

# PH10-SmartWeld+

## High-Precision Laser Processing Head for Micro Welding Applications

SmartWeld+ precisely controls the brilliance of single-mode fiber lasers to shape welding seams in width, depth, and penetration profile.

Thus, it enables precision welding of heat-sensitive materials and dissimilar material combinations such as copper to aluminum or steel.

This brings the economy, convenience, and reliability of fiber lasers to applications that have previously been challenging for that technology.

SmartWeld+ incorporates an advanced form of beam shaping including a wide variety of oscillation patterns, plus precise control of delivered laser energy during the weld process. The result is a substantial improvement in weld precision and reliability together with minimization of the heat affected zone.



### FEATURES

- Improved welding of challenging materials including copper, aluminum, titanium, steel alloys, and dissimilar materials
- Precise welding of thin and multilayer materials with minimal HAZ
- Variable spot size (30  $\mu\text{m}$  to over 1000  $\mu\text{m}$ ) which allows gap bridging and reduces fit up requirements
- Consistent control over weld depth and weld profile
- A wide choice of beam oscillation patterns to enable precise process optimization

### APPLICATIONS

- Electronics
- Batteries
- Medical devices
- Automotive/E-mobility
- Aerospace

Specifications		PH10-SmartWeld+
Recommendend Laser Source	Coherent PowerLine FL and HighLight FL Series	
Optical Configuration		
Collimator (mm)		
PowerLine FL 600 / PowerLine FL 400	f80	
PowerLine FL 150 P	f80	
HighLight FL1000CSM and FL1500CSM	f100	
Focus Unit (mm)	f150 (optional f100 or f200)	
Spot Size (Depending on Focus Unit; $\mu\text{m}$ )	28	
Depth of Focus (mm)	1	
Working Wavelength (nm)	1060 to 1070	
Maximum Shape Size (mm)	12	
Maximum Shape Repetition (Hz)	3000	
Size (standard configuration)		
Dimensions (L x W x D)	317 x 197 x 157 mm (12.48 x 7.76 x 6.18 in.)	
Weight	4.4 kg (9.7 lbs)	
Laser		
Fiber Connection	QBH fiber connector	
Maximum NA (Depends on Collimator)	0.05 (F100) 0.063 (F80)	
Maximum Laser Power	600 W cw; peak 2000 W modulated	
Control Unit		
Size	19" x 2 HE	
Weight	7 kg (15.4 lbs.)	
Power Supply	230 V AC / 10A	
Data Connection	Ethernet	
Environmental Conditions		
Operating Temperature	25°C $\pm$ 10°C (77°F $\pm$ 50°F)	
Storage Temperature	-35°C to +60°C (-31°F to d+140°F)	

Mechanical Specifications

PH10-SmartWeld+

