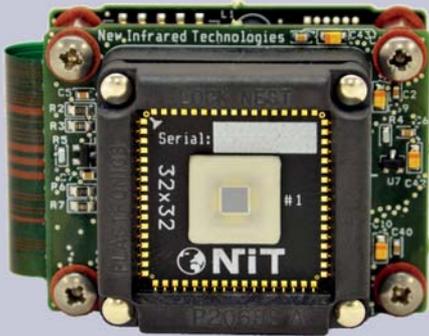


# MATRIX 1024 CORE-S

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  $\mu$ s, 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



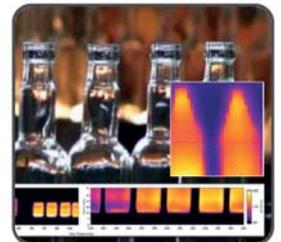
*Industrial process control  
(welding, cutting, etc)*



*Laser processing  
monitoring*

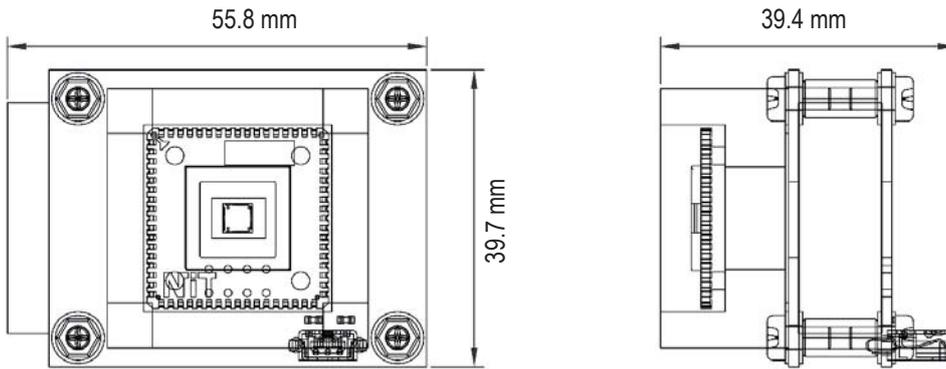


*Gas and flame  
detection*

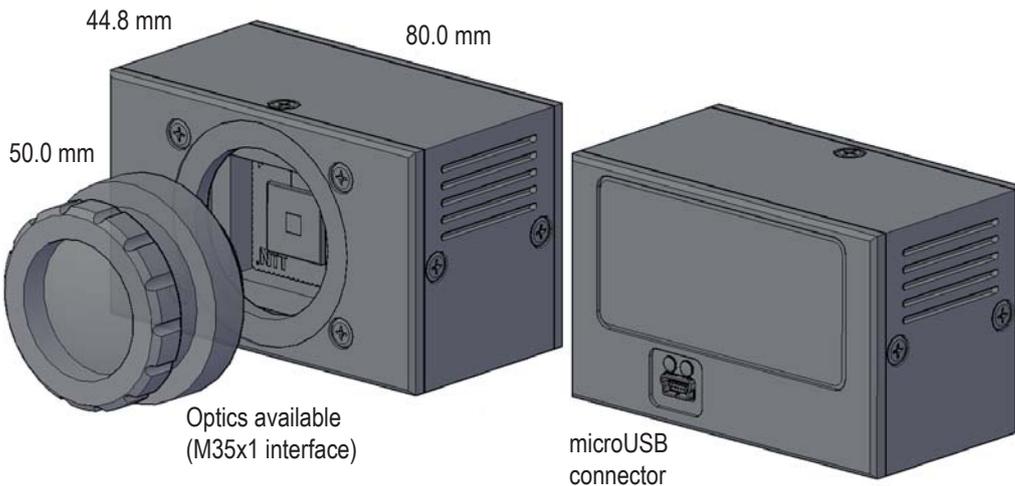


*Glass manufacturing  
quality assurance*

# 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  $\mu\text{m}$ )
- ▶ Peak detection wavelength: 3.7  $\mu\text{m}$
- ▶  $D^*$  (WLpeak) (typ):  $2 \times 10^9$  Jones
- ▶ Response time: 2  $\mu\text{s}$
- ▶ Pixel size:  $100 \times 100 \mu\text{m}^2$
- ▶ Pixel pitch: 100  $\mu\text{m}$
- ▶ 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

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