



Lineup-E201812

**VIEWWORKS**  
[www.viewworks.com](http://www.viewworks.com)









VIEWWORKS INDUSTRIAL CAMERAS  
**SELECTION GUIDE**



# Area Scan Camera



Since the first industrial camera series launched in 2008, Vieworks has gained fame with the ultra-high resolution area scan cameras in the industrial imaging industry. Relentless pursuit of innovation and discovery drives us to create industry leading cameras. Thanks to the successful adoption of the nano-stage pixel shifting and TEC technologies into our industrial imaging solutions, the VN, VP and VNP series cameras are adopted by the world's top display manufacturers. With the VN, VP and VNP series, Vieworks has become the world's leading area scan camera maker in the flat panel inspection systems. Vieworks' area scan cameras deliver unique and unparalleled performance in the most demanding applications.




Image	Series Name	Feature	Max. Resolution	Max. Frame Rate	Sensor	Interface	Page
	VA Series	Advanced High Speed CCD Cameras	8856 × 5280	125 fps	CCD	Camera Link / GigE	Page 5
	VC Series	High Speed CMOS Cameras	16384 × 9440	337.6 fps	CMOS	Camera Link / CoaXPress	Page 6 Page 7
	VH Series	High Performance CCD Cameras	4872 × 3248	264 fps	CCD	Camera Link / GigE	Page 8
	VN Series	Ultra High Resolution Pixel Shifting Cameras	23760 × 18012	72 fps	CCD / CMOS	Camera Link / CoaXPress	Page 9
	VP Series	Thermoelectric Cooled Cameras	10000 × 7096	30 fps	CCD / CMOS	Camera Link / CoaXPress	Page 10
	VNP Series	Pixel Shifting Camera with TEC Integrated	26568 × 15840	10 fps	CCD / CMOS	Camera Link / CoaXPress	Page 11
	VX Series	Aerial Imaging / Surveillance Cameras	6576 × 4384	4.7 fps	CCD / CMOS	Camera Link / GigE	Page 12
	VS Series	Scientific CMOS Digital Camera	2048 × 1150	79.4 fps	CMOS	USB 3.0	Page 13

# TDI Line Scan Camera




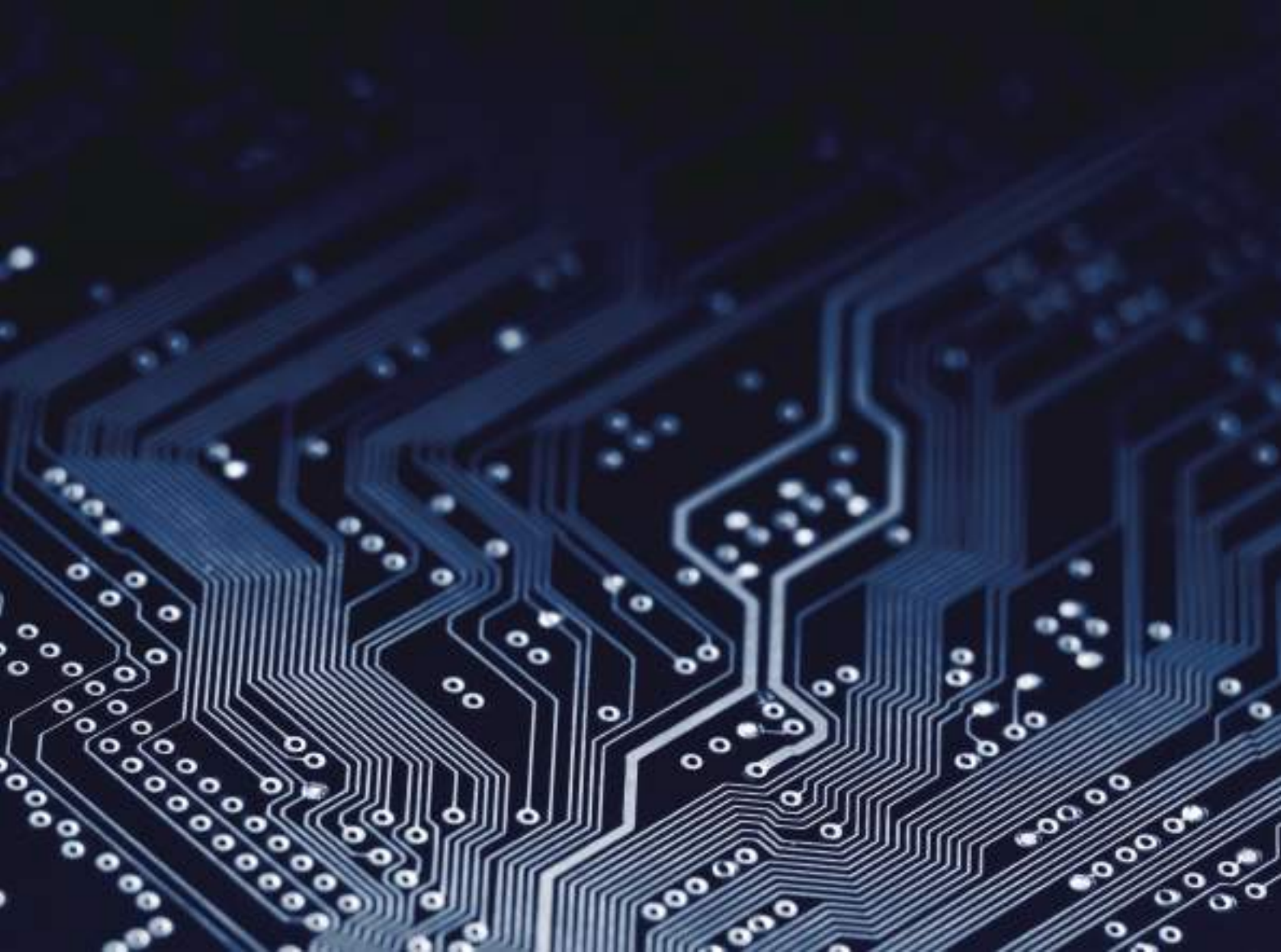
Time Delayed Integration (TDI) line scan is an advanced line scan technology used in applications where faster line rates and higher sensitivity are required. To achieve higher sensitivity at faster scanning speed, TDI line scan cameras accumulate multiple exposures of the same object by using multiple stages. This is true because TDI line scan cameras provide dramatically increased sensitivity as the sensitivity increases proportionally to the number of stages. Vieworks has developed hybrid TDI line scan sensors through the pursuit of leading edge technology. In 2016, Vieworks proudly introduced the “VTDI” series, the world’s first hybrid TDI line scan cameras, which combines the strengths of both the CCD and CMOS image sensors. With the VTDI series, customers in the industrial imaging market can take advantage of CCD’s high quality imaging and CMOS’ high speed imaging capabilities. Now VTDI sets a new standard for the industrial imaging industry that goes way beyond the existing TDI line scan camera technology.

## Monochrome

Image	Series Name	Feature	Max. Resolution	Max. Line Rate	Sensor	Interface	Page
	VT Series - M42	High Sensitivity & High Speed TDI Line Scan Cameras	6560 × 256	250 kHz	Vieworks	Camera Link / CoaXPress	Page 15
	VT Series - M72	High Sensitivity & High Speed TDI Line Scan Cameras	17824 × 256	250 kHz	Vieworks	Camera Link / CoaXPress	Page 16
	VT Series - M95	High Sensitivity & High Speed TDI Line Scan Cameras	23360 × 256	140 kHz	Vieworks	CoaXPress	Page 17

## Color

Image	Series Name	Feature	Max. Resolution	Max. Line Rate	Sensor	Interface	Page
	VTC Series - M42	High Sensitivity & High Speed Color TDI Line Scan Cameras	2160 x 80	140 kHz	Vieworks	Camera Link / CoaXPress / GigE	Page 19



## Area Scan Camera

**VHR**

Vieworks has gained fame with the ultra-high resolution area scan cameras in the industrial imaging industry. Thanks to the successful adoption of the nano-stage pixel shifting and TEC technologies into our industrial imaging solutions, the VN, VP and VNP series cameras are adopted by the world's top display manufacturers. Vieworks' area scan cameras deliver unique and unparalleled performance in the most demanding applications.



# VA Series

## 1/2/4/8/16/29/47 Megapixels Resolution, High-Speed Programmable Digital Cameras

VA Series cameras are progressive scan high performance digital cameras based on the latest 5.5  $\mu\text{m}$  CCD sensor technology of On Semiconductor. On Semiconductor's multi-tap readout structure results in faster frame rate as compared to previous generation image sensors. The VA-47MC, the new member of the VA series, uses the latest 16-tap CCD sensor technology and performs as fast as 7 fps with 47 million pixel resolution. This camera series is ideal for demanding applications such as semi-conductor inspection, electronics inspection, aerial imaging inspection, and FPD inspection.

- Progressive Scan Interline Transfer CCD Imager
- Field Upgradable Firmware
- Flat Field Correction
- Pixel Defect Correction
- Excellent Anti-blooming and Anti-smear



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H×V (mm <sup>2</sup> )	Diagonal	Optical		
VA-1MC-M/C 120	1024×1024	125 fps	8/10/12 bits	Camera Link	5.63×5.63	7.96 mm	1/2"	On Semiconductor KAI-01050	5.5×5.5
VA-2MC-M/C 68	1600×1200	70 fps	8/10/12 bits	Camera Link	8.80×6.60	11.0 mm	2/3"	On Semiconductor KAI-02050	5.5×5.5
VA-4MC-M/C 32	2336×1752	33 fps	8/10/12 bits	Camera Link	12.85×9.64	16.06 mm	1"	On Semiconductor KAI-04050	5.5×5.5
VA-8MC-M/C 16	3296×2472	16 fps	8/10/12 bits	Camera Link	18.13×13.60	22.66 mm	4/3"	On Semiconductor KAI-08051	5.5×5.5
VA-16MC-M/C 8	4896×3264	8 fps	8/10/12 bits	Camera Link	26.93×17.95	32.36 mm	32 mm	On Semiconductor KAI-16050	5.5×5.5
VA-29MC-M/C 5	6576×4384	5 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VA-29MC2-M/C 6	6576×4384	6.1 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VA-47MC-M/C 7	8856×5280	7.0 fps	8/10/12 bits	Camera Link	48.7×29.0	56.7 mm	-	On Semiconductor KAI-47051	5.5×5.5
VA-1MG2-M/C 70	1024×1024	72 fps	8/10/12 bits	GigE	5.63×5.63	7.96 mm	1/2"	On Semiconductor KAI-01050	5.5×5.5
VA-2MG2-M/C 42	1600×1200	42 fps	8/10/12 bits	GigE	8.80×6.60	11.0 mm	2/3"	On Semiconductor KAI-02050	5.5×5.5
VA-4MG2-M/C 20	2336×1752	20 fps	8/10/12 bits	GigE	12.85×9.64	16.06 mm	1"	On Semiconductor KAI-04050	5.5×5.5
VA-8MG2-M/C 10	3296×2472	10 fps	8/10/12 bits	GigE	18.13×13.60	22.66 mm	4/3"	On Semiconductor KAI-08051	5.5×5.5
VA-16MG2-M/C 4	4896×3264	4.3 fps	8/10/12 bits	GigE	26.93×17.95	32.36 mm	32 mm	On Semiconductor KAI-16050	5.5×5.5
VA-29MG2-M/C 2	6576×4384	2.3 fps	8/10/12 bits	GigE	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5

\* C, F or M72-mount is available with VA Series. Contact us to request a custom mount.

# VC Series

## High-Speed CMOS Digital Cameras with the Camera Link Interface

**VC Series** is a family of high resolution CMOS digital cameras for machine vision. Equipped with the latest global or rolling shutter CMOS image sensor technology available today, these cameras offer not only high speed image processing capabilities but also precise exposure control. The new VC-50MC and VC-155MC cameras featuring high speed and high resolution are equipped with the Camera Link interface. These cameras allow users to acquire up to 50 million pixels at 17.5 full frames per second and 155 million pixels at 5.4 full frames per second respectively. With the outstanding noise reduction technology and a wide range of camera resolutions, these cameras are ideal for use in various industrial inspection and scientific research applications.

- Resolutions from 2MP up to 155MP
- High-Speed Progressive Scan CMOS Image Sensor
- Global Shutter or Rolling Shutter CMOS Technology
- Full, Medium or Base Camera Link Interface
- Excellent Noise Reduction
- Field Upgradable Firmware
- Pixel Defect Correction



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H×V (mm <sup>2</sup> )	Diagonal	Optical		
VC-2MC-M/C 150	2048×1088	148.5 fps	8/10 bits	Camera Link	11.26×5.98	12.75 mm	2/3"	AMS CMOSIS CMV 2000	5.5×5.5
VC-2MC-M/C 340	2048×1088	337.6 fps	8/10 bits	Camera Link	11.26×5.98	12.75 mm	2/3"	AMS CMOSIS CMV 2000	5.5×5.5
VC-3MC-M/C 280	1696×1710	285 fps	8 bits	Camera Link	13.57×13.68	19.27 mm	1"	On Semiconductor LUPA3000	8.0×8.0
VC-4MC-M/C 80	2048×2048	78.9 fps	8/10 bits	Camera Link	11.26×11.26	15.92 mm	1"	AMS CMOSIS CMV 4000	5.5×5.5
VC-4MC-M/C 180	2048×2048	179.5 fps	8/10 bits	Camera Link	11.26×11.26	15.92 mm	1"	AMS CMOSIS CMV 4000	5.5×5.5
VC-12MC-M/C 65	4096×3072	64.3 fps	8/10 bits	Camera Link	22.53×16.90	28.14 mm	APS-like	AMS CMOSIS CMV 12000	5.5×5.5
VC-25MC-M/C 30	5120×5120	30.9 fps	8/10 bits	Camera Link	23.04×23.04	32.58 mm	35 mm	On Semiconductor VITA-25K	4.5×4.5
VC-25MC-M/C 30 D	5120×5120	30.1 fps	8/10 bits	Camera Link	23.04×23.04	32.58 mm	35 mm	On Semiconductor PYTHON-25K	4.5×4.5
VC-50MC-M/C 18	7920×6004	17.5 fps	8/10/12 bits	Camera Link	36.43×27.62	45.72 mm	35 mm	AMS CMOSIS CMV 50000	4.6×4.6
VC-71MC-M/C 4	10000×7096	4.2 fps	8/10/12 bits	Camera Link	31.00×24.11	38 mm	-	AMS CMOSIS CHR 70M	3.1×3.1
VC-90MC-M 9 A	12560×7080	9.4 fps	8/10/12 bits	Camera Link	43.96×24.78	50.4 mm	-	Vieworks	3.5×3.5
VC-155MC-M 5 A	16384×9440	5.4 fps	8/10/12 bits	Camera Link	57.34×33.04	66.1 mm	-	Vieworks	3.5×3.5

\* C, F or M72-mount is available with VC Camera Link Series. Contact us to request a custom mount.

# VC Series

## High-Speed CMOS Digital Cameras with the CoaXPress Interface

VC Series has been expanding its lineup of high speed CMOS cameras by adopting the latest CoaXPress interface. The high resolution CMOS cameras available with the CoaXPress interface are designed to meet the demanding requirements of high resolution, high speed and long distance image system applications. For even higher resolution and faster speed applications, the VC-50MX and VC-155MX are added to this industrial proven VC series. These cameras can acquire up to 50 million pixels at 30.9 full frames per second and 155 million pixels at 15.1 full frames per second respectively. With high speed and high resolution, these cameras are ideal for demanding applications such as printed circuit board inspection, semiconductor wafer inspection, flat panel display inspection as well as solar panel inspection.

- Resolutions from 2MP up to 155MP
- High-Speed Progressive Scan CMOS Image Sensor
- Global Shutter or Rolling Shutter CMOS Technology
- CoaXPress Interface up to 8 CXP-6 Channels
- Excellent Noise Reduction
- Field Upgradable Firmware
- Pixel Defect Correction



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H × V (mm)	Diagonal	Optical		
VC-12MX-M/C 180	4096 × 3072	180 fps	8 bits	CoaXPress	22.53 × 16.90	28.14 mm	APS-like	AMS CMOSIS CMV 12000	5.5 × 5.5
VC-12MX-M/C 330 F	4096 × 3072	330 fps	8 bits	CoaXPress	22.53 × 16.90	28.14 mm	APS-like	AMS CMOSIS CMV 12000	5.5 × 5.5
VC-25MX-M/C 72	5120 × 5120	72 fps	8/10 bits	CoaXPress	23.04 × 23.04	32.58 mm	35 mm	On Semiconductor VITA-25K	4.5 × 4.5
VC-25MX-M/C 81 D	5120 × 5120	81 fps	8 bits	CoaXPress	23.04 × 23.04	32.58 mm	35 mm	On Semiconductor PYTHON-25K	4.5 × 4.5
VC-50MX-M/C 30	7920 × 6004	30 fps	8/10/12 bits	CoaXPress	36.43 × 27.62	45.72 mm	35 mm	AMS CMOSIS CMV 50000	4.6 × 4.6
VC-90MX-M 25 A	12560 × 7080	25 fps	8/10/12 bits	CoaXPress	43.96 × 24.78	50.4 mm	-	Vieworks	3.5 × 3.5
VC-155MX-M 15 A	16384 × 9440	15 fps	8/10/12 bits	CoaXPress	57.34 × 33.04	66.1 mm	-	Vieworks	3.5 × 3.5

\* F or M72-mount is available with VC CoaXPress Series. Contact us to request a custom mount.



# VH Series

## High-Speed Programmable Digital Cameras Up to 16 Megapixels Resolution

**VH Series** cameras are progressive scan high performance industrial digital cameras. Camera functions are easily updated in the field using our standard serial interface. These cameras use the latest CCD technology from On Semiconductor which provides superior low noise performance resulting in high dynamic range. The VH Series is an excellent choice for applications such as LCD inspection, machine vision inspection, research and scientific imaging and aerial imaging.

- Excellent Dynamic Range and Noise Performance
- Progressive Scan Interline Transfer CCD Imager
- Flat Field Correction
- Field Upgradable Firmware
- Pixel Defect Correction



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size (μm <sup>2</sup> )
					H×V (mm <sup>2</sup> )	Diagonal	Optical		
VH-310C-M/C 264	640×480	264 fps	8/10/12 bits	Camera Link	4.74×3.55	5.92 mm	1/3"	On Semiconductor KAI-0340	7.4×7.4
VH-2MC-M/C 42	1600×1200	42 fps	8/10/12 bits	Camera Link	11.84×8.88	14.80 mm	1"	On Semiconductor KAI-2020	7.4×7.4
VH-4MC-M/C 20	2048×2048	20 fps	8/10/12 bits	Camera Link	15.16×15.16	21.43 mm	4/3"	On Semiconductor KAI-4021	7.4×7.4
VH-11MC-M/C 6	4008×2672	6.4 fps	8/10/12 bits	Camera Link	36.10×24.05	43.3 mm	35 mm	On Semiconductor KAI-11002	9.0×9.0
VH-16MC-M/C 4	4872×3248	4.2 fps	8/10/12 bits	Camera Link	36.10×24.00	43.3 mm	35 mm	On Semiconductor KAI-16000	7.4×7.4
VH-310G2-M/C 264	640×480	264 fps	8/10/12 bits	GigE	4.74×3.55	5.92 mm	1/3"	On Semiconductor KAI-0340	7.4×7.4
VH-2MG2-M/C 42	1600×1200	42 fps	8/10/12 bits	GigE	11.84×8.88	14.80 mm	1"	On Semiconductor KAI-2020	7.4×7.4
VH-4MG2-M/C 20	2048×2048	20 fps	8/10/12 bits	GigE	15.16×15.16	21.43 mm	4/3"	On Semiconductor KAI-4021	7.4×7.4
VH-11MG2-M/C 6	4008×2672	6.4 fps	8/10/12 bits	GigE	36.10×24.05	43.3 mm	35 mm	On Semiconductor KAI-11002	9.0×9.0
VH-16MG2-M/C 4	4872×3248	4.2 fps	8/10/12 bits	GigE	36.10×24.00	43.3 mm	35 mm	On Semiconductor KAI-16000	7.4×7.4

\* C or F-mount is available with VH Series. Contact us to request a custom mount.

# VN Series

## Nano Stage Pixel Shifting Cameras for Extended Resolutions

**VN Series** pixel shifting cameras are designed for applications where an object is stationary and extremely high resolution is required. Equipped with the Vieworks' advanced pixel shifting technology based on a precise piezoelectric stage, the VN-29MC camera's resolution can be extended from 29 megapixels up to 260 megapixels. With the VN-200MX camera, customers in the industrial market can take advantage of 427 million pixel resolution at 3 fps. These cameras are ideal for applications such as FPD inspection, document/film scanning, research and scientific imaging.

- Nano Stage Pixel Shifting Mechanism
- True Color Full Image Resolution
- Improved Fill Factor
- Base Camera Link Interface with 8, 10 or 12 bit Data Output
- CoaXPress Interface up to Quadruple Digital Output Ports
- Flat Field Correction
- Field Upgradable Firmware
- Pixel Defect Correction



Model	Resolution	Extended Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
						H×V (mm)	Diagonal	Optical		
VN-29MC-M/C 5	6576×4384	19728×13152	4.8 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VN-25MX-M/C 72	5120×5120	15360×15360	72 fps	8/10 bits	CoaXPress	23.04×23.04	32.58 mm	35 mm	On Semiconductor VITA-25K	4.5×4.5
VN-200MX-M/C 30	7920×6004	23760×18012	30 fps	8/10/12 bits	CoaXPress	36.43×27.62	45.72 mm	35 mm	AMS CMOSIS CMV-50000	4.6×4.6

\* C, F or M72-mount is available with VN Series. Contact us to request a custom mount.



# VP Series

## Thermoelectric Peltier Cooled, High-Speed Programmable Digital Cameras

VP Series cameras are Thermoelectric Peltier (TEC) cooled high performance digital cameras. These cameras use cooling technology developed for, and used by, many demanding market customers. The TEC maintains the operating temperature of the image sensor at up to 20 degrees below ambient temperature. These cameras provide a stable operating condition or the ability to expose for a long period of time to increase camera sensitivity. These cameras are ideal for industrial applications such as FPD inspection and microscopy.

- Thermoelectric Peltier Cooled
- 20 degrees below ambient temperature
- Progressive Scan Interline Transfer CCD Imager
- Progressive Scan CMOS Imager
- Flat Field Correction
- Field Upgradable Firmware
- Pixel Defect Correction



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H×V (mm)	Diagonal	Optical		
VP-29MC-M/C 5	6576×4384	4.8 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VP-71MC-M/C 4	10000×7096	4.2 fps	8/10/12 bits	Camera Link	31.00×24.11	39.27 mm	35 mm	AMS CMOSIS CHR 70M	3.1×3.1
VP-50MX-M/C 30	7920×6004	30 fps	8/10/12 bits	CoaxPress	36.43×27.62	45.72 mm	35 mm	AMS CMOSIS CMV 50000	4.6×4.6

\* No mount or F-mount is available with VP Series. Contact us to request a custom mount.



# VNP Series

## Integrating TEC into Nano Stage Pixel Shifting

**VNP Series**, pixel shifting camera equipped with TEC cooled, is designed not only for applications where extremely high resolution is required but also where high image quality is essential. The TEC maintains the operating temperature of the CCD at up to 20 degrees below ambient temperature to reduce noise significantly.

- Thermoelectric Peltier Cooled
- Nano Stage Pixel Shifting Mechanism
- True Color Full Image Resolution
- Improved Fill Factor
- All Other Features are Equivalent to VN Series



Model	Resolution	Extended Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
						H×V (mm <sup>2</sup> )	Diagonal	Optical		
VNP-29MC-M/C 5	6576×4384	19728×13152	4.8 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VNP-190MX-M/C 10	8856×5280	17712 x 10560	10 fps	8/10/12 bits	CoaXPress	48.7×29.0	56.7 mm	-	On Semiconductor KAI-47051	5.5×5.5
VNP-200MX-M/C 30	7920×6004	23760×18012	30 fps	8/10/12 bits	CoaXPress	36.43×27.62	45.72 mm	35 mm	AMS CMOSIS CMV-50000	4.6×4.6

\* C or F-mount is available with VNP Series. Contact us to request a custom mount.



# VX Series

## Aerial Imaging / Ground Surveillance Cameras

**VX Series** cameras are ideal for aerial imaging and ground surveillance applications which require photographic quality resolution and easy-to-use system integration. The VX-29M camera incorporates a 29 million pixel interline transfer CCD with resolution of 6,576 × 4,384. The VX-25MG, the new model of the VX series, provides 25 megapixel resolution images at frame rates of up to 5 fps. Taking pictures with this camera is made easy with features such as: auto exposure, auto gain, auto focus, lens aperture control, and several innovative features.

- Auto Focus, Auto Exposure, Auto Gain, Auto Aperture Controls
- Canon-EF Adapter Control
- User Adjustable Back Focus
- Field Upgradable Firmware
- Pixel Defect Correction
- Excellent Anti-blooming and Anti-smear



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H×V (mm <sup>2</sup> )	Diagonal	Optical		
VX-29MC-M/C 5	6576×4384	4.6 fps	8/10/12 bits	Camera Link	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5
VX-25MG-M 5	5120×5120	4.7 fps	8 bits	GigE	23.04×24.04	32.58 mm	35 mm	On Semiconductor VITA-25K	4.5×4.5
VX-29MG-M/C 2	6576×4384	2.3 fps	8/10/12 bits	GigE	36.17×24.11	43.47 mm	35 mm	On Semiconductor KAI-29050	5.5×5.5

\* F-mount or interface for Canon-EF adapter is available with VX Series. Contact us to request a custom mount.



# VS Series

## Scientific CMOS Digital Camera

**VS Series**, the scientific CMOS (sCMOS) camera, features an excellent combination of high quantum efficiency, high frame rates and high dynamic range. The VS-2MU is a 2 megapixel resolution sCMOS camera with the USB 3.0 interface. This camera uses the sCMOS image sensor technology from Gpixel and offers up to 79.4 frames per second at 2048 × 1150 resolution. Its high sensitivity featured with low noise and high quantum efficiency makes the VS-2MU camera ideal for biometry, medical and scientific applications.

- High Sensitivity sCMOS Image Sensor
- High Dynamic Range
- Image Correction (DSNU and PRNU Correction)
- Flat Field Correction
- Pixel Defect Correction



Model	Resolution	Frame Rate	Pixel Data	Interface	Sensor Size			Sensor	Pixel Size ( $\mu\text{m}^2$ )
					H×V (mm <sup>2</sup> )	Diagonal	Optical		
VS-2MU-M 80	2048×1150	79.4 fps	12/14 bits	USB 3.0	13.3×7.5	15.26 mm	1"	Gpixel GSENSE2011e	6.5×6.5

\* C-mount is available with VS Series. Contact us to request a custom mount.





## TDI Line Scan Camera

# VTDI

Vieworks has developed hybrid TDI line scan sensors through the pursuit of leading edge technology. In 2016, Vieworks proudly introduced the “VTDI” series, the world’s first hybrid TDI line scan cameras, which combines the strengths of both the CCD and CMOS image sensors. With the VTDI series, customers in the industrial imaging market can take advantage of CCD’s high quality imaging and CMOS’ high speed imaging capabilities.





## VT Series (M42 Mount)

2k / 3k / 4k / 6k Resolution TDI Line Scan Cameras available with M42 Mount

**VT Series**, Time Delayed Integration (TDI) line scan cameras, is offered with a wide variety of resolutions. New models available with M42 mount are built around the Viewworks' advanced hybrid TDI line scan image sensors. The VT-3K7C/X, VT-4K5C/X and VT-6K3.5C/X models are available with Camera Link or CoaXPress interfaces. These compact TDI line scan cameras available with M42 mount can be a worthy replacement for the existing line scan or multi-line scan cameras. The VT-3K7X camera achieves a maximum line rate of up to 250 kHz with up to 128× higher sensitivity. Even greater resolution and sensitivity, up to 160 kHz line rate and up to 256× greater sensitivity can be achieved using the VT-6K3.5X camera. Featured with high speed and high sensitivity, these new models are ideal for demanding applications such as flat panel display inspection, wafer inspection, printed circuit board inspection, and high-performance document scanning.

- 2k / 3k / 4k / 6k TDI Line Scan
- Bidirectional Operations with up to 256 TDI Stages
- CoaXPress or Camera Link Interface
- Anti-blooming
- Exposure Control
- Advanced PRNU and DSNU Correction
- Area Scan Mode for Camera Alignment



Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VT-6K3.5X-H 160	6560×256	160 kHz	64/128/192/256	8/10/12 bits	CoaXPress	Viewworks	3.5×3.5
VT-6K3.5X-E 160	6560×64	160 kHz	64	8/10/12 bits	CoaXPress	Viewworks	3.5×3.5
VT-4K5X-H 200	4640×256	200 kHz	64/128/192/256	8/10/12 bits	CoaXPress	Viewworks	5.0×5.0
VT-4K5X-E 200	4640×64	200 kHz	64	8/10/12 bits	CoaXPress	Viewworks	5.0×5.0
VT-3K7X-H 250	3200×128	250 kHz	32/64/96/128	8/10/12 bits	CoaXPress	Viewworks	7.0×7.0
VT-3K7X-E 250	3200×32	250 kHz	32	8/10/12 bits	CoaXPress	Viewworks	7.0×7.0
VT-6K3.5C-H 100	6560×256	100 kHz	64/128/192/256	8/10/12 bits	Camera Link	Viewworks	3.5×3.5
VT-6K3.5C-E 100	6560×64	100 kHz	64	8/10/12 bits	Camera Link	Viewworks	3.5×3.5
VT-4K5C-H 100	4640×256	100 kHz	64/128/192/256	8/10/12 bits	Camera Link	Viewworks	5.0×5.0
VT-4K5C-E 100	4640×64	100 kHz	64	8/10/12 bits	Camera Link	Viewworks	5.0×5.0
VT-3K7C-H 100	3200×128	100 kHz	32/64/96/128	8/10/12 bits	Camera Link	Viewworks	7.0×7.0
VT-3K7C-E 100	3200×32	100 kHz	32	8/10/12 bits	Camera Link	Viewworks	7.0×7.0

\* C or F-mount is also available with M42 based VT Series. Contact us to request a custom mount.



# VT Series (M72 Mount)

4k / 6k / 9k / 12k / 18k Resolution TDI Line Scan Cameras available with M72 Mount

**VT Series**, Time Delayed Integration (TDI) line scan cameras, provides faster line rates and higher sensitivity than existing line scan cameras. Vieworks' advanced TDI line scan technology based on the outstanding hybrid image sensors allows image captures as fast as 125 kHz with up to 128× higher sensitivity using the VT-4K7C camera. Even superior resolution, line rate and sensitivity, up to 200 kHz line rate and up to 256× greater sensitivity can be achieved using the VT-12K5X camera. VT series is available with Camera Link or the latest CoaXPress interface standard to meet application-specific requirements. Featured with high speed and high sensitivity, this brand new technology is ideal for demanding applications such as flat panel display inspection, wafer inspection, printed circuit board inspection, and high-performance document scanning.

- 4k / 6k / 9k / 12k / 18k TDI Line Scan
- Bidirectional Operations with up to 256 TDI Stages
- CoaXPress or Camera Link Interface
- Anti-blooming
- Exposure Control
- Advanced PRNU and DSNU Correction
- Area Scan Mode for Camera Alignment



Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size (μm <sup>2</sup> )
VT-18K3.5X-H 140	17824×256	142 KHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	3.5×3.5
VT-18K3.5X-H 80	17824×256	80 KHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	3.5×3.5
VT-12K5X-H 200	12480×256	200 KHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	5.0×5.0
VT-12K5X-H 100	12480×256	100 KHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	5.0×5.0
VT-9K7X-H 250	8912×128	250 KHz	32/64/96/128	8/10/12 bits	CoaXPress	Vieworks	7.0×7.0
VT-9K7X-H 120	8912×128	125 KHz	32/64/96/128	8/10/12 bits	CoaXPress	Vieworks	7.0×7.0
VT-6K10X-H 170	6240×128	172 KHz	32/64/96/128	8/10/12 bits	CoaXPress	Vieworks	10.0×10.0
VT-18K3.5C-H 40	17824×256	47 KHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	3.5×3.5
VT-12K5C-H 60	12480×256	67 KHz	64/128/192/256	8/10/12 bits	Camera Link	Vieworks	5.0×5.0
VT-9K7C-H 80	8912×128	94 KHz	32/64/96/128	8/10/12 bits	Camera Link	Vieworks	7.0×7.0
VT-4K14C-H 120	4096×64	125 KHz	16/32/48/64	8/10/12 bits	Camera Link	Vieworks	14.0×14.0
VT-4K7C-H 120	4096×128	125 KHz	32/64/96/128	8/10/12 bits	Camera Link	Vieworks	7.0×7.0



## VT Series (M95 Mount)

16k / 23k Resolution TDI Line Scan Cameras available with M95 Mount

**VT Series**, Time Delayed Integration (TDI) line scan cameras, is offered with a wide variety of resolutions. Featuring 16k and 23k hybrid TDI line scan sensors, new models available with M95 mount deliver greater speed and more sensitivity than ever before. The VT-23K3.5X model delivers a maximum line rate of 100 kHz. Even higher line rate, up to 140 kHz can be achieved using the VT-16K5X camera. All cameras have exposure control with anti-blooming. These cameras are ideal for demanding applications such as flat panel display inspection, wafer inspection, printed circuit board inspection, and high-performance document scanning.

- 16k / 23k TDI Line Scan
- Bidirectional Operations with up to 256 TDI Stages
- CoaXPress Interface
- Anti-blooming
- Exposure Control
- Advanced PRNU and DSNU Correction
- Area Scan Mode for Camera Alignment



Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VT-23K3.5X-H 100	23360×256	100 kHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	3.5×3.5
VT-16K5X-H 140	16384×256	140 kHz	64/128/192/256	8/10/12 bits	CoaXPress	Vieworks	5.0×5.0





## Color TDI Line Scan Camera **VTDI**

Vieworks has developed hybrid TDI line scan sensors through the pursuit of leading edge technology. In 2016, Vieworks proudly introduced the “VTDI” series, the world’s first hybrid TDI line scan cameras, which combines the strengths of both the CCD and CMOS image sensors. With the VTDI series, customers in the industrial imaging market can take advantage of CCD’s high quality imaging and CMOS’ high speed imaging capabilities.



# VTC Series (M42 Mount)

2k Resolution TDI Color Line Scan Cameras available with M42 Mount

**VTC Series**, Time Delayed Integration (TDI) color line scan cameras, provides faster line rates and higher sensitivity than existing line scan cameras. With hybrid TDI line scan technology combining the strengths of both CCD and CMOS image sensors, the M42 mount-based VTC-2K10.5C/X/G cameras can acquire True Color images at faster line rates with up to 80 times higher sensitivity. These 2k color TDI line scan cameras are available with Camera Link, CoaXPress or GigE interface standard to meet application-specific requirements. Featured with high speed and high sensitivity, these cameras are ideal for demanding applications such as flat panel display inspection, wafer inspection, printed circuit board inspection, and high-performance document scanning.

- 2k TDI Color Line Scan
- True Color Imaging
- Bidirectional Operations with up to 80 TDI Stages
- Camera Link, CoaXPress or GigE Interface
- Anti-blooming
- Exposure Control
- Advanced PRNU and DSNU Correction



Model	Resolution	Line Rate	TDI Stage	Pixel Data	Interface	Sensor	Pixel Size ( $\mu\text{m}^2$ )
VTC-2K10.5G-C19	2160×80	19 KHz (Max 100 KHz)	80	8/10/12 bits	GigE	Vieworks	10.5×10.5
VTC-2K10.5C-C100	2160×80	100 KHz	80	8/10/12 bits	Camera Link	Vieworks	10.5×10.5
VTC-2K10.5X-C140	2160×80	140 KHz	80	8/10/12 bits	CoaXPress	Vieworks	10.5×10.5

\* C or F-mount is also available with M42 based VTC Series. Contact us to request a custom mount.





## Vieworks Industrial Camera's Accessories

Vieworks also offers the accessories of industrial cameras to allow customers to strengthen competitiveness and enhance flexibility of installation and use of cameras.



# VLink Series

## Camera Link Repeater

**VLink Series** is a cost-effective Camera Link repeater to dramatically increase the distance between a camera and frame grabber. It amplifies video signals that are attenuated on the Camera Link cable and triples the available cable length through LVDS output connector equipped with a pre-emphasis feature. VLink Series allows not only to simplify the machine vision systems but also to save the cost with the least number of the repeaters and cables.

- Triples the maximum distance between camera and frame grabber
- Supports Camera Link Base/Medium/Full
- PoCL compatibility allows to use PoCL cameras and frame grabbers
- Supports cascade configuration to extend greater distances
- Optional power input receptacle to use with non-PoCL frame grabber



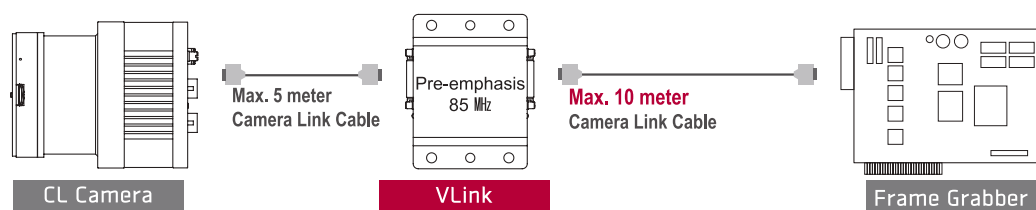
Model	VLink-Base	VLink-Full
Camera Link Configuration	Base	Base / Medium / Full
Pixel Clock	20 – 85	
Connector Type	MDR 26 / PoCL Compliant	
Operating Temperature	0 – 50°C	
Power Requirements	8 – 24 V DC	
Power Supply	Power adapter (not included) or PoCL compliant	
Power Consumption	Typ. 2 W	Typ. 4W
Dimension (W × H × L) / Weight	92 mm × 23 mm × 68 mm / 160 g	92 mm × 23 mm × 87.5 mm / 400 g

### \*Max. Cable Length by Pixel Clock

Configuration		Camera to VLink	VLink to VLink or Grabber
Cable Length	40 MHz	< 10 m	< 20 m
	60 MHz	< 8 m	< 15 m
	85 MHz	< 5 m (4 m at 10 Tap)	< 10 m

\* Max. cable length may vary depending on the type of cables and systems. Standard Camera Link cables are recommended.

### Triplies the Link Distance



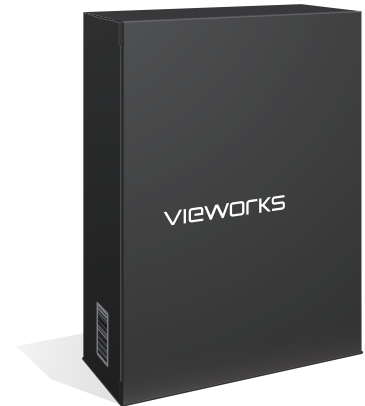
# Software

## Vieworks Imaging Solution

### VIS 7.X – SDK for GigE Vision & CoaXPress Cameras

The new version of VIS includes full support for the new CoaXPress interface as well as the GigE Vision interface. VIS 7.X not only supports the CoaXPress interface but also includes powerful tools such as Device Observer, IP Changer and Spider Logger which have been added to the latest version of VIS 6.X.

- GenICam standard version 2.3
- SDK (VwGigE API and VwCXP API) – Supporting C/C++, .Net sample
- Supported Platform – Windows 7, Windows 8



### VIS 6.X – SDK for GigE Vision Cameras

VIS 6.X is the SDK for all Vieworks cameras with GigE Vision interface.

It provides customers with software libraries and sample programs that help users quickly develop various machine vision applications. Viewer software with user-friendly interface is also included.

- GenICam standard version 2.3
- Windows device driver for GigE Vision
- SDK (VwGigE API) – Supporting C/C++, .Net sample
- Supported Platform – Windows XP, Windows 7

### VIS-Shadow – GigE SDK for Linux

The VIS-Shadow is a software package for operating Vieworks GigE cameras under Linux operating systems.

- GenICam 2.3.1 and GenTL 1.3 compliant
- Qt 4.8.1 compliant
- Ubuntu 12.04 (32 bit / 64 bit) supported

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## Configurator – Control Software for Camera Link

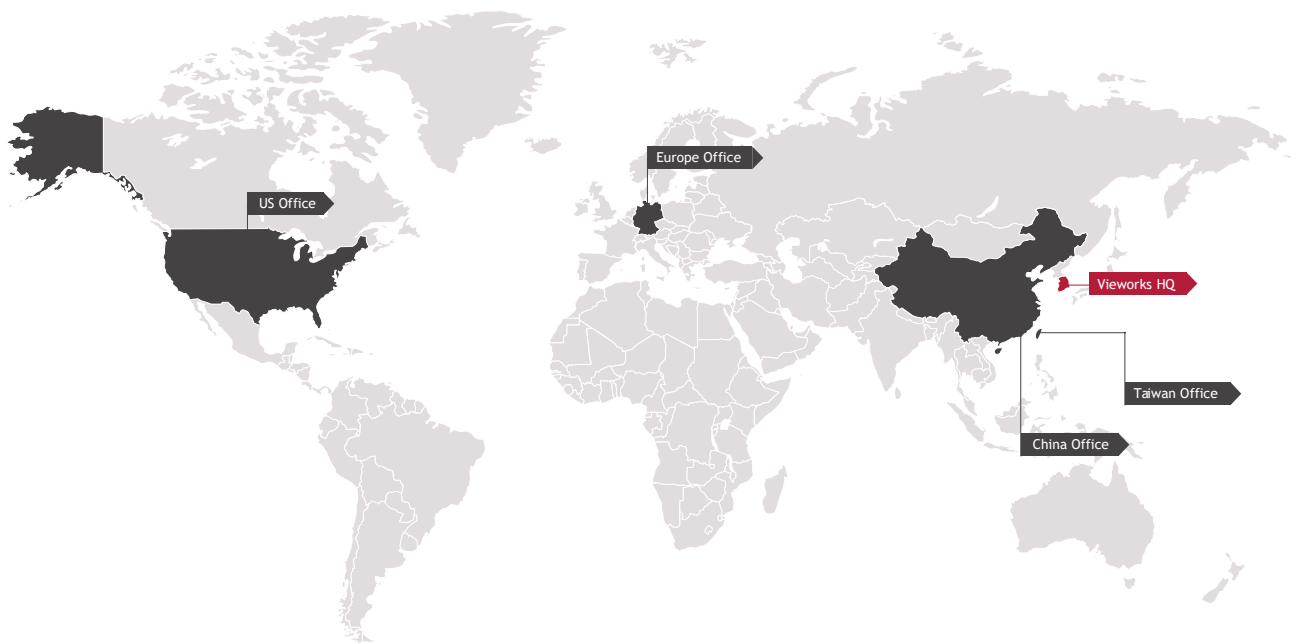
Configurator is designed to operate with all Vieworks Camera Link cameras.




















The ideal tool for testing and evaluating Vieworks machine vision cameras gives you control of all advanced camera features, and lets you determine the best settings for your application.

### Download

The latest VIS, VIS-Shadow and Configurator can be downloaded from the Vieworks website [www.vieworks.com](http://www.vieworks.com).

# Global Network



-  China
-  Denmark
-  Finland
-  France
-  Germany
-  Israel
-  Italy
-  Japan
-  Malaysia
-  Netherlands
-  Poland
-  Singapore
-  Sweden
-  Switzerland
-  Taiwan
-  Thailand
-  United Kingdom
-  United States
-  Republic of Korea

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