High-versatility real-time THz imaging system

TeraEyes-HV

Full-field real-time imaging up to 50 FPS

Ultra high resolution down to 250 µm

Multi-spectral THz imaging (2-5THz)

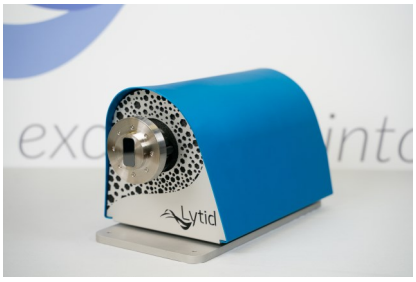
Customizable illumination pattern

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 units offer two options of pixels sizes and pixel count and are based on uncooled microbolometer arrays 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.

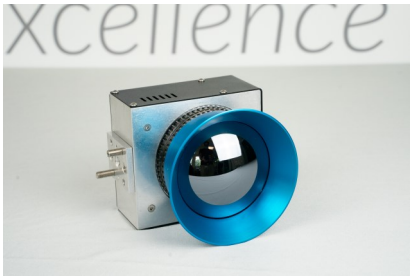


THz QCL source

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

Imaging unit :

-Customizable homogeneous illumination
-Auto-alignment module for multi-bands
- Single Gaussian beam output



Detection unit

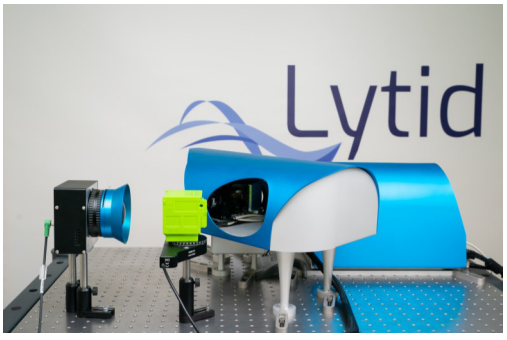
- Uncooled microbolometer camera
- TeraLens with adjustable working distance and depth of field control

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) (up to 6)	2.5/2.9/3.3/3.5/3.8/4.3/4.7	
Average output power	2-5 mW typ.	
Operation	Fully-automated	
Illumination pattern	Small pixel array	Large pixel array
Type	-Square, rectangular, linear -gaussian beam	-Square, rectangular, linear -gaussian beam
Size	-mm to 5 cm side)	-mm to 8 cm side
Detection Unit	Small pixel array	Large pixel array
Camera Type	Uncooled microbolometer FPA	Uncooled microbolometer FPA
Pixel Pitch	17 um	35 um
Frame-rate	50 Hz	
Detector size	640 x 480 pixels	384 x 288 pixels
THz Objective	TeraLens Si-HRFZ 40mm - F/0.83	
Performance		
Resolution	250 µm* in real-time mode	
Imaging	Real-time/Raster-scan	
Configuration	Transmission/Reflection	

* Achieved at the frequency of 4.7 THz

Lytid SAS
10 rue A. Domon et L. Duquet
75013 Paris - FRANCE
@ : sales@lytid.com
✆: +33 1 88 33 63 09
www.lytid.com

Published October 2024

Lytid

Empower your application