

## PRODUCT ITEM\*: THz Imaging Cameras

Description / Specifications	STANDARD MODELS Certified frequency range: 50 GHz – 700 GHz			
	TERA-256	Linear TERA-1024	TERA-1024	TERA-4096
Number of pixels:	256 (16 x 16)	1024 (256 x 4)	1024 (32 x 32)	4096 (64 x 64)
Dimensions of device:	10 x 10 x 5.5 cm	44 x 4.3 x 8.9 cm	10 x 10 x 5.5 cm	20 x 20 x 10 cm
Pixel size (pitch):	----- 1.5 x 1.5 mm -----			
Responsivity (typical):	----- 50 kV/W -----			
Noise Equivalent Power:	----- 1 nW/√Hz -----			
Power:	----- 5V USB powered -----			
Warranty period:	----- 1.5 years -----			
Software:	Terasense Viewer ® Software			

Note: Terasense offers a variety of custom-tailored solutions to satisfy other configuration / geometry requirements for sensor arrays.

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## PRODUCT ITEM: High Speed Linear THz Imaging Camera

Certified spectral range: 50 GHz – 700 GHz

**INTENDED FOR HIGH SPEED CONVEYOR BELTS**



Model / part number:	TeraFAST-256-HS		
Number of pixels (scalable*):	256 (256 x 1)	Image acquisition rate:	5000 fps (5 KHz)
Pixel size (pitch):	1.5 x 3 mm	Responsivity:	8000 V/W
Sensor array imaging area:	384 x 3 mm	Min detectable power/pixel:	100 nW (at 5000 fps)
Size of device:	450 x 160 x 44 mm		45 nW (at 1000 fps)
Sync out:	TTL (+5 V)		14 nW (at 100 fps)
Interface:	Mini-USB	Power supply:	24 V/ 20 W
Warranty:	1,5 years	Software included:	TeraFast® Viewer

\*Note: as the number of pixels is scalable we can add sensor array blocks to accommodate other configuration / geometry requirements.

**A comprehensive THz imaging system along with TeraFAST-256-HS THz imaging camera should include two more elements as below:**

**IMPATT diode with ENHANCED horn antenna**

- Upgraded IMPATT diode @ 100GHz (without conical horn - see page 2)

- ENHANCED horn antenna with integrated system of PTFE lenses



**PRODUCT ITEM: THz Detector (Fast and Ultrafast)**

Description / Specifications	Sub-THz Detectors	
	Ultrafast	Fast
<b>Response time:</b>	150 ps	1 μs
<b>Spectral Range:</b>	50 GHz - 0.7 THz	50 GHz - 0.7 THz
<b>Responsivity (typical):</b>	0.5 V/W	10 V/W
<b>Noise Equivalent Power:</b>	2 nW/√Hz	1 nW/√Hz
<b>Dimensions:</b>	23 x 29 x 6.5 mm	23 x 29 x 6.5 mm
<b>Impedance:</b>	50 Ω	10 kΩ
<b>Output connector:</b>	SMA	SMA
<b>Warranty period:</b>	1.5 years	1.5 years



NOTE: Our Client can specify the exact frequency (frequency range) preferred for the final product and Terasense will have it manufactured optimized to customers' specifications. These settings will be preset at factory and will not be adjustable afterwards.

**PRODUCT ITEM: THz Generator (IMPATT diode) at 100 GHz**

Description / Specifications
<p><b>Upgraded IMPATT diode with protective isolator (Open flange type, with case and current source)</b></p> <p><b>Frequency*:</b> ~ 100 GHz ± 5 GHz</p> <ul style="list-style-type: none"> <li>• <u>Protective isolator</u></li> <li>• TTL Modulation (1us rise/fall time)</li> <li>• High power (~ 80 mW output rfpower)               <ul style="list-style-type: none"> <li>• **Rigidly fixed conical horn antenna --- or ---</li> <li>• **WR-10 or WR-8 flange (per customer's choice)</li> </ul> </li> </ul> <p><b>Warranty:</b> 1 year (1000 hours MTBF)</p>



Note\*: This upgraded product has enhanced characteristics and high versatility. It can be used in combination with VDI multipliers and therefore includes protective isolator that serves as a special transition piece to ensure proper interface/ compatibility with a multiplier. [CE Certificate of Compliance](#)

\*\* Customer must choose between horn antenna (option 1) and flange (option 2).

**PRODUCT ITEM: THz Generator (IMPATT diode) at 140GHz**

Description / Specifications
<p><b>Upgraded IMPATT diode with protective isolator (Open flange type, with case and current source)</b></p> <p><b>Frequency*:</b> ~ 140 GHz ± 5 GHz</p> <ul style="list-style-type: none"> <li>• <u>Protective isolator</u></li> <li>• TTL Modulation (1us rise/fall time)</li> <li>• High power (~ 30 mW output rfpower)               <ul style="list-style-type: none"> <li>• **Rigidly fixed conical horn antenna --- or ---</li> <li>• **WR-6 flange (per customer's choice)</li> </ul> </li> </ul> <p><b>Warranty:</b> 1 year (1000 hours MTBF)</p>



Note\*: This upgraded product has enhanced characteristics and high versatility. It can be used in combination with VDI multipliers and therefore includes protective isolator that serves as a special transition piece to ensure proper interface/ compatibility with a multiplier. [CE Certificate of Compliance](#)

\*\* Customer has to choose between horn antenna (option 1) and flange (option 2).