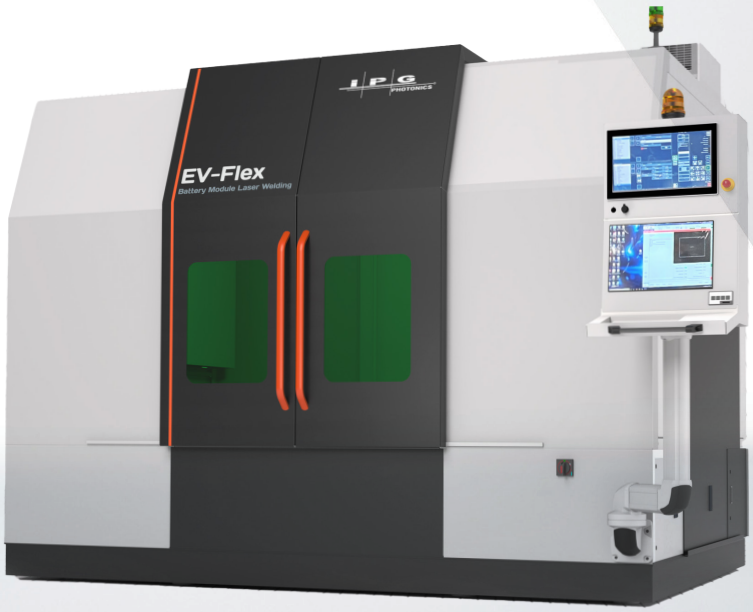
EV-FLEX

Automated Battery Module Welding System



FEATURES

- Suitable for cylindrical, prismatic and pouch cells
- Max. battery size [mm]: 1200 x 1000 x 300
- Vision Alignment system (image processing for position correction)
- Cell-to-Pack & Cell-to-Body capable
- System expandable for serial production
- "Plug & Produce" – short commissioning time
- Compact & robust machine design
- All components installed on a base frame
- Mobile manufacturing cell, suitable for forklifts
- Ease of use - intuitive user interface
- Class 1 laser certified safety enclosure

OPTIONS

- Conveyor system for automated part feedthrough
- LDD-700 Real-time weld measurement

EV-FLEX battery module welding systems are fully automatic laser processing solutions for welding cylindrical, prismatic and pouch cells interconnecting busbars. Systems can be configured for manual or conveyor-fed part loading and are suitable for process development, welding of prototypes, and small volume or mass production. Integration of conveyor and part transport systems is an available option.

EV-Flex is configurable with IPG welding lasers of the YLS and AMB series and corresponding 2D scanners. IPG e-mobility experts provide guidance to select the best equipment for specific applications (material/thickness combinations) based on proven battery welding implementations.

System options include real-time weld measurement for 100% weld qualification and examination of weld seams.

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System Specifications	
Laser Source	IPG Single and Multi-mode industrial fiber lasers from 1000 to 6000 W
Welding Head	IPG 2D High Power Scanner
Battery - max size L x W x H, mm	1200 x 1000 x 300
Battery - max weight, kg	500
Scanner Focal Length, mm	254 or 415 Options
Welding Process Area, mm	Gantry Travel: 750 x 500 x 200 Scanner Working Area – F254 Lens: 860 x 610 Scanner Working Area – F415 Lens: 950 x 700
Weld Positioning Accuracy, mm	± 0.1 (When using vision alignment position correction)
Motion Control	Siemens 3-axis CNC control
Laser Safety Enclosure	Class 1
Dimensions L x W x H, mm	3500 x 2500 x 2900
Weight, kg	4100
Operating Ambient Temperature, °C / °F	5 – 45 / 41 – 113
Relative Humidity	< 60 %, no condensation or frost

System Options		
Laser Source	Adjustable Mode Beam (AMB) 2/4 kW core/ring Single-mode or multi-mode Independent core and ring power control	YLS 1 – 2 kW Single-Mode 4 – 6 kW Multi-Mode
Real-time weld measurement	LDD-700	
Loading	Front: Manually or by means of a conveyor system	
Clamping Device	Customer and component specific	
Position adjustment for x-, y- and z-direction & quality monitoring	All functions of the LDD-700 system can be used for position and quality control as well as position correction within the system accuracy of +/- 0.1 mm	
Laser power monitoring	Integrated power meter for automatic, programmable measurement	

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