

TechNexion
INNOVATORS OF TECHNOLOGY

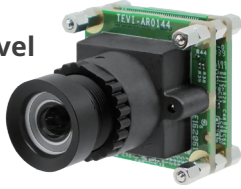


USB3 Type C Cameras
Embedded Vision

USB3 Camera Family

TechNexion USB3 cameras are fully UVC Compliant and therefore plug-n-play on any Windows or Linux platform. We offer a family of USB cameras ranging from 1MP to 13MP in rolling or global shutter configurations that can be used in a large variety of applications ranging from robotics, medical, sporting to smart city, infrastructure and embedded industrial applications.

Board Level



S-Mount



C-Mount
















USB Type C Locking Connector

By following Intel USB Type C connector locking specifications, TechNexion USB cameras ensure your USB embedded vision cameras are suitable in vibration prone and harsh industrial applications.

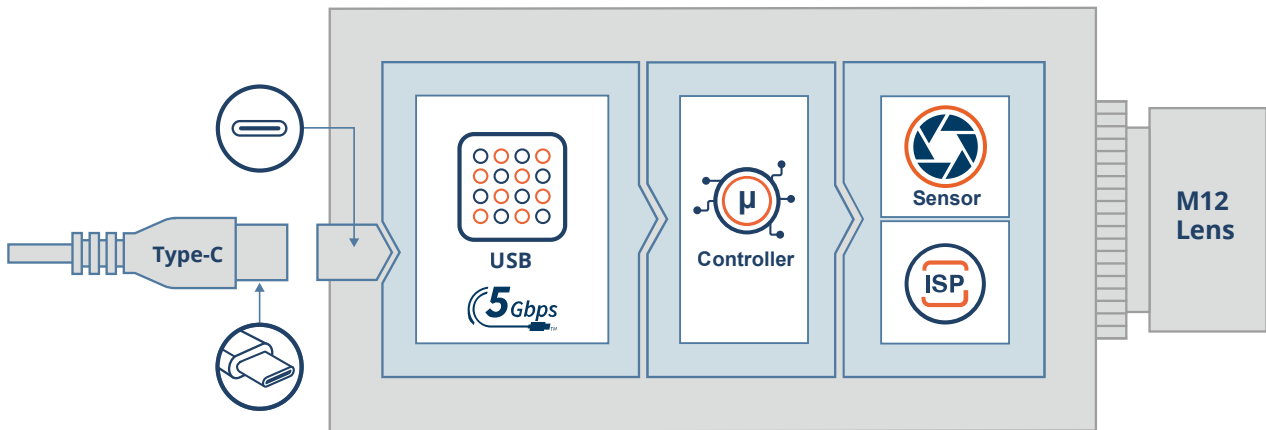


Sensor Comparison

< 2 MP	5 MP	8 MP	10 ~ 20 MP
 AR0144 Global Color	 AR0521 Rolling Color	 AR0821 eHDR Rolling Color	 AR1335 Rolling Color
 AR0145 Global Color/ Mono	 AR0522 Rolling Color/ Mono	 AR0822 eHDR Rolling Color/ Mono	 AR2020 Rolling Color
 AR0234 Global Color	 AR0544 Rolling Color/ Mono	 AR0830 Rolling Color/ Mono	
 AR0235 Global Color/ Mono			
 AR0246 eHDR Rolling Color			

Unified single software driver.

Block Diagram



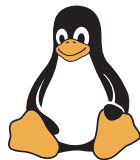
Software Enablement

Product drivers, integration guides for TechNexion USB3 Camera are available online, thus helping a quick and easy integration and evaluation path.

All TechNexion Embedded Vision products are supported with VizionViewer and VizionSDK, giving your engineering team full control over the camera settings by using C++ or Python.



Windows



Linux



VizionViewer™



VizionSDK



Android



Ubuntu



Debian

Software SDK
Available

Specifications

New

New

	AR0144	AR0145	AR0234	AR0235	AR0246	AR0521	AR0522
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Camera Information

CMOS Sensor	onsemi AR0144	onsemi AR0145	onsemi AR0234	onsemi AR0235	onsemi AR0246	onsemi AR0521	onsemi AR0522
Active Pixels	1280 (H) x 800 (V) = 1MP	1280 (H) x 800 (V) = 1MP	1920 (H) x 1200 (V) = 2.3MP	1920 (H) x 1200 (V) = 2.3MP	1920 (H) x 1080 (V) = 2MP	2592 (H) x 1944 (V) = 5MP	2592 (H) x 1944 (V) = 5MP
Pixel Size	3.0 μm x 3.0 μm	2.8 μm x 2.8 μm	3.0 μm x 3.0 μm	2.8 μm x 2.8 μm	2.0 μm x 2.0 μm	2.2 μm x 2.2 μm	2.2 μm x 2.2 μm
Illuminated Type	Front Side Illuminated (FSI)	Front Side Illuminated (FSI)	Front Side Illuminated (FSI)	Front Side Illuminated (FSI)	Front Side Illuminated (FSI)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)
Maximum S/N Ratio	38 dB	37 dB	38 dB	37 dB	39 dB	40 dB	40 dB
Optical Format	1/4" (Diagonal 4.5 mm)	1/4.3" (Diagonal 4.23 mm)	1/2.6" (Diagonal 6.8 mm)	1/2.8" (Diagonal 6.34 mm)	1/4" (Diagonal 4.41 mm)	1/2.5" (Diagonal 7.13 mm)	1/2.5" (Diagonal 7.13 mm)
Shutter Type	Global Shutter	Global Shutter	Global Shutter	Global Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter
Chromaticity	Color	Color / Mono	Color	Color / Mono	Color	Color	Color / Mono
HDR Support	-	-	-	-	Yes	-	-
Maximum Frame Rate (YUV422-UYYV)	1280 x 800 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	1280 x 800 @ 115 fps 1280 x 720 @ 115 fps 640 x 480 @ 115 fps	1920 x 1200 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 120 fps 640 x 480 @ 120 fps	1920 x 1200 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 120 fps 640 x 480 @ 120 fps	1920 x 1080 @ 30 fps 1280 x 720 @ 30 fps 640 x 480 @ 30 fps	2592 x 1944 @ 24 fps 2560 x 1440 @ 32 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 120 fps	2592 x 1944 @ 24 fps 2560 x 1440 @ 32 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 120 fps
Maximum Frame Rate (MJPEG)	1280 x 800 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	1280 x 800 @ 115 fps 1280 x 720 @ 115 fps 640 x 480 @ 115 fps	1920 x 1200 @ 100 fps 1920 x 1080 @ 100 fps 1280 x 720 @ 120 fps 640 x 480 @ 120 fps	1920 x 1200 @ 100 fps 1920 x 1080 @ 100 fps 1280 x 720 @ 120 fps 640 x 480 @ 120 fps	1920 x 1080 @ 30 fps 1280 x 720 @ 30 fps 640 x 480 @ 30 fps	2592 x 1944 @ 60 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 80 fps 1280 x 720 @ 80 fps 640 x 480 @ 120 fps	2592 x 1944 @ 60 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 80 fps 1280 x 720 @ 80 fps 640 x 480 @ 120 fps
Output Format	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)

Camera Interface

Connector	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps
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Power

Supply Voltage	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%
Power Consumption	UYYV 1280 x 800 @60FPS ≤ 0.9W	UYYV 1280 x 800 @115FPS ≤ 1W	UYYV 1920 x 1200 @60FPS ≤ 1.25W	UYYV 1920 x 1200 @60FPS ≤ 1.2W	UYYV 1920 x 1080 @30FPS ≤ 1.2W	UYYV 2592 x 1944 @24FPS ≤ 1.2W	UYYV 2592 x 1944 @24FPS ≤ 1.2W
Standby Power	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby

Software Support

Operation System	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto
Software	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™
Development SDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK

Optional Accessories

An easy to attach A-Mount bracket for TechNexion board modules and 30mm enclosed cameras.



245-MOUNT-BRACKET-A



245-MOUNT-BRACKET on tripod
(tripod not included)



300-MOUNT-BRACKET



300-MOUNT-BRACKET on tripod
(tripod not included)



Specifications

	26Q4	New			New		26Q2
	AR0524	AR0544	AR0821	AR0822	AR0830	AR1335	AR2020
Camera Information							
CMOS Sensor	onsemi AR0524	onsemi AR0544	onsemi AR0821	onsemi AR0822	onsemi AR0830	onsemi AR1335	onsemi AR2020
Active Pixels	2592 (H) x 1944 (V) = 5MP	2592 (H) x 1944 (V) = 5MP	3848 (H) x 2168 (V) = 8MP	3840 (H) x 2160 (V) = 8MP	3840 (H) x 2160 (V) = 8MP	4208 (H) x 3120 (V) = 13MP	5120 (H) x 3840 (V) = 20MP
Pixel Size	2.2 μm x 2.2 μm	1.4 μm x 1.4 μm	2.1 μm x 2.1 μm	2.0 μm x 2.0 μm	1.4 μm x 1.4 μm	1.1 μm x 1.1 μm	1.4 μm x 1.4 μm
Illuminated Type	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)	Front Side Illuminated (FSI)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)
Maximum S/N Ratio	TBD	39.9 dB	41.8 dB	40.5 dB	39.9 dB	37 dB	39.9 dB
Optical Format	1/2.5" (Diagonal TBD)	1/4.2" (Diagonal 6.05 mm)	1/1.7" (Diagonal 9.25 mm)	1/2" (Diagonal 8.81 mm)	1/2.9" (Diagonal 6.17 mm)	1/3.2" (Diagonal 5.8 mm)	1/1.8" (Diagonal 8.96 mm)
Shutter Type	Global Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter
Chromaticity	Color / Mono	Color / Mono	Color	Color / Mono	Color / Mono	Color	Color
HDR Support	-	-	Yes	Yes	-	-	-
Maximum Frame Rate (YUV422-UYYV)	2592 x 1944 @ 24 fps 2560 x 1440 @ 32 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 120 fps	2592 x 1944 @ 24 fps 2560 x 1440 @ 32 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 120 fps	3840 x 2160 @ 15 fps 2560 x 1440 @ 30 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	3840 x 2160 @ 15 fps 2560 x 1440 @ 30 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	3840 x 2160 @ 15 fps 2560 x 1440 @ 30 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	4208 x 3120 @ 10 fps 3840 x 2160 @ 15 fps 2560 x 1440 @ 30 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	TBD
Maximum Frame Rate (MJPEG)	2592 x 1944 @ 60 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 80 fps 1280 x 720 @ 80 fps 640 x 480 @ 120 fps	2592 x 1944 @ 60 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 960 @ 80 fps 1280 x 720 @ 80 fps 640 x 480 @ 120 fps	3840 x 2160 @ 30 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	3840 x 2160 @ 30 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	3840 x 2160 @ 30 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	4208 x 3120 @ 30 fps 3840 x 2160 @ 30 fps 2560 x 1440 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 120 fps 640 x 480 @ 60 fps	TBD
Output Format	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)	YUV422-UYYV MJPEG (JPG)
Camera Interface							
Connector	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps	USB Type-C 5 Gbps
Power							
Supply Voltage	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%	5V ± 5%
Power Consumption	2592 x 1944 @ 24 fps	2592 x 1944 @ 24 fps	UYVY 3840 x 2160 @15FPS ≤ 1.6W	UYVY 3840 x 2160 @15FPS ≤ 1.3W	UYVY 3840 x 2160 @15FPS ≤ 1.3W	UYVY 4200 x 3120 @12FPS ≤ 1.4W	TBD
Standby Power	TBD	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.1W Standby	≤ 0.3W Standby	TBD
Software Support							
Operation System	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto	UVC Plug-and-play Windows 10/11 Linux Yocto
Software	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™
Development SDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK



C-Mount Lens



S-Mount Lens

S-Mount Lens Information

		Focal Length	Aperture	D-FOV	H-FOV	V-FOV	TTL	MOD	Distortion	Lens Structure
AR0144	S33	8 mm	F1.6	33.1° ± 5%	28.0° ± 5%	17.4° ± 5%	26.2 mm	0.3 m	<-5.03%	6G + IR
	S83	2.85 mm	F2.8	82.6° ± 5%	73.5° ± 5%	50.3° ± 5%	20 mm	0.3 m	<-0.35%	2G + 3P + IR
AR0145	S31	8 mm	F1.6	31.2° ± 5%	26.3° ± 5%	16.3° ± 5%	26.2 mm	0.3 m	<-5.03%	6G + IR
	S78	2.85 mm	F2.8	78.2° ± 5%	69.5° ± 5%	47.1° ± 5%	20 mm	0.3 m	<-0.35%	2G + 3P + IR
AR0234	S32	12 mm	F2.0	31.8° ± 5%	26.9° ± 5%	16.8° ± 5%	23.2 mm	0.3 m	<-2.50%	5G + IR
	S83	3.9 mm	F2.8	82.8° ± 5%	73.4° ± 5%	50.1° ± 5%	22 mm	0.3 m	<1.26%	2G + 2P + IR
	S128	2.87 mm	F2.8	127.7° ± 5%	110.5° ± 5%	68.6° ± 5%	21 mm	0.3 m	<-20%	4G + 1P + IR
	S191*1	2.18 mm	F2.4	191.28° ± 5%	154° ± 5%	93.73° ± 5%	14.5 mm	0.2 m	<-75.6%	2G + 3P + IR
AR0235	S30	12 mm	F2.0	29.6° ± 5%	25.3° ± 5%	15.9° ± 5%	23.2 mm	0.3 m	<-2.50%	5G + IR
	S79	3.9 mm	F2.8	78.9° ± 5%	69.6° ± 5%	46.6° ± 5%	22 mm	0.3 m	<1.26%	2G + 2P + IR
	S120	2.87 mm	F2.8	120.3° ± 5%	104.6° ± 5%	62.1° ± 5%	21 mm	0.3 m	<-20%	4G + 1P + IR
AR0246	S33	8 mm	F1.6	33.0° ± 5%	28.6° ± 5%	15.9° ± 5%	26.2 mm	0.3 m	<-5.03%	6G + IR
	S83	2.85 mm	F2.8	82.3° ± 5%	74.5° ± 5%	46.2° ± 5%	20 mm	0.3 m	<-0.35%	2G + 3P + IR
AR0521	S34	12 mm	F2.0	33.6° ± 5%	26.8° ± 5%	20.1° ± 5%	23.2 mm	0.3 m	<-2.50%	5G + IR
	S85	3.9 mm	F2.8	85.2° ± 5%	73.0° ± 5%	58.1° ± 5%	22 mm	0.3 m	<1.26%	2G + 2P + IR
	S140	2.87 mm	F2.8	140.0° ± 5%	110.5° ± 5%	81.4° ± 5%	21 mm	0.3 m	<-20%	4G + 1P + IR
AR0522	S34	12 mm	F2.0	33.6° ± 5%	26.8° ± 5%	20.1° ± 5%	23.2 mm	0.3 m	<-2.50%	5G + IR
	S85	3.9 mm	F2.8	85.2° ± 5%	73.0° ± 5%	58.1° ± 5%	22 mm	0.3 m	<1.26%	2G + 2P + IR
	S140	2.87 mm	F2.8	140.0° ± 5%	110.5° ± 5%	81.4° ± 5%	21 mm	0.3 m	<-20%	4G + 1P + IR
AR0544	S22	12 mm	F2.0	21.3° ± 5%	17.1° ± 5%	12.8° ± 5%	23.2 mm	0.3 m	<-2.50%	5G + IR
	S62	3.9 mm	F2.8	61.4° ± 5%	51.0° ± 5%	39.5° ± 5%	22 mm	0.3 m	<1.26%	2G + 2P + IR
AR0821	S44	12 mm	F2.0	44.0° ± 5%	38.3° ± 5%	21.6° ± 5%	23.09 mm	0.15 m	<2%	5G + IR
	S74	6 mm	F2.8	74.4° ± 5%	67.1° ± 5%	40.8° ± 5%	28.6 mm	0.1 m	<0.5%	7G + IR
	S119	3 mm	F2.0	118.8° ± 5%	110.7° ± 5%	75.4° ± 5%	29.56 mm	0.3 m	<-5%	2G + 3P + IR
	S156	3.2 mm	F2.0	156.0° ± 5%	137.2° ± 5%	79.4° ± 5%	44.98 mm	0.3 m	<-32%	8G + IR
AR0822	S42	12 mm	F2.0	41.7° ± 5%	36.3° ± 5%	20.5° ± 5%	23.09 mm	0.15 m	<2%	5G + IR
	S72	6 mm	F2.8	72.0° ± 5%	64.7° ± 5%	39.0° ± 5%	28.6 mm	0.1 m	<0.5%	7G + IR
	S108	3 mm	F2.0	108.6° ± 5%	104.0° ± 5%	72.2° ± 5%	29.56 mm	0.3 m	<-5%	2G + 3P + IR
	S150	3.2 mm	F2.0	150.0° ± 5%	132.6° ± 5%	77.6° ± 5%	44.98 mm	0.3 m	<-32%	8G + IR
AR1335	S85	3.2 mm	F2.4	84.6° ± 5%	70.3° ± 5%	55.2° ± 5%	22 mm	0.3 m	<1.6%	4G + 2P + IR

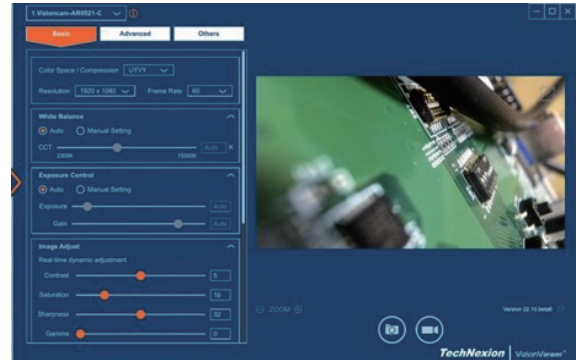
* Note 1 : Only compatible with board-level camera modules.

Customization

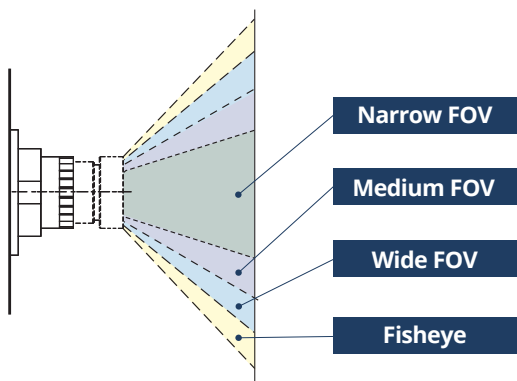
Embedded system design often requires customization to fit the specific target application. Contact your TechNexion sales representative for a consultation if you have questions on one of the following subjects:

Firmware Support

TechNexion USB3 Cameras come with OSP (on sensor profile) support enabling fast boot up and availability of multi camera setups in robotic and industrial embedded applications by providing granular configuration support right inside the camera and completely user definable and configurable with VizionSDK and VizionViewer software.



Custom Lenses



By using a standard S-Mount lens assembly. Our team of optical engineers can assist with precise customization in response to specific requirements to fit your embedded vision project involving FOV, TTL, MOD or mechanical or environmental constraints ensuring optimal performance across a range of use cases.

Optical Light Filters

Searching for a lens with or without an IR-cut filter is as easy as select a standard TechNexion camera sensor. However for custom filters in other light spectrums our optical engineers are standby for a consultation to learn more about your embedded vision project.

