

HIGHmotion 2D

Remote Laser Welding Head

HIGHmotion 2D is a remote laser welding head optimized to produce high quality, reliable welds on aluminum and copper, making it an ideal tool for e-mobility manufacturing. It is rated for 6 kW average (CW) laser (8 kW on request) and will withstand the back reflections that are typical when welding highly reflective materials.

HIGHmotion 2D is available with proprietary F-theta scan lenses having magnifications from 1.3X to 4X. The lower magnification lenses produce a small spot size that enables deep copper welds (>3 mm) while still maintaining a large work area (up to 110 x 180 mm²).



FEATURES

- Compatible with fiber and disc lasers
- Rated up to 6 kW CW laser power (8 kW on request)
- Wide range of magnifications available
- Optimized camera port for improved image quality
- Advanced optical design minimizes thermal focus shift
- Rugged, industry-proven design and construction
- Available with vision system HIGHvision

APPLICATIONS

- Busbar Welding
- Battery Can/Cap Welding
- Battery Cooling Plate Welding
- Battery Enclosure Welding
- Battery Foil-to-Tab Welding

Specifications	HIGHmotion 2D					
Focusing Unit (mm)	450			260		
Collimation Unit (mm)	200 (M = 2.25)	150 (M = 3)	112.5 (M = 4)	200 (M = 1.3)	173 (M = 1.5)	150 (M = 1.75)
X, Y Max. Elliptical Work Field (mm ²)	218 x 324	230 x 340	250 x 370	90 x 160	100 x 170	110 x 180
Permissible Numeric Aperture (NA) at 99% Power Inclusion	0.1	0.125		0.1	0.125	
Working Distance (mm) (cover slide from the focus)	555			307		
Max. Mean Laser Power in Continuous Wave Operation (cw) (kW)	6 ¹					
Permissible Wavelength Range of the Laser Light (nm)	1020 to 1100					
Laser Light Cable Receiver	LLK- Auto, LLK-Q					
Max. Angle of Deflection of the Beam to the Optical Axis (°)	12					
Cooling Water (l/min.)	Min. 1.8					
Dimensions (Standard Configuration)						
W x D x H (mm)	Approx. 220 x 485 x 375					
Weight (kg)	Approx. 21					
Ambient Conditions						
Operating Temperature (°C)	+15 to +55					
Air Humidity (%)	<85					
Control Unit						
Power Supply	AC 115 V / 12 A - AC 230 V / 6A					
Compressed Air Supply	Oil and water- free					
Dimensions (W x D x H) (mm)	810 x 400 x 650					
Options						
Process Monitoring	C-Mount, Standard flange					
Crossjet	Single, Double, Process jets					
Vision system	HIGHvision					
Control Unit	19" Rack version ²					
Field bus system	Hardwired, Profibus, Profinet, DeviceNet, Ethernet/IP, CC-Link, EtherCAT					

Notes:

1. 8 kW on request.
2. Compatible with selected Coherent lasers.

Mechanical Specifications

HIGHmotion 2D (example configuration)

