

MV-DP3120-03P

3D Laser Profile Sensor



Introduction

With built-in high-accuracy measurement algorithm, image process algorithm of wide dynamic range, and data integration algorithm, MV-DP3120-03P can output high accurate 3D point cloud data in real-time by combining high frame rate chip and accurate laser control. With compact structure, high integration, and easy operation, it is widely applied into consumer electronics, electronics manufacturing, automobile, etc.

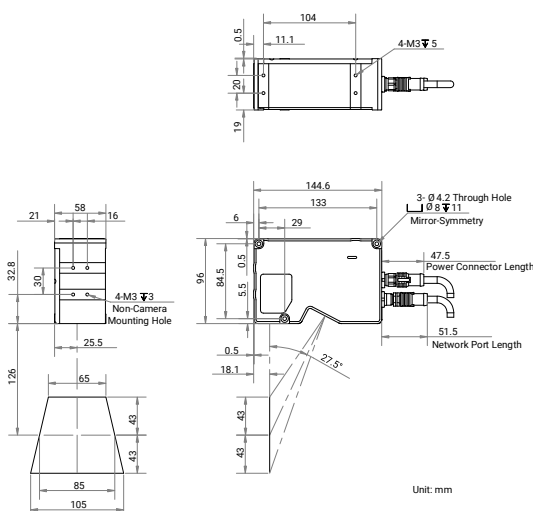
Available Model

MV-DP3120-03P V2.0

Applicable Industry

Consumer electronics, electronics manufacturing, automobile, etc.

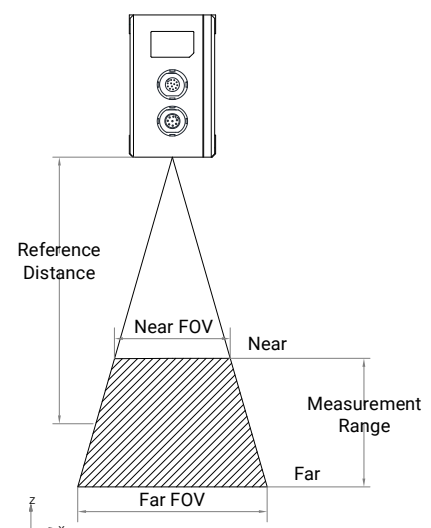
Dimension



Key Features

- Built-in high-accuracy algorithm and accuracy is up to submicron level.
- Adopts high frame rate chip with 46.7 kHz scan frame rate.
- Supports multiple exposure modes with good robustness.
- Adopts multiple-frame integration technology to provide complete profiles.
- Provides multiple filter modes with stable data.
- Supports ROI selection and auto setting for easier operation.

Measurement Range Diagram



Specification

Parameter	Model	MV-DP3120-03P
	3D Laser Profile Sensor	
Performance		
Data points/profile	3200	
Reference distance	126 mm	
Measurement range (Z-axis)	86 mm	
Measurement range (X-axis)	65 mm @ near field of view 85 mm @ reference distance 105 mm @ far field of view	
Resolution (Z-axis)	4.38 μm to 8.33 μm	
Repeatability (Z-axis)*	1.68 μm @ data that sensor tests gauge block on optical platform ¹	
Linearity Z-axis (±% of MR)	0.01	
Profile data interval	20.4 μm to 35.7 μm	
Scan frame rate	3.4 kHz to 46.7 kHz (high frame rate mode ²)	
Data output	Original image, profile data, depth image, brightness image	
Trigger mode	Software trigger, hardware trigger (differential encoder)	
Laser safety class	Class 3R	
Wavelength	660 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 opto-isolated input × 2 (Line 0/9), differential input × 2 (Line 3/6), and differential output × 1 (Line 1)	
Power supply	24 VDC	
Power consumption	Typ. 17.2 W @ 24 VDC	
Mechanical		
Dimension	144.5 mm × 96 mm × 58 mm (5.7" × 3.8" × 2.3")	
Weight	Approx. 950 g (2.1 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, VM3D, or third-party software	
Operating system	32/64-bit Windows 7/10, 64-bit Windows 11 (8 GB memory and above, and i5 CPU recommended)	

¹: This data is obtained via testing gauge blocks in a laboratory, and it is an average from 4096 tests.

²: In high frame rate mode, this value range represents the frame rates achievable with Binning enabled, spanning from the full ROI to the minimum ROI.