

MV-ID2013XM

1.3 MP Industrial Code Reader



RoHS



Introduction

MV-ID2013XM mini industrial code reader adopts Hikrobot's deep learning algorithm to process images with good robustness, and can recognize various complex codes. It integrates 4-channel light source control and multiple optical accessories to meet various demands in lightning, with working distance reaching 1 m at most. The device adopts a modular design with rotatable cable. Compatible with IDMVS client software V5.0.0 and later, it can achieve functions such as auto focusing and one-click tuning for easy use and fast debugging. Applicable industries include consumer electronics, PCB, automobile, lithium battery, photovoltaic industry, etc.

Key Features

- Adopts high-robustness algorithm to accurately identify difficult codes, such as stained code, skewed code, low-contrast code, and code on laser-marked metal surfaces.
- Integrates digital WDR image processing algorithm, and combines with 4-channel light source control and multiple optical accessories for enhancing code clarity.
- Adopts modular design, rotatable cable, separated cable, and multi-surface mounting interfaces for flexible mounting.
- Supports multi-channel isolated I/O and multiple industrial protocols for integration into diverse automation systems.
- Compatible with IDMVS client software V5.0.0 and later, it can achieve functions such as auto focusing and one-click tuning for fast debugging.

Available Model

Mechanical Focusing, Network-Type Device

- 5 mm focal length: MV-ID2013XM-05M-RBN
- 8 mm focal length: MV-ID2013XM-08M-RBN
- 12 mm focal length: MV-ID2013XM-12M-RBN
- 16 mm focal length: MV-ID2013XM-16M-RBN

Mechanical Focusing, USB-Type Device

- 5 mm focal length: MV-ID2013XM-05M-RBN-U
- 8 mm focal length: MV-ID2013XM-08M-RBN-U
- 12 mm focal length: MV-ID2013XM-12M-RBN-U
- 16 mm focal length: MV-ID2013XM-16M-RBN-U

Liquid Lens Focusing, Network-Type Device

- 8 mm focal length: MV-ID2013XM-08L-RBN
- 12 mm focal length: MV-ID2013XM-12L-RBN
- 16 mm focal length: MV-ID2013XM-16L-RBN

Liquid Lens Focusing, USB-Type Device

- 8 mm focal length: MV-ID2013XM-08L-RBN-U
- 12 mm focal length: MV-ID2013XM-12L-RBN-U
- 16 mm focal length: MV-ID2013XM-16L-RBN-U

Applicable Industry

Consumer electronics, PCB, automobile, lithium battery, photovoltaic industry, etc.

Model	MV-ID2013XM-05M-RBN(-U)	MV-ID2013XM-08M-RBN(-U)	MV-ID2013XM-12M-RBN(-U)	MV-ID2013XM-16M-RBN(-U)
Performance				
Symbologies	1D codes: Code 39, Code 93, Code 128 (GS1-128 included), CodaBar, EAN 8, EAN 13, UPCA, UPCE ITF 14, ITF 25, Matrix 25, MSI, China Post, Code 11, Industrial 2of5, and Pharmacode (one/two-track)			
	2D matrix codes: QR Code (GS1-QR included), Data Matrix (GS1-DM included), MicroQR, AZTEC, HanXin, Maxi code			
	Stacked codes: PDF417, MicroPDF417			
Max. frame rate	60 fps			
Max. reading speed	80 codes/sec			
Sensor type	Global shutter, mono, 1/4", 2.7 μm × 2.7 μm			
Resolution	1280 × 1024			
Exposure time	35 μs to 1 sec			
Gain	0 dB to 30 dB			
Electrical feature				
Data interface	Network type: Fast Ethernet (100 Mbit/s) USB type: USB 2.0 (with DC power supply)			
Communication protocol	Network type: SmartSDK, TCP Client, TCP Server, Serial, FTP, Profinet, Ethernet/IP, MELSEC/SLMP, ModBus, ModBus RTU, Fins, UDP USB type: SmartSDK, USB (CDC, HID)			
Digital I/O	17-pin M12 connector provides power and I/O, including isolated input (LineIn 0/1) × 2, isolated output (LineOut 3/4) × 2, RS-232 × 1. Supports device triggering and factory reset via pressing side button.			
Power supply	24 VDC			
Power consumption	Avg.: 5 W @ 24 VDC (light source enabled), max.: 12 W @ 24 VDC (light source enabled)			
Mechanical				
Focal length	5 mm	8 mm	12 mm	16 mm
Field of view	38° (H) × 31° (V)	24° (H) × 19° (V)	16° (H) × 13° (V)	12° (H) × 9° (V)
Lens mount	M12-mount, mechanical focus supported			
Lens cap	Half-polarized lens cap by default. Transparent, fully-polarized, and ESD protective caps are optional.			
Light source	Red light by default. White/blue/IR/UV/two-color (red/blue) light is optional.			
Aiming system	2 green LED lights			
Indicator	Power indicator (PWR), network indicator (LNK), result indicator (OK/NG), user-defined indicator (U1)			
Shell material	Aluminum alloy			
Dimension	Straight angle: 72.7 mm × 31.5 mm × 41 mm (2.9" × 1.2" × 1.6") Right angle: 51.5 mm × 31.5 mm × 61 mm (2.0" × 1.2" × 2.4")			
Weight	Approx. 100 g (0.2 lb.)			
Ingress protection	IP65			
Temperature	Working temperature: 0 °C to 50 °C (32 °F to 122 °F) Storage temperature: -30 °C to 70 °C (-22 °F to 158 °F)			
Humidity	20% RH to 95% RH (no condensation)			
Vibration resistance	Device only: 10 Hz to 55 Hz, 1.5 mm full amplitude, 2 hours per axis (X/Y/Z) (IEC 60068-2-6:2007\GB/T 2423.10-2019)			
Shock resistance	Device only, 30 g / 11 ms, half-sine wave, 500 shocks per axis (6 directions) (IEC 60068-2-27\GB/T 2423.5-2019)			
General				
Client software	IDMVS			
Certification	CE, RoHS, KC			

Model	MV-ID2013XM-08L-RBN(-U)	MV-ID2013XM-12L-RBN(-U)	MV-ID2013XM-16L-RBN(-U)
Performance			
Symbologies	1D codes: Code 39, Code 93, Code 128 (GS1-128 included), CodaBar, EAN 8, EAN 13, UPCA, UPCE ITF 14, ITF 25, Matrix 25, MSI, China Post, Code 11, Industrial 2of5, and Pharmacode (one/two-track)		
	2D matrix codes: QR Code (GS1-QR included), Data Matrix (GS1-DM included), MicroQR, AZTEC, HanXin, Maxi code		
	Stacked codes: PDF417, MicroPDF417		
Max. frame rate	60 fps		
Max. reading speed	80 codes/sec		
Sensor type	Global shutter, mono, 1/4", 2.7 μm × 2.7 μm		
Resolution	1280 × 1024		
Exposure time	35 μs to 1 sec		
Gain	0 dB to 30 dB		
Electrical feature			
Data interface	Network type: Fast Ethernet (100 Mbit/s) USB type: USB 2.0 (with DC power supply)		
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Digital I/O	17-pin M12 connector provides power and I/O, including isolated input (LineIn 0/1) × 2, isolated output (LineOut 3/4) × 2, RS-232 × 1. Supports device triggering and factory reset via pressing side button.		
Power supply	24 VDC		
Power consumption	Avg.: 5 W @ 24 VDC (light source enabled), max.: 12 W @ 24 VDC (light source enabled)		
Mechanical			
Focal length	8 mm	12 mm	16 mm
Field of view	24° (H) × 19° (V)	16° (H) × 13° (V)	12° (H) × 9° (V)
Lens mount	D14-mount, liquid lens focus supported		
Lens cap	Half-polarized lens cap by default. Transparent, fully-polarized, and ESD protective caps are optional.		
Light source	Red light by default. White/blue/IR/UV/two-color (red/blue) light is optional.		
Aiming system	2 green LED lights		
Indicator	Power indicator (PWR), network indicator (LNK), result indicator (OK/NG), user-defined indicator (U1)		
Shell material	Aluminum alloy		
Dimension	Straight angle: 72.7 mm × 31.5 mm × 41 mm (2.9" × 1.2" × 1.6") Right angle: 51.5 mm × 31.5 mm × 61 mm (2.0" × 1.2" × 2.4")		
Weight	Approx. 100 g (0.2 lb.)		
Ingress protection	IP65		
Temperature	Working temperature: 0 °C to 40 °C (32 °F to 104 °F) Storage temperature: -30 °C to 70 °C (-22 °F to 158 °F)		
Humidity	20% RH to 95% RH (no condensation)		
Vibration resistance	Device only: 10 Hz to 55 Hz, 1.5 mm full amplitude, 2 hours per axis (X/Y/Z) (IEC 60068-2-6:2007\GB/T 2423.10-2019)		
Shock resistance	Device only, 30 g / 11 ms, half-sine wave, 500 shocks per axis (6 directions) (IEC 60068-2-27\GB/T 2423.5-2019)		
General			
Client software	IDMVS		
Certification	CE, RoHS, KC		

Detection Range

MV-ID2013XM-05/08/12/16M-RBN(-U) (Unit: mm)						
Lens Focal Length	Working Distance	Field of View		1D Min. Resolution*	2D Min. Resolution**	Diagram of Field of View
		H	V			
5	25	17.4	13.9	0.014	0.041	
	100	69.4	55.5	0.054	0.163	
	200	138.8	111.0	0.108	0.325	
	300	208.2	166.6	0.163	0.488	
	500	347.0	277.6	0.271	0.813	
	800	555.2	444.1	0.434	1.301	
	1000	694.0	555.2	0.542	1.627	
8	40	17.3	13.8	0.014	0.041	
	100	43.2	34.6	0.034	0.101	
	200	86.4	69.1	0.068	0.203	
	300	129.6	103.7	0.101	0.304	
	500	216.0	172.8	0.169	0.506	
	700	302.4	241.9	0.236	0.709	
	1000	432.0	345.6	0.338	1.013	
12	60	17.1	13.7	0.013	0.040	
	100	28.6	22.9	0.022	0.067	
	200	57.1	45.7	0.045	0.134	
	300	85.7	68.6	0.067	0.201	
	500	142.8	114.3	0.112	0.335	
	800	228.5	182.8	0.179	0.536	
	1000	285.6	228.5	0.223	0.669	
16	125	27.0	21.6	0.021	0.063	
	200	43.2	34.5	0.034	0.101	
	300	64.8	51.8	0.051	0.152	
	500	107.9	86.4	0.084	0.253	
	700	151.1	120.9	0.118	0.354	
	900	194.3	155.4	0.152	0.455	
	1000	215.9	172.7	0.169	0.506	

1D Min. Resolution (mm)*: Field of view (long side) / resolution (long side) × 1.

2D Min. Resolution (mm)**: Field of view (long side) / resolution (long side) × 3.

Detection Range

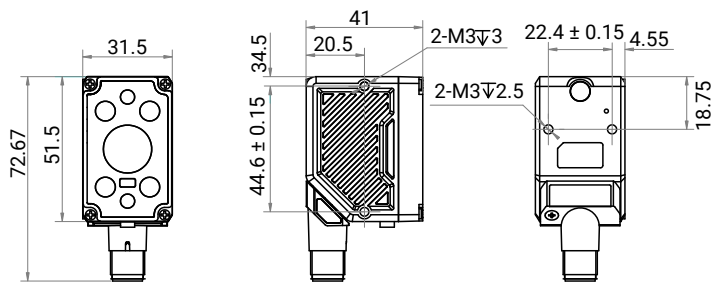
MV-ID2013XM-08/12/16L-RBN(-U) (Unit: mm)						
Lens Focal Length	Working Distance	Field of View		1D Min. Resolution*	2D Min. Resolution**	Diagram of Field of View
		H	V			
8	40	17.3	13.8	0.014	0.041	
	100	43.2	34.6	0.034	0.101	
	300	129.6	103.7	0.101	0.304	
	600	259.2	207.4	0.203	0.608	
	1000	432.0	345.6	0.338	1.013	
	1500	648.0	518.4	0.506	1.519	
	2000	864.0	691.2	0.675	2.025	
12	75	21.6	17.3	0.017	0.051	
	100	28.8	23.0	0.023	0.068	
	300	86.4	69.1	0.068	0.203	
	600	172.8	138.2	0.135	0.405	
	1000	288.0	230.4	0.225	0.675	
	1500	432.0	345.6	0.338	1.013	
	2000	576.0	460.8	0.450	1.350	
16	100	21.6	17.3	0.017	0.051	
	200	43.2	34.6	0.034	0.101	
	300	64.8	51.8	0.051	0.152	
	500	108.0	86.4	0.084	0.253	
	700	151.2	121.0	0.118	0.354	
	900	194.4	155.5	0.152	0.456	
	1000	216.0	172.8	0.169	0.506	

Working Distance: It refers to the auto focus distance. In the fast focus mode, the minimum focusing distance is 100 mm.

1D Min. Resolution (mm)*: Field of view (long side) / resolution (long side) × 1.

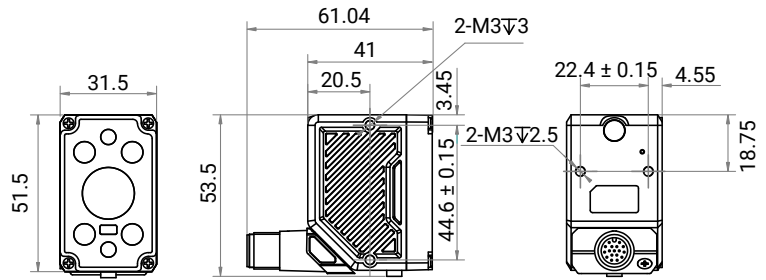
2D Min. Resolution (mm):** Field of view (long side) / resolution (long side) × 3.

Device (Straight Angle)



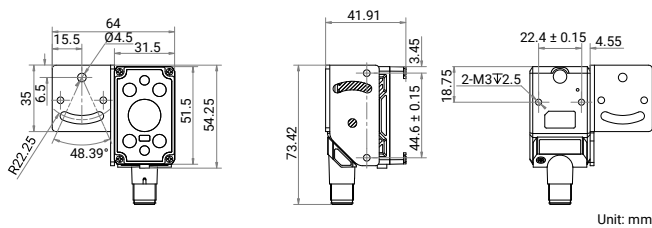
Unit: mm

Device (Right Angle)



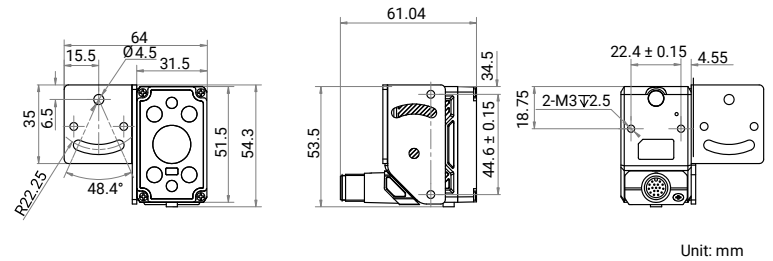
Unit: mm

Device and Installation Bracket 1 (Straight Angle)



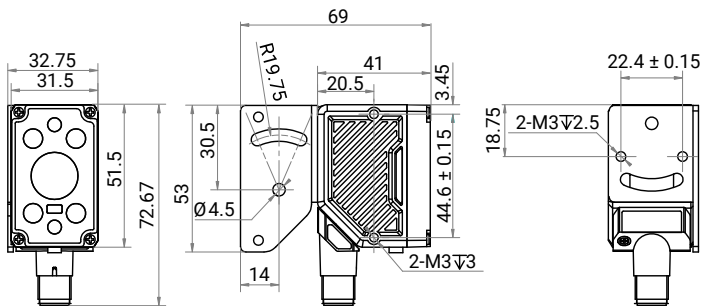
Unit: mm

Device and Installation Bracket 1 (Right Angle)



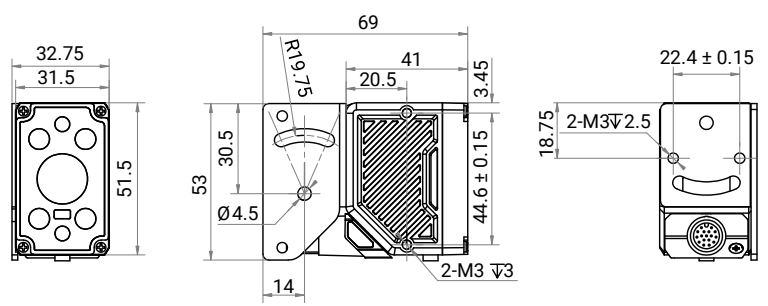
Unit: mm

Device and Installation Bracket 2 (Straight Angle)



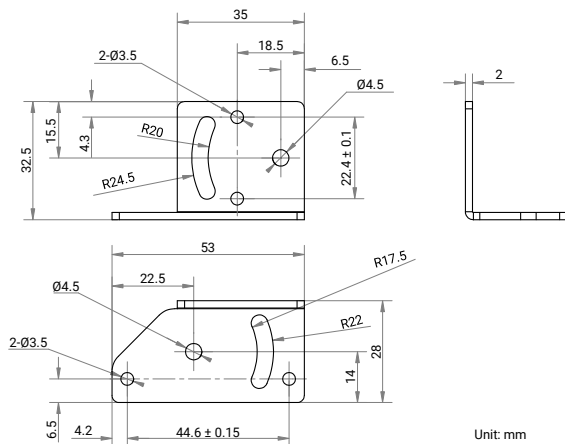
Unit: mm

Device and Installation Bracket 2 (Right Angle)



Unit: mm

Bracket



Unit: mm

Notes

- Avoid direct eye exposure to a UV/IR light source which should be used with a transparent lens cap (without lamp cup) to prevent plastic embrittlement.
- To reset the device to factory settings, press and hold the both the Trigger button (TRIG) and Smart-Tune button (TUNE) button simultaneously for 10 seconds. During this process, the U1 indicator will illuminate for 1 second, and then flash every 0.5 seconds. After 10-second hold, the U1 indicator will remain solid for 3 seconds, which means the factory reset has completed successfully.