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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 | 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 |
| ●●● 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) |
| ●● M810 | 816 x 624 | Sony IMX433 | 160 fps | 9 μm | 72.1dB | 1/1.7" Optical Format | 8 or 12-Bit Mono | G3-GM11-M0810 |
| ●●● C810 | 816 x 624 | Sony IMX433 | 160 fps | 9 μm | 72.1 dB | 1/1.7" Optical Format | 8 or 12-Bit Bayer/RGB/YUV* | G3-GC11-C0810 G3-GC11-C0810IF (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) |
| ●● M1610 | 1608 x 1104 | Sony IMX432 | 90 fps | 9 μm | 72.1 dB | 1.1" Optical Format | 8 or 12-Bit Mono | G3-GM11-M1610 |
| ●●● C1610 | 1608 x 1104 | Sony IMX432 | 90 fps | 9 μm | 72.1 dB | 1.1" Optical Format | 8 or 12-Bit Bayer/RGB/YUV* | G3-GC11-C1610 G3-GC11-C1610IF (with IR cut-off filter) |
| ●● M1630 | 1632 x 1248 | Sony IMX430 | 85 fps | 4.5 μm | 73 dB | 1/1.7" Optical Format | 8 or 12-Bit Mono | G3-GM11-M1630 |
| ●●● C1630 | 1632 x 1248 | Sony IMX430 | 85 fps | 4.5 μm | 73 dB | 1/1.7" Optical Format | 8 or 12-Bit Bayer/RGB/YUV* | G3-GC11-C1630 G3-GC11-C1630IF (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 | 1/2.3" Optical Format | 8 or 12-Bit Mono | G3-GM10-M1950 |
| ●●● C1950 | 1936 x 1216 | Sony IMX392 | 151 fps | 3.4 μm | 75 dB | 1/2.3" 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 | 3.45um | 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) |

*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 |
|--------------|-------------------|--------------------|-------------------------|------------|---------------|-----------------------|--------------------------------|---|
| ●● 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) |
| ●● 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

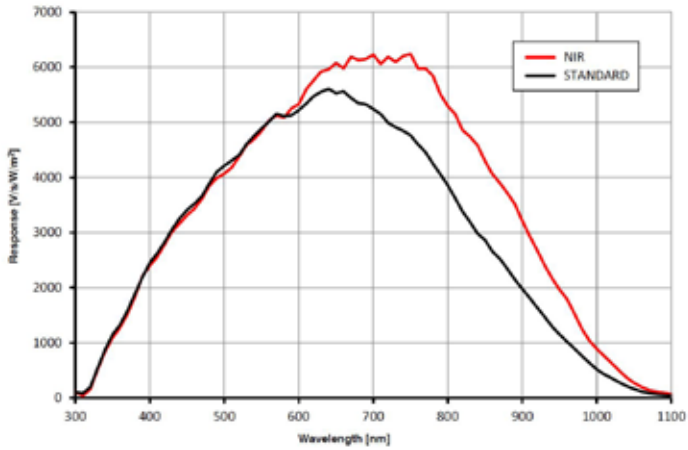
| | | | | | | | | |
|--------------------|-------------|----------------|----------|---------|---------|---------------------|------------------|---------------|
| ●● M2450 POLARIZED | 2448 x 2048 | Sony IMX250MZR | 34.4 fps | 3.45 μm | 76.4 dB | 2/3" Optical Format | 8 or 12-Bit Mono | G3-GM14-M2450 |
|--------------------|-------------|----------------|----------|---------|---------|---------------------|------------------|---------------|

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

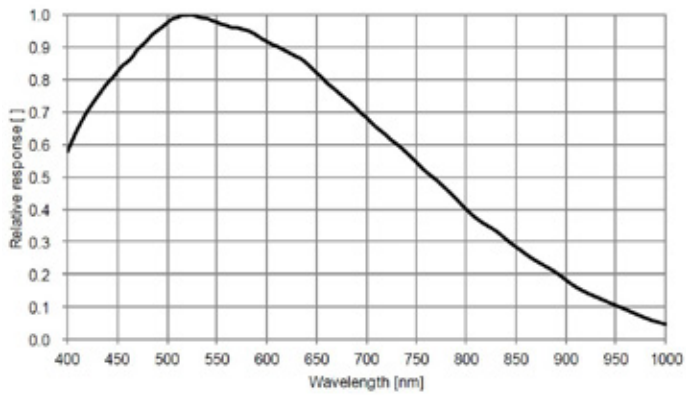
Spectral Response Standard Monochrome Models



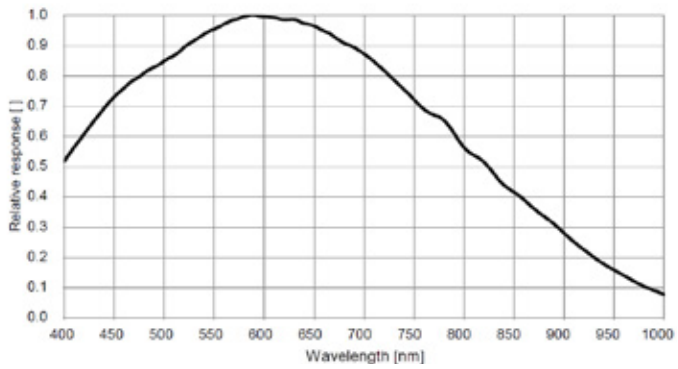
M640/NIR
M800/NIR
M1280/NIR
M2590/NIR
M1930/NIR
M4090
M5100



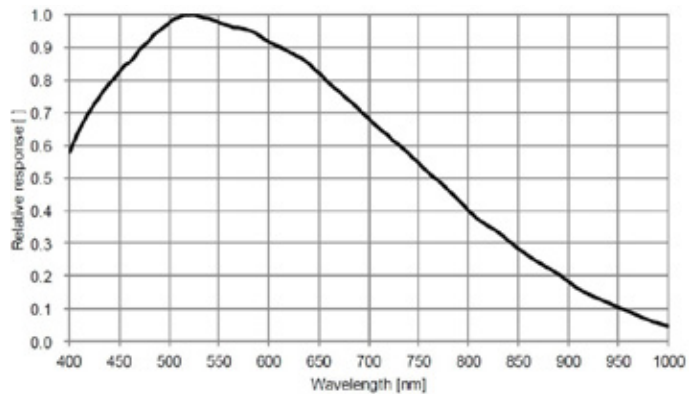
(Excludes lens characteristics and light source characteristics.)



M4060
M4040
M4030
M4020
M2020
M2050
M2420
M2450



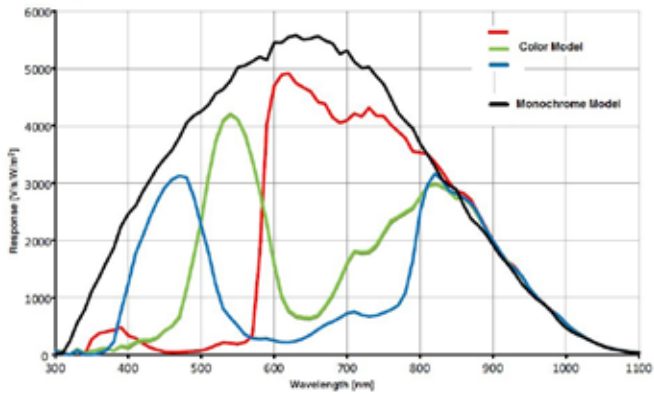
M810
M1610
M1630



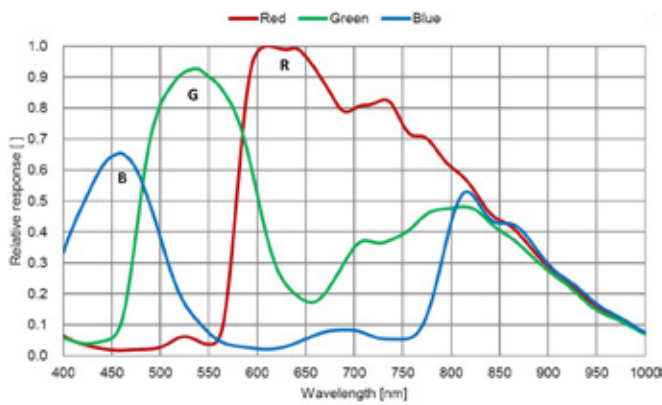
M1920
M1940

RESPONSIVITY GRAPHS

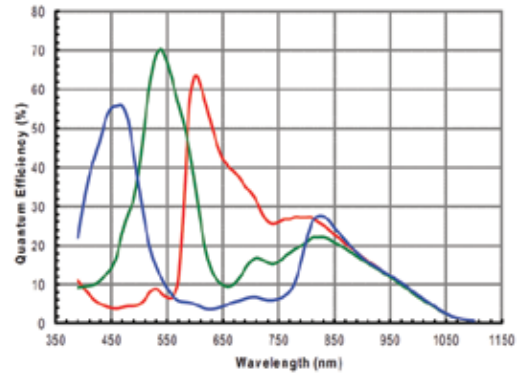
Spectral Response Standard Colour Models



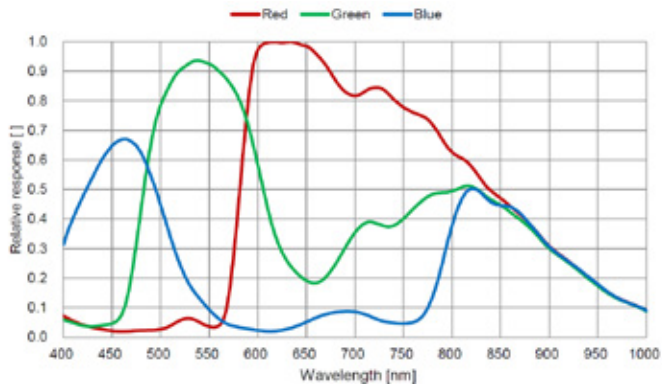
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C1930
C2590
C4090
C5100



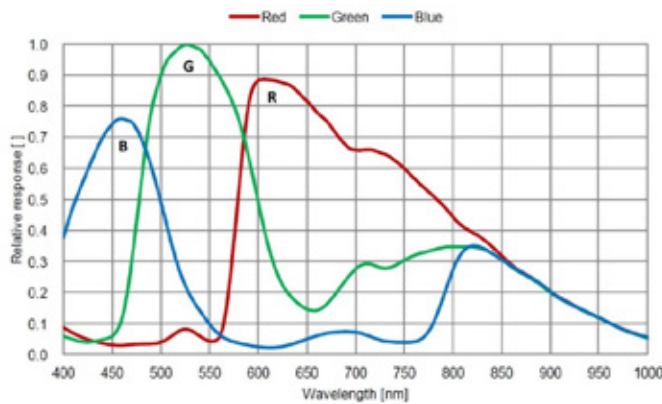
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C4040
C4030
C4020
C2020
C2050
C2420
C2450



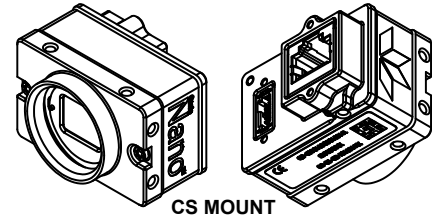
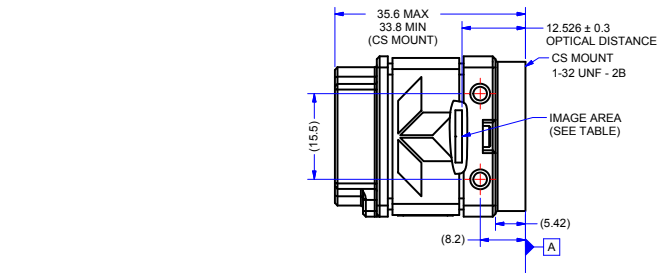
C4900



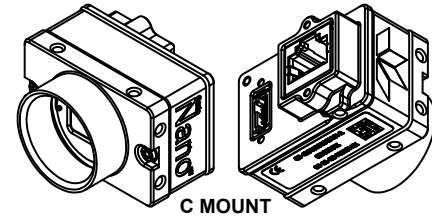
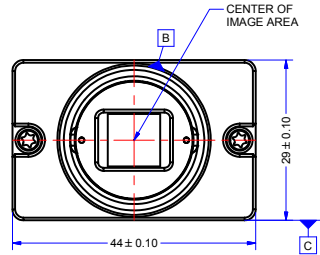
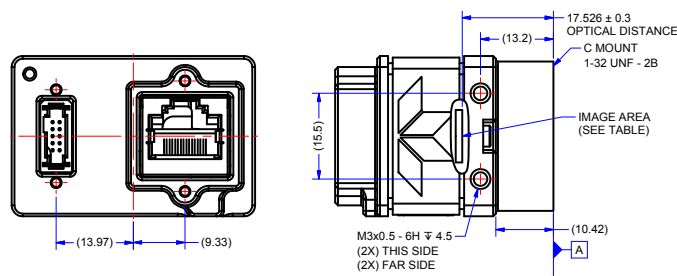
C810
C1610
C1630



C1920
C1940

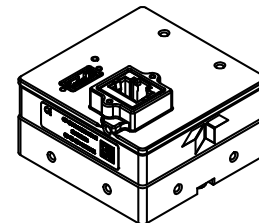
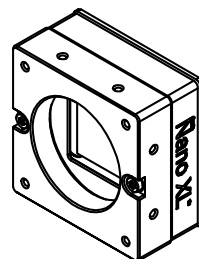
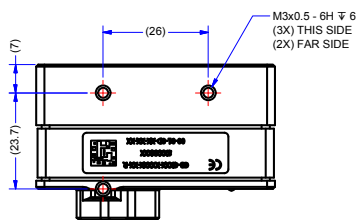
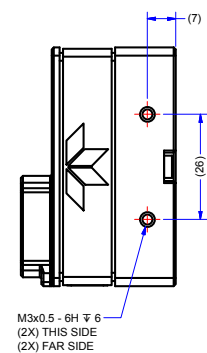
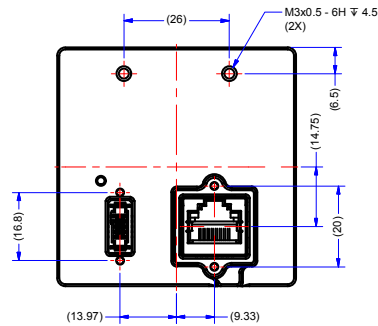
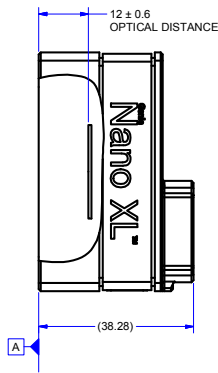
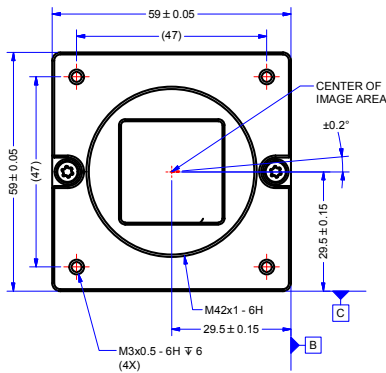
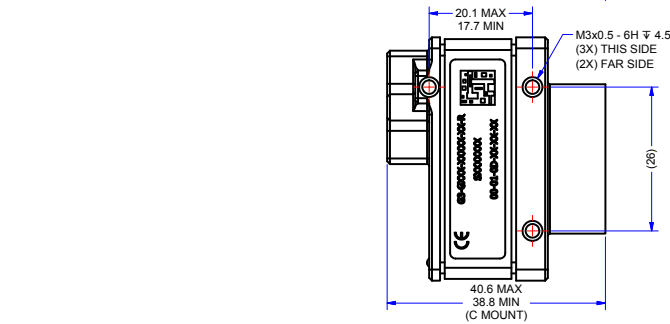


CS MOUNT



C MOUNT

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



www.teledynedalsa.com

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

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Versatile camera series featuring Pregius® and Python® sensors

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