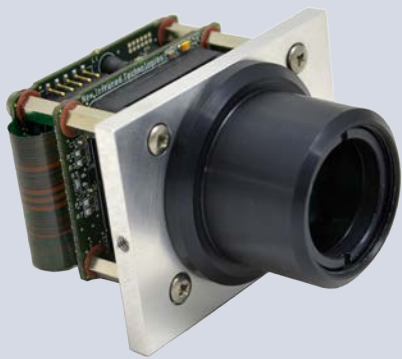
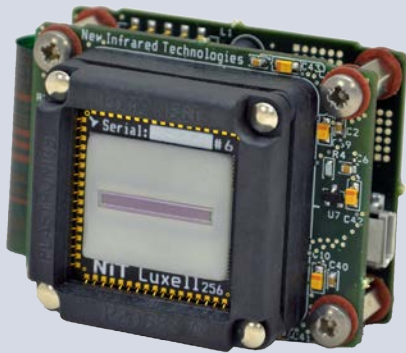


LUXELL CORE-S



Linear uncooled MWIR readout module with USB output
Modular system with metal housing and lens accessories available
Optimal system for low cost solutions and industrial integration

- ▶ Electronic plug-and-play readout module for linear LUXELL FPA 256 px (included)
- ▶ Resolution: 256 px (pixel size: 60 μm , pixel height: 600 μm)
- ▶ Band of detection: MWIR (1 - 5 microns)
- ▶ Peak wavelength of detection: 3.7 microns
- ▶ Integration time: 4 - 20 μs , selectable
- ▶ Minimum temperature of detection: 100 $^{\circ}\text{C}$
- ▶ Maximum scanning rate: 300 lines per second (@minimum integration time)
- ▶ Mechanical shutter for 1-pt offset
- ▶ Start-up time: < 5 seconds
- ▶ Communication interface: USB 2.0 full speed
- ▶ Data transmission: raw data, 14 bits
- ▶ Power: 1W (USB powered, 5 VDC, 200 mA)
- ▶ Dimensions (in mm) / Weight (grams): 56.0 (L) x 44.5 (W) x 41.5 (H) / 60 g
- ▶ Mechanical housing (accessory):
 - ▶ Alluminum housing, with CS-mount optics interface, rear USB connector (industrial M12x1, mini-USB, IP67-rated), tripod screw and water block
 - ▶ Housing dimensions, in mm: 70.0 (L) x 72.5 (W) x 50.0 (H)
 - ▶ IP67-rated when assembled with accessory lens
- ▶ Lens (accessory):
 - ▶ CS-mount, $f=35$ mm, $F\#1.1$, $\text{FoV} = 25^{\circ}(\text{h}) \times 1^{\circ}(\text{v})$
 - ▶ Field of Regard (@1m) = 440 mm(h) x 17 mm(v)
- ▶ Software included:
 - ▶ NIT SOFTWARE SUITE (Acquisition and visualization SW), LabVIEW SDK
- ▶ Total size with housing, water block and lens: 70.0 (L) x 131.5 (W) x 50.0 (H)
- ▶ Total weight with housing and lens (grams): 500 g
- ▶ Industrial applications: industrial welding process monitoring, laser manufacturing process monitoring, machine vision, spectroscopy, glass manufacturing



Industrial process control
(welding, cutting, etc)



Laser process monitoring

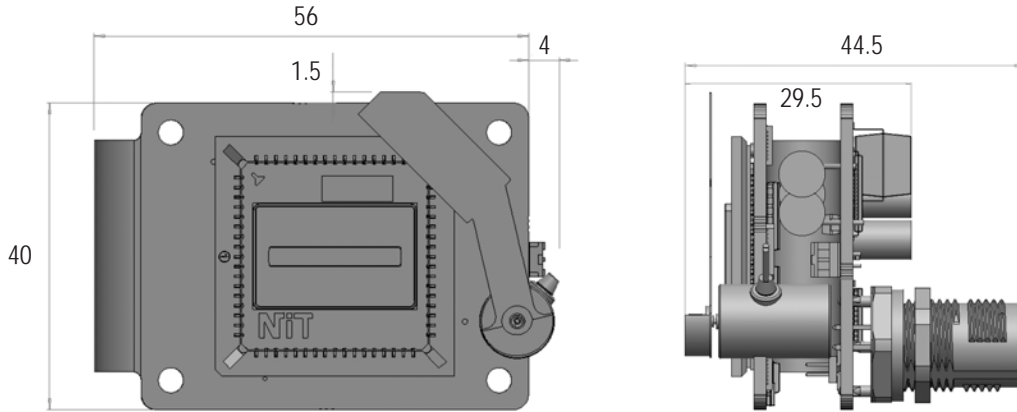


Spectroscopy and gas detection



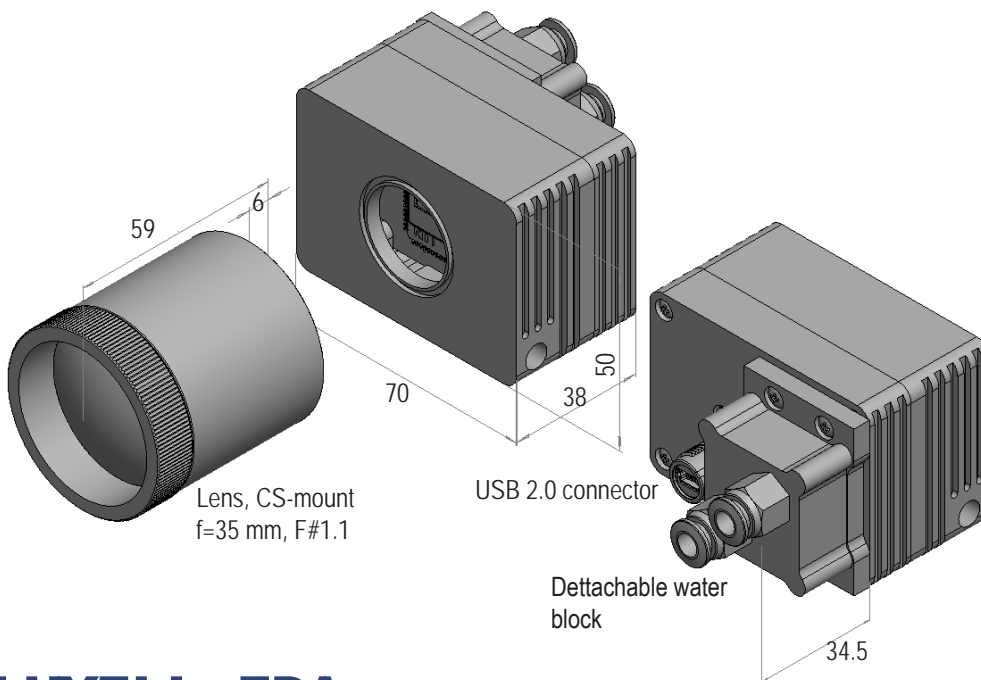
Glass manufacturing quality assurance

LUXELL CORE-S module



All dimensions in mm

LUXELL CORE-S with external housing and lens



Lens, CS-mount
f=35 mm, F#1.1

USB 2.0 connector

Detachable water
block

LUXELL FPA



- ▶ FPA resolution: 256 pixels
- ▶ Uncooled operation
- ▶ Band of detection: MWIR (1 - 5 μm)
- ▶ Peak detection wavelength: 3.7 μm
- ▶ D^* (WLpeak) (typ): 2×10^9 Jones
- ▶ Silicon window with AR coating
- ▶ Response time: 2 μs
- ▶ Pixel size: $600 \times 60 \mu\text{m}^2$
- ▶ Pixel pitch: 60 μm
- ▶ Readout method: x-y multiplexed
- ▶ Readout electronics: not included (CORE-S compatible)
- ▶ Dimensions (mm): $24 \times 24 \times 2.2$
- ▶ Biasing voltage (typ): 5 V
- ▶ Pixel resistance (typ): 0.2 - 1.0 $\text{M}\Omega$
- ▶ Packaging: SMD / LCC68 footprint
- ▶ Pinout: 68 pins (32 in use)

Typical applications

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

Industries of use

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

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