

# LSAM Capabilities Overview

Ascent's large scale additive manufacturing machine (LSAM) produces high-speed, light-weight solutions from diverse high-performance thermoplastics. Ascent's design expertise and large format printer offer tailored applications across all industries.

## PRINTER SPECIFICATIONS

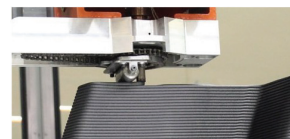
Characteristic	Description
<b>Large Build Envelope</b>	10ft x 40ft x 5ft (3m x 1.5m x 12.2m) Extremely large build volume can print large objects or multiple tools simultaneously
<b>Dual Gantry</b>	Printing & machining capabilities exist within the same envelope Both printing and machining can occur simultaneously
<b>High-Speed Printing</b>	Printer can extrude 150-200lbs of thermoplastic per hour Print time determined largely by number of layers required Successive layers must be applied within an optimal temperature window to bond
<b>High Precision Machining</b>	5-axis milling capable of achieving +/- 0.01" tolerances Ascent can also leverage its 12 existing high-speed, high-velocity machining centers located in CA
<b>Vertical Layer Printing</b>	Allows parts to be printing along the 40' axis of the machine Layers stack along length of part Provides flexibility for build orientation, impacting material and mechanical properties
<b>Diverse Materials Available</b>	<b>Base resins:</b> ABS, PPO, PC ( <i>low to medium temp</i> ) PEI, PESU ( <i>high temp</i> ) <b>Fillers:</b> Carbon Fiber, Glass Fiber, Wood Fibers  Customized materials available through supplier network
<b>Addressing Anisotropy</b>	Through design techniques, build orientation, and material selection, Ascent can advise on understanding and compensating for anisotropic properties.
<b>Design Expertise</b>	Ascent can work with engineers to optimize designs for LSAM Ascent has ability to design, slice, analyze, and print tooling and other products



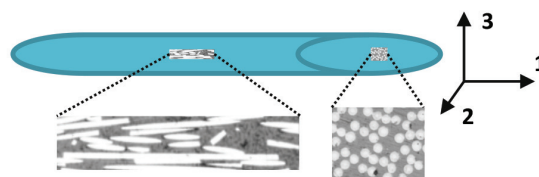
5-Axis Milling



Vertical Layer Printing



Bead With = 0.8" // Bead Height = 0.2"



Fibers Orient Along Bead's Printed Axis

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