



Stacking Builds For Maximum Throughput on Origin One

One hundred parts
produced within
24 hours on a
single Origin One,
at a fraction of the
cost of traditional
manufacturing



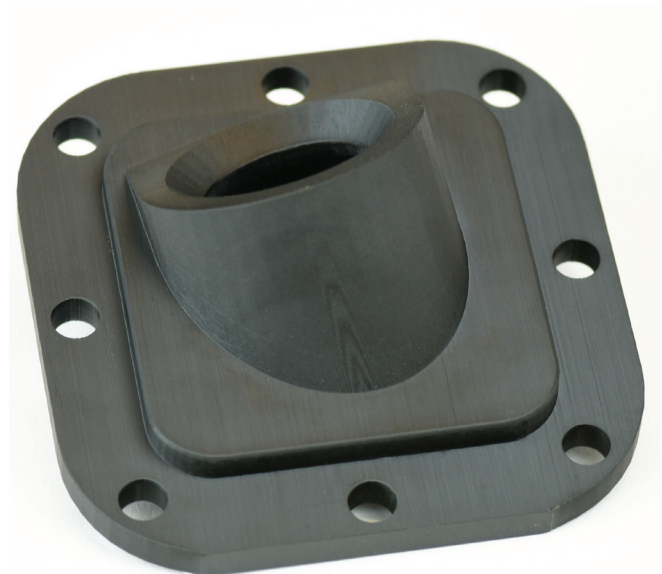


Robust Housings For Computer Vision Components

Origin® One features several integrated cameras for computer vision and capturing temperature data in the IR range; additional sensors measure other environmental conditions during the print process.

Senior mechanical design engineer Matt Miyamoto designed camera mounts for CNC machining out of black ABS plastic. A compound angle meant that the part could only be machined by a 5-axis CNC (or on a 3-axis CNC with multiple setups), which made the parts expensive to machine at low or high volumes. Matt turned to Origin's own solution to achieve the quality and throughput required.

| | |
|-----------------------|----------------------|
| Size: | 84 x 84 x 50.5 mm |
| Volume: | 43.5 cm ³ |
| Surface Requirements: | < Ra 4μm |
| Color: | Black |
| Initial Quantity: | 100 |



About Origin One's P3 Technology

Origin One's Programmable Photopolymerization (P3™) technology precisely orchestrates light, temperature, and other conditions, automatically optimizing prints in real time for the best possible results.

High green strength isotropic prints require minimal support structures and can be stacked

throughout the entire build volume, allowing for maximum throughput, minimal waste, and post-processing in minutes. No surface finishing (e.g., bead blasting, polishing, or painting) is required. Origin's technology is built for additive mass production and produces parts that are functionally and aesthetically suitable for end use.



BASF Ultracur3D Photopolymers

Origin's Open Material Network includes one of the largest chemical producers in the world, BASF. Origin's programmable print process is capable of printing a wide range of materials including BASF's Ultracur3D which has a combination of excellent surface finish, mechanical strength, UV stability, and throughput that is unmatched in the industry.

Results

By intelligently packing the parts into the build volume, Origin lab technician Elton Cheung was able to print 40 camera housings in a single print, taking less than 8 hours. Printing overnight enabled maximum printer utilization, and repeating the same print the following morning meant the order was completed in under 24 hours. Post-print, a simple solvent wash, followed by a one minute UV post-cure, rendered the parts ready for use.

| | |
|---|------------|
| Number of Parts in Build Area (192 x 108 x 370mm): | 40 |
| Build Print Time: | 8 Hours |
| Part Wash and Cure Time Per Build | 40 Minutes |
| Material Cost Per Part: | \$3.38 |
| Origin Amortized Cost Per Part: | \$1.38 |
| Labor Cost Per Part: | \$1.25 |
| Total Cost Per Part: | \$6.41 |



P³ vs. Other Manufacturing Methods

| | ORIGIN | Jet Fusion | SLS | Other DLP | CNC MILLING |
|----------------------------|------------------------|-------------------------|-------------------------|-----------------|------------------------|
| Material: | BASF Ultracur3D | PA 12 | PA 11 | Rigid Urethane | ABS |
| Lead Time: | < 2 Business Days | 5 Business Days | 4 Business Days | 7 Business Days | 11-15 Business Days |
| Typical Surface Roughness: | 2-3 (Ra) μm | 10.5 (Ra) μm | 13.3 (Ra) μm | N/A | 3.2 (Ra) μm |
| Cost Per Part: | \$6.41 | \$41.61 | \$69.64 | \$80.13 | \$708.00 |
| Total Cost of 100 Parts: | \$641.00 | \$4,161.00 | \$6,964.00 | \$8,013.00 | \$70,854.00 |

* Alternative manufacturing estimates sourced from an independent manufacturing service bureau.



Origin One **Camera Mounts**

Takeaways

Origin One enabled the production of a camera housing for a fraction of the time and cost of CNC Milling or other additive manufacturing platforms. Origin's throughput and open material network dramatically increase the number of applications for which additive is suitable. Get in touch to discover which of your parts are suitable for open additive manufacturing at scale.

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