IMPACT®-3000 SERIES

High Power Industrial Pulsed CO_2 Lasers

High-power short-pulse CO_2 lasers for surface layer removal and cleaning, non-destructive testing, and photochemistry

Typical Applications

- Surface Layer Removal and Cleaning
  - Polymer Coatings
  - Brake Lines
  - Paint Stripping
  - Mold Cleaning
- Non-Destructive Testing
  - Laser Ultrasound Generation
- Photochemistry and Spectroscopy
  - Isotope Separation
  - LIDAR and remote sensing

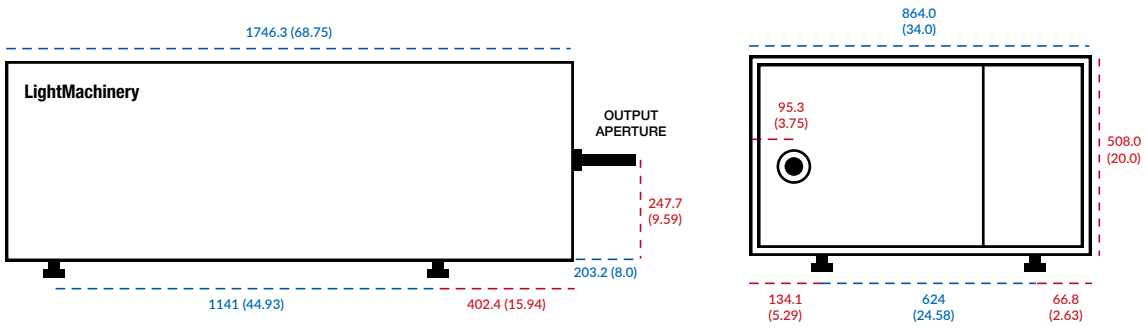
IMPACT -3000 Series lasers are high powered TEA CO_2 lasers designed for advanced applications in materials processing, non-destructive testing, photochemistry and scientific research. For **Materials Processing**, their combination of high peak power and short pulses permits the removal of surface layers such as polymer coatings, paint or contamination from metal or composite backings with no damage to the underlying material and minimal heat-affected zone (HAZ). Their high average power offers fast throughput. Applications include flex circuit processing, medical device manufacturing, brake tube stripping, paint stripping and mold cleaning.

In **Non-Destructive Testing**, the high pulse repetition rate, short pulse durations and optimised mode structure of IMPACT-3000 lasers make them an ideal generation source for laser ultrasound (Laser UT) testing of composite matrix materials. For Photochemistry and advanced Scientific Research, the high repetition rate and high average power can be utilised in applications as diverse as isotope separation and remote sensing / LIDAR.

Specifications

Model Number:		3100	3125	3150	3100HP	3125HP	3150HP	3400
Laser Type		Pulsed CO_2, transversely excited at atmospheric pressure						
Maximum Energy (J)	10.6 µm 9.3 µm	2.0 1.8	1.6 1.4	1.3 1.2	3.0 3.0	2.4 2.4	2.0 2.0	0.30 0.25
Maximum Power (W)	10.6 µm 9..3 µm		200 180			300 300		120 100
Maximum Repetition Rate (pps)		100	125	150	100	125	150	400
Output Wavelength (µm)		9.0 to 11.0 (infrared)						
Beam Size (mm) (at laser)		19 x 19						11 x 11
Beam Size (mm) (at laser)		~6.0						~2.0
Weight		Installed 480 kg (1050 lbs.), Shipping 530 kg (1200 lbs.)						
Electrical Requirements		3-phase, 4-wire, 208 or 400VAC, 50 or 60Hz, 30 Amps						
Water Cooling Requirements		See below*						
Laser Gas Requirements		Commercial gas pre-mix**, <0.01 SCFN (0.2 liters per hour)						
Compressed Air Requirements		80 psig dry						

Dimensions in mm (inches)



* IMPACT-3000 lasers require a temperature-stabilized closed-cycle cooling supply capable of removing 4 kW of heat at a temperature of 13°C – 20°C at a minimum differential pressure of 2.0 bars. Impact-3000HP lasers require a temperature-stabilized closed-cycle cooling supply capable of removing 5.5 kW of heat at a temperature of 13°C– 20°C at a minimum differential pressure of 3.0 bars.
** Consult LightMachinery for details of gas mix and purity requirements.

For further technical and sales information, please visit our website or contact:

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