AO Metal

LASER POWDER BED FUSION · DESIGNED AND BUILT IN CALIFORNIA

A50 METAL 3D PRINTER

When the alloy is the hard part.

A blue laser for copper, gold and silver, a build plate heated to 250 °C, and every process parameter still open to you.

BUILD VOLUME	LASER	LAYER	BLUE LASER
Ø50 × 100 mm	300–1000 W fiber	15–100 µm	455 nm, 250 W

from $89,000

300 W · 500 W and 1000 W quoted on request



- **A blue laser changes the material list**
  455 nm, 250 W. Copper, gold and silver absorb it where an infrared laser reflects.
- **An experiment still costs grams**
  128 g of steel or 74 g of titanium for a set of test parts 10 mm tall.
- **Two hours to change material**
  A full changeover, not a service visit.
- **A heated plate as standard**
  250 °C under the part. For 900 °C there is the A50-HT, a printer of its own.
- **Open where it matters**
  Our own slicer, every parameter exposed, proven sets included.
- **The A30 process transfers unchanged**
  The same slicer, the same controls, the same file.

SIXTEEN ALLOYS PROVEN TO DATE. THE LIST IS NOT CLOSED.

Stainless 316L · 17-4PH	Inconel 625 · 718	Ti-6Al-4V · TiAl	AlSi10Mg · 6061	Cobalt chrome
Tool steels H13 · M300	Copper · CuCrZr	W · Ta · Nb · Mo	Gold · Silver · Platinum	High-entropy alloys

AO Metal · a brand of Additive Plus · Gardena, California

info@aometal.com · info@additiveplus.com · (747) 800-4854

A50 · TECHNICAL DATA

Specifications and what it takes to run one.

128 g of 316L powder to run a set of test parts 10 mm tall.

POWDER TO START A BUILD	316L STEEL	TI-6AL-4V	ALUMINIUM
Test parts, 10 mm tall	**128 g**	**74 g**	**45 g**
A build of 20 mm parts	**256 g**	**148 g**	**90 g**
Dispenser filled to full height	**2.69 kg**	**1.55 kg**	**947 g**
Metal in the part itself — a 10 mm cube	**7.9 g**	**4.5 g**	**2.7 g**

Model	A50-300	A50-500	A50-1000
Technology	Laser powder bed fusion (LPBF)		
Build volume	**Ø50 × 100 mm (Ø1.97 × 3.94 in)**		
Laser	300 W fiber, 1064 nm	500 W fiber, 1064 nm	1000 W fiber, 1064 nm
Laser spot size	75 µm (55 µm optional)		
Optional blue laser	455 nm, 250 W · the machine then runs on 208–240 V, 1 phase, NEMA 6-50 on a 50 A circuit, peak about 4.9 kW		
Scan system	Galvo scan head + F-theta lens		
Max scanning speed	up to 12 m/s		
Layer thickness	15–100 µm		
Build plate heating	250 °C · for 900 °C see the A50-HT		
Inert gas	Argon, < 2 L/min		
Material changeover	**2 hours**		
Software · file format	AO Build Studio + AO Build Slicer · STL		
Power supply	120 V, 1 phase, 60 Hz · NEMA L5-30, 30 A circuit	208–240 V, 1 phase, 60 Hz · NEMA L6-30, 30 A circuit	208–240 V, 1 phase, 60 Hz · NEMA 6-50, 50 A circuit
Peak power, estimated	about 2.6 kW	about 4.0 kW	about 6.6 kW
Dimensions (W × D × H)	1110 × 810 × 2000 mm (43.7 × 31.9 × 78.7 in); 1170 × 820 mm of floor with the monitor arm		
Weight	about 480 kg (1,060 lb); 490 kg with the blue laser		
Alloys proven to date	16+ — not a fixed list		
Price	**from $89,000**	**Quoted on request**	**Quoted on request**

What a system comes with

- AO Build Studio and AO Build Slicer, with proven parameter sets for the alloys you order.
- Build plate, powder dispenser, filters, seals and the tools for a material change.
- **Installation and operator training,** with a named engineer on the account.
- **Warranty:** 12 months on laser, scanner, blower, motors and electrical systems.
- **Lead time:** some configurations ship from stock; built to order in 8–14 weeks. Your quotation confirms the date.

What you will also need

- **Required:** wet vacuum cleaner (explosion-proof for reactive metals) and a sieving machine.
- **Recommended:** heat-treatment furnace, bandsaw or small lathe, polishing tool.
- **Serviceable in your own lab:** filters, seals, hoses and recoater blades are ordinary components you can source locally.

The line it belongs to

A30
Ø30 × 60 mm · 200 or 300 W fiber · 120 V, single phase
from $59,000

A50
Ø50 × 100 mm · 300–1000 W · optional 455 nm blue laser
from $89,000

A100
Ø100 × 100 mm · 300–1000 W · optional 455 nm blue laser
from $99,000

A50-HT
Ø50 × 100 mm · 300–1000 W · 900 °C induction-heated plate
Quoted

A100-HT
Ø100 × 100 mm · 300–1000 W · 900 °C induction-heated plate
Quoted

The same slicer, the same controls, the same file. A process developed on one machine transfers to the others without being rebuilt.

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Designed and manufactured by Additive Plus in Gardena, California — spares, service and your engineer are all here. Tell us the alloy and the part, and we will say what an A50 does with it.

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