MV-DP2470-03P

3D Laser Profile Sensor

Introduction

With built-in high-accuracy algorithm, image process algorithm of wide dynamic range, and data integration algorithm, MV-DP2470-03P 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 3C industry, electronics manufacturing, automobile, etc.
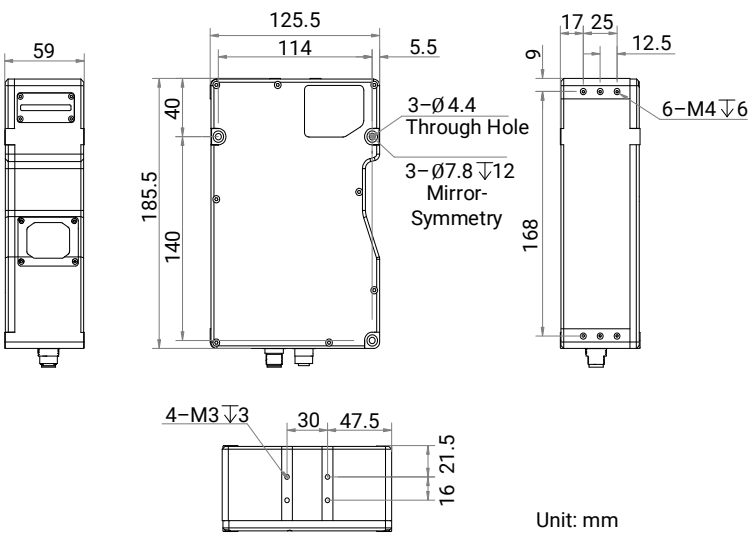
Available Model

MV-DP2470-03P

Applicable Industry
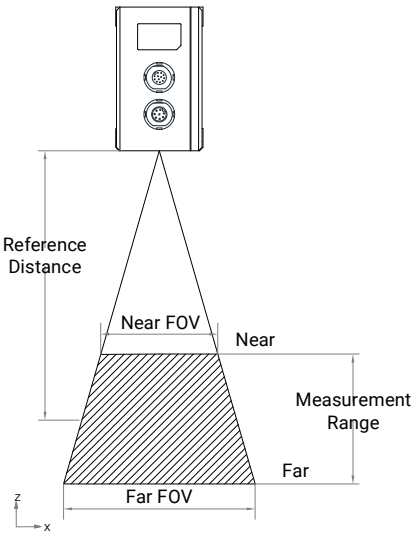
3C industry, electronics manufacturing, automobile, etc.

Key Feature

- Built-in high-accuracy algorithm and accuracy is up to submicron level.
- Adopts high frame rate chip with 10 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.

Dimension

Unit: mm

Measurement Range Diagram

Specification

Parameter \ Model	MV-DP2470-03P 3D Laser Profile Sensor
Performance	
Data points/profile	2048
Reference distance	565 mm
Z-axis measurement range	670 mm
X-axis measurement range	142 mm @ near field of view 315 mm @ reference distance 488 mm @ far field of view
Z-axis resolution	10.39 µm to 169.79 µm
Z-axis repeatability∗	4.45 µm @ data that sensor tests gauge block on optical platform
Z-axis linearity (±% of MR)	0.01
Profile data interval	68.6 µm to 277.0 µm
Scan frame rate	660 Hz (within max. measurement range), max. 10 KHz (in ROI mode)
Data output type	Profile data, depth image, brightness image
Trigger mode	Software trigger, external trigger (differential encoder)
Laser wavelength	650 nm
Laser safety class	Class 3R
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	13.8 W @ 24 VDC
Mechanical	
Dimension	185.5 mm × 125.5 mm × 59 mm (7.3" × 4.9" × 2.3")
Weight	Approx. 1450 g (3.2 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)

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