TELEDYNE DALSA
Everywhereyoulook™
Part of the Teledyne Imaging Group

# 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 Sapera 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

## GENIE NANO INDIVIDUAL MODEL SPECIFICATIONS

| | 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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>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<br>G3-GC10-C1930IF (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<br>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<br>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<br>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<br>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<br>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<br>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<br>G3-GC10-C4060IF (with IR cut-off filter) |

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

GiGE VISION TURBODRIVE BY TELEDYNE DALSA

## 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<br>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<br>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<br>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.

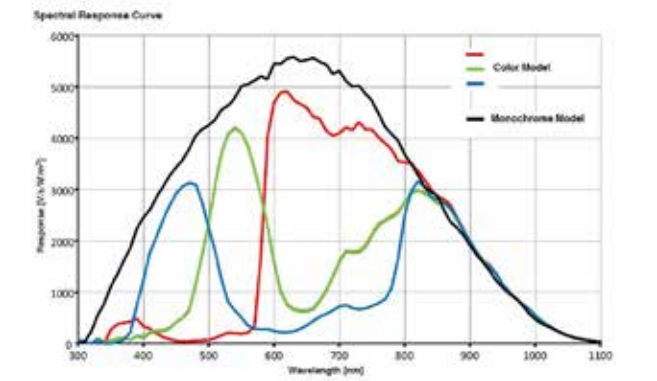
## GENIE NANO INDIVIDUAL MODEL SPECIFICATIONS — POLARIZATION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 |

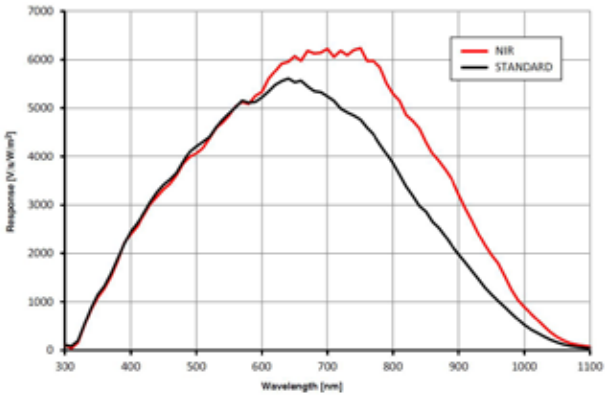
## GENIE NANO FAMILY SPECIFICATIONS (COMMON TO ALL MODELS)

| | 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 ouputs,<br>1 input/3 outputs option available on demand | 2 opto-isolated inputs, 3 opto-isolated ouputs |
| **Image Buffers (On-board memory)** | 90MB for VGA to 5 Mpixel models<br>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)<br>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)<br>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)<br>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 Sapera LT 8.0 for Windows, Teledyne DALSA GigE-V for Linux or 3rd Party GenICam compliant SDK | |

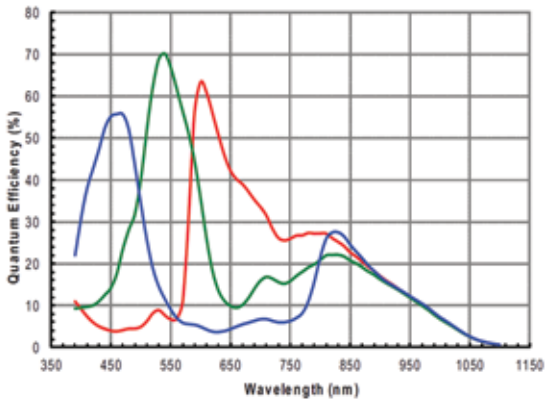
## RESPONSIVITY GRAPHS



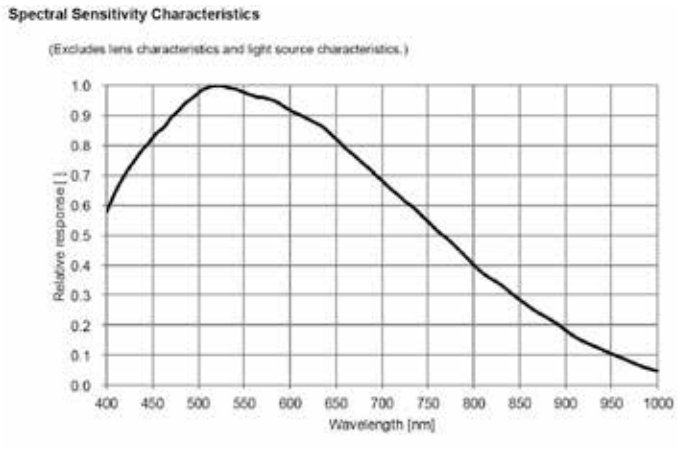

C640
C800
C1280
C1930
C2590
C4090
C5100




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




C4900

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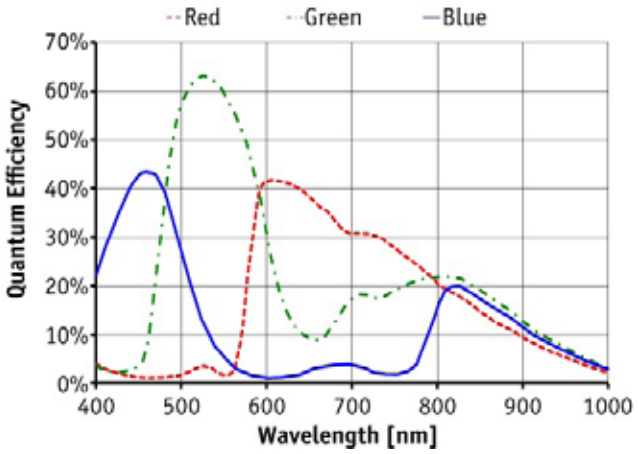
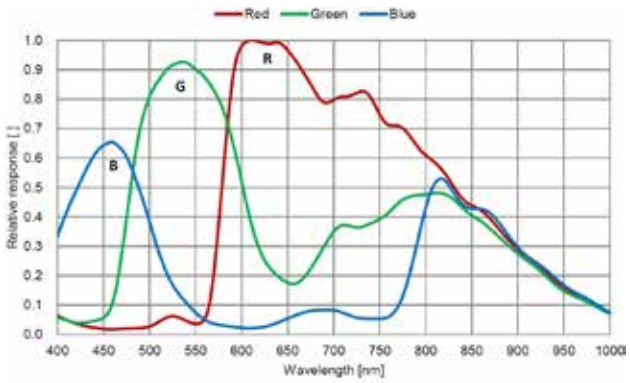
M4030
M4020
M2020
M2050
M2420
M2450




C1920
C1940

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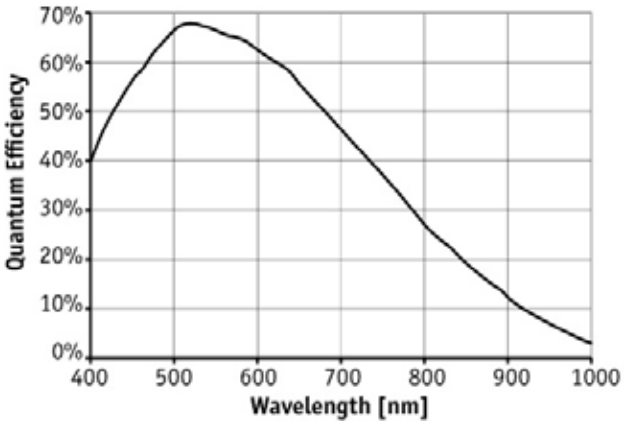
C4040
C4030
C4020
C2020
C2050
C2420
C2450

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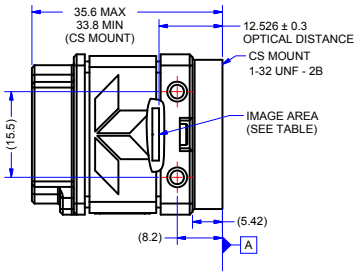
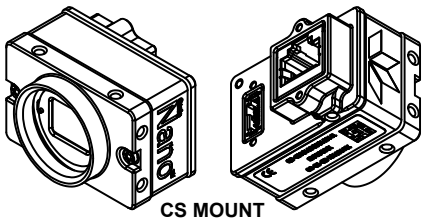
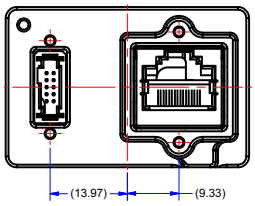
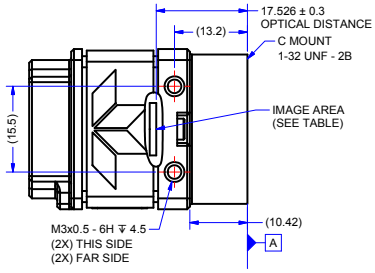
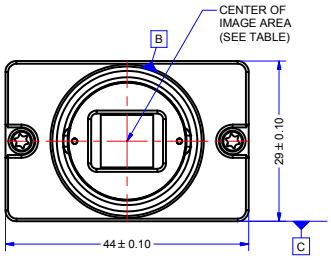
M1940

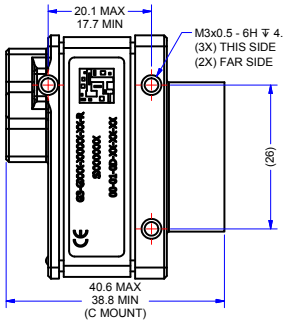


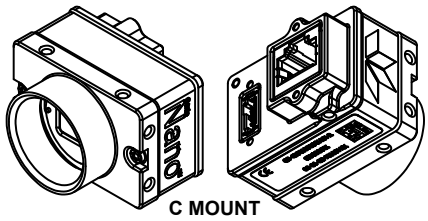



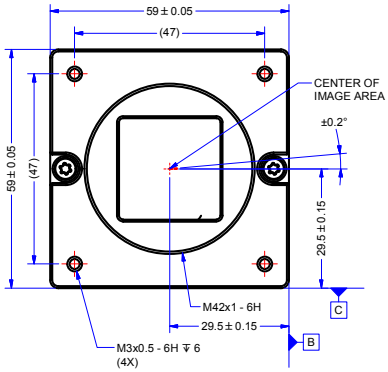



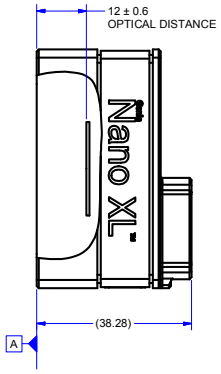



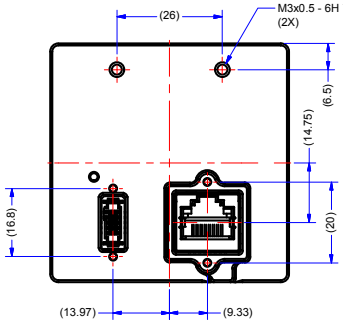



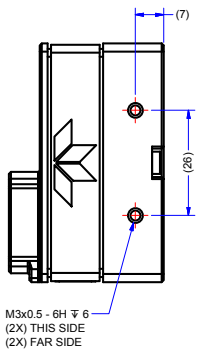



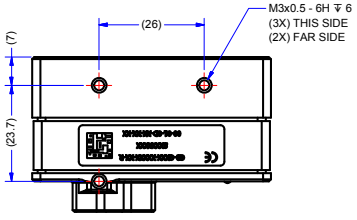

NOTES:
1. UNITS: MILLIMETERS.
2. IMAGE AREA IS ALIGNED TO DATUMS A B & C.

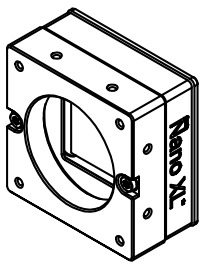


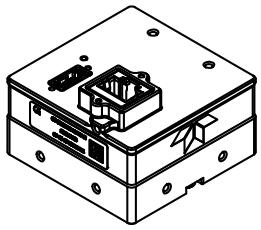



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# Versatile camera series featuring Pregius® and Python® sensors

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