# LUXELL CORE-S
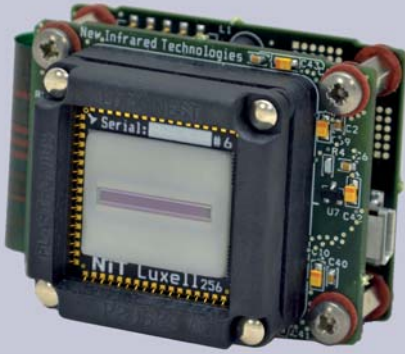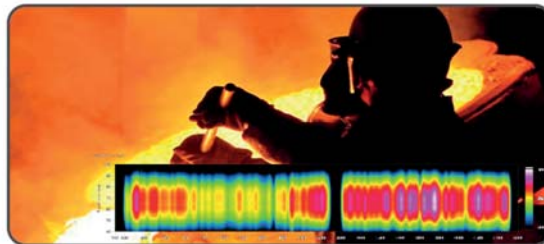
Low-cost linear uncooled MWIR readout module with USB output

Optimal system for low cost solutions
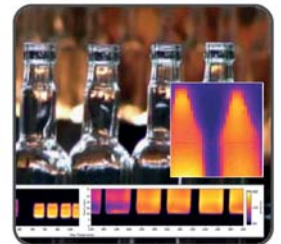
- Electronic plug-and-play readout module based in microcontroller ARM M3 CORTEX architecture for linear LUXELL FPA (64, 128 & 256 px)
- LUXELL FPA included with the module
- Band of detection: MWIR (1 - 5 microns)
- Peak wavelength of detection: 3.7 microns
- Readout (A/D) channels: 2
- Integration time: 4 - 20 µs, 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

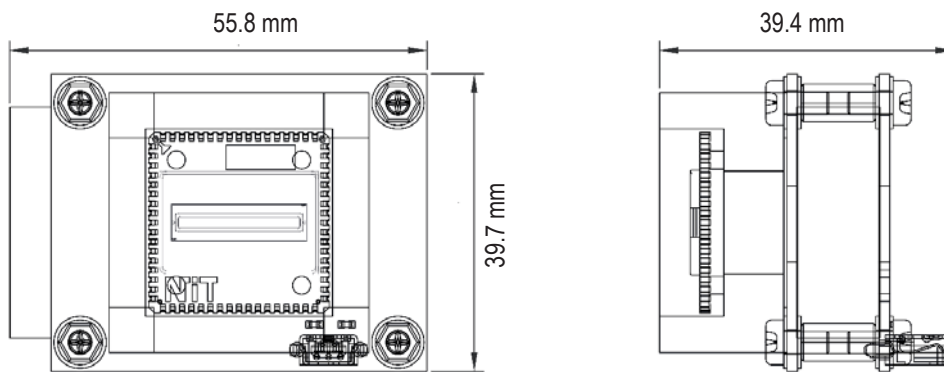**Industrial process control (welding, cutting, etc)**

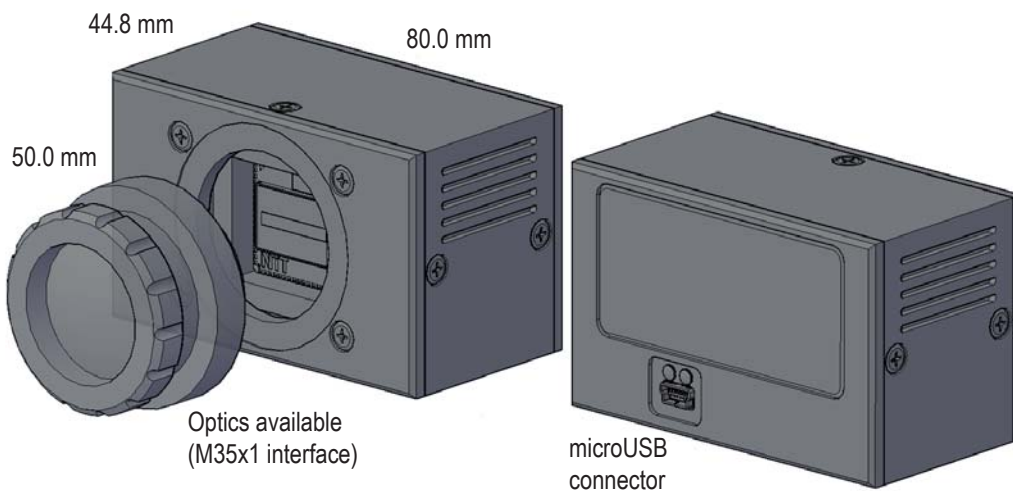**Steel manufacturing industry Process Quality Assurance**

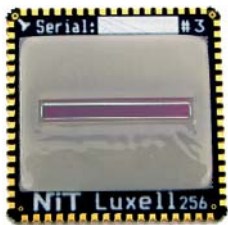**Glass manufacturing quality assurance**

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**NIT**
**New Infrared Technologies**

# LUXELL CORE-S module

55.8 mm

39.4 mm

39.7 mm

# LUXELL CORE-S
# with external housing and lens

44.8 mm

80.0 mm

50.0 mm

Optics available
(M35x1 interface)

microUSB
connector

# 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): $2 \times 10^9$ Jones
- Response time: 2 us
- Pixel size:
    - 64 px, 128 px: $100 \times 1000$ um$^2$
    - 256 px: $60 \times 600$ 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*

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