Laser system

ALW 200 | ALW 300

ERGONOMIC SEATED WORKPLACE

The ALW is a comfortable, ergonomic seated workstation that offers plenty of legroom. The observation optics offer a variable viewing angle in the range 10°–50° and thus enables comfortable working while sitting or standing.

Demanding materials such as aluminum, copper alloys, precious metals, titanium and sensitive alloys can be easily welded with the powerful ALW 200/300. With the optional fine welding function, you can reduce the spot diameter to < 0.1 mm.

This welding laser is ideally suited for series production. The NC software is integrated. Programming and teaching takes place directly on the 12.1“ touchscreen display. Additional I/Os are also available. In addition, an automatic wire feeder. For toolmaking tasks, the functions „UCS“ (user coordinate system) and „individual teaching“ are very helpful.

ALW 300

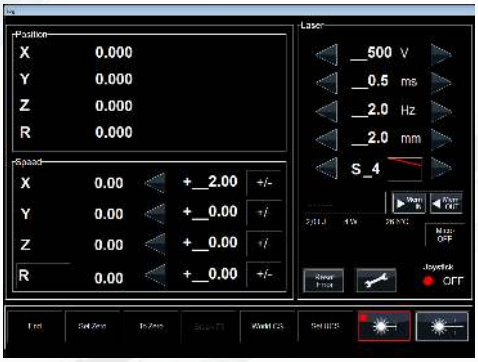
ALW 300 open

ALPHA LASER GmbH Junkersstraße 16 D-82178 Puchheim Tel +49 (0)89 890237-0 info@alphalaser.de www.alphalaser.eu

The ALW has 3 linear movement axes, whereby the vertical Z-axis lifts up to 400 kg. The joystick for axis movement in X, Y, Z and R reacts very precisely. It is located in the working chamber, but can also be attached to the outside of the housing - just as your task requires. An axis of rotation for circular welds is optionally available. The working chamber offers plenty of space and wide-opening doors make loading simple.

The closed, laser-safe housing makes the ALW a laser-protected workplace that can be used in the normal production environment without additional safety precautions.

The ALW meets the high security requirements for performance level d.



Manual

Automatic

Pulse shaping

Technical data

	ALW 200	ALW 300
LASER		
Laser type/wave length	Nd:YAG, 1,064 nm	Nd:YAG, 1,064 nm
Average power	200 W	300 W
Peak pulse power	9 kW	9 kW
Pulse energy	90 J	90 J
Pulse duration	0.5–20 ms	0.5–20 ms
Pulse frequency	Single pulse–100 Hz	Single pulse–100 Hz
Operating mode	pulsed	pulsed
Welding spot Ø	0.2–2.0 mm	0.2–2.0 mm
Focusing objective	150 mm, further according to lens data sheet	
Pulse shaping	Adjustability of power curve within a laser pulse	
Display and operation	12.1" Touchscreen-Display	
OBSERVATION LENS	Leica Ergotobus with eyepieces for use with eyeglasses	
WORKING CHAMBER		
W × D × H	1,080 × 850 × 450 mm	1,080 × 850 × 450 mm
Mounting plate (W × D)	600 × 475 mm	600 × 475 mm
workpiece weight	400 kg max., central	400 kg max., central
Workpiece movement	Motorized through joystick	Motorized through joystick
Movement range (X, Y, Z)	478 × 340 × 332 mm	478 × 340 × 332 mm
EXTERNAL DIMENSIONS		
W × D × H	1,190 × 1,400 × 1,740 mm (with display folded 1,500 mm)	
Weight	870 kg	870 kg
ELECTRICAL CONNECTION	3 × 400 V / 50–60 Hz / 3 × 16 A	
External cooling	optional	optional
Extraction	integrated	integrated
OPTIONS	Turn and tilt objective Rotating axis Microwelding device Ergo wedge Camera system for demonstrating and observing the welding process Crossjet External cooling (regulated or unregulated)	

V3.1

ALW 300 F | ALW 450 F

ERGONOMIC SEATED WORKPLACE

The ALW is now also available in the version fiber laser with 300 W and 450 W laser power. The fiber source has a high energy efficiency and is ideally suited for reproducible welding because the laser power is monitored during the welding process. Welding can be done in CW mode or pulsed.

The ALW is a comfortable, ergonomic and compact seat workplace that offers plenty of legroom and can be adjusted to the size of the operator thanks to the height and forward adjustable foot plate. The observation optics offer a variable viewing angle in the range of 10°–50° and thus enables a comfortable work.

The closed, laser-safe enclosure makes the ALW a laser-protected workstation that can be used in the normal production environment without any additional safety precautions. We have again reinforced the laser protection by metal lamellas behind the bellows. In addition, the system meets the high security requirements for performance level d.

ALW 450 F

ALW 450 F open

ALPHA LASER GmbH Junkersstraße 16 D-82178 Puchheim Tel +49 (0)89 890237-0 info@alphalaser.de www.alphalaser.eu

The laser and motion system are conveniently operated via the intuitive, large 12.1“ touchscreen. In addition, the laser parameters can be set or adjusted during welding using the patented multifunction footswitch. This allows full concentration on the welding task without having to take your hands off the workpiece. The WINLaserNC software is also programmed directly on the touch screen, which can be swiveled in the vertical and horizontal axis. Thus, a good view of the display is always guaranteed.

semi-automatic operation

fully automatic

Technical data

	ALW 300 F	ALW 450 F
LASER		
Laser type/wave length	Fiber laser, 1,070 nm	Fiber laser, 1,070 nm
Average power	300W	450 W
CW power	300 W	450 W
Peak pulse power	3 kW	4.5 kW
Pulse energy	30 J	45 J
Pulse duration	0.2–50 ms/CW	0.2–50 ms/CW
Pulse frequency	Single pulse–100 Hz	Single pulse–100 Hz
Beam parameter product at 50 µm	2–3 mm * mrad	2–3 mm * mrad
Operating mode	pulsed/CW	pulsed/CW
Welding spot Ø	0.2–3.0 mm, optional 0.1–4.0 mm	
Focusing objective	150 mm, further according to lens data sheet	
Pulse shaping	Adjustability of power curve within a laser pulse	
Display and operation	12.1“ Display with touch function. Laser parameters can also be set using a multifunctional footswitch, WINLaserNC software through integrated PC	
OBSERVATION LENS	Leica Ergotobus with eyepieces for use with eyeglasses	
WORKING CHAMBER		
W × D × H	1,080 × 850 × 450 mm	1,080 × 850 × 450 mm
Mounting plate (W × D)	600 × 475 mm	600 × 475 mm
workpiece weight	400 kg max., central	400 kg max., central
Workpiece movement	Motorized through joystick	Motorized through joystick
Movement range (X, Y, Z)	478 × 340 × 332 mm	478 × 340 × 332 mm
EXTERNAL DIMENSIONS		
W × D × H	1,190 × 1,400 × 1,740 mm (with display folded 1,500 mm)	
Weight	900 kg	900 kg
ELECTRICAL CONNECTION		
Electrical connection	3 × 400 V / 50–60 Hz / 3 × 16 A	
External cooling	optional	optional
Extraction	Build-in socket available	
USB keyboard and mouse	Socket integrated	
OPTIONS	Turn and tilt objective Rotary axis module Optique cooling Sealing air Cross jet Camera system for demonstrating and observing the welding process	

V2.3