

SP1600-xP | Technical Specifications

Mechanics

Working area	1680 x 1245 mm (66 x 49 in)
Max. workpiece height	50mm (1.97 in)
Machining head	2 software-controlled z-axes for adjusting the focusing and for adjusting the distance of the nozzle tip to the workpiece surface, Quick-lens change
Processing table	Slat cutting table, aluminum cutting grid table, honeycomb grid cutting table –
Max. processing speed	1.5 m/s (59 ips) (Cutting & Engraving)
Acceleration	10 m/s ² (393 ips ²)
Motors	Brushless DC servo motors
Position measurement	Incremental encoder with permanent memory
Optical elements	Telescope, lenses and all mirrors air-flushed, telescope water-cooled
Lens	2.5" (optional); 5.0" (standard); 7.5" (optional)
Deviation in traversing accuracy	< 150 µm / m per axis
Part dimensional accuracy	Depending on the material and cutting process, exact data can be determined during sampling
Max. workpiece weight	350 kg, distributed over the entire work surface
InPack Technology™	Protects the processing head and all moving parts from contamination, extended dust protection included
Sonar Technology™	Ultrasound-based autofocus system, repeatability < ± 50 µm
Sectionmode	Up to 7 different operational modes controlled in Ruby® Laser software
Extraction	Segmented table extraction for the entire processing area Extraction directly across the entire width of the x-portal
Gas kit	Control of external compressed air and process gas with a max. 6 bar supply pressure, built-in filter unit
Software	Ruby®
Interface	Ethernet for connection to PC, OPC-UA, Rest-API (Ruby®)
Control desk	Machine keyboard, key switch, emergency stop; Space for mouse, keyboard, monitor, drawer; lens and tool carrier, PC and monitor optional

Laser

Laser system	Sealed-off, super-pulsed CO ₂ laser
Minimum average laser power	180W, 450W, 500W
Typical average laser power	220W, 600W, 600W
Peak pulse power	450W, 1800W, 1200W
Cooling	Water cooling
Wavelength	10.6 µm (main emission line)

Options

OptiFlow-xP exhaust concept	Fully monitored and optimized air flow, to drastically reduce flaming under the substrate
Tandem operation	Continuous machine operation on alternating table sides
Additional Gas-Kit	Second Gas -Kit installation (1 Gas Kit included)
Customer Service & Service	Customized service packages available

Dimensions (W x D x H) & Weight

Machine	2938 x 2381 x 1281 mm (115 x 93 x 50 in), approx. 1450 kg (3197 lbs)
Cooling	760 x 1110 x 1450 mm (30 x 44 x 57 in) , 180 kg (397 lbs) (450W version)
Control panel (height -adjustable)	1100 x 760 x 1030 – 1310mm (43 x 30 x 41-52 in), approx. 170 kg (375 lbs)
Extraction (Vent3000)	1210 x 1410 x 1510 mm (48 x 56 x 59 in) , approx. 400 kg (882 lbs)

Security

Laser class	Completely encapsulated beam path, laser source with laser safety class 4; In normal operation (not service operation) with laser protection panels, the laser system is laser class 2
Interlock	Two-channel interlock security system
Environmental conditions	Ambient temperature +15° to +25° C Humidity 40% to max. 70%, non-condensing
Certificates	CE

Electrics & extraction

Extraction operating point	Table exhaust: 3200m ³ /h at 3000 Pa Head exhaust: 200m ³ /h at 4200 Pa Minimum requirement for acrylic cutting; depending on application
Voltage & power consumption (Machine including cooler and extraction)	3x400V+N 50A 50/60Hz

Subject to changes, errors and omissions. Version V1.0/ May2024