

# ***Focal- $\pi$ Shaper 9\_xxx***

***Series of high efficient Beam Shapers  
To manipulate the intensity profile of focused TEM<sub>00</sub> beams  
Lasers of UV, Visual and near-IR spectrum***



With these unique tools the long-standing wish to manipulate the shape of focused beams becomes a reality.

With nearly 100% efficiency the ***Focal- $\pi$ Shaper*** produces various profiles:

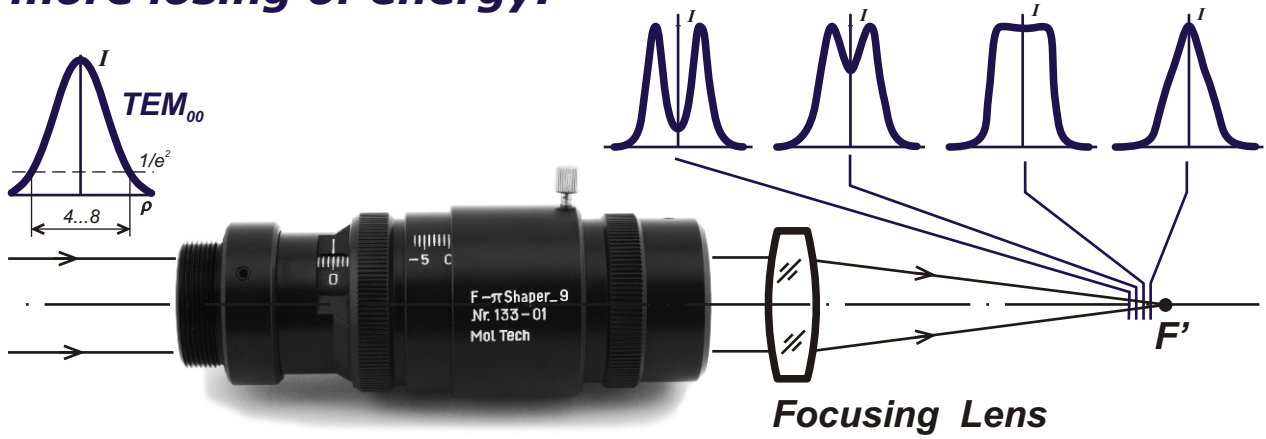
- Flattop
- "Reverse Gauss"
- "Donut"
- "Trident", etc.

An appropriate optical design provides simple adjustment procedure and lets it easy to integrate the ***Focal- $\pi$ Shaper*** in your applications:

- Solar Cell production laser technologies
- Marking and Engraving
- Drilling
- Scribing
- Dicing
- Material micromachining
- Printing
- Microwelding

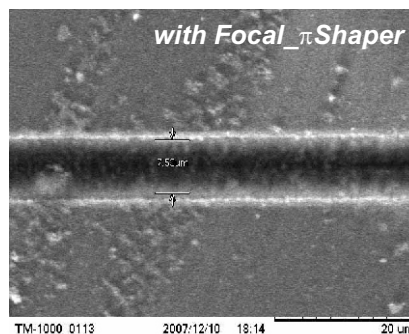
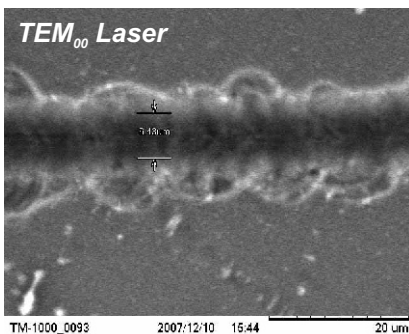
***Beam Shaping never was so easy!***

# No more losing of energy!



## Technical Specifications

Common for all Focal- $\pi$ Shaper 9_xxx models:	
Type	Telescope of Galilean type ( without internal focus)
Input beam	<ul style="list-style-type: none"> <li>- TEM<sub>00</sub>, Collimated or low divergence</li> <li>- Diameter &lt; 16 mm</li> <li>- Optimum <math>2\omega</math> diameter for a Gaussian beam 4...8 mm (<math>1/e^2</math>)</li> </ul>
Output beam	<ul style="list-style-type: none"> <li>- Collimated or low divergence</li> <li>- Profile is optimized for Intensity distribution manipulation in focal plane of a diffraction limited lens</li> <li>- Diameter &lt; 16 mm</li> </ul>
Other features	<ul style="list-style-type: none"> <li>- Easy integration to an optical setup and adaptation to a laser source</li> <li>- Compact design suitable for scientific and industrial applications</li> <li>- A diffraction limited focusing lens of any type can be applied with the F-<math>\pi</math>Shaper</li> <li>- Easy tolerances for alignment as well as positioning of the F-<math>\pi</math>Shaper with respect to a lens</li> <li>- Capability to work with scanning mirrors</li> </ul>
Overall dimensions	<ul style="list-style-type: none"> <li>- Diameter 41 mm</li> <li>- Length 110 mm</li> </ul>
Weight	200 g
Mounting	External Thread M 27x1
Focal- $\pi$ Shaper 9_xxx features	
Model	<b>_1064</b> <b>_TiS</b> <b>_532</b> <b>_355</b> <b>_266</b>
Optimum spectral range**, nm	1020 - 1100      750 - 850      520 - 550      330 - 380      250 - 280
Applications based on	Nd:YAG, Fiber and other near IR-lasers      Ti:Sapphire laser, near IR lasers      2 <sup>nd</sup> (532) Harmonics of Nd:YAG laser      3 <sup>rd</sup> (355) Harmonics of Nd:YAG laser      4 <sup>th</sup> (266) Harmonics of Nd:YAG laser
* - working wavelength range without taking into consideration the coatings	
** - according to coatings applied	



Comparison of Scribing (Courtesy of Altechna)

