VA-1MC / VA-2MC
VA-4MC / VA-8MC
VA-16MC / VA-29MC

1 / 2 / 4 / 8 / 16 / 29 MEGAPIXEL RESOLUTION
HIGH-SPEED PROGRAMMABLE DIGITAL CAMERA

VA Series cameras are progressive scan high performance digital cameras based on the 5.5 μm 4-tap CCD sensor technology of ON Semiconductor (formerly Truesense Imaging, Inc.). ON Semiconductor's 4-tap readout structure results in 2× the frame rate as compared to previous generation image sensors. Frame rates as high as 125 frames per second at 1 million pixel resolution can be achieved. This camera series is ideal for demanding applications such as semi-conductor inspection, electronics inspection, aerial imaging inspection, and FPD inspection.

vieworks

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Main Features

* ON Semiconductor Progressive Scan IT CCD Imager
* 14 bit A/D Converter
* 8/10/12 bit Data Output
* 1/2/4 Tap for Full Resolution Readout from 4.8 up to 120 fps
* Field Upgradable Firmware
* Flat Field Correction
* Pixel Defect Correction
* Excellent Anti-blooming and Anti-smear

Applications

* Machine Vision Inspection
* Research and Scientific Imaging
* Microscopy and Metrology
* Remote Sensing and Scanning
* Intelligent Transport System (ITS)

Specifications

Model	VA-1MC-M/C 120	VA-2MC-M/C 68	VA-4MC-M/C 32
Resolution (H × V)	1024 × 1024	1600 × 1200	2336 × 1752
Sensor (ON Semiconductor)	KAI-01050	KAI-02050	KAI-04050
Sensor Size (Optical Format)	1/2"	2/3"	1"
Sensor Type	Progressive Scan Interline Transfer CCD		
Pixel Size	5.5 μm × 5.5 μm		
Sensor Output	1, 2 or 4 Tap		
Interface	Camera Link		
Max. Frame Rate	125 fps	70 fps	33 fps
Exposure Time	1/100000 ~ 7 s (10 μs step)		
Partial Scan (Max. Speed)	337 fps at 120 Lines	183 fps at 150 Lines	142 fps at 200 Lines
Pixel Data Format	8 / 10 / 12 bit		
Electronic Shutter	Global Shutter		
Data Output Pixel Clock Speed	40 MHz (1 or 2 Tap) / 80 MHz (4 Tap)		
Trigger Mode	Free-Run, Standard, Fast, Double, Overlap Programmable Exposure Time and Trigger Polarity		
Dynamic Range	64 dB		
Binning	×1, ×2, ×4 (Horizontal and Vertical Independent)		
Lookup Table	User Defined Lookup Table (LUT)		
Analog Offset	Adjustable (0 ~ 127 LSB at 12 bit, 256 steps)		
Analog Gain	0 ~ 32 dB, 900 steps		
Dimension / Weight	68 mm × 68 mm × 54 mm, 420 g (with C-mount) 68 mm × 68 mm × 83 mm, 460 g (with F-mount)		
Temperature	Operating: -5℃ ~ 40℃, Storage: -40℃ ~ 70℃		
Lens Mount	C or F-mount, Custom mount available upon request		
Power	10 ~ 14 V DC, Typ. 6 W	10 ~ 14 V DC, Typ. 6.5 W	10 ~ 14 V DC, Typ. 6.5 W
Compliance	CE, FCC, KC		
Configuration Software	Configurator		

VA-1MC / VA-2MC / VA-4MC / VA-8MC / VA-16MC / VA-29MC

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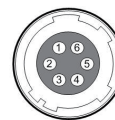
Specifications

Model	VA-8MC-M/C 16	VA-16MC-M/C 8	VA-29MC-M/C 5
Resolution (H × V)	3296 × 2472	4896 × 3264	6576 × 4384
Sensor (ON Semiconductor)	KAI-08051	KAI-16050	KAI-29050
Sensor Size (Optical Format)	4/3"	32 mm (APS-H)	35 mm
Sensor Type	Progressive Scan Interline Transfer CCD		
Pixel Size	5.5 μm × 5.5 μm		
Sensor Output	1, 2 or 4 Tap		
Interface	Camera Link		
Max. Frame Rate	16 fps	8 fps	4.8 fps
Exposure Time	1/100000 ~ 7 s (10 μs step)		
Partial Scan (Max. Speed)	84 fps at 300 Lines	23 fps at 1000 Lines	15.2 fps at 1000 Lines
Pixel Data Format	8 / 10 / 12 bit		
Electronic Shutter	Global Shutter		
Data Output Pixel Clock Speed	40 ㎒ (1 or 2 Tap) 80 ㎒ (4 Tap)	Low Speed: 30 ㎒ (1/2 Tap) / 60 ㎒ (4 Tap) High Speed: 40 ㎒ (1/2 Tap) / 80 ㎒ (4 Tap)	
Trigger Mode	Free-Run, Standard, Fast, Double, Overlap Programmable Exposure Time and Trigger Polarity		
Dynamic Range	66 dB	64 dB	
Binning	×1, ×2, ×4 (Horizontal and Vertical Independent)		
Lookup Table	User Defined Lookup Table (LUT)		
Analog Offset	Adjustable (0 ~ 127 LSB at 12 bit, 256 steps)		
Analog Gain	0 ~ 32 dB, 900 steps		
Dimension / Weight	68 mm × 68 mm × 54 mm, 420 g (with C-mount) 68 mm × 68 mm × 83 mm, 460 g (with F-mount)		68 mm × 68 mm × 104 mm 500 g (with F-mount)
Temperature	Operating: -5℃ ~ 40℃, Storage: -40℃ ~ 70℃		
Lens Mount	C or F-mount	F-mount, Custom mount available upon request	
Power	10 ~ 14 V DC, Typ. 7 W	10 ~ 14 V DC, Typ. 8 W	10 ~ 14 V DC, Typ. 9.5 W
Compliance	CE, FCC, KC (Application of VA-16MC in preparation)		
Configuration Software	Configurator		

Ordering Scheme

VA – 29M C – M 5 A0

Series
VA Series

Sensor Resolution
1M – 1 Megapixels
2M – 2 Megapixels
4M – 4 Megapixels
8M – 8 Megapixels
16M – 16 Megapixels
29M – 29 Megapixels

Interface
C – Camera Link

Sensor Options
A0 – ON Semiconductor

Frame Rate
5 – 4.8 fps
8 – 8 fps
16 – 16 fps
32 – 33 fps
68 – 70 fps
120 – 125 fps

Mono / Color
M – Monochrome
C – Color

Connector Specification

Power

1 2 3: +12V DC, 4 5 6: GND
(HR10A-7R-6PB)

Control

1: Trigger IN+, 2: Trigger IN-
3: DC Ground, 4: Strobe OUT+
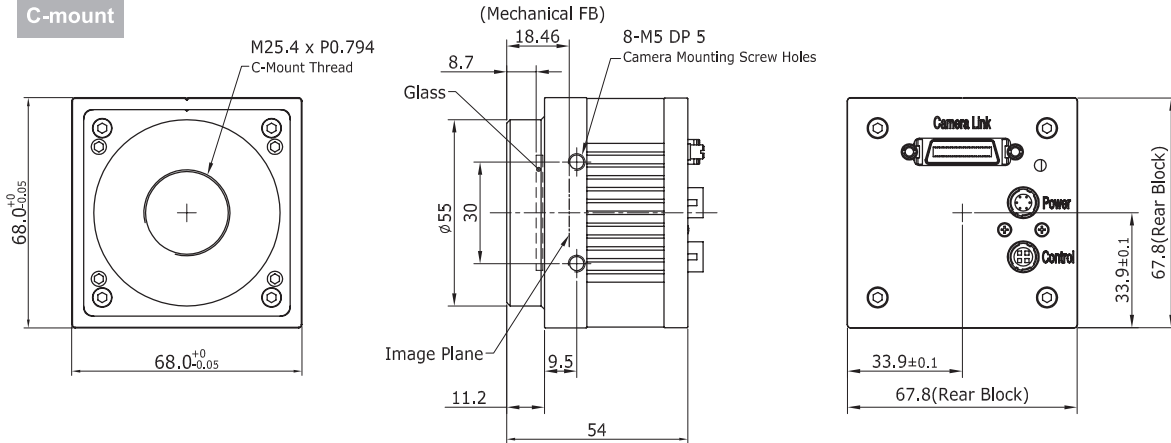(HR10A-7R-4S)

Connectors on camera body

VA-1MC / VA-2MC / VA-4MC / VA-8MC / VA-16MC / VA-29MC

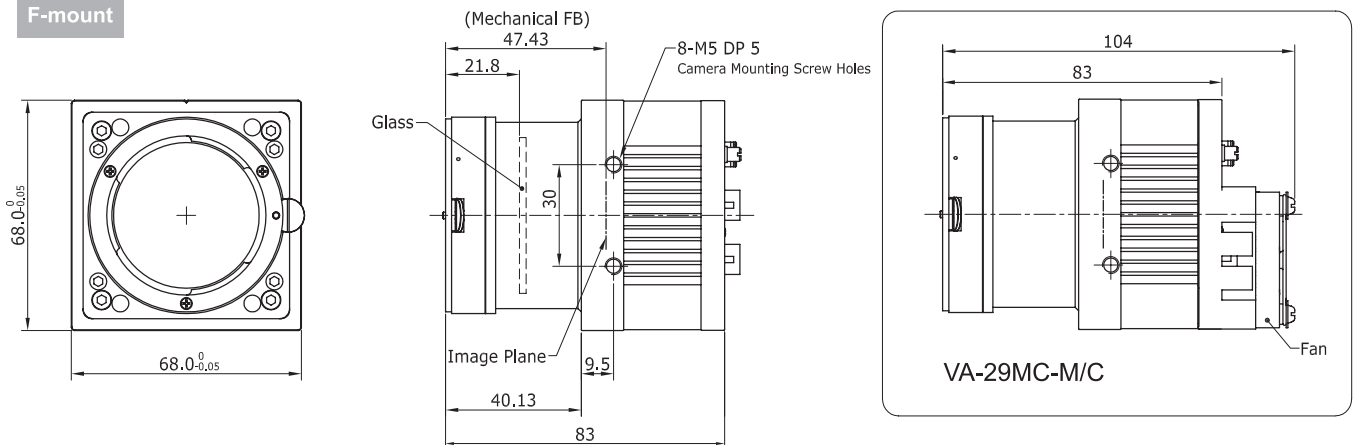1 / 2 / 4 / 8 / 16 / 29 MEGAPIXEL RESOLUTION – HIGH-SPEED PROGRAMMABLE DIGITAL CAMERA

Mechanical Dimensions

Unit: ㎜

C-mount

M25.4 x P0.794
C-Mount Thread

(Mechanical FB)

18.46
8.7

8-M5 DP 5
Camera Mounting Screw Holes

Glass

Ø55
30

68.0⁺⁰₋₀.₀₅

68.0⁺⁰₋₀.₀₅

Image Plane

9.5
11.2
54

Camera Link
Power
Control

67.8(Rear Block)
33.9±0.1

33.9±0.1
67.8(Rear Block)

F-mount

(Mechanical FB)
47.43
21.8

8-M5 DP 5
Camera Mounting Screw Holes

Glass

30

68.0⁰₋₀.₀₅

68.0⁰₋₀.₀₅

Image Plane

9.5
40.13
83

104
83

VA-29MC-M/C

Fan

For more information please contact local distributor or visit our website at http://www.vieworks.com.

RA14-11A-008

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