

# Bull Rider by Origin One

Stratasys Dura56 by LOCTITE, a new durable, high-impact material with a smooth surface finish, was put to the test on a kick scooter.

## Stratasys signet light

- 52cm<sup>3</sup> material used, 50 min print time, \$1.83 part cost.\*
- Refractive design printed with frosted transparent LOCTITE IND405 results in bright light with no added tint.
- This light is friction fit into a recess that houses a blue LED light, made possible with Origin One's printing accuracy.



## Handlebar

- 340cm<sup>3</sup> material used, 12hrs 10min print time, \$112 part cost.\*
- Lean-to-steer design offers excellent ergonomics and requires minimal supports to print.
- The Stratasys Origin One is able to print this 408g part as one continuous piece.



## Stem base

- 314cm<sup>3</sup> material used, 8hrs 22min print time, \$83 part cost.\*
- Designed to withstand strong torque and impact. Tappable Dura56's strength allows for multiple screw and bolt connection points.
- Printed without supports or polishing with the Origin One.



## Brake

- 123cm<sup>3</sup> material used, 8hrs 50min print time, \$27 part cost.\*
- Designed to withstand repeated flexion and friction during use.
- A branded functional texture was made possible by Origin One's ability to print small detailed features with a smooth surface finish.



## Wheels

- 328cm<sup>3</sup> material used, 5hrs 24min time to print, \$39 part cost.\*
- Designed to accommodate heavy radial and lateral forces repeatedly and extensively.
- P3 technology produces parts with high accuracy and repeatability, ensuring bearings and exterior rubber tires fit perfectly on every wheel.



## Front deck

- 1370cm<sup>3</sup> material used, 15hr 12min print time, \$226 part cost.\*
- Central piece that connects steering column and front wheel trucks and supports rider's weight.
- Origin One prints have high green strength, enabling easy production of lattices and overhangs.



## Back deck

- 1469cm<sup>3</sup> material used, 15hrs 21min print time, \$227 part cost.\*
- Secures back wheel with metal bearing and mates to front of deck with 6 socket cap bolt and barrel nuts and 3 struts and slots, made possible by strong, durable, tappable Dura56 material.
- Origin One is able to produce dense, large parts, with high quality textured finishes, like this 1,762g and 14" tall piece.

## Bull Rider by Origin One

This scooter was dreamed up by the Origin team and our partners at Slicelab Design Studio to test exactly what this new material was capable of, and to demonstrate just how easy Dura56 is to print on the Origin One. We were checking for more than just flawless prints and a great finish – we also tested its real-world durability in an actual skate park!

In just 81 days, we went from initial brainstorm, through three iterations, and then successfully created a finished product. All 3D printed parts, which consist of over 90% of the scooter's mass, were printed in under 48 hours using 3 printers.

**Get started with functional prototyping and end-use production with the Stratasys Origin One and our extensive materials catalog.**

[Get started today by contacting your Stratasys representative.](#)

\* Costs calculated on Stratasys ROI calculator, at 95% utilization. Print time is material, geometry and application dependent and may refer to multiple parts per build.

## Materials

### Stratasys Dura56 by LOCTITE®

Developed specifically for Origin® 3D printers, Dura56 is a durable, impact-resistant photopolymer with an exceptional surface finish and a low cost per kg. It's great for functional applications where aesthetics and robustness are critical.

Created by Stratasys and LOCTITE to address end-use and prototyping applications with high material consumption. Ideal for housings, parts with mating features or class A surfaces. Print more for less without sacrificing quality or strength.

### IND405 by LOCTITE

Can you spot the one part that isn't Dura56? That's right, the light! LOCTITE IND405 is an incredible solution for strong parts that can be polished to an optically clear finish. This tough, semi-rigid material is a great option for lights, fluid ducts, guides and more.

### Stratasys Dura56 from LOCTITE

Tensile Stress at Break	42 MPa
Young's Modulus	1600 MPa
Notched Izod Impact	56 J/m
HDT at 0.455 MPa	52°C

### The Stratasys Origin One:

Technology	Programmable PhotoPolymerization P3™
Build Volume	Build Area: 192 x 108 x 370 mm / 7,672 cm <sup>3</sup> (7.5 x 4.25 x 14.5 in / 462 in <sup>3</sup> )
XY Resolution	50 µm

