

PH20 SmartWeld+

High-Power, High-Precision Laser Processing Head

PH20 SmartWeld+ performs the most demanding welding processes on both thin and thick materials – including copper and aluminum, and even dissimilar materials – with unmatched precision and at high speeds. It accomplishes this by closely controlling welding cross section and seam quality while also producing minimal heat input.

PH20 SmartWeld+ mates fixed beam delivery optics with a highly dynamic galvanometer scanning module (speeds up to 2 kHz) and is controlled through software that delivers a variety of pre-programmed scan patterns. Controlling the weld path independently from the scan pattern enables easy programming. It can be used with Coherent single-mode standard and Adjustable Ring Mode (ARM) fiber lasers of up to 5 kW average power.

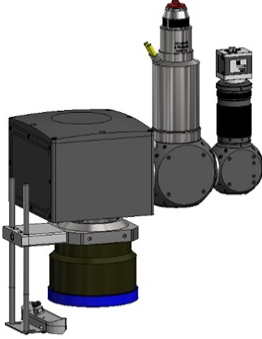
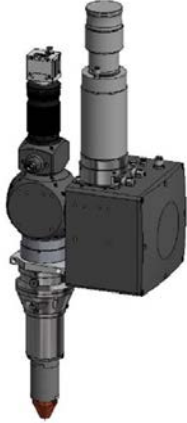


FEATURES

- Works with lasers up to 5 kW
- Enables consistent control over weld depth and profile
- Numerous oscillation patterns enable precise process optimization for both thick and thin materials
- Can dynamically adapt beam motion and compensate workpiece variations under control of the vision systems
- Simplified intuitive programming

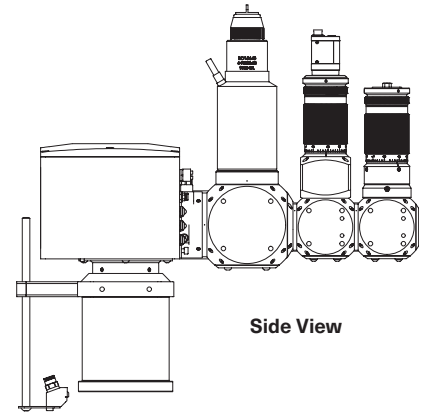
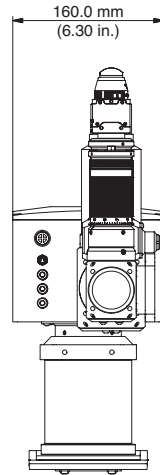
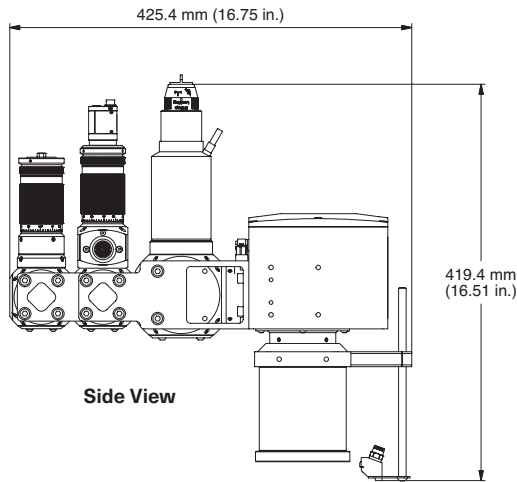
APPLICATIONS

- Automotive/E-Mobility
- Batteries
- Electronics
- Medical Devices
- Aerospace

Specifications		PH20 SmartWeld+	
Model	<p>Dynamic</p> <p>Camera and process monitoring follow the laser spot along the weld path</p> 	<p>Static</p> <p>Camera and process monitoring focus on a fixed position enabling precise observation of smaller process areas, e.g., spot welds or for applying longer weld seams</p> 	
Max. Average Laser Power (kW)	5		
Working Area	<p><30 x 30 mm with D50 optics</p> <p><50 x 50 mm with F255 F-theta lens</p> <p><82 x 82 mm with F432 T-theta lens</p>	<p>< 30 x 30 mm with D50 optics (exceeding camera picture)</p> <p>< dia 10 mm with welding nozzle</p>	
Collimators/Laser Sources	<p>F 100: for HighLight FL ARM/CSM and ARM 100/290 HighBrightness</p> <p>F 120: for PowerLine FL 1000/1500 SM</p> <p>F 160: for HighLight FL SM</p>		
Focusing Lenses	<p>D50: F 150, 200, 250, 300 mm</p> <p>F-theta: F 160, 255, 432 mm</p>	<p>D50: F 150, 200, 250, 300 mm</p>	
Drift over 8 hours (μrad)	<6		
Repeatability (μrad)	<3		
Weight (kg)	7 to 10		
Options			
Camera	Camera, 2 or 5 MP		
Illumination	External IR illumination	Coaxial IR illumination	
Process Monitoring	Optical Sensor Interface OSI, connector type: SMA		
Nozzles: Off axis cross jet, height adjustable	<p>Coaxial cross jet incl. Heat shield</p> <p>Coaxial welding nozzle</p> <p>Temperature monitoring of the protection glass</p>		

Mechanical Specifications

PH20 SmartWeld+ Dynamic



PH20 SmartWeld+ Static

