



Flat-Top Converter | Top Hat

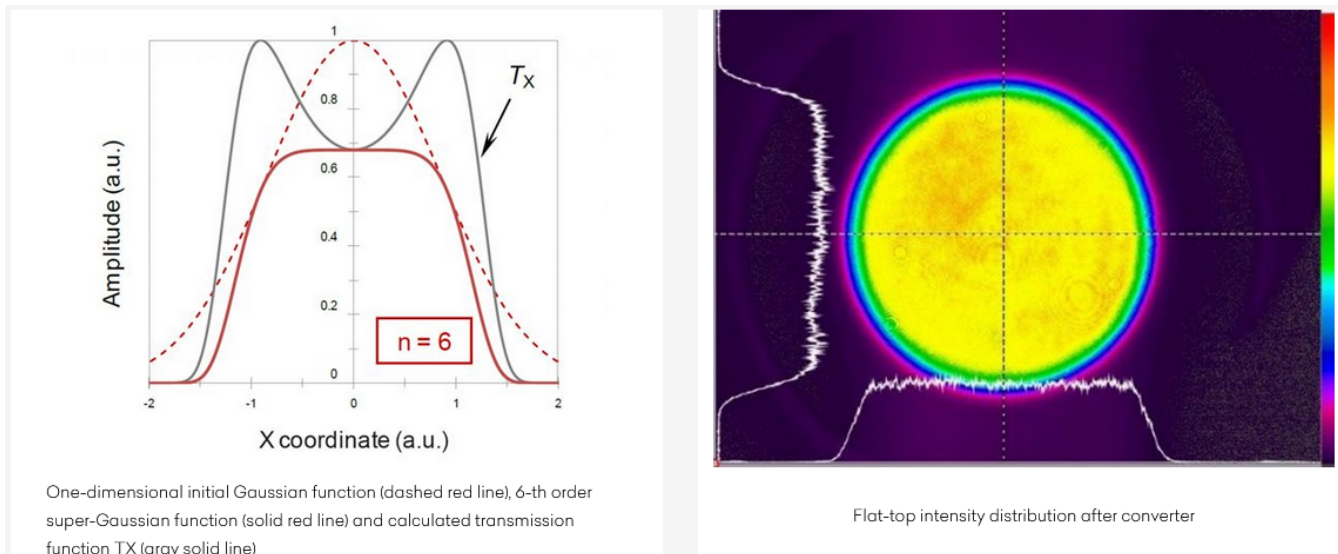
Transforms Gaussian beam to a Flat-Top beam

Detailed description

Space-variant waveplate for flat-top conversion is a space-variant phase retardation plate inscribed inside a bulk of fused silica glass by femtosecond laser pulses. It is well known that flat top intensity distributions compared to Gaussian beam profiles with respect to the efficiency and quality have noticeable advantages for micromachining. ⁴

A combination of a space-variant waveplate and a polarizer acts as a space-variant transmission filter (patent pending) and can be used to transform an initially Gaussian beam to a flat-top beam with efficiency of more than 50% of initial laser power.

Converter allows for on-the-fly adjustment of the beam shape from flat-top to shape with a dip in the middle. The converter is compatible with high power ultrashort lasers.



Space variant waveplate for flat-top conversion is beam shaping optics. Combination of a space-variant waveplate and a polarizer acts as a space-variant transmission filter that converts Gaussian beam spot profile to flat-top beam with equal energy distribution.

Main features:

- Converts Gaussian beam to a flat-top beam.
- High damage threshold: 63,4 J/cm² @1064 nm, 10ns and 2,2 J/cm² @1030 nm, 212fs.
- Wavelength range from 300 nm to 2 μ m.
- Conversion efficiency up to 70 % (wavelength dependent)
- Large aperture (up to 15 mm; standard is 6 mm)
- 100% suitable for your application – designed according to your laser beam specifications.



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