MATRIX 1024 CORE-S

Low-cost uncooled MWIR readout module with USB output
Optimal system for low cost solutions

- Electronic plug-and-play readout module based in microcontroller ARM M3 CORTEX architecture for MATRIX 1024 FPA
- MATRIX 1024 FPA included with the module
- Band of detection: MWIR (1 - 5 microns)
- Peak wavelength of detection: 3.7 microns
- Uncooled operation
- Readout (A/D) channels: 2
- Integration time: 4 - 20 μs, selectable
- Maximum frame rate (@ minimum integration time): 100 fps
- Intelligent dark current subtraction on-board
- Start-up time: < 5 seconds
- Communication interface: USB 2.0 full speed
- Data transmission: raw data, 14 bits
- Power: 1W (USB powerer, 5 VDC, 200 mA)
- Minimum temperature of detection: 100 °C
- Dimensions of the OEM electronic module (in mm): 56 (L) x 40 (W) x 40 (H)
- Weight of the OEM module (grams): 60 g
- Metal housing available, with M35x1 optics interface, rear connectors, and tripod screw [housing dimensions, in mm: 80 (L) x 45 (W) x 50 (H)]
- Front plate with lens holder: available
- Optics available (M35x1 interface): f=9 mm, f=24 mm, f=48 mm
- Software included: NIT SOFTWARE SUITE (Acquisition and visualization SW)
- LabVIEW SDK for custom software programming available
- Industrial applications: industrial welding process monitoring, laser processing, gas and flame detection, glass manufacturing quality assurance, machine vision
**MATRIX 1024 CORE-S module**

**MATRIX 1024 CORE-S**
with external housing and lens

**MATRIX 1024 FPA**

- FPA resolution: 32x32 (1024 pixels)
- Uncooled operation
- Band of detection: MWIR (1 - 5 um)
- Peak detection wavelength: 3.7um
- D* (WLpeak) (typ): 2x10⁹ Jones
- Response time: 2 us
- Pixel size: 100x100 um²
- Pixel pitch: 100 um
- Readout method: x-y multiplexed

- Readout electronics: not included (CORE-S compatible)
- Packaging: SMD / LCC68 footprint
- Dimensions (mm): 24x24x2.2
- Biasing voltage (typ): 5 V
- Pixel resistance (typ): 0.8 - 2.0 MOhm

Typical applications
- Industrial manufacturing process control (welding, cutting, etc.)
- Laser process monitoring
- Gas and flame detection
- Machine vision
- OEM integration
- Defense applications

Industries of use
- Automotive industry
- Home appliance manufacturing
- Metallurgy and steel industry
- Petrochemical industry
- Defense