

# MELTIO

3E METAL DEPOSITION TECHNOLOGY



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LMD-Wire/Powder 3D printer

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Meltio M450 is the world's first metal 3D printer capable of building fully dense parts from wire and powder in the same machine, by using a patented multi-laser technology. It's able to automatically use metal wire, metal powder, or both simultaneously without changing the nozzle.



### Unique technology

Meltio M450 can produce complex metallic components from both wire and powder feedstock. The ability to produce parts from wire makes operation and material handling very clean, as well as ensuring 100% material efficiency. Being able to process powder fills the gap to conventional LMD and brings the ability to mix alloys on the fly.

### Cost-effective solution for metal parts fabrication

M450 provides the most affordable method for metal additive manufacturing. It can use any commercially available metal wires and powders in the market. The acquisition and production cost is substantially lower compared to competing technologies.

### Amazing build envelope in a compact format

Despite its compact outer dimensions Meltio M450 features a significant print envelope of 150mm x 200mm x 450 mm. The printer is clean and safe, without the typical hassle of common and bulky industrial hardware.

### Great results and versatility

The sealed atmosphere reduces oxidation, enabling 3D printing of reactive metals. M450 features not only metal 3D printing of full parts, but also an all-in-one additive manufacturing solution for repairing parts, laser cladding, laser welding (autogenous and with filler), laser cutting, laser texturing and polishing.

### Easy to use software

The printer features a powerful on-board computer with a 17" touchscreen and a feature rich GUI with advanced custom designed software to allow easy model slicing and access to process parameters. The printer can also be controlled via a tablet or computer through a local wireless network or via an Ethernet connection.



## Technical features

<b>Build volume<sup>(1)</sup></b>	150mm x 200mm x 450mm
<b>Laser power</b>	2 possible configurations: Max power 0.6kW Max power 1.2kW
<b>Laser type</b>	Fiber coupled solid state diode
<b>Laser resolution</b>	700µm individual spot size
<b>Layer thickness<sup>(2)</sup></b>	200-1200µm typical for wire, 100-500µm typical for powder
<b>Tested materials</b>	Stainless Steel (all grades), Inconel (718 and 625) and Ti-6Al-4V (grades 5 and 23)
<b>Under development materials</b>	Copper, Aluminum, Molybdenum, Tungsten, X9, Gold, Invar
<b>Wire feedstock</b>	0.8 to 1.2 mm diameter
<b>Powder feedstock</b>	45µm to 90µm particle size <sup>(3)</sup>

(1) Build height may be smaller depending on the thickness of the build plate used.  
(2) Depending on desired build rate and resolution  
(3) Does not require spherical particles

<b>Process chiller</b>	Industrial grade compact process chiller
<b>Process control</b>	Closed-loop, laser and wire modulation
<b>Printer dimensions</b>	550mm x 600mm x 1400 mm
<b>Shipping dimensions</b>	180cm x 69cm x 91 cm
<b>Weight</b>	ca. 250 kg, depending on options
<b>Shipping weight</b>	ca. 360 kg, depending on options
<b>Power consumption</b>	Up to 6kW peak power depending on options
<b>Gas consumption</b>	3-15 L/min <sup>(4)</sup> 208V-230V power supply providing at least 4kW-6kW power with 50-60Hz frequency. The printer can operate with a single or 3-phase electrical connection.
<b>Power consumption</b>	
<b>Connectivity</b>	WiFi and Ethernet, CAN Bus
<b>Safety measures</b>	Laser-safe closed enclosure, laser fiber failure detection, fume extraction, atmosphere control
<b>Operating sound</b>	70dB (with chiller on)

(4) Depending on build material