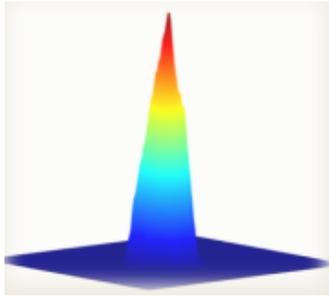


非冷却・高感度テラヘルツ検出器

「RIGI-THz」



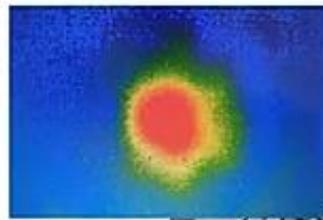
- ビームプロファイリング
- 非破壊・非接触性能検査
- 産業用プロセス制御
- ライフサイエンス分野
- セキュリティー分野
- 高感度 NEP: $< 1.5 \text{ pW}/\sqrt{\text{Hz}}$ (at 4.6THz)



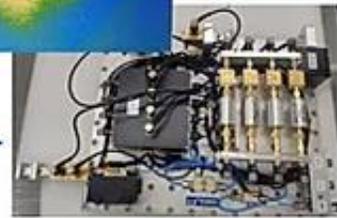
THz-QCL光源イメージデータ

- 帯域: 4.6 THz
- レーザーパワー: 0.6 μW
- 露光時間: 50 μs
- データ取得: シングルショット

• VDI CW source



VDI
Virginia Diodes, Inc.



sub-mW 480 GHz

【仕様】

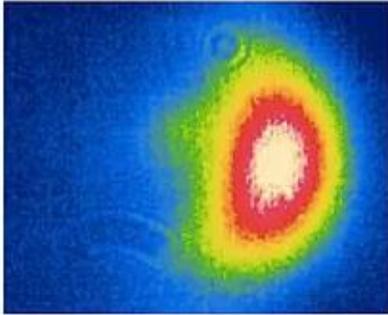
Model	S2	S3	M1	M2	L2	XL2
	S2-Ex			M2-Ex		
Pixel size	25 μm	17 μm	25 μm	17 μm	15 μm	12 μm
Number of pixel	160 × 120	160 × 120	384 × 288	640 × 480	1024 × 768	1280 × 1024
Active area(mm)	4 × 3	2.7 × 2.04	9.6 × 7.2	10.88 × 8.16	15.36 × 11.52	15.36 × 12.288
Dynamic range	14 bit	14 bit	14 bit	14 bit	14 bit	14 bit
Frame rate	9 Hz	9 Hz	50 Hz	50 Hz	4.5 or 50 Hz	4.5 or 50 Hz
NEP	$< 1.5 \text{ pW}/\sqrt{\text{Hz}}$ (at 4.6THz)					
Shutter				Integrated for automatic background correction		
Sensitivity	$< 1\text{THz} \sim 18\text{THz}$					
Power supply	USB- powered					
Weight	$< 70\text{g}$		$< 100\text{g}$			
Dimensions(cm)	W3.2×H3.2×D4			W4×H4×D5.5		
Window	Si					
Adapter	none , Filter mount etc (optional)					

※Exモデルは<1THzでベーシックモデルよりも3~4倍高感度なセンサーを搭載しています

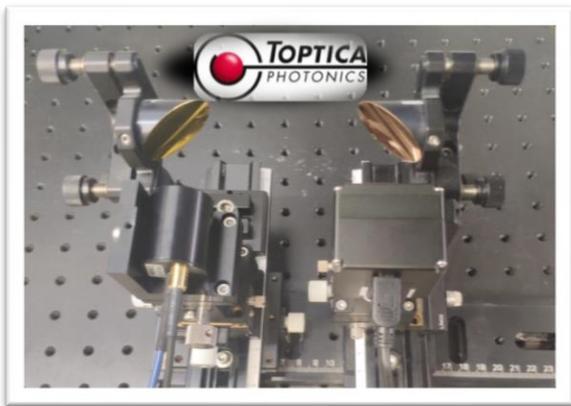
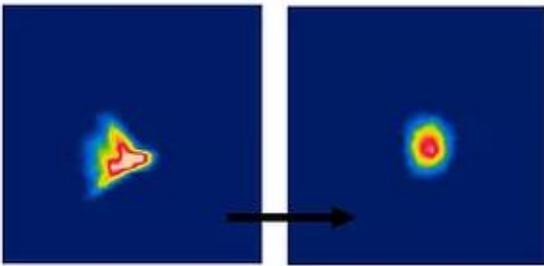
【アプリケーション例】

Applications in beam profiling (single shot, 50 μs)

1 THz, pulsed: weak photoconductive antenna source (using 80 MHz, 800 nm oscillator pump source): Characterization



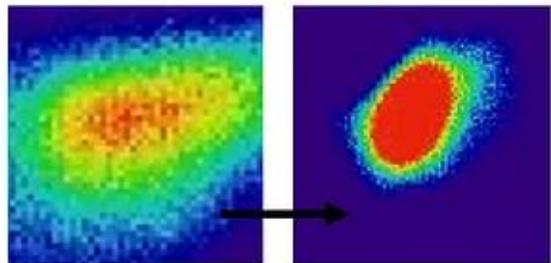
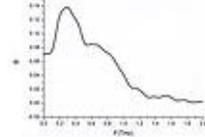
1 THz, pulsed: weak ZnTe based source (using 200 μJ, 800 nm oscillator pump source): Alignment



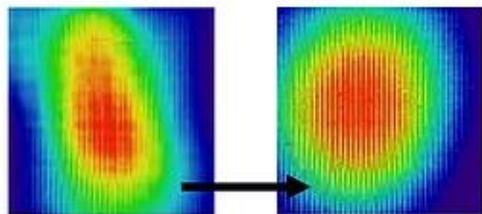
Simple THz imaging setup based on the Toptica PCA and RIGI camera

Shared by our customers using different camera models

0.3 THz, pulsed, 1 kHz: Lithium Niobate Source: alignment



3 THz, CW: CO2 based source: Spatial filtering



S: Series:
Demonstration of imaging

Image with QCL from Lytid using small low contrast plastic



Low power vs High power cameras



Image using CW THz source
Frequency: 0.76 THz
Acquisition: Single frame (EMPA)