



vieworks

VQ-310G-120 / VQ-1300G-30

VQ-310G-M400 / VQ-2MG-20

VQ-5MG-16

ULTRA COMPACT - COST EFFECTIVE CCD AND CMOS CAMERA



VQ Series is the smallest digital cameras ideal for a wide range of industrial applications. With its compact housing size and light weight, VQ cameras can simply replace most of industrial analogue cameras. Its competitive price and advanced features such as built-in frame buffer, user defined LUT and auto exposure control allow users to enjoy flexible choices for various machine vision and traffic applications.

Main Features

- * Resolution from VGA up to 5 MP
- * Power over Ethernet with 1 Gbps interface
- * Maximum 100 meter cable lengths
- * Compact size with C-mount and CS-mount adapter
- * Built-in frame buffer and auto exposure control
- * Stream Hold and Inter-Packet Delay
- * Camera Image Memory: 64 MB
- * Field Upgradeable Firmware
- * Pixel Defect Correction (Binning Mode: 2 × 2, 4 × 4)

Applications

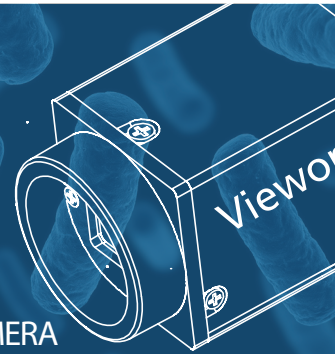
- * Machine Vision and Metrology
- * Medical and Scientific Imaging
- * Microscopy
- * Remote Sensing
- * Intelligent Transport Systems (ITS)

machinevision.vieworks.com



VQ-310G-120 / VQ-1300G-30 VQ-310G-M400 / VQ-2MG-20 VQ-5MG-16

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Specifications

Model		VQ-310G-120	VQ-1300G-30	VQ-310G-M400
Resolution (H × V)		656 × 488	1296 × 960	640 × 480
Sensor		Sony ICX 424 AL/AQ	Sony ICX 445 AL/AQ	CMOSIS CMV 300
Sensor Size (Optical Size)		4.85 mm × 3.61 mm, 1/3"	4.86 mm × 3.60 mm, 1/3"	4.74 mm × 3.56 mm, 1/3"
Sensor Type		Progressive Scan Interline Transfer CCD		High Speed CMOS Image Sensor
Pixel Size		7.4 μm × 7.4 μm	3.75 μm × 3.75 μm	7.4 μm × 7.4 μm
Sensor Output		1 Tap		
Pixel Data Format		8/10/12 bit		
Output Format	Mono	Mono8, Mono10, Mono10 packed, Mono12, Mono12 packed		
	Color	Bayer BG8, Bayer BG12, Bayer BG12 packed, YUV422 packed, YUV422 (YUYV) packed		N/A
Interface		Gigabit Ethernet		
Electronic Shutter		Global Shutter		
Shutter Speed		22 μs ~ 7 s (10 μs step)	9 μs ~ 7 s (10 μs step)	65 μs ~ 7 s (10 μs step)
Partial Scan (Max. Speed)		451 fps at 60 Lines	118 fps at 120 Lines	7900 fps at 2 Lines
Binning		×1, ×2, ×3, ×4 (Horizontal and Vertical Independent)		N/A
Lookup Table		G = 1.0, User defined LUT (Lookup Table)		
Black Level		Adjustable (0 ~ 128 LSB at 12 bit, 256 steps)		Adjustable (0 ~ 256 LSB at 12 bit, 256 steps)
Gain Control		Analog: ×1 ~ ×40 (0 ~ 32 dB)		×1, ×1.25, ×1.5, ×1.75, ×2, ×2.5, ×3, ×3.5
Max. Frame Rate		120 fps	30 fps	400 fps
Exposure Mode		Timed, Trigger Width, Double Exposure		Timed, Trigger Width Exposure
Dynamic Range		52 dB		56 dB
Auto Control		Auto Gain, Auto Exposure, Auto White Balance		Auto Gain, Auto Exposure
Dimension (W×H×L) / Weight	C-mount	29 mm × 29 mm × 56.4 mm / 91 g		-
	CS-mount	29 mm × 29 mm × 51.4 mm / 86 g		44 mm × 29 mm × 60 mm / 100 g
Temperature		Operating: 0°C ~ 40°C, Storage: -40°C ~ 70°C		Operating: -10°C ~ 55°C, Storage: -40°C ~ 70°C
Lens Mount		C-mount or CS-mount		CS-mount
Power		Power over Ethernet (802.3af) or 8 ~ 38 V DC		10 ~ 14 V DC
API SDK		Vieworks Imaging Solution 6.X		

Specifications

Model	VQ-2MG-20		VQ-5MG-16
Resolution (H × V)	1624 × 1232		2448 × 2056
Sensor	Sony ICX 274 AL/AQ		Sony ICX 625 AL/AQ
Sensor Size (Optical Size)	7.14 mm × 5.42 mm, 1/1.8"		8.44 mm × 7.09 mm, 2/3"
Sensor Type	Progressive Scan Interline Transfer CCD		
Pixel Size	4.4 μm × 4.4 μm		3.45 μm × 3.45 μm
Sensor Output	1 Tap		2 Tap
Pixel Data Format	8/10/12 bit		
Output Format	Mono	Mono8, Mono10, Mono10 packed, Mono12, Mono12 packed	
	Color	Bayer BG8, Bayer BG12, Bayer BG12 packed, YUV422 packed, YUV422 (YUYV) packed	Bayer RG8, Bayer RG12, Bayer RG12 packed
Interface	Gigabit Ethernet		
Electronic Shutter	Global Shutter		
Shutter Speed	30 μs ~ 7 s (10 μs step)		39 μs ~ 7 s (10 μs step)
Partial Scan (Max. Speed)	90 fps at 154 Lines		41 fps at 256 Lines
Binning	×1, ×2, ×3, ×4 (Horizontal and Vertical Independent)		
Lookup Table	G = 1.0, User defined LUT (Lookup Table)		N/A
Black Level	Adjustable (0 ~ 128 LSB at 12 bit, 256 steps)		
Gain Control	Analog: ×1 ~ ×40 (0 ~ 32 dB)		
Max. Frame Rate	20 fps		16 fps
Exposure Mode	Timed Exposure, Trigger Width Exposure, Double Exposure		
Dynamic Range	48 dB		52 dB
Auto Control	Auto Gain, Auto Exposure, Auto White Balance		Auto White Balance
Dimension (W×H×L) / Weight	C-mount	29 mm × 29 mm × 56.4 mm / 91 g	35 mm × 35 mm × 59.7 mm / 83 g
	CS-mount	29 mm × 29 mm × 51.4 mm / 86 g	35 mm × 35 mm × 54.7 mm / 83 g
Temperature	Operating: 0°C ~ 40°C, Storage: -40°C ~ 70°C		
Lens Mount	C-mount or CS-mount		
Power	Power over Ethernet (802.3af) or 8 ~ 38 V DC		
API SDK	Vieworks Imaging Solution 6.X		

Ordering Scheme

Series		Sensor Options	
VQ Series		B0 - Sony E0 - CMOSIS	
Sensor Resolution		Frame Rate	
310 - 0.3 Megapixels 1300 - 1.3 Megapixels 2M - 2 Megapixels 5M - 5 Megapixels		14 - 16 fps 20 - 20 fps 30 - 30 fps 120 - 120 fps 400 - 400 fps	
Interface		Mono / Color	
G - Gigabit Ethernet		M - Monochrome C - Color	

Connector Specification

Control for VQ Series



- 1 : +12 V DC, 2 : Trigger IN+
- 3 : Trigger IN-, 4 : I/O Output+
- 5 : I/O Output-, 6 : DC Ground (HR10A-7R-6PB)

Control for VQ-310G-M400



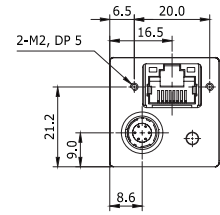
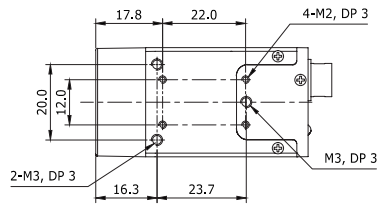
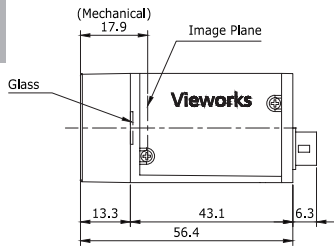
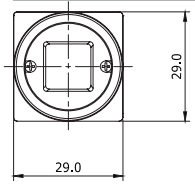
- 1 : DC Ground, 2 : +12 V DC
- 3 : I/O Output-, 4 : I/O Output+
- 5 : Trigger IN-, 6 : Trigger IN+
- 7-12: Not Connected (HR10A-10R-12PB)

Connectors on camera body

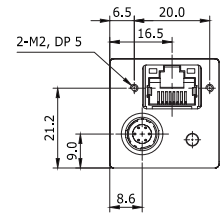
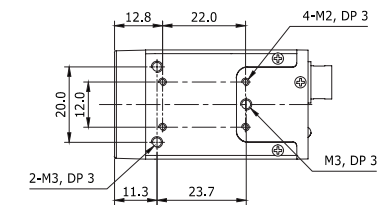
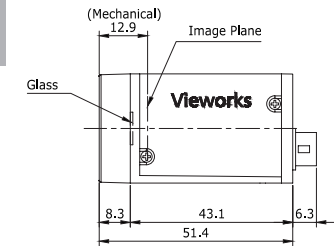
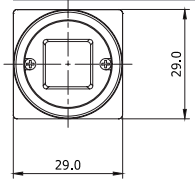
Mechanical Dimensions

Unit : mm

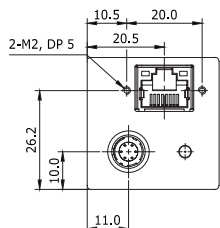
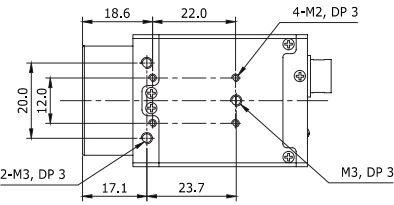
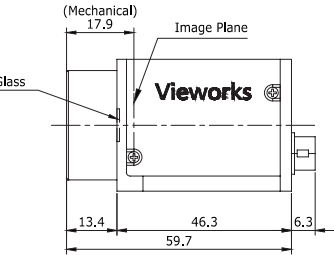
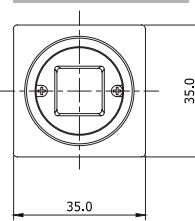
**C-mount for VQ-310G-120
VQ-1300G-30
VQ-2MG-20**



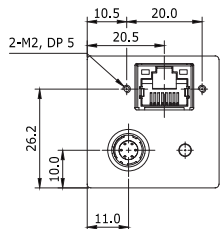
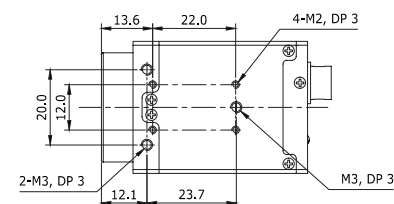
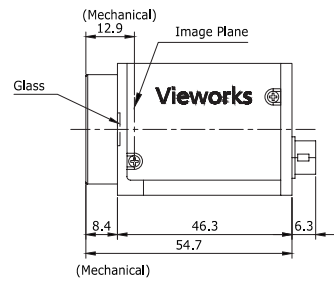
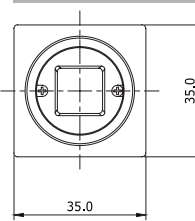
**CS-mount for VQ-310G-120
VQ-1300G-30
VQ-2MG-30**



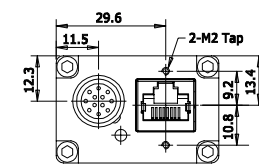
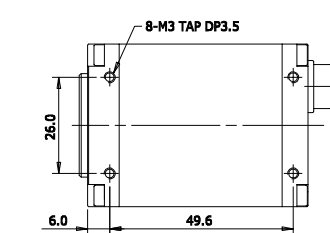
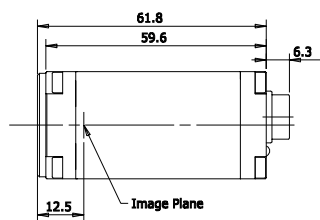
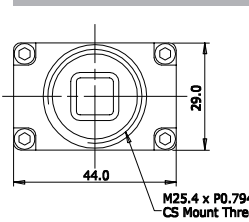
C-mount for VQ-5MG



CS-mount for VQ-5MG



CS-mount for VQ-310G-M400



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Corporate Headquarters

Vieworks Co., Ltd. # 604 Suntechcity II, 307-2 Sangdaewon-dong, Jungwon-gu, Seongnam-si, Gyeonggi-do, 462-736 South Korea
tel +82-70-7011-6161 fax +82-31-737-4936 e-mail sales@vieworks.com website machinevision.vieworks.com

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