

PRODUCT DATASHEET

ES-CV-C00-S001-V001

Industrial Stereo 3D Camera

Binocular Structured Light Camera | 305 Stereo 3d Camera Series

Product Overview

The ES-CV-C00-S001-V001 is a binocular structured-light stereo 3D camera for industrial depth sensing and machine vision integration. It combines stereo vision depth sensing, USB 3.0 / USB 2.0 connectivity and IP54 ingress protection in a compact industrial enclosure. Key specifications include 18 mm baseline, Up to 1280 x 800 @ 30 fps depth resolution and 4-100 cm operating range.

Key Specifications

PARAMETER	VALUE	UNIT
Depth Technology	Stereo Vision	
Depth Resolution and Frame Rate	Up to 1280 x 800 @ 30fps 848 x 530 @ 60fps	
Operating Range	4 - 100cm	
Depth Field of View	H 88° x V 65° ± 3° (1280 x 800 @ 20cm)	
Baseline	18	mm
Data Connection	USB 3.0 (recommended) & USB 2.0	
Ingress Protection Rating	IP54 (only when the Type-C interface is properly connected and the screws are tightened)	
Dimensions	42 x 42 x 23mm	
Weight	68	g

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Operating Range	4 - 100	cm	
Baseline	18	mm	
Depth Field of View	H 88° x V 65° ± 3° (1280 x 800 @ 20cm)		
Depth Technology	Stereo Vision		
Depth Filter	IR-Cut		
Ideal Range	7 - 50	cm	
Spatial Precision	≤ 1% (1280 x 800 @ 50cm & 90% x 90% ROI)		
IMAGING			
Depth Resolution and Frame Rate	Up to 1280 x 800 @ 30fps 848 x 530 @ 60fps		
Color Resolution and Frame Rate	Up to 1280 x 800 @ 60fps		
Color Field of View	H 94° x V 68° ± 3°		
Camera Image Sensor Type	Stereo Color: Global Shutter		
ELECTRICAL			
Power Consumption	Typical average 1.57 W; maximum-disparity configuration average 1.88 W		
Power Supply - DC input	5 V DC, minimum 700 mA		
Maximum Average Power Consumption	<2	W	
MECHANICAL			
Weight	68	g	
Installation Interface - Bottom	1 x 1/4-20 UNC		Max torque Not specified; Max insertion depth Not specified
	2 x M3		Max torque Not specified; Max insertion depth Not specified
Installation Interface - Back	2 x M3		Max torque Not specified; Max insertion depth Not specified

Technical Specifications

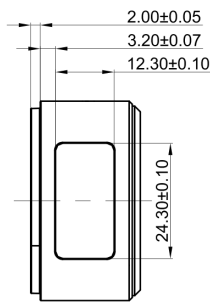
PARAMETER	SPECIFICATION	UNIT	NOTES
INTERFACES			
Data Connection	USB 3.0 (recommended) & USB 2.0		
Interface	USB Type-C		
Supported Functions	Dual color streams; hardware and software multi-camera synchronization; depth and color presets		
ENVIRONMENTAL			
Operating Environment	-10 to 45°C @ 128 disparity search range -10 to 40°C @ 256 disparity search range		
Use Environment	Suitable for indoor and protected outdoor environments		
Backside Case Temperature	-10 to +60	°C	
Storage Temperature	-20 to 70	°C	Short term
	0 to 60	°C	Long term
Storage Humidity	5-90	% RH	Non-condensing
SAFETY			
Ingress Protection Rating	IP54 (only when the Type-C interface is properly connected and the screws are tightened)		
RELIABILITY			
Design Lifespan	5	years	Default Operating Mode & Operating Environment.
COMPLIANCE			
Radiated Emissions	± 6	dB	
ESD - Contact discharge	±8	kV	Class A
ESD - Air discharge	±15	kV	Class A
EMC Performance	ESD: Class A Contact discharge: ±8kV, Air discharge: ±15kV RE: ±6 dB		
CONFIGURATION			
Dimensions	42 x 42 x 23mm		
ADDITIONAL SPECIFICATIONS			
Protection Rating	IP54 (only when the Type-C interface is properly connected and the screws are tightened)		
Sensor Type	Stereo Color: Global Shutter		

Dimensional & Integration Overview

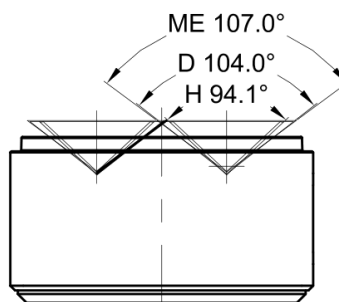
Mechanical Overview

PARAMETER	VALUE			UNIT
Weight	68			g
Installation Interface	LOCATION	INTERFACE	MAX TORQUE	MAX INSERTION DEPTH
	Bottom	1 x 1/4-20 UNC	Not specified	
	Back	2 x M3		
Dimensions	42 x 42 x 23mm			

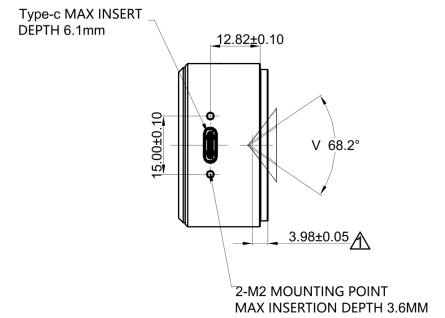
Dimensional Drawings



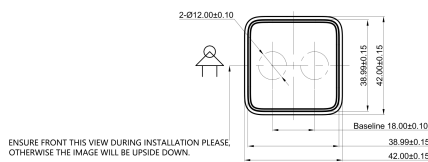
Mechanical View 1



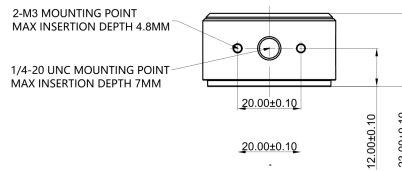
Mechanical View 2



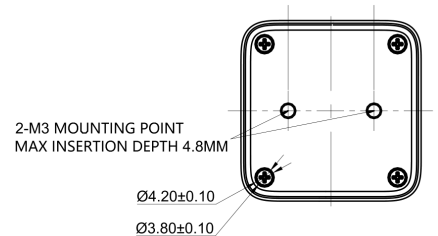
Mechanical View 3



Mechanical View 4



Mechanical View 5



Mechanical View 6

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Left step or flange offset depth	2.00 ± 0.05
	Left datum to inner edge depth	3.20 ± 0.07
	Main body depth or length	12.30 ± 0.10
	Main body height	24.30 ± 0.10
Mechanical View 2	ME angular field specification	ME angle 107.0 degrees
	D angular field specification	D angle 104.0 degrees
	H angular field specification	H angle 94.1 degrees
Mechanical View 3	M2 mounting hole center spacing	3.98±0.05 mm
	M2 mounting hole specification	2× M2 threaded mounting holes
	M2 screw maximum insertion depth	3.6 mm maximum screw insertion depth
Mechanical View 4	Mounting hole diameter and position	2 holes, Ø12.00±0.10 mm
	Front view vertical dimension 1	38.99±0.15 mm
	Front view vertical dimension 2 (total height)	42.00±0.15 mm
	Baseline distance	Baseline 18.00±0.10 mm
	Front view horizontal dimension 1	38.99±0.15 mm
	Front view horizontal dimension 2 (total width)	42.00±0.15 mm

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 5	M3 Mounting Hole	2× M3 threaded mounting holes
	M3 Hole Max Insertion Depth	Max insertion depth 4.8mm
	1/4-20 UNC Mounting Hole	1/4-20 UNC threaded mounting hole
	1/4-20 UNC Hole Max Insertion Depth	Max insertion depth 7mm
	Width	20.00±0.10
	Partial Height	12.00±0.10
	Total Height	23.00±0.10
	Bottom Width	20.00±0.10
Mechanical View 6	M3 mounting point quantity	2× M3 threaded mounting holes
	Maximum screw insertion depth	4.8 mm maximum
	Mounting hole diameter (outer/through hole)	Ø4.20 ±0.10 mm
	Mounting hole diameter (inner/threaded hole)	Ø3.80 ±0.10 mm

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01 Specifications are subject to change without notice. Verify the current product configuration before final design release.

02 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.