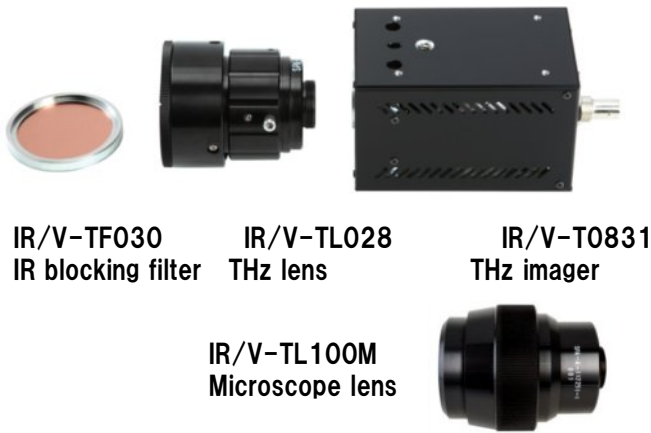


Uncooled THz Imager IR/V-T0831C

FPA based, palm size and light weight real-time THz imager



Outlook of IR/V-T0831C
(Equipped with lens and filter)



IR/V-TF030
IR blocking filter

IR/V-TL028
THz lens

IR/V-T0831
THz imager

IR/V-TL100M
Microscope lens

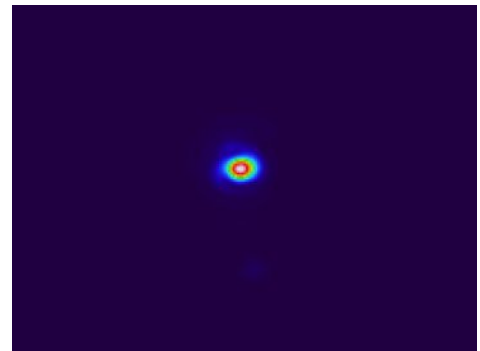
Advantages

- QVGA format
- High sensitivity
- "Lock In" for SNR improvement

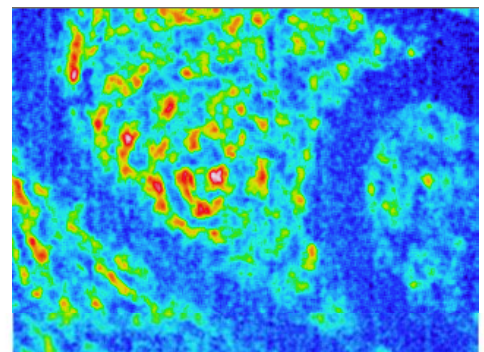
Applications

- Beam Profiling
- Biomedical Imaging
- Non-destructive testing
- Process Control

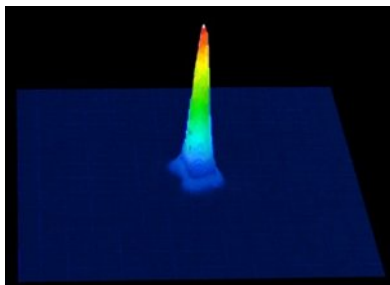
Image of THz source
(Quantum Cascade Laser)



Clip in the flour
(with microscope lens)



Example of THz source *



Quantum cascade laser
Frequency : 3THz, Power : 6.6μW

*Above image is generated from acquired data using off-the-shelf software.

Specifications

Specification of IR/V-T0831C THz Imager

| Item | Description |
|---|---|
| Detector | Uncooled microbolometer |
| Array format | 320x240 – 23.5 μ m pitch |
| Field of view | 15.0°x11.2° (Equipped with option lens IRV-TL028) |
| Noise equivalent power (NEP) ^(†) | <100pW (@ 4THz) |
| Frequency range ^(†) | 1~7 THz |
| Signal outputs | Digital image data : USB2.0 Sync. Signal : BNC |
| Frame rate | 8.5Hz |
| Lock In function | Sync. Signal : 4.29Hz, 2.14Hz, 1.43Hz, 1.07Hz TTL output: +5V |
| Operation temperature | 0~35°C / a1 <80%RH |
| Power | 12 VDC |
| Weight | 550g approx. (excl. lens and filter) |
| Accessories | USB cable, Filter adapter, Viewer software, User's manual |

(†) NEP and frequency range are based on evaluation and calculated results. These performances are not guaranteed because of no standard testing method in the world.

Options

IR/V-TL028 : THz lens (F/1)
IR/V-TL100M: THz microscope lens (1x)
IR/V-TF030 : Infrared blocking filter
(Cut off frequency approx. 300cm⁻¹ (= 9THz))

Specification of IR/V-TL028 THz lens

| Item | Description | Remarks |
|---------------|--|-------------------------------|
| Focal Length | 28.2mm | |
| F number | 1.0 | |
| Field of View | Horizontal: 15.0° or more Vertical: 11.2° or more | When equipped with IR/V-T0831 |
| Size | Φ60mm x 73mm | |
| Weight | 200g approx. | |

Specification of IR/V-TL100M THz microscope lens

| Item | Description | Remarks |
|------------------|--|-------------------------------|
| Magnification | 1x | |
| N.A. | 0.5 | |
| Working Distance | 34mm approx. | Fixed focus |
| Field of View | Horizontal: 7.52mm Vertical: 5.64mm | When equipped with IR/V-T0831 |
| Size | Φ69mm x 86mm | |
| Weight | 200g approx. | |

Specification of IR/V-TF030 Infrared blocking filter

| Item | Description | Remarks |
|----------------------|-------------------------|-----------------------------|
| Cut-off Freq. | 300±20 cm ⁻¹ | |
| Average Transparency | ≥80% | 50 ~ 250 cm ⁻¹ |
| Average IR Blocking | < 0.1% | 500 ~ 2000 cm ⁻¹ |
| Size | φ56mm×6.1mm | |

This product utilizes the result of the research funded by National Institute of Information and Communications Technology (NICT) of Japan.

For further information, please contact:

NEC Corporation

Intelligence Surveillance and Reconnaissance Systems Department,
Radio Application Guidance and Electro-Optics Division

1-10, Nisshin-cho, Fuchu, Tokyo 183-8501 Japan
TEL: +81-42-333-1174

E-mail: window@geo.fc.nec.co.jp

- Performances described herein are based on the NEC test condition.
- Performances and appearance described herein are subject to change without notice.

WARNING NOTICE

This product (or technology or software) is controlled by export control laws and regulations of Japan. Transfer or any other disposal of this product (or technology or software) without required license from the government of countries having competent jurisdiction is prohibited.

<http://www.nec.com/en/global/prod/terahertz/>

As of September 2014