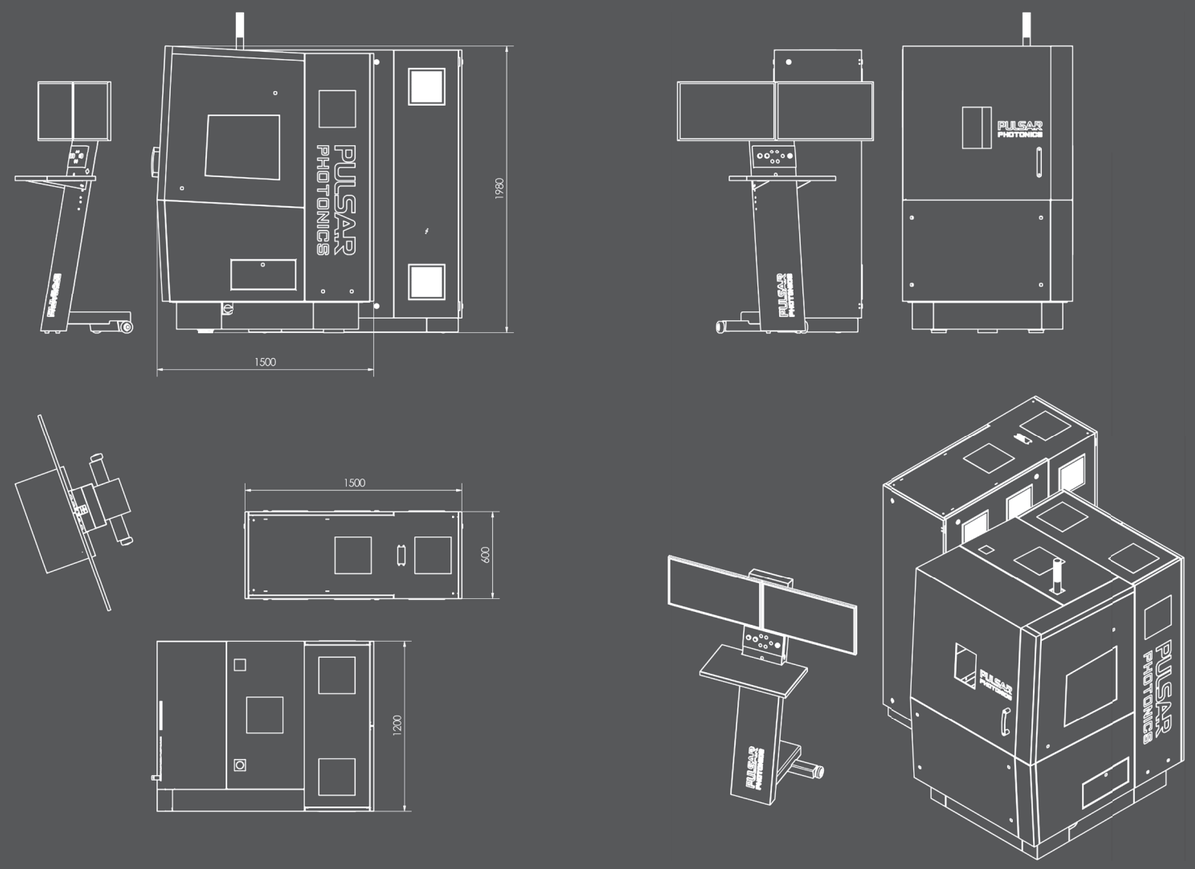
DIMENSIONS
(OF BASIC CONFIGURATION)



COMPACT LASER MICROMACHINING SYSTEM RDX 500

FLEXIBLE AND COMPACT MACHINE CONCEPT

HIGH QUALITY LASER MICRO-PROCESSING

EXCELLENT PRICE-PERFOR-MANCE RATIO

LEAN SOLUTIONS FOR LASER MICROMACHINING

PULSAR PHOTONICS

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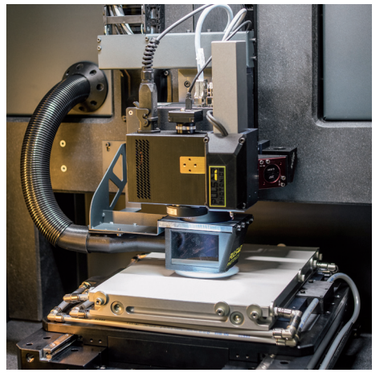
PULSAR PHOTONICS

MODULAR SYSTEM FOR LASER MICROMACHINING

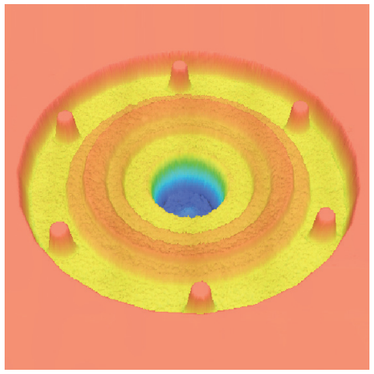
The modular concept of lean laser machines from Pulsar Photonics covers a wide range of processes and applications. By integrating customized laser systems and processing heads the machine tools are particularly suitable for laser drilling, laser micro structuring and precision laser cutting.
Pulsar Photonics is your know-how partner for process prototyping and development and design of adapted beam deflection system. You are accompanied by our experienced engineers up to the machine construction, on-site installation and after-sales service. In cooperation with various component manufacturers and research institutions Pulsar Photonics provides the optimal solution for the targeted application.
With the RDX500 Pulsar Photonics offers a compact machine to access the field of laser micro machining with short or ultra-short pulsed lasers.
High quality components in combination with a lean machine concept allows laser processing with an excellent price-performance ratio.

KEY ELEMENTS OF RDX500



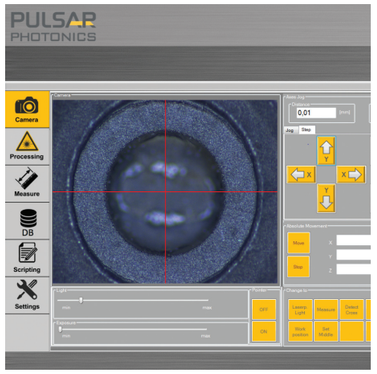
LEAN CONCEPT

The basic idea of the RDX500 is to build a machine which offers all basic functions of a modern laser micro machine in a lean machine concept.
Using high quality components and a modular approach the laser machine is the ideal solution for the professional access in laser micromachining.



METROLOGY & SENSORS

Machine-integrated measurement technology creates advantages where quality work pieces shall be processed and a documentation of the processing quality is required. The RDX500 uses a laser-based topography module for characterization of technical surfaces. Integrated camera systems support the work piece positioning. Further sensors for process monitoring can be integrated into the flexible software architecture.



SOFTWARE CONTROL

Full access to all technology modules is the central user benefit of the RDX500.
The machine software Photonic Elements is capable to control laser sources, scanning systems, a variety of sensor modules as well as machine axes. It includes an adaptive industrial field bus system and features e.g. Ethernet, RS232/ 485, USB. This allows easy execution of combined laser processing and measuring tasks. The preparation of job files is done via the commercial CAD software Rhinoceros and our CAD/CAM Plugin PhotonicVectors.

TECHNICAL DATA

Specifications	
Machine frame	The RDX500 machine frame is constructed for micromachining as a rigid double C- frame construction with cross table; mirrored design for the machine door direction, operator panel and suction device connector *Options: Granite*
Machine axis system	Motorized machine axes: XY cross table, Z stage (vertical mounted, brake) Working area: typ. 210 mm x 290 mm x 200 mm Repeatability: ± 0.02 mm to ± 1 micron Speed: up to 200 mm/s Type: linear direct drive or ball screw
Optical Scanning	Galvanometer-Scanner, Focusing objective f=60-160mm Wavelengths: 355nm, 532nm or 1064nm *Options: MultiBeamScanner, FlexibleBeamShaper*
Laser sources	Compact laser sources pulse duration: nanosecond - picosecond - femtosecond average power: up to 100 W Beam guidance: fiber guided / encapsulated free-beam guidance
Software / CAD-CAM	Machine control: PhotonicElements CAD: Rhinoceros® Rhino 3D CAM (integrated): Rhino plug-in *PhotonicVectors* *Options: Script-based control, Auto-reporting* *Design-of-experiment function*
Hardware-control	Field bus system (e.g. Ethernet, RS 232 / 485, Analog I/O, Digital I/O, USB)
Measurement technology	Camera System CM-R2 (coaxial laser pointer, LED-illumination) Sensors: Beam profiling, Machine condition, Process emissions *Options: Tactile probe sensor, Coaxial process control, Alignment mark recognition*
Accessories	Vacuum chuck, Work piece carriers , Turn/tilt unit, Suction unit, Zero point clamping system, Process gas system
Services	Feasibility studies, Application development, CAD/CAM training, USP laser training, Remote maintenance, Software development

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