

# AP 530 S

## Laser Marking/Texturing System for Orthopedic Implants

The AP 530 S is an automated free-form surface processing system for texturing, marking, and functionalization of implantable medical hardware of any shape. This system incorporates an ultrashort pulse laser, a 6-axis robot, and enhanced 3D vision for automated part handling and complete coverage of all surfaces as well as supporting post-process verification. Batch loading of parts provides longer unattended process time eliminating operator intervention and errors. The AP 530 S is an ideal system for surface texturing to aid in enhanced osseointegration and vascularization of orthopedic implants and components. It simplifies the creation of deterministic (i.e., non-random) surface patterns for enhanced functionality. This system can optionally incorporate a marking laser subsystem for unique device identifiers (UDI) for parts tracking and verification from manufacturing to implantation.



### FEATURES

- Free-form sample handling for full-volume coverage of asymmetric parts
- Batch processing and minimum operator intervention
- Multi-axis processing and inspection
- Surface texturing, marking, and laser black marking capabilities
- Modular build design for application-centric systems

### APPLICATIONS

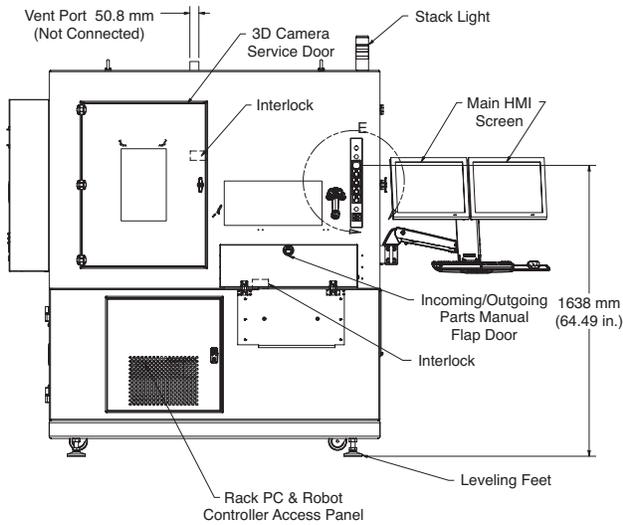
- Surface texturing orthopedic implants for enhanced osseointegration and vascularization
- Marking/Black marking for UDI and production tracking
- Texturing for surface functionalization

Workstation Requirements	
Input Power	1-phase, L1 + L2 with safety ground
Voltage	230 VAC, 60 Hz, +/-5%
Current (A)	30
Beam Delivery Purge Air	Class 5.5.4 according to DIN/ISO 8573-1, but max 3 mg/m cubed residual oil, at 7 bar. Mas 25 °C, (supply: compressed air)
Compressed Air Quality	80-100 PSI, 35-150F, ISO8573.1 Class 5.5.5 or better, (particles <40um, max 450F, pressure dew point and <25mg/m3 oil/oil vapor)
Weight (Kg)	1700
System Storage (C)	5 to 40 +/-5
Ambient Temperature (C)	28 to 32, air conditioned, oil free, debris free
Relative Humidity (%)	10 to 65 non-condensing
Vibration	VC-C
Workstation Specifications	
Classification	Class I Laser System, CE Compliant
Automation	Fully Automatic Processing
Mechanics	Machine base, robotics & other
HMI	Monitors, Coherent Laser FrameWork-PLT Processing Software
Machine Vision	3D Vision. Other vision processes available for part identification and process verification
Motion Control	6-axis robot and motion driven by Coherent Laser FrameWork-PLT Processing Software
Axis Travel	6 axis motion via robot and Galvo on Z-axis
Axis Speed	N/A
Product Size	Free-form parts. 200mm/variable widths
Dimensions (mm)	1862 x 1518 x 2400 (w x d x h)
Laser Source	Femtosecond, Picosecond or Nanosecond
Processing Head	2 axis galvometer
Evacuation	200 CFM

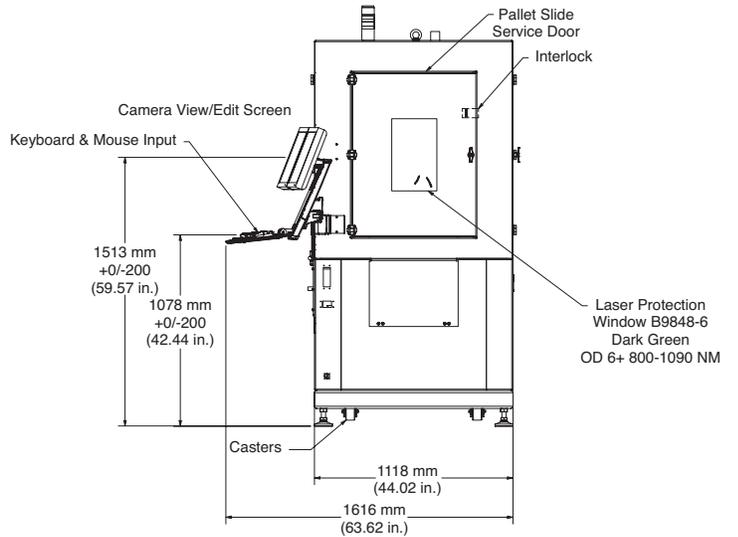
**Mechanical Specifications**

AP 530 S

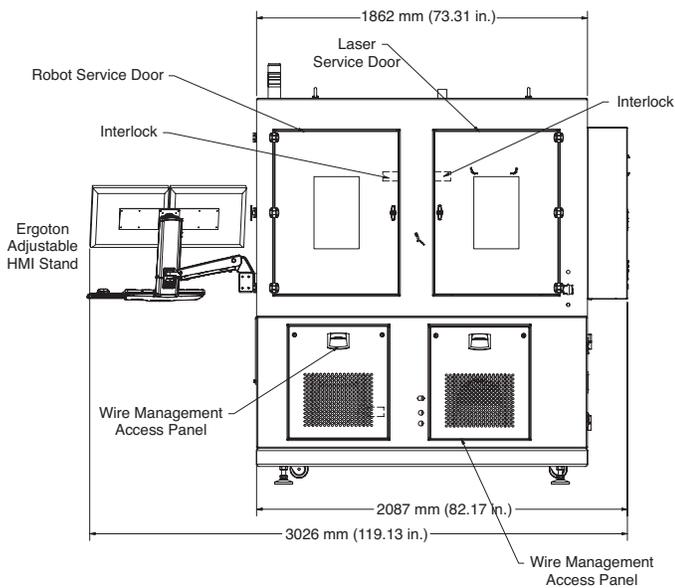
**Front View**



**Right Side View**



**Rear View**



**Left Side View**

