ADDIREEN

Green Laser
Metal Printing Solution Provider

For a Greener Print

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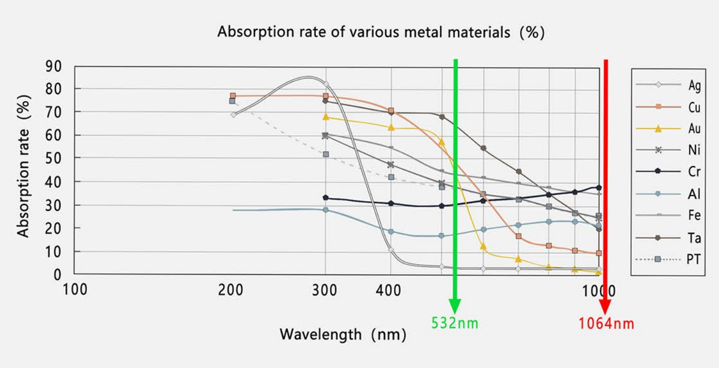
Addireen, founded in 2023, pioneered China's first green laser metal 3D printing solution. With nearly 18 years of experience in the R&D and utilization of both laser technology and metal 3D printing equipment, our team advances the field through short-wavelength and composite multi-wavelength lasers, offering superior 3D printing solutions for highly reflective metals and refractory metals, and also enabling a more efficient and finer printing of common metal materials.

We address key industry challenges—limited materials, low printing efficiency, high costs, and complex post-processing—by providing innovative solutions that drive mass production. We at Addireen, are committed to establishing us as a global leader in our targeted market segment of digital manufacturing.

Advantages of Green Laser



- The absorption rate of copper-based materials at short wavelength green laser is approx. 10 times that of infrared light
- Green laser can meet the application requirements of short wavelength, high power, and high laser beam quality at the same time.

Green Laser Metal Printing Solutions

XH-M160G

XH-M350G

XH-M100G

XH-M660G

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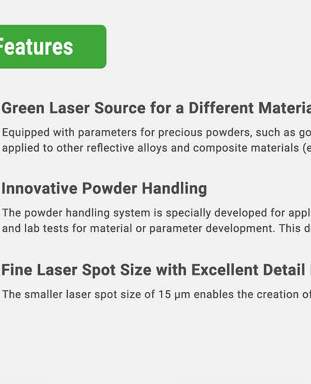

XH-M100G
High Power Green Laser for Precious Metals

The smallest build volume of Addireen, equiped with a green fiber laser, one of the first industrial green lasers on the market with a wavelength of 532nm. M100G features an innovative powder feeding structure and a convenient powder recovery system, which minimizes startup costs and reduces powder waste. It is ideal for processing precious powder, such as gold, platinum, and silver 925, with unparalleled quality and consistency, making it suitable for customized jewelry production. Additionally, it is compatible with highly reflective materials, refractory materials and their composite materials. M100G offers open-source printing parameters, making it an ideal tool for new material test and development.

Features

Green Laser Source for a Different Material Package
Equipped with parameters for precious powders, such as gold, platinum, and silver 925, as well as pure copper and copper alloys. It can also be applied to other reflective alloys and composite materials (e.g., Cu-based diamond composites, Cu-based graphene).

Innovative Powder Handling
The powder handling system is specially developed for applications that require small amounts of powder, such as jewelry with precious metals and lab tests for material or parameter development. This design minimizes machine operating costs.

Fine Laser Spot Size with Excellent Detail Resolution
The smaller laser spot size of 15 μm enables the creation of the finest structures.

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Applications

Jewelry Gold, platinum, silver

Material Development Copper(Cu), copper alloys, tungsten(W), tantalum(Ta), molybdenum(Mo), zirconium(Zr), niobium(Nb),chromium(Cr)

Machine Specifications

Model	XH-M100G
Build Volume(1)	Ø100*100mm
Laser Source	Continuous single-mode green fiber laser, wavelength 532nm, 500W
Focus Diameter	15-30μm
Focusing system	F-theta lens focusing
Scanning Speed	Up to 8m/s
Layer Thickness	20-120μm
Machine Dimensions	1109*888*1893mm
Weight	Approx. 850KG
Materials	Gold, platinum, silver 925, refractory metals, composite materials (Cu-based diamond composite, Cu-based graphene)

Note : (1)Height for build plate is not included.

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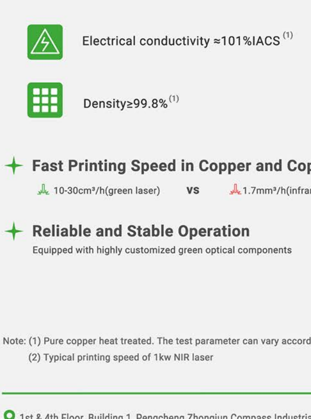

XH-M160G
Compact and High-performance Printing Solution for Pure Copper and Copper Alloys

Features

Incredible Printing Performance with Cooper and Copper Alloys
Green laser enables the additive manufacturing of highly reflective materials, allowing for more effective and efficient printing. It delivers a high absorption rate, and generates less spatter during printing. Finer details can be achieved due to the small spot size of green laser. The performance of the printed cooper and its alloy parts are enhanced.

- Electrical conductivity ≈101%IACS (1)
- Thermal conductivity ≈390W/(m·K) (1)
- Density≥99.8% (1)
- Min.wall thickness 0.08mm

Fast Printing Speed in Copper and Copper Alloys
10-30cm³/h(green laser) vs 1.7mm³/h(infrared laser) (2)

Reliable and Stable Operation
Equipped with highly customized green optical components

Note: (1) Pure copper heat treated. The test parameter can vary according to factors like printing parameter, material used.
(2) Typical printing speed of 1kw NIR laser

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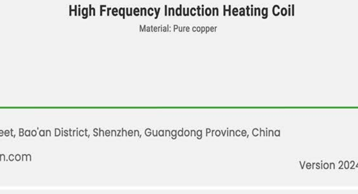
M160G is a compact industrial metal laser printing system, with a small footprint of 160*160*200mm, designed for pure copper and copper alloy printing. M160G combines with a 500W or 700W green fiber laser, one of the first industrial green lasers on the market with a wavelength of 532nm, designed to process high reflective metal powders. It enables 3D printing of materials such as copper, copper alloy and other precious metals, which are difficult or impossible to print with infrared wavelength. M160G allows complete freedom of machine operation. Machine parameter and powder choice are unlocked for the user. Open to integrate with the upstream and downstream in software systems.

Machine Specifications

Model	XH-M160G
Build Volume(1)	160*160*200mm
Laser Source	Continuous single-mode green fiber laser, wavelength 532nm, optional with 500W, 700W
Focus Diameter	20-40μm
Focusing System	F-theta lens focusing
Scanning Speed	Up to 8m/s
Printing Speed	10-30cm³/h
Layer Thickness	20-120μm
Machine Dimensions	1280*1200*2000mm
Weight	Approx. 1.2T
Materials	Pure copper, copper alloys, refractory metals, composite materials(Cu-based diamond composite, Cu-based graphene), other common metal materials

Note : (1)Height of build plate is not included.

Applications

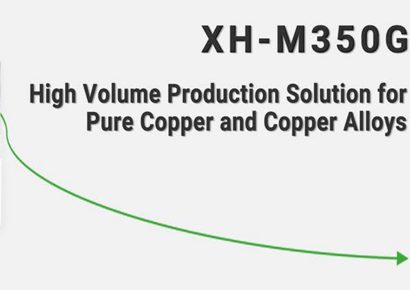


IGBT
Material: Pure copper

Cold Plate
Material: Pure copper

Fin Structure Display
Material: Pure copper
Fin thickness: 0.5mm

Ultra-thin Cooling Fins
Material: CuSn10
Wall thickness 0.08mm



High Frequency Induction Heating Coil
Material: Pure copper

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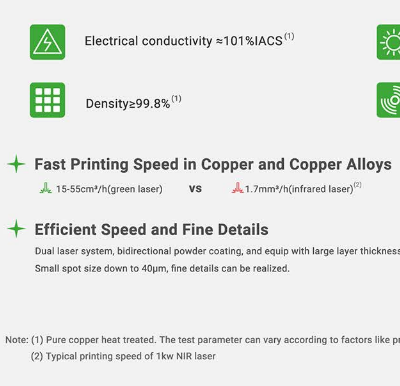

XH-M350G
High Volume Production Solution for Pure Copper and Copper Alloys

Features

Incredible Printing Performance with Cooper and Copper Alloys
Green laser enables the additive manufacturing of highly reflective materials, allowing for more effective and efficient printing. It delivers a high absorption rate, and generates less spatter during printing. Finer details can be achieved due to the small spot size of green laser. The performance of the printed cooper and its alloy parts are enhanced.

- Electrical conductivity ≈101%IACS (1)
- Thermal conductivity ≈390W/(m·K) (1)
- Density≥99.8% (1)
- Min.wall thickness 0.08mm

Fast Printing Speed in Copper and Copper Alloys
15-55cm³/h(green laser) vs 1.7mm³/h(infrared laser) (2)

Efficient Speed and Fine Details
Dual laser system, bidirectional powder coating, and equip with large layer thickness printing parameter, printing can be more efficient.
Small spot size down to 40μm, fine details can be realized.

Note: (1) Pure copper heat treated. The test parameter can vary according to factors like printing parameter, material used.
(2) Typical printing speed of 1kw NIR laser

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M350G, with a build volume of 350*350*500mm, boasts a robust modular design and can be equipped with one or two green fiber lasers, available in 500W, 700W, or 1000W. The system enables efficient printing of materials like copper, copper alloys, and precious metals, which are difficult or impossible to process with infrared lasers.

The machine's modular platform gives flexibility to reproducible production and easy maintenance. Its open-source system supports extensive parameter customization and a wide range of materials. The system is open to integrate seamlessly with upstream and downstream software.

Machine Specifications

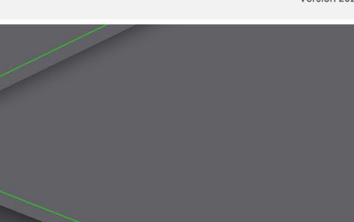
Model	XH-M350G
Build Volume(1)	350*350*500mm
Laser Source	Continuous single-mode green fiber laser, wavelength 532nm, optional with 500W, 700W, 1000W
Focus Diameter	40-60μm
Focusing System	F-theta lens focusing
Scanning Speed	Up to 8m/s
Printing Speed	10-30cm³/h Single laser 15-55cm³/h Dual laser
Layer Thickness	20-120μm
Machine Dimensions	3050*1750*2850mm
Weight	Approx. 3.9T
Materials	Pure copper, copper alloys, refractory metals, composite materials(Cu-based diamond composite, Cu-based graphene), other common metal materials

Note : (1)Height of build plate is not included.

Applications

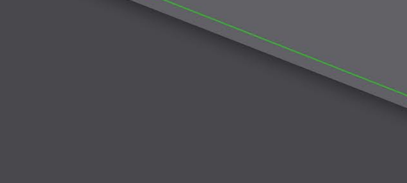
Combustion Chamber
Material: CuCrZr
Flow Channel : 1mm * 1.35mm

Engine Nozzle
Material: CuCrZr
Bottom Blade Thickness: 0.7mm



Complex Internal Spiral Channels
Material: Pure copper
Minimum Fin Wall Thickness: 0.5mm

Copper Printed Structures
Material: Pure Copper
Minimum Wall Thickness: 0.1mm
Minimum Hole Diameter: 0.3mm



Heat Sink Baseplate
Material: Pure copper

Liquid Cold Plate
Material: Pure copper

Induction coil
Material: Pure copper

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Shenzhen Addireen Technologies Co., Ltd

- Highly Reflective Metals
- Refractory Metals
- Common Metal Materials

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