



Genie™ Nano Cameras

Smaller, faster, stronger, cheaper.

최상의 속도와 이미지 품질을 제공하는 초소형 GigE Vision Camera

Genie Nano는 Teledyne DALSA 제품군 중 가장 저렴하고 강력한 성능을 가진 CMOS Area Scan 카메라로 GigE vision, CameraLink 두 가지의 인터페이스를 지원합니다. Genie Nano는 업계 선도적인 CMOS 센서를 장착하였으며, 더불어 독자적인 카메라 기술을 통한 혁신적인 스피드, 혹독한 환경을 대비한 강건한 바디 설계, 그리고 가격 대비 그 이상의 다양한 기능을 제공합니다.

Teledyne DALSA의 특허인 TurboDrive™ 기술은 Genie Nano가 최상의 이미지 품질을 유지함과 동시에, GigE 카메라의 한계보다 150% 또는 그 이상의 높은 프레임 속도를 가능케 합니다. 모든 Teledyne DALSA의 GigE 카메라와 마찬가지로, Genie Nano는 AIA GigE Vision 표준을 기반으로 카메라를 PC로 직접 연결할 수 있습니다.



TURBODRIVE BY TELEDYNE DALSA

GigE VISION

주요 특징

- 표준 PC의 이더넷 포트와 하드웨어 사용
- 최대 100m 케이블 길이 지원 (CAT-5e 또는 CAT-6)

품질 보증

- CE, FCC 및 RoHS

프로그램 가능성

- Partial 스캔 모드에서 더욱 빠른 프레임 속도
- 노출제어 기능을 탑재한 글로벌 셔터
- 다중 노출 가능
- 멀티 ROI 가능(최대16 ROI)
- MetaData 지원
- IEEE1588 (네트워크 간 정확한 동기화 가능) 지원
- Binning
- Look-up table

안정성

- 내구성을 고려한 강건한 바디 설계
- 3년의 보증기간
- 이미지 신뢰성 진단(Trigger to Image-Reliability) 프레임워크를 활용해 전송된 이미지에 대해 완벽한 시스템 수준의 모니터링과 제어, 진단 가능

대표 어플리케이션

- 전자 제품 제조 검사
- 산업용 계측
- ITS(지능형 교통 시스템)
- 스포츠 시뮬레이션
- 의료기기

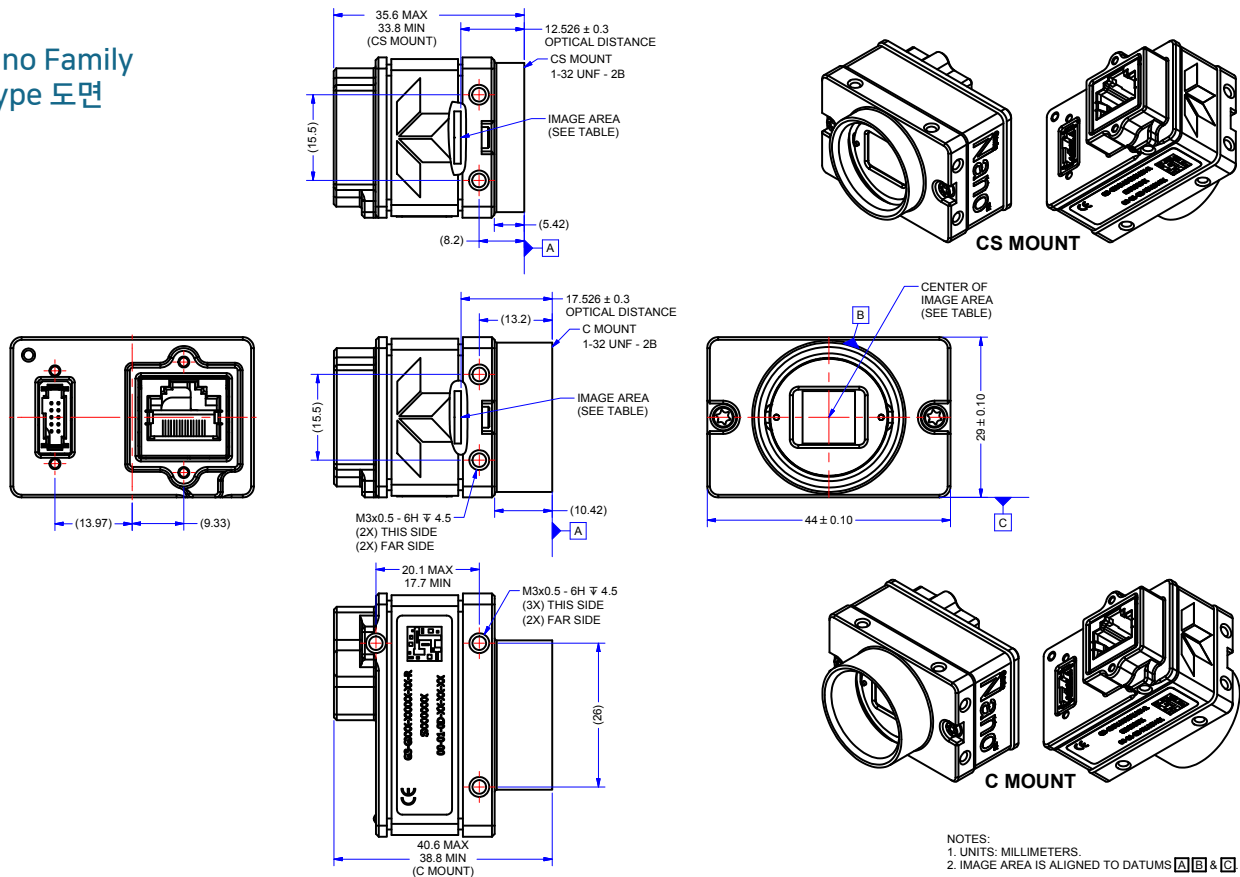
Specifications: M1930, M1930-NIR, C1930

Supported Features	M1930, M1930-NIR	Nano-C1930	
Resolution	1984 x 1264		
Sensor	OnSemi Python2000 P1 (2.3M)		
Pixel Size	4.8 μm x 4.8 μm		
Shutter type	Full frame electronic global shutter function		
Full Well charge	10ke (max)		
Firmware option (Field programmable)	Standard Design Monochrome	Standard Design Bayer	RGB-Output Design
Max. Internal Frame Rate Full Resolution (1984 x 1264)	107 fps (Fast Readout Enable) 84.5 fps (Normal Readout Enable)		
Maximum Sustained Frame Rate Output (with TurboDrive v1)	107 fps (8-bit) 52 fps (10-bit)		N/A
Maximum Sustained Frame Rate Output (without TurboDrive)	46 fps (8-bit) 23 fps (10-bit)		12 fps (RGBA) 16 fps (RGB) 23 fps (Yuv422) 46 fps (8-bit mono)
Pixel Data Formats	Mono 8-bit Mono 10-bit	Bayer 8-Bit Bayer 10-Bit	RGBA 32-bit RGB 24-bit Yuv422 16-bit Mono 8-bit
Trigger to Exposure Minimum delay (Synchronous Exposure Alignment)	8 μs if exposureAlignment = Synchronous With No Overlap between the new exposure and the previous readout 26.2 μs if exposureAlignment = Synchronous With Overlap between the new exposure and the previous readout		
Trigger to Exposure Minimum delay (Reset Exposure Alignment)	3 μs		
Trigger to Exposure Start jitter (best case with Synchronous Exposure Alignment)	Up to 1 line time		
Trigger to Exposure Start jitter (Reset Exposure Alignment) *	0 μs		
Exposure Time Minimum (see “exposureTimeActual” in Sensor Control)	87 μs (increment steps of 1μs)		
Min. Time from End of Exposure to Start of Next Exposure (second frame)	49 μs – Normal Readout 47 μs – Fast Readout		
Horizontal Line Time:	9 μs – Normal Readout 7 μs – Fast Readout		
Readout Time	10831 μs – Normal Readout for 1920 x 1200 Add 76μs when overlapping Exposure and Readout 8428μs μs – Fast Readout for 1920 x 1200 Add 64μs when overlapping Exposure and Readout Specifically: (Horizontal line time at current resolution * number of lines) + (3 * (line time of the 2590 model))		

Auto-Brightness	Yes , with Auto-Exposure and AGC (FPGA Gain)	
Black offset control	Yes (in DN)	
Gain Control	In-sensor Analog Gain (1.0x to 8x) in 11 gain steps (1.0, 1.14, 1.33, 1.6, 2.0, 2.29, 2.67, 3.2, 4.0, 5.33, 8.0) In-sensor Digital Gain (1x to 32x) in 0.01x steps In-FPGA Digital Gain (1x to 4x) in 0.007x steps	
Binning Support	Yes In-FPGA (summing and average, 2x2, 4x4) Yes In- Sensor (averaging 2x2)	No
Color Correction Support	No	Yes
Decimation Support	No	
Defective Pixel Replacement	Yes, up to 512 positions	
Image Correction	No	
Image Flip Support	Yes, In-Sensor, Vertical Only	
Multi-ROI Support	Yes, in Sensor, up to 16 ROI (mutually exclusive with binning)	
On-Board Image Memory	90MB	
Output Dynamic Range (dB)	62.1 dB (in 10-Bit Pixel Format)	
SNR (dB)	39.8 dB (in 10-Bit Pixel Format)	

* Note: The actual internal minimum exposure may be different than what is programmed. Use the feature “exposureTimeActual” from the [Sensor Control](#) category to read back the actual sensor exposure. The exposure start sensor event is delayed 4 μ s from the actual start.

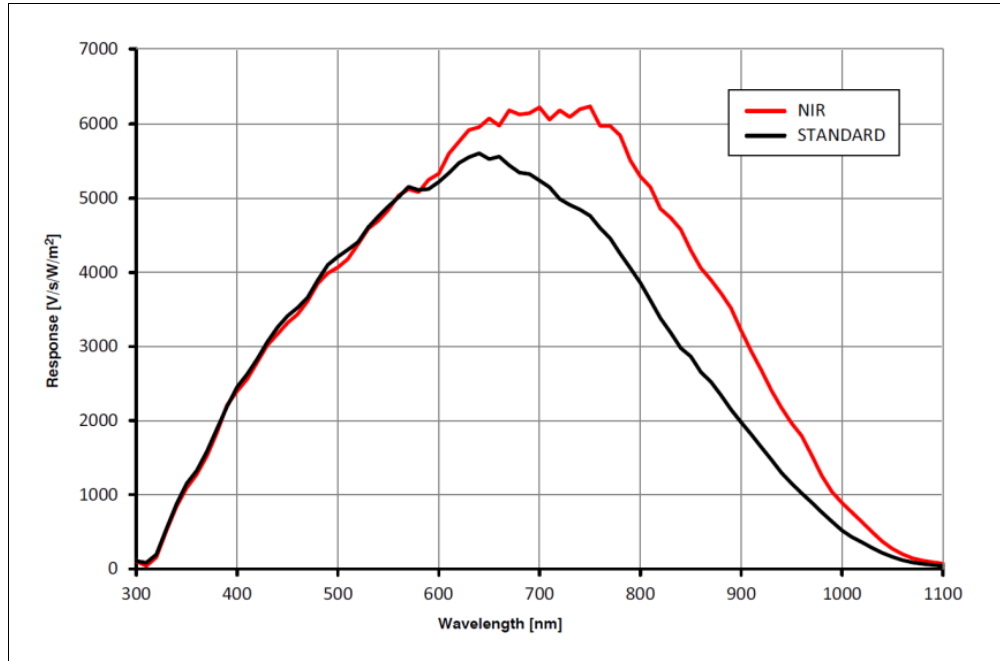
Genie Nano Family - GigE Type 도면



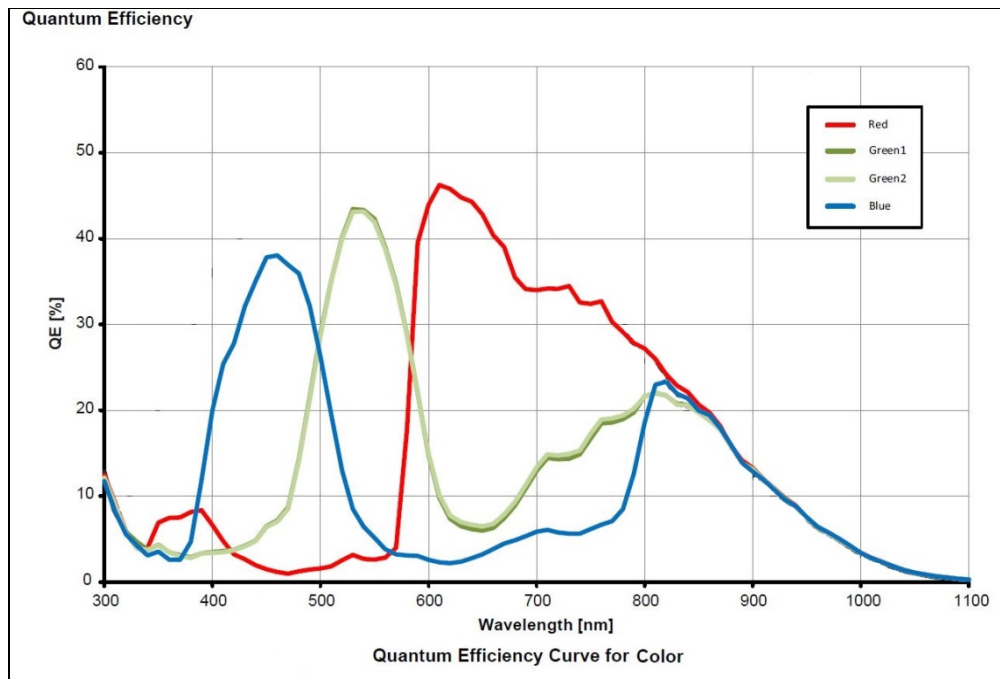
Spectral Response

Model specific specifications and response graphics for the On-Semi Python (25K & 16K) series are provided here. The response curves describe the sensor, excluding lens and light source characteristics.

On-Semi Python Series (P1 & P3) — Monochrome and NIR



On-Semi Python Series (P1 & P3) — Bayer Color



Genie Nano Family - GigE Type 상세 스펙

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 Sapera LT 8.0 for Windows, Teledyne DALSA GigE-V for Linux or 3rd Party GenICam compliant SDK	



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