

# AL-Q



## THE COMPACT LASER WELDING CELL FOR INTEGRATED SERIES PRODUCTION AND SMALL SERIES

### TOP PERFORMANCE IN THE WELDING PROCESS

The AL-Q laser welding cell has been developed for use in industries where uniform weld seams are essential. Whether in **medical technology**, **aerospace** or **sensor technology** - with the powerful QCW laser technology, you can achieve outstanding welding results, from pulsed welding to deep penetration CW welding.



For more information, visit our product page.

### RELIABLE SYSTEM CONTROL

The new **WINLaser® 5 control system** is powerful and easy to operate. The integrated control concept is designed by ALPHA LASER and is continuously being further developed.

### MINIMAL FOOTPRINT

The required footprint is less than  $2 \times 2$  m. **Save valuable space** in your production. Even very long components can be accommodated in the large working chamber with optional housing feed-throughs.

### THE RIGHT FIXTURE

An appropriate fixture makes all the difference when it comes to throughput and ergonomics. Our precise rotary axes offer **high accuracy with convenient operation**, for example by foot switch with pneumatic collet chuck.

NEW WITH WINLASER® CSP  
The Industry 4.0 interface  
based on OPC 40530



Series production at ALPHA LASER enables short delivery times and high availability of spare parts.

Our competent contact person speaks your language and supports you in defining the optimum solution for you.

FIBER LASER PERFORMANCE (WATT)

**150 300 450 600**



The system meets the high safety requirements of Performance Level d.

	150 F	300 F	450 F	600 F
Average power	150 W	300 W	450 W	600 W
CW power	150 W	300 W	450 W	600 W
Peak pulse power	1.5 kW	3 kW	4.5 kW	6 kW
Pulse energy	15 J	30 J	45 J	60 J
Cooling	Air	Air	Air/Water	Air/Water

LASER

Laser type/Wavelength	QCW Fiber Laser, 1070 nm
Pulse duration	0.2-50 ms / CW
Pulse frequency	Single pulse - 100 Hz
Beam parameter product for 50 µm	2-3 mm*mrad
Operating mode	Pulsed/CW
Welding spot Ø	0.2-2.0 mm
Focusing objective	150 mm

CONTROL

Operating system	WINLaser 5
Optional for production integration	WINLaser CSP (optional)
Input	Touchscreen, Mouse, Keyboard

WORKING CHAMBER

W × D × H	900 × 650 × 850 mm
Mounting plate (W × D)	610 × 440 mm (with M5 hole grid)
Workpiece weight	Up to 100 kg, centered
Movement range (X, Y, Z)	210 × 175 × ca. 300 mm (standard), optional 310 × 225 × ca. 300 mm (XL)
Positioning accuracy (X, Y, Z)	< 0.02 mm
Travel speed (X, Y, Z)	25 mm/s

EXTERNAL DIMENSIONS

W × D × H	1850 × 1775 × 2470 mm (in working position, door open)
	1250 × 1140 × 1990 mm (in transport position, door closed, without signal tower)
Weight	475 kg

OPTIONS

WINLaser CSP interface  
I/O interface  
Rotating axis (chuck / pneumatic collet)  
AL-DV wire feeder  
Turn and tilt objective  
Sealing air  
Crossjet  
Pneumatic connection in the working chamber  
External cooling

CONNECTIONS

Electrical connection	3 × 400 V / 50-60 Hz / 3 × 16 A
Exhaust gas extraction	NW45 connection, 50-250 m <sup>3</sup> /h volume flow, W3 certification recommended
Cooling water (with water cooling option)	½" connection, supply temperature 18-24 °C, cooling capacity 3.5-5.7 kW, differential pressure max. 2 bar
Shielding gas	6 mm quick connector
Compressed air (with pneumatic collet or Crossjet option)	6 mm quick connector
Remote maintenance	Ethernet socket (alternatively: WLAN)
Customer network (with WINLaser CSP option)	Ethernet socket

[www.alphalaser.eu](http://www.alphalaser.eu)

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