CIS

Camera & Imaging Systems

PRODUCT LINEUP

2025 Spring

Corporate Profile

About us

Corporate name	CIS Corporation	
Location	539-5, Higashi Asakawa-machi, Hachioji-shi, Tokyo, 193-0834, JAPAN Tel +81-42-664-5535 (Head Quarters)	
Foundation	September 1st, 1978	
President	Yusuke Muraoka	
ISO	ISO9001:2015 edition	ISO14001 (HQ only)

Corporate History

Sep. 1978	Founded CAFLO Corporation
Mar. 1991	Started manufacturing VCC camera series (CCD models)
Jan. 1992	Renamed to CIS Corporation
May. 1995	Acquired ISO9002 certification
Nov. 1995	First shipment of CE certified products
Jun. 1996	Started manufacturing digital cameras
May. 1998	Acquired ISO9001 certification
Dec. 2000	Acquired ISO14001 certification
Apr. 2002	Increased capital to 60 Million YEN
Nov. 2002	Acquired ISO9001 certification, year 2000 version
Aug. 2003	Certified as SONY Green Partner
Oct. 2004	Increased capital to 90 Million YEN
Oct. 2005	Established Software Development Center
Sep. 2007	Opened Hachioji Office
May. 2011	Opened Solution Development Center in Nakano, Japan
Mar. 2015	Reacquired ISO14001 certification
Mar. 2018	Acquired ISO9001 certification (year 2015 version) and ISO14001 certification (year 2015 version) from the third-party institution
Dec. 2020	Relocated Sales Div. and Engineering Div. to Takao

From Camera to Imaging Systems

Imaging System Solution

CIS has consistently pursued “small footprint”, “high speed”, and “high performance” in our product design and development. While maintaining these key product features, CIS is pursuing new technologies such as new sensors, new digital interface, hardware and software integration, and proprietary signal processing algorithm.

CIS offers total imaging solution to meet with customer’s various needs, by way of proposing optimal system architecture and the most suitable camera interface, electric and mechanical design, development of system software, and when applicable, development of image processing application software.

Expert Engineering Teams

We have in-house professional teams devoted to mechanical design, circuit design, FPGA logic development, system software development and algorithm development.
From planning to design, entire engineering processes are handled within CIS.

We can provide one-stop-shop services for realizing your requirements in design, development and mass production of image processing systems and cameras.

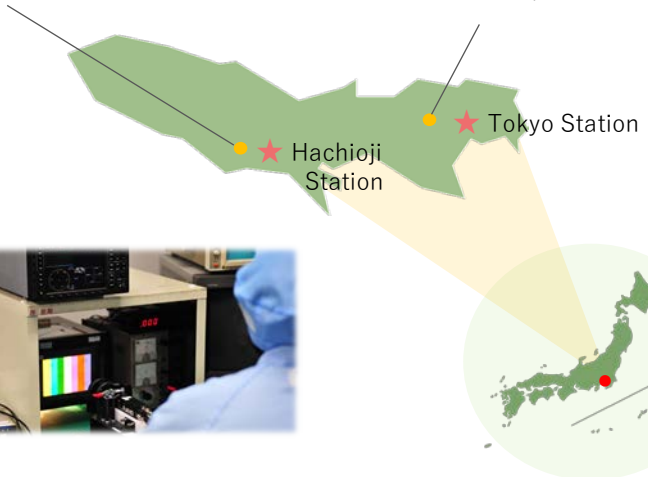
Furthermore, we have started releasing unique, high image-quality color cameras incorporating Clairvu™, CIS’s proprietary image processing engine.

HQ・Factory

539-5, Higashi Asakawa-machi, Hachioji-shi, Tokyo, 193-0834, JAPAN

Solution Development Center
R&D Center

2F 3F, 5-5-5, Tokumasu Bldg., Higashi Nakano, Nakano-ku, Tokyo, 164-0003, JAPAN



VGA
SXGA
2M




	VGA High speed	SXGA High speed	SXGA High speed	2M High speed
Interface	CXP3×1lane	CXP1-CXP3×1lane	CXP3・CXP6×1lane	CXP1-CXP3×1lane
Model name (B/W) (Color)	**VCC-VCXP5M VCC-VCXP5R**	**VCC-SXCXP3M VCC-SXCXP3R**	**VCC-SXCXP5M VCC-SXCXP5R**	**VCC-2CXP2M**
Sensor	Pregius IMX287	PYTHON 1300	Pregius IMX273	PYTHON 2000
Sensor size	1/2.9 type CMOS	1/2 type CMOS	1/2.9 type CMOS	2/3 type CMOS
Unit cell size (μm)	6.9μm×6.9μm	4.8μm×4.8μm	3.45μm×3.45μm	4.8μm×4.8μm
Effective pixels (H)×(V)	720×540	1280×1024	1456×1088	1984×1264
Resolution	VGA	SXGA	SXGA	2M
Frame rate	583fps(at VGA), 523fps(CXP3・8bit), 437fps(CXP3・10bit), 320fps(CXP3・12bit)	168fps(CXP3・8bit)	276fps(8bit), 226fps(10bit), 165fps(12bit)	85fps(CXP3・8bit/10bit)
Pixel clock	74.25MHz	72MHz	74.25MHz	72MHz
Shutter	OFF～1/20,000s	OFF～1/10,000s	OFF～1/66,666s	OFF～1/5,000s
Lens mount	C mount	C mount	C mount	C mount
Dimensions (W)×(H)×(D)mm	29×29×29	29×29×29	29×29×29	29×29×29
Features	Connector: BNC, External trigger, Long distance transmission, ROI, H&V flip, Exposure, Gain, Gamma correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, Sub-sampling, Sequence control, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, ROI, H&V flip, Exposure, Gain, Gamma correction, Shading correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, Sub-sampling, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP

2M
5M




	2M High speed	5M High speed	5M High speed	5M High speed
Interface	CXP3・CXP6×1lane	CXP1-CXP6×1lane	CXP3-CXP6×1lane/2lanes	CXP3/CXP6×1lane
Model name (B/W) (Color) (NIR)	**VCC-2CXP6M VCC-2CXP6R**	**VCC-5CXP3M VCC-5CXP3R VCC-5CXP3NIR**	**VCC-5CXP4M VCC-5CXP4R**	**VCC-5CXP7M VCC-5CXP7R**
Sensor	Pregius IMX422	PYTHON 5000	Pregius IMX250	Pregius S IMX547
Sensor size	1/1.7 type CMOS	1type CMOS	2/3 type CMOS	1/1.8 type CMOS
Unit cell size (μm)	4.5μm×4.5μm	4.8μm×4.8μm	3.45μm×3.45μm	2.74μm×2.74μm
Effective pixels (H)×(V)	1632×1248	2592×2048	2464×2056	2472×2064
Resolution	2M	5M	5M	5M
Frame rate	239fps(CXP6・8bit), 195fps(CXP6・10bit), 166fps(CXP6・12bit)	85fps(CXP6・8bit/CXP6・10bit), 43fps(CXP3・8bit/CXP3・10bit)	163fps(CXP6・8bit×2lanes), 145fps(CXP6・10bit×2lanes), 90fps(CXP6・12bit×2lanes)	101fps(CXP6・8bit), 82fps(CXP6・10bit), 68fps(CXP6・12bit)
Pixel clock	74.25MHz	72MHz	74.25MHz	74.25MHz
Shutter	OFF～1/66,000s	OFF～1/10,000s	15μs～200ms	91μs～200ms
Lens mount	C mount	C mount	C mount	C mount
Dimensions (W)×(H)×(D)mm	29×29×55	29×29×55	55×55×30	29×29×55
Features	Connector: BNC, External trigger, Long distance transmission, ROI, 2×2 binning (B/W model only), Exposure, Gain, Gamma correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, Sub-sampling, Sequence control, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, H&V flip, Exposure, Gain, Defective pixel correction, PoCXP/External power supply	Connector: BNC, External trigger, Long distance transmission, ROI, 2×2 binning (B/W model only), Exposure, Gain, Gamma correction, Shading correction, Defective pixel correction, PoCXP

5M

12M

	5M High speed	12M High speed	12M High speed
Interface	CXP6/12×1lane	CXP3-CXP6×1lane/2lanes	CXP6/12×1lane
Model name (B/W) (Color)	**VCC-5CXPHSM** **VCC-5CXPHSR**	**VCC-12CXP4M** **VCC-12CXP4R**	**VCC-12CXPHSM** **VCC-12CXPHSR**
Sensor	GMAX3405	Pregius IMX253	GMAX3412
Sensor size	2/3 type CMOS	1.1 type CMOS	1.1 type CMOS
Unit cell size (μm)	3.4μm×3.4μm	3.45μm×3.45μm	3.4μm×3.4μm
Effective pixels (H)×(V)	2448×2048	4096×3000	4096×3072
Resolution	5M	12M	12M
Frame rate	218.5fps(CXP12×1lane 8bit) 171.7fps(10bit) 150.2fps(12bit)	65fps(CXP6・8bit/10bit×2lanes), 32fps(CXP6・8bit/10bit×1lane), 16fps(CXP3・8bit/10bit×1lane)	92fps(CXP12×1lane 8bit) 71.6fps(10bit) 47.4fps(12bit)
Shutter	5μs～100ms	OFF～1/51,000s	8μs～100ms
Lens mount	C mount	M42 mount	C mount
Dimensions (W)×(H)×(D)mm	29×29×29	55×55×30	47×47×31
Features	Connector：HD-BNC, External trigger, Long distance transmission, ROI, Binning, Gain, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, 2×2 binning (B/W model only), Exposure, Gain, Shading correction, Defective pixel correction, PoCXP	Connector：HD-BNC、 External trigger, Long distance transmission, ROI, Binning, Gain, Defective pixel correction, PoCXP

20M

24M

25M

	20M High speed	24M Small size	25M High speed
Interface	CXP12×2lanes/1lane, CXP6×2lanes/1lane, CXP3×2lanes	CXP3/CXP6×1lane	CXP1-CXP6×4lanes
Model name (B/W) (Color) (NIR) (Binning)	**VCC-20CXP6M** **VCC-20CXP6R**	**VCC-24CXP7M**	**VCC-25CXP1M** **VCC-25CXP1R** **VCC-25CXP1NIR** **VCC-25CXP1MBN**
Sensor	Pregius S IMX531	Pregius S IMX540	PYTHON 25K
Sensor size	1.1 type CMOS	1.2 type CMOS	APS-H CMOS
Unit cell size (μm)	2.74μm×2.74μm	2.74μm×2.74μm	4.5μm×4.5μm
Effective pixels (H)×(V)	4512×4512	5328×4608	5120×5120
Resolution	20M	24M	25M
Frame rate	79.6fps(CXP12・8bit×2lanes)	21.9fps(CXP6・8bit), 17.6fps(CXP6・10bit), 14.7fps(CXP6・12bit)	82fps(CXP6・8bit), 65fps(CXP6・10bit), 40fps(CXP3・8bit), 34fps(CXP3・10bit)
Pixel clock	74.25MHz	74.25MHz	72MHz
Shutter	2.68μs～200ms	OFF～1/83,333s	OFF～1/30,000s
Lens mount	M48 mount	C mount	M48 mount
Dimensions (W)×(H)×(D)mm	65×65×93.3	29×29×55	65×65×65
Features	Connector: HD-BNC, External trigger, Long distance transmission, ROI, Binning, H&V flip, Gamma correction, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP	Connector: BNC, External trigger, Long distance transmission, ROI, Flip, Gamma correction, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP	Connector: DIN, External trigger, Long distance transmission, ROI, Sub-sampling, Binning (Binning model only), Sequence control, Exposure, Gain, Shading correction, Defective pixel correction, PoCXP

25M
120M

Without heatsink

With heatsink

	25M Ultra-high speed	120M Ultra-high resolution
Interface	CXP6/12×4lanes/1lane	CXP3/6×4lanes, CXP6×2lanes
Model name (B/W) (Color) (NIR)	**VCC-25CXPHSM-F / VCC-25CXPHSM (without heatsink)** **VCC-25CXPHSR-F / VCC-25CXPHSR (without heatsink)** **VCC-25CXPHSNIR-F / VCC-25CXPHSNIR (without heatsink)**	**VCC-120CXP1M** **VCC-120CXP1R**
Sensor	GMAX0505	120MXSM
Sensor size	1.1 type CMOS	APS-H CMOS
Unit cell size (μm)	2.5μm×2.5μm	2.2μm×2.2μm
Effective pixels (H)×(V)	5120×5120	13264×9180
Resolution	25M	120M
Frame rate	150fps(CXP12×4・8bit), 141fps(CXP12×4・10bit), 88fps(CXP6×4・8bit), 68fps(CXP6×4・10bit), 44fps(CXP12×1・8bit), 35fps(CXP12×1・10bit), 23fps(CXP6×1・8bit), 18fps(CXP6×1・10bit)	9.4fps(CXP3・8bit×4lanes/ CXP6・8bit×2lanes/ CXP6・8bit ×4lanes/ CXP6・10bit×4lanes)
Pixel clock	1152MHz	-
Shutter	6μs～2s	OFF～1/20,000s
Lens mount	M48 mount	M48 mount
Dimensions (W)×(H)×(D)mm	65×125×93.3 (VCC-25CXPHSM-F / VCC-25CXPHSR-F / VCC-25CXPHSNIR-F) 65×65×93.3 (VCC-25CXPHSM / VCC-25CXPHSR / VCC-25CXPHSNIR) ※ Heat dissipation is necessary for this model without heatsink.	65×65×68
Features	Connector: HD-BNC, External trigger, Long distance transmission, ROI, Shading correction, Gamma correction, Exposure, Gain, Defective pixel correction, PoCXP/External power supply	Connector: DIN, External trigger, Long distance transmission, ROI, Exposure, Gain, Strobe out, Long time exposure, Shading correction, Defective pixel correction, PoCXP

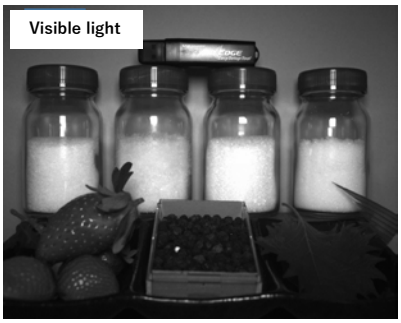
127M
250M

	127M Ultra-high resolution	127M Ultra-high resolution	250M Ultra-high resolution
Interface	CXP6/12×1lane/2lanes	CXP6/12×1lane/2lanes	CXP6×4lanes
Model name (B/W) (Color)	**VCC-127CXP6M** **VCC-127CXP6R**	**VCC-127CXP6MHS** **VCC-127CXP6RHS**	**VCC-250CXP1M** **VCC-250CXP1R**
Sensor	Pregius IMX661	Pregius IMX661	CANON LI8020SAM
Sensor size	3.6 type CMOS	3.6 typa CMOS	APS-H CMOS
Unit cell size (μm)	3.45μm×3.45μm	3.45μm×3.45μm	1.5μm×1.5μm
Effective pixels (H)×(V)	13408×9528	13408×9528	19568×12588
Resolution	127M	127M	250M
Frame rate	18.5fps(CXP12・8bit×2lanes), 13.1fps(CXP12・10bit×2lanes), 11.1fps(CXP12・12bit×2lanes), 9.2fps(CXP12・8bit×1lane)	17.5fps(CXP12・8bit×2lanes), 8.7fps(CXP12・8bit×1lane)	5fps(CXP6・8bit/10bit), 3.2fps(CXP6・12bit)
Pixel clock	74.25MHz	74.25MHz	1152MHz
Shutter	22μs～15s	7.24μs～15s	200μs～15s
Lens mount	M72 mount	M72 mount	M48 mount
Dimensions (W)×(H)×(D)mm	100×100×100	100×100×80	100×100×94.9
Features	Connector: Micro BNC External trigger, ROI, 2×2 binning, Exposure, Gain, Gamma correction, Shading correction, Flat field correction, Defective pixel correction, PoCXP/External power supply, Cooling fan installed.	Connector：Micro BNC External trigger, ROI, 2×2 binning, Exposure, Gain, Gamma correction, Shading correction, Flat field correction, Defective pixel correction PoCXP/External power supply, Low latency Short Exposure	Connector: DIN, External trigger, Long distance transmission, ROI, Binning, Strobe pulse control, Exposure, Gain, Gamma correction, Shading correction, Defective pixel correction, PoCXP/External power supply Cooling fan installed.

SWIR Cameras

SXGA

CIS SWIR camera, VCC-SXCXP1SW, can detect and inspect objects in the region of 400nm to 1,700nm wavelength spectrum.



	SXGA Visible+SWIR image sensor
Interface	CXP3×1lane
Model name	**VCC-SXCXP1SW**
Sensor	SenSWIR IMX990 (SWIR)
Sensor size	1/2 type
Unit cell size (μm)	5μm×5μm
Effective pixels (H)×(V)	1296×1032
Resolution	SXGA
Frame rate	134.7fps(8bit), 125.3fps(10bit), 71.5fps(12bit)
Pixel clock	74.25MHz
Shutter	10μs～200ms
Lens mount	C mount
Dimensions (W)×(H)×(D)mm	65×65×65
Features	Detection wavelength spectrum: 400nm~1700nm, Connector: BNC, External trigger, ROI, H&V flip, Lighting trigger control, Exposure, Gain, Defective pixel correction, PoCXP

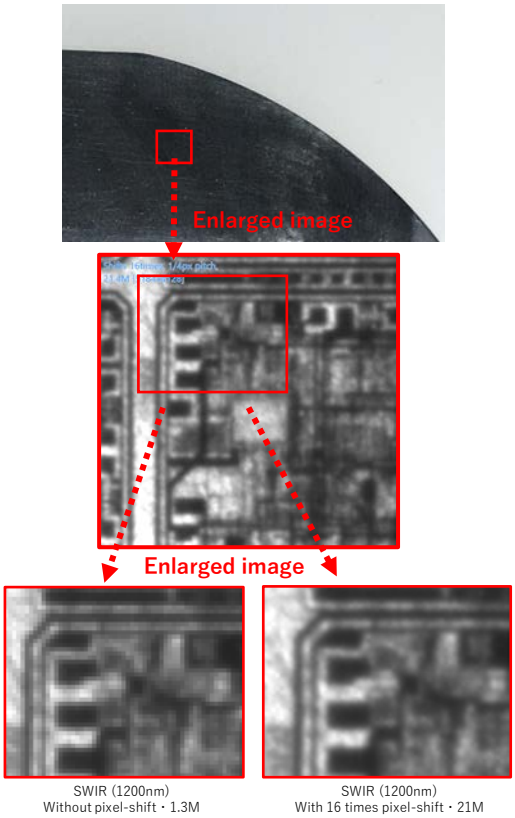
3M
5M

	3.2M Visible+SWIR image sensor	5M Visible+SWIR image sensor
Interface	CXP6/12×1lane	**CXP6/12×1lane**
Model name	**VCC-3CXP1SW**	**VCC-5CXP1SW**
Sensor	SenSWIR IMX993	SenSWIR IMX992
Sensor size	1/1.8 type	1/1.4 type
Unit cell size(μm)	3.45μm×3.45μm	3.45μm×3.45μm
Effective pixels(H)×(V)	2080×1544	2592×2056
Resolution	3.2M	5.2M
Frame rate	173fps(8bit) 158.9fps(10bit) 93.2fps(12bit)	131fps(8bit) 120.9fps(10bit) 70.9fps(12bit)
Shutter	TBD ～1s	TBD～1s
Lens mount	C mount	C mount
Dimensions (W)×(H)×(D)mm	65×65×65	65×65×65
Features	Connector：HD-BNC, External trigger, ROI, Binning, High speed, SWIR Defective pixel correction, PoCXP	Connector：HD-BNC, External trigger, ROI, Binning, High speed, SWIR Defective pixel correction, PoCXP

21M

	Max. 21M pixels Visible + SWIR sensor installed
Interface	CXP3×1lane
Model name	**VCC-SXCXP1SWPS-9 (9 times pixel-shift)** **VCC-SXCXP1SWPS-16 (16 times pixel-shift)**
Sensor	SenSWIR IMX990 (SWIR)
Sensor size	1/2 type CMOS
Unit cell size (μm)	5μm×5μm
Effective pixels (H)×(V)	1296×1032
Resolution	(9 times pixel-shift) 5M・12M (16 times pixel-shift) 5M・21M
Frame rate	117.9fps(8bit), 110.5fps(10bit), 66.2fps(12bit)
Pixel clock	74.25MHz
Shutter	-
Lens mount	C mount
Dimensions (W)×(H)×(D)mm	65×65×95
Features	Detection wavelength spectrum: 400nm~1700nm, Build-in Piezo actuator drive unit Connector: BNC, External trigger, ROI, Exposure, Gain, Gamma, Shading correction, Defective pixel correction, PoCXP non-compliant

↓ Object of shooting: Back side of silicon wafer
(Shot under visible light)



SWIR (1200nm)
Without pixel-shift・1.3M

SWIR (1200nm)
With 16 times pixel-shift・21M

↑ Shot silicon wafer under SWIR (1200nm)
The circuits on the front side are transmitted and became visible.

CoF Camera

21M

	21M Ultra-high speed
Interface	CoaXPress over Fiber QSFP28×1
Model name (B/W) (Color)	**VCC-21CoF2M** **VCC-21CoF2R**
Sensor	GSPRINT4521
Sensor size	APS-H CMOS
Unit cell size (μm)	4.5μm×4.5μm
Effective pixels (H)×(V)	5120×4096
Resolution	21M
Frame rate (TBD)	510fps(8bit), 410fps(10bit), 250fps(12bit)
Pixel clock	-
Shutter (TBD)	4~10,,000,000μs
Lens mount	TFL- II mount
Dimensions (W)×(H)×(D)mm	80×80×150
Features	External trigger, ROI, 2×2 binning, H flip, Exposure, Gain, Gamma correction Shading correction, Defective pixel correction

CoaXPress-over-Fiber (CoF) is a significant extension of the existing CoaXPress specification to support transport over fiber optics.

Pros of using CoF

◆Transmit images with broad spectrum
Up to 5,000MB/s bandwidth from camera to host PC memory.

◆Cable length
Cable length is not an issue as fiber connectivity is basically not limited in length. Therefore, cables can be routed freely according to customers' applications.

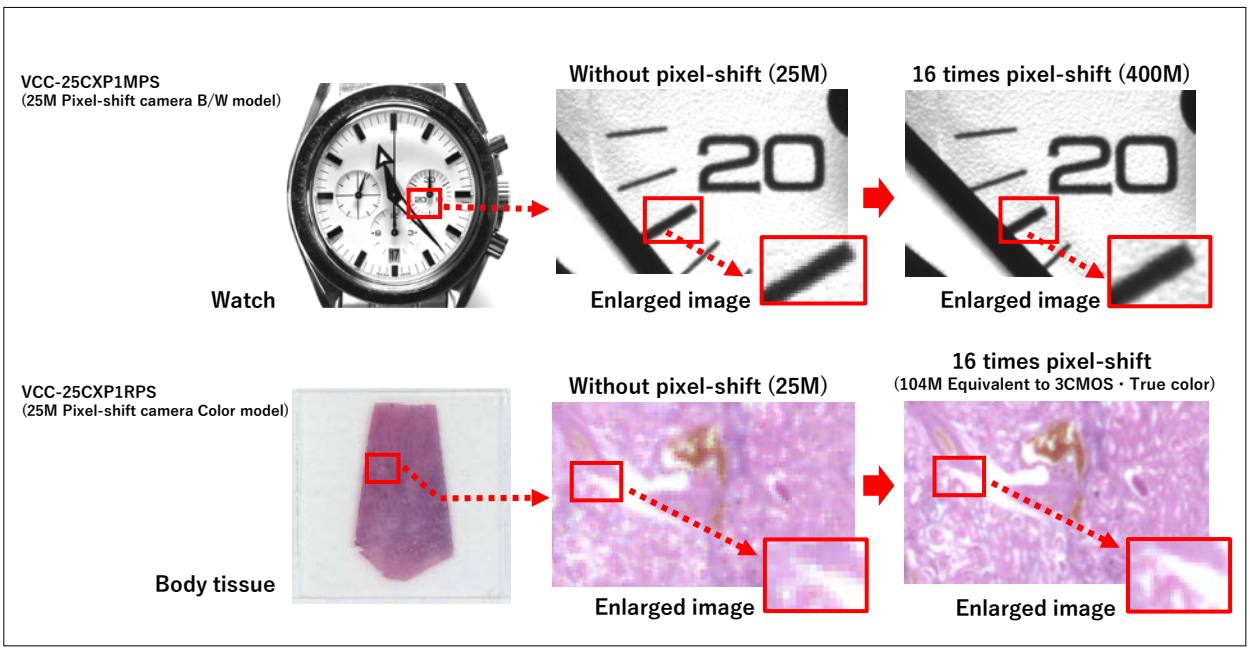
◆Standerdized by JIIA and IEEE
The wide variety of connectivity options for CoF has already been available from multiple companies. Therefore, customers can obtain cables which suit to their application easily at low cost.

400M

		Max. 400M pixels Ultra-high resolution
Interface		CXP3/CXP6×4lanes
Model name	(B/W) (Color)	**VCC-25CXP1MPS** **VCC-25CXP1RPS**
Sensor		PYTHON 25K
Sensor size		APS-H CMOS
Unit cell size (μm)		4.5μm×4.5μm
Effective pixels (H)×(V)		5120×5120
Resolution	(B/W) (Color)	25M・100M・400M 25M・25M(Equivalent to 3CMOS True color)・104M(Equivalent to 3CMOS True color)
Frame rate		81.4fps(CXP6・8bit at 25M), 11.1fps(CXP6・8bit at 100M), 2.7fps (CXP6・8bit at 400M)
Pixel clock		72MHz
Shutter		OFF～1/30,000s
Lens mount		M48 mount
Dimensions (W)×(H)×(D)mm		65×65×93.3
Features		Connector: DIN, External trigger, Exposure, Gain, B/W: 10240×10240/20480×20480 Color: 5120×5120/10240×10240(Equivalent to 3CMOS True color) Build-in Piezo actuator drive unit

Pixel-shift Technology

CIS realized ultra-high resolution cameras by using patented piezo-actuator-based pixel shift technology.
This technology increases the resolution by shifting the sensor in μm order, creating virtual pixels in between physical pixels, and by synthesizing images obtained at each position. For color models, the same technology is applied for obtaining all R, G, and B information in each and every pixel, thereby producing an image quality equivalent to 3-image sensor cameras.
These cameras are suitable not only for Machine Vision applications, but also for research applications and image archiving purposes.



Camera Link

VGA



	VGA 1TAP, 2TAP, 3TAP	VGA 1TAP, 2TAP, 3TAP Pixel clock selectable	VGA High speed
Interface	PoCL・non-PoCL (Auto selection)	PoCL・non-PoCL (Auto selection)	PoCL
Model name (B/W) (Color)	**VCC-VCL3M** **VCC-VCL3R**	**VCC-VCL5M** **VCC-VCL5R**	**VCC-GC20V41PCL** **VCC-FC20V49PCL**
Sensor	PYTHON 300	Pregius IMX287	CMV2000
Sensor size	1/4 type CMOS	1/2.9 type CMOS	1/4 type CMOS
Unit cell size (μm)	4.8μm×4.8μm	6.9μm×6.9μm	5.5μm×5.5μm
Effective pixels (H)×(V)	640×480	720×540	640×480
Resolution	VGA	VGA	VGA
Frame rate	Base: 538fps(3tap) 268fps(2tap) 134fps(1tap)	Base: 519fps(3tap)/578fps(3tap・at VGA) 317fps(2tap) 175fps(1tap)	Base: 502fps(2tap)
Pixel clock	72MHz・36MHz (Selectable with 2TAP output)	74.25MHz・64.969MHz・37.125MHz (Selectable)	79.99MHz
Shutter	OFF～1/10,752s	OFF～1/50,000s	OFF～1/50,000s
Lens mount	C mount	C mount	C mount
Dimensions (W)×(H)×(D)mm	29×29×29	29×29×29	29×29×29
Features	External trigger, ROI, Sub-sampling, Gain, Defective pixel correction, Power auto selection ※ Baud rate needs to be specified when ordering.	External trigger, ROI, H&V flip, Cursor indication, Exposure, Gain, Shading correction, Defective pixel correction, Power auto selection	High speed 500fps, Low power consumption 1.6W External trigger, ROI, Gain

(Baud rate is selectable from 115,200bps and 9,600bps.)

SXGA


	SXGA 1TAP, 2TAP, 3TAP Pixel clock selectable	SXGA 1TAP, 2TAP, 3TAP Pixel clock selectable
Interface	PoCL・non-PoCL (Auto selection)	PoCL・non-PoCL (Auto selection)
Model name (B/W) (Color)	**VCC-SXCL3M** **VCC-SXCL3R**	**VCC-SXCL5M** **VCC-SXCL5R**
Sensor	PYTHON 1300	Pregius IMX273
Sensor size	1/2 type CMOS	1/2.9 type CMOS
Unit cell size (μm)	4.8μm×4.8μm	3.45μm×3.45μm
Effective pixels (H)×(V)	1280×1024	1440×1080
Resolution	SXGA	SXGA
Frame rate	Base: 152fps(3tap) 84fps(2tap) 42fps(1tap)	Base: 136fps(3tap) 91fps(2tap) 46fps(1tap)
Pixel clock	72MHz・36MHz (Selectable with 2TAP output)	74.25MHz・64.969MHz・37.125MHz (Selectable)
Shutter	OFF～1/10,000s	OFF～1/50,000s
Lens mount	C mount	C mount
Dimensions (W)×(H)×(D)mm	29×29×29	29×29×29
Features	External trigger, ROI, Sub-sampling, Gain, Defective pixel correction, Power auto selection ※ Baud rate needs to be specified when ordering.	External trigger, ROI, 2×2 binning (B/W model only), H&V flip, Cursor indication, Exposure, Gain, Shading correction, Defective pixel correction, Power auto selection

(Baud rate is selectable from 115,200bps and 9,600bps.)

2M
3M
5M



	2M High speed	3M 1TAP, 2TAP, 3TAP	5M 1TAP, 2TAP, 3TAP
Interface	PoCL	PoCL・non-PoCL (Auto selection)	PoCL・non-PoCL (Auto selection)
Model name (B/W) (Color)	**VCC-GC20U11PCL** **VCC-FC20U19PCL**	**VCC-3CL5M** **VCC-3CL5R**	**VCC-5CL5M** **VCC-5CL5R**
Sensor	CMV2000	Pregius IMX265	Pregius IMX264
Sensor size	2/3 type CMOS	1/1.8 type CMOS	2/3 type CMOS
Unit cell size (μm)	5.5 μm × 5.5 μm	3.45 μm × 3.45 μm	3.45 μm × 3.45 μm
Effective pixels (H) × (V)	2048 × 1088	2064 × 1544	2448 × 2048
Resolution	2M	3M	5M
Frame rate	Base: 71fps(2tap)	Base: 56fps(3tap) 45fps(2tap) 23fps(1tap)	Base: 36fps(3tap) 29fps(2tap) 15fps(1tap)
Pixel clock	79.99MHz	74.25MHz	74.25MHz
Shutter	OFF～1/50,000s	OFF～1/50,000s	OFF～1/50,000s
Lens mount	C mount	C mount	C mount
Dimensions (W) × (H) × (D)mm	29 × 29 × 29	29 × 29 × 29	29 × 29 × 29
Features	External trigger, ROI, Gain, 8bit/10bit output	External trigger, ROI, Sub-sampling, Gain, Defective pixel correction, Power auto selection	External trigger, ROI, Sub-sampling, Gain, Defective pixel correction, Power auto selection Pixel clock selectable model VCC-5CL5M63 / R63 are also available.

5M
12M
25M

	5M High speed, Thin type	12M High speed, Thin type	25M High speed/Various features
Interface	PoCL・non-PoCL (Selectable)	PoCL・non-PoCL (Selectable)	PoCL・non-PoCL (Selectable)
Model name (B/W) (Color)	**VCC-5CL4M / VCC-5CL4MHS** **VCC-5CL4R / VCC-5CL4RHS**	**VCC-12CL4M** **VCC-12CL4R**	**VCC-25CL1M** **VCC-25CL1R**
Sensor	Pregius IMX250	Pregius IMX253	PYTHON 25K
Sensor size	2/3 type CMOS	1.1 type CMOS	APS-H CMOS
Unit cell size (μm)	3.45 μm × 3.45 μm	3.45 μm × 3.45 μm	4.5 μm × 4.5 μm
Effective pixels (H) × (V)	2448 × 2048	4096 × 3000	5120 × 5120
Resolution	5M	12M	25M
Frame rate	Deca: 163fps(10tap)8bit HS model Deca: 114fps(8tap)10bit Full: 114fps(8tap)8bit Med: 57fps(4tap)8bit/10bit Base: 42fps(3tap)8bit Base: 28fps(2tap)8bit/10bit	Deca: 63fps(10tap)8bit 53fps(8tap)10bit Full: 53fps(8tap) Med: 27fps(4tap) Base: 13fps(2tap)	Deca: 32fps(10tap)8bit Full: 22/25fps(8tap)8bit Med: 11fps(4tap)8bit/10bit(B/W model only) Base: 5fps(2tap)8bit/10bit(B/W model only)
Pixel clock	74.25MHz / 84.86MHz (HS model)	84.86MHz	72MHz(8tap) / 85MHz(8・10tap)
Shutter	OFF～1/50,000s / OFF～1/60,000s (HS model)	OFF～1/51,000s	OFF～1/30,000s
Lens mount	M42 mount	M42 mount	M48 mount
Dimensions (W) × (H) × (D)mm	55 × 55 × 25	55 × 55 × 25	65 × 65 × 40.5
Features	External trigger, ROI, H&V Flip, Cursor indication, Exposure, Gain, Defective pixel correction	External trigger, ROI, H&V Flip, Cursor indication, Exposure, Gain, Defective pixel correction	External trigger, ROI, 2 × 2 binning(B/W model only), Sequence control, Exposure, Gain, Shading correction, Defective pixel correction

3M
5M



	3.1M High Speed	5M High Speed	8.29M Color
Interface	USB 5Gbps	USB 10Gbps	USB 5Gbps
Model name (B/W) (Color)	**VCC-3U051M** **VCC-3U051R**	**VCC-5U101M** **VCC-5U101R**	**VCC-8U051C**
Sensor	IMX900	GMAX3405	IMX778
Sensor size	1/3.1 type CMOS	2/3 type CMOS	1/2.8 type CMOS
Unit cell size(μm)	2.25 μm × 2.25 μm	3.4 μm × 3.4 μm	1.45 μm × 1.45 μm
Effective pixels(H) × (V)	2048 × 1536	2448 × 2048	3840 × 2160
Resolution	3.1M	5M	8.29M
Frame rate	125.1fps(8bit) 117fps(10bit) 72fps(12bit)	187.1fps(8bit) 149.7fps(10bit) 124.9fps(12bit)	27fps (YC8bit)
Shutter	TBD	TBD	TBD
Lens mount	C mount	C mount	C mount
Dimensions (W) × (H) × (D)mm	29 × 29 × 29	29 × 29 × 29	29 × 29 × 29
Features	USB3 Vision, USB 3.2 Gen 1x1(5Gbps), Global shutter, External trigger, ROI, Defective pixel correction	USB3 Vision, USB 3.2 Gen 2x1(10Gbps), Global shutter, External trigger, ROI, Defective pixel correction	USB3 Vision, USB 3.2 Gen 1x1(5Gbps), Clairvu ISP, AE/AWB Rolling shutter

8M
SWIR


5M

	8.29M Color	SWIR 5.2M	5.1M
Interface	USB 10Gbps	USB 10Gbps	SLVS-EC
Model name	**VCC-8U101C**	**VCC-5U101SW**	**DCC-5SLEC1M** (B/W) **DCC-5SLEC1R** (Color)
Sensor	IMX778	IMX992	IMX547
Sensor size	1/2.8 type CMOS	1/1.4type CMOS	1/1.8type CMOS
Unit cell size(μm)	1.45 μm × 1.45 μm	3.45 μm × 3.45 μm	2.74 μm × 2.74 μm
Effective pixels(H) × (V)	3840 × 2160	2560 × 2048	2472 × 2064
Resolution	8.29M	5.2M	5.1M
Frame rate	60fps(YC8bit)	131fps(8bit)	122fps(8bit)
Shutter	TBD	TBD	TBD
Lens mount	C mount	C mount	C mount
Dimensions (W) × (H) × (D)mm	29 × 29 × 29	65 × 65 × 65	29 × 35 × 27
Features	USB3 Vision, USB 3.2 Gen 2x1(10Gbps) Clairvu ISP, AE/AWB Rolling shutter	USB3 Vision, USB 3.2 Gen 2x1(10Gbps), SWIR, High speed, Global shutter, ROI, Binning, External trigger, Defective pixel correction	SLVS-EC 2Lanes [CMOS Sensor Specifications] High speed, Global shutter, ROI, Binning, Subsampling

2M
8M

	2M		4K	
Interface	USB3.0		USB3.0	
Model name (Board) (Enclosure)	**Without I/F board**	**With I/F board**	**Without I/F board**	**With I/F board**
	SCM-2M1 SCC-2M1	**SCM-2M1GE SCC-2M1GE**	**SCM-8M1 SCC-8M1**	**SCM-8M1GE SCC-8M1GE**
Sensor	AR0234CS		Pregius IMX715	
Sensor size	1/2.6 type CMOS		1/2.8 type CMOS	
Unit cell size (μm)	3.0 μm × 3.0 μm		1.45 μm × 1.45 μm	
Effective pixels (H) × (V)	1920 × 1200		3860 × 2190	
Frame rate	30fps		30fps	
Lens mount	M12 mount		M12 mount	
Power supply	DC12V / PoE (With adding I/F board)		DC12V / PoE (With adding I/F board)	
Dimensions (W) × (H) × (D)mm	65 × 48 × 58.5	65 × 48 × 82.1	65 × 48 × 58.5	65 × 48 × 82.1
Features	ISP installed (AWB, AE), AI processor (i.MX 8M Plus) installed, FOV: 51° (H) × 38° (V), Installed OS: Base system: Yocto, Linux Kernel: 6.6.52-2.2.0, U-Boot: 5.4.70 ※Complies to HDMI/1000BASE-T Ethernet by adding optional I/F board.		ISP installed (AWB, AE), AI processor (i.MX 8M Plus) installed, Installed OS: Base system: Yocto, Linux Kernel: 6.6.52-2.2.0, U-Boot: 5.4.70 ※Complies to HDMI/1000BASE-T Ethernet by adding optional I/F board.	

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※Yocto Project® is a trademark of The Linux Foundation.
※i.MX 8M Plus is a registered trademark of NXP Semiconductors N.V.

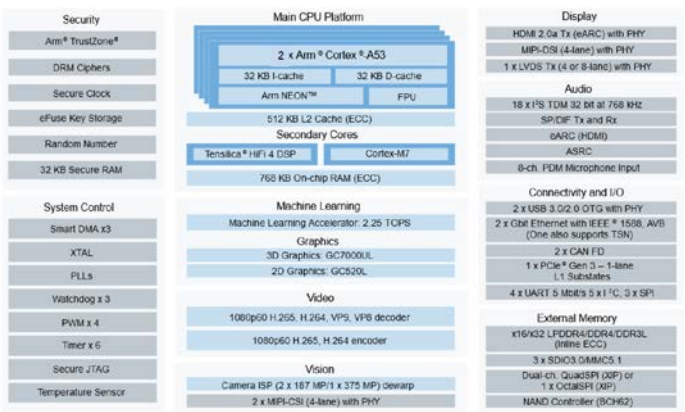
Features of SCM Series Smart Camera

The SCM series is a miniature smart camera kit featuring a variety of image & ToF sensors. At the heart of the system is NXP Semiconductor's i.MX 8M Plus, which features up to 4 cores of 1.8GHz Arm® Cortex® A53 core, 2.25TOPS machine learning accelerator for edge AI , and an embedded ISP which is capable of processing up to 13Mpix. Images.

This product's powerful computation resource and small footprint makes it suitable for such applications as payload-conscious drones, robotics/logistics, and security.

The initial product line-up will come in variety of sensors including 2M global shutter sensor, 4K rolling shutter sensor, VGA ToF sensor, and an RGB+depth product combining ToF sensor and 2M global shutter sensor.
The base configuration supports USB3.0 I/F, and with an optional I/F board, the camera supports HDMI and GigE I/Fs as well.

This smart camera platform can cope with virtually any sensor equipped with MIPI I/F and with a resolution of up to 13Mpix., and we are ready to cater to your specific request for the choice of sensor and optics. Please contact CIS Sales for details.



←Applications for processor "i.MX 8M Plus"
- System host
- ISP processing
- User application processing (Including AI)
- Distance calculation (SCM1-ToF1)

※i.MX 8M Plus is a registered trademark of NXP Semiconductors N.V.

ToF / AI Smart Camera

VGA (ToF)
ToF+RGB
EVS



	VGA		2M		0.1M	
Interface	USB3.0		USB3.0		USB3.0	
Model name (Board) (Enclosure)	Without I/F board	With I/F board	Without I/F board	With I/F board	Without I/F board	With I/F board
	SCM-ToF1 -	**SCM-ToF1GE** -	**SCM-RGBD1** -	**SCM-RGBD1GE** -	**SCM-EVS1** **SCC-EVS1**	**SCM-EVS1GE** **SCC-EVS1GE**
Sensor	IMX570		AR0234CS ・ IMX570(ToF)		GenX320	
Sensor size	1/4.5 type CMOS		1/2.6 type CMOS ・ 1/4.5		1/5 type CMOS	
Unit cell size (μm)	5.0 μm × 5.0 μm		3.0 μm × 3.0 μm ・ 5.0 μm × 5.0 μm		6.3 μm × 6.3 μm	
Effective pixels (H) × (V)	640 × 480		1920 × 1202 ・ 640 × 480		320 × 320	
Frame rate	15fps		RGB 30fps ・ ToF 15fps		-	
Lens mount	M12 mount (ToF lens mounted)		M12 mount		M12 mount	
Power supply	DC12V		DC12V / PoE (With I/Fboard)		DC12V / PoE (With I/F board)	
Dimensions (W) × (H) × (D)mm	65 × 48 × 40.8	65 × 48 × 64.5	83.5 × 48 × 59.2	83.5 × 48 × 82.7	65 × 48 × 40	65 × 48 × 64.5
Features	LD(Laser Diode) ×2 lights mounted, AI processor (i.MX 8M Plus) installed, FOV: 63° (H) × 48° (V), Measurement range: 400～5000mm, Installed OS: Base system: Yocto, Linux Kernel: 6.6.52-2.2.0, U-Boot: 5.4.70 ※Complies to HDMI/1000BASE-T Ethernet by adding optional I/F board.		LD(Laser Diode) ×2 lights mounted, AI processor (i.MX 8M Plus) installed, FOV: 63° (H) × 48° (V), Measurement range: 400～5000mm, Installed OS: Base system: Yocto, Linux Kernel: 6.6.52-2.2.0, U-Boot: 5.4.70 ※Complies to HDMI/1000BASE-T Ethernet by adding optional I/F board.		AI processor (i.MX 8M Plus) installed, Installed OS: Base system: Yocto, Linux Kernel: 6.6.52-2.2.0, U-Boot: 5.4.70	

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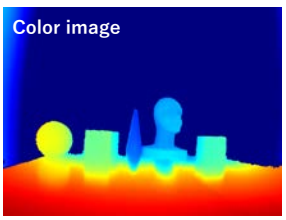
※i.MX 8M Plus is a registered trademark of NXP Semiconductors N.V.

ToF Cameras


	ToF (VGA)	ToF (VGA)
Interface	MIPI CSI-2 × 2lanes	MIPI CSI-2 × 2lanes
Model name	**DCC-VToF3** **(Laser diode ×1 light mounted model)**	**DCC-VToF4** **(Laser diode ×4 lights mounted model)**
Sensor	IMX570 (ToF)	IMX570 (ToF)
Sensor size	1/4.5 type CMOS	1/4.5 type CMOS
Unit cell size (μm)	5 μm × 5 μm	5 μm × 5 μm
Effective pixels (H) × (V)	640 × 480	640 × 480
Frame rate	30fps	15fps
Lens mount	M12 mount	M12 mount
Dimensions (W) × (H) × (D)mm	36 × 18 × 16	70 × 50 × 30
Features	LD(Laser Diode) wavelength 940nm ×1 light mounted, FOV 79° (H) × 61° (V), Measurement range: 0.4~1.5m ※4 power supplies (DC12V, 1.8V, 2.7V, and 3.3V)are required. ※External host (Jetson Nano) is required for camera control.	LD(Laser Diode) wavelength 940nm ×4 lights mounted, FOV 90° (H) × 69° (V), Measurement range: 0.4~5m, Power requirement: DC12V ※External host (Jetson Nano) is required for camera control.

Shot with DCC-VToF4
(Measurement range: 0.4～5m)

Near — Far



Near — Far

FULL HD

VCC-HD5

DCC-HD5

	Compact size 1080p 60fps	Ultra-high sensitivity Full HD 0.0005lux
Interface	3G-SDI / HD-SDI	3G-SDI / HD-SDI
Model name (Color)	**VCC-HD5 (Chassis type)** **DCC-HD5 (Board type)**	**VCC-HD1000A**
Sensor	Pregius IMX265	35mm FHDXSCA
Sensor size	1/1.8 type CMOS	35mm Full size
Unit cell size(μm)	3.45μm×3.45μm	19μm×19μm
Effective pixels(H)×(V)	1920×1080	1920×1080
Video output	1080p, 1080i, 720p	1080p, 1080i, 720p
Signal I/F	3G-SDI, HD-SDI, BNC75Ω	3G-SDI, HD-SDI, BNC75Ω
Sync system	Internal sync / External sync	Internal sync / External sync
Shutter	1/13,600～1/23.98s	1/11,200～1s
Lens mount	C mount	EF mount
Dimensions(W)×(H)×(D)mm	Chassis type: 29×29×55 Board type: IM board 29×29, MB board 25.4×38, PD board 25.4×43 (TBD)	75×75×85
Features	Image with no distortion with global shutter, ISP Clairvu™, Max. 1080/60p(with 3G-SDI output) high speed processing output, Conform to Gamma curve BT.709 and BT.2100, Conform to BT.2020, Color correction, Knee selectable, NR, LTC, GenLock, GenLock offset, OSD	Rolling shutter, ISP Clairvu™, Max. 1080/60p(with 3G-SDI output) high speed processing output, Color correction, HDR, Knee selectable, NR, LTC, GenLock, OSD, Ultra-high sensitivity 0.0005lux equivalent to ISO 4,000,000

4K

VCC-4K2

DCC-4K2

VCC-4K5

DCC-4K5

	BT.2100 complied 4K UHD 60fps	Compact size 4K UHD60fps
Interface	Quad 3G-SDI / HD-SDI	12G-SDI / 6G-SDI / 3G-SDI / HD-SDI
Model name (Color)	**VCC-4K2 (Chassis type)** **DCC-4K2 (Board type)**	**VCC-4K5 (Chassis type)** **DCC-4K5 (Board type)**
Sensor	Pregius IMX305	STARVIS2 IMX678
Sensor size	1 type CMOS	1/1.8 type CMOS
Unit cell size(μm)	3.45μm×3.45μm	2.0μm×2.0μm
Effective pixels(H)×(V)	3840×2160	3840×2160
Video output	2160p, 1080p, 1080i	2160p, 1080p, 1080i
Signal I/F	3G-SDI×4ch, 3G-SDI×1ch, HD-SDI×1ch	12G-SDI, 6G-SDI, 3G-SDI, HD-SDI×1ch, BNC75Ω
Sync system	Internal sync/External sync	Internal sync/External sync
Shutter	1/13,600～1/23.98s	1/13,600～1/23.98s
Lens mount	M42 mount	C mount
Dimensions(W)×(H)×(D)mm	Chassis type: 65×65×110 Board type: Lens mount block 65(W)×65(H)×12(D), Main block 65(W)×29(H)×89(D)(Excluding projection)	Chassis type: 29×29×77 Board type: Sensor board 25.4×26.6, Main board 25.4×38, Driver board 25.4×43 (Excluding projection)
Features	Image with no distortion with global shutter, ISP Clairvu™, Max. 4K60fps high speed processing output, SQD・2SI system complied, Conform to Gamma curve BT.2100(HLG), Conform to BT.709 and BT.2020, Color correction, Knee selectable, NR, LTC, GenLock, OSD	Rolling shutter, ISP Clairvu™, Max. 4K60fps high speed processing output, Conform to Gamma curve BT.2100(HLG), Conform to BT.709 and BT.2020, Color correction, Knee selectable, NR, LTC, GenLock, OSD, low-latency

4K

Clairvu™

Clairvu™

	4K Lens mount Built-in ×18 zoom lens	4K Lens mount Built-in ×18 zoom lens
Interface	Quad 3G-SDI / HD-SDI / 3G-SDI	NDI® (Network Device Interface)
Model name (Color)	**DCC-4KZM (×18)**	**VCC-4KNDI (with chassis)** **DCC-4KNDI (without chassis)**
Sensor	STARVIS IMX334	STARVIS IMX334
Sensor size	1/1.8 type CMOS	1/1.8 type CMOS
Unit cell size(μm)	2.0μm×2.0μm	2.0μm×2.0μm
Effective pixels(H)×(V)	3840×2160	3840×2160
Video output	2160p, 1080p, 1080i	2160p, 1080p
Signal I/F	3G-SDI×4ch, 3G-SDI×1ch, HD-SDI×1ch	NDI®
Sync system / Frame rate	Sync system: Internal sync / External sync	Frame rate: 60fps, 59.94fps, 50fps, 30fps, 29.97fps, 25fps, 24fps, 23.98fps
Shutter	1/13,600～1/23.98s	1/13,600～1/23.98s
Lens mount	×18 AF zoom lens fw=6.6mm, ft=120mm	×18 AF zoom fw=6.6mm, ft=120mm
Dimensions(W)×(H)×(D)mm	66×65×98	68.5×68×120.6 (Excluding projection)
Features	Rolling shutter, Connector: H.FL-R-SMT, ISP Clairvu™, Max. 4K60fps high speed processing output, SQD・2SI system complied, Conform to Gamma curve BT.2100(HLG), Conform to BT.709 and BT.2020, Color correction, HDR, Knee selectable, NR, LTC, GenLock, OSD	ISP Clairvu™, Max. 4K60fps high speed processing output, Conform to Gamma curve BT.2100 (HLG), Conform to BT.709 and BT.2020, Color correction, HDR, Knee selectable, 2D/3D NR, OSD, Stereo line input, PoE+ complied

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8K

Clairvu™

VCC-8K1-EF

VCC-8K1-PL

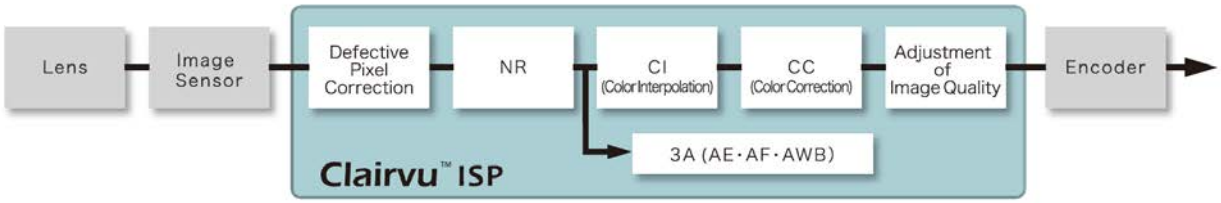
Accessories

	8K UHD60fps
Interface	12G-SDI /12G-SDI / 12G-SDI /6G-SDI
Model name (Color)	**VCC-8K1-EF (EF mount model)** **VCC-8K1-PL (PL mount model)**
Sensor	XGS45000
Sensor size	Super 35mm CMOS
Unit cell size(μm)	3.2μm×3.2μm
Effective pixels(H)×(V)	7680×4320
Video output	4320p、2160p
Signal I/F	12G-SDI×4lanes、BNC75Ω
Sync system / Frame rate	Internal sync/External sync
Shutter	1/11,200～1/23.98s
Lens mount	EF mount with electronic contacts (-EF model)/ PL mount (-PL model)
Dimensions(W)×(H)×(D)mm	EF mount model: 80 x 80 x 135mm PL mount model: 80 x 80 x 138mm
Features	Image with no distortion with global shutter, ISP Clairvu™, Max. 8K60fps high speed processing output, Conform to Gamma curve BT.2100(HLG), Conform to BT.709 and BT.2020, Color correction, Knee selectable, NR, LTC, GenLock, OSD, low-latency

	Remote Control Unit
Model name	**RU-100**
Features	With RU-100 connected to CIS cameras, camera settings can be done with OSD (On Screen Display). RU-100 also can be used as a converter from USB to RS-232C so that you can use it to set camera settings via PC.
Connectable cameras	VCC/DCC-HD5 VCC-HD1000A VCC/DCC-4K2 VCC/DCC-4K5 VCC/DCC-4KNDI (Needs to be converted to 2.5mm plug)

ISP Algorithm Clairvu™

Proprietary ISP (Image Signal Processor) engine for crisp, low pseudo-color, and low artifact, color image processing.



■ High Quality Image

Crisp, low pseudo-color, and low artifact color interpolation process produces high quality images equivalent to that of non-real time PC-based DPE application software.

■ CC (Color Correction)

Enables precise color reproduction by way of sophisticated color compensation technology (multiple-axis division of the color plain).

■ High Speed yet Cost Effective

Algorithm engine that processes 7680×4320 progressive image signals at 60fps can be implemented into a relatively small, a medium sized FPGA.

■ CI (Color Interpolation)

Color interpolation process produces color images out of signal output from Bayer array color sensor, and significantly affects its image quality. “Clairvu™” enables high resolution, low pseudo-color, and low noise at the same time.

■ AE (Auto Exposure)

According to the detected luminance conditions, diaphragm (lens iris), gain level, and shutter speed are controlled to keep the brightness of the image constant.

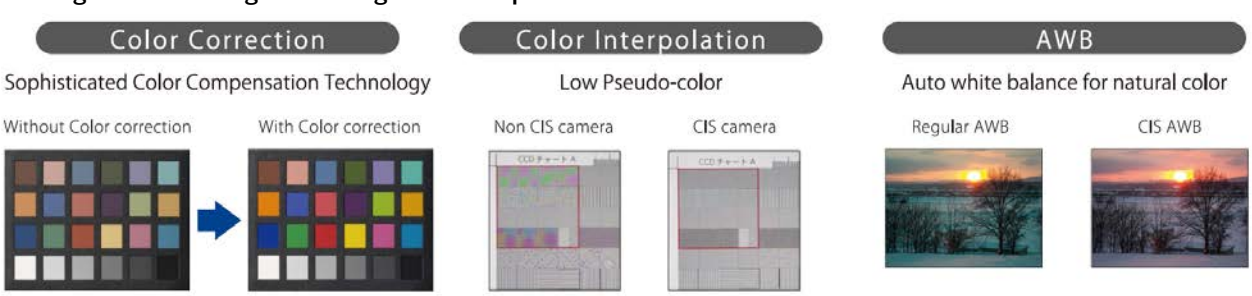
■ AF (Auto Focus)

Contrast detection method that defines the focus position for the maximum contrast as the full focus. Eliminating signal noises as much as possible, auto focus function is effective even for difficult scenes, such as the one under low illumination, telescopic zooming, and others.

■ AWB (Auto White Balance)

Human eyes are color flexible and sense the original colors even when the ambient light source changes. To acquire natural images, cameras need to have a similar function to human eyes, in other words, the function to correct the color depending on illuminating conditions. This is a so-called “White Balance” function. In addition to the conventional AWB to make the average color of the image by close to gray, CIS developed auto white balance algorithm to control its balance more precisely, estimating the color of the lighting source.

＜Signal Processing Technologies - Examples＞



Accessories / Semi-custom Lens

	Camera lens mount conversion ring					
Model name	**M58-F mount conversion ring**	**M48-F mount conversion ring (Turn-style)**	**M48-F mount conversion ring**	**M48-C mount conversion ring**	**M42-F mount conversion ring**	**M42-C mount conversion ring**
Features	Conversion ring from M58 to F lens mount.	Conversion ring from M48 to F lens mount. (Turn-style)	Conversion ring from M48 to F lens mount.	Conversion ring from M48 to C lens mount.	Conversion ring from M42 to F lens mount.	Conversion ring from M42 to C lens mount.

	AC adaptor
Model name / Part number	**6pins AC adaptor / DTPS-1215-06**
	12pins AC adaptor / 12V-1.5A-S12-A-A
Features	In warranty only when connected to the corresponding CIS cameras and accessories. 6pins AC adaptor: RoHS2 compliant 12pins AC adaptor: RoHS2 non-compliant

Semi-custom Lens

CIS offers versatile semi-custom lenses as well as general lenses that meet customer's requirements.

◆ High Image Quality

- Fixed lens placement resulting in accurate optical axis and less aberration.
- Provision of fixed iris throttle plate according to usage conditions resulting in less image deterioration compared to standard mount lenses.

Comparison of lens size

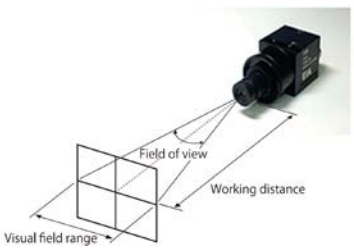
Comparison of lens iris (f2.8)

◆ Compact and Light Weight

- Improves vibration and shock resistance.

◆ Lens Variation

- Resolution: EIA, VGA, SXGA, UXGA, 5M, 12M, Full HD, etc.
- Focal range: 16mm, 25mm, 35mm, 50mm, etc.



◆ Less prone to dust problems

- Lens cleansing and assembly all done in the CIS's clean room.

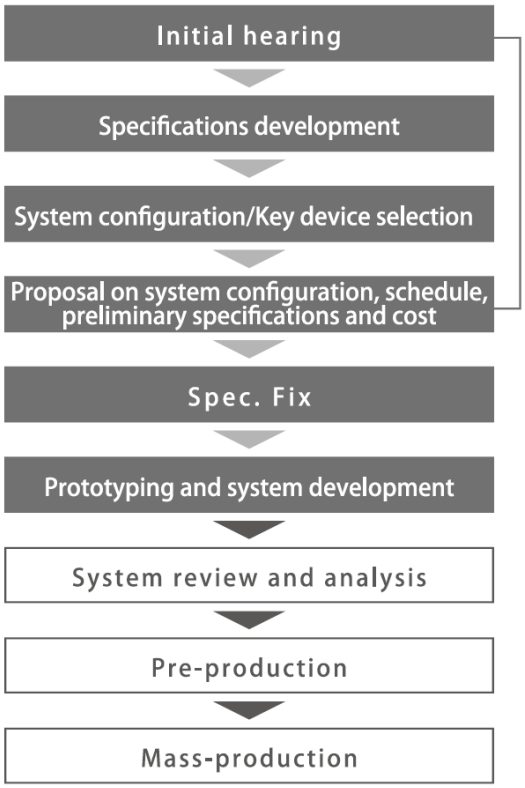
Development of Image Processing Systems

On top of cameras, CIS offers total imaging solution to meet wide variety of customers' needs as a one-stop-shop, proposing system architecture and the most appropriate interface, designing and manufacturing, development of system software, and optimizing customer's image processing application and implementation.

1. CIS has in-house professional teams of each field

Mechanical design	Optical design knowledge, Heat dissipation design, Water & dust proof housing design, Miniaturization, Micro-motion control using piezo-actuator, Cost reduction know-how
Circuit design	Evaluation and design experience for various CCD and CMOS image sensors, Analog and digital circuit design, Miniaturization & low power dissipation design, High-speed interface circuit design (in the order of GHz)
System software development	System specification development, Real time image processing, System software development using RTOS, Embedded imaging application software development, PC application software development. We have deep experiences in design and development around TI's DSP.
Algorithm development	In order to draw maximum performance from the device, we provide optimization at an algorithmic level. Custom development of image processing application, Licensing of original image processing IPs.
Quality assurance	Product design verification (Electrical performance, functionality, anti-vibration, impact, dust and heat dissipation testing, conformance with various safety regulations including RoHS.) Reliability testing including product safety.
Production engineering	Design review at pre-production stage: Review done on both product quality and ease of production for higher field. Promotion of automated production by use of software.
Production	Fully controlled production environment.

2. From Proposal to Mass Production



After initial customer hearing, we develop a proposal comprising all necessary components.
The more you share with us, the better our proposal becomes.

Upon confirmation of the final system configuration, we provide our client with preliminary specifications and a cost estimate. Upon agreement with our client, the actual product design begins.

We usually perform two phases of prototyping, whereby we implement necessary fixes and design changes as per our client's request. In these stages, we also perform various quality and environmental testing in order to provide for a faster bring up of the final product.

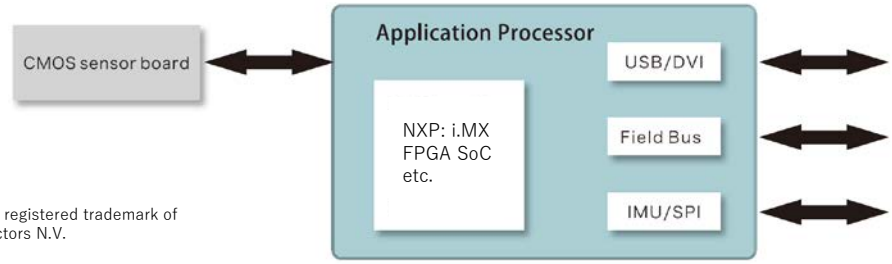
Finally comes the mass production phase. In order to get rid of dirt and dust which tends a impose a fatal problem to imaging systems, we have Class 1000 clean room within our own factory.
In the course of manufacturing over 1 million cameras, we have accumulated various expertise in each and every process within the production phase, which will contribute to producing high quality yet cost effective products for our customers.

Development of Image Processing Systems (Case example)

Here are some actual examples CIS developed.

◆ Customized Smart Camera (Deep learning edge device)

A smart camera with CMOS sensor board which can be used as deep learning edge device. Smooth migration from common deep learning framework can be done. Compatible with IMU and Field Bus Interface.



※i.MX8M Plus is a registered trademark of NXP Semiconductors N.V.

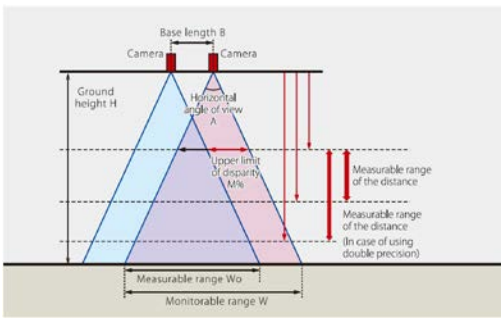
◆ Defog

The objects can be captured clearly under bad conditions such as fog and rain with CIS's proprietary image processing system.

Before defog　　After defog

◆ Stereo Camera Measurement

When captured the object by several cameras, the position of the object can be measured by using the disparity of the object captured by each camera.



Also, we have developed **Intelligent surveillance camera system** which image processing system unit is integrated with the camera and resulting in significant downsizing and cost efficiency, **High-speed real time image processing system** which supports hundreds to thousands fps by hardware (FPGA), **Multiple camera 3D image processing equipment** which generates accurate 3D data from two sets of stereo camera inputs, etc.

We will strive to develop higher performance systems using deep learning, GPGPU, or Edge Processor for deep learning.

CIS

CIS Corporation

■HQ・Factory
539-5, Higashi Asakawa-machi, Hachioji-shi, Tokyo,
193-0834, JAPAN
TEL +81-42-664-5535 (Main number)
+81-42-664-5568 (Sales Div.)

■Higashi Nakano OFFICE (Solution Development Center)
2F 3F, 5-5-5, Tokumasu Bldg., Higashi Nakano,
Nakano-ku, Tokyo, 164-0003, JAPAN

E-mail: cisinfo@ciscorp.co.jp
URL: https://www.ciscorp.co.jp/en/index