# scansonic

## THE NEXT GENERATION

OF LASER WELDING AND BRAZING WITH TACTILE SEAM TRACKING

# ALO4-0

#### **HOW IT WORKS**

The filler wire required for the seam during joining also serves as a mechanical sensor. The filler wire is continuously pressed into the joint by the swivel axis and melted in the laser focal point; it positions and guides the processing head precisely over the seam.

Two synchronized scanner axes are integrated into the ALO4-O for a defined 2D laser beam oscillation with up to 1000 kHz. Beam oscillation is a repeated, high-frequency movement of the laser beam. Deflection shapes, amplitudes and frequencies are freely programmable for each scanner axis.







alloying with additional material and seam smoothing

### **PRODUCT BENEFITS**

**Stable process control** and highest seam quality through automatic compensation of component tolerances by tactile seam tracking with filler wire.

**Definable 2D laser beam oscillation** with up to 1000 kHz via two synchronized scanner axes. Deflection shapes, amplitudes and frequencies can be freely programmed for each scanner axis.

**Industry 4.0** as the new standard for connectivity and intuitive user interfaces with recipes for operating and configuring the optics.

**SCeye® system** for highly automated and intelligent process monitoring, as well as for recording all videos and data from the process.

**Integrated 3D weight compensation** and force control guarantee high-precision control of the wire pressure forces and enable a processing space of 360 °.



**Shortened start-up times**, faster optics changeovers and more efficient service thanks to plug & play in the hardware and interface architecture.



**Easy handling** thanks to the optional integration of external functions such as wire feeder, media control, QA systems and direct control of the laser source.



**Individual device configuration** thanks to the modular scacpacs<sup>®</sup> building block system and expandability over the entire product life cycle.

#### **SCAPACS®-MODULES**



#### SWIVEL AXIS

- Increased drive dynamics and more torque offer the possibility of 90 ° angles of the swivel axis during processing
- Optimised for continuous use even under high mechanical loads



#### AUTOFOCUS

- Automatic tracking of the horizontal focus position
- Increased operational readiness thanks to temperature monitoring and position control

#### **TELESCOPIC ARM**

- Height tolerance compensation with improved integrated force sensors
- Variants: Standard, Fix (with brakes), Motion (motorised)



#### OSCILLATION SCANNER UNIT

- Synchronized 2D oscillating scanner axes
- Deflection shapes, amplitudes and frequencies up to 1000 Hz can be freely parameterized



#### PROTECTIVE GLASS MONITORING

- Continuous monitoring of the protective glass on the process side
- Based on the patented temperature evaluation algorithms



#### SCEYE®

- Data and video recording during the process
- Quality assurance: Envelopes, pore detection and beam-wire-position

#### **TECHNICAL DATA**

Wavelength	1030 – 1080 nm
Laser power	< 8 kW
Laser protection class	4
Image scales	1:1.0 and 1:1.1
Total angle of acceptance	up to 290 mrad*
Focal lengths	176 mm
IP class	Processing optics: IP60 (up to IP64 possible by sealing the laser light cable receiver) Switch cabinets: IP54
Voltage supply	24 V / 10 A provided by the customer or 230 / 400V 4 A using the controller power-supply box
Dimensions (L x W x H) in mm	approx. 350x 250x 580*
Weight	Processing optics: approx. 20 kg Controller power-supply box: approx. 25 kg

\*depending on the configuration

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