



IRXCAM-THz-384

Terahertz Camera Module

The IRXCAM-THz camera is a flexible module based on the sensitive INO 384 x 288 pixel uncooled microbolometer FPA optimized for the terahertz waveband. Due to its longer wavelength, THz band offers unmatched penetration depth for seeing through materials. Thus, the camera shows sensitivity over a wide spectral range, providing live video images.

The module is composed of a set of electronic boards that handle raw data acquisition and data transfer over GigE, as well as output data. Providing 16-bit raw signal and 8-bit final image outputs at 48 Hz, the electronics gives total access to the detector configuration parameters. The FPA is mounted on proximity electronics that are adaptable to various FPAs. The core can be further equipped with a 44 mm focal length refractive optics optimized for the THz region.

IRXCAM-THz-384 CAMERA CORE



APPLICATIONS

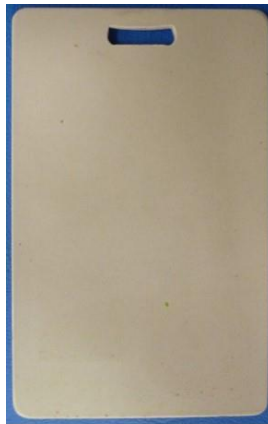
- Package inspection
- Manufacturing
- Security screening and surveillance
- Concealed weapons detection
- Vision through camouflage
- Quality control, process monitoring
- Spectroscopy
- Submillimeter astronomy
- Dental and medical imaging
- Food inspection

BENEFITS

- Wide band response
- High sensitivity
- 16-bit raw data
- High image quality
- Refractive optics available

EXAMPLES OF SEE-THROUGH IMAGING

VISIBLE IMAGE –
MAGNETIC CARD



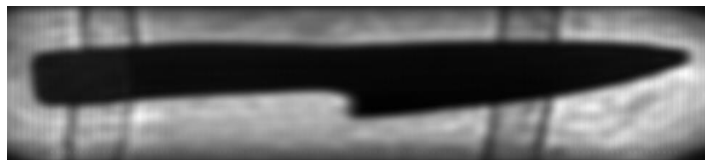
TERAHERTZ
IMAGE



VISIBLE IMAGE -
INSIDE



KNIFE INSIDE A CARDBOARD MAIL ENVELOPE



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PRELIMINARY TECHNICAL SPECIFICATIONS ⁽¹⁾	
Waveband ⁽²⁾	70 – 3189 μm / 4.25 – 0.094 THz
Sensor ⁽²⁾	<ul style="list-style-type: none"> 384 x 288 pixel uncooled microbolometer FPA 35 μm pixel pitch Silicon float zone window AR coating optimized for specific THz wavelengths
Frame rate	48 Hz
Video output	GigE Link <ul style="list-style-type: none"> RJ-45 connector 16-bit raw data
Control	GigE Link <ul style="list-style-type: none"> System operation control Loading of parameters
Pixel pitch	35 μm
Power supply	9-12 V
Power consumption	6 W
Dimensions	65 mm (H) x 59 mm (W) x 105 mm (L)
Weight	420 g
Temperature	- 10 to 50°C

REFRACTIVE OBJECTIVES		
Specifications ⁽³⁾	Fast Optics	Ultrafast Optics
Focal length	44 mm	44 mm
F number	0.95	0.7
Object distance	90 cm to infinity	60 cm to infinity
Lens material	HRFZ-Si	HRFZ-Si
AR coating	Parylene-C	Parylene-C
Number of lenses	2	2
Dimensions	80 mm (\varnothing) 52 mm (L)	80 mm (\varnothing) 66.5 mm (L)

⁽³⁾ Custom specifications available on demand



Fast Optics
F/0.95

Ultrafast Optics
F/0.7

⁽¹⁾ Subject to change.

⁽²⁾ Detector and coating may vary depending on the selected wavelength.

**R&D CONTRACTS – PROTOTYPING – PREPRODUCTION
SHORT-RUN PRODUCTION – TECHNOLOGY TRANSFERS**