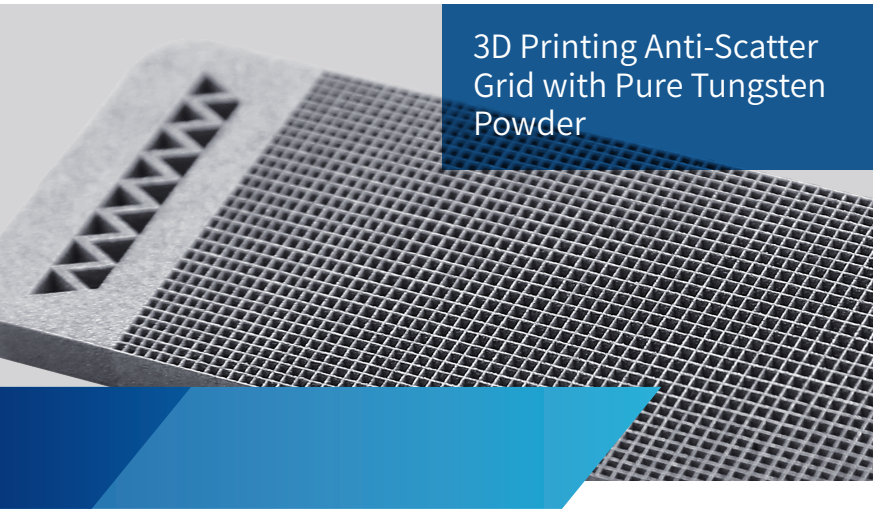
HBD

Expert on Metal 3D Printing

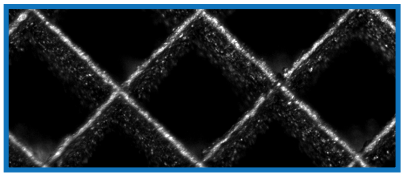
Tungsten Additive Manufacturing

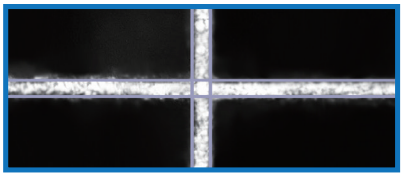
Medical Radiography Applications

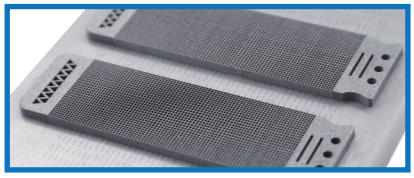


3D Printing Anti-Scatter Grid with Pure Tungsten Powder

Compared with traditional 2D molybdenum or 1D grids, 2D tungsten anti-scatter grids have significant advantages. On the one hand, the higher density of tungsten is beneficial to improve the absorption of X-ray scattering. On the other hand, the 3D printing technology of digital manufacturing mode makes the product structure design more free, which affects the more accurate introduction of X-rays into the photodiode.



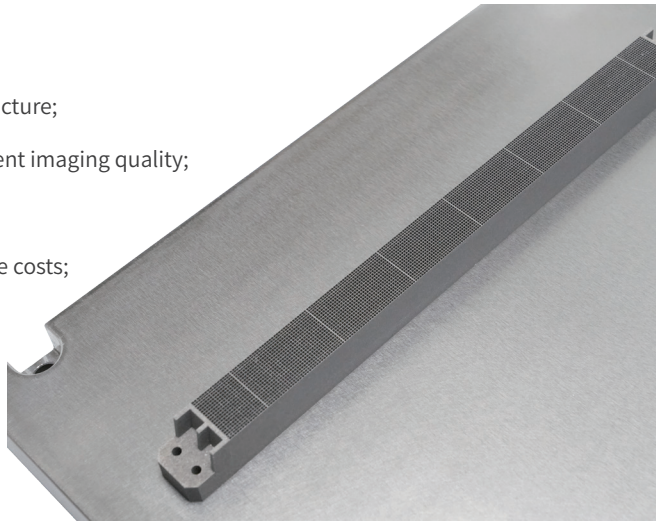




HBD has developed an ultra-thin-wall, high-precision, high-density forming process that can completely remove impurities in parts, making 3D printed pure tungsten parts successfully used in a vacuum environment.

LPBF Advantages:

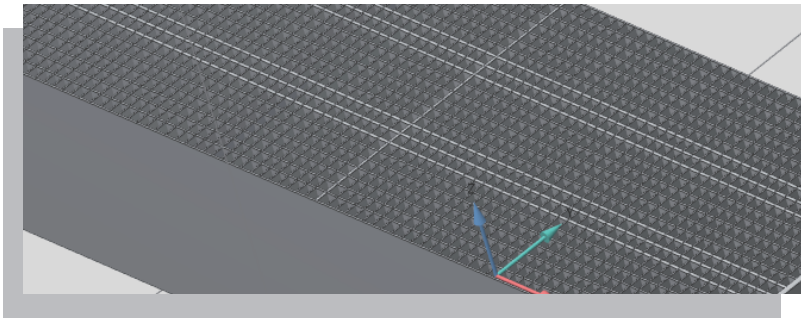
- With full design freedom, it can realize the change of any dimensional structure;
- Adjust the shape of the beam to reduce X-ray scattering and ensure excellent imaging quality;
- Good heat resistance, can effectively shield radiation;
- Improve and simplify the assembly process, increase efficiency and reduce costs;
- High-quality inspection and grid design;
- Digital manufacturing accelerates the time to market of products.



HBD Advantages:

HBD has rich accumulation of process in the printing of high temperature refractory metal materials such as tungsten, and experience in 3D printing design solutions that are more suitable for application scenarios.

- Parts forming accuracy ±0.02mm;
- The density is up to 99%;
- Accurately realize different wall thickness structures of 0.1-0.2 mm;
- Minimum wall thickness: 0.08 mm-0.1mm.



Provide 3D Design Support

Check if the parts are suitable for printing

Optimize the design at the technical level

Optimize the design at the functional level

Tungsten has proven to be a valuable 3D printing material, and many experts are interested in its heat resistance, especially in a vacuum and under high-voltage working environment. Many researchers have determined that laser powder bed fusion (LPBF metal 3D printing) technology could be used to manufacture relatively dense tungsten parts with high precision and complexity that will make a lot of difference in the fields of medical radiation protection and nuclear imaging, and other plasma environments. Explore more applications of tungsten additive manufacturing: rocket engine nozzles, weapon heads, turbine blades, saw blades, drill bits, bearings, pistons, collimators, etc.

HBD-200

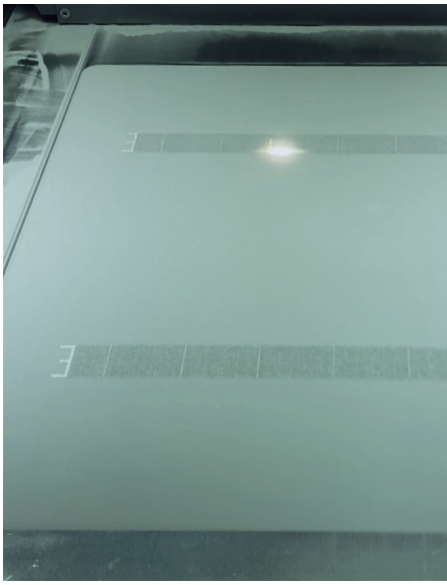
Forming Size: 270mm×170mm×120mm

Laser Power: 300W×2

HBD 350

Forming Size: 325mm×325mm×400mm

Laser Power: 500W



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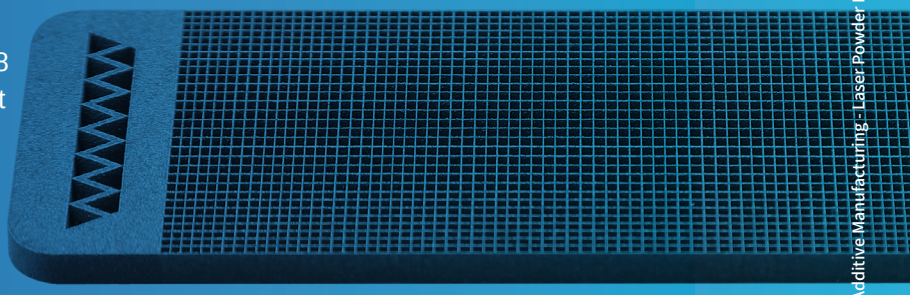

HBD Additive Manufacturing - Laser Powder Bed Fusion