



GMSL Cameras
Embedded Vision

GMSL2 Camera Family

TechNexion GMSL (Gigabit Multimedia Serial Link) cameras are compliant to ISO 20860-1 & 2 and USCAR 18 standards, Fully IP68 waterproof and can be connected with single wire COAX extension cables using FAKRA interconnects to bridge cable distances up-to 15 meters. We offer a family of GMSL 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



Platforms Support

TechNexion GSML2 cameras are supported with a single software driver implementation on Nvidia and NXP official evaluation boards and partner systems.

To learn more about compatibility. Reach out to your TechNexion representative to enable GMSL support on your embedded system.



i.MX95
i.MX8M Plus



Jetson AGX Orin
Jetson Orin NX
Jetson Orin Nano
Jetson Xavier NX
Jetson Nano

Sensor Comparison

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

Unified single software driver.

GMSL2 Frame grabber

The ease of usage, benefits and integration of a GMSL camera in embedded systems is often made complex by the lack of GMSL ports and connectors on the system. For those scenarios TechNexion developed a range of framegrabbers that easily plug into a USB port and extend the system with 1 to 4 GMSL interconnects.



1-4 Port

Connect up-to 4 GMSL cameras to a single USB port on your x86 or Arm based system.



Software

Linux and Windows systems are supported



UVC Compliant

The framegrabber doesn't need any custom software installation. It's fully plug-n-play in Windows and Linux embedded systems.



VizionViewer™

Easy to use software utility providing you with granular camera settings control.



Autodetect

Zero configuration required to detect any specific TechNexion GMSL camera by the framegrabber.



VizionSDK

Hardcode and control your cameras with C++ and Python code.



Software Enablement

Product drivers, integration guides for TechNexion GMSL2 cameras 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.



VizionViewer™



VizionSDK

Software SDK Available

Environmental and Mechanical



	UVLS-GM2-ARxxx-SL	VLS-GM2-ARxxx-SL	VLS-GM2-ARxxx-CB
Dimensions	24.5(W) x 24.5(H) x 30(D) mm	29.5(W) x 29.5(H) x 28(D) mm	29.5(W) x 29.5(H) x 33.2(D) mm
Weight	≤ 20 grams	≤ 45 grams	≤ 39 grams
MTBF	50,000 Hours	50,000 Hours	50,000 Hours
Shock	15G half-sine 11 ms duration	15G half-sine 11 ms duration	15G half-sine 11 ms duration
Vibration	1 Grms random 5-500Hz hr/axis	1 Grms random 5-500Hz hr/axis	1 Grms random 5-500Hz hr/axis
Relative Humidity	10 to 90 %	10 to 90 %	10 to 90 %
Operating Temperature	- 30°C to + 70°C	- 30°C to + 70°C	- 30°C to + 70°C
Certification	Compliant with CE / FCC / RoHS / REACH directives		

C-Mount Lens Information



	C2305080FF	C2305125FF	C2305160FF	C2305250FF	C2305350FF	C2305550FF
Focal Length	8 mm	12.5 mm	16 mm	25 mm	35 mm	50 mm
Aperture	F1.4	F1.4	F1.4	F1.4	F1.4	F1.4
Lens D-FOV	67.1°	46.6°	37.3°	24.6°	17.3°	13.04°
Lens H-FOV	56.3°	39°	30.3°	20°	13.9°	10.46°
Lens V-FOV	43.7°	30.3°	23°	15°	10.4°	7.86°
TTL	57.53 mm	54.03 mm	49.03 mm	48.03 mm	61.23 mm	74.43 mm
MBFL	9.73 mm	11.73 mm	12.43 mm	11.93 mm	7.53 mm	11.93 mm
MOD	0.1 m	0.15 m	0.1 m	0.1 m	0.2 m	0.3 m
TV Distortion	1.0%	-0.8%	0.10%	0.20%	-0.8%	-0.8%
Image Size	2/3"	2/3"	2/3"	2/3"	2/3"	2/3"
Resolution	5MP	5MP	5MP	5MP	5MP	5MP
Filter Thread	M37×P0.5 mm	M30.5×P0.5 mm	M30.5×P0.5 mm	M30.5×P0.5 mm	M37×P0.5 mm	M37×P0.5 mm
Operating Temperature	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
Weight	108 grams	60 grams	61 grams	65 grams	125 grams	128 grams
Size	Ø39.3×47.8 mm	Ø32.9×42.3 mm	Ø33.5×36.6 mm	Ø33.5×36.1 mm	Ø39.8×53.7 mm	Ø39.6×62.5 mm
Material	Metal	Metal	Metal	Metal	Metal	Metal

S-Mount Lens Information



	Focal Length	Aperture	D-FOV	H-FOV	V-FOV	TTL	MOD	Distortion
UVLS-GM2-AR0144-SL VLS-GM2-AR0144-SL								
S33	8 mm	F1.6	33.1° ± 5%	28.0° ± 5%	17.4° ± 5%	26.2 mm	0.3 m	<-5.03%
S83	2.85 mm	F2.8	82.6° ± 5%	73.5° ± 5%	50.3° ± 5%	20 mm	0.3 m	<-0.35%
UVLS-GM2-AR0234-SL VLS-GM2-AR0234-SL								
S32	12 mm	F2.0	31.8° ± 5%	26.9° ± 5%	16.8° ± 5%	23.2 mm	0.3 m	<-2.50%
S83	3.9 mm	F2.8	82.8° ± 5%	73.4° ± 5%	50.1° ± 5%	22 mm	0.3 m	<1.26%
S128	2.87 mm	F2.8	127.7° ± 5%	110.5° ± 5%	68.6° ± 5%	21 mm	0.3 m	<-20%
UVLS-GM2-AR0521-SL VLS-GM2-AR0521-SL								
S34	12 mm	F2.0	33.6° ± 5%	26.8° ± 5%	20.1° ± 5%	23.2 mm	0.3 m	<-2.50%
S85	3.9 mm	F2.8	85.2° ± 5%	73.0° ± 5%	58.1° ± 5%	22 mm	0.3 m	<1.26%
S140	2.87 mm	F2.8	140.0° ± 5%	110.5° ± 5%	81.4° ± 5%	21 mm	0.3 m	<-20%
UVLS-GM2-AR0522-SL VLS-GM2-AR0522-SL								
S34	12 mm	F2.0	33.6° ± 5%	26.8° ± 5%	20.1° ± 5%	23.2 mm	0.3 m	<-2.50%
S85	3.9 mm	F2.8	85.2° ± 5%	73.0° ± 5%	58.1° ± 5%	22 mm	0.3 m	<1.26%
S140	2.87 mm	F2.8	140.0° ± 5%	110.5° ± 5%	81.4° ± 5%	21 mm	0.3 m	<-20%
UVLS-GM2-AR0821-SL VLS-GM2-AR0821-SL								
S44	12 mm	F2.0	44.0° ± 5%	38.3° ± 5%	21.6° ± 5%	23.09 mm	0.15 m	<2%
S74	6 mm	F2.8	74.4° ± 5%	67.1° ± 5%	40.8° ± 5%	28.6 mm	0.1 m	<0.5%
S119	3 mm	F2.0	118.8° ± 5%	110.7° ± 5%	75.4° ± 5%	29.56 mm	0.3 m	<-5%
S156	3.2 mm	F2.0	156.0° ± 5%	137.2° ± 5%	79.4° ± 5%	44.98 mm	0.3 m	<-32%
UVLS-GM2-AR0822-SL VLS-GM2-AR0822-SL								
S42	12 mm	F2.0	41.7° ± 5%	36.3° ± 5%	20.5° ± 5%	23.09 mm	0.15 m	<2%
S72	6 mm	F2.8	72.0° ± 5%	64.7° ± 5%	39.0° ± 5%	28.6 mm	0.1 m	<0.5%
S108	3 mm	F2.0	108.6° ± 5%	104.0° ± 5%	72.2° ± 5%	29.56 mm	0.3 m	<-5%
S150	3.2 mm	F2.0	150.0° ± 5%	132.6° ± 5%	77.6° ± 5%	44.98 mm	0.3 m	<-32%
UVLS-GM2-AR1335-SL VLS-GM2-AR1335-SL								
S85	3.2 mm	F2.4	84.6° ± 5%	70.3° ± 5%	55.2° ± 5%	22 mm	0.3 m	<1.6%

Don't see what you are looking for ? Talk to us.

Specifications



	UVLS-GM2-AR0144 VLS-GM2-AR0144-SL VLS-GM2-AR0144-CB	UVLS-GM2-AR0234-SL VLS-GM2-AR0234-SL VLS-GM2-AR0234-CB	UVLS-GM2-AR0521-SL VLS-GM2-AR0521-SL VLS-GM2-AR0521-CB	UVLS-GM2-AR0522-SL VLS-GM2-AR0522-SL VLS-GM2-AR0522-CB
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Camera Information

CMOS Sensor	onsemi AR0144	onsemi AR0234	onsemi AR0521	onsemi AR0522
Active Pixels	1280 (H) x 800 (V) = 1MP	1920 (H) x 1200 (V) = 2.3MP	2592 (H) x 1944 (V) = 5MP	2592 (H) x 1944 (V) = 5MP
Pixel Size	3.0 μm x 3.0 μm	3.0 μm x 3.0 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)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)
Maximum S/N Ratio	38 dB	38 dB	40 dB	40 dB
Optical Format	1/4" (Diagonal 4.5 mm)	1/2.6" (Diagonal 6.8 mm)	1/2.5" (Diagonal 7.13 mm)	1/2.5" (Diagonal 7.13 mm)
Shutter Type	Global Shutter	Global Shutter	Rolling Shutter	Rolling Shutter
Chromaticity	Color	Color	Color	Color / Mono
Maximum Frame Rate (YUV422-UYYV)	1280 x 800 @ 60 fps 1280 x 720 @ 60 fps 640 x 480 @ 60 fps	1920 x 1200 @ 60 fps 1920 x 1080 @ 60 fps 1280 x 720 @ 120 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	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
Output Format	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12

Camera Interface

Serial Link	GMSL2	GMSL2	GMSL2	GMSL2
Serializer	MAX96717	MAX96717	MAX96717	MAX96717
Connector	FAKRA SMB Jack Z-Code	FAKRA SMB Jack Z-Code	FAKRA SMB Jack Z-Code	FAKRA SMB Jack Z-Code

Power

Power over Coax	10.8V - 26.4V	10.8V - 26.4V	10.8V - 26.4V	10.8V - 26.4V
Power Consumption	1280 x 800 @ 60 fps $\leq$ 0.9W	1920 x 1200 @ 60 fps $\leq$ 1.25W	2592 x 1944 @ 24 fps $\leq$ 1.2W	2592 x 1944 @ 24 fps $\leq$ 1.2W
Standby Power	$\leq$ 0.1W Standby	$\leq$ 0.1W Standby	$\leq$ 0.1W Standby	$\leq$ 0.1W Standby

Software Support

Platform Support	NXP NVIDIA	NXP NVIDIA	NXP NVIDIA	NXP NVIDIA
Software	VizionViewer™	VizionViewer™	VizionViewer™	VizionViewer™
Development SDK	VizionSDK	VizionSDK	VizionSDK	VizionSDK

Optional Accessories

An easy to attach A-Mount bracket for TechNexion camera board modules.



245-MOUNT-BRACKET-A



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

Specifications



	UVLS-GM2-AR0821-SL VLS-GM2-AR0821-SL VLS-GM2-AR0821-CB	UVLS-GM2-AR0822-SL VLS-GM2-AR0822-SL VLS-GM2-AR0822-CB	UVLS-GM2-AR1335-SL VLS-GM2-AR1335-SL VLS-GM2-AR1335-CB
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Camera Information

CMOS Sensor	onsemi AR0821	onsemi AR0822	onsemi AR1335
Active Pixels	3848 (H) x 2168 (V) = 8MP	3840 (H) x 2160 (V) = 8MP	4208 (H) x 3120 (V) = 13MP
Pixel Size	2.1 μm x 2.1 μm	2.0 μm x 2.0 μm	1.1 μm x 1.1 μm
Illuminated Type	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)	Back Side Illuminated (BSI)
Maximum S/N Ratio	41.8 dB	40.5 dB	37 dB
Optical Format	1/1.7" (Diagonal 9.25 mm)	1/1.8" (Diagonal 8.81 mm)	1/3.2" (Diagonal 5.8 mm)
Shutter Type	Rolling Shutter	Rolling Shutter	Rolling Shutter
Chromaticity	Color	Mono / Color	Color
HDR Support	Yes	Yes	Yes
Maximum Frame Rate (YUV422-UYYV)	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 @ 120 fps 640 x 480 @ 60 fps
Output Format	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12	YUV422-UYYV RGB888 / RGB565 RAW8 / RAW10 / RAW12

Camera Interface

Serial Link	GMSL2	GMSL2	GMSL2
Serializer	MAX96717	MAX96717	MAX96717
Connector	FAKRA SMB Jack Z-Code	FAKRA SMB Jack Z-Code	FAKRA SMB Jack Z-Code

Power

Power over Coax	10.8V - 26.4V	10.8V - 26.4V	10.8V - 26.4V
Power Consumption	3840 x 2160 @ 15 fps $\leq$ 1.6W	3840 x 2160 @ 15 fps $\leq$ 1.3W	4200 x 3120 @ 12 fps $\leq$ 1.4W
Standby Power	$\leq$ 0.1W Standby	$\leq$ 0.1W Standby	$\leq$ 0.3W Standby

Software Support

Platform Support	NXP NVIDIA	NXP NVIDIA	NXP NVIDIA
Software	VizionViewer™	VizionViewer™	VizionViewer™
Development SDK	VizionSDK	VizionSDK	VizionSDK

Optional Accessories

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



300-MOUNT-BRACKET



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



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Customization

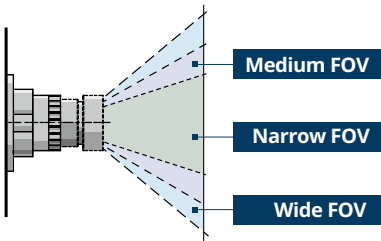
Embedded system design often requires customization to fit the specific target application. Contact your TechNexion sales representative for a consultation if you have questions on one of the following subjects:

Firmware Support

TechNexion GMSL2 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 and C-Mount lens assemblies. 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.

