

Realizing High-Speed High-Precision Processing

FANUC

FIBER LASER series



FIBER LASER with High Reliability, High Performance

FANUC FIBER LASER series

FF500i/FF1000i/FF2000i/FF3000i/FF4000i/FF5000i/FF6000i-A

FANUC FIBER LASER series are compact, high-performance and highly-reliable fiber LASER's, applicable for cutting of metallic and non-metallic materials, welding, and additive manufacturing. Not only does its high-quality LASER beam enable high-speed cutting of thin plates, but also the various functions available for FANUC Series 30i/31i-LB realize high-quality processing.



Easy of Use

Advanced Oscillator Control Function

- Use of FS30i/31i-LB and FANUC Serial Servo Bus (FSSB) enables direct and high-speed oscillator control
- High-speed LASER command synchronized with axis control realizes high-speed, high-precision processing
- Compatible operation with FANUC CO₂ LASER series makes it possible to efficiently expand LASER processing machine lineup.

Machining Performance

High-Speed Cutting Functions

- Various Processing functions optimized for FIBER LASER series are implemented in FS30i/31i-LB.
 - Edge Cutting Function, and Gap Control Function
 - LASER Power Control Function
 - Minute LASER Output Control Function
 - LASER Cutting Condition Setting Function

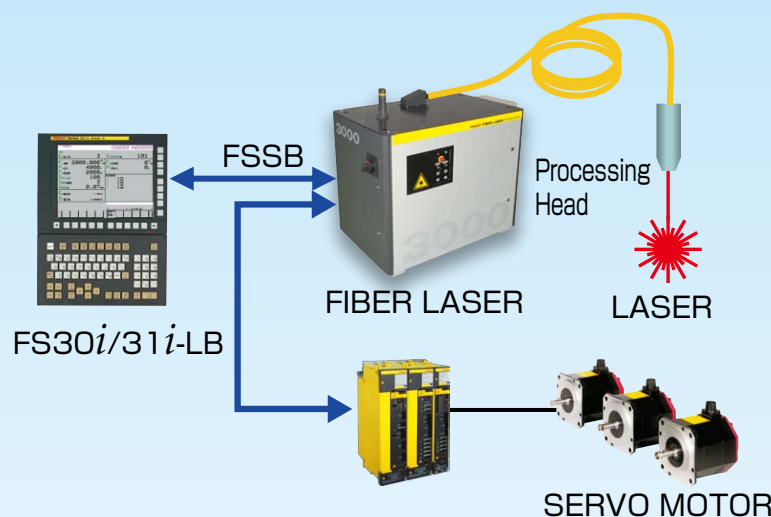
Minimizing Downtime

High Reliability

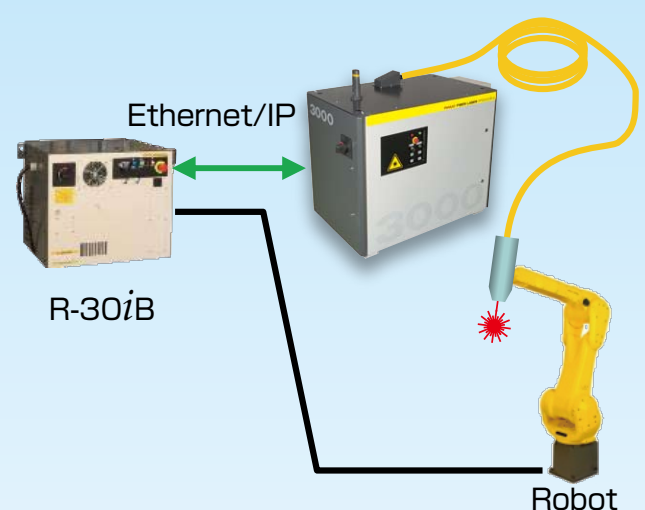
- High-quality and long-life LASER Diode Module
- New LD Power Supply Unit applied with high-reliability design and high-speed circuit technology
- Improvement of maintainability by modularized structure
- Oscillator Protection Function against reflected LASER beam
- Operation time display screen and Maintenance Diagnostic Function

System Configuration

LASER Processing Machine



LASER Robot System



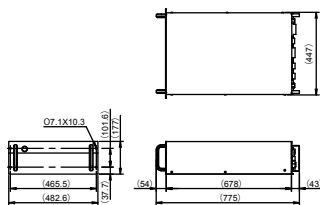
FANUC, as the Leader of FA & Robot & Robomachine, Strongly Supports the Development of Customer Processing Systems

Specification

Items		Specifications						
LASER Model		FF500i-A	FF1000i-A	FF2000i-A	FF3000i-A	FF4000i-A	FF5000i-A	FF6000i-A
Principle		Diode pumped fiber LASER						
Structure		Resonator combined with power supply unit						
Rated LASER power		500W	1000W	2000W	3000W	4000W	5000W	6000W
Output command range		50W to rated output power						
Output stability		± 1% (For 1 hour operation from 5 minutes after beam ON, with constant cooling water temperature)						
LASER wavelength		1070nm± 10nm						
Beam mode		Multimode						
Polarization		Random						
Feeding fiber type		QBH type (with cooling water)						
Feeding fiber core dia.		50μm or 100μm	50μm, 80μm, 100μm or 200μm			80μm, 100μm or 200μm		
Guide LASER wavelength		660nm (Class 3R)						
Pulse output command frequency		5 to 32767Hz						
Pulse output command duty		0 to 100%						
Specification of cooling water	Quality	Distilled water						
	Conductivity	500μS/cm or less						
	Particle	100μm or less (Use particle filter)			5μm or less (Use particle filter)			
Oscillator cooling water	Flow rate	10L/min or more	30L/min or more	40L/min or more	50L/min or more	60L/min or more	70L/min or more	
	Water temperature	25.5°C±0.5°C						
	Circulating water pressure	0.5MPa or less in gauge pressure						
	Recommended cooling capacity	1.5kW or more	3kW or more	6kW or more	8kW or more	10kW or more	12kW or more	14kW or more
Feeding fiber/ Process fiber cooling water	Flow rate	2L/min						
	Water temperature	30°C to 35°C						
	Circulating water pressure	0.4MPa or less in gauge pressure						
	Recommended cooling capacity	0.3kW or more						
Operating ambience	Temperature	5°C to 35°C						
	Humidity	95%RH or less (No dew formation) <Note> Before to open oscillator doors and panels, or before to restart oscillator and circulating cooling water with doors and panels locked, be sure to check the humidity of inside of oscillator and cooling water temperature, and be sure that there is no possibility to have dew formation.						
Power line		200VAC+10%, -10%		50/60Hz± 1Hz		220VAC+10%, -10%		
Earth		D-class grounding (Ground resistance 100Ω or less)						
Requirement input power		3kVA	6kVA	14kVA	20kVA	28kVA	34kVA	40kVA
Maximum current		9A	17A	38A	55A	76A	93A	109A
Mass		Ca. 45kg	Ca. 50kg	Ca. 300kg	Ca. 350kg	Ca. 500kg	Ca. 550kg	Ca. 600kg

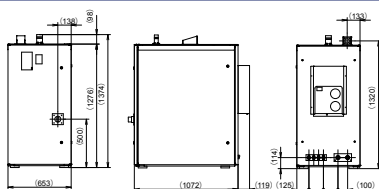
Dimension

FF500i/FF1000i-A



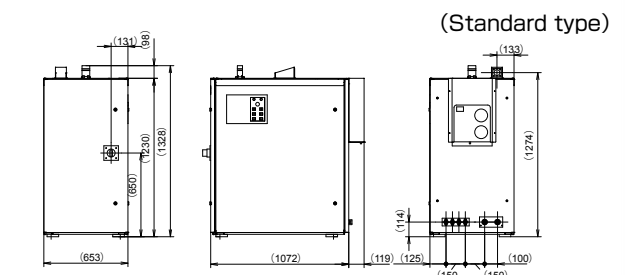
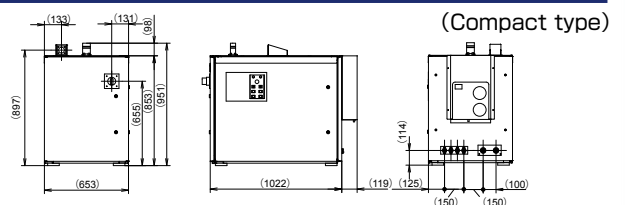
Note. FF500i-A and FF1000i-A are same dimension

FF4000i/FF5000i/FF6000i-A



Note. FF4000i-A, FF5000i-A and FF6000i-A are same dimension

FF2000i/FF3000i-A

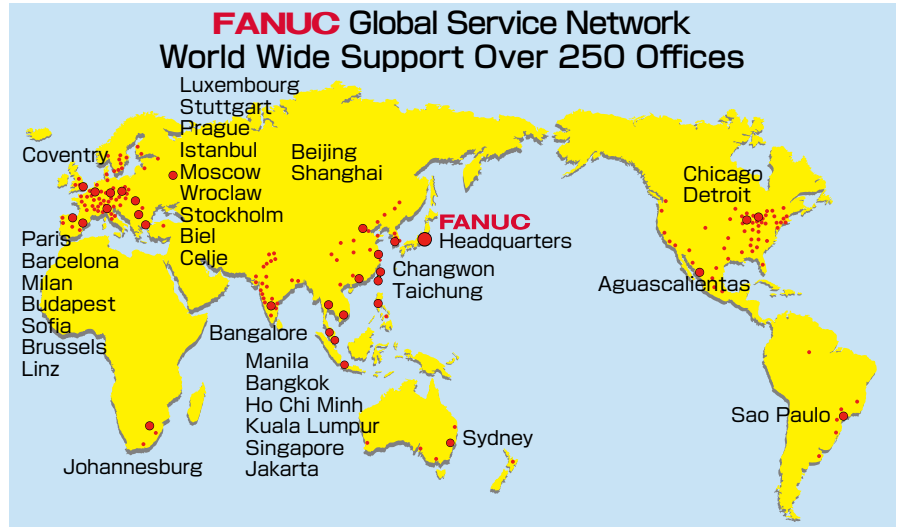


Note. FF2000i-A and FF3000i-A are same dimension

Maintenance and Customer Support

Worldwide Customer Service and Support

FANUC operates customer service and support network through subsidiaries and affiliates. FANUC provides the highest quality service with the prompt response at any location nearest you.



FANUC Training Center

FANUC Training Center operates training courses for daily, periodic, and preventive maintenance of LASER oscillator.

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High Safety

FANUC FIBER LASER series products comply with the EC directive (CE Marking) and U.S. standards (FDA) under the LASER radiation control for health and safety that apply to manufactures of LASER products.



DANGER

·INVISIBLE and/or VISIBLE LASER RADIATION·
·AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION·
·不可見 / 可見激光·
·光線和散射光都很危險。請勿用肉眼查看或者用手觸摸·

	INVISIBLE (不可見)	VISIBLE (可見)
MAXIMUM OUTPUT (最大出力)	< 5m-W	CW
PULSE DURATION (脈沖寬度)	20µs~CW	CW
EMITTED WAVELENGTH (波長)	1.07µm	0.6~0.7µm
LASER MEDIUM (媒質)	Yb:GLASS	SEMICON.

CLASS IV LASER PRODUCT

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