# ALFlak

## SELF-PROPELLED, ROBUST, PROGRAMMABLE

The AL*Flak*'s laser arm projects a great distance to effortlessly reach its welding position, even in deep or complex molds. Welding seams up to 500 mm are possible without relocation. Your advantage: The welding process can be performed without constant repositioning.

The AL*Flak* comes in two versions: with a self-propelled caterpillar track or a model that can be moved manually.

Choose the laser source that fits your requirements: You can choose Nd:YAG 200 W or 300 W laser sources or fiber lasers with output of 300, 450, 600 or 900 W.

**If your needs change later, you can equip your AL*Flak* with a 300 W or 450 W fiber source to double the output.**

**AL*Flak* Fiber**

**AL*Flak* stationary**

**AL*Flak* mobile**

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# Technical data

| | ALFlak 200 | ALFlak 300 | ALFlak 300 F | ALFlak 450 F | ALFlak 600 F | ALFlak 900 F |
|---|---|---|---|---|---|---|
| **LASER** | | | | | | |
| Laser type/wave length | Nd:YAG, 1,064 nm | Nd:YAG, 1,064 nm | Fiber laser, 1,070 nm | Fiber laser, 1,070 nm | Fiber laser, 1,070 nm | Fiber laser, 1,070 nm |
| Average power | 200 W | 300 W | 300 W | 450 W | 600 W | 900 W |
| CW power | | | 300 W | 450 W | 600 W | 900 W |
| Peak pulse power | 9 kW | 9 kW | 3 kW | 4.5 kW | 6 kW | 9 kW |
| Pulse energy | 90 J | 90 J | 30 J | 45 J | 60 J | 90 J |
| Pulse duration | 0.2-20 ms | | 0.2 ms - CW | | | |
| Pulse frequency | Single pulse -100 Hz | | Single pulse -100 Hz | | | |
| Operating modes | Pulsed | | Pulsed/CW | | | |
| Welding spot Ø | 0.2–2.0 mm / 0.01–1.0 mm with micro welding option | | 0.2-3.0 mm, optional 0.1-4.0 mm | | | 0.3-3.0 mm, optional 1.1-4.0 mm |
| Focusing objective | 150 mm, further according to lens data sheet | | | | | |
| Pulse shaping | Adjustability of power curve within a laser pulse | | | | | |
| Display and operation | Display with membrane keyboard Laser parameters can also be set using a multifunctional footswitch. WINLaserNC software through external PC | | Touchscreen Laser parameters can also be set using a multifunctional footswitch, WINLaserNC software can be operated through a touchscreen | | | |
| **OBSERVATION LENS** | Leica microscope attachment with eyepieces for glasses wearers, 10 ×, optional 16 ×. | | | | | |
| **WORK AREA** | | | | | | |
| Movement speed (X, Y, Z) | 0-25 mm/s | | | | | |
| Movement range (X, Y, Z) | 320 × 330 × 370 mm | | | | | |
| Lowest working point | 200 mm | | 565 mm | | | |
| Highest working point | 1,500 mm | | 1,780 mm | | | |
| Arm deflection | 1,500 mm | | ca. 1,400 mm | | | |
| **EXTERNAL DIMENSIONS** | | | | | | |
| W × D × H (basic part incl. chassis) | 1,200 × 1,200 × 1,100 mm | | 1,200 × 1,030 × 1,150 mm | | | |
| Weight | With caterpillar track approx. 850 kg, without caterpillar track 550 kg | | With caterpillar track approx. 910 kg, without caterpillar track approx. 610 kg | | | |
| **EXTERNAL CONNECTIONS** | | | | | | |
| Electrical connection | 3 × 400 V / 50-60 Hz / 3 × 16 A / 16 A | | | | | |
| External cooling | Prepared | | | | Lens water cooling integrated | |
| **OPTIONS** | Turn and tilt objective<br>Micro welding function<br>Rotary axis module with chuck, tiltable, for horizontal to vertical rotation<br>Camera system for demonstrating and observing the welding process<br>Ergo wedge<br>LAfet® programmable laser wire feed system | | Turn and tilt objective<br>Rotary axis module with chuck, tiltable for horizontal to vertical rotation<br>Camera system for demonstrating and observing the welding process<br>Ergo wedge<br>LAfet® programmable laser wire feed system | | Powder nozzle<br>Turn and tilt objective with water cooling | |



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