

Ultrafast Laser Beam Shaper

Features

- › Complex beam shaping
- › Low transmission losses
- › High peak-power/energy handling
- › Diffraction limited output
- › Tolerance to input beam instability
- › Compact and rugged design

Applications

- › Micro & nano processing of metal, glass, ceramics, semiconductor...
- › Drilling
- › Cutting
- › Engraving
- › Milling
- › Surface texturing

Description

CANUNDA-PULSE is a versatile beam-shaper based on Cailabs Multi Plane Light Conversion* (MPLC) patented technology.

It reshapes singlemode laser beams operating in short pulse regime with up to 100 μJ pulse energy handling. Thanks to its mode selective design, CANUNDA-PULSE is robust to laser

imperfections and misalignment ensuring a perfect output beam.

CANUNDA-PULSE is particularly suited to complex and low loss laser beam reshaping benefitting to industrial laser processing quality and throughput improvement.

Use cases

› Glass cutting

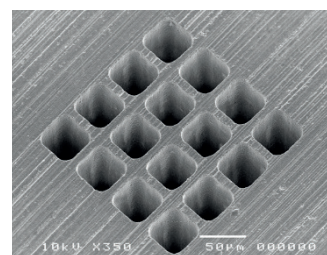
Bessel beams concentrate the laser energy in a diffraction-less, elongated focus beam. These special properties are especially suited to cut transparent material when associated with ultrafast lasers.



Laser drilling of a glass sample achieved with a CANUNDA-PULSE

› Micro-processing with single or multiple flat tops

A flat top intensity profile allows to minimize the side thermal effects thus improve the processing quality. The transverse shape can be tailored and the square shape is often preferred for surface processing as it minimizes side overlap. Multiple spots can be achieved with a single laser.



Micro-drilling (Oxford Laser)

* U.S. Pat No 9.250.454 - Japanese patent n° 5990544

General specifications

All parameters given at 25 °C operating temperature and 1030 nm operating wavelength unless stated otherwise.

PARAMETER	MIN.	TYP.	MAX.	OBSERVATIONS
Input beam				
Type	Free space collimated			Fibered input available
Diameter	0.5 mm	1.0 mm	3 mm	
Central wavelength	850 nm	1030 nm	1100 nm	Other wavelengths available
Operating regime	Pulsed			
Total average power	-	-	50 W	
Total pulse energy	-	-	500 µJ	
Pulse duration	150 fs	500 fs	-	
Polarization	Insensitive			
Spatial mode		TEM ₀₀		Or any measurable field
Beam quality	-	1.1	1.3	With stabilization of input transverse beam profile
Output beam				
Type	Free space collimated			
Diameter	0.5 mm	1.0 mm	3 mm	
Beam quality	Diffraction limited			Depends on target shape and laser input
Spatial mode	Square or circular flat top			Optional splitted flat tops, other custom shapes available
Total losses	-	5 %	10 %	Ratio between total input and output power
Mechanics and environment				
Package dimensions	300 x 222 x 51 mm ³			
Operating temperature	+0 °C	+25 °C	+50 °C	
Relative humidity	5 %		65 %	Non condensing

