TELEDYNE DALSA
Everywhereyoulook™
Part of the Teledyne Imaging Group

(주)바이렉스

Genie™ Nano 5GigE Cameras

Smaller, faster, stronger, cheaper.

전례없는 속도와 최고의 이미지 품질을 제공하는 소형 GigE Vision 카메라

지금까지 없었던 고성능 CMOS Area scan 카메라 Genie Nano 5G 시리즈를 소개합니다.
해상도 3.2~45메가픽셀의 업계 최고의 이미지 센서를 탑재한 카메라는 독자적인 카메라 기술을 통해 혁신적인 속도를 제공합니다. 강건한 바디 설계로 넓은 온도 범위에서 작동이 가능하며 유용한 부가 기능을 탑재하고 있습니다.

Teledyne DALSA의 특허기술인 TurboDrive기술로 Genie Nano는 최상의 이미지 품질을 유지함과 동시에 GigE Vision 카메라의 한계보다 150% 또는 그이상의 높은 프레임 속도를 가능하게 합니다.
모든 Teledyne DALSA의 GigE 카메라와 마찬가지로, Genie Nano는 AIA GigE Vision 표준을 기반으로 카메라와 PC를 직접 연결할 수 있습니다.

TURBODRIVE™
BY TELEDYNE DALSA

주요 특징

- 5GigE 이더넷 포트 & 하드웨어
- 케이블 길이 100m까지 지원 (CAT-5e, CAT-6)or (4T-6A)
- 현장에 증명된 Sapera LT CamExpert를 통한 손쉬운 셋업
- 견고한 스크류 마운트 RJ-45 커넥터로 산업 환경을 수용하도록 설계

품질 보증

- CE, FCC 및 RoHS

프로그램 기능

- Partial 스캔 모드에서 더 빠른 프레임 속도
- 노출제어 기능을 탑재한 글로벌셔터
- 다중 노출 기능
- 멀티 ROI 기능
- MetaData 지원
- IEEE1588 (네트워크 간 정확한 동기화 가능) 지원
- 비닝
- 룩업테이블

안정성

- 내구성을 고려한 강건한 바디설계
- 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: M2050
Part Number: G5-GM30-M2050

Supported Features	Nano-M2050
Resolution	2064 x 1544
Sensor	Sony IMX252 (3.2M)
Pixel Size	3.45 µm x 3.45 µm
Shutter type	Full frame electronic global shutter function
Firmware option (Field programmable)	Standard Design
Full Well charge; dependent on Firmware Design Loaded	11ke (max)
Sensitivity to Saturation	1x
Max. Internal Frame Rate Full resolution	187 fps
Maximum Sustained Frame Rate Output (with TurboDrive v2) *	187 fps (8-bit)
Maximum Sustained Frame Rate Output (without TurboDrive)	187 fps (8-bit)
Pixel Data Formats	Mono 8-bit
Trigger to Exposure Minimum delay	2 line time (*Synchronous Exposure Alignment*) 0 µs (*Reset Exposure Alignment*)
Trigger to Exposure Start jitter	0 µs to 1 Line Time (*Synchronous Exposure Alignment*) 0 µs *(Reset Exposure Alignment)*
Actual Exposure Time Minimum (see "exposureTimeActual" in Sensor Control)	17 µs (increment of 3.36 µs steps)
Min. Time from End of Exposure to Start of Next Exposure	13 lines–13.73 µs (29.95 µs)
Horizontal Line Time:	3.36 µs
Readout Time	(H Line Time) x (lines in frame +23) — in µs
Auto-Brightness	Yes , with Auto-Exposure and AGC (FPGA Gain or Sensor Gain)
Black offset control	Yes (in DN)
Gain Control	In-sensor Gain (1.0x to 251x) In-FPGA Digital Gain (1x to 4x) in 0.007x steps
Binning Support	Yes In-FPGA (summing and average) 2x2, 4x4
Decimation Support	No
Color Correction Support	No
Defective Pixel Replacement	No
Image Correction	No
Image Flip Support	Yes, In-Sensor, Vertical and Horizontal
Multi-ROI Support	Yes, In-Sensor, up to 16 ROI (mutually exclusive with in-sensor binning)
On-Board Image Memory	430MB
Output Dynamic Range (dB)	75.4 dB (in 8-Bit Pixel Format)
SNR (dB)	39.6 dB (in 8-Bit Pixel Format)

***** ~250MB/sec Sustained into the TurboDrive Engine achieved using 1500 Byte Packet Size

Specifications: C2050
Part Number: G5-GC30-C2050 / C2050IF

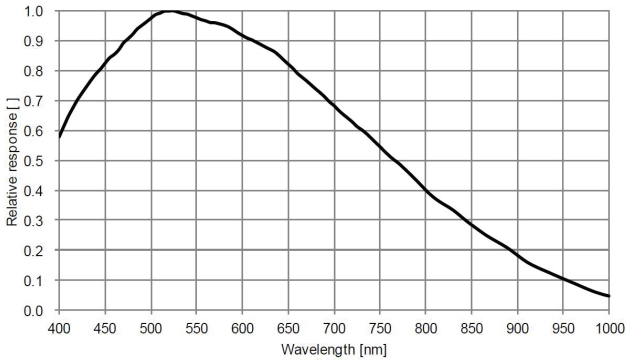
Supported Features	Nano-C2050
Resolution	2064 x 1544
Sensor	Sony IMX252 (3.2M)
Pixel Size	3.45 µm x 3.45 µm
Shutter type	Full frame electronic global shutter function
Firmware option (Field programmable)	Standard Design (Bayer)
Full Well charge; dependent on Firmware Design Loaded	10.7ke (max)
Sensitivity to Saturation	1x
Max. Internal Frame Rate Full resolution	187 fps
Maximum Sustained Frame Rate Output (with TurboDrive v2) *	187 fps (8-bit)
Maximum Sustained Frame Rate Output (without TurboDrive)	187 fps (8-bit)
Pixel Data Formats	Bayer 8-Bit
Trigger to Exposure Minimum delay	2 line time (*Synchronous Exposure Alignment*) 0 µs (*Reset Exposure Alignment*)
Trigger to Exposure Start jitter	0 µs to 1 Line Time (*Synchronous Exposure Alignment*) 0 µs *(Reset Exposure Alignment)*
Actual Exposure Time Minimum (see "exposureTimeActual" in Sensor Control)	17 µs (increment of 3.36 µs steps)
Min. Time from End of Exposure to Start of Next Exposure	13 lines–13.73 µs (29.95 µs)
Horizontal Line Time:	3.36 µs
Readout Time	(H Line Time) x (lines in frame +23) — in µs
Auto-Brightness	Yes , with Auto-Exposure and AGC (FPGA Gain or Sensor Gain)
Black offset control	Yes (in DN)
Gain Control	In-sensor Gain (1.0x to 251x) In-FPGA Digital Gain (1x to 4x) in 0.007x steps
Binning Support	No
Color Correction Support	Yes
Decimation Support	No
Defective Pixel Replacement	No
Image Correction	No
Image Flip Support	Yes, In-Sensor, Vertical and Horizontal
Multi-ROI Support	Yes, In-Sensor, up to 16 ROI (mutually exclusive with in-sensor binning)
On-Board Image Memory	430MB
Output Dynamic Range (dB)	75.4 dB (in 8-Bit Pixel Format)
SNR (dB)	39.6 dB (in 8-Bit Pixel Format)

*** Limited to the Genie Nano-5G Architecture:**
~950MB/sec Sustained into the TurboDrive Engine achieved using 1500 Byte Packet Size

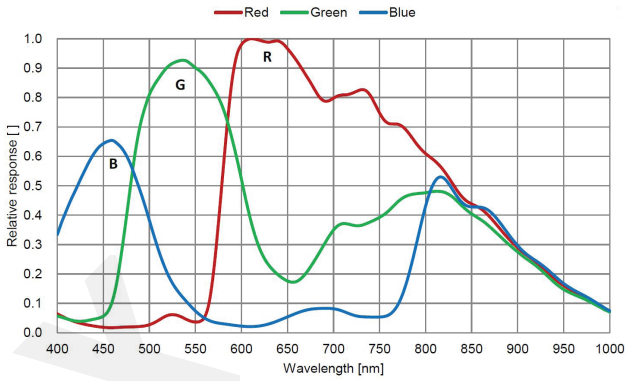
감도 그래프

Spectral Sensitivity Characteristics

Excludes lens characteristics and light source characteristics

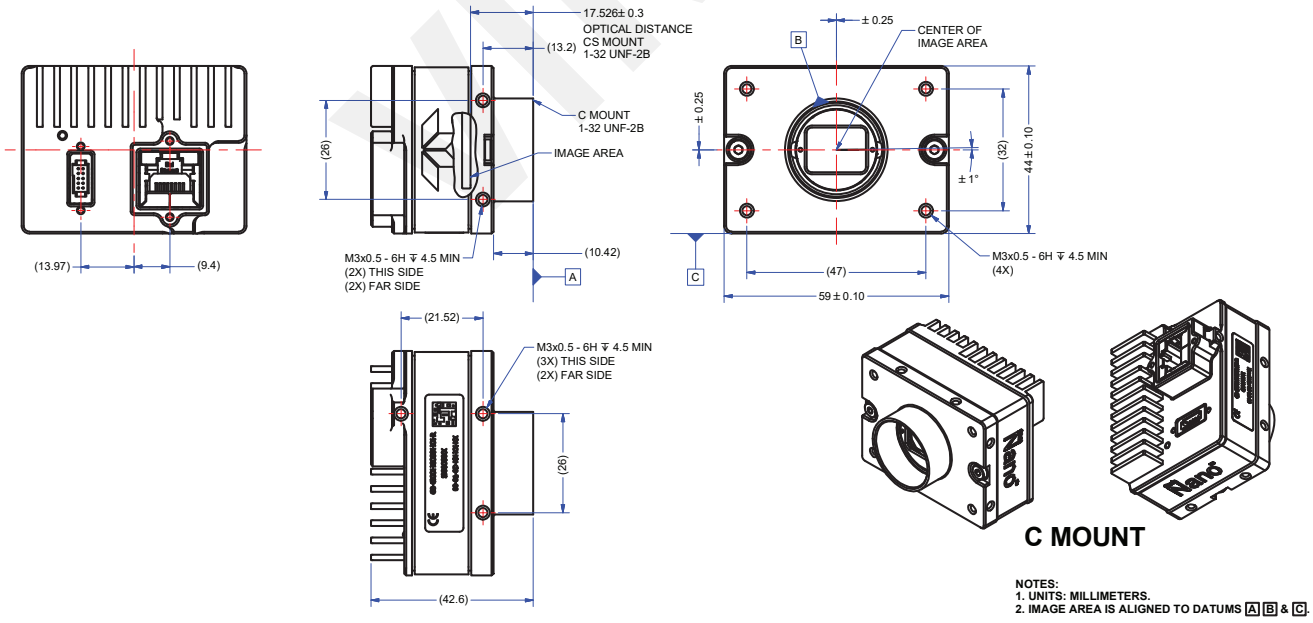


M4060
M4040
M2050
M2450



C4060
C4040
C2050
C2450

2D 취부도



Genie Nano 5GigE 시리즈 라인업

	Active Resolution	Sensor Model	Frame Rate (Burst Mode)	Pixel Size	Dynamic Range	Max. Image Circle	Data Format	Part Number (for C-mount option)
Nano-5G-M2050	2064 x 1544	Sony IMX252	187 fps	3.45 µm	76.46 dB	1/1.8" Optical Format	8-Bit Mono	G5-GM30-M2050
Nano-5G-C2050	2064 x 1544	Sony IMX252	187 fps	3.45 µm	76.46 dB	1/1.8" Optical Format	8-Bit Raw Bayer	G5-GC30-C2050 G5-GC30-C2050IF (with IR cut-off filter)
Nano-5G-M2450	2464 x 2056	Sony IMX250	141 fps	3.45 µm	76.46 dB	2/3" Optical Format	8-Bit Mono	G5-GM30-M2450
Nano-5G-C2450	2464 x 2056	Sony IMX250	141 fps	3.45 µm	76.46 dB	2/3" Optical Format	8-Bit Raw Bayer	G5-GC30-C2450 G5-GC30-C2450IF (with IR cut-off filter)
Nano-5G-M4060	4112 x 2176	Sony IMX255	87.5 fps	3.45 µm	76.46 dB	1" Optical Format	8-Bit Mono	G5-GM30-M4060
Nano-5G-C4060	4112 x 2176	Sony IMX255	87.5 fps	3.45 µm	76.46 dB	1" Optical Format	8-Bit Raw Bayer	G5-GC30-C4060 G5-GC30-C4060IF (with IR cut-off filter)
Nano-5G-M4040	4112 x 3008	Sony IMX253	63 fps	3.45 µm	76.46 dB	1.1" Optical Format	8-Bit Mono	G5-GM30-M4040
Nano-5G-C4040	4112 x 3008	Sony IMX253	63 fps	3.45 µm	76.46 dB	1.1" Optical Format	8-Bit Raw Bayer	G5-GC30-C4040 G5-GC30-C4040IF (with IR cut-off filter)
Nano-5G-M4500	4500 x 4500	On-semi XGS20000	30 fps	3.2 µm	66.06 dB	APS-C	8 or 12-bit* Mono	G5-GM31-M4505
Nano-5G-C4500	4500 x 4500	On-semi XGS20000	30 fps	3.2 µm	66.0 dB	APS-C	8 or 12-bit* Bayer	G5-GC31-C4505
Nano-5G-M5400	5420 x 5420	On-semi XGS30000	15 fps	3.2 µm	66.06 dB	APS-C	8 or 12-bit* Mono	G5-GM31-M5425
Nano-5G-C5400	5420 x 5420	On-semi XGS30000	15 fps	3.2 µm	66.0 dB	APS-C	8 or 12-bit* Bayer	G5-GC31-C5425
Nano-5G-M8100	8192 x 5420	On-semi XGS45000	15 fps	3.2 µm	66.06 dB	APS-C	8 or 12-bit* Mono	G5-GM31-M8105
Nano-5G-C8100	8192 x 5420	On-semi XGS45000	15 fps	3.2 µm	66.0 dB	APS-C	8 or 12-bit* Bayer	G5-GC31-C8105

*Available with the 12-bit firmware

GiGE VISION TURBODRIVE BY TELEDYNE DALSA

Genie Nano 5G 공통 스펙

	GENIE NANO-5G (Medium Casing)	GENIE NANO-5G (XL Casing)
Data Output Transfer	Gigabit Ethernet (1 Gbps, 2.5 Gbps or 5 Gbps — auto-negotiate)	
Exposure Control	Automatic, programmable, or via external trigger	
I/O Ports	2 opto-isolated inputs, 3 opto-isolated ouputs	
Image Buffers (On-board memory)	450 MB	
Lens Mount	C-Mount	M42-mount
Size (L x H x W) (C-mount option)	32 mm x 44 mm x 59 mm (no lens adapter) 42 mm x 44 mm x 59 mm (with lens adapter and connectors)	41 mm x 59 mm x 59 mm
Mass	124 g	183 g
Operating Temp	-20 to +65°C (housing temperature)	
Power Supply	10 to 36V or Power Over Ethernet (POE)	
Power Dissipation (model dependent)	9.4 W to 9.6 W	
Data Connector	Standard or screw mount RJ-45	
Power and I/O Connector	SAMTEC TFM-105 type	
Camera Specification	GigE Vision v2.0	
Software Platform	Teledyne DALSA Sapera LT 8.50 for Windows, Teledyne DALSA GigE-V for Linux or 3rd Party GenICam compliant SDK	

Virex
Vision Components & Consulting

(주)바이렉스 www.virex.co.kr
경기도 안양시 동안구 흥안대로 427번길 38, 성지스타위드 1214호
#1214 38, Heungan-daero 427beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea

Tel +82-70-5055-3330 **Fax** +82-70-8233-5445
E-Mail sales@virex.co.kr