000 mm, (4) 5000 mm, (5) 6000 mm, (6) 8333 mm
Accuracy	See Performance Tab
Precision (Depth Noise)	See Performance Tab
Communication Channels	5 Channels. Allows users to operate up to 5 Helios2 cameras without interference between cameras. (Cross compatible with HTW003S-001, HTP003S-001, HLT003S-001)
Flying Pixel Filter	Yes
Intrinsic parameters available	

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\*Listed specification testing in progress and is subject to change

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