

RENISHAW

RenAM 500Q Ultra

RenAM 500 Ultra: Build faster with TEMPUS™ technology

The RenAM 500 Ultra series offers the ultimate in metal additive manufacturing (AM) capability for laser powder bed fusion (LPBF) systems. It utilises Renishaw's TEMPUS technology to enhance the class-leading productivity of the RenAM 500 series by up to 100%*, all while upholding the same high part quality.

Available with single (RenAM 500S), dual (RenAM 500D), or quad (RenAM 500Q) laser configuration, RenAM 500 Ultra systems all include the same industry-leading optical design, powder recirculation and chamber gas-flow optimisation. With Renishaw's latest process monitoring technology providing detailed build process feedback, combined with reduced build times, RenAM 500 Ultra systems deliver cost-effective, dependable additive manufacturing for metal component production.



Using RenAM 500 Ultra systems to create production-ready metal parts means you can remain agile when faced with changing demands, are unrestricted by complex part geometries, and can seamlessly scale your capacity to suit your business needs.

Talk to us about your application and learn how RenAM 500 Ultra systems with TEMPUS technology can transform your manufacturing capability.

*Depending on build geometry.

www.renishaw.com/renam500ultra



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Built on the class-leading RenAM 500 series platform

Renishaw's RenAM 500 series of metal AM systems deliver standout LPBF processing speeds, consistent high part quality, and process economics that break down barriers to the wider use of metal AM.

Every variant of the RenAM 500 series can be configured with one, two, or four 500 W lasers — all being able to access the entire powder bed surface. In four-laser systems, this allows for efficient laser assignment and significantly higher build rates, improving productivity and lowering the cost per part. RenAM 500 Ultra models are equipped with automated powder and waste handling systems optimised for volume production.

All RenAM 500 series systems feature:

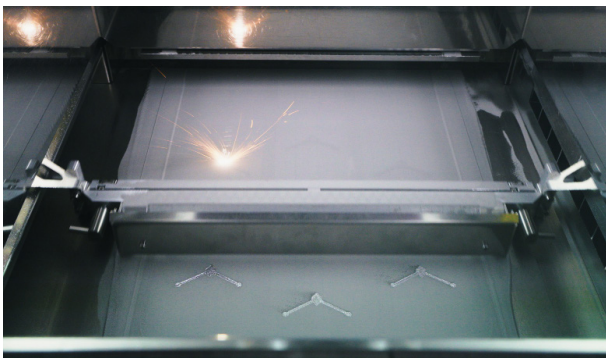
- A build chamber vacuum system — drastically reducing the in-chamber oxygen content, the time taken to produce an inert chamber atmosphere, and the volume of argon gas used for every build.
- Dual SafeChange™ particulate filters, allowing for uninterrupted large builds.
- A digital control system with intelligent sensing technology.
- Integration with Renishaw's suite of AM software tools, such as QuantAM, InfiniAM and Renishaw Central.
- A comprehensive range of processible powders, including stainless and tool steels, aluminium alloys, nickel-based alloys and titanium alloys.
- A compact footprint that maximises factory utilisation.



Machine Information

Laser configuration	1x (500S), 2x (500D) or 4x (500Q) 500 W ytterbium fibre laser(s)
Beam focus diameter	80 µm with dynamic focus
Build volume (X × Y × Z)	250 mm × 250 mm × 350 mm
Machine size (length × width × height)	1236 mm × 2165 mm × 2130 mm

Halve your build times with TEMPUS technology



Traditional powder bed systems require the powder recoater to fully distribute powder before the layer can be consolidated. With TEMPUS technology, the lasers can fire at the same time as the recoater is moving.

RenAM 500 Ultra systems come equipped with TEMPUS technology — a new innovation from Renishaw that delivers a substantial increase in AM productivity without compromising on part quality.

This technology synchronises the system lasers with the powder recoater, removing up to nine seconds of build time from every layer. With builds frequently containing thousands of layers, this can reduce total build times by tens of hours.

When optimised with Renishaw's QuantAM build preparation software, all geometries can see a productivity benefit – up to twice as fast in some cases.

TEMPUS technology is exclusively available on the RenAM 500 series from Renishaw.

To find out more, visit:

www.renishaw.com/tempustechology

Become an AM expert with the full suite of InfiAM process monitoring tools

RenAM 500 Ultra systems come equipped with Renishaw's process monitoring hardware and software as standard. The included suite of sensors collect process data live from every build, with analysis tools that give you the ability to easily monitor build quality, reduce post-process inspection costs, and gain insight into your production.

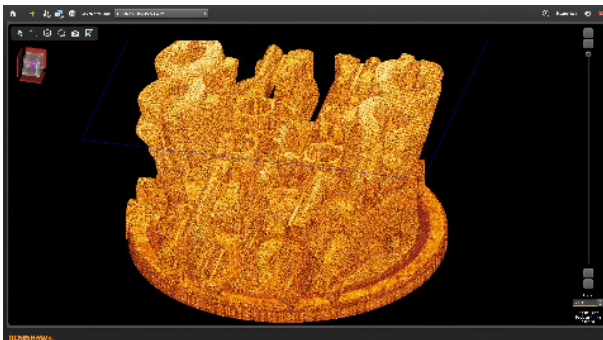
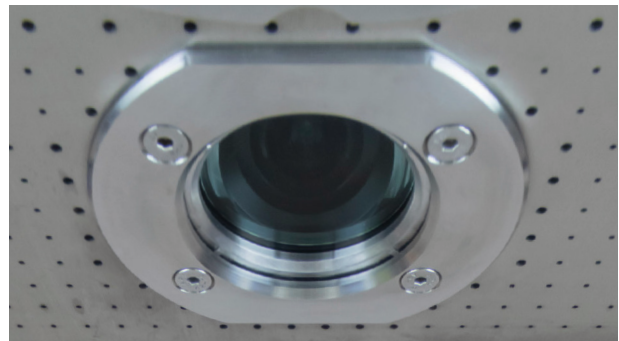
Viewing the data after a build is seamless thanks to included automation functions, which simplify the process monitoring workflow so you can quickly confirm part quality and reduce waste.

RenAM 500 Ultra systems come with 1-year licenses for InfiAM Camera and InfiAM Spectral, and a connection to Renishaw Central.

InfiAM Camera

By taking two high-resolution images of every layer, you can visually assess that each build is progressing to the high standards you expect from your RenAM 500 Ultra system.

InfiAM Camera comes with an array of smart analysis tools that highlight areas needing attention. These give you the ability to quickly review images in near real-time to help detect potential anomalies.



InfiAM Spectral

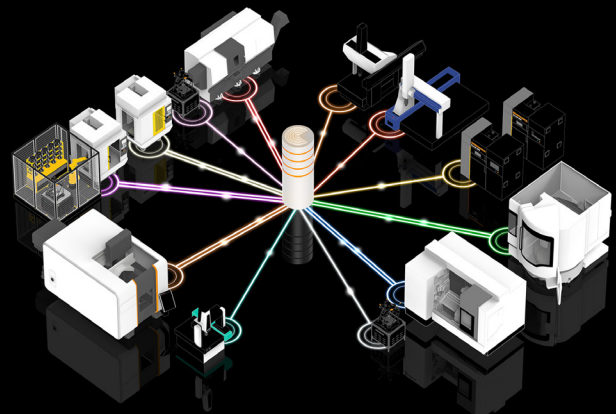
Using the LaserVIEW and MeltVIEW hardware in the RenAM 500 Ultra systems, InfiAM Spectral provides feedback on the energy input and melt-pool emissions collected during the AM build process. This is invaluable in analysing component quality throughout the build process, and for monitoring laser and melt-pool characteristics.

The intelligent software interprets this data into 2D and 3D views of the build, giving you the power to see inside each part.

Renishaw Central

Remotely view live information from all your RenAM 500 Ultra systems, providing a detailed insight into AM system performance and individual sensors from any location.

Renishaw Central collects and provides visibility of the status of Renishaw products from across the factory floor. This allows you to easily monitor the performance and utilisation of all connected devices at a glance.






When performance really matters, choose Renishaw

We have applied decades of experience in metrology, precision measurement equipment and production engineering to our additive manufacturing machines to ensure the highest accuracy and performance possible. Built with parts manufactured in-house, every model in the RenAM 500 series has been put through extensive and rigorous testing to ensure each can be trusted to deliver the results you need.

www.renishaw.com/renam500ultra

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