Remote Laser Welding Head

HIGHmotion 2D

Full throttle to a future of electric cars

The HIGHmotion 2D is a remote laser welding head optimized to produce high quality and highly reliable welds on Aluminum and Copper connections on batteries used in electric vehicles.

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Rev. 01

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The system is rated for 6 kW average laser power in continuous wave operation and is optimized to withstand back reflections that are typical when welding highly reflective materials. The advanced optical design enables excellent imaging quality by minimizing thermally induced focus shift. Equipped with a II-VI F-theta lens, near orthogonal welding angles can be achieved over a processing area of 200x300mm², which ensures that the beam can access the work pieces around complex and narrow clamping devices used in battery welding.

Perfect Fit for Battery Welding

- Industry tough design including dust proof housing, stainless steel water cooling circuit and monitored cover slide at F-theta provides high uptime
- Self-calibrating, high performance galvanometers lead to fast and precisely controlled positioning for high accuracy and long-term stability
- New TCP offset function enables full position control
- Sophisticated software suite includes tools for traceability and IoT like data matrix- and QR-code marking, logging of events or monitoring the complete welding system
- High level serviceability due to easily accessible and exchangeable components

Features

- Compatible with fiber and disc lasers
  - IR + green wavelength
  - LLK-D and LLK-Q available*
- Rated for 6 kW CW laser power
- F-theta for best imaging quality
  - Large work space of 200 x 300 mm^2
  - System magnification options
    M = 3 or M = 4 *
- Large working distance of more than 0.5 m
- Weighs only 21 kg **
- Up to 4 cover slides, including a cover slide before collimation, prevent damage to the optics from contamination
- Process enhancing accessories, e.g. several crossjet options, a new teach module or a CCD adapter
- A complete system ready to use including cable management, robot support, crash sensor, crossjet, software, electric & pneumatic supply, camera, fiber cable, cover slides and more
- Compatible with all common process observation tools

  * others on request
  ** depending on configuration