

# 10GigE Area Scan Industrial Camera

With the widely application of machine vision in industries, high-speed and high-precision visual inspection has a higher requirements on the resolution and frame rate of industrial cameras. In order to meet the market demand, MindVision launched a number of new products, includes 10Gigabit network camera with 0.5MP-65MP pixels, which are full of meet customers' demand for high definition. It is widely used in PCB, screen detection, lithium battery and railway.

## Product Features

- Reserve a fan interface to effectively control the camera temperature
- The interface is matched with the capture card, and the cost is greatly reduced
- Adopting standard 10 Gigabit network interface design, and stable communication can be realized by super six network cables, Compared with the CameraLink interface with a capture card, the cost is greatly reduced
- The farthest transmission distance can reach 100 meters, and the industrial field wiring is no longer restricted and backward compatible with Gigabit Ethernet
- Unique data packet retransmission technology to ensure reliable data transmission
- Excellent SDK design, as simple as using a USB camera, plug and play
- The effective bandwidth is 1200MByte, which is 10 times that of the gigabit network, which greatly reduces the image transmission time and delay
- Support GigEVision. GenICam standard and the same SDK as the dry network camera, shorten the customer development cycle



## Product Selection Table

Model Number	Pixel	Sensor type	Shutter method	Maximum resolution	Pixel size	Frame rate (FPS)	Target size	Minimum exposure	Sensor model	Colour
MV-XG51GC/M	0.51MP	CMOS	Global	816X624	9.0μm	1594	1/1.7"	0.0008ms	IMX426	Color/Mono
MV-XG170GC/M	1.7MP	CMOS	Global	1600X1100	9.0μm	662	1.1"	0.001ms	IMX425	Color/Mono
MV-XG280GC/M	2.8MP	CMOS	Global	1936X1464	4.5μm	409	2/3"	0.001ms	IMX421	Color/Mono
MV-XG402GC/M	4MP	CMOS	Global	2048X2048	5.5μm	176	1"	0.0026ms	CMV4000	Color/Mono
MV-XG503GC/M	5MP	CMOS	Global	2592X2160	2.5μm	121	1/2"	0.003ms	GMAX2505	Color/Mono
MV-XG903GC/M	9MP	CMOS	Global	4208X2160	2.5μm	121	2/3"	0.003ms	GMAX2509	Color/Mono
MV-XG1205GC/M	12MP	CMOS	Global	4096X3072	3.2μm	90	1"	0.003ms	XGS12000	Color/Mono
MV-XG1803GC/M	18MP	CMOS	Global	4512X4096	2.5μm	64	1"	0.003ms	GMAX2518	Color/Mono
MV-XG2500GC/M	25MP	CMOS	Global	5120X5120	2.5μm	42	1.1"	0.004ms	GMAX0505	Color/Mono
MV-XG2600C/M	26MP	CMOS	Rolling	6240X4168	3.76μm	45	1.8"	0.005ms	IMX571	Color/Mono
MV-XG3100GC/M	31MP	CMOS	Global	6480X4860	3.45μm	35	27.9MM (APS-C)	0.0056ms	IMX342	Color/Mono
MV-XG4701C/M	47MP	CMOS	Rolling	8240X5628	2.315μm	24	1.4"	0.007ms	IMX492	Color/Mono
MV-XG6500GC/M	65MP	CMOS	Global	9344X7000	3.2μm	15.5	29.9mmx22.4mm	0.015ms	GMAX3265	Color/Mono

## Technical Parameters

Model Parameter	MV-XG51GC/M	MV-XG170GC/M	MV-XG280GC/M	MV-XG402GC/M
Resolution@ frame rate	816X624@1594	1600X1100@662	1936X1464@409	2048X2048@176
Pixel size	9.0μmX9.0μm	9.0μmX9.0μm	4.5μmX4.5μm	5.5μmX5.5μm
Pixel bit depth	12bit	12bit	12bit	12bit
Sensitivity	4050mV 1/30s	4910mV 1/30s	1677mV 1/30s	8.5 V/lux*s
Acquisition mode	Continuous/soft trigger/hard trigger			
Maximum gain (multiple)	125	125	125	64
Exposure time range (ms)	0.0008~838	0.001~1153	0.001~1048	0.0026~1874
Frame buffer	256M Bytes			
User-defined data area	2K Bytes			
Video output format	Color : Bayer8/Bayer12 Mono : Mono8/Mono12			Color : Bayer8 Mono : Mono8
GPIO	Two inputs and two outputs, one configurable input and output, support trigger and flash sync mode			
Lens Mount	C-Mount			
Power supply	12V			
Power	< 12W			
Dimensions	64x64x61.7mm (Without lens mount and rear shell interface)			
Weight	< 550g			

Model Parameter	MV-XG503GC/M	MV-XG903GC/M	MV-XG1205GC/M	MV-XG1803GC/M
Resolution@ frame rate	2592X2160@121	4208X2160@121	4096X3072@90FPS	4512X4096@64
Pixel size	2.5μmX2.5μm	2.5μmX2.5μm	3.2μmX3.2μm	2.5μmX2.5μm
Pixel bit depth	8bit	8bit	12bit	8bit
Sensitivity	1.03x107e-/ ((W/m2)-s)	1.03x107e-/ ((W/m2)-s)	57%@580nm17%@850nm	1.05x107e-/ ((W/m2)-s)
Acquisition mode	Continuous/soft trigger/hard trigger			
Maximum gain (multiple)	20	20	8	20
Exposure time range (ms)	0.003~393.2	0.003~393.2	0.003~196.6	0.003~393.2
Frame buffer	256M Bytes			
User-defined data area	2K Bytes			
Video output format	Color : Bayer8/Bayer12 Mono : Mono8/Mono12		Color : Bayer8 Mono : Mono8	Color : Bayer8/Bayer12 Mono : Mono8/Mono12
GPIO	Two inputs and two outputs, one configurable input and output, support trigger and flash sync mode			
Lens Mount	C-Mount			
Power supply	12V			
Power	< 12W			
Dimensions	64x64x61.7mm (Without lens mount and rear shell interface)			
Weight	< 550g			

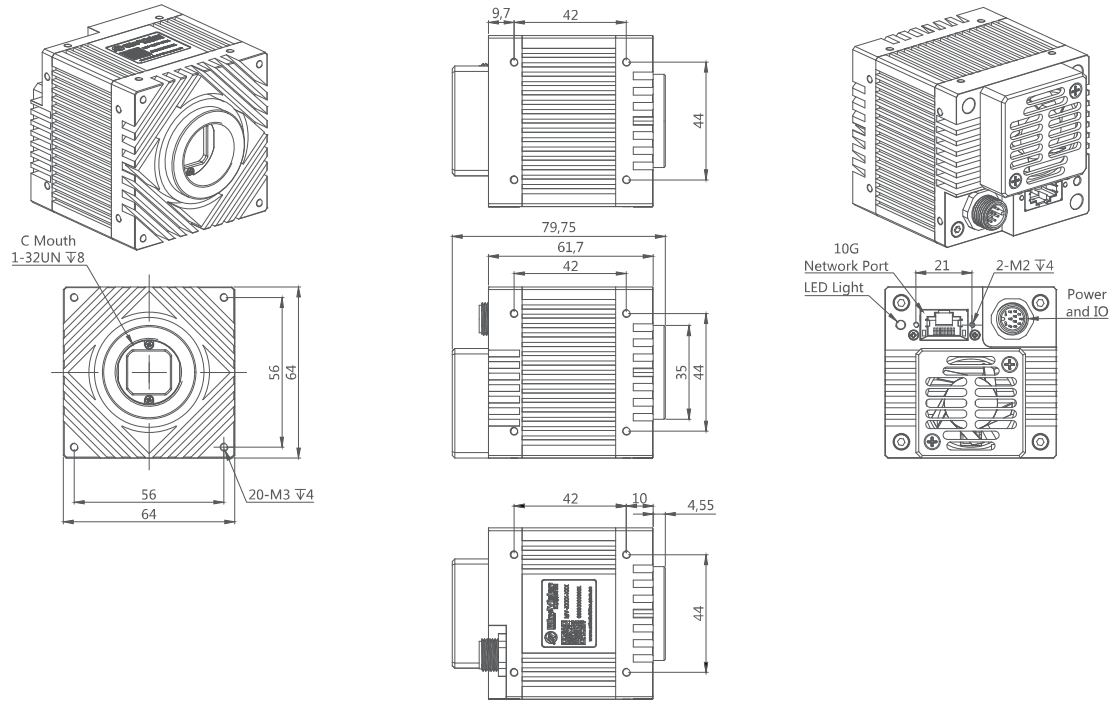
## Technical Parameters

Model	MV-XG2500GC/M	MV-XG2600C/M	MV-XG3100GC/M	MV-XG4701C/M	MV-XG6500GC/M
Resolution@ frame rate	5120X5120@42FPS	6240X4168@45	6480X4860@35FPS	8240X5628@24	9344x7000@15.5
Pixel size	2.5μmX2.5μm	3.76μmX3.76μm	3.45μmX3.45μm	2.315μmX2.315μm	3.2μmX3.2μm
Pixel bit depth	10bit	12bit	12bit	12bit	12bit
Sensitivity	1.03x10 <sup>-7</sup> e <sup>-</sup> /((W/m <sup>2</sup> )-s) @500nm	5630mV 1/30s	915mV 1/30s	87.69mV 1/30s	1.03x10 <sup>-7</sup> e <sup>-</sup> /((W/m <sup>2</sup> )-s) @500nm
Acquisition mode	Continuous/soft trigger/hard trigger				
Maximum gain (multiple)	16.5	64	125	22	6
Exposure time range (ms)	0.004~524.3	0.005~5242	0.0056~5872	0.007~5000	0.015~10000
Frame buffer	256M Bytes				
User-defined data area	2K Bytes				
Video output format	Color : Bayer8 Mono : Mono8	Color : Bayer8/Bayer12 Mono : Mono8/Mono12	Color : Bayer8 Mono : Mono8	Color : Bayer8/Bayer12 Mono : Mono8/Mono12	Color : Bayer8 Mono : Mono8
GPIO	Two inputs and two outputs, one configurable input and output, support trigger and flash sync mode				
Lens Mount	C-Mount	M58 ( F-port adapter ring are optional)			
Power supply	12V				
Power	< 12W				
Dimensions	64x64x61.7mm (Without lens mount and rear shell interface)	64x64x59.5mm (Without lens mount and rear shell interface)			
Weight	< 550g		< 500g		

## General parameters

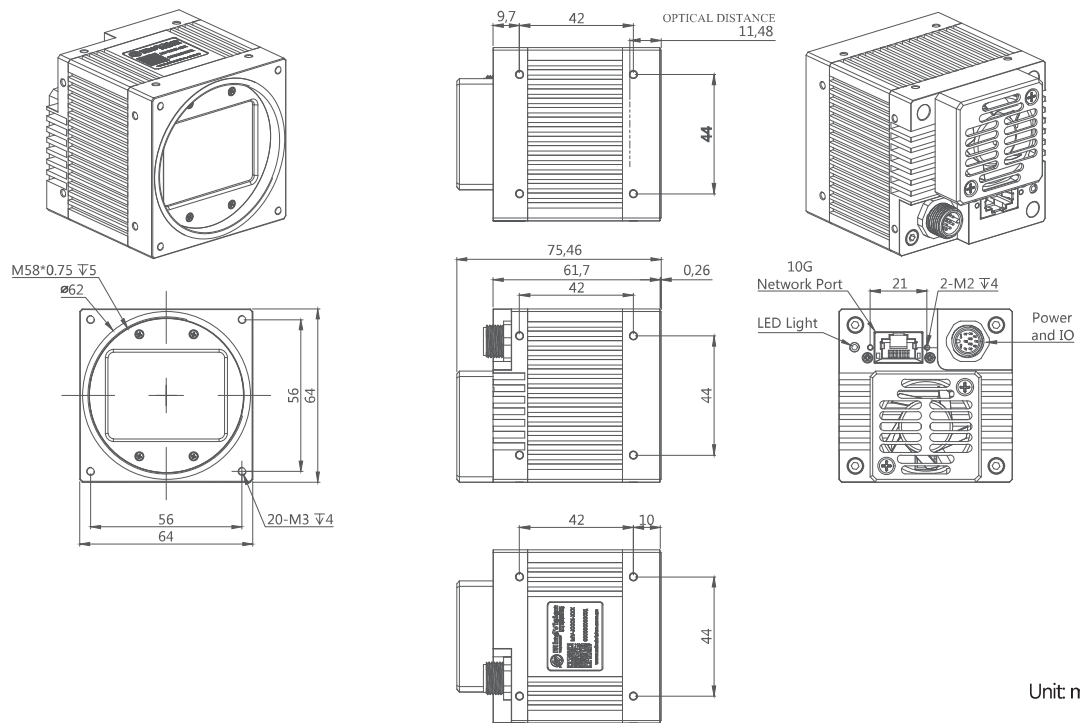
Programming language pack	C/C++/C#/VB6/VB.NET/Delphi/BCB/Python/Java
Operating system	WIINXP, WIN7/8/10 32@64 bit system, Linux and ARM Linux driver, Android platform driver, MAC OS system
Driver	Directshow component Halcon special component Labview special driver OCX component TWAIN component
Data interface	10G copper cable 10GBase-T, compatible with 100M/1G/2.5G/5G
Vision Standard Agreement	GigE Vision V1.2, Genlcam
Filter	Black and white cameras come standard with double-sided AR antireflection film, and color cameras come standard with 650nm infrared cut filter
Working temperature @humidity	0~50°C @ 20%~80%(No condensation)
Storage temperature @humidity	-30~60°C @ 20%~95%(No condensation)
Other functions	Support any size ROI custom resolution, contrast and gamma adjustment, saturation adjustment, white balance correction, black level correction, custom dead point coordinate correction,ISP image processing acceleration, 3D noise reduction, custom LUT table, frame rate adjustment, custom camera name, etc.

## C-Mount Dimension Drawing



Unit mm

## M58-Mount Dimension Drawing



Unit mm