MATRIX 1024 SERIES

Discover uncooled MWIR at a speed and price never seen before

New Infrared Technologies

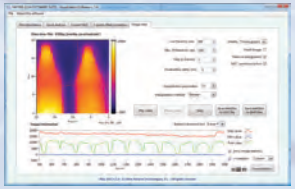
MATRIX 1024 CAMERA-HS

TCP IP ACQ SW VIS SW

Stand alone system, plug&play
Designed for fast application development

Explore the capabilities and speed of the uncooled MWIR (1 - 5 microns) with the MATRIX 1024 CAMERA-HS, the only uncooled imaging system in the market acquiring more than 2,000 fps directly to your computer using Ethernet connection.
The system includes the high-speed readout and communication electronics, two optics (7.6º and 3.8º FoV), the complete MATRIX 1024 SOFTWARE SUITE for acquisition and analysis, and a hard case for transportation.

2 optics included



MATRIX 1024 SW SUITE

Full package

MATRIX 1024 CORE-HS

The MATRIX 1024 CORE-HS includes the FPA, the high-speed readout electronics and Ethernet communications. Each module has an IP-address which allows IR data transmission to a host computer. The MATRIX 1024 SOFTWARE SUITE included makes very easy to acquire and analize data in multiple applications.

TCP IP ACQ SW VIS SW

Optimal system for integration

MATRIX 1024 CORE-S

The MATRIX 1024 CORE-S is an electronic device based on a microcontroller architecture, which includes the FPA, 2-channel readout electronics (100 fps max), USB 2.0 output and the MATRIX SW SUITE. The system is plug and play, ready to read the FPA signal and optimum for the development of very cost-effective solutions based on the MATRIX FPA.

USB 2.0 ACQ SW VIS SW

Optimal system for low cost solutions

MATRIX 1024 FPA

The MATRIX 1024 FPA is the main component of the MATRIX 1024 SERIES. It has been packaged on a PCB with an LCC68 footprint to allow a perfect integration with your systems. The FPA has a complete uncooled performance at room temperature. Readout electronics are not included in the packaging.

Component designed for integration

MATRIX 1024 FPA

Uncooled VPD PbSe, 32x32 FPA (1024 pixels)

Pixel size:	*100 x 100 µm²*
Biasing voltage (typ):	*5 V*
Pixel resistance (typ):	*0.8 - 2.0 MOhm*
Power (typ):	*1 mW*
Spectral response:	*1-5 microns*
Detection (λpeak):	*3.7 microns*
D*(λpeak) (typ):	*$2 \cdot 10^9$ Jones*
Responsivity (@V_b=5V)(A/W):	*0.55*
Quantum efficiency:	*2%*
Optimum range of detection:	*Target > 70 C*
Packaging:	*SMD, LCC68 footprint*
Dimensions (mm):	*24 x 24 x 2.2*
Operating temperature:	*5 C - 70 C*
Response time:	*2 microseconds*
Readout electronics:	*not included, x-y addressed*

MATRIX 1024 CORE-HS

- Integration time: > 5 µs, selectable
- Frame rate (max): 2,048 fps
- Intelligent dark current substraction
- Start-up time: < 20 seconds
- NETD: < 100 mK
- Dimensions (mm): 109 x 100 x 73
- Weight: < 500 grams
- FPGA: XILINX VIRTEX 4 (with Linux OS)
- System communication and control: Ethernet 10/100
- Data transmission: Ethernet, TCP/IP, raw format, 16 bits
- Power: 12 VDC, 1 A
- Software: MATRIX 1024 SW SUITE (Acq+Vis)

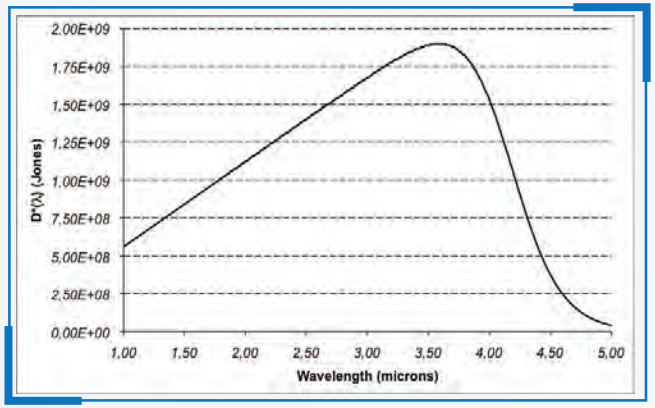
MATRIX 1024 CORE-S

- Integration time: 2 - 100 µs, selectable
- Frame rate (max): 100 fps
- Intelligent dark current substraction
- Start-up time: < 5 seconds
- Dimensions (mm): 60 x 60 x 40
- Microcontroller: ARM CORTEX M3
- System communication and control: USB 2.0 full speed, raw format, 14 bits
- USB powered (5 VDC, 0.5 A)
- Software: MATRIX 1024 SW SUITE (Acq+Vis)

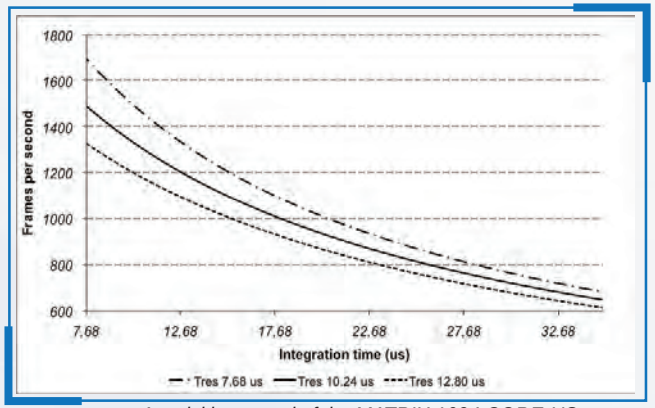
Technical characteristics

MATRIX 1024 CAMERA-HS

- Based on MATRIX 1024 CORE-HS unit with aluminum housing
- Dimensions (mm) 120 x 120 x 150
- Weight: 1.5 kg including optics
- Power: 12 VDC, 1 A
- Lens mount: M35x1
- Optics included:
  FOV 7.6 (f=24 mm; f#1.2)
  FOV 3.8 (f=48 mm; f#2.4)
- Software supplied: MATRIX 1024 SOFTWARE SUITE (acquisition + visualization)
- Package contents: main unit, 2 optics, Ethernet cable, power supply, software suite, hard case (ask for other optic options)



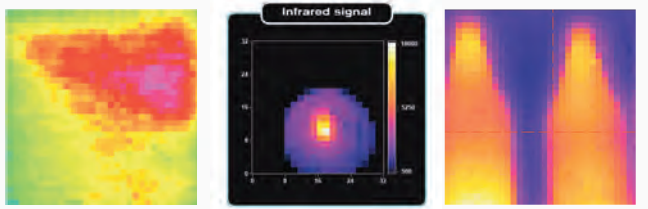
Typical FPA spectral responsivity [$D^*(\lambda_{peak})$(500 K, 1000 Hz, 1 Hz)]

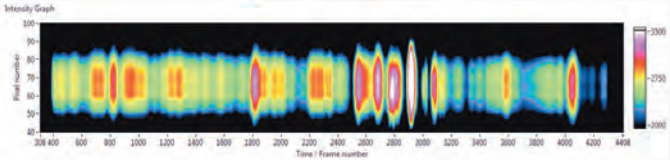


Acquisition speed of the MATRIX 1024 CORE-HS system

Industrial applications

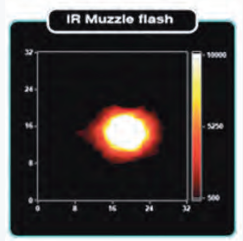
Fire and gas detection
Laser industry
Manufacturing automation and quality control
Industrial process control: cut, welding

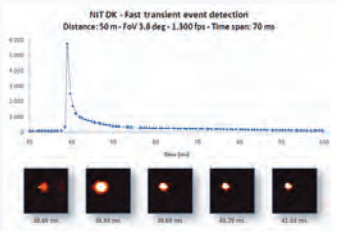




Military applications

Explosion characterization
Countermeasures
Final guidance
Muzzle flash detection





The MATRIX 1024 SERIES is a product from New Infrared Technologies, S.L.
For more information, visit us at www.niteurope.com, or contact us at info@niteurope.com

New Infrared Technologies

ISO 9001
ISO 14001
BUREAU VERITAS Certification