

Diffraction for MACHINING LASER

To reach the best performances (speed, accuracy, ...) in machining laser, it is necessary to impact the intensity profiles of standard laser by homogenizing, shaping, patterning or focusing their beams.

SILIOS Technologies meets these material processing requirements with customized Diffraction Optical Elements (DOEs) for different standard laser sources like **CO₂**, **Nd:Yag** and **Excimer**.

Examples:

Welding

SILIOS' DOE shapes in **Donut** and homogenizes the CO₂ laser beam to properly distribute the energy over the two elements to be welded.

Cutting

SILIOS' DOE shapes the Yag or CO₂ laser beam in a perfect **Gaussian** beam to ensure a very high accuracy.

Marking

SILIOS' DOE shapes the Yag or Excimer laser and homogenizes in **Top Hat** the laser beam to properly manage the depth and the width of the marking.

Thermal treatment

SILIOS' DOE shapes the Yag, CO₂ or Excimer laser beam in **Top Hat** and homogenizes it to master the process uniformity.

Technical specifications:

Optic type:	plate or mirror
Material:	fused silica, BK7, glass, silicon, Znse,...
Beam diameter :	up to 4" diameter
Wavelength range :	UV (down to 193nm) to IR (up to 12-14 microns)
Damage threshold :	ultra hard energy coating available
Efficiency:	up to 95%

