

Helios2 Ray Outdoor Time-of-Flight (ToF) 3D Camera

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	18-24Vdc ±5%, 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 µm (H) x 10.0 µm (V)
Framerate	30 FPS @ 0.3 MP (for all operating modes)

PHYSICAL PROPERTIES

Dimensions	60 x 60 x 77.5 mm
Weight	398 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	69° x 51° (nominal)
Illumination	4 x VCSEL laser diodes, Class 1, @ 940nm

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
Warranty	3 year

*Listed specification testing in progress and is subject to change

Outdoor use of the camera is defined as operating the camera within the dust and moisture protection levels outlined by the IP67 standard. The camera must also be operating within a temperature range of -20°C to 50°C (Case Temperature) and adhere to the shock and vibration guidelines specified in DIN EN 60068-2-27 and DIN EN 60068-2-64 standards. Any deviation from these specified parameters during camera operation can result in reduced performance or potential camera damage and malfunction.

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: 13 μ s, 88 μ s or 350 μ 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)
CAMERA FEATURES	
User Sets	1 default and 2 custom user set
Chunk Data	Image, CRC, timestamp, line status, pixel format, width/height, offset X/Y, pixel dynamic range min/max
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 HTR003S-001, HTW003S-001, HTP003S-001, HLT003S-001)
Flying Pixel Filter	Yes
Intrinsic parameters available	

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