Laser Cutting Systems

Laser-Jet 1512 • 2512 / Faserlaser

Equipped with fiber lasers with various beam powers. Lowest operating cost due to highest efficiency.

- Laser Cutting Systems with extremely small foot-print and low machine weight
- Minimum requirements for the setup site
- Minimal installation requirements

- Travel
  - X-axis 1500 / 2500 mm
  - Y-Achse 1250 mm (option 1500 mm)

DESCRIPTION

SPECIFICATIONS

PC CONTROL

Laser-Jet 1512 • 2512

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Maximum cutting efficiency in stainless steel, aluminum, copper alloys, and other high-reflectivity metals

- **Laser Cutting Systems with extremely small foot-print and low machine weight**
- **Minimum requirements for the setup site**
- **Very ergonomic handling and easy operation**

- Laser beam is guided in a flexible fiberoptic cable, eliminating the requirement to clean beam travel optics
- Cutting lens is protected by an easy to replace protective glass lens

- Virtually maintenance-free laser operation
- Automatic cutting process guidance, height sensing
- Labeling of cut parts with the same cutter head
- Available with manually retractable cutting table
- Can be equipped with cutting drawers (optional)

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Cutting system with retractable cutting table (option)

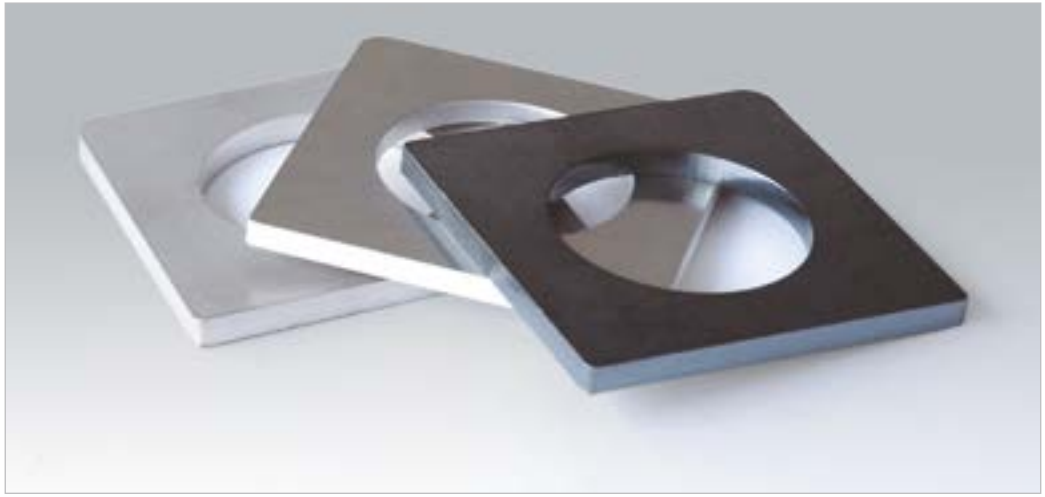
IPG PHOTONICS

Made in Germany

- excellent cut quality ensured by high-quality beam and rigid machine structure
- compact machine layout for easy feed of material and removal of cut parts
- user-friendly, application-oriented operating software with integrated technology database (Cutting Chief inside)
- lowest operating cost and longest maintenance intervals (remote system diagnostics via Advanced Remote Control)
- minimum emissions due to exhaust vacuum above workpiece board

Application Examples

High cutting quality, complex contours



Cutting parts of aluminum, stainless steel and structural steel

Due to the fiber laser's shorter wavelength, the cutting process is performed within a sealed enclosure. The enclosure automatically closes upon start of a cutting job and opens at the end of the cutting operation to allow direct removal of cut parts.

Laser-Jet Cutting Systems feature a transverse layout.
Machine bridge runs along the long work surface dimension

1st. D(X axis) The cutting table does not have to be pulled out of the machine for plate loading and parts unloading.

Machine control can be connected to the internet. This will allow remote control functions and remote diagnostics and monitoring of the system state.

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Laser-Jet 1512 • 2512

Specifications Laser-Jet		1512	2512
Travel			
- X-axis	mm	1500	2500
- Y-axis	mm	1250	1250
- Y-axis extension (optional)	mm	1500	1500
- Z-axis	mm	70	70
Workpiece support height	mm	1000	1000
Throat width	mm	1850	2850
Throat height	mm	60	60
max. part weight	kg/dm²	2,5	2,5
Rapid feed	m/min	60	60
Positioning accuracy	mm	± 0,05	± 0,05
Repeatability	mm	± 0,05	± 0,05
Machine width	mm	2850	3850
Machine depth	mm	2250	2250
Machine height	mm	2000	2000
Weight	kg	1850	2100
System with FL 150/1500 QCW Part No.		140 855	140 857
System with FL 300/3000 QCW Part No.		140 856	140 858
System with FL 1000 Part No.		140 874	140 875
System with FL 1500 Part No.		140 870	140 871
System with FL 2000 Part No.		140 872	140 873
System with FL 3000 Part No.		140 879	140 876

Standard Equipment

- Complete system with PC control
- Ytterbium fiber laser
- fiberoptic cable
- high-power cutting head
- capacitive height scanner
- toggle for cutting gas/cutting pressure
- support grid for metal cutting
- automatically moving protective enclosure
- coolant regenerator,
- operating and programming instructions

Options	Part No.
- Vacuum and filter system	140 840
- Hand-wheel positioning system	250 601
- Purge air processing	250 749
- CAD-CAM software (grid nesting)	250 752
- CAD-CAM software extension	250 753
- Calculation software	250 754
- Y axis extension to 1500 mm	250 959
- Refrigerated compressed air dryers	251 090
- Digital gas pressure regulator	251 194
- Manually retractable cutting table	251 498

Ytterbium Fiber Laser	FL 150/1500	FL 300/3000	FL 1000	FL 1500	FL 2000	FL 3000
Wavelength	1,07 µm	1,07 µm	1,07-1,08 µm	1,07-1,08 µm	1,07-1,08 µm	1,07-1,08 µm
CW beam power, max.	250 W	300 W	1050 W	1575 W	2100 W	3150 W
Pulse peak power	1500 W	3000 W	1000 W	1500 W	2000 W	3000 W
Power stability	± 0,5 %	± 0,5 %	± 2 %	± 2 %	± 2 %	± 2 %
CW beam power, min.	25 W	30 W	100 W	150 W	200 W	300 W
Pulse frequency, max.	2500 Hz	2500 Hz	2000 Hz	2000 Hz	2000 Hz	2000 Hz
Connected load	max. 1,1 kW	max. 1,4 kW	max. 3,1 kW	max. 4,7 kW	max. 6,2 kW	max. 9,1 kW

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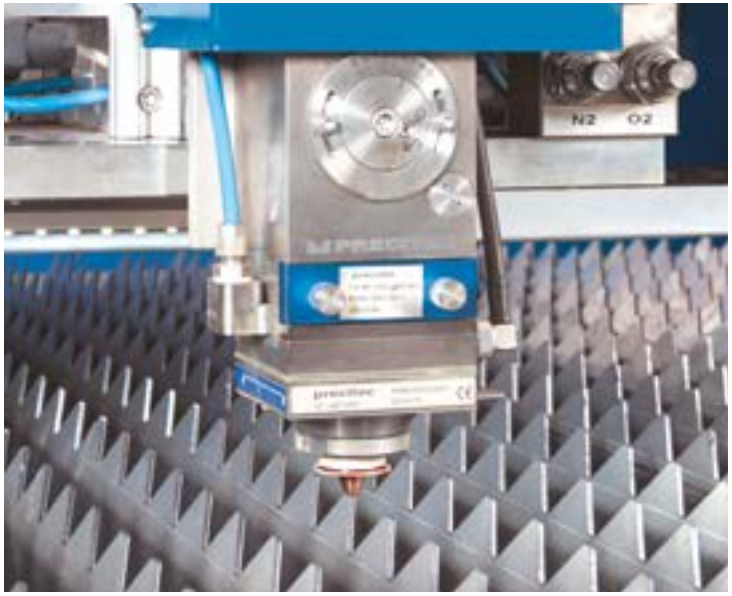
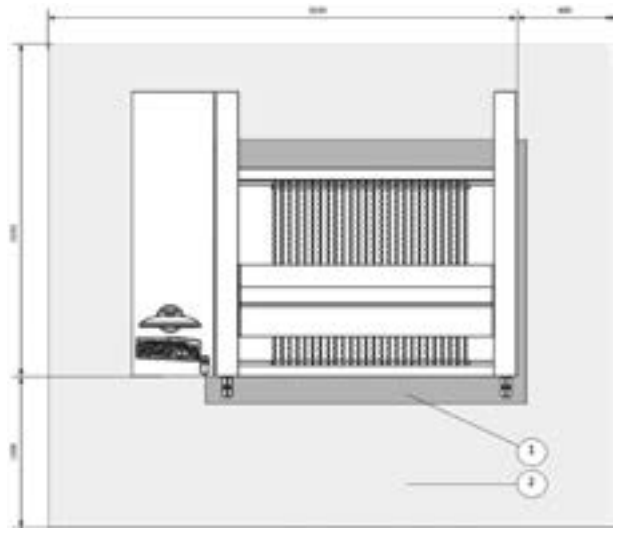


high-power cutting head

Ytterbium - Fiber Laser

Laser-Jet Cutting Systems feature a transverse layout:

Machine bridge runs along the long work surface dimension (X axis). The cutting table does not have to be pulled out of the machine for plate loading and parts unloading.



Machine Footprint (without Laser Source, Cooler and Extractor)

Footprint of Laser-Jet	1512	2512
Required floor space (1)	2400 x 1900 mm	3400 x 1900 mm
Minimum work space (2)	4000 x 3700 mm	5000 x 3700 mm

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Vacuum and filter system (optional)

Hand-wheel positioning system
(optional)

GPlus Cut 4000 B

Powerful PC Control for the Laser-Jet

- **innovate hardware with a modular design** (including self-diagnostics for every individual module)
- **rapid data refresh rate** (0.25 ms clock time = 4000 Hz for position control)
- **large data storage for extensive cutting jobs**
- **PLC and NC kernel are protected against Windows crashes (BSoD0**
- **3 USB port for data transfers and internet connection** (allows remote control of machine by the customer and remote diagnostics by the manufacturer for application consultation and system analysis - Advanced Remote Control)
- **user-friendly, easy-to-learn HMI** (separate windows for manual operation, data entry, cut simulation, automatic operation)
- **automatic parameter settings via technology database** (parameters can be adjusted during cutting operation to optimize the cut; cutting geometries can be directly imported from DXF, DIN/ISO files)
- **pre-selected routines to guide the cutting process along a contour (Cutting Chief Inside)**
- **easy resuming of cutting process after an interruption**

I/O – bus terminals (Fieldbus EtherCAT)

Technological Equipment

- IPC: Intel Pentium M 1.8 GHz, 1024 MB RAM, 160 GB hard drive,6 x USB 2.0
- Windows XP Professional 32-bit3 x Ethernet 10/100Fieldbus EtherCAT
- I/O: Bus terminals according to Beckhoff New Automation Technology
- CNC: TwinCAT NC I + NC PTP + TwinCAT PLC as Multi-PLC
- CADCAM (optional): cncCUT in PC Version 2D (IBE Software) + GPlus/Laser – Post-Processor

The optional CAD-CAM – Software Packages include:

- easy cutting program creation without any CNC knowledge, geometry imports from DXF, DWG, DIN/ISO files
- analyzer for testing and editing of geometry files
- 50 macros with configured standard geometries
- technology assignment for engraving label text and cutting contours
- automatic design of starting cuts, insertion of lands, bridges and chain cutting programming, starting cuts from the edge
- Grid Nesting
- extension for parquet, contour and manual nesting , for the creation of common cut lines and separation cuts to remove plate material excess, excess material management
- extension for calculation of cutting time and parts cost

cutting parameters directly from technology database

simulation of the cut on user HMI

Cut parts with starting tapers nested in grids CAD-CAM (optional)

Contour nesting on grid remainder and separation of excess plate material (optional)

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