LUXELL CORE-S

Low-cost linear 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 linear LUXELL FPA (64, 128 & 256 px)
- LUXELL FPA included with the module
- Band of detection: MWIR (1 - 5 microns)
- Peak wavelength of detection: 3.7 microns
- Readout (A/D) channels: 2
- Integration time: 4 - 20 $\mu$s, selectable
- Maximum scanning rate (@ minimum integration time):
  - 1200 lines per sec (64 px)
  - 600 lines per second (128 px)
  - 300 lines per second (256 px)
- Intelligent dark current substraction 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 ºC
- 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):
  - 64 px: f=9 mm, f=24 mm, f=48 mm
  - 128 px & 256 px: f=35 mm, f=70 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, glass manufacturing quality assurance, machine vision

Industrial process control (welding, cutting, etc)
Steel manufacturing industry
Process Quality Assurance
Glass manufacturing quality assurance

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**LUXELL CORE-S module**

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with external housing and lens

**LUXELL FPA**

- FPA resolution: 64, 128, 256 pixels
- Uncooled operation
- Band of detection: MWIR (1 - 5 um)
- Peak detection wavelength: 3.7 um
- D* (WLpeak) (typ): 2x10^9 Jones
- Response time: 2 us
- Pixel size:
  - 64 px, 128 px: 100x1000 um^2
  - 256 px: 60x600 um^2
- Pixel pitch:
  - 64 px, 128 px: 100 um
  - 256 px: 60 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): 0.2 - 1.0 MOhm

Typical applications

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

Industries of use

- Automotive industry
- Home appliance manufacturing
- Metallurgy and steel industry
- Petrochemical industry