

# PowerLine FL

## Fully Integrated Fiber Laser Subsystem

PowerLine FL is a product family of modular laser subsystems driven by single-mode and multi-mode fiber lasers and integrated beam delivery options for precision welding, precision cutting and precision drilling. It comes with integrated options like PartVision and SmartSense+, all controlled under the Laser FrameWork software package.



### FEATURES

- Power level 200 W to 1500 W, optimized for your application
- Optional pulsed mode
- Fully integrated sub-system with Laser FrameWork software package for easy factory integration
- Single-mode laser with SmartWeld technology for optimized welding results
- Optional Coherent SmartSense+ process monitoring
- Optional PartVision packages
- Coherent SmartWeld, SmartWeld+, SmartCut+ for optimized welding, cutting and drilling results
- Back reflection protected

### APPLICATIONS

- Precision Welding (also mixed materials)
- Precision Cutting
- Precision Drilling
- Scribing of Brittle Materials

### MARKETS

- E-Mobility and Automotive
- Electronics
- Medical Devices

Specifications	PowerLine FL 200	PowerLine FL 400	PowerLine FL 600	PowerLine FL 1000	PowerLine FL 1500	PowerLine FL 150 P	PowerLine FL 300 P
Wavelength (nm)	1070			1080		1070	
Operation Mode	cw and modulated					pulsed and cw	
Output Power (W)	200	400	600	1000	1500	150 (pulsed) 250 (cw)	300 (pulsed) 300 (cw)
Max. Pulse Peak Power (pulsed/modulated) (W)	200	400	600	1000	1500	1500	3000
Max. Pulse Energy (J)	does not apply					15	30
Emission Time / Pulse Width (FWHM)	10 $\mu$ s to CW			10.0 $\mu$ s to CW		0.02 to 50 ms	
Pulse Frequency (kHz)	single pulse up to 50			single pulse up to 20		single pulse up to 50	
Fiber Connector	QCS	RQB	QBH			RQB	
Beam Quality (M2)	<1.1			<1.5		single and multi mode	multi mode
Fiber Length (standard)	4.5 m SM		9.5 m SM	5 m SM		3.7 m SM 4.7 m MM (100 $\mu$ m)	4.7 m MM (100 $\mu$ m)
Fiber Length (optional)			4.5 m SM			4.7 m MM (50 $\mu$ m) 9.7 m MM (100 $\mu$ m)	
Cooling	air		water-water / water-air			air	
Beam Path Options	scanner, fixed optics for welding and cutting, Smartweld+ (PH10)			scanner		scanner, fixed optics for welding and cutting, Smartweld+ (PH10)	
Process Control	PartVision Packages, SmartSense+						
<b>Electrical Specifications</b>							
Mains Voltage	single phase 208 to 240			2 Mains connections necessary 3-phase delta config 400 to 480 single phase 208 to 240		single phase 208 to 240	
EU+Asia (V AC)							
US (V AC)							
Mains Frequency (Hz)	50/60						
Primary Electrical Power Consumption (kW)	2.15	2.3 to 2.5	2.7 to 2.9	3.5 (3P) + 1 (2P)	5.7 (3P) + 1 (2P)	1.8	2.0

### AVAILABLE SCANNER AND FIXED OPTICS

Application Package "Precision Welding" (Scanner Optics)



Application Package "Precision Welding" (Fixed Optics)



Application Package "Precision Cutting" (Fixed Optics)



SmartWeld+ based optical beam path with SmartSense+ process monitoring



Galvo based optical beam path with SmartSense+ process monitoring

