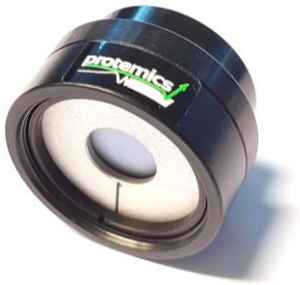
Bias-free Terahertz emitter

TeraBlast



Background

THE new bias-free Terahertz emitter series TeraBlast from Protemics are optically pumped THz sources which can be used with a wide range of femtosecond laser sources (such as low power oscillators or amplified lasers with wavelengths in the range of 700..1600 nm).

They are ideally suited and tested for near-field imaging applications including TeraSpike micro-probe operation. The TeraBlast is also a great emitter for classic far-field spectroscopy and other THz applications.

Technical data

TeraBlast TD-1550-L-165	
Excitation wavelength range	700 .. 1600 nm
Typ. average excitation power range	5 mW .. 1000 mW
Average THz emission power	> 2.5 µW [a]
Active area diameter	10 mm [b]
Adapter dimension (Outer diameter)	1/2 inch

[a] Measured with pyroelectric detector (Spectrum Detector Inc. SPI-D-62-THz) for 370 mW optical pump power.

[b] Larger active areas possible. Please request!

Key benefits

- Recommended THz source for TeraSpike microprobe operation
- High emission power
- Patent pending design (DE102012010926 A1)
- Virtually no alignment or focusing effort
- Can be used as a point source or array emitter
- Linearly polarized emission
- Extremely robust due to bias-free operation
- No device failure on local short-cut defects
- No dark current
- No parasitic off-set signal generation in lock-in detection schemes

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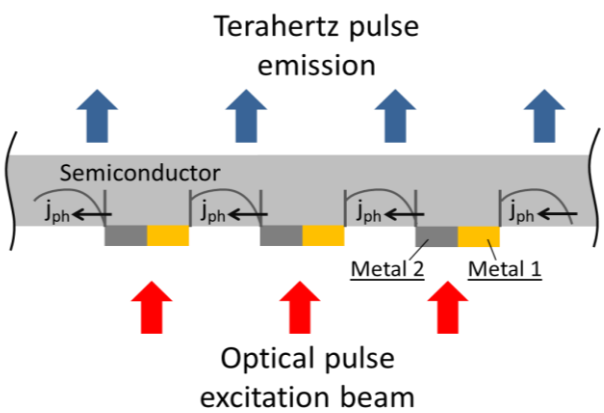
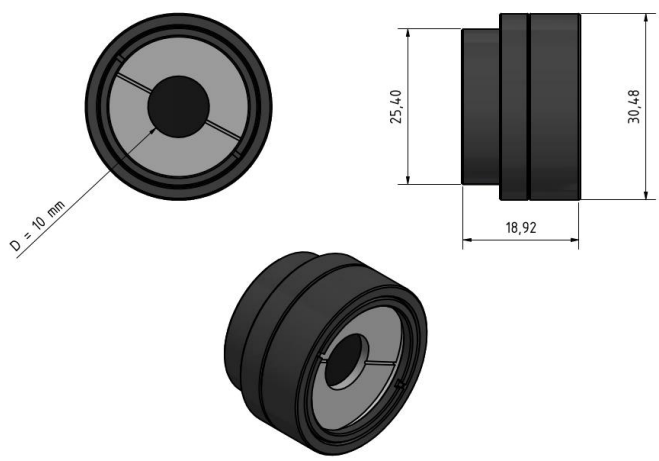
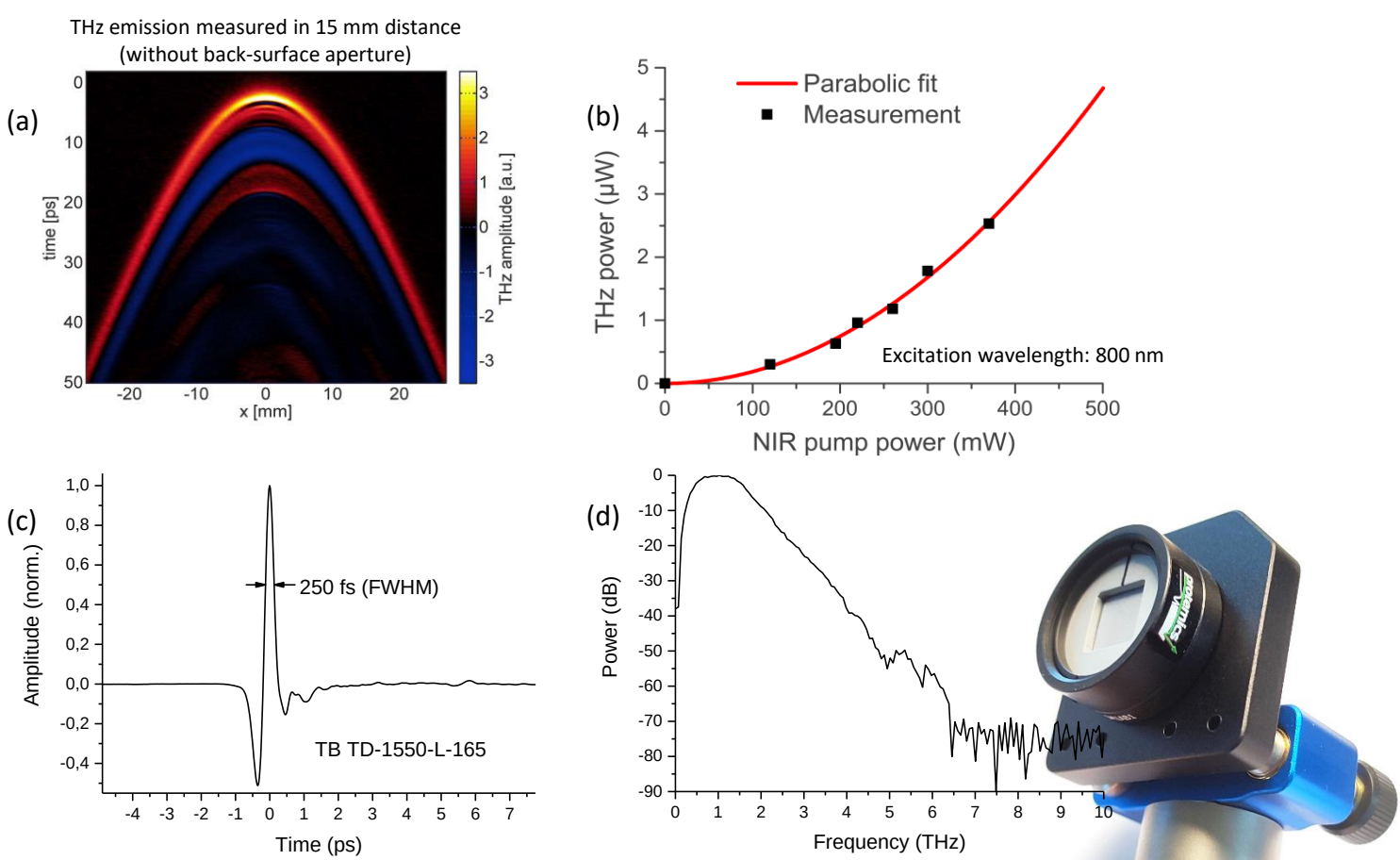
Emitter scheme



Dimensions



Exemplary measurement data



(a) Measured with TeraSpike TD-800-X-HRS, (b) Measured with SPI-D-62-THz from Spectrum Detector Inc. (c) & (d) Far-field transmission through atmosphere measured with a femtosecond laser from Laser Quantum („taccor“) and electrooptic detection in a 400-µm-thick GaP crystal using ASOPS based time-domain spectroscopy.