

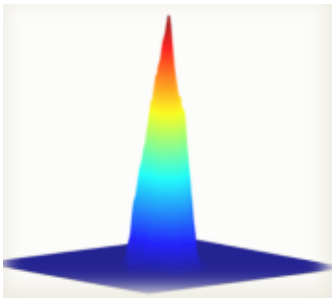
非冷却・高感度テラヘルツ検出器

「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 pW/√Hz(at 4.6THz)



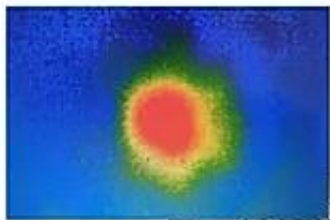
Coin size!!



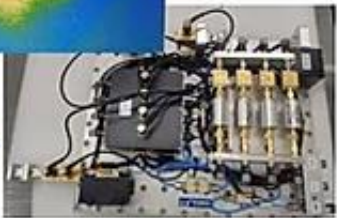
THz-QCL光源イメージデータ

- ・ 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

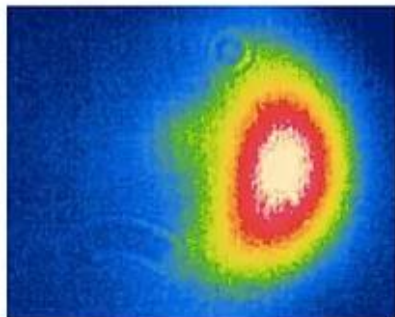
【仕様】

Model	S2	S3	M4	M1	M2	L2	XL1
Pixel size	25 μm	17 μm	17 μm	25 μm	17 μm	15 μm	15 μm
Number of pixel	160 × 120	160 × 120	240 × 180	384 × 288	640 × 480	1024 × 768	1280 × 1024
Active area(mm)	4 × 3	2.7 × 2.04	4.08 × 3.06	9.6 × 7.2	10.88 × 8.16	15.36 × 11.52	19.2 × 15.36
Dynamic range	14 bit	14 bit	10 bit	14 bit	14 bit	14 bit	14 bit
Frame rate	9 Hz	9 Hz	25 Hz	50 Hz	50 Hz	50 Hz	50 Hz
NEP	< 1.5 pW/√Hz(at 4.6THz)						
Shutter	Integrated for automatic background correction						
Sensitivity	<1THz~18THz						
Power supply	USB- powered						
Weight	<70g		<100g				
Dimensions(cm)	W3.2×H3.2×D4		W4×H4×D4.5				
Window	Si						
Adapter	none , Filter mount etc (optional)						

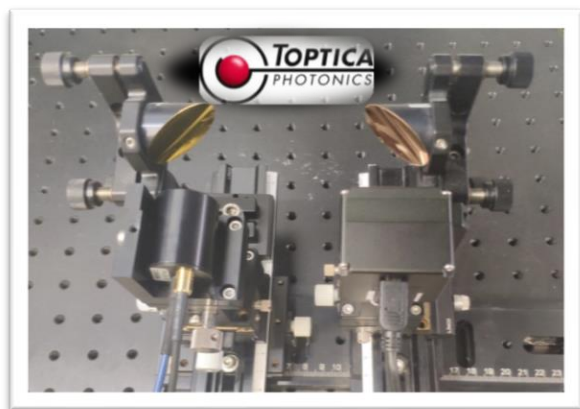
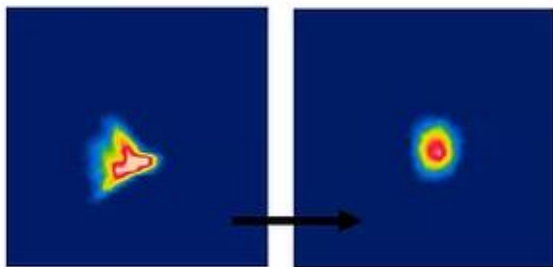
【アプリケーション例】

Applications in beam profiling (single shot, 50 μ s)

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



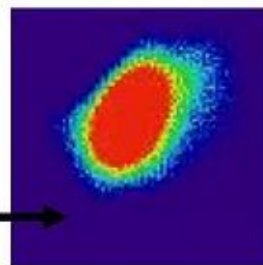
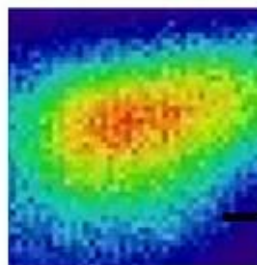
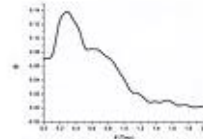
1 THz, pulsed: weak ZnTe based source (using 200 μ J, 800 nm oscillator pump source): Alignment



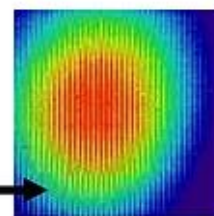
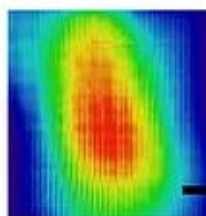
Simple THz imaging setup based on the Toptica PCA and RIGI camera

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)