



# Genie™ Nano Cameras

Smaller, faster, stronger, cheaper.

Compact GigE Vision cameras with unprecedented speed and uncompromised image quality.

Introducing Genie Nano, a GigE vision CMOS area scan camera that redefines **low cost** performance. Genie Nano starts with industry leading image CMOS sensors from VGA to 25 megapixel resolution and adds proprietary camera technology for **breakthrough speed**, a robust build quality for wide operating temperature, and an unmatched feature set—all at an **incredible price**. Teledyne DALSA's proprietary **TurboDrive™** technology allows Genie Nano to deliver its full image quality at faster frame rates—often 150% or higher—with no changes to your GigE network. Like all Teledyne DALSA GigE cameras, the Genie Nano is based on AIA GigE Vision Standard to directly link the camera to a PC.



**TURBODRIVE™**  
BY TELEDYNE DALSA

## Key Features

- Uses standard PC Ethernet port & hardware
- Supports cable lengths up to 100 m (CAT-5e or CAT-6)
- Simplified set-up with field proven Sopera LT software featuring CamExpert
- Engineered to accommodate industrial environment with a ruggedized screw mount RJ-45 connector

## Programmability

- Higher frame rates achievable in partial scan mode
- Global electronic shutter with exposure control
- Multi-exposure feature
- Multi-ROI feature
- Metadata support
- IEEE1588 (Precision Time Protocol) support
- Binning
- Look-up-table and More

## Reliability

- Robust all-metal body
- 3 year warranty
- Trigger to Image Reliability (T2IR) framework improves the reliability of your inspection system and protects you from data loss

## Typical Applications

- Electronics manufacturing inspection
- Industrial metrology
- Intelligent traffic systems

## Regulatory Compliance

- CE, FCC and RoHS

	Active Resolution	Sensor Model	Frame Rate (Burst Mode)	Pixel Size	Dynamic Range	Max. Image Circle	Data Format	Part Number (for C-mount option)
●● M640/M640-NIR	640 x 480	On-Semi Python300	862 fps	4.8 μm	62.1 dB	1/4" Optical Format	8 or 10-Bit Mono	G3-GM10-M0640 G3-GM12-M0640 (NIR)
●●● C640	640 x 480	On-Semi Python300	862 fps	4.8 μm	62.1 dB	1/4" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C0640 G3-GC10-C0640IF (with IR cut-off filter)
●● M700	728 x 544	Sony IMX287	311 fps	6.9 μm	73.6 dB	1/3" Optical Format	8 or 12-Bit Mono	G3-GM10-M0700
●●● C700	728 x 544	Sony IMX287	311 fps	6.9 μm	73.6 dB	1/3" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC10-C0700
●● M800/M800-NIR	800 x 600	On-Semi Python500	566 fps	4.8 μm	62.1 dB	1/3.3" Optical Format	8 or 10-Bit Mono	G3-GM10-M0800 G3-GM12-M0800 (NIR)
●●● C800	800 x 600	On-Semi Python500	566 fps	4.8 μm	62.1 dB	1/3.3" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C0800 G3-GC10-C0800IF (with IR cut-off filter)
●● M1240	1280 x 1024	On-Semi Python1300 P3	83 fps	4.8 μm	62.1 dB	1/2" Optical Format	8 or 10-Bit Mono	G3-GM11-M1240
●●● C1240	1280 x 1024	On-Semi Python1300 P3	83 fps	4.8 μm	62.1 dB	1/2" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC11-C1240 G3-GC11-C1240IF
●● M1280/M1280-NIR	1280 x 1024	On-Semi Python1300	213 fps	4.8 μm	62.1 dB	1/2" Optical Format	8 or 10-Bit Mono	G3-GM10-M1280 G3-GM12-M1280 (NIR)
●●● C1280	1280 x 1024	On-Semi Python1300	213 fps	4.8 μm	62.1 dB	1/2" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C1280 G3-GC10-C1280IF (with IR cut-off filter)
●● M1450	1456 x 1080	Sony IMX273	160 fps	3.45 μm	76.4 dB	1/3" Optical Format	8 or 12-Bit Mono	G3-GM10-M1450
●●● C1450	1456 x 1080	Sony IMX273	160 fps	3.45 μm	76.4 dB	1/3" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC10-C1450 G3-GC10-C1450IF (with IR cut-off filter)
●● M1920	1920 x 1200	Sony IMX249	39 fps	5.86 μm	75.5 dB	1/1.2" Optical Format	8 or 12-Bit Mono	G3-GM11-M1920
●●● C1920	1920 x 1200	Sony IMX249	39 fps	5.86 μm	75.5 dB	1/1.2" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC11-C1920 G3-GC11-C1920IF (with IR cut-off filter)
●● M1940	1920 x 1200	Sony IMX174	84 fps	5.86 μm	68.3 dB	1/1.2" Optical Format	8 or 10-Bit Mono	G3-GM10-M1940
●●● C1940	1920 x 1200	Sony IMX174	84 fps	5.86 μm	68.3 dB	1/1.2" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C1940 G3-GC10-C1940IF (with IR cut-off filter)
●● M1930/M1930-NIR	1920 x 1200	On-Semi Python2000	116 fps	4.8 μm	62.1 dB	2/3" Optical Format	8 or 10-Bit Mono	G3-GM10-M1930 G3-GM12-M1930 (NIR)
●●● C1930	1920 x 1200	On-Semi Python2000	116 fps	4.8 μm	62.1 dB	2/3" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C1930 G3-GC10-C1930IF (with IR cut-off filter)
●● M1950	1936 x 1216	Sony IMX392	151 fps	3.4 μm	75 dB	2/3" Optical Format	8 or 12-Bit Mono	G3-GM10-M1950
●●● C1950	1936 x 1216	Sony IMX392	151 fps	3.4 μm	75 dB	2/3" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC10-C1950 G3-GC10-C1950IF (with IR cut-off filter)
●● M2020	2048 x 1536	Sony IMX265	55 fps	3.45 μm	76.4 dB	1/1.8" Optical Format	8 or 12-Bit Mono	G3-GM11-M2020
●●● C2020	2048 x 1536	Sony IMX265	55 fps	3.45 μm	76.4 dB	1/1.8" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC11-C2020 G3-GC11-C2020IF (with IR cut-off filter)
●● M2050	2048 x 1536	Sony IMX252	140 fps	3.45 μm	56.4 dB	1/1.8" Optical Format	8-Bit Mono	G3-GM10-M2050
●●● C2050	2048 x 1536	Sony IMX252	140 fps	3.45 μm	56.4 dB	1/1.8" Optical Format	8-Bit Bayer/RGB/YUV*	G3-GC10-C2050 G3-GC10-C2050IF (with IR cut-off filter)
●● M2420	2448 x 2048	Sony IMX264	35 fps	3.45 μm	76.4 dB	2/3" Optical Format	8 or 12-Bit Mono	G3-GM11-M2420
●●● C2420	2448 x 2048	Sony IMX264	35 fps	3.45 μm	76.4 dB	2/3" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC11-C2420 G3-GC11-C2420IF (with IR cut-off filter)
●● M2450	2448 x 2048	Sony IMX250	90 fps	3.45 μm	56.4 dB	2/3" Optical Format	8-Bit Mono	G3-GM10-M2450
●●● C2450	2448 x 2048	Sony IMX250	90 fps	3.45 μm	56.4 dB	2/3" Optical Format	8-Bit Bayer/RGB/YUV*	G3-GC10-C2450 G3-GC10-C2450IF (with IR cut-off filter)
●● M2590/M2590-NIR	2592 x 2048	On-Semi Python5000	51 fps	4.8 μm	62.1 dB	1" Optical Format	8 or 10-Bit Mono	G3-GM10-M2590 G3-GM12-M2590 (NIR)
●●● C2590	2592 x 2048	On-Semi Python5000	51 fps	4.8 μm	62.1 dB	1" Optical Format	8 or 10-Bit Bayer/RGB/YUV*	G3-GC10-C2590 G3-GC10-C2590IF (with IR cut-off filter)
●● M4060	4112 x 2176	Sony IMX255	56 fps	3.45 μm	56.4 dB	1" Optical Format	8-Bit Mono	G3-GM10-M4060
●●● C4060	4112 x 2176	Sony IMX255	56 fps	3.45 μm	56.4 dB	1" Optical Format	8-Bit Bayer/RGB/YUV*	G3-GC10-C4060 G3-GC10-C4060IF (with IR cut-off filter)

\*User selectable. Refer to user manual for complete configuration detail.

## GENIE NANO INDIVIDUAL MODEL SPECIFICATIONS cont.

	Active Resolution	Sensor Model	Frame Rate (Burst Mode)	Pixel Size	Dynamic Range	Max. Image Circle	Data Format	Part Number
●● M4040	4112 x 3012	Sony IMX253	40 fps	3.45 μm	56.4 dB	1.1" Optical Format	8-Bit Mono	G3-GM10-M4040
●●● C4040	4112 x 3012	Sony IMX253	40 fps	3.45 μm	56.4 dB	1.1" Optical Format	8-Bit Bayer/RGB/YUV*	G3-GC10-C4040 G3-GC10-C4040IF (with IR cut-off filter)
●● M4030	4112 x 2176	Sony IMX267	30 fps	3.45 μm	76.4 dB	1" Optical Format	8 or 12-Bit Mono	G3-GM-11-M4030
●●● C4030	4112 x 2176	Sony IMX267	30 fps	3.45 μm	76.4 dB	1" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC-11-C4030 G3-GC-11-C4030IF (with IR cut-off filter)
●● M4020	4112 x 3012	Sony IMX304	20 fps	3.45 μm	76.4 dB	1.1" Optical Format	8 or 12-Bit Mono	G3-GM-11-M4020
●●● C4020	4112 x 3012	Sony IMX304	20 fps	3.45 μm	76.4 dB	1.1" Optical Format	8 or 12-Bit Bayer/RGB/YUV*	G3-GC-11-C4020 G3-GC-11-C4020IF (with IR cut-off filter)
●●● C4900	4912 x 3684	On-Semi AR1820HS	13 fps	1.25 μm	65.8 dB	1/2.3" Optical Format	User selectable Bayer/RGB/YUV*	G3-GC10-C4900 (for C-mount option)
●● XL M4090	4096 x 4096	On-Semi Python 16K	31 fps	4.5 μm	55.2 dB	APS-H Optical Format	8 or 10-Bit Mono	G3-GM30-M4095
●●● XL C4090	4096 x 4096	On-Semi Python 16K	31 fps	4.5 μm	55.2 dB	APS-H Optical Format	8 or 10-Bit Bayer	G3-GC30-C4095
●● XL M5100	5120 x 5120	On-Semi Python 25K	20 fps	4.5 μm	55.2 dB	APS-H Optical Format	8 or 10-Bit Mono	G3-GM30-M5105
●●● XL C5100	5120 x 5120	On-Semi Python 25K	20 fps	4.5 μm	55.2 dB	APS-H Optical Format	8 or 10-Bit Bayer	G3-GC30-C5105

\*User selectable. Refer to user manual for complete configuration detail.

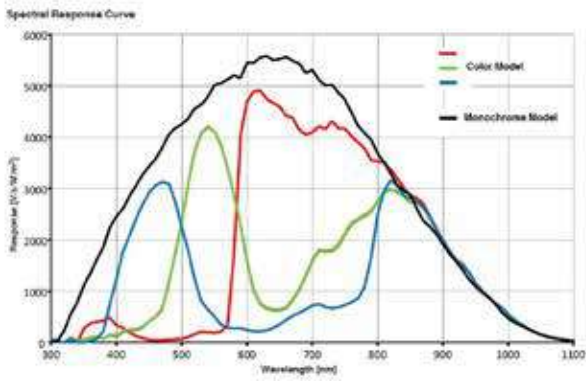
## GENIE NANO INDIVIDUAL MODEL SPECIFICATIONS — POLARIZATION

●● M2450 POLARIZED	2448 x 2048	Sony IMX250MZR	34.4 fps	3.45 μm	76.4 dB	2/3" Optical Format	8 or 12-Bit Mono	G3-GM14-M2450
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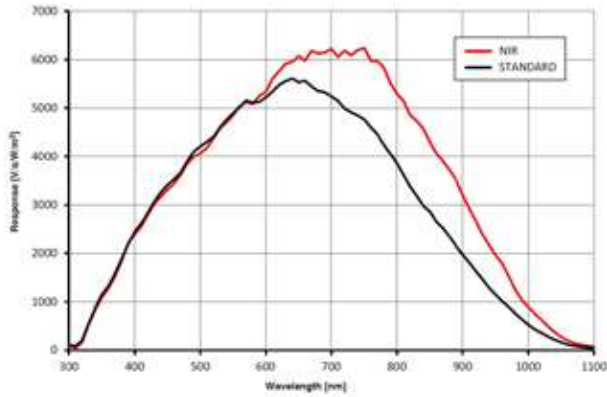
## GENIE NANO FAMILY SPECIFICATIONS (COMMON TO ALL MODELS)

	GENIE NANO	GENIE NANO XL
Data Output Transfer	Gigabit Ethernet (1000 Mbit/s) only	
Exposure Control	Automatic, programmable, or via external trigger (Note: C4900 rolling shutter supports only programmable exposure control)	
I/O Ports	2 opto-isolated inputs, 2 opto-isolated outputs, 1 input/3 outputs option available on demand	2 opto-isolated inputs, 3 opto-isolated outputs
Image Buffers (On-board memory)	90MB for VGA to 5 Mpixel models 200 MB for the 9M, 12M and 18 Mpixels models	500 MB for the 16 and 25 Mpixels models
Lens Mount	C and CS-Mount available	M42
Size (L x H x W) (C-mount option)	21.2 mm x 29 mm x 44 mm (no lens adapter or connectors) 38.9 mm x 29 mm x 44 mm (with lens adapter and connectors)	30 mm x 59 mm x 59 mm (no lens adapter or connectors) 30 mm x 59 mm x 59 mm (with lens adapter and connectors)
Mass	~46 g	~163 g
Operating Temp	-20 to +60°C (housing temperature)	
Power Supply	10 to 36V or Power Over Ethernet (POE)	
Power Dissipation (model dependent)	3.6 W to 4.6 W (12V) 4.0 W to 4.9 W (PoE)	6.5 W @ 24 Volt Aux.
Data Connector	Standard or screw mount RJ-45	
Power and I/O Connector	SAMTEC TFM-105 type	
Camera Specification	GigE Vision v1.2 compliant	
Software Platform	Teledyne DALSA Sopera LT 8.0 for Windows, Teledyne DALSA GigE-V for Linux or 3rd Party GenICam compliant SDK	

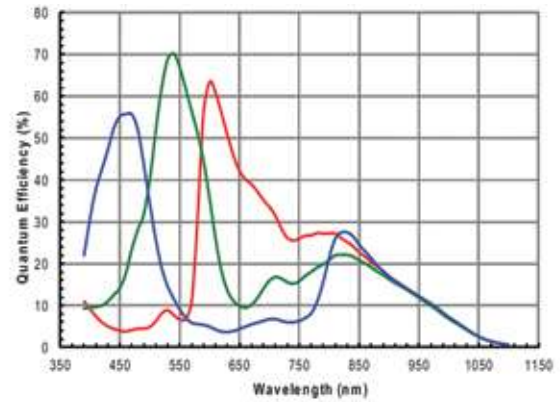
## RESPONSIVITY GRAPHS



C640  
C800  
C1280  
C1930  
C2590  
C4090  
C5100



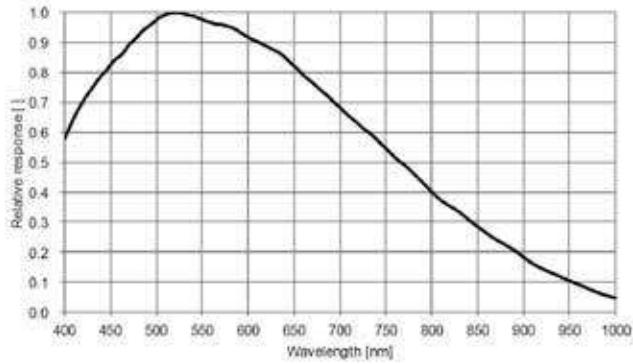
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M1280/NIR  
M2590/NIR  
M1930/NIR  
M4090  
M5100



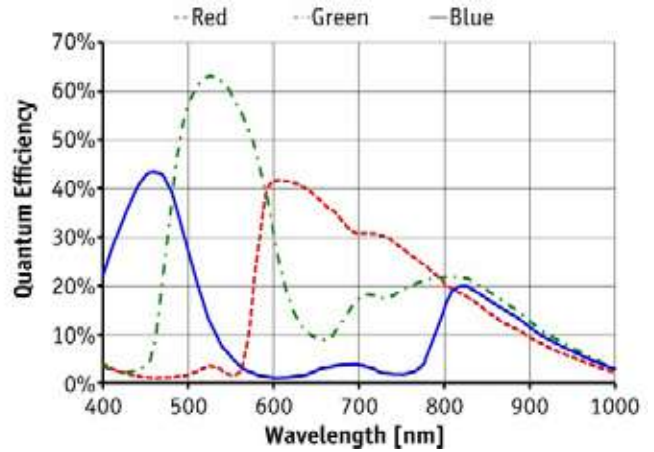
C4900

### Spectral Sensitivity Characteristics

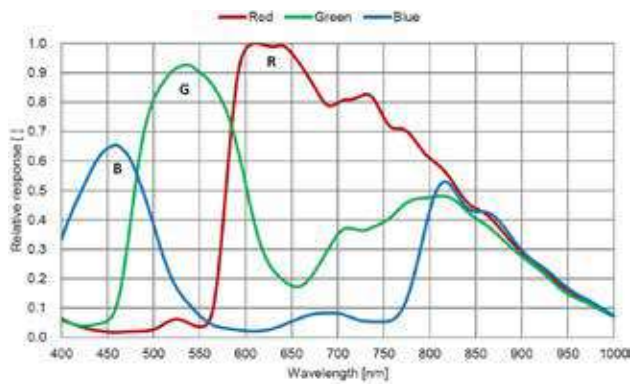
(Excludes lens characteristics and light source characteristics.)



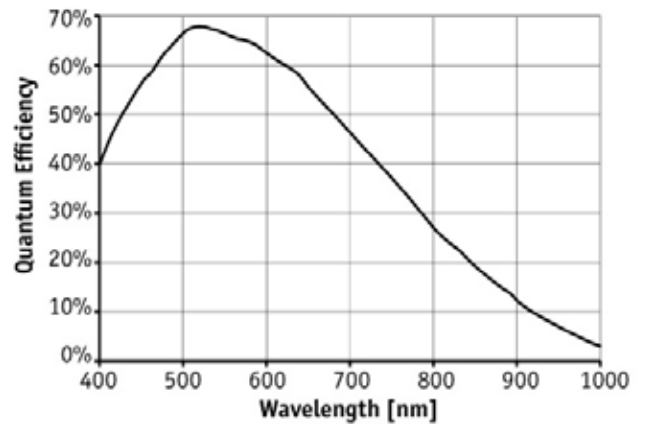
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M4040  
M4030  
M4020  
M2020  
M2050  
M2420  
M2450



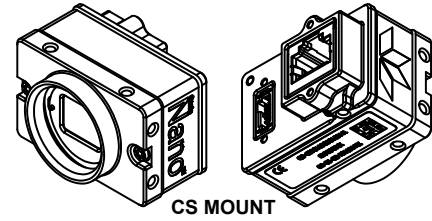
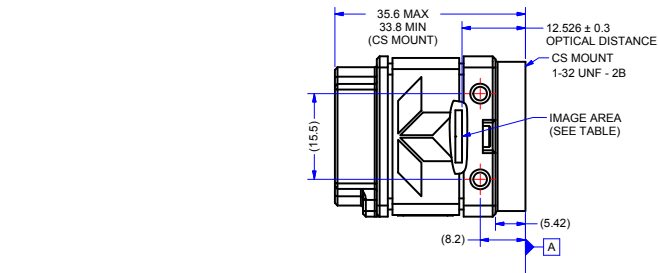
C1920  
C1940



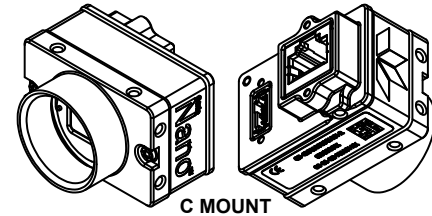
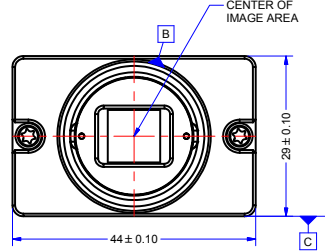
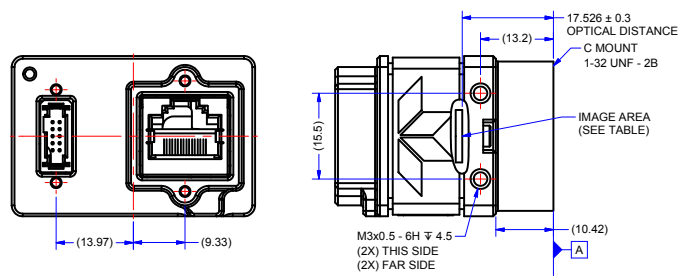
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C4040  
C4030  
C4020  
C2020  
C2050  
C2420  
C2450



M1920  
M1940

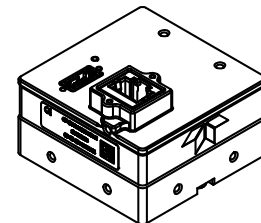
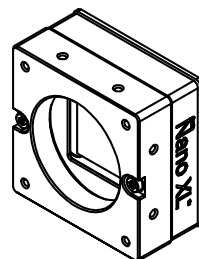
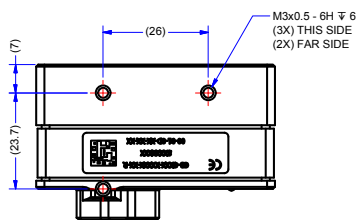
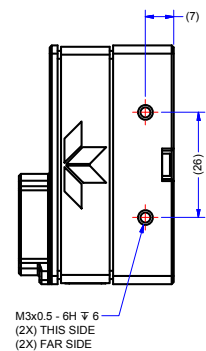
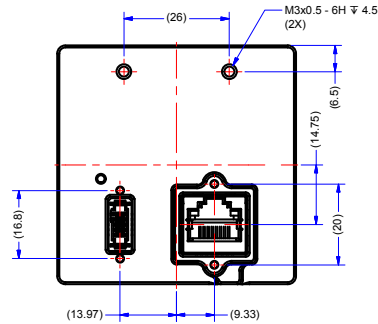
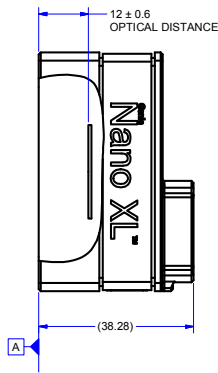
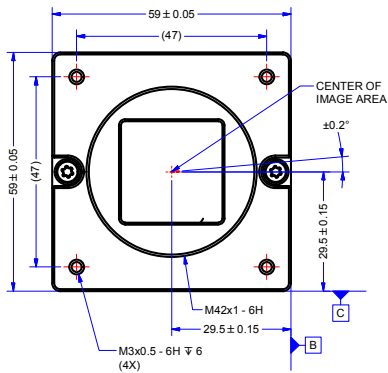
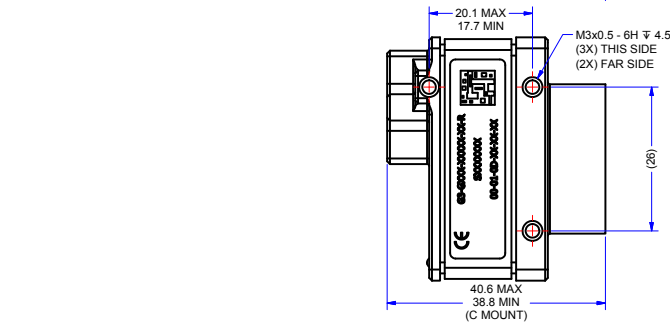


**CS MOUNT**



**C MOUNT**

NOTES:  
 1. UNITS: MILLIMETERS.  
 2. IMAGE AREA IS ALIGNED TO DATUMS **A**, **B** & **C**



[www.teledynedalsa.com](http://www.teledynedalsa.com)

**NOTES:** See user manual for more detail. See product web page for downloadable 3D models.

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Part of the Teledyne Imaging Group



## Versatile camera series featuring Pregius® and Python® sensors

[www.teledynedalsa.com](http://www.teledynedalsa.com)

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