

## Laser equipment of SLV Halle GmbH

Our aim is to develop and test innovative technologies. In doing so, we accompany our customers from the initial welding tests via adaptation of welded structures up to the implementation of units at the customer's which are suitable for industry. The following equipment is available.

### Ytterbium Fiber laser

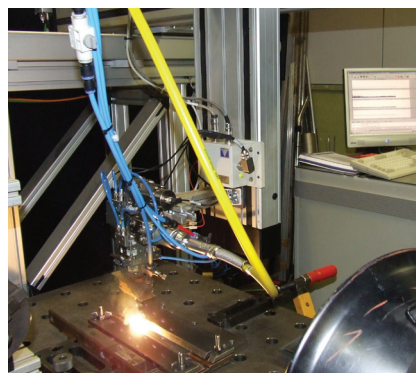


Ytterbium Fiber laser 12 kW

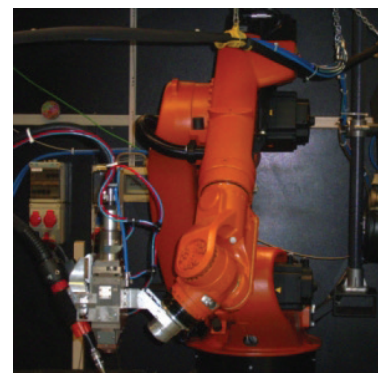
Laser output: 12,2 kW  
 Wave length: 1070 nm  
 Fiber core Ø / radiation quality: 300 µm / 15 mm x mrad  
 100 µm / 4 mm x mrad

This laser source are used by SLV Halle GmbH to investigate applications. Their advantages include the very low space requirements and very compact cooling system as well as high output power and excellent beam qualities. This opens up completely new applications for material processing using laser beams. The following guide systems are available to implement your application.

### Guide systems



Portal system with 3 linear and 1 rotary axes  
 Working space: 1 m x 1 m x 1,5 m



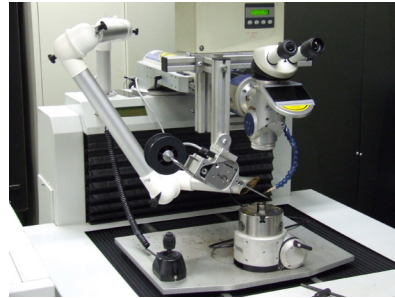
6-axle articulated arm robot with a max. of 3 external axes;  
 Load 40 kg,  
 Working space: 2 m x 1 m x 1,5 m

The focal point of investigations using the fiber laser covers the integration and technological testing of these laser sources within the research activities of SLV Halle GmbH. Particular attention is paid here to sheet metal thicknesses from 0.5 mm - 15 mm.



### Manual laser working place AL 200

Numerous applications for precision welding with and without filler metal are covered by the laser welding machine AL 200. Combined with a CNC working table ALT the open laser welding machine allows controlled movements of workpieces during laser welding without restricting the working space. The integration of a mechanical wire feeding opens up further opportunities towards build-up welding or laser soldering.



Manual laser working place



Wire feeding system

### Characteristics of the pulsed solid state laser:

Wave length:	1064 nm (Nd:YAG-Laser)
Mean output:	200 W
Pulse period:	0.5 - 20 ms
Pulse frequency:	Individual pulse - permanent pulse 20 Hz

### CO<sub>2</sub>-Slab laser RS DC 035

The equipment portfolio is rounded up by a CO<sub>2</sub> slab laser. The principle of functioning of the slab laser provides major advantages such as the extremely compact dimensions and omission of gas recirculation and external gas supply. Also included is best beam quality and clearly reduced service expenditure. It is used - in addition to investigate applications ordered by customers - by SLV Service GmbH for service welding of rotationally symmetric components in the range of weld-in depths up to 5 mm.



Laser output:	3,5 kW
Wave length:	10.600 nm
Raw beam diameter:	20,4 mm
K number =	0,6 bei 3,5 kW; F = 250 mm

### Training and qualification profiles

- Qualification as laser safety specialist according to the Trade Association Regulation BGV B2 „Laser radiation“ (former VBG 93), April 2000
- DVS training course „Laser beam specialist, specialist for metal machining by laser beams“ according to the DSV directive 1187, March 1997
- DVS training course „Laser beam welding in dental engineering“ according to the DSV directive 1187-1, December 1999
- EWF training course „Special Courses for Training and Qualification in Laser Welding (Engineer, Technologist and Specialist levels)“ according to EWF directive 494-01 (1999) (German version under progress)
- EWF/DVS training course „Electron beam welding“ (under progress)

### Contact

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