

Harnessing the Power of Additive Manufacturing for Advanced Rapid Prototyping

Vision Possible





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Reliable, accurate and high-quality prototypes are no longer a luxury. They're a necessity for staying ahead in a competitive market. Stratasys technologies deliver flexible, cost-efficient solutions tailored to the evolving demands of design and engineering industries, enabling rapid iterations and faster time to market from initial concept to finished product.

Advanced rapid prototyping with Stratasys 3D printing solutions is the cornerstone of next level product development. Offering unmatched flexibility, unrivalled precision, and accelerated design cycles, our solutions are designed to push the boundaries of creativity and functionality.

Stratasys additive manufacturing solutions are transforming visionary concepts into exact, market-ready products for developers who refuse to compromise, delivering the perfect model at each stage in the development process.





How the New Face of Rapid Prototyping is Changing the Game

Stratasys technologies are redefining the future where every prototype is a step closer to perfect product development, delivering unmatched precision, speed, and functionality. With industry-leading software that unlocks efficiency, optimization and advanced capabilities for your Stratasys printer, you can explore the limitless world of innovation.

Conceptualization with Fidelity:

Advanced Rapid Prototyping transforms conceptualization by offering over 600K color combinations plus multi-material blending, providing designers in markets from wearables to automotive interiors with prototypes that are virtually indistinguishable from the final product. This elevated level of detail brings ideas to life with the accuracy and realism at a pace that conventional methods simply can't match.

Engineering Efficiency:

Experience exciting new efficiencies in material usage and workflows, and marvel at accelerated print speeds. Unlock features like detailed cost estimation, design optimization, and even the integration of electronic components mid-print – all designed to streamline your path from design to a functional prototype.

Marketing Precision:

For marketers, Stratasys full color, multi-material 3D printing results in captivating prototypes, models and products, demonstrating function, illustrating

concepts and engaging audiences. Such high-fidelity prototypes enable precise market testing and authentic consumer feedback, bridging the gap between concept and customer delight.

Quality Assurance:

In quality and user experience testing, Stratasys raises the bar, enabling high-performance industrial grade prototyping - with a wide range of validated and certified materials - that withstands rigorous testing and simulates real life usage. This ensures not only the product's durability, but also its ability to meet the highest quality standards.

Customization at Scale:

When it comes to customization and niche markets, Stratasys' new prototyping capabilities to blend diverse materials and incorporate various elements during the print process, empowers businesses to efficiently produce custom items in small batches. This adaptability offers a tangible edge in markets where bespoke solutions are not just preferred but essential.





What the Professionals are Saying

Whirlpool

Whirlpool uses three of our technologies - FDM (Fused Deposition Modeling), P3 DLP (Digital Light Processing) and SLA (Stereolithography) - to meet its rising diverse product development demands. They know that staying ahead of the competition is the key to success, which is why they prototype 85% of all their parts using 3D printers.

With multiple technologies, Whirlpool can produce any part their designers want, from beautiful customer-facing prototypes with SLA, to high-heat retention parts with P3 DLP, or functional validation with FDM.



[Watch the video case study here](#)



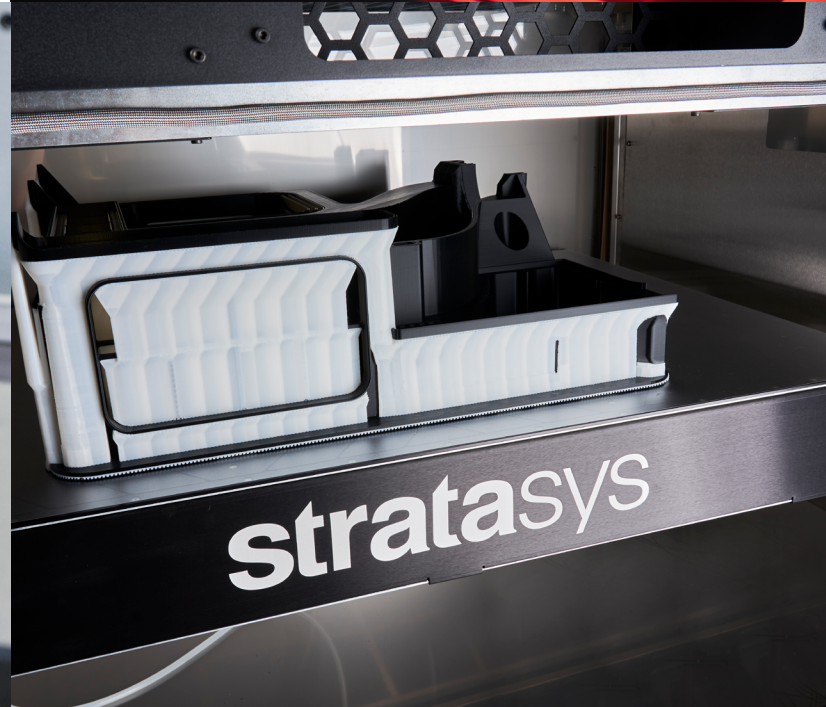
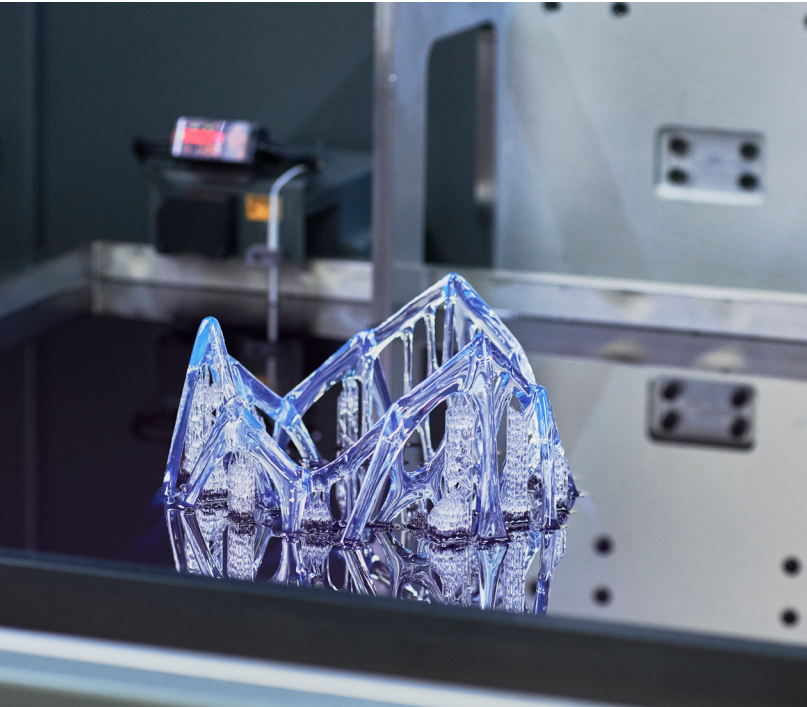
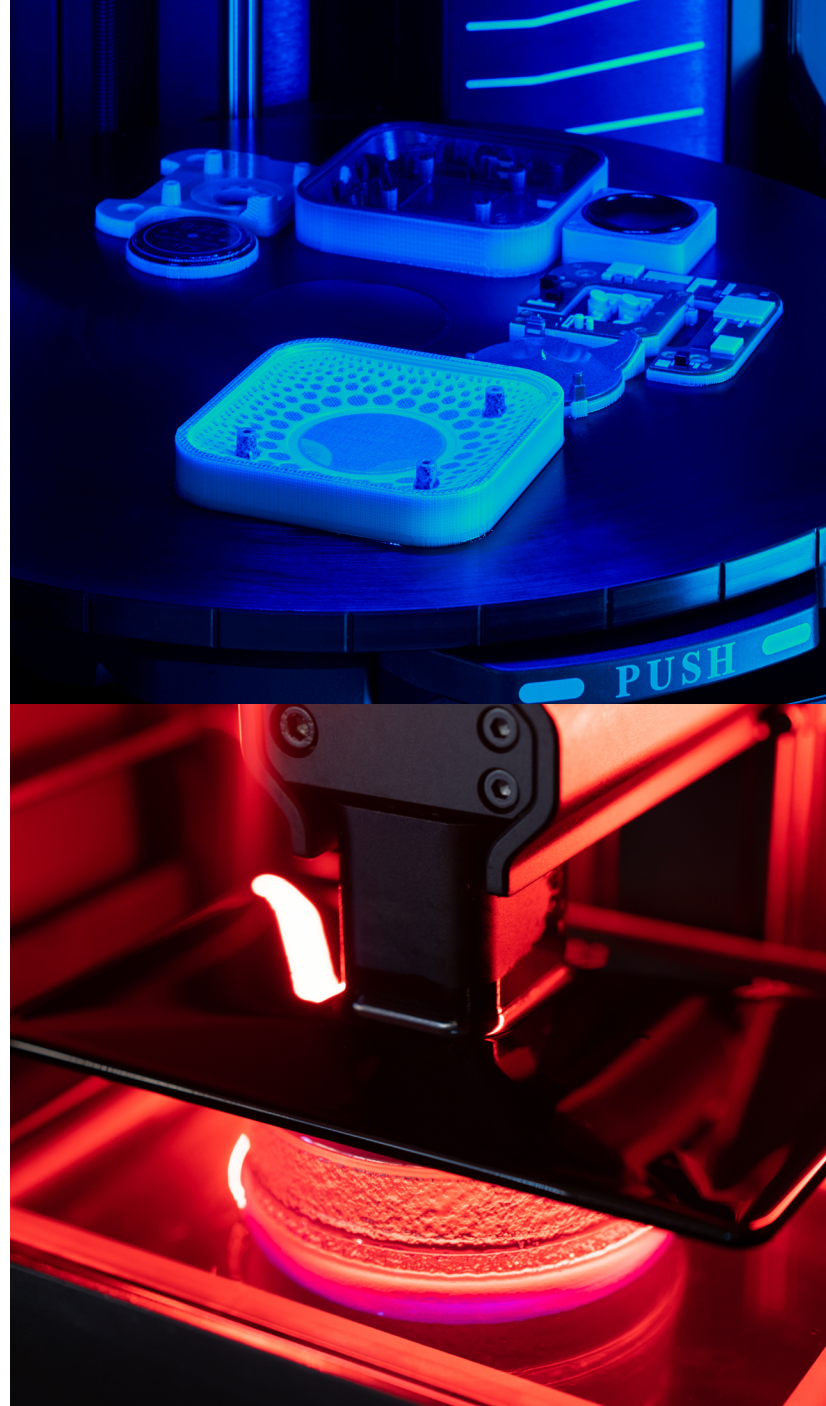
Solving your Prototyping Challenges

Are you ready to elevate your prototypes with breath-taking detail and functionality?

Whether you're shaping the next wave of consumer tech, piecing together life-saving medical devices, or redefining aerospace engineering, our cutting-edge solutions are tailored to bring your innovative designs from the drawing board to the real world with ease and precision.

Our 3D printing solutions - PolyJet™, P3™ Digital Light Processing (P3 DLP), Stereolithography (SLA), and Fused Deposition Modeling (FDM™) – are here to help you do just that

Read on to see the power of possibility!





FDM[®]

Fused Deposition Modeling

FDM is renowned for its reliability, speed and cost-effectiveness, perfect for rapidly producing prototypes and iterating designs. If you need to develop, test, and refine your ideas quickly and efficiently, with FDM you can accelerate your prototyping process without breaking the bank.

Uncompromising Reliability and Simplicity

Fused Deposition Modeling (FDM) technology brings unparalleled ease and reliability to advanced rapid prototyping, ensuring your projects succeed from the very first print. Forget the hassle of dialing in temperatures or adjusting speeds, our FDM solutions deliver consistent results, freeing engineers to focus on innovation rather than troubleshooting.

Accessibility for Every Engineer

Designed with simplicity in mind, FDM printers are a staple in any manufacturing environment. They empower every engineer, regardless of experience, to bring their designs to life. With prints that can be started overnight and ready by morning, and the intuitive GrabCAD Print software boasting a mere 10-minute learning curve, prototyping has never been more accessible.

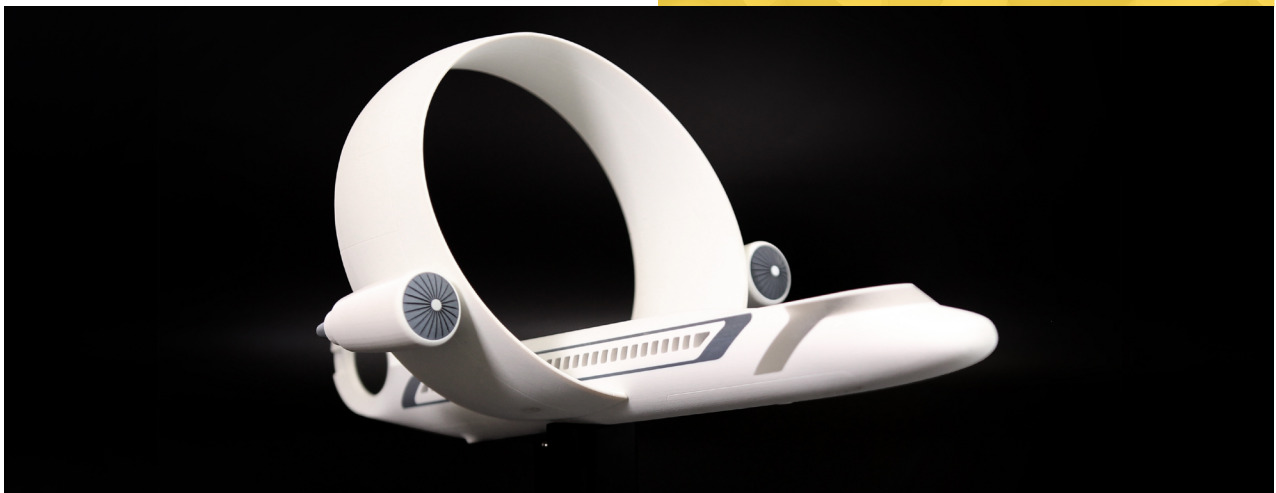
Boost your Design Cycle

Imagine having an extra designer at your disposal 24/7. With FDM technology, designs can be refined and tested at an unprecedented and reliable pace, freeing up time and attention for additional projects.



The key benefits of FDM technology:

- **Reliability:** FDM printers have a verified 99% uptime and 99% repeatability performance.
- **Material Versatility:** From standard colors in single materials to specialized composites.
- **Ease of use:** Single print head, easily changed based on material and usage requirements.
- **Efficiency:** high chemical resistance, toughness and abrasion durability.





P3™ DLP

Digital Light Processing

With our P3™ DLP technology, every print, from the first to the last, meets the highest quality standards due to a patented pneumatic mechanism that carefully controls separation forces. This advanced system is pivotal for producing functional prototypes and end-use parts with fine features and smooth cross-sectional areas.

Controlled Quality and Material Versatility

Exceptional prototypes require precise control, which is why P3™ DLP technology's independent temperature management, reliable up to 60°C, is essential for working with high-temperature materials. This precise control facilitates the creation of parts with injection molding-like quality directly from the print bed, eliminating the need for post-process finishing.

From Prototyping to Production

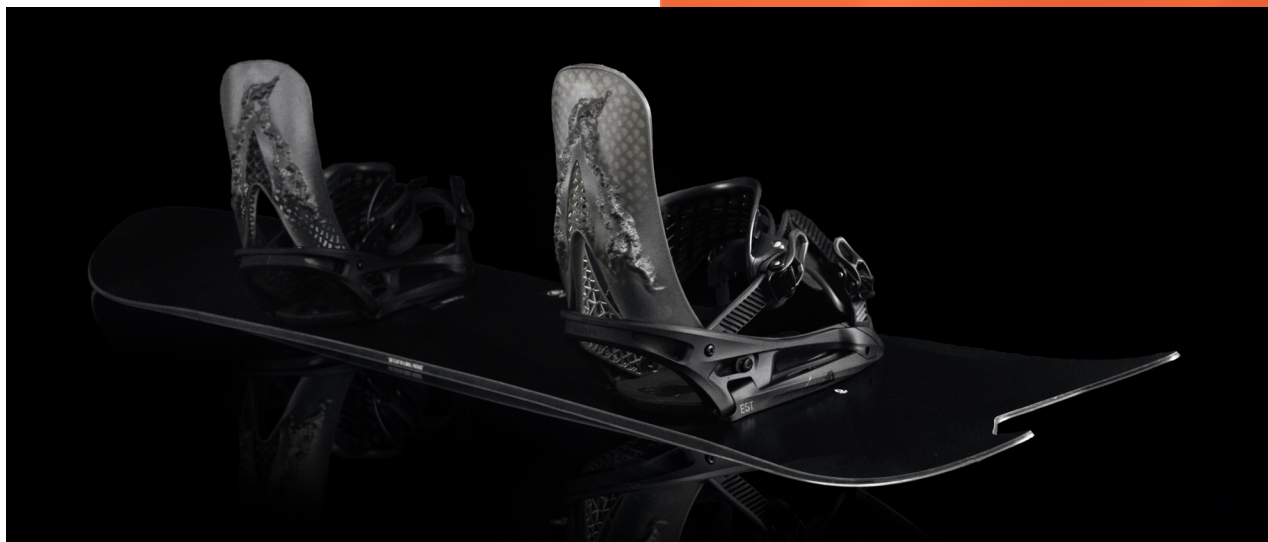
P3 exemplifies versatility and flexibility, adapting to a variety of advanced prototyping and production needs. The transition from creating detailed prototypes to producing high-quality end-use parts is seamless, thanks to the printer's ability to handle a diverse range of materials and its capacity for both short and long build sequences.

Operational Excellence and Throughput

Efficiency is at the heart of P3. The printer maximizes throughput with its rapid print times, strong green strength, and minimal post-cure requirements. Low waste production and high yield rates translate to an optimized production process.

The key benefits of P3 DLP technology:

- **Precision Printing:** Consistent high quality, with reduced separation forces enhancing both detail and scale.
- **Thermal Stability:** High-temperature printing without deformation, with injection-molding quality and precise tolerances.
- **Customization Ready:** Configurable settings support your diverse prototyping needs.
- **Seamless Transition:** Flexibility to shift from initial prototypes to full production on a single platform.
- **Efficient Workflow:** Fast printing and minimal post-cure times, a user-friendly interface with quick material swaps.





PolyJet™

Photopolymer Jetting

Ideal for prototypes requiring intricate details and lifelike accuracy. Experience unparalleled versatility, with full-color capabilities and multi-material printing for hyper-realistic, fast prototyping. Seamlessly integrate elements into prints with Smart Insert™ or print directly onto objects for limitless customization.

Precision Prototyping with Vibrant Realism

Propel your CMF (color, material, finish) prototyping from the great to the extraordinary, with over 600K color combinations and Pantone Validated palettes to achieve the ultimate design fidelity. Coupled with our innovative material engineering, you can blend rigid and flexible materials to meet specific needs and create hyper-realistic prototypes with a broad spectrum of digital materials.

Accelerated and Scaled Prototyping

Our High-Speed Printing Mode doubles the speed in multi-material configurations and dramatically reduces the time from design to prototype, while our large-scale prototyping capabilities offer high accuracy for those more substantial parts. With PolyJet, you can scale up without compromising on the intricate details that make your prototypes stand out.

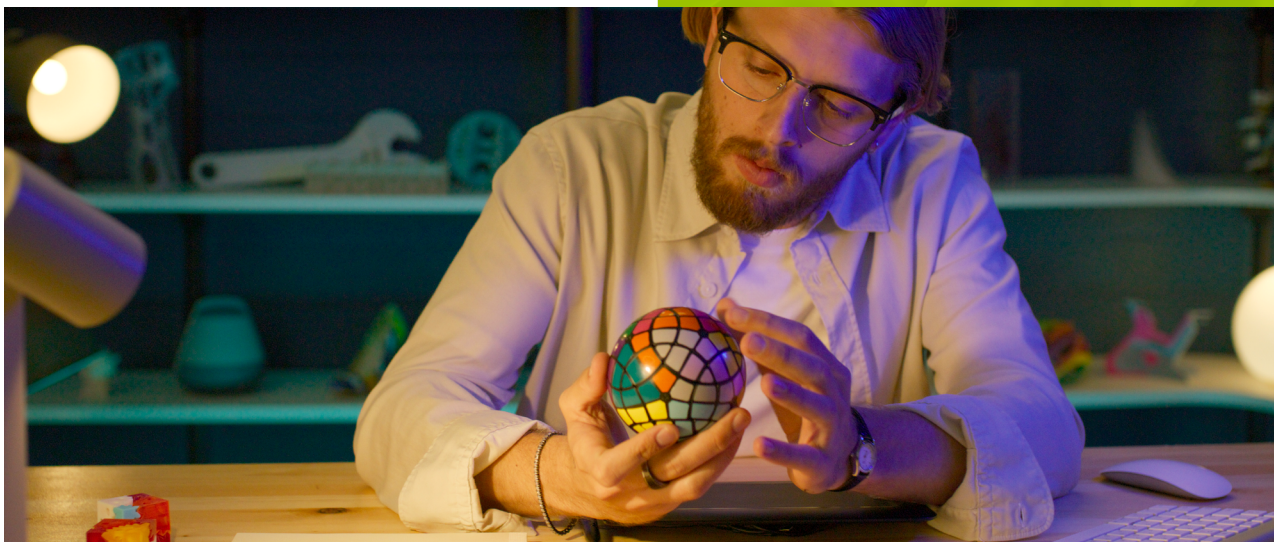
Up your Game with GrabCAD Print Pro

The advanced capabilities unlocked in your PolyJet printer with GrabCAD Print Pro expands your creative possibilities, enabling direct printing on trays or objects with various materials and textures for complex prototypes featuring intricate details, embedded electronics, and microfluidic channels. [Full list in appendix 1.](#)



The key benefits of PolyJet technology:

- **Vibrant Realism:** Elevate CMF prototyping with unparalleled design fidelity.
- **Speed and Scale:** Slash design-to-prototype time, even for large-scale parts.
- **PolyJet and GrabCAD Print Pro:** Unlock new levels of personalization and customization.
- **Durability and Precision:** Design prototypes with confidence, knowing they are built to last, and perform on par with industry standards.





SLA

Stereolithography

Unlock a new realm of prototyping precision with Stereolithography (SLA) technology. Used extensively for both concept models and functional prototypes, SLA is instrumental in evolving designs from initial ideas to production-ready models. Our Neo® SLA 3D printer is the choice of professionals in high-stake industries like Formula 1, automotive and service bureaus, known for its reliable operation and exceptional part accuracy.

Outstanding Accuracy, Surface Quality and Detail

The Neo® SLA 3D printer stands out for its ability to drastically reduce finishing times by up to half, thanks to an optimized design harnessing the latest technology for its laser and scanners. This results in parts with excellent layer alignment, dimensional accuracy, and sharp feature resolution, ensuring prototypes are not just precise but also have superior sidewall quality and detail.

Efficient Large-Scale Printing

The Neo800, our largest 3D printer, enables printing of either expansive prototypes or multiple smaller parts with exceptional detail in one go. Its spacious 31.5 x 31.5 x 23.6 " platform facilitates the creation of large parts without the need for bonding sections. Achieve precise part production across the entire platform, ensuring dimensional accuracy from corner to corner and minimizing variability between parts, thereby enhancing reliability.

Engineered for Excellence

Every aspect of the Neo® SLA 3D printer has been meticulously developed with the end-user in mind. Constructed with the finest components for improved dependability and equipped with user-centric software updates, the Neo® reflects our commitment to delivering an exceptional prototyping tool that meets and surpasses the needs of engineers in various fields.

The key benefits of Stereolithography technology:

- **Cost-Effective Quality:** Attain precise, high-quality finishes, reducing the need for as much post processing.
- **High Uptime and Yield:** Dependable operation and peak productivity.
- **Versatile Applications:** Open material platform, compatible with any 355nm hybrid resin
- **Intuitive Software:** Robust functionality, including part traceability and reporting.
- **Exceptional Support:** Customer service that includes remote diagnostics and on-site assistance.





Simplify your Workflow

GrabCAD Print™

One of the key benefits of GrabCAD Print is its user-friendly interface. The software is easy to navigate, even for beginners, and provides a streamlined workflow that allows designers to quickly create and modify 3D models for printing. Furthermore, GrabCAD Print allows for collaboration between team members, making it easy to share designs, collaborate on projects, and provide feedback.

GrabCAD Print supports a variety of file formats, including STL, OBJ, and STEP, allowing designers to work with a wide range of 3D modeling software. Plus, the software is cloud-based, which means that designs can be accessed from anywhere and on any device with an internet connection.

GrabCAD Print provides a range of material options, allowing designers to choose the right material for their project while automatically generating support structures for 3D models, making it easier to print complex designs.

GrabCAD Print Pro™

The new GrabCAD Print Pro for PolyJet and FDM helps reduce manpower and costs by taking automated processes, traceability and per-part estimations a step further, so you can take your prototypes from “Great to WOW!”

With PolyJet, the Smart Insert™ feature allows for the integration of functional components or decorative elements mid-print, adding a new level of functionality to your prototypes. Print-on-Tray capabilities ensure immaculate surface finishes such as glass or brushed textures, while Print-on-Object enables direct printing onto items like phone cases for unparalleled customization.

On the FDM side, GrabCAD Print Pro ensures precise part accuracy essential for critical projects. It offers per-part time estimation for multiple models, enhancing planning efficiency. The template function streamlines your workflow by saving print settings, and labeling features integrate seamlessly into job preparation.





3D Printing Materials

3D printing technology has come a long way and with the expansion of material choices comes greater possibilities for product engineers. Select from a wide range of thermoplastic polymers, photopolymers, and composites depending on your desired application. We've validated our materials, whether developed in-house or from our materials partners, to work seamlessly with our printer technology for unparalleled versatility.

Technology Highlights

FDM

- Wide range of available thermoplastics – engineering grade to high-performance
- Includes carbon-filled materials for high-strength applications

PolyJet

- Thermoset resins with many color options and combinations for new digital materials
- End to end solution for full color, multi material printing with over 600K color combinations including transparent, opaque, rigid and flexible

P3™ DLP

- A portfolio of production-grade materials developed by industry leaders in polymer technology.

SLA

- Assorted range of resins offering suitability for diverse set of applications
- Resins with superior clarity, structural integrity, and thermal resistance

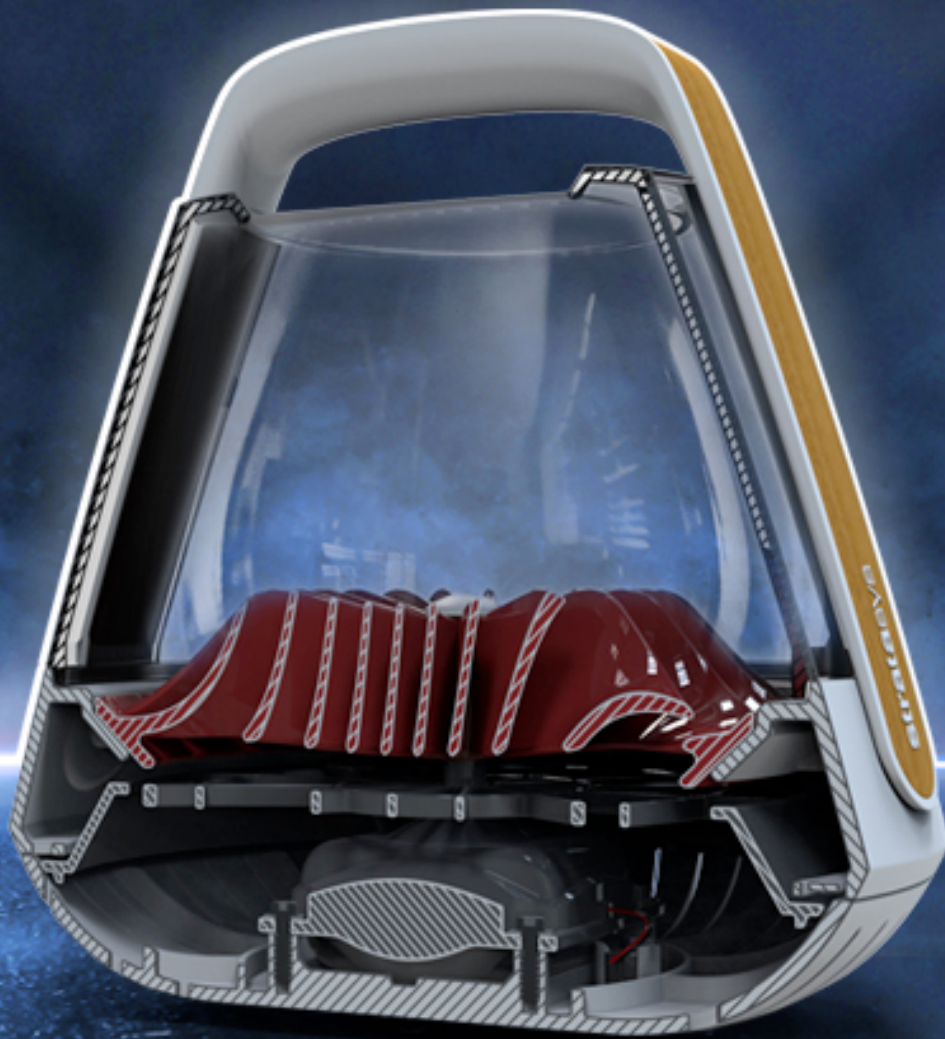




Meet the Intricate Challenges of Design Head on

Bring unmatched accuracy to your fingertips, and overcome the barriers of complexity with 3D printing for advanced rapid prototyping.

Step away from the constraints of traditional methods. In 3D printing you'll find the freedom to refine your designs with the finest details, speed up your prototyping process, and cut down on costs, all while ensuring that every aspect of your vision is realized to its full potential. to....Step away from the constraints of traditional methods to find new freedom in refining your designs with the finest details. Speed up your prototyping process, and cut down on costs, all while ensuring that every aspect of your vision is realized to its full potential.





Appendix 1

Primary Advanced Rapid Prototyping Capabilities

Full-Color Multi-Material 3D Printing: Transition from standard to advanced level with over 600K color combinations and Pantone-validated palettes. (PolyJet x GrabCAD Print Pro)

Material Engineering: Our capability to blend rigid and flexible materials creates a wide range of digital materials with varying shore values, pushing beyond traditional prototyping. (FDM, PolyJet and P3)

Print-on-Tray Feature: Print directly on tray to achieve a perfect surface finish on glass, carbon fiber, and more, advancing beyond the norm in 3D printing. (PolyJet x GrabCAD Print Pro)

Smart Insert™ Feature: Pause and resume print to allow insertion of elements during print such as electronic chips, fastening elements, in-print decoration and more. (PolyJet x GrabCAD Print Pro)

High-Speed Printing Mode: Double printing speed at DM2 (2-material configuration), surpassing traditional 3D printing speeds. (PolyJet x GrabCAD Print Pro)

Large Parts Printing: Offers high accuracy on an open platform for large parts, pushing the boundaries of regular prototyping. (Stereolithography and FDM)

High-Performance Industrial Grade Prototyping: Ensures durable and high-quality prototypes, advancing beyond traditional rapid prototyping. (P3, FDM)

Accuracy and Precision: Print parts with quality similar to injection molded parts and feature details as accurate and small as a human hair thickness. (P3)

Air-as-Material: Utilize air as a material to finesse finished surfaces or to accurately model weight and cavities for integrations such as embedded electronics.

Support-as-Material: Take control of your design with the ability to use support structures as model material, enhancing textures and tooling applications.

Liquid-as-Material: Push the envelope further with microfluidic structure printing, perfect for high-precision applications.

Print-on-Object: Expand your creative canvas by printing directly onto objects like phone cases or cosmetic packaging for a truly customized experience.

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