

MV-DP3020-01P

3D Laser Profile Sensor



Introduction

With built-in high-accuracy algorithm and image process algorithm of wide dynamic range, MV-DP3020-01P can output high accurate 3D point cloud data in real time by combining high frame rate chip, single-frame HDR chip and accurate laser control. With compact structure, high integration, and easy operation, it is widely applied into consumer electronics, electronics manufacturing, new energy, etc. for 3D information acquisition.

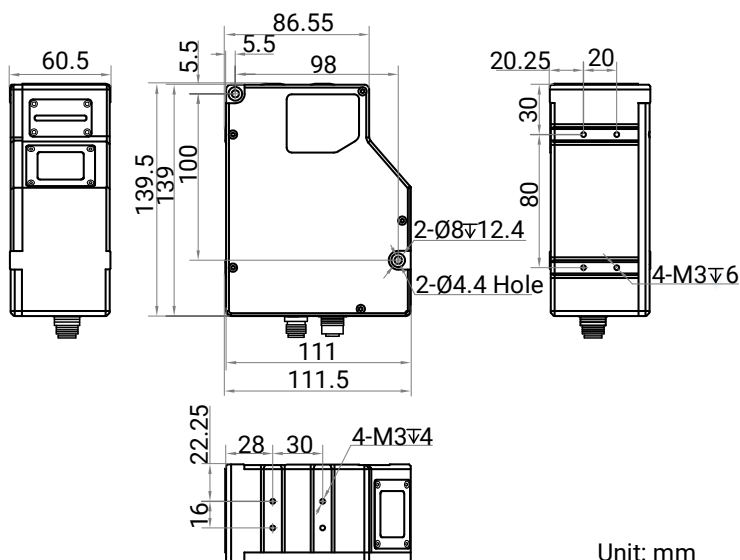
Available Model

MV-DP3020-01P

Applicable Industry

Consumer electronics, electronics manufacturing, new energy, etc.

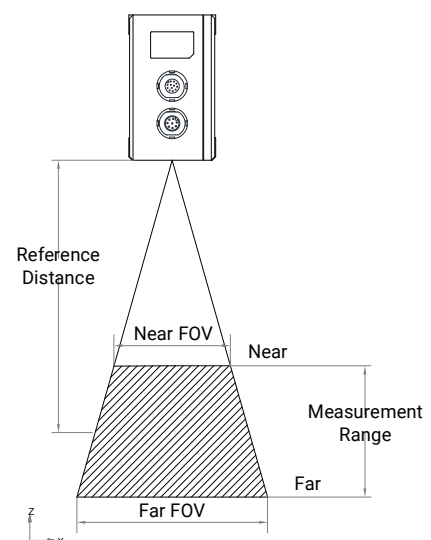
Dimension



Key Feature

- Built-in high-accuracy algorithm and accuracy is up to submicron level.
- Adopts high frame rate chip with 19 KHz scan frame rate.
- Supports single-frame HDR with better compatibility of the material.
- Provides multiple filter modes with stable contour data.
- Supports ROI selection and auto settings for easier operation.

Measurement Range Diagram



Specification

Parameter	Model	MV-DP3020-01P
	3D Laser Profile Sensor	
Performance		
Data points/profile	3200	
Reference distance	20 mm	
Measurement range (Z-axis)	6 mm	
Measurement range (X-axis)	11.5 mm @ near field of view 13.2 mm @ reference distance 14 mm @ far field of view	
Resolution (Z-axis)	0.65 μm to 0.72 μm	
Repeatability (Z-axis)*	0.20 μm @ data that sensor tests gauge block on optical platform	
Linearity Z-axis (±% of MR)	0.01	
Profile data interval	4.0 μm to 4.2 μm	
Scan frame rate	1.3 kHz (within max. measurement range), max. 19 kHz (in ROI mode)	
Data output	Profile data, depth image, brightness image	
Trigger mode	Software trigger, hardware trigger (differential encoder)	
Laser safety class	Class 3R	
Wavelength	405 nm	
Electrical feature		
Data interface	Gigabit Ethernet (1000 Mbit/s), compatible with Fast Ethernet (100 Mbit/s)	
Digital I/O	12-pin M12 interface provides power and I/O, including differential input × 3 (Line 0/3/6), differential output × 1 (Line 1), and RS-232 × 1	
Power supply	24 VDC	
Power consumption	Typ. 13.8 W @ 24 VDC	
Mechanical		
Dimension	139.5 mm × 111.5 mm × 60.5 mm (5.5" × 4.4" × 2.4")	
Weight	Approx. 1075 g (2.4 lb.)	
Ingress protection	IP67	
Temperature	Working temperature: 0 °C to 45 °C (32 °F to 113 °F) Storage temperature: −30 °C to 80 °C (−22 °F to 176 °F)	
Humidity	20% RH to 85% RH (no condensation)	
General		
Client software	3DMVS	
Operating system	32/64-bit Windows 7/10 (8 GB memory and above, and i5 CPU recommended)	

*This data is obtained via testing gauge blocks in a laboratory, and it is an average from 4096 tests.