

SPECIFICATIONS

Operating environment

Ambient temperature	5 to 35°C {41 to 95°F}
Max. relative humidity	75 % without dew condensation
Illumination	Over 500 lux.

Machine

Item	Specification	
Model name	Quattro	
Travel method	X- and Y-axes: Optics travel	
Control method	X-, Y-, and Z-axes controlled (two axes simultaneously controlled)	
Travel amount	X-axis	1260 mm {49.6 in.}
	Y-axis	1260 mm {49.6 in.}
	Z-axis	100 mm {3.94 in.}
Feed rate	X-axis	0 to 10 m/min {0 to 32.8 ft/min}
	Y-axis	0 to 10 m/min {0 to 32.8 ft/min}
Rapid rate	X-axis	30 m/min {98.4 ft/min}
	Y-axis	30 m/min {98.4 ft/min}
	Z-axis	15 m/min {49.2 ft/min}
Maximum worksheet loading capacity	80 kg {176.4 lb} (with C1000E)	160 kg {352.8 lb} (with C2000E)
Repeatable positioning accuracy	±0.01 mm {0.0004 in.}	
Least command increment	0.001 mm {0.0001 in.}	
Drive feed method	Ball screw method	
Assist gas type selector	Automatic selection	
Machine table height	850 mm {33.46 in.}	
Total machine mass (including cooling unit and dust collector)	3850 kg {8490 lb} (with C1000E)	4330 kg {9550 lb} (with C2000E)
Power supply (only for machine)	AC, 3 phases, 200/220 V ± 10%, 50/60 Hz, 7 kVA	

Laser oscillator

Item		Specification		
Laser for processing		Invisibility		
Laser class		4		
Model		C1000E	C2000E	
Laser oscillation method		High-frequency discharge excited, high-speed axial-flow type		
Laser output	Output (rated)	1000 W	2000 W	
	Stability	±1.0% (closed-loop control at rated output)		
	Pulse	Peak output	1000 W (CW) 1000 W (Pulse peak)	2000 W (CW) 3300 W (Pulse peak)
		Frequency	5 to 2000 Hz	
	Duty	0 to 100%		
Output beam	Wavelength	10.6 μm {4.2 × 10 ⁻⁴ in.}		
	Mode	Low-order mode		
	Diameter	20 mm {0.79 in.} or less (at oscillator outlet)	27 mm {1.06 in.} or less (at oscillator outlet)	
	Divergence angle	2.0 mrad or less		
Polarization		Linear polarization in 45° direction		
Laser gas	Mixed gas	CO ₂ :He:N ₂ = 5:40:55		
	Flow rate	About 10 L/h {610 in ³ /h}		
Cooling water flow rate		40 L/min {10.5 US gal/min} or more (circulation type)	75 L/min {19.8 US gal/min} or more (circulation type)	
Laser oscillator outside dimensions (W × D × H)		1500 × 700 × 785 mm {59.06 × 27.56 × 30.91 in.}	2050 × 750 × 1056 mm {80.71 × 29.53 × 41.57}	
Power supply		AC, 3 phases, 200/220 V ± 10%, 50/60 Hz		
		18 kVA	33 kVA	
Circular polarizer		Yes (formed in optical path of machine)		
Laser for positional confirmation		Visibility		
Laser class		3R		
Rated output		<5mW		
Pulse		CW		
Wavelength		0.6 to 0.7 μm {2.4 to 2.8 × 10 ⁻⁵ in.}		
Laser medium		Semiconductor or He-Ne		

CNC control unit

Item	Specification	
	FS16i-LA (Fanuc)	FS16i-LB (Fanuc)
CNC unit	FS16i-LA (Fanuc)	FS16i-LB (Fanuc)
CNC control method	Semi-closed loop method	
Control functions	<ul style="list-style-type: none"> • X-, Y-, and Z-axes controlled (two axes simultaneously controlled) • Laser oscillator control 	
Input methods	<ul style="list-style-type: none"> • 3.5" FD (built-in type) • Manual data input with numeric keys 	
Least input increment	0.001 mm {0.0001 in.}	
Minimum position detection accuracy	0.001 mm {0.0001 in.}	
Program storage capacity	320 m {1049.6 ft}	
Operating modes	Edit/Memory/MDI/Retract/Manual	
Display functions	<ol style="list-style-type: none"> 1. Program directory 2. Position information 3. Messages 4. Program check 5. Settings 	<ol style="list-style-type: none"> 6. Cutting conditions 7. Parameters 8. Tool diameter compensation (Offset) 9. Diagnosis (CNC self-diagnostics)
I/O interface	RS232C	
Display	9.5" monochrome display	