



# ASX Announcement

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ASX CODE: A3D

ACN: 601 164 505

## A3D Delivers Fume Extraction Upgrade Milestone Successfully

### Highlights:

- Post-upgrade high-power printing indicates potential for improved production rate outcomes
- System performance enhancements with no detriment to print quality
- Progress towards proving A3D's competitive edge in Rapid Manufacturing Technology (RMT)
- Achieving second milestone enables ongoing parameter development & printing of customer sample parts

Aurora Labs Limited ("A3D" or "the Company") (ASX:A3D), is pleased to provide an update to shareholders on the status of the Fume Extraction Upgrade milestone of its 12-month Technology Development Pathway.

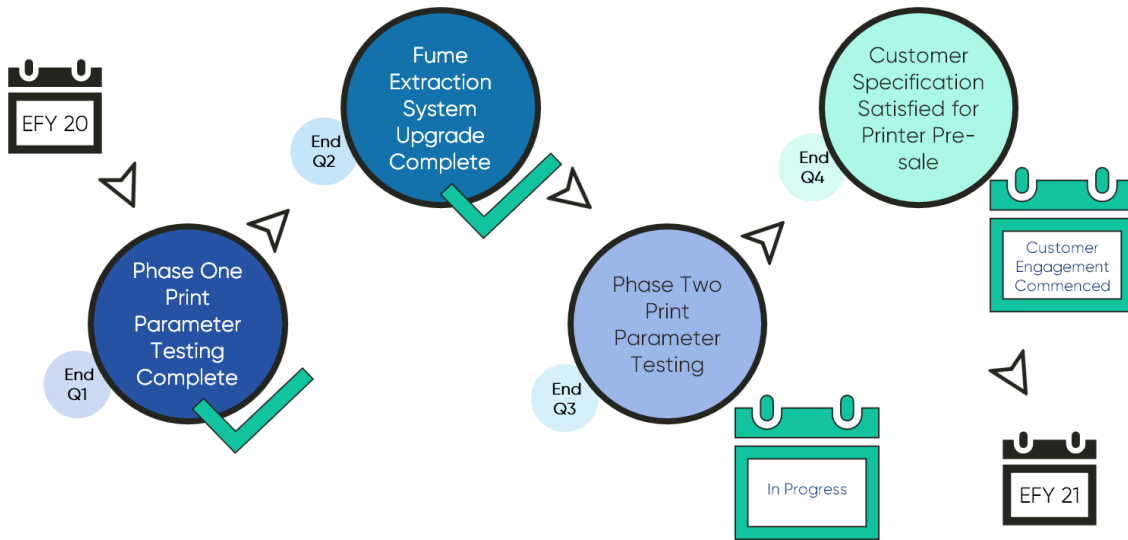
The pathway's first milestone, Phase One Print Parameter Testing, was achieved in October 2020. The second milestone is now complete with the improved fume extraction system fully installed, integrated, and commissioned. The successful upgrade means A3D remains on track to achieve commercial readiness for the RMP-1 printer by the end of the 2020/21 fiscal year.

CEO Peter Snowsill said:

"I am extremely satisfied with both the implementation and impact of our fume extraction project. Our whole team worked diligently to address a range of technical hurdles and logistic risks to successfully deliver this critical upgrade on time and on budget. The initial print results give us a high level of confidence that A3D's technology can deliver excellent, market competitive print outcomes. We will continue to fine tune and expand printing capability through upcoming customer prints to stay on the right development trajectory for RMP-1."



## Technology Development Pathway



### Fume Extraction System Upgrade<sup>1</sup>

This multi-faceted project has improved the removal of the soot and fumes produced by lasing. Effective extraction creates stable printing conditions and decreases potential fume interference with the laser beams, in turn enabling improved print quality and speed. The system upgrade also improves operational efficiency and safety of print soot handling. This new A3D developed, state-of-the-art system should allow for high laser power, faster printing speeds, and a competitive technical and commercial advantage for its customers.

## Performance Outcomes

Post-upgrade results are favourable to the investigation of production rate increases at high laser powers

Production Rate	Print Properties Maintained	Increased Soot Removal	Increased Safety and Efficiency
Significant production rate increase, up to 4x.	3 <sup>rd</sup> party tensile tests on stainless steel (316L) compliant with ASTM F3184.* Part density >99% achieved.**	Significant reduction in soot accumulation in the chamber during lasing.	Zero downtime for dirty filter change out, simple and safe removal of filtered print soot.

\*Tests performed by NATA certified laboratory for ASTM F3184 (Standard specification for Additive Manufacturing Stainless Steel Alloy (UNS S31603) with powder bed fusion)

\*\*Tests performed by A3D for ASTM B962 – 17 (Standard Test Methods for Density of Compacted or Sintered Powder Metallurgy (PM) Products Using Archimedes' Principle)



## Production Rate Increase

Initial post-upgrade printing indicates that new print parameter investigations at high laser power can be confidently undertaken with high likelihood of increased production rates meeting customer print quality requirements. This is demonstrated in the real-time stainless steel (316L) valve trim<sup>2</sup> printing video available at:

<https://www.auroralabs3d.com/a3d/content/company/videos/files/20210204.mp4>

The valve trim print shows approximately fourfold increase in production rate between typical powder bed fusion settings including low laser power and commonly used parameters, and high laser power and parameters which are now possible with A3D's improved fume extraction. This productivity increase is based on direct comparison between pre- and post-upgrade printing performance for this specific part in A3D's RMP-1 Beta. The change in production rate over previous rates is significant.

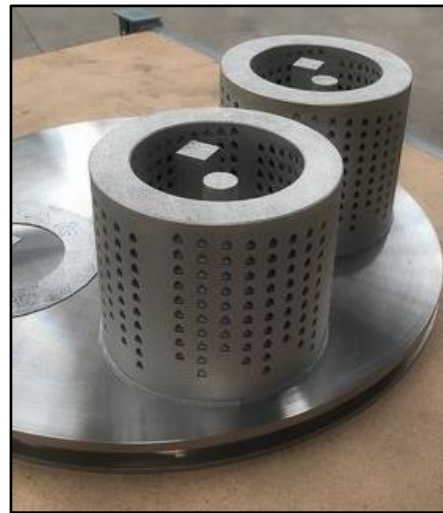
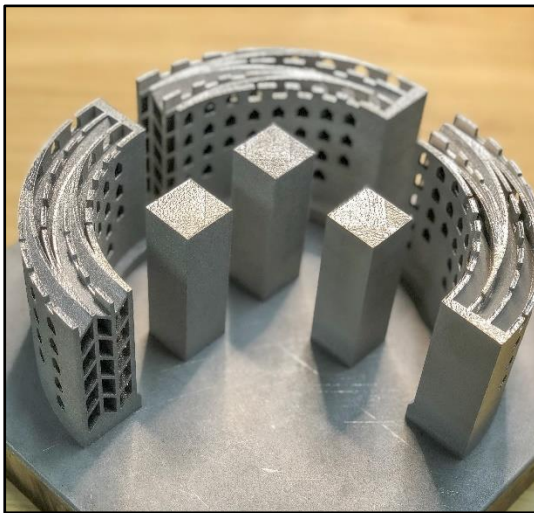


Figure 1 & 2: Partial and complete valve trims printed in 316L Stainless Steel (as shown in the video above)  
Tensile bars are included in the print to allow for post printing material testing

Incorporation of effective fume extraction and the enhanced ability to conduct high power, high quality printing into the suite of technologies A3D is developing and implementing in its RMT will enable continued increases in the production rate and technology scale up.

## Customer-Centric Parameter Development

With Milestone 2 achieved, A3D will now focus on continued development of suitable parameters for high power, high quality, high production printing targeted at producing a series of full-size customer parts. These parts will prove commercial viability through quality and functionality testing and cost modelling to demonstrate suitability, repeatability, and competitive advantage. A3D will continue to develop existing customer relationships and to leverage the Additive Now joint venture relationship to identify customers that can benefit from A3D technology in the future.



Footnotes:

1. Refer to ASX Announcements 26 November 2020 and 18 December 2020 "Fume Extraction Progress Update"
2. A valve trim is an internal part of a valve that controls the flow rate through the valve. Printed valve trims are of interest to end-users in the Oil & Gas and Resources sector and Valve OEMs. From a print perspective, the valve trim is a complex part combining thin and thick walls, upskins and downskins (refers to whether the printed surface is upward or downward facing), and islands. 150mm diameter is a common valve size.

Ends

Approved for release by the Company's Board of Directors.

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## ABOUT AURORA LABS

Aurora Labs Limited ("the Company"), an industrial technology and innovation company that specialises in the development of 3D metal printers, powders, digital parts and their associated intellectual property.

Aurora Labs is listed on the Australian Securities Exchange (ASX: A3D)

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## FORWARD LOOKING STATEMENTS

This announcement contains forward-looking statements which incorporate an element of uncertainty or risk, such as 'intends', 'may', 'could', 'believes', 'estimates', 'targets' or 'expects'. These statements are based on an evaluation of current economic and operating conditions, as well as assumptions regarding future events.

These events are, as at the date of this announcement, expected to take place, but there cannot be any guarantee that such events will occur as anticipated or at all given that many of the events are outside Aurora's control.

Accordingly, Aurora and the directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur.

For further information, please contact: [enquiries@auroralabs3d.com](mailto:enquiries@auroralabs3d.com)