High-versatility real-time THz imaging system

TeraEyes-HV

Full-field real-time imaging @ 25 FPS

Ultra high resolution down to 250 µm

Multi-spectral THz imaging (2-5THz)

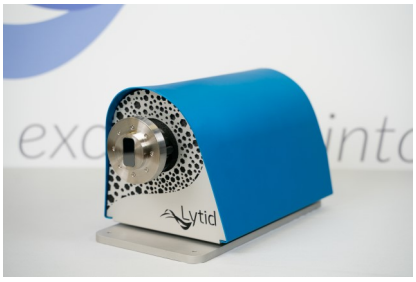
Customizable illumination pattern

1 click optical configuration

Transmission / Reflection imaging

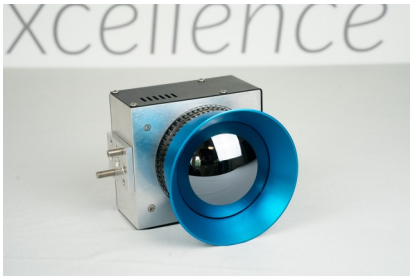
THz Imaging acquisition software

TeraEyes-HV is a high-versatility, real-time THz imaging system, suitable for full-field high resolution applications. Based on Lytid's powerful CW THz source, TeraCascade2000, a multifunctional imaging unit and a focal plane array detection unit, TeraEyes-HV is the ultimate, fully-integrated THz imaging solution. The source provides up to six frequencies in the THz range to satisfy the needs of customer. Integrated auto-alignment module delivers a collimated beam, while providing beam pointing stability after frequency switch. The beam homogenizer included in the imaging unit, ensures a high-quality, homogeneous illumination area, which can be user customized. The detection unit includes an uncooled microbolometer THz camera and TeraLens, Lytid's high resolution optimized THz imaging lens. TeraEyes also includes a programmable secondary output with a collimated beam for multi-spectral raster scan imaging or sensing outlining the system's versatility. Being an user-friendly, plug and play system, all parameters of TeraEyes-HV can be remotely adjusted by the dedicated PC software, allowing customers to focus on their application .



THz QCL source
- Multiple frequencies from 2–5 THz
- mW level output power
- Fully-automated cooling system
- Programmable and remote control

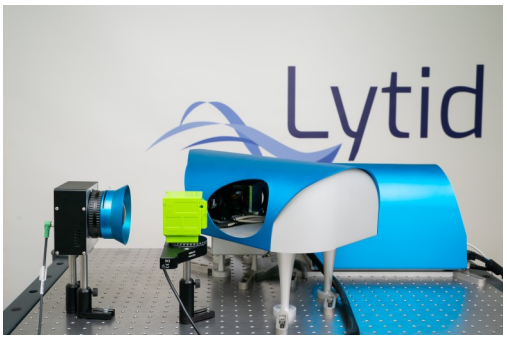
Imaging unit :
- Customizable homogeneous illumination options
- Auto-alignment module for multi-frequency source
- Single Gaussian beam output option



Detection unit
- Uncooled microbolometer camera
- TeraLens with adjustable working distance and depth of

Features :
- High resolution (250 µm*)
- Real time imaging (25 fps)
- Homogenous illumination
- Transmission/ reflection mode
- Multiple frequency option with auto-alignment module
- Compact, fully-integrated units
-Automate operation with dedicated software, ease of use

Applications :
- Resolution–demanding imaging
- Real-time & Point-to-point imaging
- Non-Destructive testing
- Quality control
-Tomography & 3D image reconstruction



Specifications	TeraEyes-HV
Source—TeraCascade2000	
Type	THz QCL source
Frequencies (THz)	2.5/2.9/3.2/3.8/4.2/4.7
Output power	2-3 mW typ.
Operation	Fully-automated
Illumination pattern	
Type	-Square, rectangular, linear -gaussian beam
Size	-mm to 8 cm side (OUT1) - collimated or focused (OUT2)
Detection Unit	
Camera Type	Uncooled microbolometer FPA
Pixel Pitch	50 micron
Frame-rate	25 Hz
Detector size	320x240 pixels
THz Objective	TeraLens
Performance	
Resolution	250 µm* in real-time mode
Imaging	Real-time/Raster-scan
Configuration	Transmission/Reflection

* achieved at the frequency of 4.7 THz

PRELIMINARY DATASHEET

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