500W

Air-Cooled Pulsed Laser Cleaning Machine

Compact



LaserSan

Technical Specifications
Laser Cleaning Machine (LS-500W)

Optical Characteristics

Parameter	Specification
Equipment Model	LS-500
Laser Type	Pulsed fiber laser source
Average Laser Power	500W
Central Wavelength	1064 nm
Fiber Length	Configuration-dependent: 1.5 mJ = 5 m · 5 mJ = 10 m · 15 mJ = 10 m
Power Adjustment Range	10%–100%, adjustable
Laser Pulse Frequency	20 kHz–4000 kHz, adjustable
Laser Line Width	X: 5–110 mm, adjustable · Y: 5–110 mm, adjustable
Scan Area (Adjustable)	X: 5–120 mm · Y: 5–70 mm
Field Lens Model	F254
Minimum Optical Fiber Bending Radius	150 mm
Laser Output Instability	< 5%
Cooling Method	Air-cooled thermal system with integrated closed-loop coolant circuit. No external chiller or water connection required.
Polarization Direction	Arbitrary
Guided Laser Function	Available
Anti-High Reflection Function	Available

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General Characteristics

Parameter	Specification
Equipment Model	LS-500
Net Weight	56 kg
Laser Head Weight	Approx. 1.1–1.3 kg, depending on configuration
Machine Dimensions	813.5 × 435.5 × 530 mm
Operation Type	Handheld
Power Supply Voltage	Standard configuration: 220V / 13A Optional configurations: 110V / 26A or 380V / 13A 220V operating tolerance: ±10% (198–242V)
Grid Frequency	50/60 Hz
Operating Temperature Range	0°C – 40°C
Storage Temperature Range	-10°C – 60°C
Power Consumption	< 3 kW
Optical Cable Length	5–10 m, depending on pulse-energy configuration
Control Interface	Multi-language touchscreen control system (28 languages)
Scanning Patterns	12 preset scanning patterns
Process Library	Preconfigured application-specific cleaning processes
Expert Mode	Manual parameter adjustment with 20+ user-definable process presets

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Performance Characteristics

Parameter	Specification
Beam Quality (M^2)	Configuration-dependent: 1.7 / 5 / 11
Pulse Duration	30–500 ns
Maximum Single Pulse Energy	Available configurations: 1.5 / 5 / 15 mJ
Spot Size Range	10–30 mm
Scan Speed*	Up to 10.1 m^2/h*
Source Rated Lifetime	≥100,000 h
Laser Safety Class	Class 4
Scanning Technology	2D galvanometric scanning
Scanning Patterns	12 preset scanning patterns
Control System	Multi-language touchscreen control system
Supported Languages	28 languages
Generator Compatibility	Compatible with suitable generator power supply
Air Supply Requirement	0.6–0.8 MPa, oil-free and water-free compressed air
Source Brand	JPT (MOPA)
Certification	CE, IEC 60825-1
Fume Extraction Compatibility	Compatible with HEPA + activated carbon filtration systems

*Scan speed is a reference maximum. Actual cleaning performance depends on material, contamination or coating type, layer thickness, selected parameters and operating conditions.

NOTE: All specifications are provided for reference purposes and may vary depending on configuration, machine version and continuous product improvements.

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Laser Cleaning Head Platform

LaserSan systems use a common industrial laser cleaning head platform across multiple machine configurations.

The cleaning head has been developed for professional industrial operation, combining low weight, ergonomic handling and stable cleaning performance across a wide range of applications and working environments.

Feature	Description
Head Weight	Approx. 1.1–1.3 kg, depending on configuration
User Interface	Integrated mini touchscreen
Scanning System	2D galvanometric scanning
Safety Control	Dual safety activation
Distance Monitoring	Automatic shut-off outside defined operating range
Lens Protection	Dual air protection system
Positioning	Red laser guidance
Modular Interface	Supports flexible configuration across different cleaning applications
Ergonomics	Low-fatigue industrial design
Protective Cover	Helps prevent dust intrusion and protects optical components during operation

Key Advantages

- Lightweight ergonomic design
- Stable operation during extended working sessions
- Precision scanning trajectory
- Reduced operator fatigue
- Improved accessibility on complex geometries
- Consistent cleaning results across different materials and surfaces
- Integrated safety and monitoring functions
- Integrated touchscreen with real-time system feedback



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Standard Package Contents

The standard package contents supplied with the LS-500W Laser Cleaning System are listed below.

Supplied Item	Item Picture	Quantity
User Manual		1 standard
Interlock Connector		1 optional, available on request
Laser Protective Glasses		1 pair — standard
Protective Lenses		5 pcs — standard
External Control Cable / External Laser Button		1 standard
Power Cable		1 standard

LASERSAN SUPPORT INCLUDED

Each machine is supplied fully tested, configured and prepared for operation. Technical documentation, onboarding, start-up guidance and remote technical support are included as standard.