

# HIGH SPEED LINEAR TERAHERTZ CAMERA



IDEAL FOR HIGH SPEED CONVEYORS

- ✔ Image acquisition rate: 5 kHz (5000 fps)
- ✔ Scanning speed: up to 15 m/sec
- ✔ Spectral range: 50 GHz – 0.7 THz
- ✔ Number of pixels (scalable): 256 x 1
- ✔ TeraFast® Viewer software
- ✔ Warranty period: 18 months

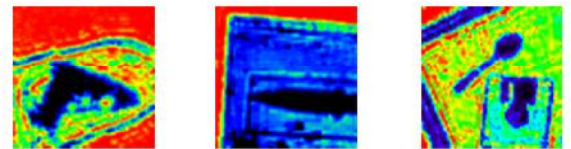
## Description

High Speed Linear THz camera is our brand new product, which features both, unprecedented imaging speed of 5000 frames per second and ease of integration into any industrial process. Its ultrafast linear sensor array is built to satisfy the needs in Non-Destructive Testing (NDT) and Quality Control (QC) for many industrial applications employing high speed conveyors belts. This product fits most conveyors with a belt speed up to 15 m/s.

Our Linear Terahertz Imaging System consists of two parts: a terahertz imaging camera and THz generator, both optimized & synchronized to each other. The generator is supplied with a specially configured horn antenna designed to cover the entire imaging area across conveyor belt. The horn spreads THz beam evenly and ensures that the whole THz radiation power is properly delivered from the generator into the camera. The camera pixel size determines image resolution of 1.5 mm, which is sufficient to support imaging in most industrial applications.



Layout for Linear Terahertz Imaging System installation on conveyor



Samples of THz images made by Terasense THz camera

### COMPETITIVE ADVANTAGES:

- ✔ No ionizing radiation
- ✔ Extremely high image acquisition rate (5 kHz)
- ✔ Ease of integration into industrial process
- ✔ CE Certification of Compliance
- ✔ Plug-and-Play design and customized solutions
- ✔ LOW COST

Terasense® technology employs standard semiconductor manufacturing processes for mass-market production, which allows to produce sensor arrays in large quantities, ensure high-performance and claim reasonable price.

## Specifications

Number of pixels:	256 (256 x 1)	Image acquisition rate:	5000 fps (5 KHz)
Pixel size:	1.5 x 3 mm <sup>2</sup>	Responsivity:	8000 V/W
Imaging area:	384 x 3 mm <sup>2</sup>	Min detectable power/pixel:	100 nW (at 5000 fps) 45 nW (at 1000 fps) 14 nW (at 100 fps)
Dimensions of device:	450 x 160 x 44 mm <sup>3</sup>	Included software:	TeraFast® Viewer
Sync out:	TTL (+5 V)	Power supply:	24 V/ 20 W
Interface:	mini-USB		



## APPLICATIONS

Rapid non-destructive, non-invasive characterization and imaging of objects / defects in uniform materials or under coated surfaces has never been easier and faster than with our high speed camera codenamed TeraFAST. Its record breaking image acquisition rate opens up doors to many industrial applications associated with Non-destructive testing, quality control and process control.



### Pharmaceutical and Cosmetics Industries

Non-destructive testing (NDT) of drugs, medical products and baby's diapers (nappies) at industrial production lines.

### Wood Processing Industry

Detecting concealed hollows, internal forms, shapes and/or defects saves a lot of time on inspections. Wood analysis: checking wood for water / moisture inside.



### Food Industry

Non-invasive technique for monitoring availability / number of hazel nuts inside of chocolate candies already wrapped and packaged; detecting any metal plastic debris, extraneous bodies or inhomogeneous parts (clots) inside ready food products.

### FMCG Packaging

Checking for availability of items inside packages as a process control step; detecting foreign objects inside packaging meant to exclude human error or defective items inside the package.



### Construction Materials and Building Trades

Using THz imaging camera at manufacturing facilities or at construction sites to identify and locate inhomogeneous elements or moisture in concrete, floor screed, plaster, wall paint etc.

### Automotive Industry

Identifying presence or absence of steel objects (viz. wires) or foreign bodies and elements inside of rubber tires. Inspecting fitted tires on wheels to identify special run-flat nylon inserts attached to alloy wheels inside a tire, thereby avoiding time-consuming tire removal for visual inspection.



### Agriculture and Livestock Farming

Potato selection process running on conveyor belt aimed to separate planting-potatoes from mud clumps and stones.

Measuring the thickness of a wool coat on a live sheep.

### Security Screening and Letter Scanning

Homeland security: identification of hidden objects concealed in bags at the airports or check-points.

Checking the contents of envelopes and parcels.

