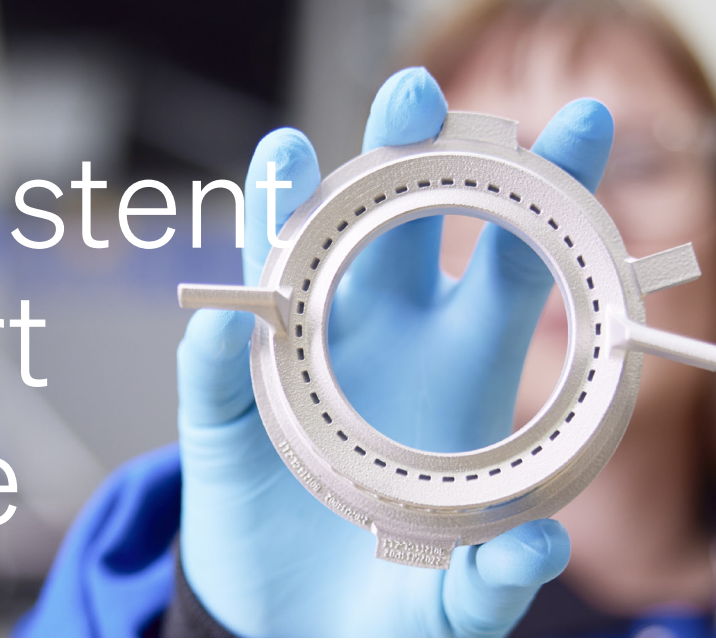


# M2 Series 5

Enabling consistent repeatable part quality at scale



# Enabling consistent repeatable part quality at scale



In today's manufacturing world, the need for increased productivity, usability and reliability is key. Colibrium Additive is pushing the boundaries of additive manufacturing again with the next-generation of DMLM machine. Built for superior part quality, machine usability and repeatability, the new M2 Series 5 is designed especially for highly regulated industries like aerospace and medical. Finer feature resolution and improved part quality and consistency enable you to unlock new revenue opportunities with new and innovative designs and builds.

Designed for high-quality builds at scaleThe M2 Series 5 can unlock your company's manufacturing potential. The new system provides an elevated level of productivity and repeatability by minimizing the effects of process variations. The result: fast builds that help lower your company's cost.

The powerful dual-laser system—available in both 400 W and 1kW—combined with 3D optics enables 100% coverage per laser, meaning that both optical systems have full build-field overlap. A dedicated thermal control of the optics further leads to improved thermal and optical stability, accuracy, and best-in-class stitching. Due to the small but variable spot size, the system provides the user with more flexibility that enables both fine features and enhanced productivity.

The flow-optimized build chamber of the M2 Series 5 now allows for a more constant gas flow. Additionally, the new optimized gas flow design eliminates recirculation and reduces variation by 25% over the entire build field.

## Capability packages for different levels of adoption.

New part vectorization allows for additional flexibility to part parameter design, enabling new geometries and ensuring part quality, especially with increased part complexity. The pre-calculation helps to save time and boost productivity. In combination with multiple internal sensors, this ensures a more tightly controlled build environment, resulting in significantly better part quality and consistency. These are the key drivers for success in safety-relevant industries like aerospace and medical and other industries looking at scaled production.

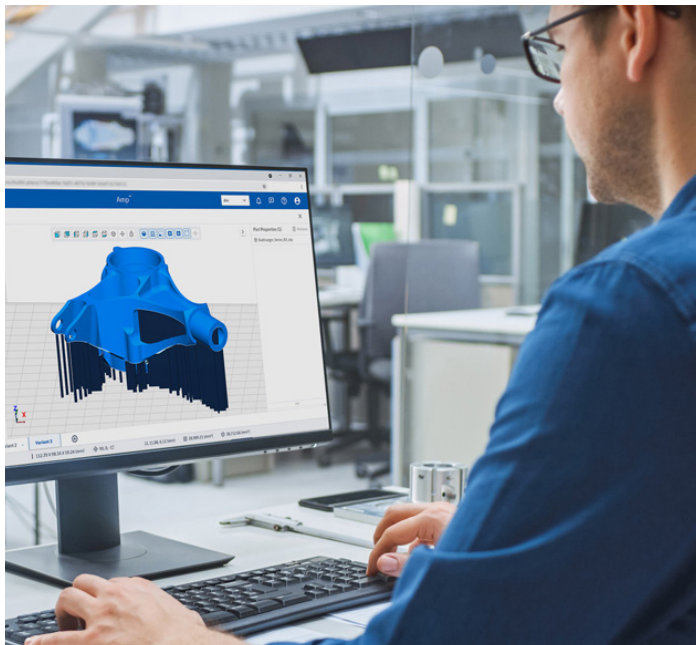




# Designed and optimized in partnership with industry leading customers

Offering maximum usability, maintainability and safety, The M2 Series 5 features a unique safety system that promotes safety and efficient handling of reactive materials. This is made possible by the physical separation of the process chamber and a material handling side, connected with a movable build module. Additionally, all powder handling processes are performed under inert gas to prevent oxidation and safety hazards. The integrated glovebox system enables safe, non-contact handling of reactive or harmful materials and enables the dust-protected removal of parts. Together with the newly optimized water-floodable filter modules, the M2 Series 5 offers maximum protection for the machine operators, while extending the filter life and reducing operating costs.

The system is designed to maximize usability and maintainability. All functionalities of the machine have been optimized for easy access and handling. The new software of the M2 Series 5 helps you save time before, during and after the build process.



## M2 Series 5 Highlights

- Bigger build volume: 245 × 245 × 350 mm
- 400W or 1kW dual-laser system with full overlap
- Improved gas flow system
- 3D optics with 70 – 500 µm spot size
- Inert sieving and powder exchange
- Maximized machine uptime
- Pre-calculation software , saving time when building complex parts
- Designed for usability and maintainability
- QuickStart functionality

New software features like pre-calculation now enable an off-machine scan path generation. This eliminates calculation delays between layers for complex parts. A new dose profile also helps to further reduce powder consumption for builds with changing geometries.

The additional optical sensors help to monitor the optics temperature to ensure a more stable process and better part quality.

Furthermore, part segmentation and vector tool path support optimized exposure strategies, while the thin wall segmentation enables ultra-fine feature resolution within the part.

The new QuickStart functionality now offers the ability to start a build job directly from the glovebox, while the machine automatically establishes the build job conditions—enabling additional operational productivity savings.

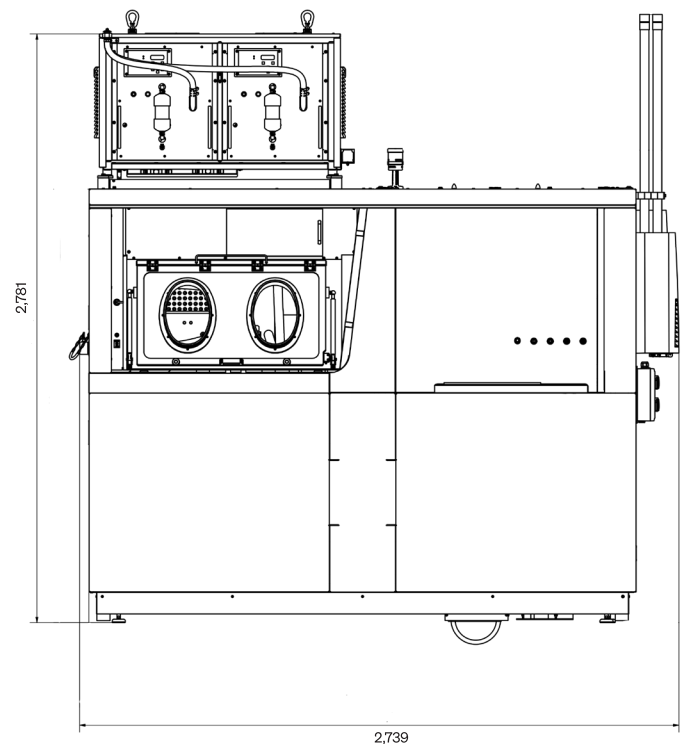
# M2 Series 5

## Technical Data

<b>Build envelope</b>	245 × 245 x max 405* mm (x, y, z)
<b>Layer thickness</b>	25 - 120 µm
<b>Production speed</b>	Productivity rates and material portfolio available on <a href="#">website</a>
<b>Laser safety</b>	T1 certification
<b>Laser system options</b>	Fibre Laser 2×1kW (cw), Fibre Laser 2 × 400 W (cw), optional 1 × 400 W (cw)
<b>Scanning speed</b>	Max 4.5 m/s with variable focus adjustment
<b>Focus diameter</b>	70-500µm
<b>Spot Size range</b>	Available
<b>Heating System</b>	61 - 72 µm
<b>Reference clamping system (optional)</b>	EROWA, others on request
<b>Connected loads</b>	Approx. power consumption 28A Power supply 3/N/PE AC 400V, 32A connector, compressed air 6-10bar
<b>Inert gas supply</b>	2 gas connections provided N2 generator external (optional)
<b>Inert gas consumption</b>	5l / min < 1 m³/h
<b>Filtering system</b>	Integrated, with a 20 m2 filter surface
<b>Dimensions</b>	2,739 × 2,050 × 2,781 mm (W x D x H)
<b>Weight</b>	Approx. 2,500 kg
<b>Operating conditions</b>	18 - 25°C

### Materials Available\*\*

- Stainless Steel 316L
- Stainless Steel 17-4PH
- Maraging Steel M300
- Tool Steel H13
- Aluminium AlSi10Mg
- Aluminium A205
- Aluminium AlSi7Mg
- Nickel 718
- Nickel 625
- Titanium Ti6Al4V ELI Grade 23
- Titanium cp-Ti
- Titanium Ti6242
- Cobalt CoCrMo
- Cobalt CoCrW



\*Build height dependent on build plate configuration and platform thickness (actual range is 405-313 mm)

\*\*Most parameters, data sheets and productivity rates can be found on the M2 Series 5 website