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IMI TECH Co., Ltd 15 Years of Industrial Digital Camera Development and Application

Compact High Performance GigE Camera

The GigE camera with no separate Frame Grabber, a max. 100m data transmission, PoE support, and multi-camera use on one PC, provides a very flexible solution!

The AMAZON2 700 series has various image sensor sizes, resolution and frame rates, a form factor size that is optimized to industrial equipment, trigger/strobe port resistant to external noise and cable locks for moving systems that provide stability and convenience.

The AMAZON2 cameras comply with GenICam 2.3: and provide API/SDK & Demo Software to assist with system development under Visual C++(6.0 more), Visual Basic (32bit), Delphi, C++ Builder, Visual C# etc.. Furthermore, we provide a variety of support including: Product Customization, Mass Production, and Engineer Support for the optimized customer system.

Main Features

— CCD(Global Shutter) / CMOS Image Sensor
— Color/Mono type, VGA to 10 MP High Resolution
— Max. 100fps (656x488 pixel), External Trigger/Strobe
— User Defined Look Up Table, User Default Memory Save
— Binning/ROI/Brightness/Sharpness/Gamma/Gain/WB/Hue
— C/CS Mount selectable, Back focal length adjustable
— Operating Temp. -5 ˚C ~ 45 ˚C(Storage -30 ˚C ~ 60 ˚C)
— 29(W) x 29(H) x 51.1(D)mm (without lens adapter)
— Cable lock with screws, POE Support

Accessories

— Trigger/Power Cable
— Tripod Mount
— FA Lens(C/CS Mount)

Specification

Model Name	Image Sensor	Sensor Name	Resolution		Pixel Size	Frame Rate
			Megapixel	WxH(mm)		
IMx-710G	1/4" Sony CCD	ICX618 AL/AQ	0.3MP	656 x 488	5.60μm x 5.60μm	100 fps
IMx-711G	1/3" Sony CCD	ICX424 AL/AQ	0.3MP	656 x 488	7.40μm x 7.40μm	90 fps
IMx-712G	1/2" Sony CCD	ICX414 AL/AQ	0.3MP	656 x 484	9.90μm x 9.90μm	90 fps
IMx-715G	1/3" Sony CCD	ICX204 AL/AK	0.78MP	1032 x 776	4.65μm x 4.65μm	36 fps
IMC-715G2	1/3" Sony CCD	ICX692 AQ	0.9MP	1280 x 720	4.08μm x 4.08μm	30 fps
IMx-716G	1/3" Sony CCD	ICX445 AL/AQ	1.3MP	1288 x 964	3.75μm x 3.75μm	30 fps
IMx-717G	1/2" Sony CCD	ICX267 AL/AK	1.4MP	1388 x 1040	4.65μm x 4.65μm	20 fps
IMx-720G	1/1.8" Sony CCD	ICX274 AL/AQ	2.0MP	1624 x 1232	4.40μm x 4.40μm	25 or 16 fps
IMx-728G	1/1.8" Sony CCD	ICX687 AL/AQ	2.8MP	1936 x 1456	3.69μm x 3.69μm	20 fps
IMx-750GC	1/2.5" Aptina CMOS	MT9P031	5.0MP	2588 x 1940	2.20μm x 2.20μm	14 fps
IMC-770GC	1/2.3" Aptina CMOS	MT9J003	10MP	3660 x 2744	1.67μm x 1.67μm	7.3 fps

High Resolution & High Speed Camera Link/CoaXPress/GigE

High resolution and high speed cameras have become very popular for use in industrial equipment and inspection systems like 3D Solder Paste Inspection, Automated Optical Inspection, UHD TV Inspection and 10+MP Smartphone Camera Module Inspection. We provide high resolution and high speed cameras with various interfaces like Camera Link, CoaXPress and GigE.

The 29M 5fps and 25M 30fps Camera Link cameras are an excellent solution for high performance imaging applications that need a flexible GPIO.

The 25M 72fps CoaXPress camera has the fastest bandwidth and max. 100 meter transmission via coaxial cable for remote applications.

The 1.4M, 2.8M, 5M, 6M, 8M and 29M GigE cameras enables data to be transmitted up to 100M without Frame grabber; employing the robust, easy to use GigE protocol.

Main Features

IMx-7xxxG / 7xxxGK (GigE)
_ CCD (Global Shutter)
_ Ext. Trigger/Strobe
_ C or F mount
_ Back focal length adjustable
_ Operating Temp. -5 ˚C ~ 45 ˚C
_ 70(W) x 70(H) x 55(D) mm (IMx-7xxxGK)
_ 70(W) x 70(H) x 44(D) mm (IMx-7xxxGK)
_ 55(W) x 55(H) x 46.5(D) mm (IMx-7050G)
_ Cable lock with screws

IMx-2625CL (Camera Link)
_ 25Megapixel 30fps
_ 5056 X 5056 Resolution
_ Color/BW Type
_ True 8/10 bit Data
_ 2/4/8/10 Tap
_ F Mount, M42, M72 Mount

IMB-2529CL (Camera Link)
_ 29Megapixel CCD Image Sensor
_ 6576 X 4384 Resolution
_ S/N Ratio more than 55dB
_ True 8/10 bit Data
_ 2/4/8/10 Tap
_ F Mount, M42, M72 Mount

IMx-2625CXP (CoaXPress)
_ 25Megapixel 72fps
_ 5120 X 5120 Resolution
_ PoCXP Support
_ CXP-6 4CH
_ F Mount or M42 Mount
_ Horizontal/Vertical ROI
_ Color / BW Type
_ True 8/10 bit Data

Camera Link/CoaXPress Specification

Model Name	Resolution	FPS	Sensor	LENS MOUNT	Pixel Size (μm)	BW/Color	Remarks
IMX-2625CL	5056 x 5056	30 fps	CMOS	F/ M42/M72	4.5μm x 4.5μm	Both	30 FPS AT 10 TAP FULL
IMB-2529CL	6576 x 4384	5 fps	CCD	F/ M72	5.5μm x 5.5μm	BW	2 TAP Base
IMX-2625CXP	5120 x 5120	72 fps	CMOS	F/ M42	4.5μm x 4.5μm	Both	4 CHANNEL

GigE Specification

Model Name	Image Sensor	Sensor Name	Resolution		Pixel Size (μm)	Frame Rate	Sensor Tap
			Megapixel	WxH (mm)			
IMB-7529GK	35mm CCD	KAI-29050-AXA	29MP	6572 x 4380	5.5μm x 5.5μm	2 fps	2 Taps
IMx-7080GK	4/3" Kodak CCD	KAI-08050	8.0MP	3296 x 2472	5.5μm x 5.5μm	8 fps	2 Taps
IMx-7060G	1" Sony CCD	ICX694 AL/AK	6.0MP	2750 x 2200	4.54μm x 4.54μm	13 fps	2 Taps
IMx-7050G	2/3" Sony CCD	ICX625ALA/AQ	5.0MP	2448 x 2048	3.45μm x 3.45μm	15 fps	2 Taps
IMx-7040GK	1" Kodak CCD	KAI-04050	4.0MP	2336 x 1752	5.5μm x 5.5μm	16fps	2 Taps
IMx-7028G	1/1.8" Sony CCD	ICX687 AL/AQ	2.8MP	1936 x 1456	3.69μm x 3.69μm	25 fps	2 Taps
IMx-7018G	2/3" Sony CCD	ICX285 AL/AQ	1.4MP	1388 x 1040	6.45μm x 6.45μm	30 fps	1 Taps

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Megapixel CCD HD-SDI & IP Network

Rolling Shutter CMOS megapixel cameras give a low recognition rate of auto license plates due to line scan image acquisition. due to a 200ms delay for the encoding process, IP cameras with rolling shutters have difficulty capturing the image at the exact required time. Global shutter CCD cameras capture plates on cars moving more than 200km/h with only a 2.5ms delay. Furthermore, night color images have less noise and better color rendition for the recognition of car color, brand, driver's face and other characteristics. These cameras employ an external trigger/strobe under dark environmental conditions; and produce bright and vivid images, even with high speed shuttering. Lighting life is 2 times longer than constant lighting.

With a global shutter IP camera, the user can chose to capture multi images with different brightness setting. This function to set the brightness of several ROIs differently; and by providing an HTTP API, ONVIF, PSIA, DLL Library, is very compatible with most kinds of VMS.

These IP cameras are used in red light traffic enforcement systems and long distance monitoring systems.
All-In-One(Lens/Lighting/Housing Built-in) cameras are also more convenient to install and maintain.

Main Features

IP Network
_ Progressive Scan Global Shutter CCD Image Sensor
_ IR-CUT Filter Built-In Day/Night Auto Mode
_ Auto & Manual Gain/Shutter/Iris/Exposure Optimized Setting
_ Real Time Trigger Image Capture(2.5ms -) Competitors 250ms)
_ Real Time Trigger Full Size Image or ROI Image Capture
_ ROI or Triggered Image Brightness Setting(Max. 3 Images)
_ H.264/MJPEG/MPEG4 Codec & Triple Streaming

_ ONVIF, PSIA (HTTP API & DLL Library)
_ PoE(IEEE 802.3af Class 2) / DC 12V
_ CVBS 2nd Video Output, 2 Ways Audio
_ (Micro)SD/SDHC Memory Card
_ Pre/Post Event Video & Still Image Recording
_ E-Mail / FTP / TCP Image Network Transmission
  32CH CMS Free Support

HD-SDI
_ Progressive Scan Global Shutter CCD Image Sensor
_ IR-CUT Filter Built-In Day/Night Auto Mode
_ Auto & Manual Gain/Shutter/Iris/Exposure Optimized Setting
_ Real Time Trigger Image Capture
_ DC 8 - 30V, PoC(Power over Coaxial)
_ C Mount / RS-485 / Ext. Trigger & Strobe
_ Defog Algorithm built-in

HD-SDI Specification

Model Name	Resolution	FPS	Sensor Name	Sensor Size	Pixel Size(μm)	BW/Color	Remarks
IMC-9117	1388 x 1040	30	ICX-267	1/2"	4.65	Both	C Mount
IMC-9121	1920 x 1080	30	KAI-02150	2/3"	5.5	Color	C Mount

IP Specification

All-In-One Model : IMC-8115J-VIR, IMC-8116J-VIR, IMC-8120J-VIR, IMC-8128J-VIR

Model Name	Resolution	FPS	Sensor Name	Sensor Size	Pixel Size(μm)	BW/Color	Remarks
IMC-8115	1280 x 720	30	ICX-692	1/3"	4.08	Color	5-50mm DC Iris D/N Lens(All-In-One)
IMx-8116	1280 x 960	30	ICX-445	1/3"	3.75	Both	5-50mm DC Iris D/N Lens(All-In-One)
IMx-8117	1388 x 1040	30	ICX-267	1/2"	4.65	Both	
IMx-8120	1600 x 1200	25	ICX-274	1/1.8"	4.4	Color	10-50mm Motorized Zoom Lens(All-In-One)
IMC-8128	1920 x 1080	30	ICX-687	1/1.8"	3.69	Color	10-50mm Motorized Zoom Lens(All-In-One)
IMC-8140	2336 x 1752	15	KAI-04050	1"	5.5	Color	
IMx-8150	2448 x 2048	15	ICX625	2/3"	3.45	Both	

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High Resolution CMOS IP Network

Experience over the years has shown that It requires at least a 5 Megapixel CMOS IP camera module to capture the best image for the recognition of license plate numbers on parked cars, for parking guidance and for simultaneous video streaming for monitoring. The optimized streaming resolution can be set to each parking lot environment. It gives full size resolution captured images for 3 car plate numbers, while streaming at any resolution. Both JPG and YUV image file formats are available.

Depending upon application requirements, a C/CS/M12 mount lens block, 2 ways audio, SD card slot, PoE module, RS-422/485 and other various additional functions are available. By providing an HTTP API, ONVIF, PSIA, DLL Library, this camera is compatible with most kinds of VMS.

The IMI 2 MP CMOS IP Camera supports Full HD 1080p, 60fps monitors and records fast moving objects clearly and accurately. By using its own ISP chip, the camera provides not only basic functions like Auto Gain, and AWB; but also Noise Reduction, WDR, Defog, Sens-Up etc.

Main Features

_ Progressive Scan CMOS Image Sensor
_ IR-CUT Filter Built-In Day/Night Auto Mode
_ Auto & Manual Gain/Shutter/Iris/Exposure Optimized Setting
_ S/W Trigger Image Capture
_ Real Time Trigger Full Size Image or ROI Image Capture

_ ROI or Triggered Image Brightness Setting (Max. 3 Images)
_ H.264/MJPEG/MPEG4 Codec & Triple Streaming
_ ONVIF, PSIA (HTTP API & DLL Library)
_ PoE (IEEE 802.3af Class 2) / DC 12V
_ CVBS 2nd Video Output, 2 Ways Audio

_ (Micro) SD/SDHC Memory Card
_ Pre/Post Event Video & Still Image Recording
_ E-Mail / FTP / TCP Image Network Transmission
_ 32CH CMS Free Support

Specification

Model Name	Resolution	FPS	Sensor Name	Sensor Size	Pixel Size (μm)	BW/Color	Remarks
IMC-8222	1920 x 1080	60	IMX-136	1/2.9"	2.8	Color	CS/C Mount
IMC-8222D-VIR	1920 x 1080	60	IMX-136	1/2.9"	2.8	Color	3.5-16mm D/N A/I
IMC-8222B-VIR	1920 x 1080	60	IMX-136	1/2.9"	2.8	Color	3.5-16mm D/N A/I
IMC-8222M	1920 x 1080	60	IMX-136	1/2.9"	2.8	Color	CS/C Mount
IMC-8250M	2592 x 1944	15	MT9P031	1/2.5"	2.2	Color	C/CS or M12 Mount
IMC-8612M	4040 x 3032	10	IMX-172	1/2.3"	1.4	Color	C/CS or M12 Mount

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720x480 GigE/IP based Thermal Camera

IMI Thermal Cameras are used in various areas like electronic equipment, building inspection, machine vision and surveillance, etc.

With many "thermal cameras", the sensor only finds the temperature of a specific point. The IMI thermal camera has functions to detect a wide area temperature spectrum; and each points absolute temperature. IMI thermal cameras are employed successfully in factory and processing areas, fire inspection and coast surveillance as well.

These IMI thermal cameras provide 320x240 and 720x480 resolution now; but megapixel resolution will soon be released.

Both the IP and GigE interfaced cameras provide easy to use control features for recording video files.

Main Features

_ 60fps Support
_ Various Lens Support
_ Real time data & video recording & analysis

_ PC & TV Monitoring available in real time
_ Remote Control on PC
_ Digital Zoom (x2, x4)

_ Alarm Output in specific temperature increase
_ Max./Min. Temperature Detection
_ Various Palette Support
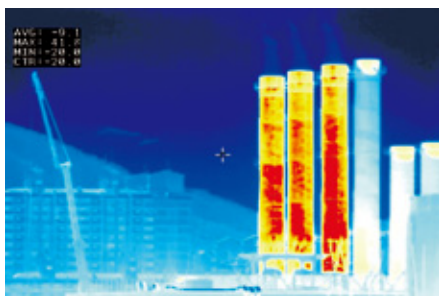
District Heating | **Fire Supervisory** | **land and Sea Supervisory**

Specification

Model Name	Resolution	FPS	Temperature Range	Detector spectrum length	Pitch (um)	Remarks
IMT-802N	320 x 240	60 fps	-20 ~ 120℃	8 ~ 14um	25um	Ethernet
IMT-811N	720 x 480	60 fps	-20 ~ 300℃	8 ~ 14um	17um	Ethernet

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Compact Size HD-SDI / USB 3.0 Camera

Using the miniaturization techniques created in industrial camera development, these very small cameras can now be deployed for medical applications like microscope or endoscope, and also for broadcasting purpose like cable TV.

At 29 x 29 x 29mm, these world smallest 1080p 60fps HD-SDI and USB 3.0 cameras gives not only vivid images, but also RS-485 2 ways communication, image freeze or marking via external signal when the event happens. Furthermore they support 59.94i and 59.94p for broadcasting. Also, an OSD joystick on the rear of the camera, or imbedded in a cable, provide the user with a MENU and control parameters on the viewing screen.

The IMI USB 3.0 camera complies with UVC. It does not need separate power.

Main Features

_ 1/2.8" CMOS Image Sensor
_ IR-CUT Filter Built-In Day/Night Auto Mode(Only IMC-922S)
_ WDR / DNR / AGC / Sense-Up / Defog
_ Image Marking or Freeze at event, Motion Detection Output

_ 1080 30i/p, 59.94i/p
_ DC 12V, C/CS Mount & S Mount(Only IMC-922S)
_ RS-485 (Pelco-D) Support

Specification

Model Name	Resolution	FPS	Sensor Name	Sensor Size	Pixel Size(μm)	BW/Color	Remarks
IMC-922	1920 x 1080	60	IMX-136	1/2.8"	2.8	Color	
IMC-922S	1920 x 1080	60	IMX-136	1/2.8"	2.8	Color	26x26mm
IMC-322UC	1920 x 1080	60	IMX-136	1/2.8"	2.8	Color	USB 3.0

High Speed USB 3.0 Camera

USB 3.0 has the advantages of 440M bytes bandwidth, low cost general cable use, and improved power supply compared with USB 2.0. The USB 3 Vision Standard compliance requires less CPU capacity than GigE.

Thanks to a new image sensor providing more than 100M bytes/s, it has rapidly become a very popular protocol.

Specification

Model Name	Resolution	FPS	Sensor Name	Sensor Size	Pixel Size(μm)	BW/Color	Remarks
IMx-3213UP	640 x 480	500 fps	NOIP1SN0300A	1/4"	4.8	Both	2015. 04
IMx-3250UC	1920 x 1200	150 fps	Phyton 2000	2/3"	4.8	Both	2015. 09
IMC-3270UC	2590 x 2048	60 fps	Phyton 5000	1"	4.8	Both	2015. 09

API/SDK & Software Package

For FireWire, GigE and USB 3.0 interfaces, IMI provides DirectX & ActiveX based Neptune SDK development environment. The user can develop the desired system with this SDK, using Visual C++, Visual Basic, VB.NET, C#, Delphi, C++ Builder etc. Each SDK provides basic functions for camera control. The user can select the suitable SDK for their purpose.

The HD-SDI SDK has ActiveX based NeptuneSDI. The IP Network SDK has camera based HTTP API and PC based SpiderCtrl. NeptuneSDI is similar to the Neptune SDK, and includes basic functions for camera control. The HTTP API can transfer CGI Commands and control the camera directly. SpiderCtrl consisted of a C type Library in order to control the IP camera on a PC.

Interface	Name	Main Features
1394a/b GigE USB 3.0	Neptune	Viewer Program (Demo) / GigE IP Management Program Direct Show Filter, TWAIN, Active X API, C / C++ Library GenICam compliance, XML support GigE Vision Filter / IEEE 1394 Device / USB 3.0 Vision Driver Windows XP/7/8, 32/64bit
HD-SDI	NeptuneSDI	Viewer Program / Active X based API
IP Network	ImSpiderCMS	Windows based Bundle S/W 36CH Live and Recording 16CH Detection and Playback Event Recording and transmission
	SpiderCtrlAPI	DLL Library API Stream module / Control module Camera image, External Trigger/Strobe control
	IP Manager	IP address management tool

Neptune API/SDK Structure

Neptune Software Package

| NepTune Demo Viewer | GigE Manager | Direct Show filter | TWAIN | Activex API | C | C++ |

Neptune Software Package

G E N i C A M

GenIcam XML

XML

| GigE vision Filter driver | IEEE 1394 Device driver | USB3 Vision driver |