



# Terahertz imaging cameras



New physical principle employed



Operates at frequencies (0.05 – 0.7 THz), where most common materials are transparent



256, 1024, 4096 pixels models are available — to accommodate any budget



USB feeding and programming



Low-cost



1.5 year warranty

The detectors are fabricated from GaAs high-mobility heterostructure in the standard semiconductor cycle using conventional optical lithography. The imaging sensor is manufactured on a single wafer. That process ensures high homogeneity and reproducibility of the plasmonic detector parameters(pixel-to-pixel deviation responsivity is within 20-percent range). Each unit detector proved to have room-temperature responsivity up to 50 kV/W with read-out circuitry and noise equivalent power 1 nW/Hz<sup>0.5</sup> in the frequency range 10 GHz — 1 THz. The detection mechanism is based on transformation of incident THz radiation into two-dimensional electron system(2DES) plasma oscillation. Plasma wave is then rectified on the inhomogeneity of 2DES electron density in the defect region.

## Tera-256



- 256 pixels (16 x 16 array)
- 1.5 x 1.5 mm pixel size
- 50 kV/W responsivity with NEP=1 nW/Hz<sup>0.5</sup>
- 10 cm x 10 cm x 5.5 cm device size



## Tera-1024

- 1024 pixels (32 x 32 array)
- 1.5 x 1.5 mm pixel size
- 50 kV/W responsivity with NEP=1 nW/Hz<sup>0.5</sup>
- 10 cm x 10 cm x 5.5 cm device size

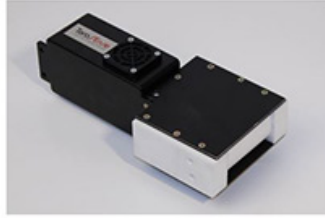


## Tera-4096

- 4096 pixels (64 x 64 array)
- 1.5 x 1.5 mm pixel size
- 50 kV/W responsivity with NEP=1 nW/Hz<sup>0.5</sup>
- 20 cm x 20 cm x 10 cm device size

## TeraFAST-256

- Image acquisition rate: 5000 fps (5 KHz)
- Scanning speed: up to 15 m/sec (900 m/min)
- Min detectable power/pixel: 100 nW (at 5000 fps)
- 256 pixels (256 x 1 array) - scalable in size
- 3 x 1.5 mm pixel size
- 8000 V/W responsivity with NEP=1 nW/Hz<sup>0.5</sup>



[Download Terahertz Camera Datasheet](#)



[Download TeraSense Brochure](#)

## Demonstration of THz imaging



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