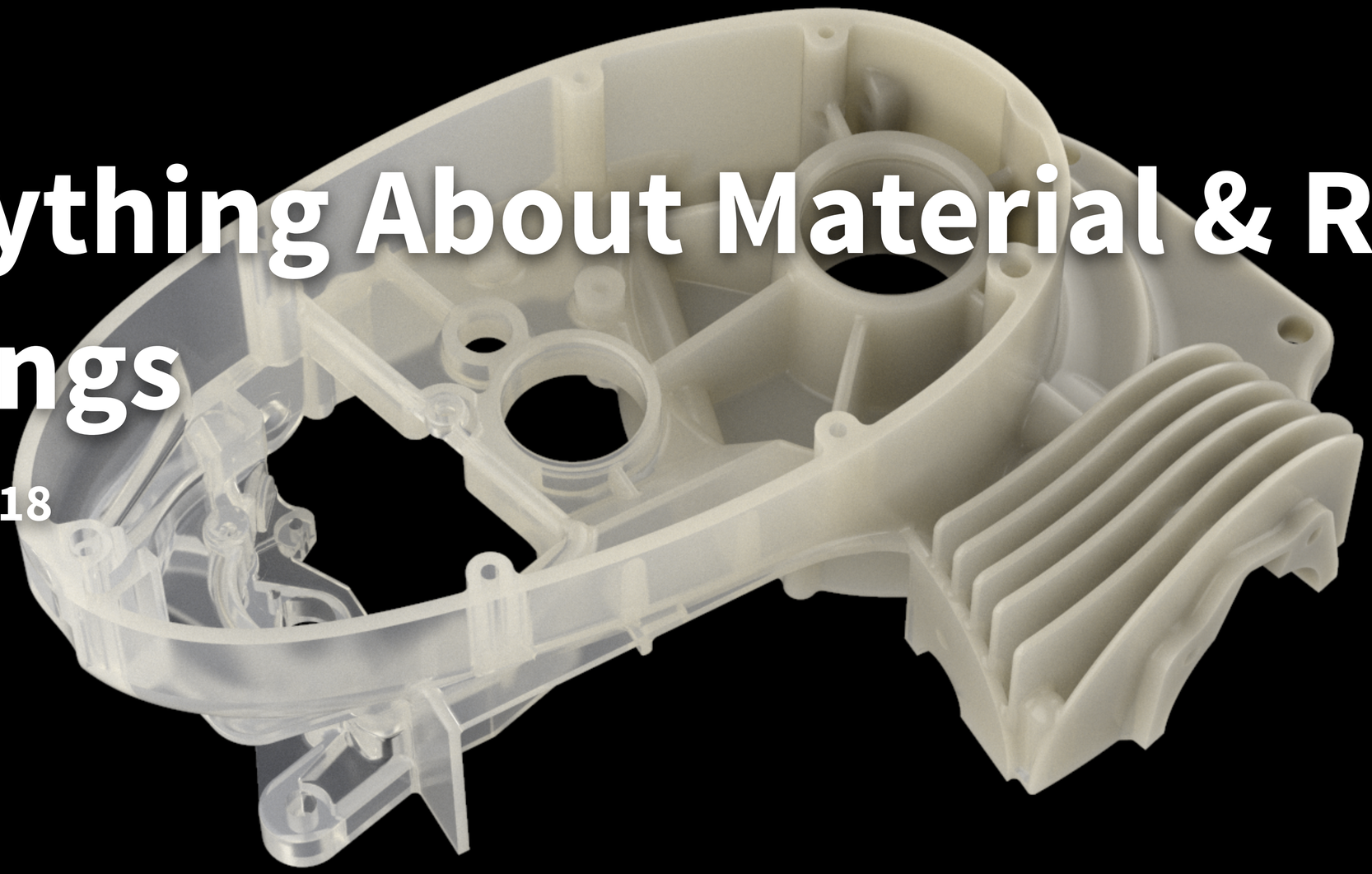
Everything About Material & Render Settings

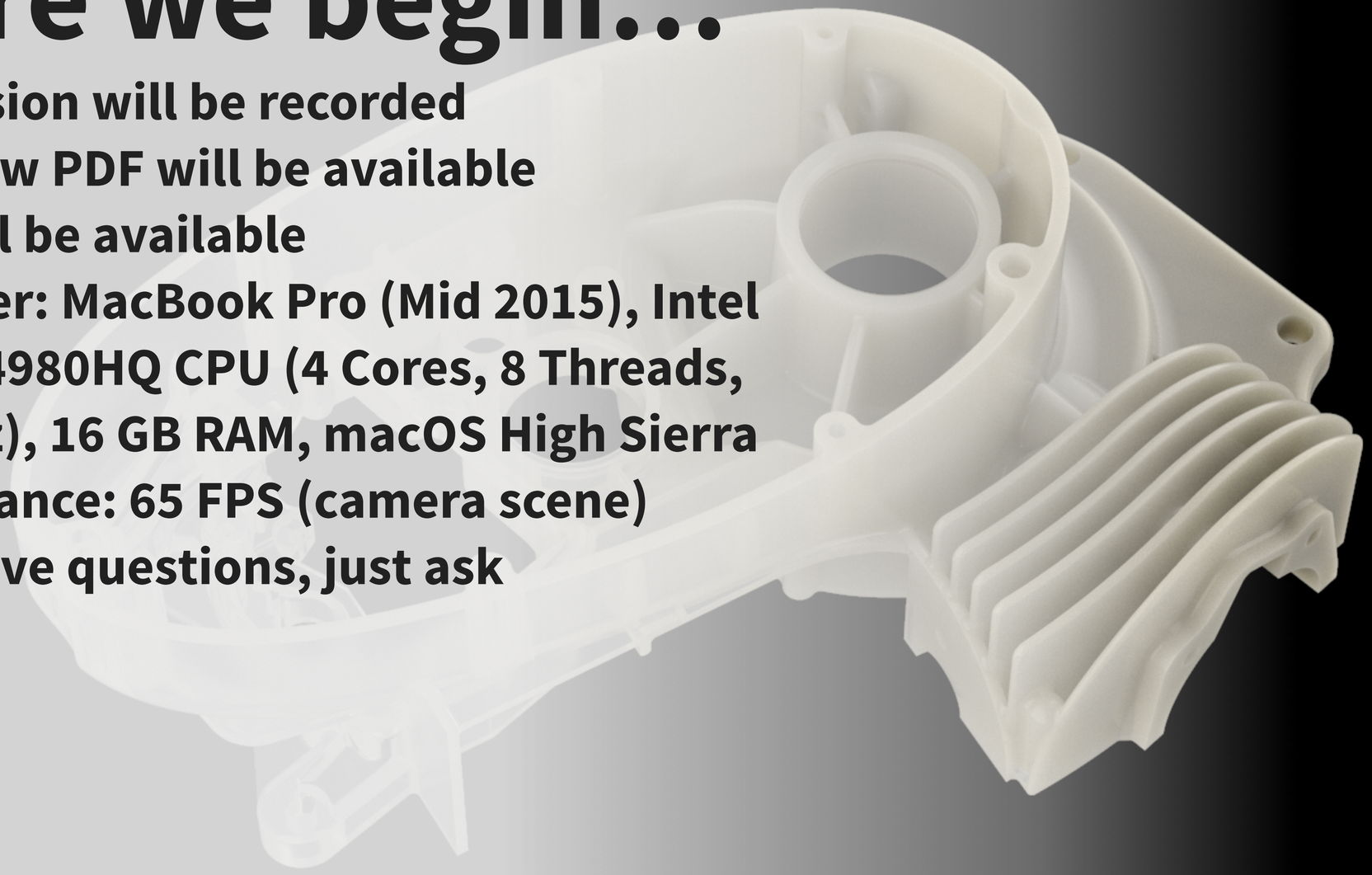


June 28, 2018

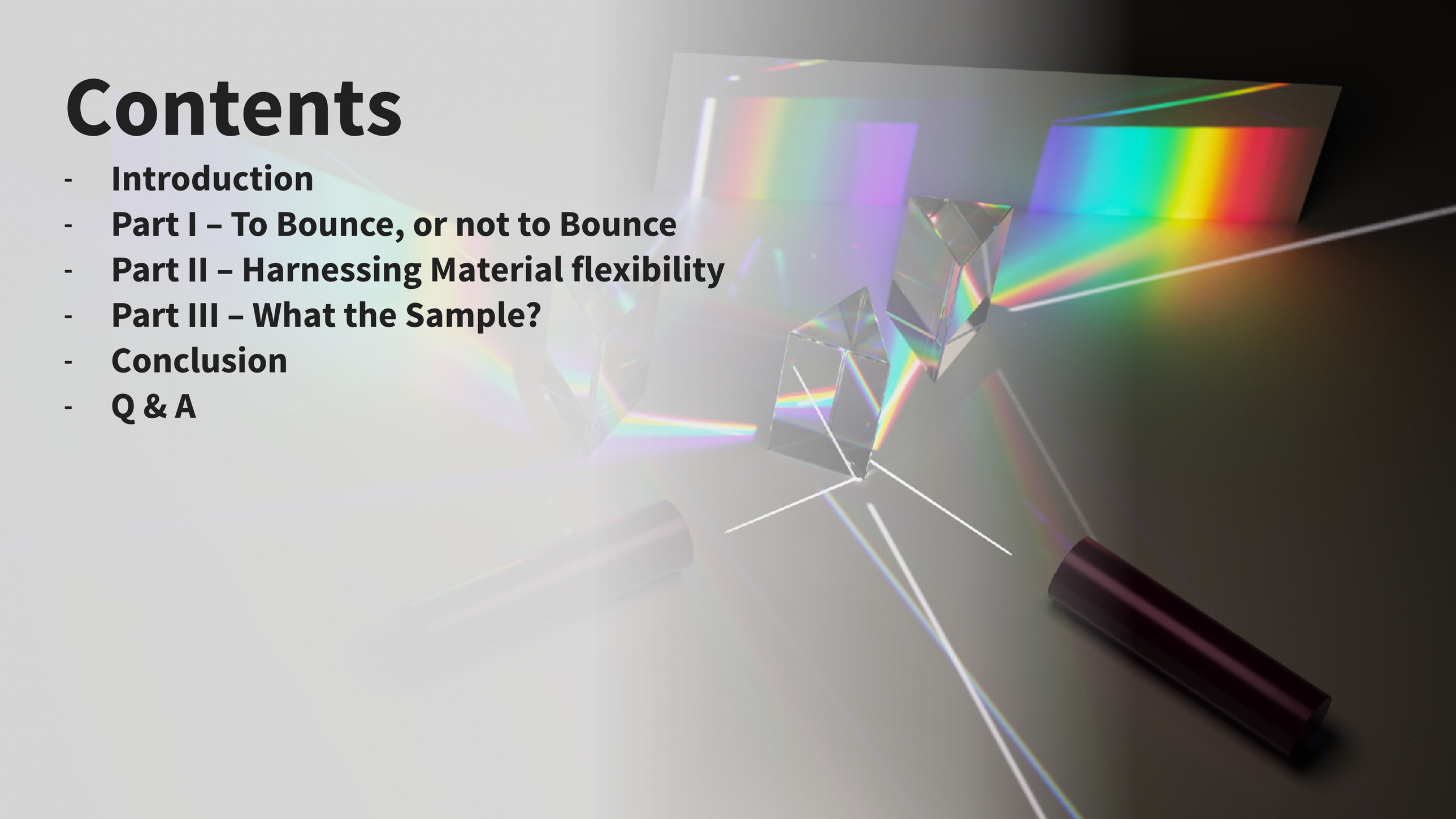
Dries Vervoort

Before we begin…

- This session will be recorded
- Slideshow PDF will be available
- KSPs will be available
- Computer: MacBook Pro (Mid 2015), Intel Core i7-4980HQ CPU (4 Cores, 8 Threads, 2.80 GHz), 16 GB RAM, macOS High Sierra
- Performance: 65 FPS (camera scene)
- If you have questions, just ask



Contents

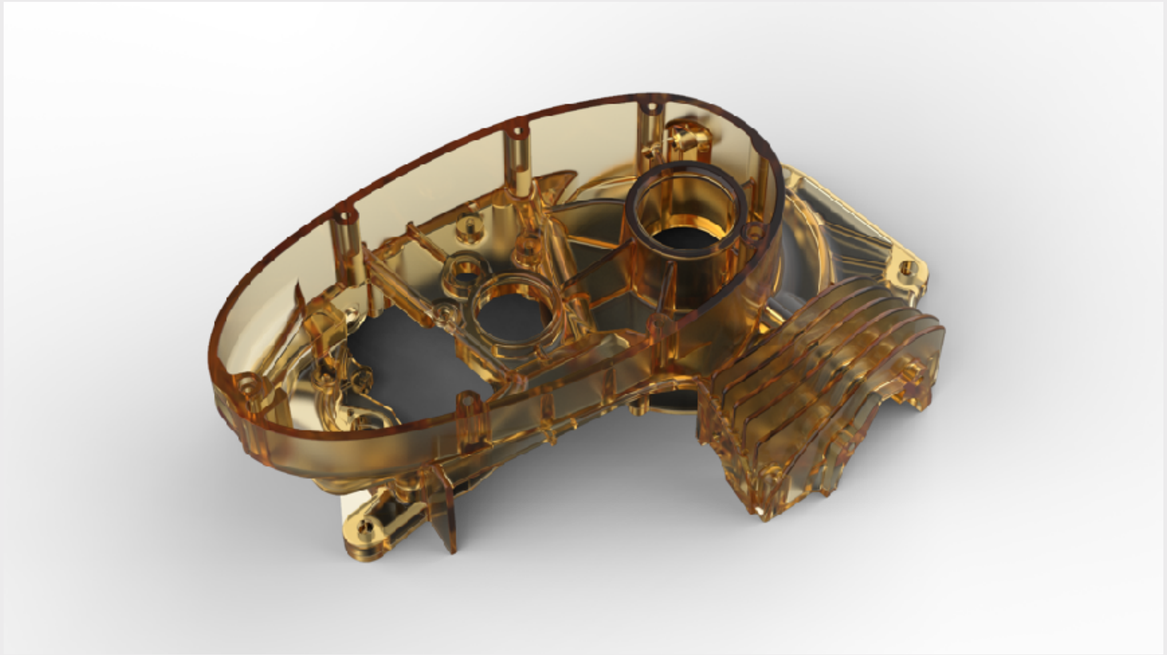


Part I – To Bounce, or not to Bounce

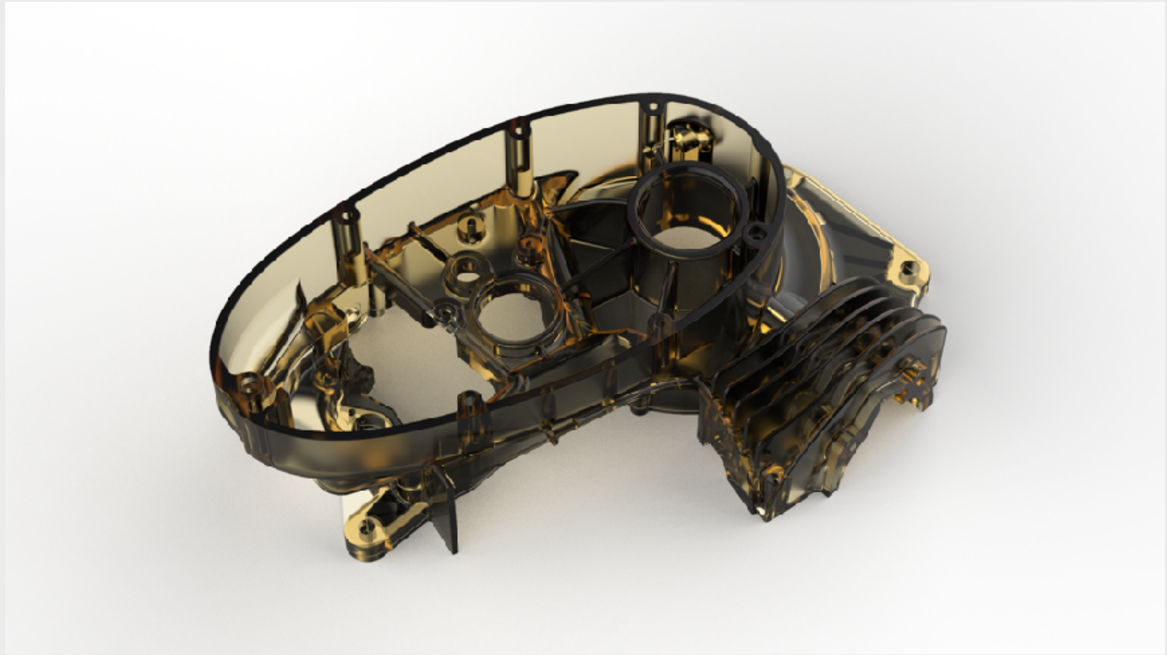
Understanding Ray Bounces and Global Illumination

Common issues and challenges

Wrong Lighting settings for the materials



No Global Illumination



Too few Ray Bounces

Model: “Scooter Cezeta - Engine housing” by xero, GrabCAD

Solutions in KeyShot

Ray Bounces and Global Illumination in Lighting tab

Ray Bounces:

- **Increase for highly reflective or refractive surfaces**

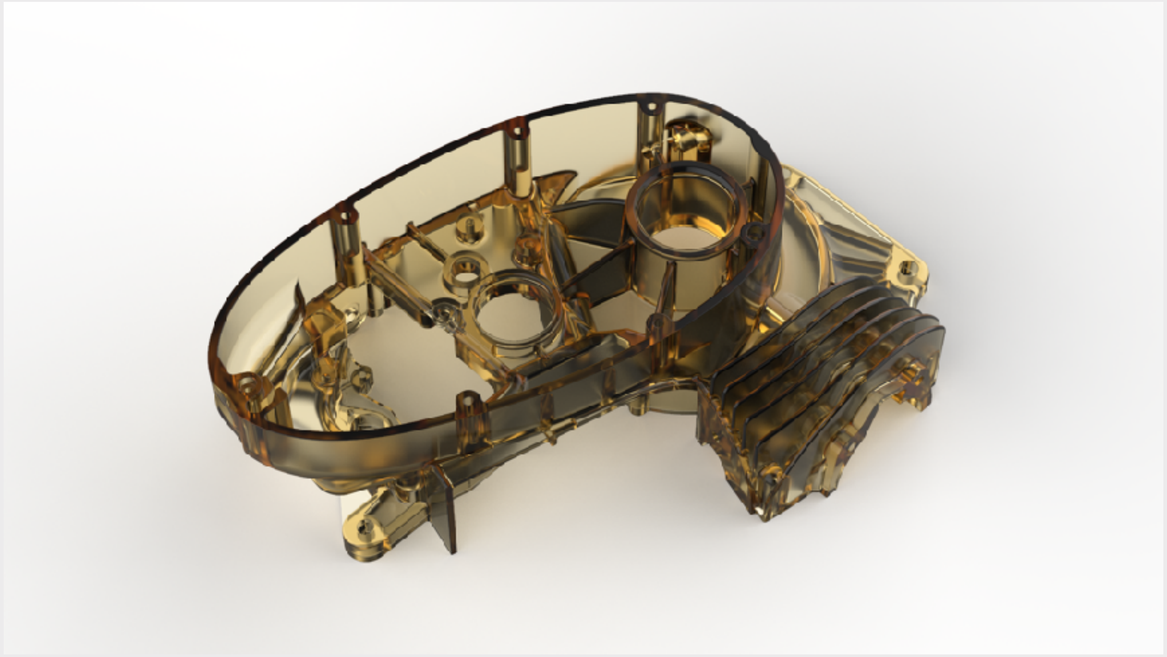
Global Illumination Bounces:

- **Increase for bright diffuse surfaces that are occluded**
- **At least 1 bounce for light to pass pass through glass**

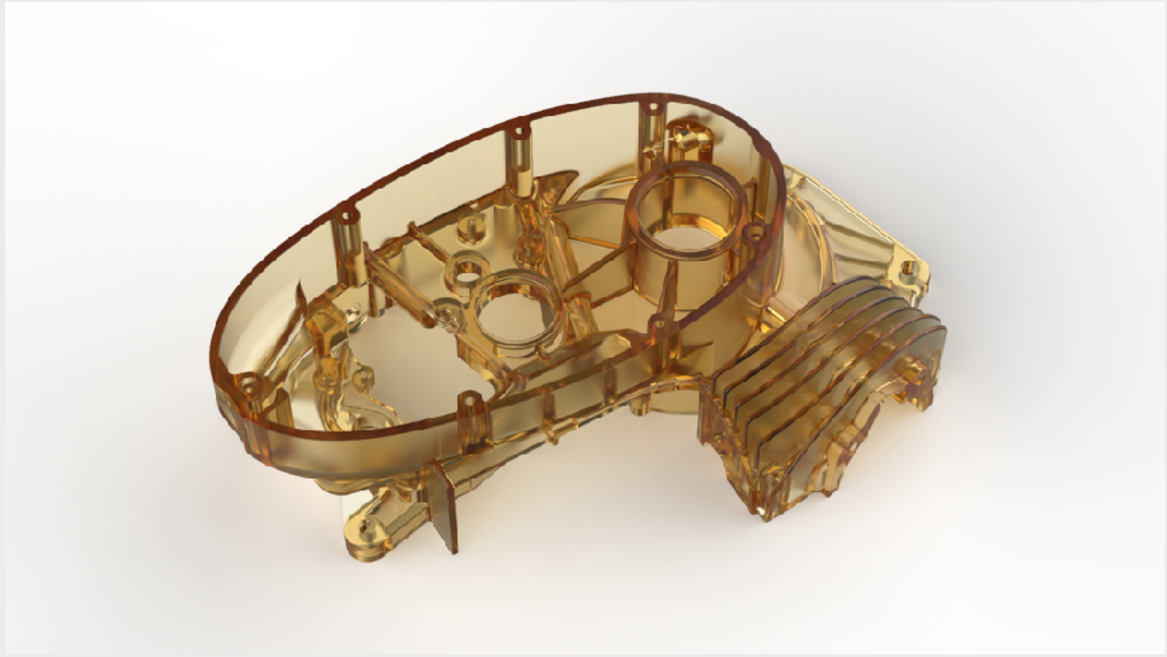
The “Product” Lighting Preset will work 90% of the time

Ray Bounces

More Ray Bounces for bright transparent materials



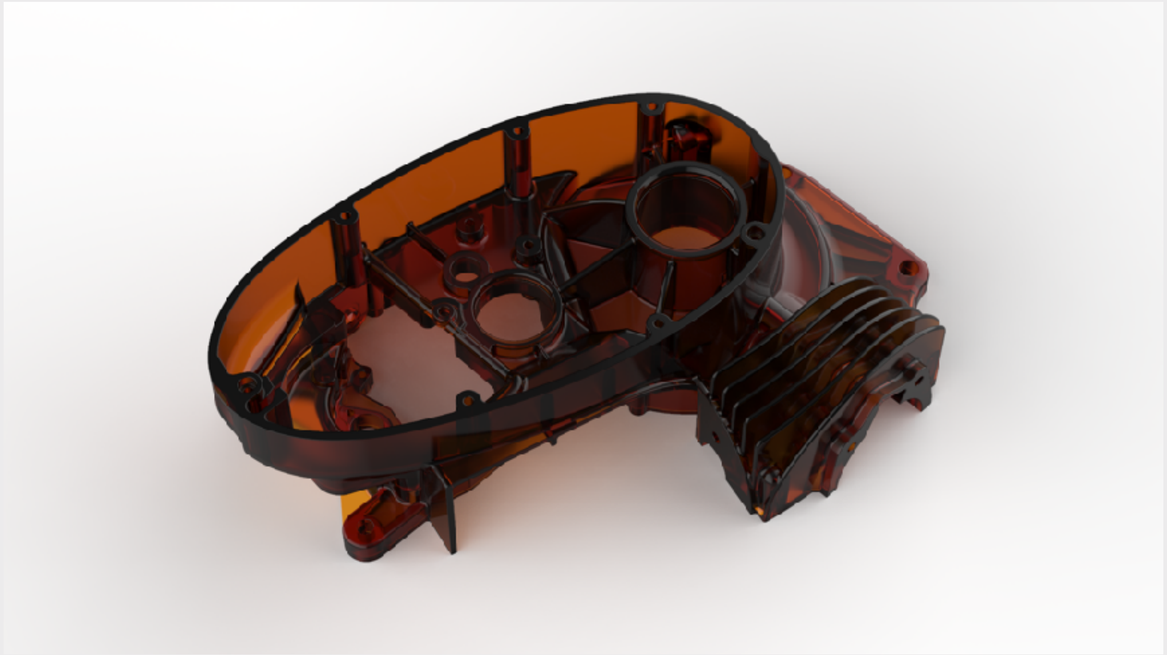
6 Ray Bounces



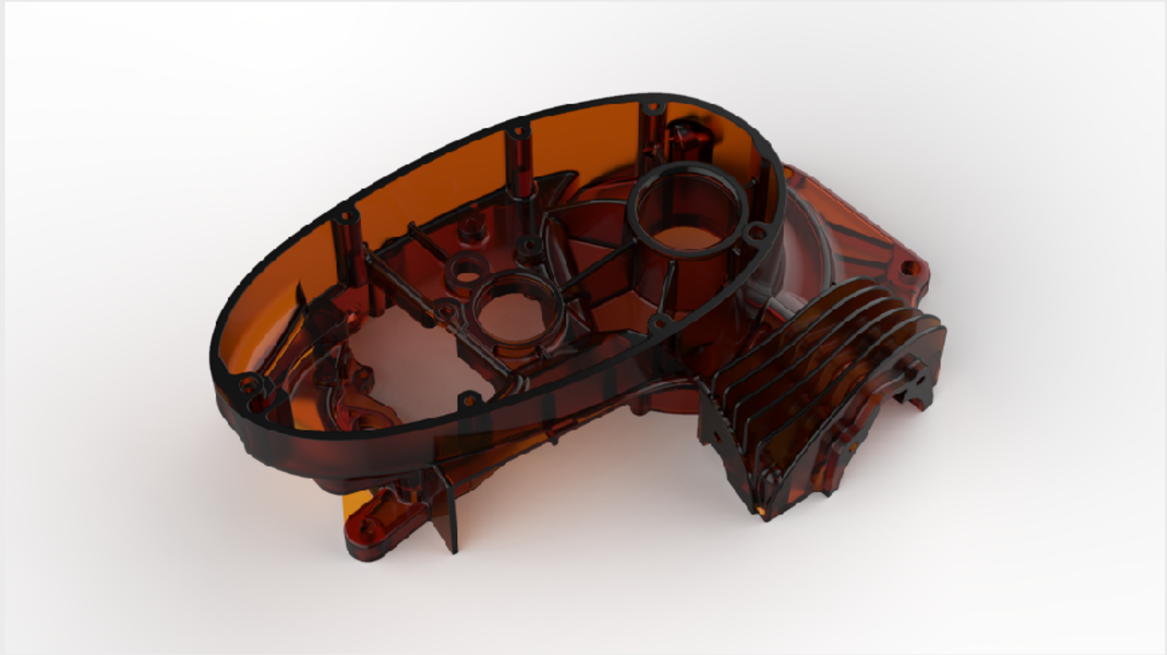
14 Ray Bounces

Ray Bounces

Less Ray Bounces for dark transparent materials



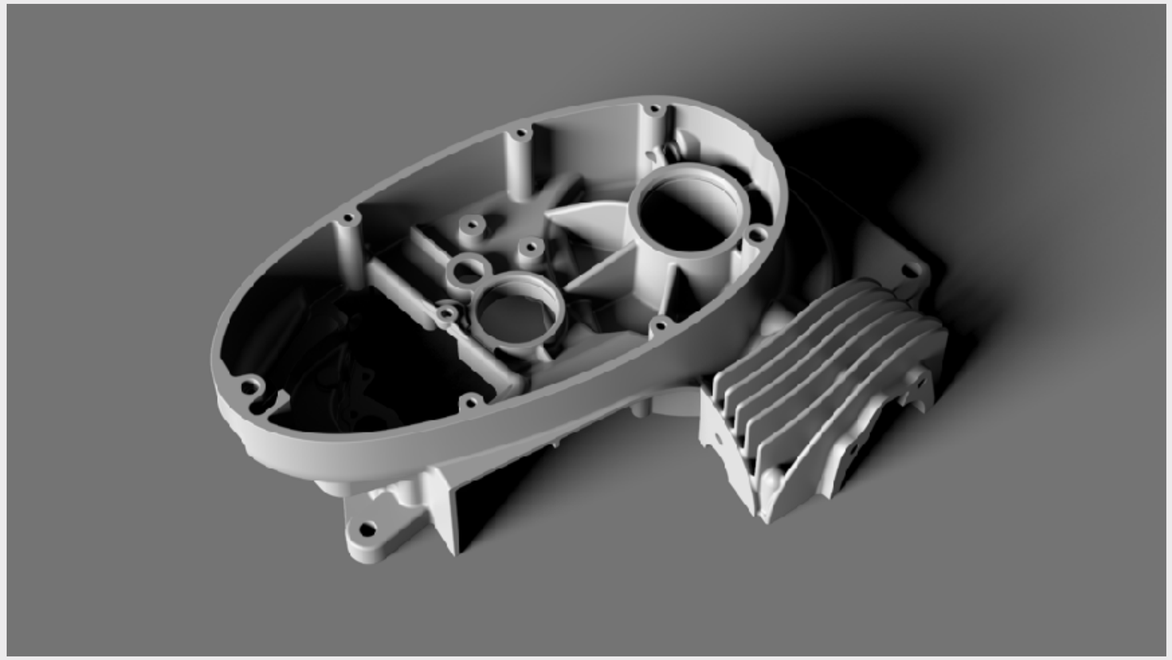
6 Ray Bounces



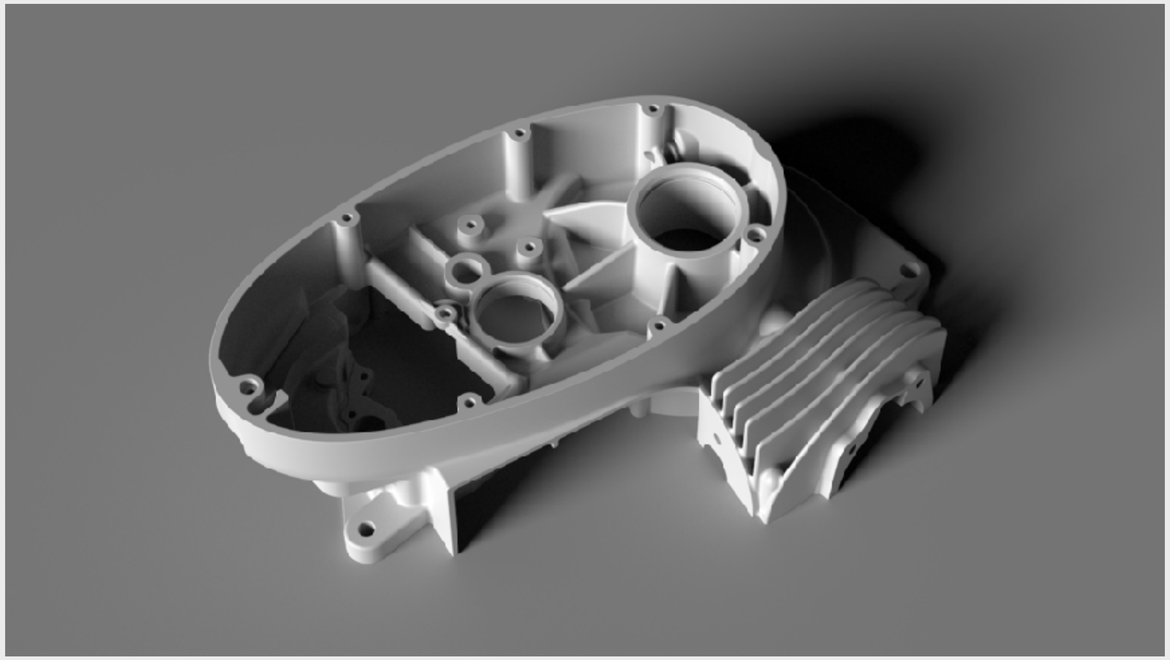
14 Ray Bounces

Global Illumination Bounces

More Global Illumination Bounces for bright diffuse materials



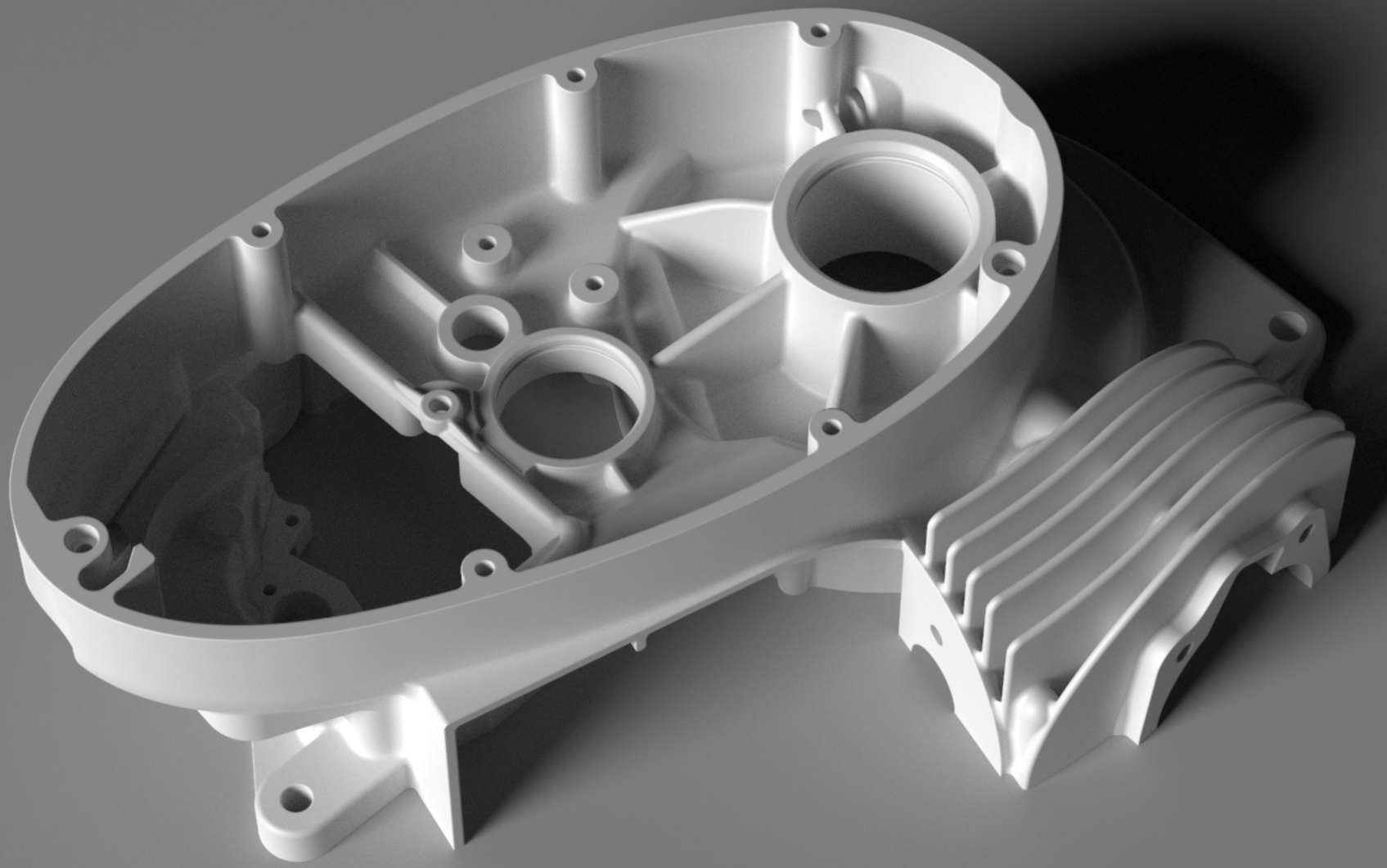
0 Global Illumination Bounces



1 Global Illumination Bounce

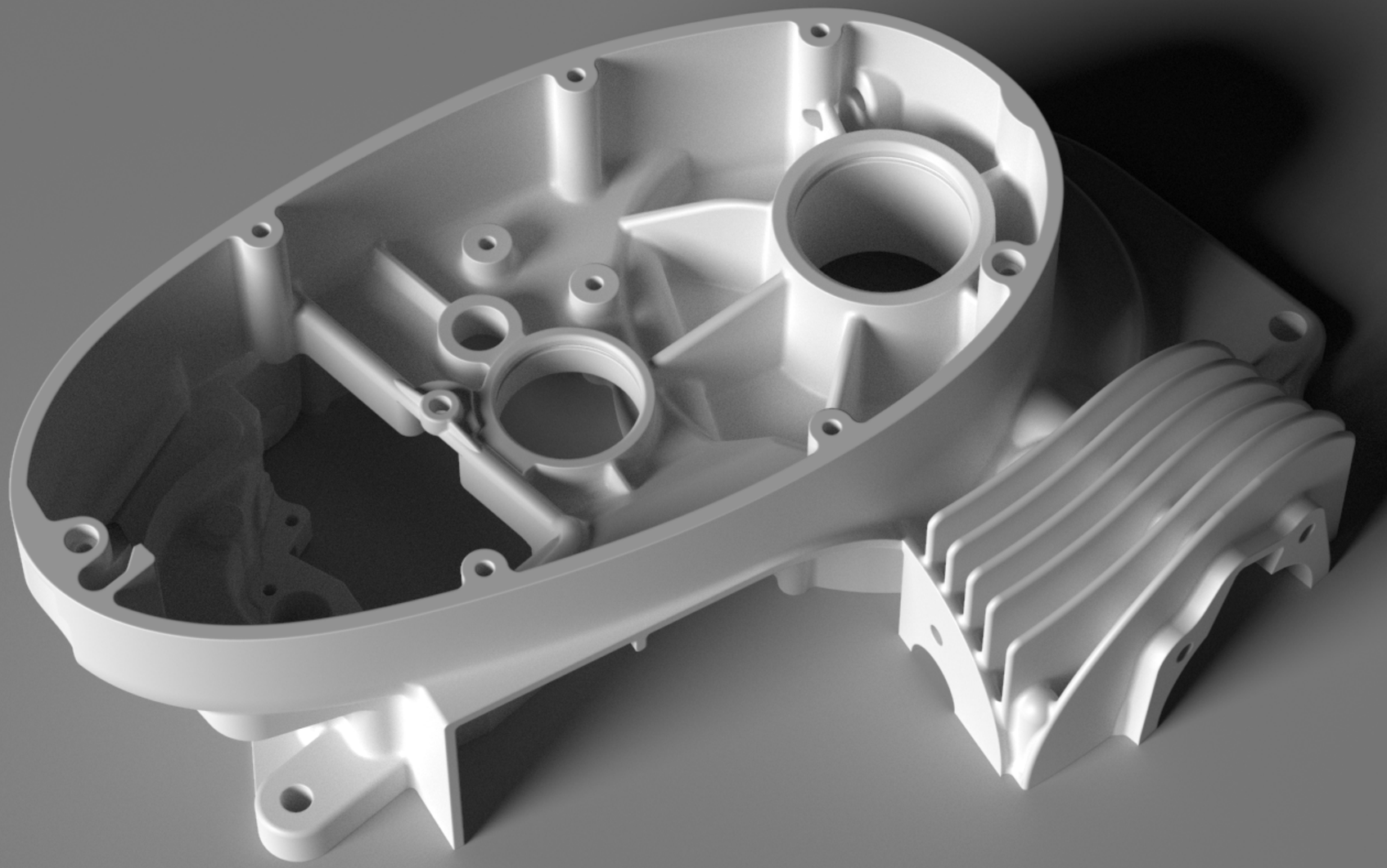
Global Illumination Bounces

4 Bounces



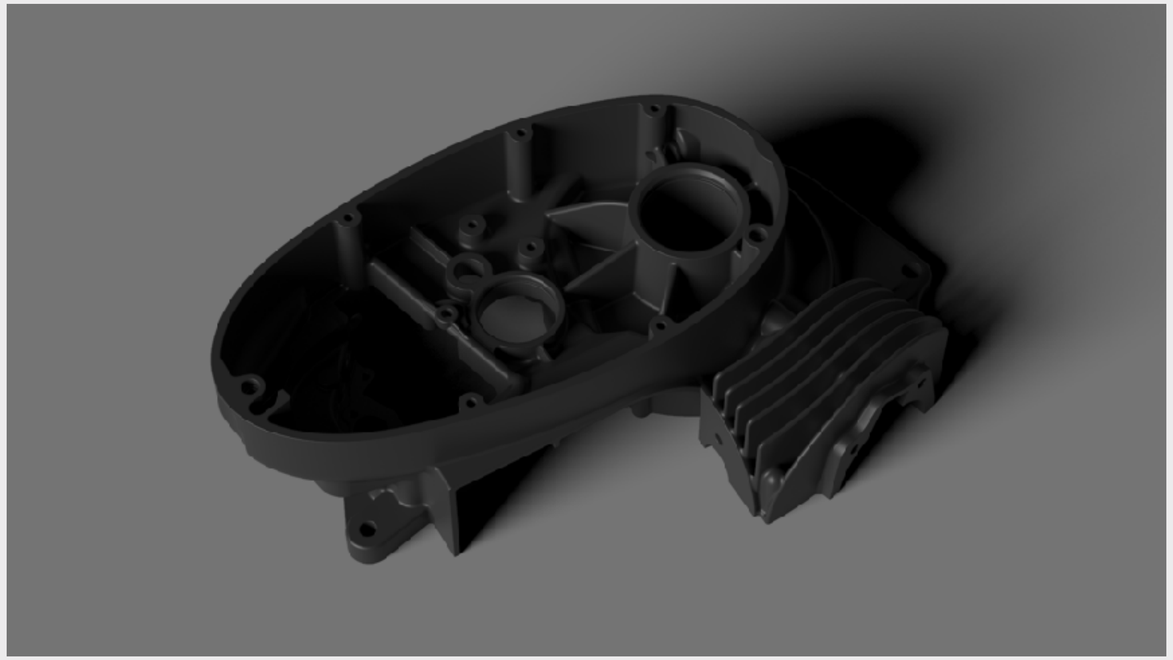
Global Illumination Bounces

10 Bounces

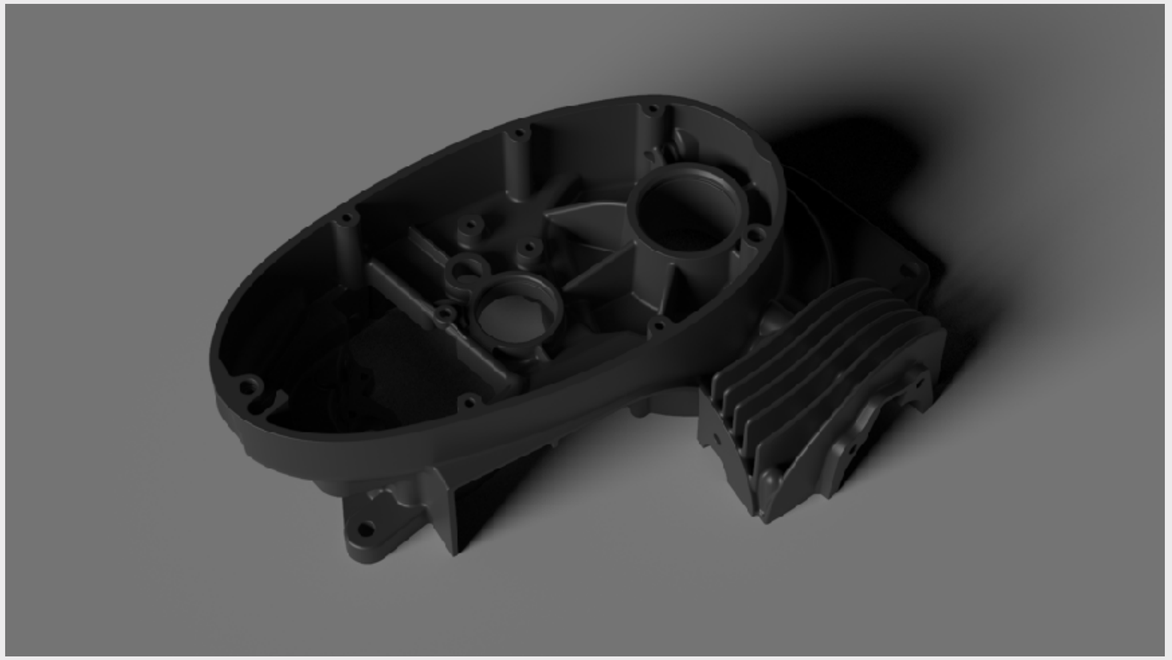


Global Illumination Bounces

Less Global Illumination Bounces for dark diffuse materials



0 Global Illumination Bounces



1 Global Illumination Bounce

Hands-on

Part II – Harnessing Material flexibility

Mastering Materials for a wide range of uses

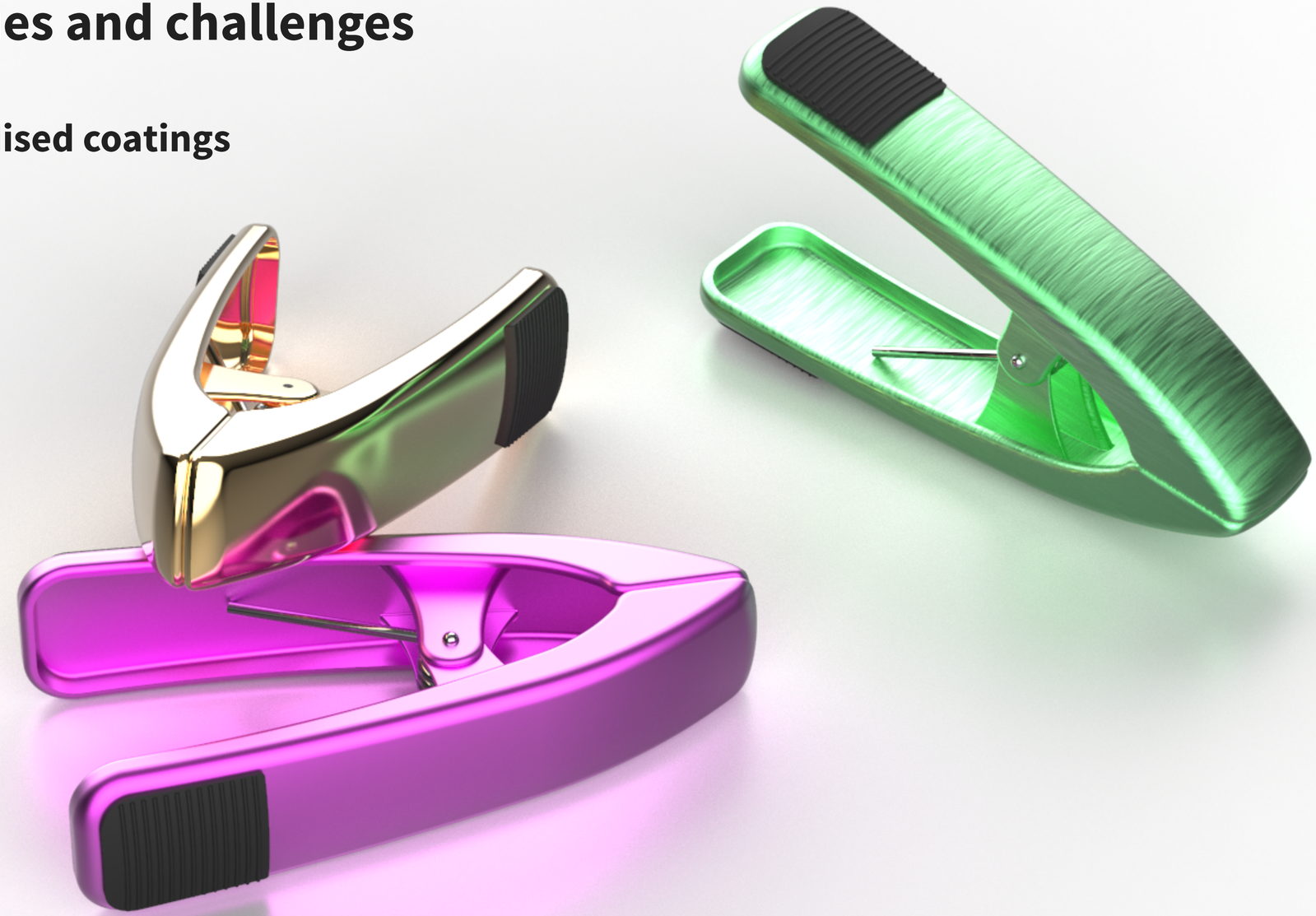
Common issues and challenges

Blown out metals

Model: “Chip clip” by David Oldroyd, GrabCAD

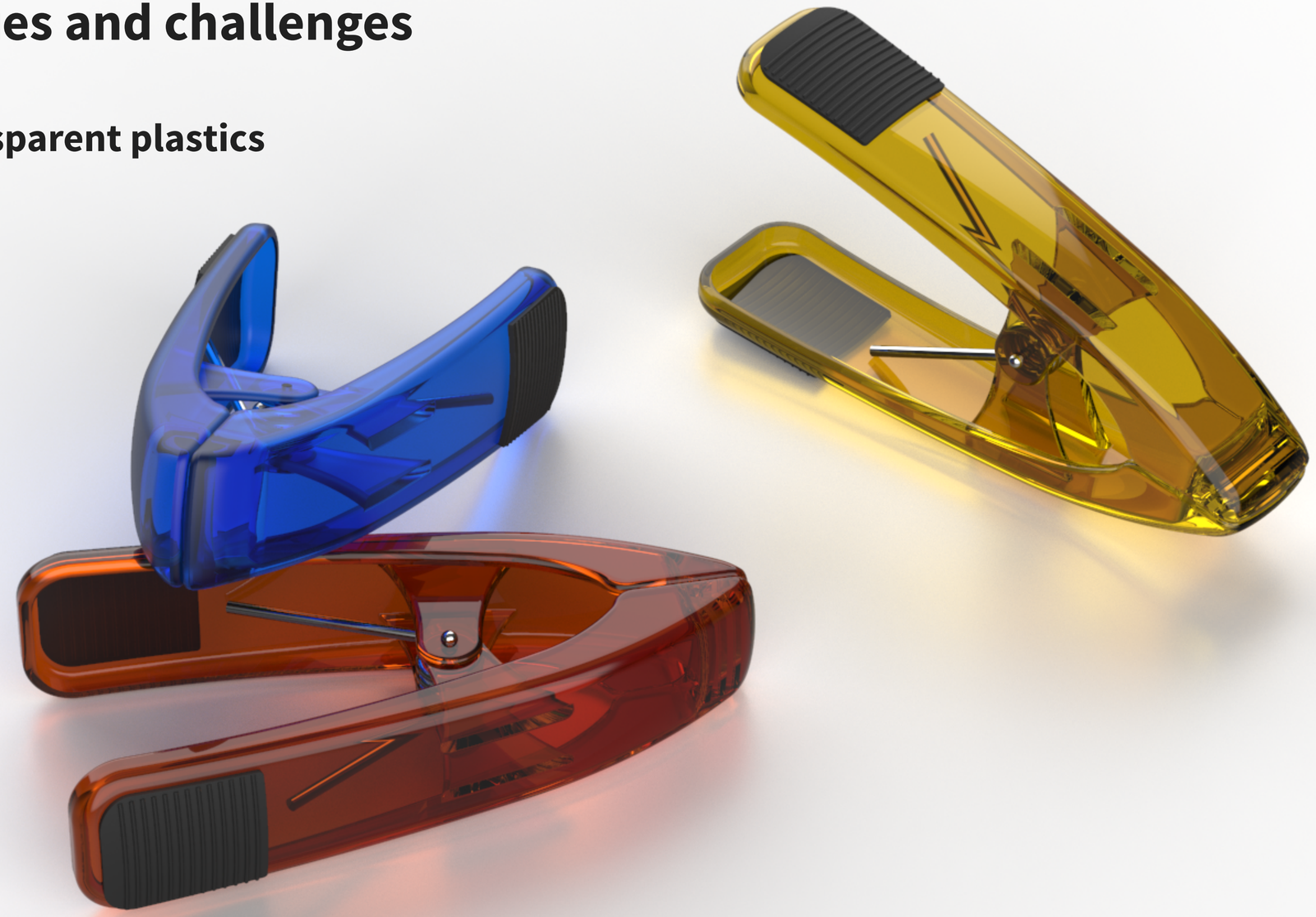
Common issues and challenges

Dull-looking anodised coatings



Common issues and challenges

Dull-looking transparent plastics

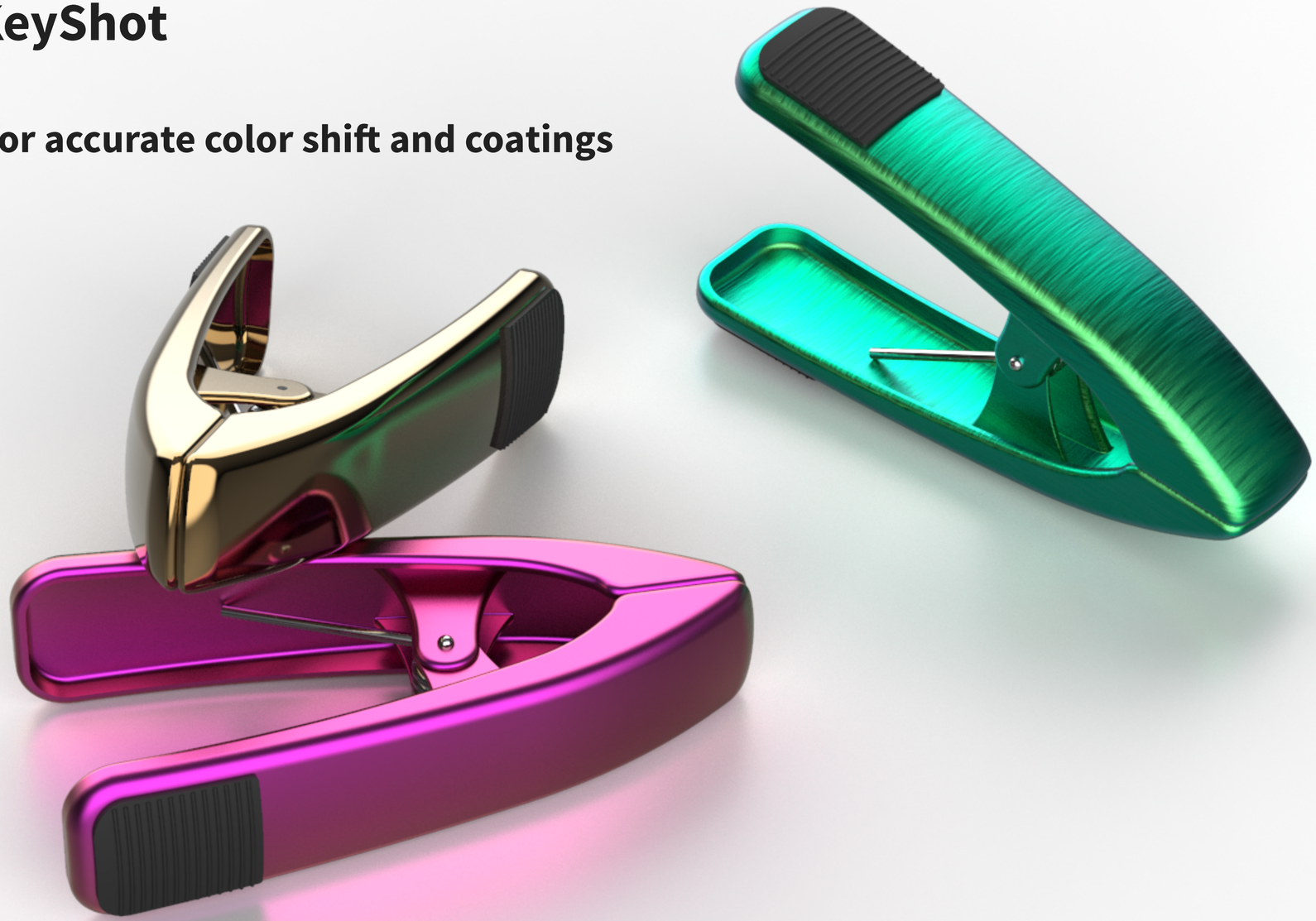


Solutions in KeyShot

- Measured Metals with Anodized option
- Cloudy Plastic with Transparency Distance, Cloudiness and Scattering
- Metallic Paint with fine control over clear-coat
- Options for Toon, Solid Glass etc.

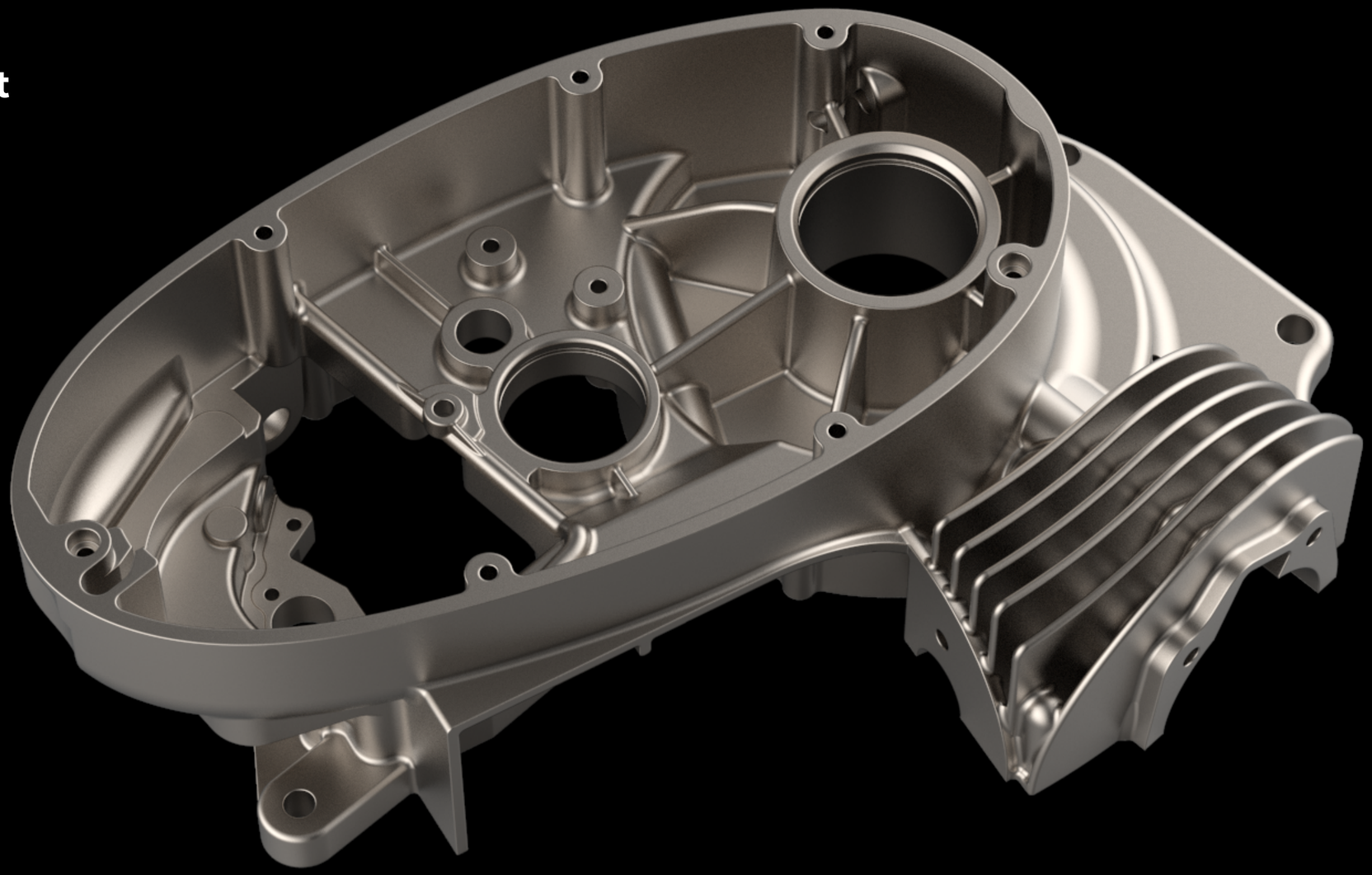
Solutions in KeyShot

Measured Metals for accurate color shift and coatings



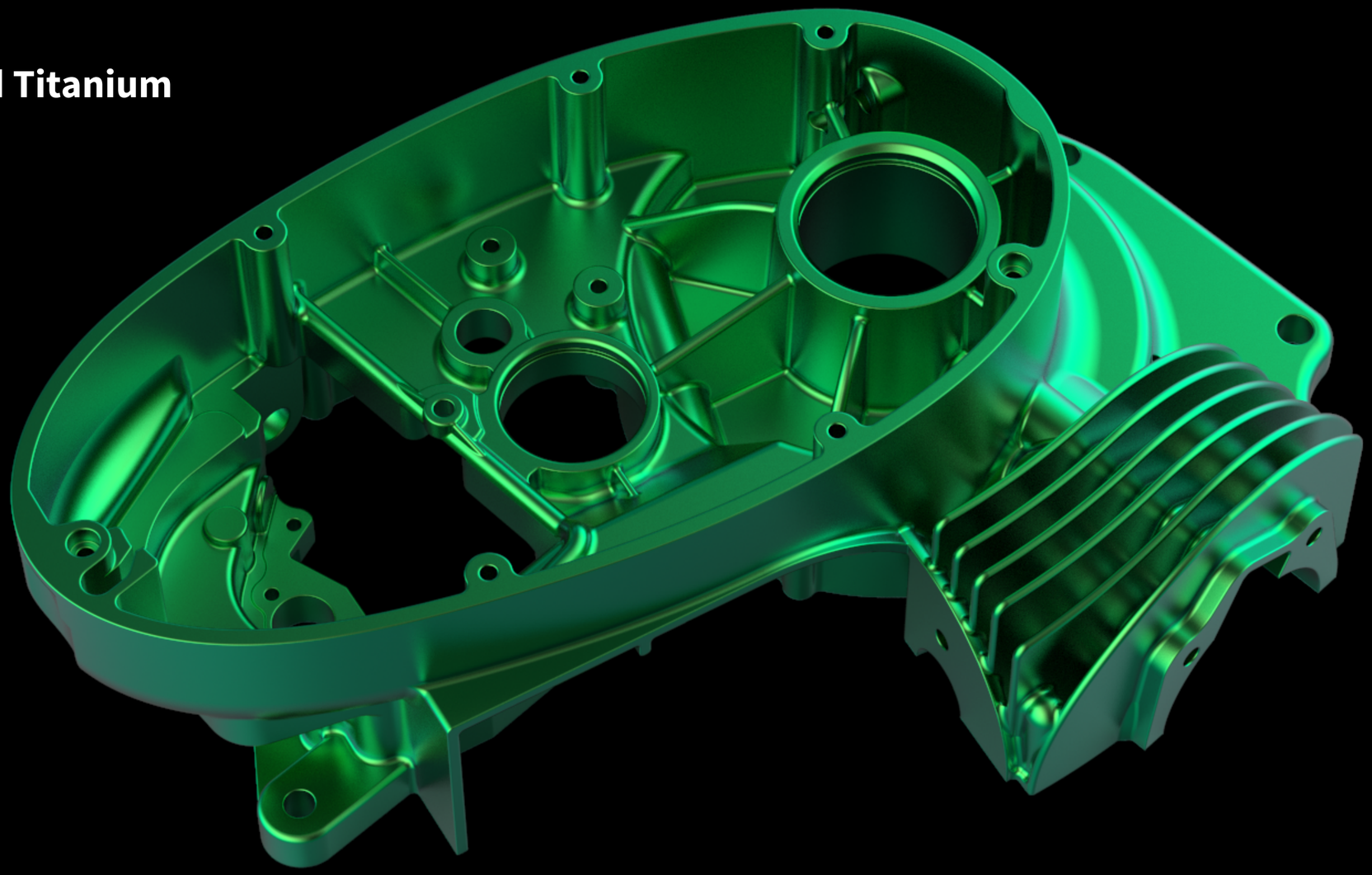
Measured Metal

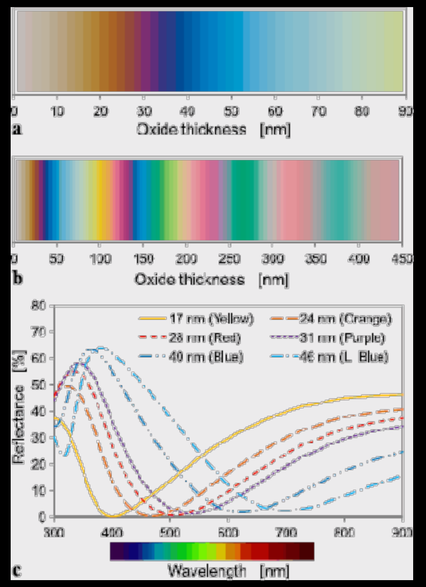
Titanium preset



Measured Metal

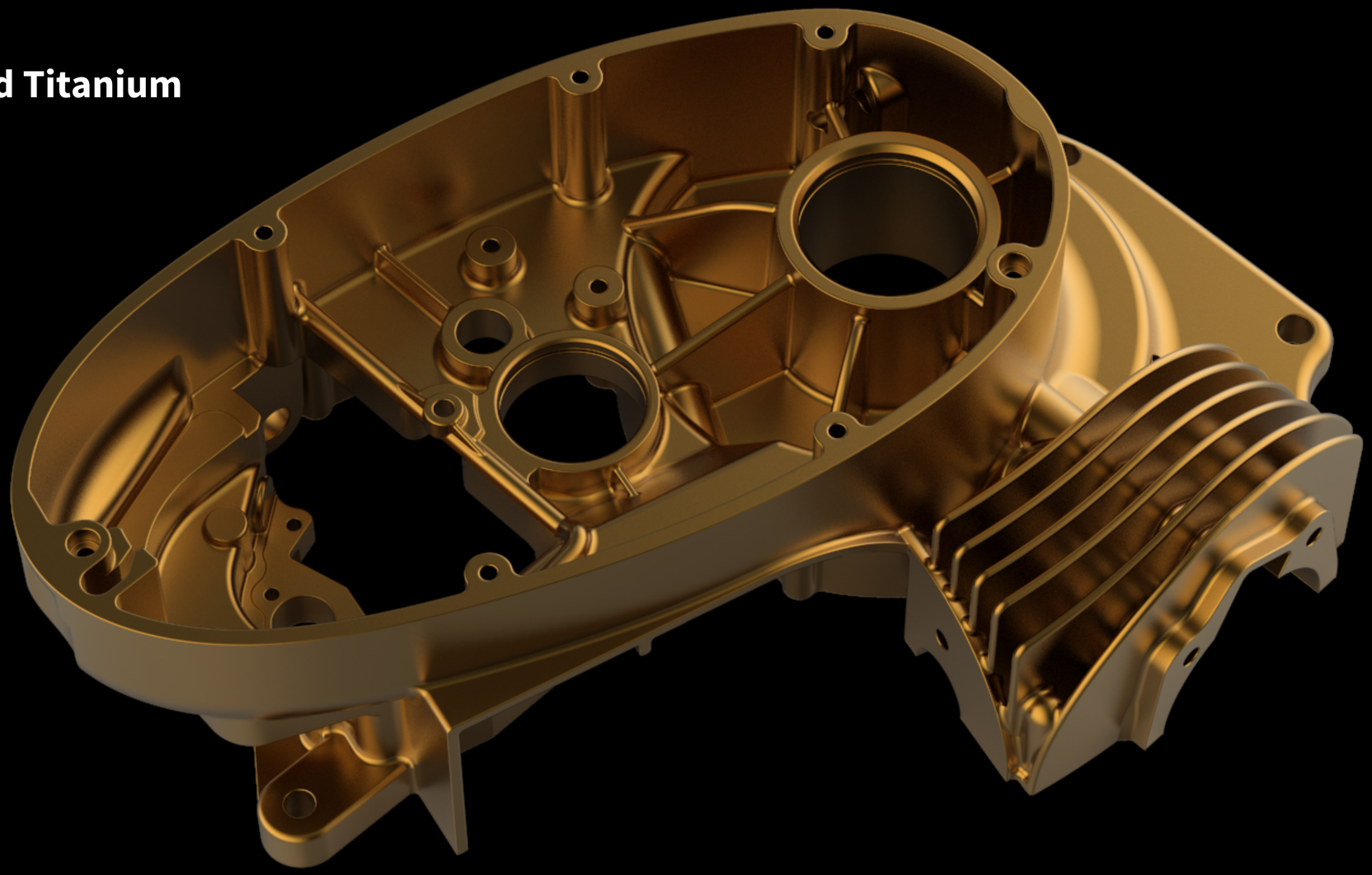
Green anodized Titanium





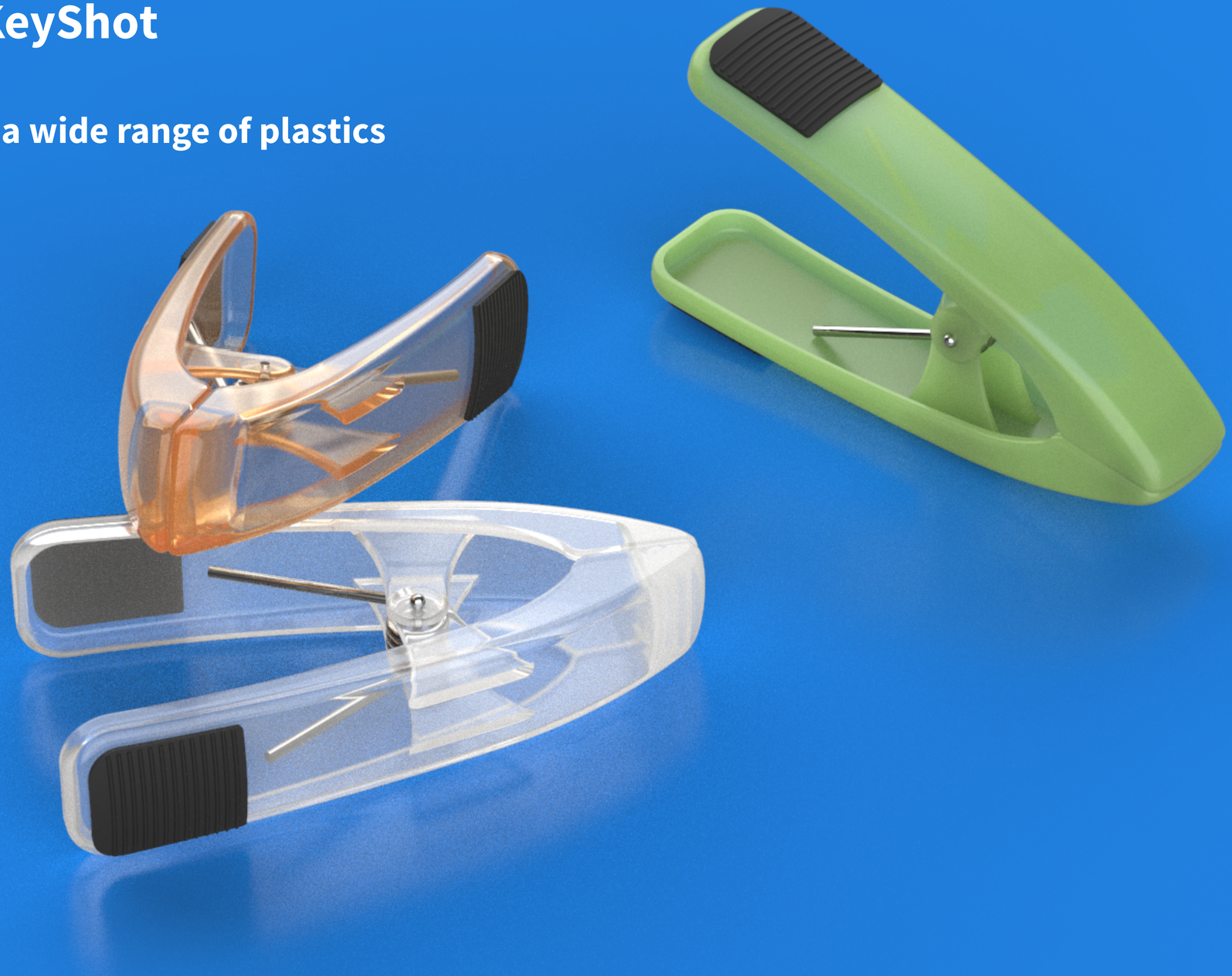
Measured Metal

Yellow anodized Titanium



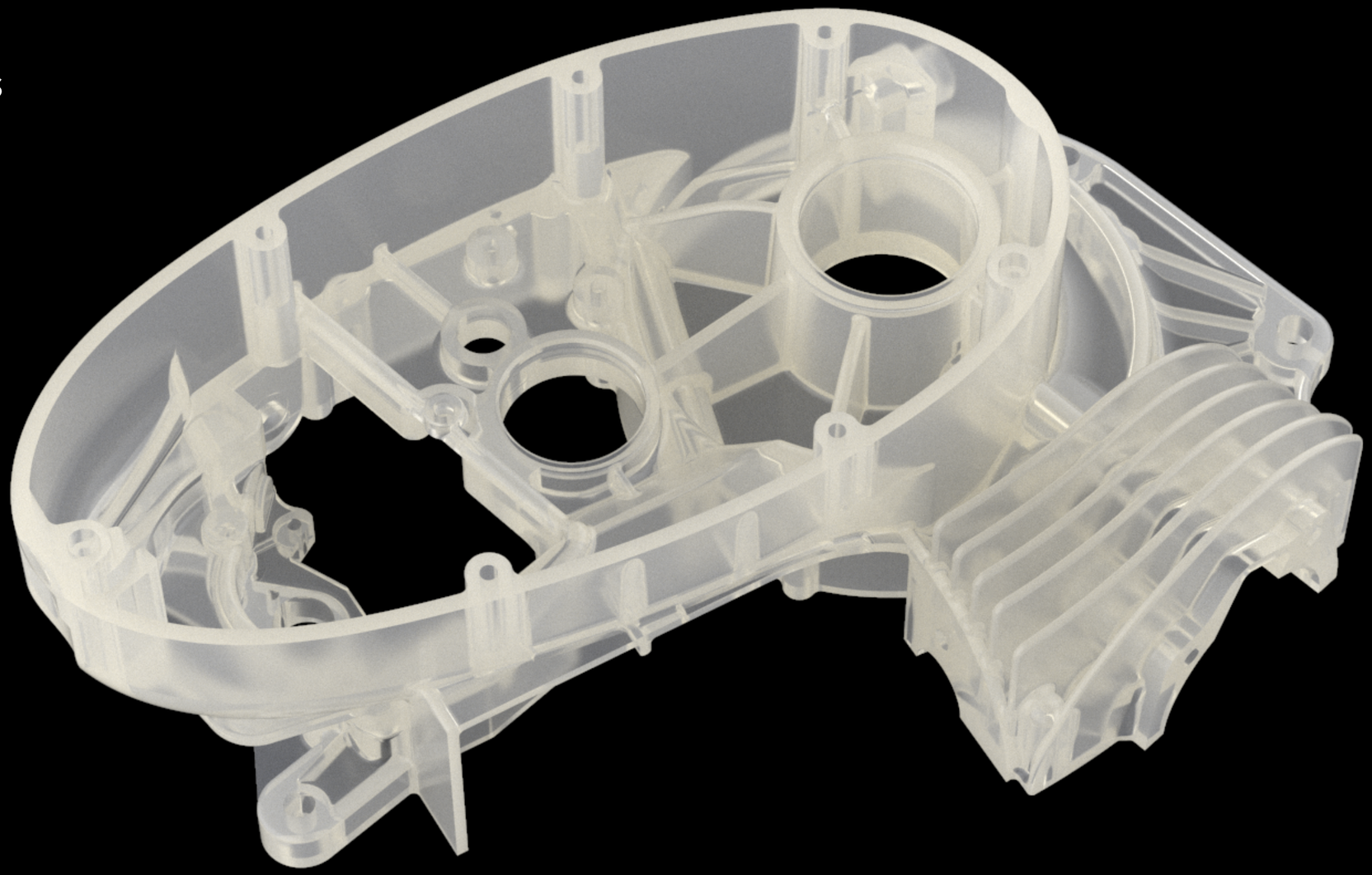
Solutions in KeyShot

Cloudy Plastic for a wide range of plastics



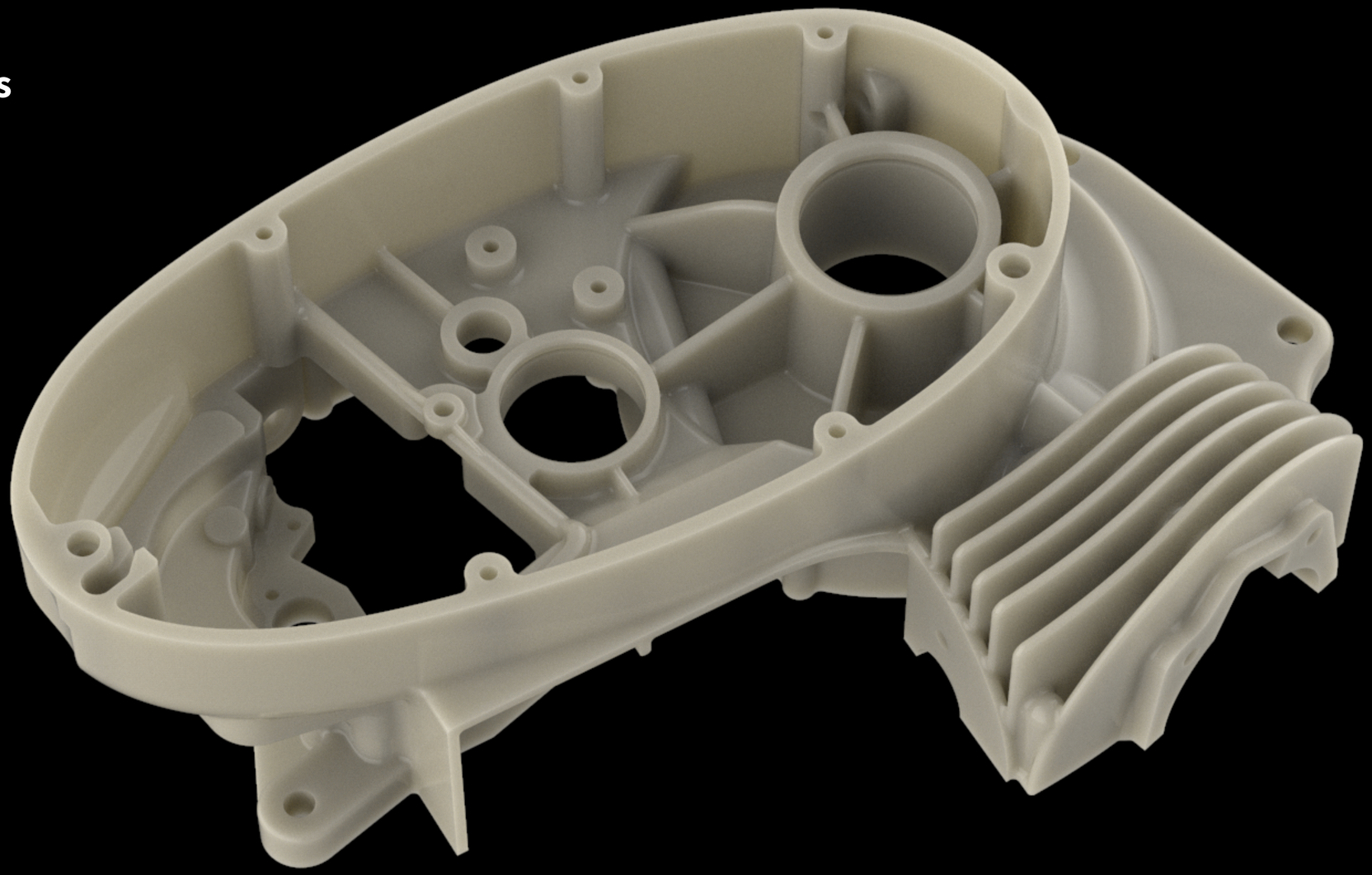
Cloudy Plastic

Low Cloudiness



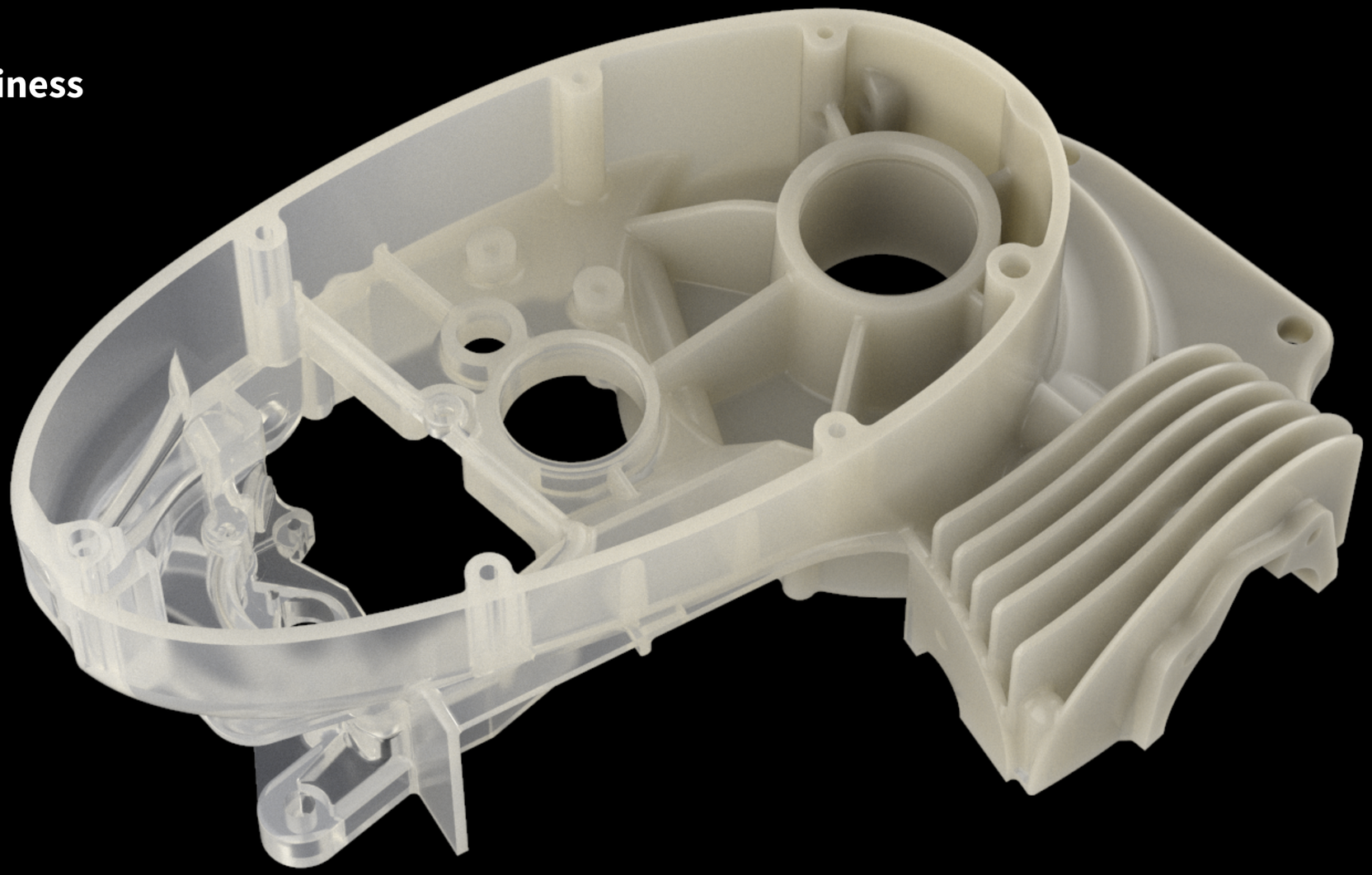
Cloudy Plastic

High Cloudiness



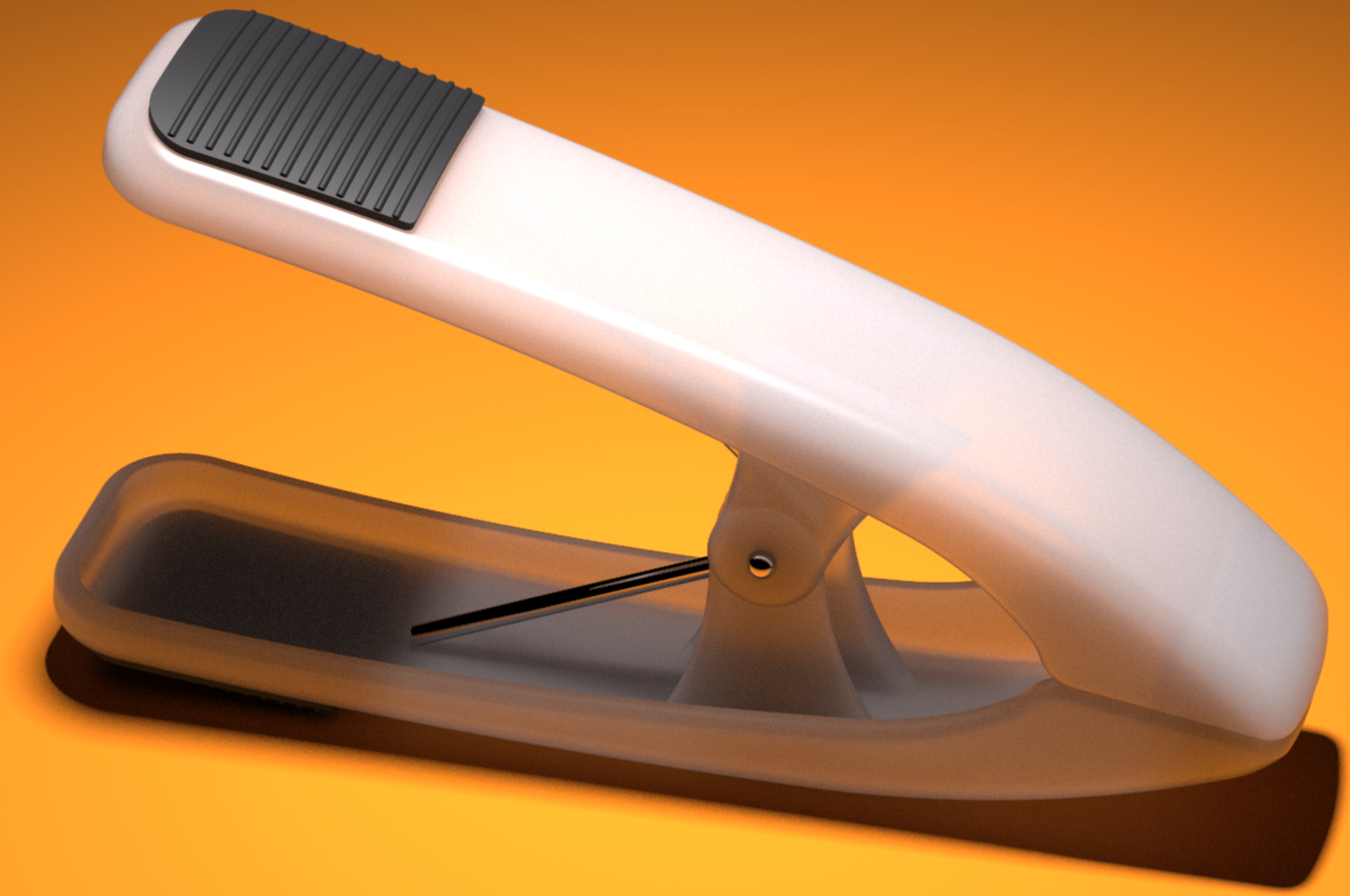
Cloudy Plastic

Gradient Cloudiness



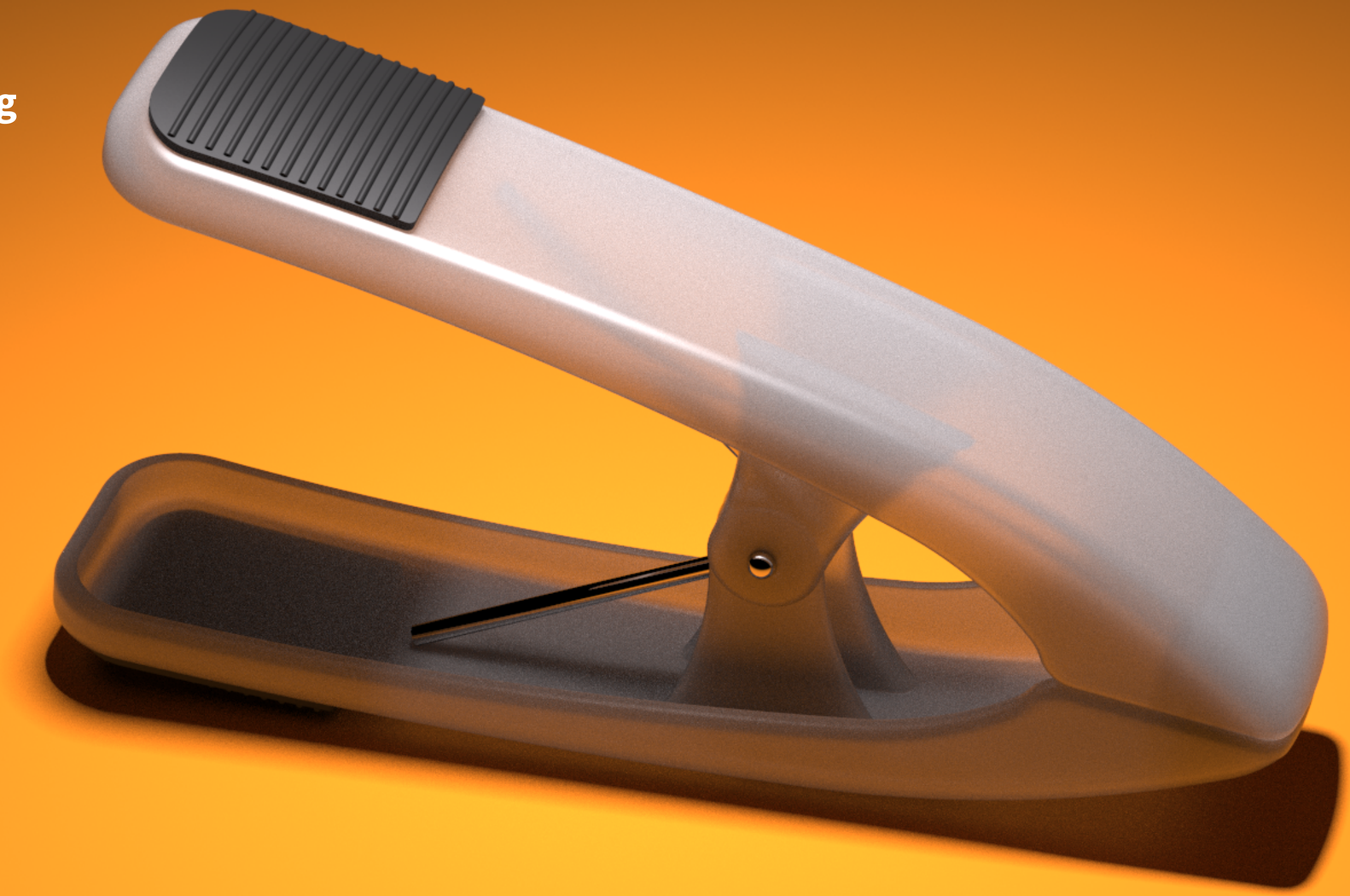
Cloudy Plastic

Uniform Scattering



Cloudy Plastic

Backward Scattering

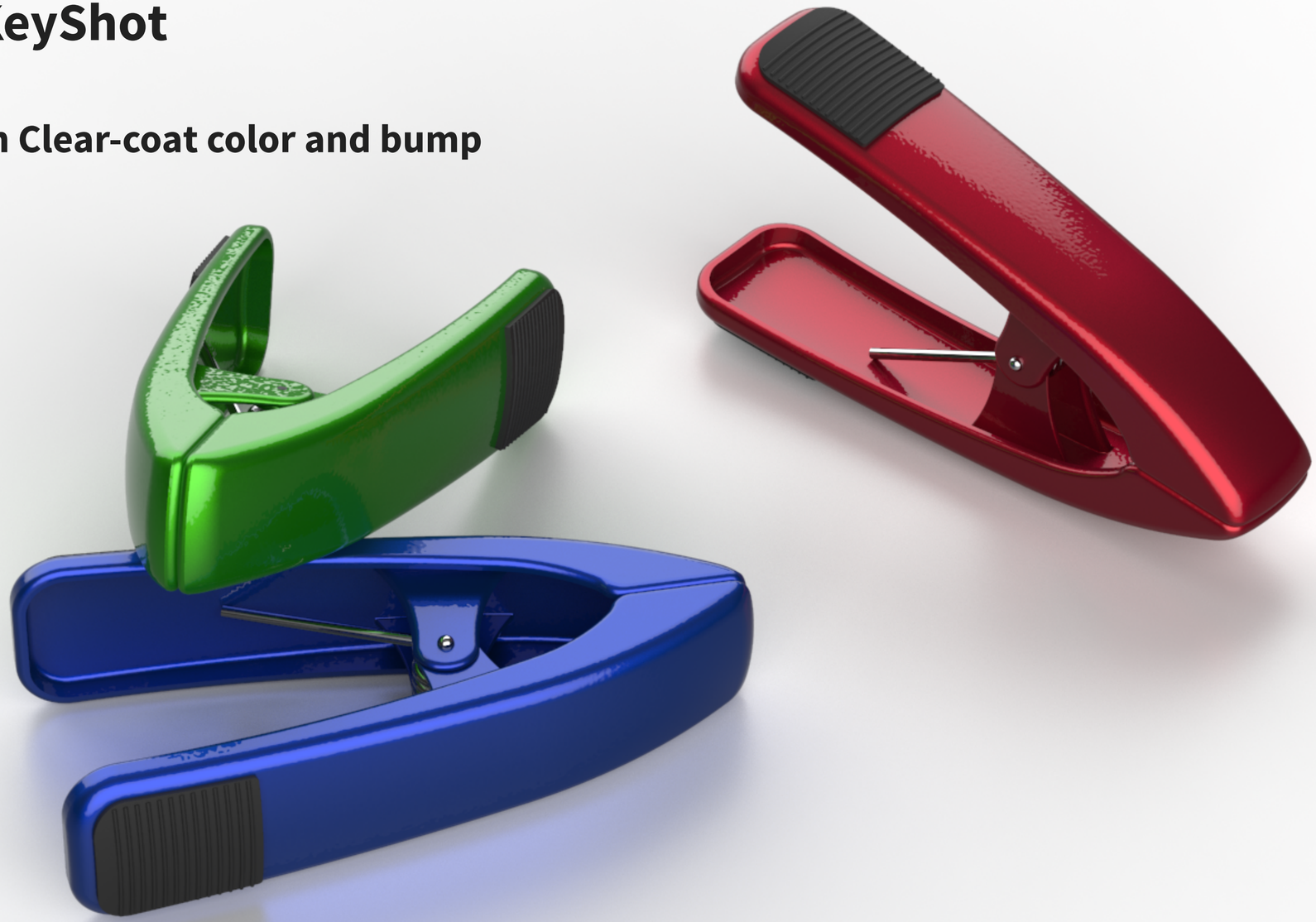


Cloudy Plastic

Forward Scattering

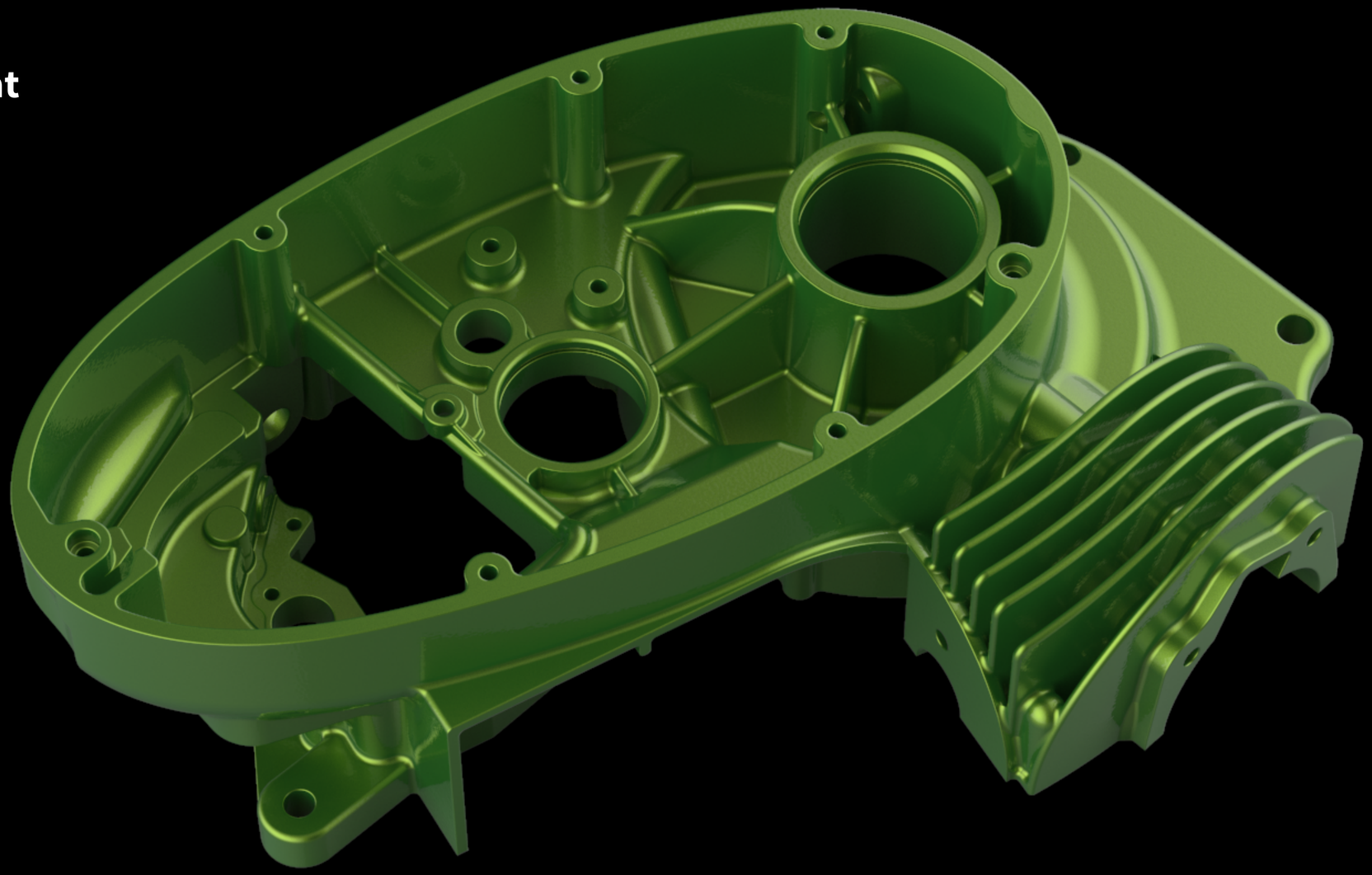
Solutions in KeyShot

Metallic Paint with Clear-coat color and bump



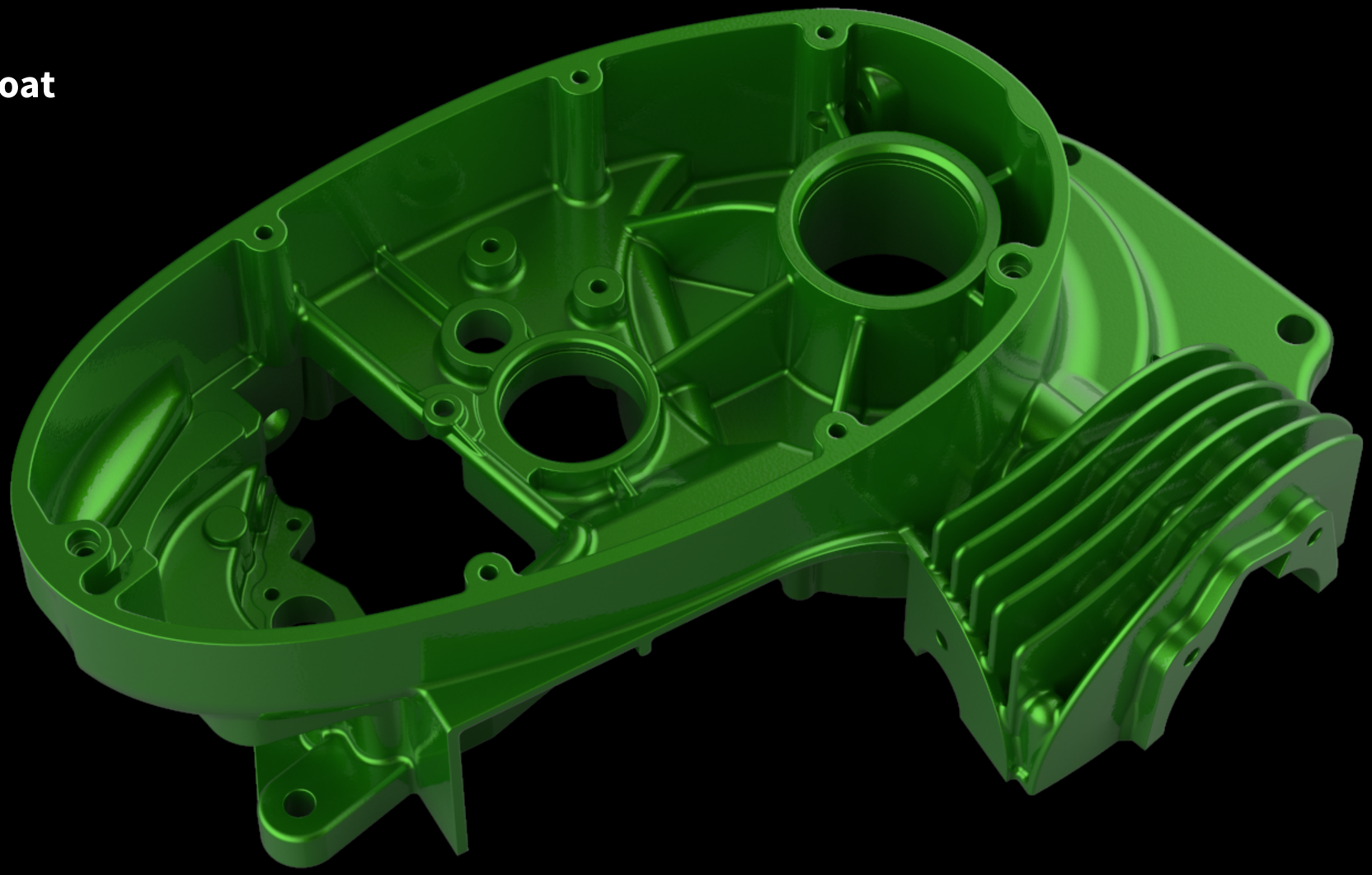
Metallic Paint

White Clear-coat



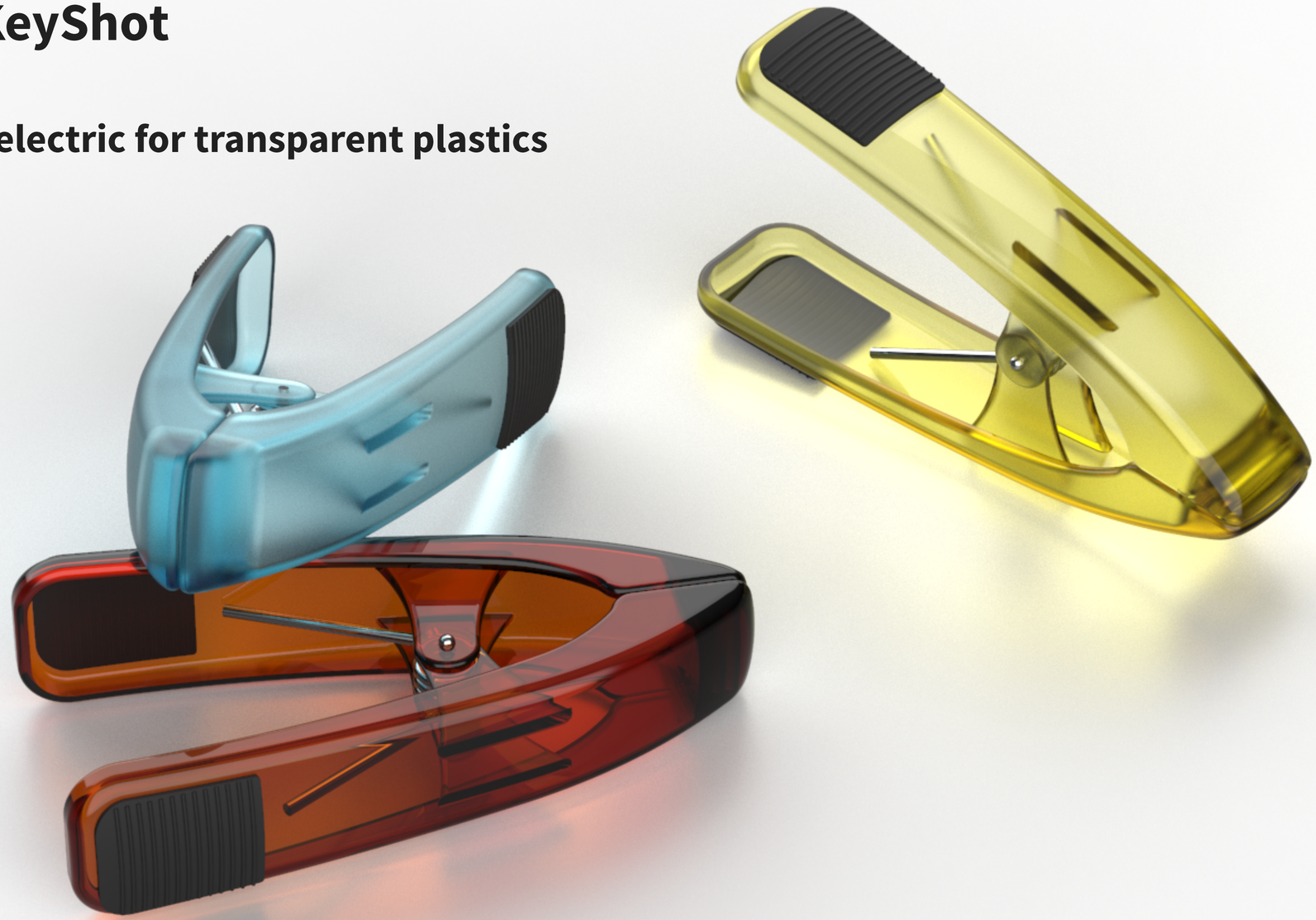
Metallic Paint

Colored Clear-coat



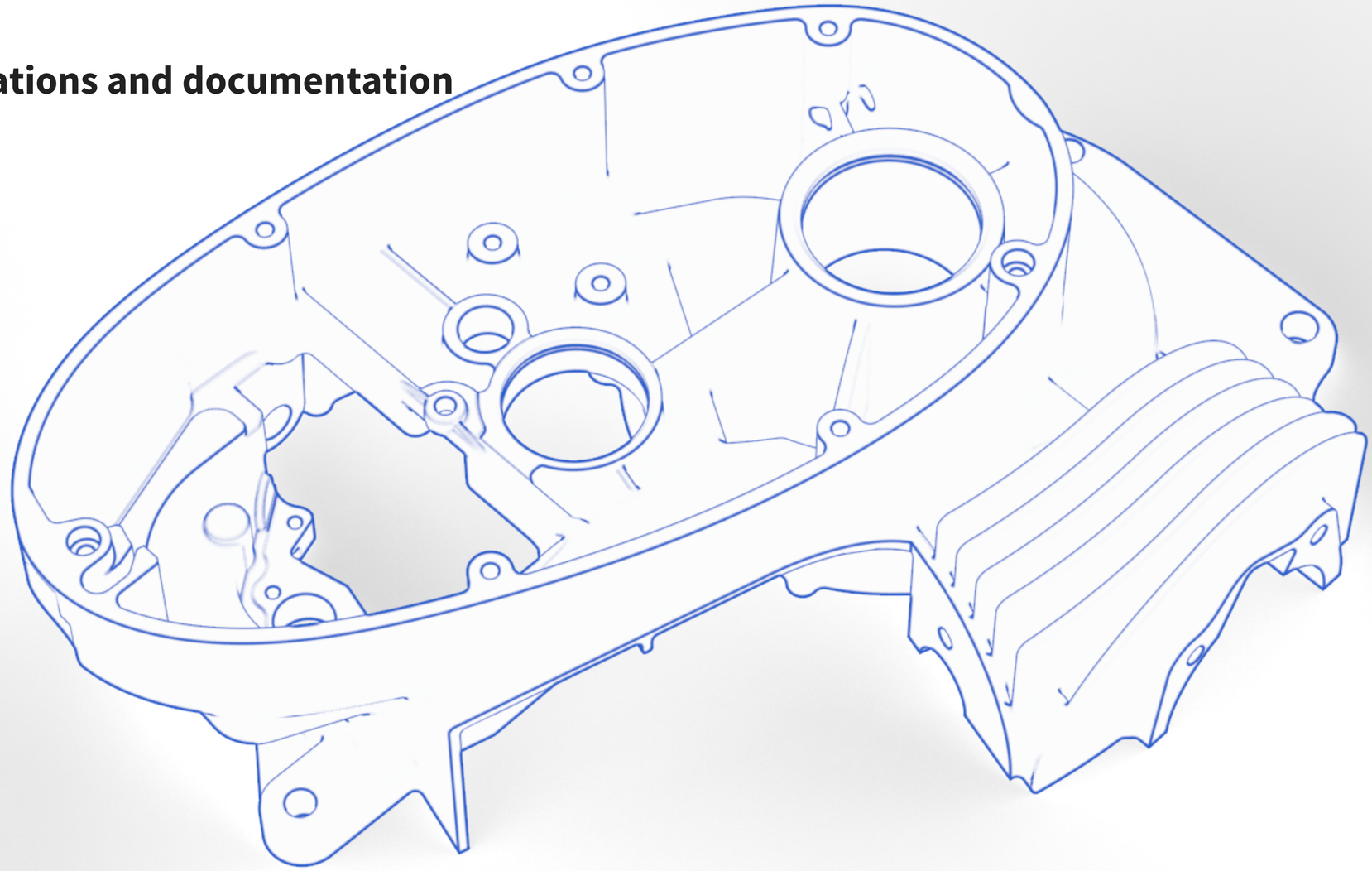
Solutions in KeyShot

Solid Glass and Dielectric for transparent plastics



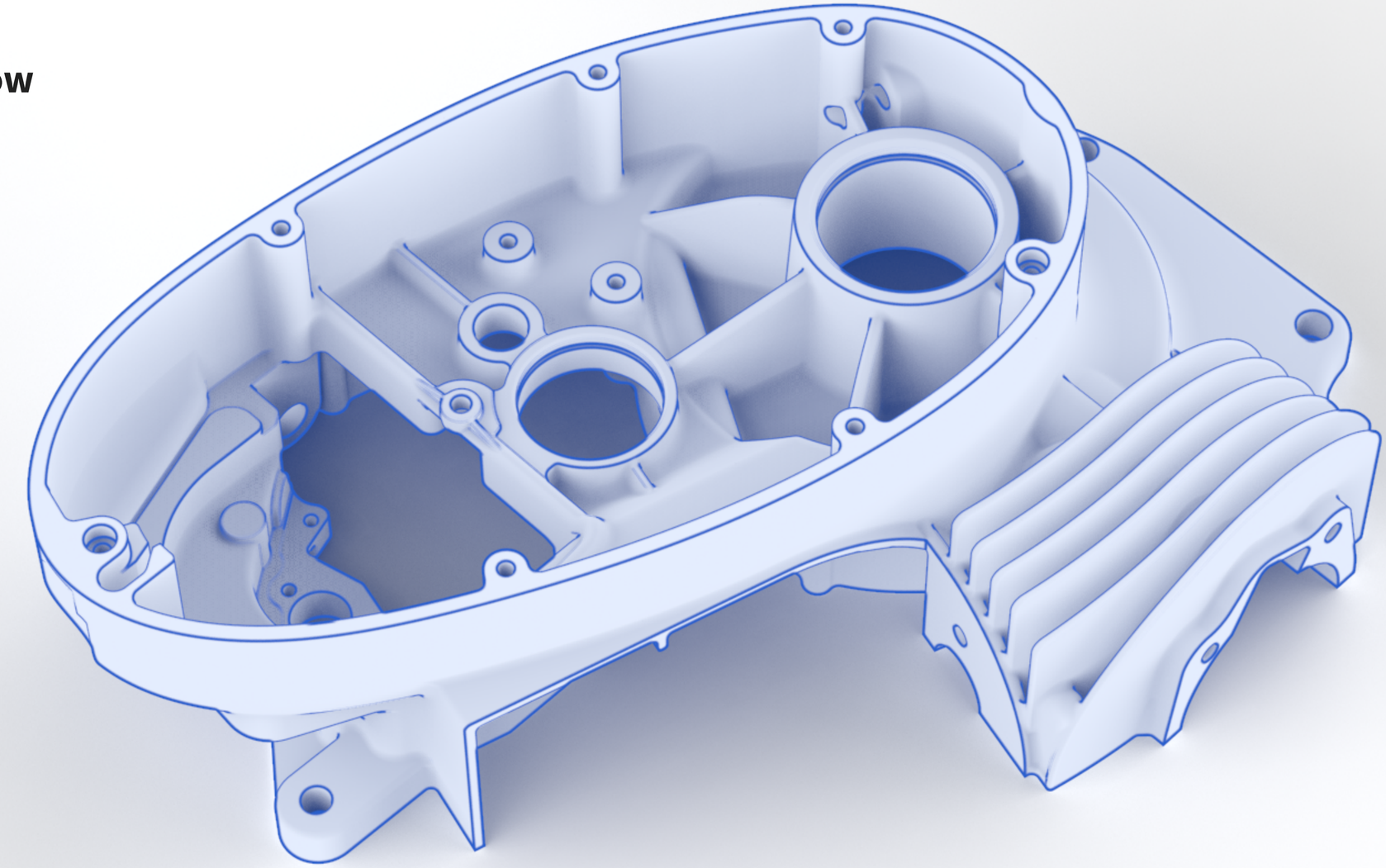
Solutions in KeyShot

Toon for illustrations and documentation



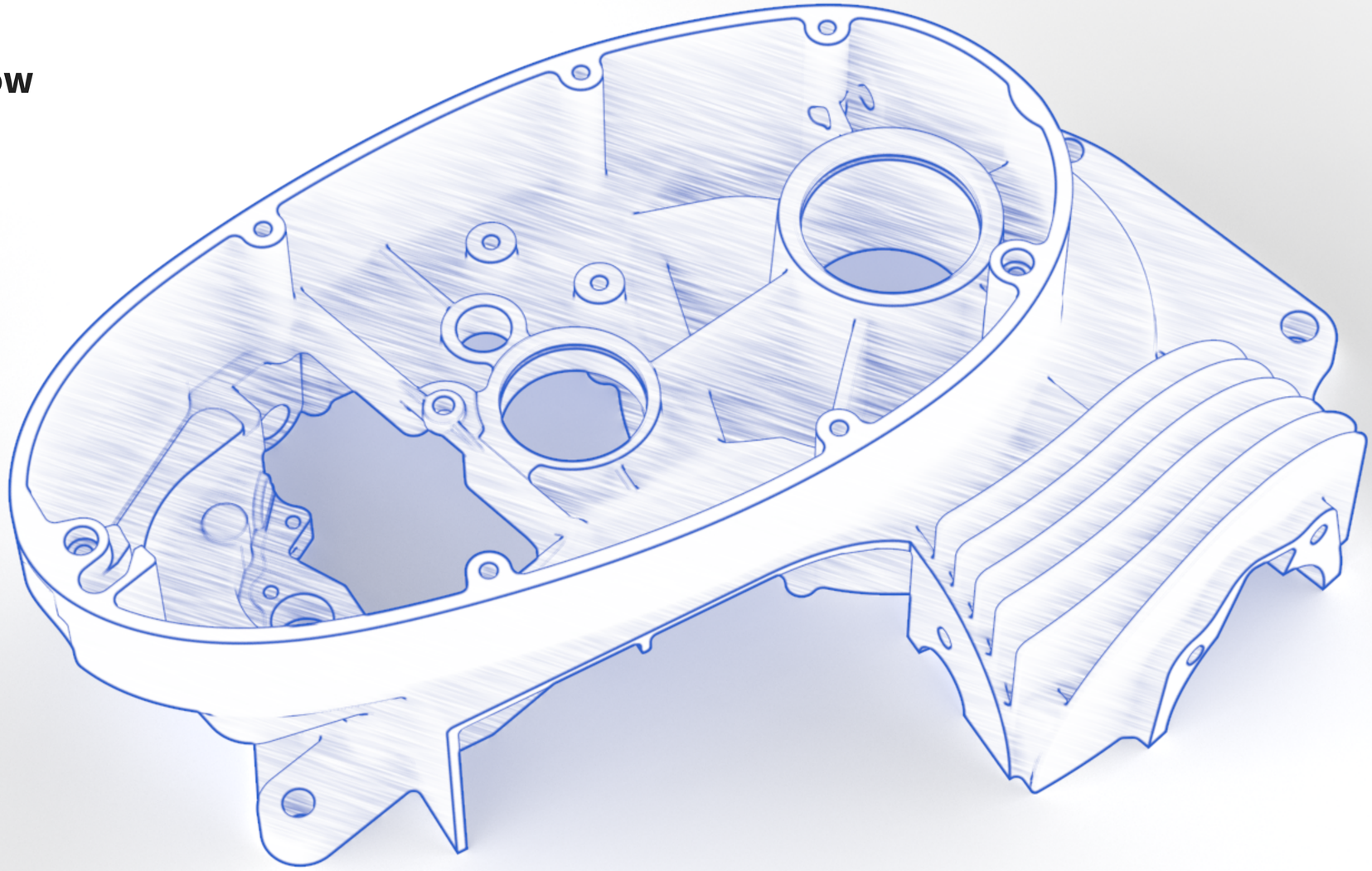
Toon

Colored Shadow



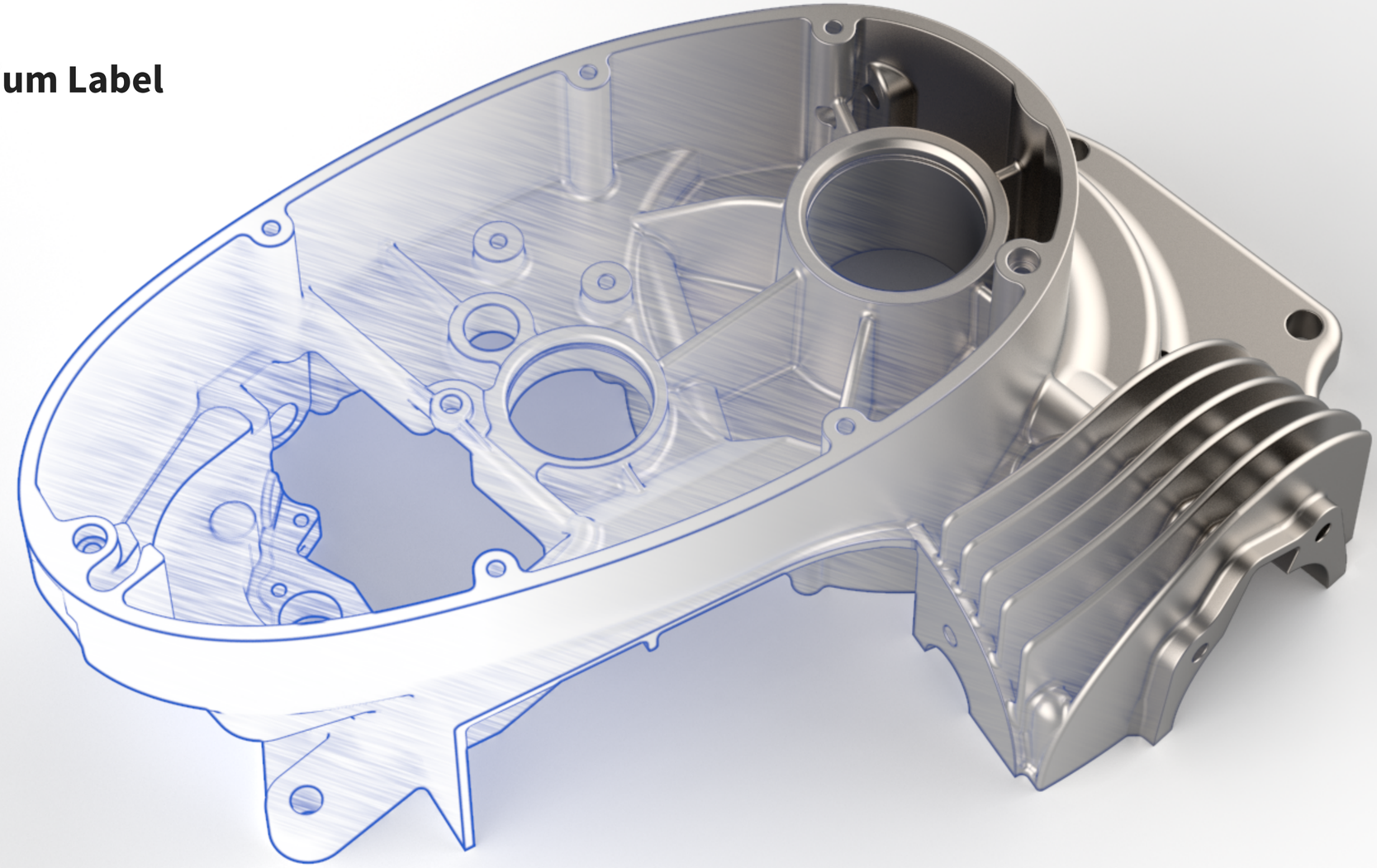
Toon

Textured Shadow



Toon

Gradient Titanium Label



Hands-on

Part III – What the Sample?

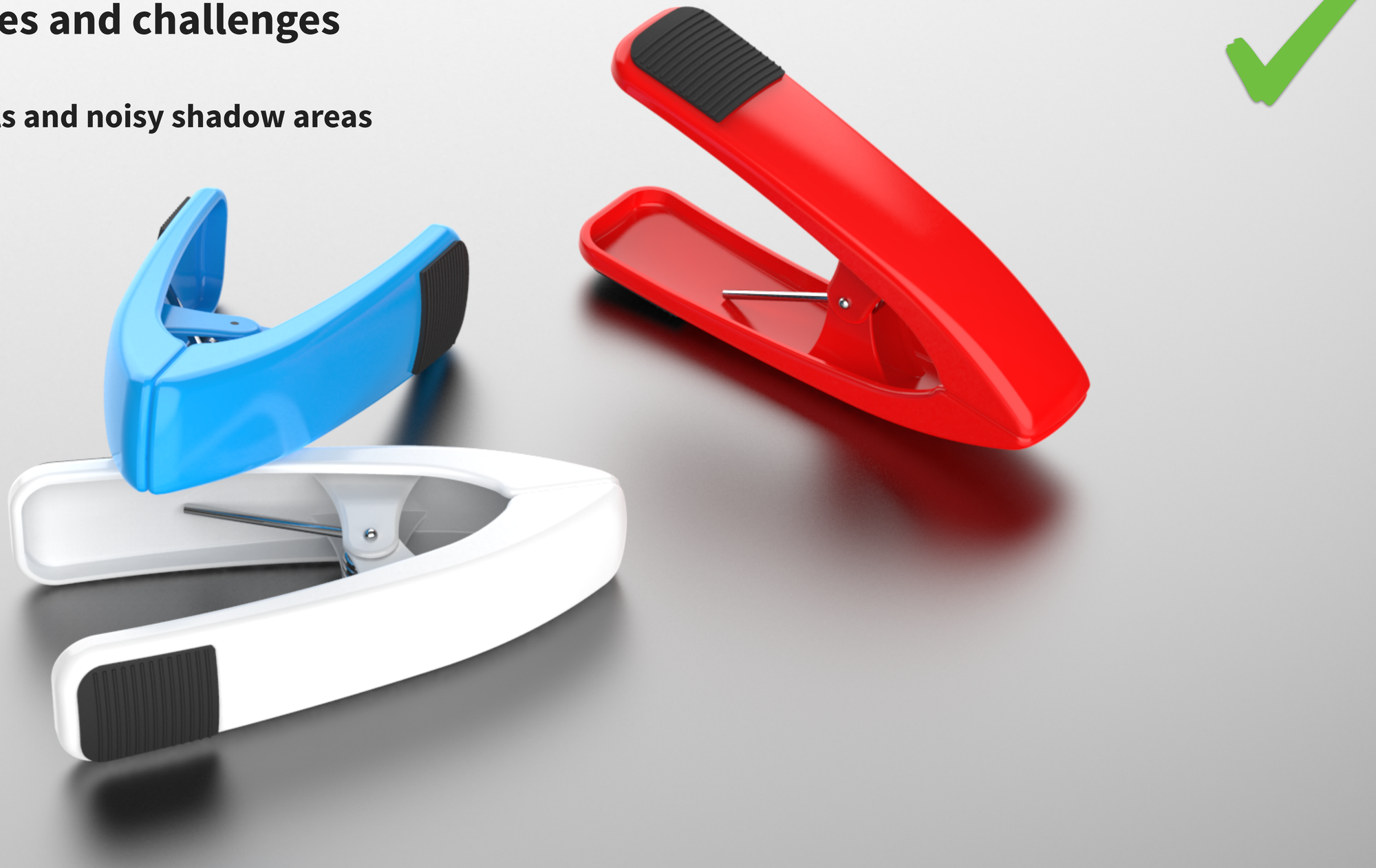
Making sense of Samples and Render Quality

Common issues and challenges

Noisy rough metals and noisy shadow areas

Common issues and challenges

Noisy rough metals and noisy shadow areas



Solutions in KeyShot

- Material versus Render Samples
- Rule of thumb: increase Material samples first

Things that require more Render Samples:
- Some materials: Ground Plane, Measured Metals
- Shadows
- Depth of Field
- Motion Blur

Render quality:
- Maximum Samples or Time: great general-purpose settings
- Custom Control can help avoid noise in shadows
- Interior Mode has less noise than Product Mode

Things to avoid:
- Cranking up all settings and sliders
- Starting with high settings

Hands-on

Conclusion

Summary and recommendations

- **“Product” Lighting Preset as a starting point**
- **Dare to experiment**
- **Explore the new material options for Metal, Cloudy Plastic etc.**
- **Increase Material Samples before Render Samples**
- **Maximum Time or Samples as a starting point**
- **Interior Mode can be great for product shots too**

Questions?