

# Large-area bias-free Terahertz emitter



## Application notes



### TeraBlast TD-1550-L-165

Large-area bias-free THz emitter device  
v5 09/2022



# Caution!

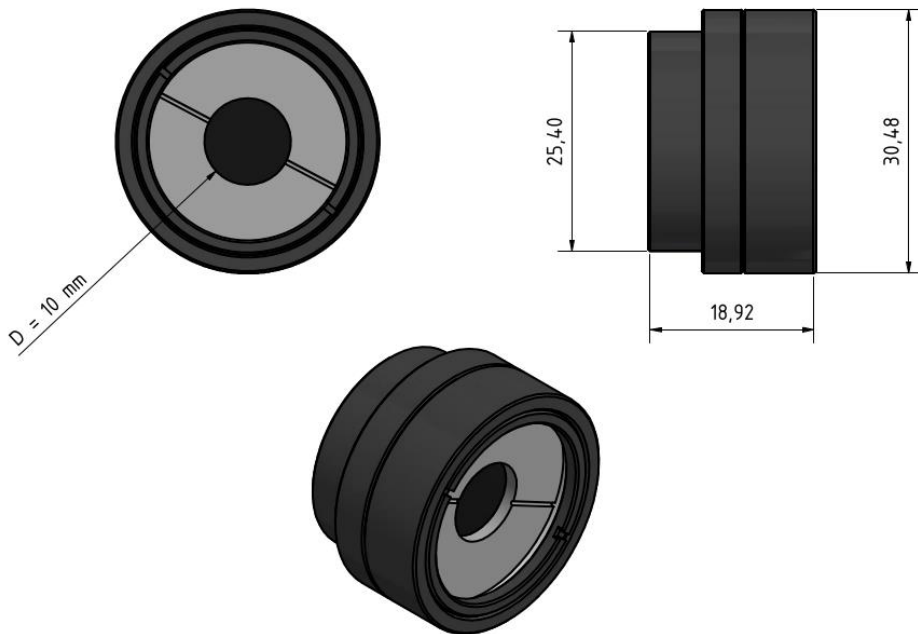


- Carefully study these application notes before starting the installation of your TeraBlast THz emitter.
- Handle the device with care. Do not drop.
- Always keep the device in a clean and dust-free environment.
- Laser radiation is reflected by the device. Refer to laser safety instructions.

# Dimensions



- Dimensions of TeraBlast TD-1550-L-165
- Version with 1" mount:



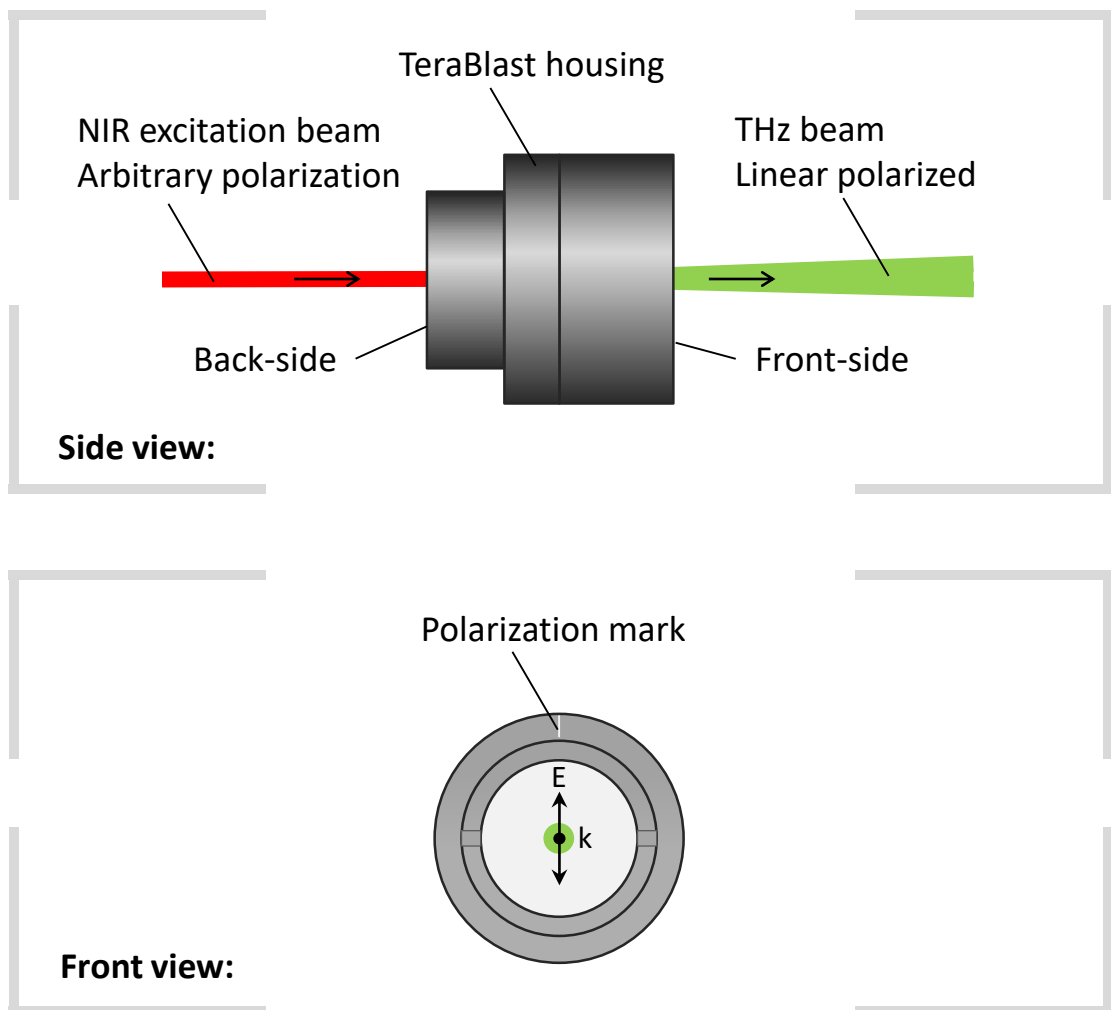
- (old) version with 0,5" mount:



# Preparation

- Before device installation, block all laser beams in the area of operation to avoid injuries and thermal device damage. Obey the security instructions of your laser manufacturer.

## Emitter orientation:



# Installation

- **Unboxing:**

Please check the TeraBlast emitter for visual transportation damage before removal of the seal.



- **TeraBlast Installation:**

(a) The TeraBlast emitter is equipped with a 1" (or 0.5") mounting adapter. Please install a compatible mounting device at the desired position in your setup.

(b) With the laser beam still blocked install the TeraBlast emitter in the setup. Align the THz polarization (see mark) according to your requirements.

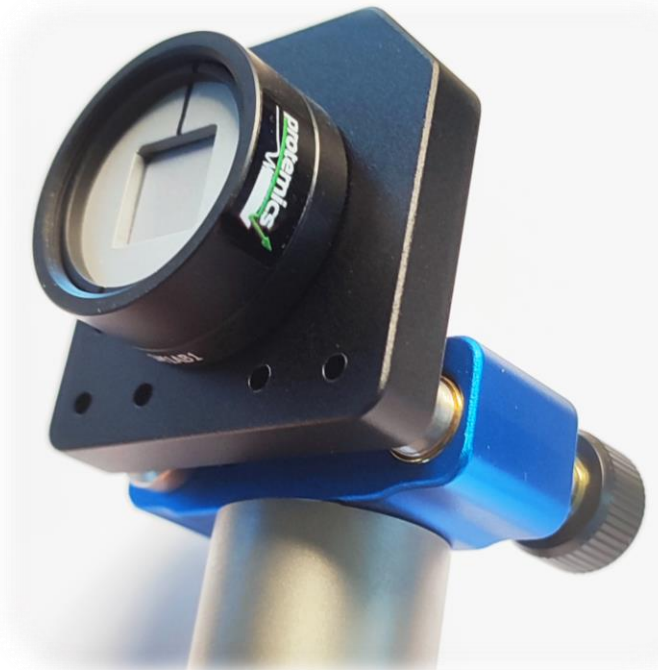
(c) TeraBlast is suited for both large area and focussed excitation. For highest bandwidth a focussed excitation is recommended (Spotsize smaller 200 $\mu$ m).

(d) The maximum excitation fluence should stay below 220 nJ/mm<sup>2</sup> for optimal efficiency.



# Recommendations

- The TeraBlast is designed for excitations with ultra-short laser pulses with wavelengths between 700nm and 1600nm. For optimum performance pulse durations below 120fs and wavelengths around 800nm are recommended.
- In THz far-field set-ups additional THz optics such as parabolic mirrors or lenses should be installed to collimate and focus the generated THz radiation.
- For applications requiring field detection at close distance (< 20 mm) to the TeraBlast emitter the HPF (high pass filter) option is recommended to block low-frequency microwave emission. With the HPF option a matching filter is included within the TeraBlast housing.



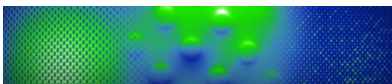
# Optional TeraBlast-Option -AR



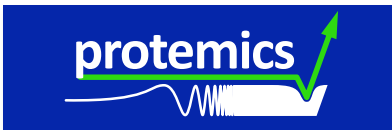
- **Discoloration:**

It might happen, that the anti-reflection coating of the TeraBlast TD-1550-L165-AR shows some discoloration at the edges. This has no influence on the generated and radiated THz pulse





Questions? Please contact us:



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