

PRO45 SERIES

Single Module CW Fiber Lasers

MAX PHOTONICS

MFSC 6000W Pro45

Pro45 Series: Best-in-Class Efficiency at the Lowest TCO.

Offering up to **48% Wall-Plug Efficiency (WPE)**, the Pro45 Series reduces energy consumption and operational costs across cutting, welding, and cladding applications. With a **plug-and-play design** and **EtherCAT compatibility**, it integrates seamlessly into existing systems, enhancing productivity without disruption. Engineered for reliability and long-term stability, the Pro45 delivers top-tier performance and sustainability.



Key Features



Industry-Leading TCO & Energy Efficiency: Up to 48% WPE reduces energy and operational costs, with low standby power cutting expenses when idle. 20% Power Redundancy: Extra capacity for specialized tasks, ensuring flexibility and future-proofing.



Long-Term Reliability: Over 5 years of power stability for 24/7 operation in demanding environments.



Precision Tunability (2%-100%): Accurate control for both delicate marking and high-power cutting.



Enhanced Linearity ($\pm 2\%$): Consistent power output, ideal for high-precision welding, reducing recalibration needs.



Fast Switching Time: Quick transitions between power levels enhance throughput and efficiency.



Seamless Integration: Plug-and-play design with EtherCAT/PROFINET for easy system integration.



Optional Fiber-Fiber Coupler: Enables fast fiber replacement for optimal laser welding performance.



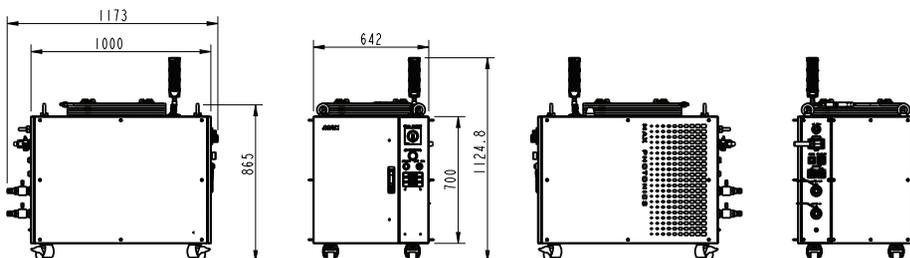
Lower Maintenance Costs: Modular components and a splicing box allow quick repairs and reduce downtime.

Our new **G5 fiber connector** ensures superior connection stability and excellent dust protection. It offers significantly enhanced cooling performance and maintains power stability for up to 1 hour, even when processing highly reflective materials.

Fully compatible with mainstream cutting heads.

Conventional QBH option is also available.

Mechanical Specifications (mm)



Technical Specifications

Optical Specifications	
Nominal Power	6000 W
Power Redundancy	20 % (Typ.)
WPE (Wall Plug Efficiency)	Up to 48 % / 45 % (Typ.)
Mode of Operation	CW/Modulated
Polarization	Random
Power Tunability	2 % to 100 %
Wavelength	1080 ± 10 nm
Power Stability	± 1 %
Laser Beam Quality, BPP	3.0 to 4.0 mm x mrad
Modulation Frequency	≤ 5 KHz
Preview Red Light Power	200 to 1000 μW (Class 2)
Fiber Delivery System	
Interface	G5 QBH
Length	25 m
Diameter	100 μm
Bending Radius	static 100 mm (Min.) / dynamic 200 mm (Min.)
Electrical Ratings	
Bus Control System	EtherCAT / PROFINET (Optional) / Digital IO
Supply Voltage	400 (+/-10%) V/3P+PE @ 50Hz and 480 (+6%/-13%) V/3P+PE @ 60Hz
Standby Power	≤100 W
Other Specifications	
Power Cable	14 meters
Signal Cable	14 meters
Operating Temperature	10°C to +40°C; no freezing
Storage Temperature	-10 °C to +60 °C
Humidity	10 to 90 %
Cooling Method	Water Cooling
Cooling Medium	Distilled water/ Glycol Antifreeze (Conductivity Value: 40±5uS/cm)
Dimension	640 * 1000 * 700 mm
Weight	230 (±5) kg
Certificates	CE, FDA, ETL (power supply)
Safety Standard	ISO 13849-1:2015 Performance Level D (PL-d)



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