

Field	Details
Product Identification	
Family	Modular Application Series
Product Name	Laser Marking & Engraving
Machine Configuration Support	
Machines	Laser Marking & Engraving Machines
Machine Types Supported	Engraving Etching Annealing 2D 3D Rotary
Number of Operations per Robot	1-6 Operations
Robot Options	Industrial Collaborative, Clean Room Universal Robots Collaborative (Model Determined by Configuration Requirements)
Modular Components	
Automation Console	Integrated HMI with high performance industrial edge device and configurable connections for Safety, Digital I/O, and Pneumatics
Pedestal	Welded steel robot pedestal anchored to shop floor with precision pins for specified robot
Precision In-Feed	Tight tolerance industrial precision aluminum shelf(s) for repeatable & flexible automation 43" X 58" X 49" 1079 mm X 1467 mm X 1236 mm
Shelving Automation System	Precision machined aluminum shelves with flexible in-feed
	Flexible shelving trays design support multiple size and shape parts (ability to use/reuse existing trays in many cases)
	Automation optimized shelving utilizes locking drawers increasing in-feed storage and enabling uninterrupted part replenishing
End of Arm Tooling	Pneumatic/Electric Robot EOAT clamps for multi-SKU operations
Post-Process Support	
Cleaning & Finishing	Cleaning Stations, Deburr, Grinders, Polishers, Tapping
Inspection & Test	Vision, Laser, Telecentric, CMM, Probes, ATE
Automation Console Hardware Specs	
Overall Dimensions (L x D x H)	25" x 22" x 55" 635 mm X 559 mm X 1397 mm
Industrial M12 Connections	16 Dual Channel I/O ¹ with 4 position A-Coded M12 Bulkheads
Safety Control Connections & Indicators	16 Dual Channel Signal ports with 4 position A-Coded M12 Bulkheads
	16 Dual Channel Enabling Circuits with 4 position A-Coded M12 Bulkheads
	5 Additional Dual Channel Sensor Ports with 4 position A-Coded M12 Bulkheads
	Integrated E-stop and Reset buttons
	Integrated Red/Yellow/Green Stacklight
Air Connections	12 Two Position Ports ¹ with 10mm push to connect OD Bulkheads
Air Requirements	100-120 psi
Power Requirements	120V 15Amps
Flexxbotics Industrial Edge	Dell Edge Gateway 3200 / 5200
Internet / Data Connection	10x RJ45, 2x USB-A, Wi-Fi, Bluetooth
HMI User Interface	
Touch Screen (L x W)	18.7 x 11.7" (474 x 296 mm)
Resolution	WSXGA+ (1680 x 1050 @ 60Hz)
Aspect Ratio	16:10
Software	
Flexxbotics Software Included	Robotic Production Software featuring FlexxCore
Flexxbotics Software Capabilities Summary	Robotic Cell Automation Robot-to-Machine Interfacing Robot / Equipment Program Control Robotic Production Data Alarms & Escalations Automated Changeover Autonomous Process Control Analytics, Reports, and Business Intelligence Administration & Low-code Configuration (Functionality determined by Package Edition purchased)
Operating System Configurations	Windows 10/11 IOT (w/ Software-based RTOS Capability), Ubuntu
Connectivity & Communication	
Machine Control Compatibilty	FOBA, KEYENCE, Trumpf, Videojet, Tykma Electox, Trotec, Raymond Laser, Laserax Telesis Technologies, Check compatibility at https://flexxbotics.com/flexxbotics-compatibility/
Industrial Protocol Support	EtherNet/IP, PROFINET/PROFIBUS, Siemens SINUMERIK, Modbus TCP, OPC UA, MTConnect, FOCAS2, Heidenhain DNC, Haas MNET, CC-Link, DeviceNet, Modbus RTU, Ethernet POWERLINK, EtherCAT, and others
General Protocol Support	TCP/IP, UDP, FTP, SFTP, Telnet, SMTP, RS-232, and others
Business Systems Connectivity	Extends Existing Systems for Robotic Automation including ERP, MES, QMS, SCADA, IIoT, CAD/CAM, and others
Feature & Functionality Details	
Robotic Cell Automation	Loading and Unloading Parts Cell Control Logic Configurable Rules and Conditionals

Field	Details
Robot-to-Machine Interfacing	Start/End Cycle Controller Protocol Interoperability G-Code / M-Code / Macro Updating and Parameter Writing
Tooling Automation	Tool Breakage Detection & Swapping Tool Wear Monitoring Auto-Tool Compensation
Alarms & Escalations	Stack Light Signals Operator HMI Alarms Text/Email Escalation Option
HMI Screens & Workflows	Single Button Operator Screens Barcode Scanning & Step-by-Step Workflows Flexible Part Set-up Interface for Adding New Parts
Automated Changeover	Run Multiple Parts / Units with Auto-Changeover
Safety	Compatible with Safety PLC's, Emergency Stops, Laser Scanners, Light Curtains, and more
Compliance & Traceability	Part-by-Part Production Data Capture for Digital Thread Traceability and Quality Standards Compliance (ISO-13485, AS9100, CGMP, and others)
Reports & Analytics	Production Progress, Part Count, Cycle Times, Throughput, Utilization, Yield, Unattended Time, and more
Administration & Configuration	UX Screen Layout, Button Configuration, Parts Attribute Definition, Modifiable Logic & Triggers, and more

¹ Expandable