



# 3D printing: A world of possibilities

- A guide to Stratasys products and technologies

The evolution of excellence

Stratasys is the world's premier  
3D-printing company, supplying  
best-in-class additive  
manufacturing technologies  
that continue to define our era.

They have helped to shape the cars we drive, the aeroplanes we travel in, the surgical techniques employed in our hospitals and even the shoes we run in.

SYS Systems, part of the Carfulan Group and a UK platinum partner for Stratasys, is positioned at the forefront of the 3D printing movement and supplies, installs and supports the full Stratasys range.

Our team of independent experts are passionate about their mission to help businesses of all sizes make better products more efficiently, all the while pushing the boundaries of innovation.

While others have come and gone, SYS Systems has stood the test of time. A service-focused approach, endorsed by an accreditation to ISO 9001:2015, means the customer always comes first.

With rapid production capabilities backed up by intelligent software, a vast array of material and colour options and an appreciation for all budgets, bespoke Stratasys systems are facilitating the on-site production of ever-more realistic models, manufacturing aids and end-use parts.

Today, our tailored sales and service packages are ensuring that professional 3D printing is more accessible than ever before.

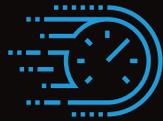
It's no longer a question of if our technologies could improve the way you work - it's a question of by how much.

**The only limit is your imagination.**

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# Why choose 3D printing?



## Speed

Replace expensive and slow traditional machining methods with technology that delivers top-quality models and components in a matter of hours, at the click of a button.



## Efficiency

Iterate quicker, slash design cycles and reduce lead times – 3D printing enables products to be brought to market faster, maximising profitability and providing a swift return on investment.



## Ease of use

CAD files are seamlessly turned into models with GrabCAD, an intuitive software solution that allows for simplified preparing, scheduling, monitoring and reporting of print jobs.



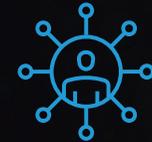
## Accuracy

World-leading Stratasys 3D printers deliver high-quality, reliable and repeatable prints time and time again, reducing waste and streamlining performance.



## Affordability

Get flexible finance options on everything from desktop to industrial-sized systems, and expand your capabilities with our trade in and upgrade scheme.



## Versatility

From flight-ready aerospace components to patient-specific surgical guides, 3D printing is delivering innovative solutions across every industry imaginable.

Ask us about a free sample part – and we can even print one of yours

Speak to us about our finance and trade-in options (see pages 34 & 35)



### **Material options**

For ultra-realistic prototypes, robust manufacturing aids or superior end-use parts in a range of colours, Stratasys materials meet the toughest certification standards and succeed in every application

See our full list of materials on pages 13-15 and 24-26

Product range

# PolyJet Technology

**PolyJet 3D printing works in a similar way to the inkjet technique, but instead of jetting drops of ink onto paper it jets layers of curable liquid photopolymer onto a tray.**

These fine layers help to achieve exceptional detail and surface smoothness, turning out builds of final-product standard.

PolyJet can produce specialised moulds, prototypes, medical models, jigs, fixtures and other manufacturing tools, as well as incorporate the widest variety of vivid colours and materials into a single print for unparalleled efficiency and versatility in product development.



“

Now, in-house, we are able to create finely detailed physical objects directly from digital data that are virtually identical to the real thing. It has helped to slash our design-to-production times and is well on its way to giving us an even quicker return on investment than we anticipated.”

- Mick Gray, Eschmann

# Objet30 Pro

## KEY FEATURES

- Small footprint
- Professional performance
- Advanced design possibilities

With up to eight material options, the Objet30 combines the accuracy and versatility of a professional printer with the small footprint of a desktop system, paving the way for advanced 3D-printing possibilities.

Fast, easy and reliable – top-quality prototypes and models with intricate features can be produced right in the heart of the office environment.

The Objet30 Pro has the industry's best print resolution for yielding smooth surfaces and precision on even the smallest moving parts, with the ability to create thin walls.

A roomy tray size allows for the printing of a variety of consumer goods, electronics, medical devices and more.

Thanks to the Vero family of materials, users can simulate dimensionally stable and highly detailed plastics that closely resemble end products.

Objet Studio software automatically transforms STL and SLC files from any 3D CAD application into 3D modelling slices, including both build material and support.

That means you can quickly edit trays, assign materials, manage job queues and perform routine system maintenance with click-and-build wizards.

For fine details, advanced testing or moveable prototypes, the Objet30 Pro's specialised materials include:

- Transparent (VeroClear), a nearly colourless material featuring great dimensional stability, fine-detail model building, and simulation of transparent thermoplastic such as PMMA
- High Temperature (RGD525) for advanced functional testing, hot air and water flow, and static applications
- Simulated Polypropylene (Rigur450 and Durus White), materials offering toughness and durability for smooth prototypes with living hinges, flexible closures and snap-fit parts



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy	Build resolution (dpi)
82.5 x 62 x 59cm / 106kg	300 x 200 x 150mm	8	28 microns (0.0011in); 16 microns (0.0006in) for VeroClear material	Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – $\pm 100\mu$ ; above 100mm – $\pm 200\mu$ or $\pm 0.06\%$ of part length, whichever is greater	X-axis 600 Y-axis 600 Z-axis 900



Compatible materials: VeroClear, VeroWhitePlus, VeroBlackPlus, VeroBlue, VeroGray, Durus, Rigur and High Temperature

# Objet30 Prime

## KEY FEATURES

- Small footprint
- Wide material range
- High-speed printing

The Objet30 Prime offers 12 material options, the largest range available in a desktop format.

From the comfort of the office you can accurately create flexible or rigid models, choosing either high-quality, high-speed or draft print mode - a fast and economical technology exclusive to the Prime.

Whether it's for medical implements requiring prolonged skin contact (such as ear forms or surgical guides) or prototype gaskets, plugs and seals, the quiet operation and small footprint of the Objet30 Prime make it a welcome addition to a productive office.

Objet Studio software automatically transforms STL and SLC files from any 3D CAD application into 3D modelling slices, including both build material and support.

That means you can quickly edit trays, assign materials, manage job queues and perform routine system maintenance with click-and-build wizards.

Its specialised materials include:

- Rigid Opaque (Vero family) in a variety of colours including white, grey, blue and black
- Transparent (RGD720 and VeroClear) for clear and tinted products with great dimensional stability and surface smoothness
- High Temperature (RGD525) for advanced functional testing, hot air and water flow, and static applications
- Simulated Polypropylene materials (Rigur450 and Durus White) with toughness and durability for smooth prototypes with living hinges, flexible closures and snap-fit parts
- Rubber-like materials (TangoGray or TangoBlack) for a range of applications requiring non-slip or soft surfaces
- Bio-compatible (MED610) for medical-device prototyping



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy	Build resolution (dpi)
82.5 x 62 x 59cm / 106kg	300 x 200 x 150mm	12	16 microns; 28 microns for Tango materials	Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – $\pm 100\mu$ ; above 100mm – $\pm 200\mu$ or $\pm 0.06\%$ of part length, whichever is greater	X-axis 600 Y-axis 600 Z-axis 1600



Compatible materials: VeroWhitePlus, VeroBlackPlus, VeroBlue, VeroGray, VeroClear, RGD720 (transparent), TangoGray, TangoBlack, Durus, Rigur, High Temperature, MED610

# Objet260 Connex3

## KEY FEATURES

- Multi-material capability
- Triple-jetting technology
- Precision soluble support

Whatever your specific application needs, the brilliantly coloured multi-material capabilities of the Connex3 give unmatched design freedom and will inspire a world of possibilities.

Advanced triple-jetting technology facilitates the creation of anything from vivid opaque to stained glass-like translucent models, with hundreds of blended hue variations in between.

Material properties range from rubber to rigid, neutral to vibrant, standard to bio-compatible and durable to high temperature, with incredibly impressive detail, repeatability and unerring accuracy.

PolyJet's signature precision plus soluble support allows users to be more versatile in prototype creation as post-processing is minimal. It sharpens communication between design and engineering teams, fuels collaboration and shortens product development cycles.

A simple workflow between CAD application and the Connex3 lets you produce smooth three-colour gradients and vivid multi-colour models based on the information in the original CAD file.

Create complex components and assemblies in a combination of materials for specific industries, such as tough single-material options that withstand the stress of flexible closures and snap-fit parts, or complex and stable medical devices.

A 16-micron resolution layer means that every last detail can be seen, touched, tested and perfected, helping to take business operations to a whole new level.

GrabCAD Print software simplifies the traditional 3D print preparation workflow and provides intelligence around printer usage, so quality models can be delivered faster.

“

Compared with the old method of producing parts, I'd say 3D printing has saved us three days of labour per machine, factoring in the production problems that have now been removed. We're pushing real 3D-printing applications as far as we can for the benefit of our customers and it's an ever-growing area.”

– Chris Freshman, Torus Group



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy	Build resolution (dpi)
870 x 1200 x 735mm / 264kg; Material cabinet – 76kg	260 x 260 x 200mm	82	16 microns (horizontal build layers)	Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – ±100µ; above 100mm – ±200µ	X-axis 600 Y-axis 600 Z-axis 1600



**Compatible materials:** VeroWhitePlus, VeroBlackPlus, VeroBlue, VeroGray, VeroCyan, VeroMagenta, VeroYellow, Vero PureWhite, VeroMagentaV, VeroYellowV, VeroClear, RGD720 (transparent), TangoGray, TangoBlack, TangoPlus, TangoBlackPlus, Agilus30 (black and transparent), Rigur, Durus, Digital ABS Plus (ivory and green), High Temperature, Biocompatible.

# Objet350 and Objet500 Connex3

## KEY FEATURES

- Multi-colour, multi-material
- Ultimate part realism
- Minimal post-processing

**The first system in the world to simultaneously 3D-print multiple colours and materials, the Connex3 continues to be a leader in its field.**

It allows users to create models with the look, feel and properties of real production parts, as well as quickly and easily print off custom jigs, assembly fixtures and tooling with ultra-fine accuracy and without the need for assembly.

Multiple materials can be loaded at one time, enabling the printing of parts that require a range of mechanical, optical or thermal properties like non-slip grips, transparent windows or flexible hinges.

Fast, flexible colours can be printed directly from the information in an original CAD file, from smooth three-colour gradients and vivid multi-colour textures to sleek transparencies or milky opaque colours.

Intuitive GrabCAD software makes achieving high-quality builds simple, with no need for post-processing.

Through one diverse solution you are guaranteed agility, aesthetics and efficiency at every stage of product development, giving your business a competitive advantage.

“

3D printing allows you to have a better quality design process. We can print a prototype of a goggle in a day, take it to the pool and learn a whole host of insights which the next day we can then incorporate into the product's design. It's opened up new avenues and opportunities.”

– Chris Johnson, Speedo



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy	Build resolution (dpi)
1400 x 1260 x 1100mm / 430kg; Material cabinet – 76kg	<b>Objet350:</b> 350 x 350 x 200mm  <b>Objet500:</b> 500 x 400 x 200mm	82	16 microns (horizontal build layers)	Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – $\pm 100\mu$ ; above 100mm – $\pm 200\mu$ or $\pm 0.06\%$ of part length, whichever is greater	X-axis 600 Y-axis 600 Z-axis 1600



**Compatible materials:** VeroWhitePlus, VeroBlackPlus, VeroBlue, VeroGray, VeroCyan, VeroMagenta, VeroYellow, Vero PureWhite, VeroMagentaV, VeroYellowV, VeroClear, RGD720 (transparent), TangoGray, TangoBlack, TangoPlus, TangoBlackPlus, Agilus30 (black and transparent), Rigur, Durus, Digital ABS Plus (ivory and green), High Temperature, Biocompatible.

# J55

**Almost 500,000 colours, Pantone validation, texture realism and incredible quality - the J55 is about creation without compromise.**

An affordable, office-friendly option for maximum productivity, it brings full-colour 3D-printing in multiple materials and finishes to the fingertips of your design team.

Featuring the best footprint-to-tray ratio on the market, this advanced system allows users to make the maximum number of top-class concept or high-fidelity models in one print, quickly and effortlessly. By simulating finishes like fabric, wood, glass and leather, ideas can be brought to life with ease and placed in the hands of stakeholders for ergonomic testing in a matter of hours.

Within a compact design sits a five-material channel and rotating platform with fixed print head for outstanding surface finish and print accuracy, while ProAero filtration technology guarantees odour-free, low power and almost silent operation.

Benefit from streamlined design-to-print workflows powered by GrabCAD Print software, which allows users to import designs using native CAD or 3MF file formats, and remotely monitor and manage print jobs from outside the office.

Forget time-consuming, expensive and frustrating traditional manufacturing methods. Whatever your need, with the J55 you can achieve the amazing every day.

## KEY FEATURES

- Office friendly
- Pantone verified colours
- Streamlined production



Size and weight	Build envelope	Materials available	Build modes	Layer thickness	Accuracy
651 x 661 x 1551mm / 228kg	140 x 200 x 190mm	7	High Quality Speed (HQS) – 18.75µm	18 microns / 0.0007 in (horizontal build layers)	<p>Typical deviation from STL dimensions, for 1 Sigma (67%) of models printed with rigid materials, based on size: under 100mm – ±150µ; above 100mm – ±0.15% of part length.</p> <p>Deviation from STL dimensions, for 2 Sigma (95%) of models printed with rigid materials, based on size: under 100mm – ±180µ; above 100mm – ±0.2% of part length.</p>



**Compatible materials:** VeroCyanV, VeroMagenta, VeroYellowV, VeroPureWhite, VeroBlackPlus, VeroClear, DraftGrey

# J8 Series

## KEY FEATURES

- True full-colour capability
- Seven-material capacity
- Super high speed

The J8 Series provides true full-colour capability with texture mapping and colour gradients, enabling users to create prototypes that look, feel and operate like finished products.

With an astonishing 500,000-plus available colours and a seven-material capacity, even the most imaginative ideas can be brought to life with the minimum of fuss, without sacrificing time for complexity or assembly. Simply load in the preferred resins and avoid down time associated with changeovers.

Using high-performance materials - from rigid to flexible, opaque to transparent - and with minimal post-processing requirements, the product development process can move along at high speed.

The J826, J835 and J850 are Pantone validated. From a single click in GrabCAD Print software, brands and manufacturers are now able to define, communicate and control colour from concept to realisation, saving hours over traditional paint or iterative colour-matching processes.

Multiple print modes let users adjust the speed and quality of a print to meet their specific needs. Super High Speed mode with DraftGrey material delivers the fastest creation of concept models, while additional modes support multiple materials and higher print resolutions.

GrabCAD Voxel Print software, meanwhile, allows users to manipulate microscopic voxels – tiny units of graphic information that define points in three-dimensional space – to achieve effects and properties that have never been possible before.



Size and weight	Build envelope	Materials available	Build modes	Layer thickness	Accuracy
<p><b>J826:</b> 820 x 1310 x 665 mm / 234kg</p> <p><b>J835/J850:</b> 1400 x 1260 x 1100mm / 430kg</p>	<p><b>J826:</b> 255 x 252 x 200mm</p> <p><b>J835:</b> 350 x 350 x 200mm</p> <p><b>J850:</b> 490 x 390 x 200mm</p>	84	<p>High Quality: up to 7 base resins, 14-micron (0.00055 in) resolution</p> <p>High Mix: up to 7 base resins, 27-micron (0.001 in) resolution</p> <p>High Speed: up to 3 base resins, 27-micron (0.001 in) resolution</p> <p>Super High Speed: 1 base resin, 55-micron (0.002 in) resolution</p>	<p>14 microns / 0.00055in (horizontal build layers).</p> <p>55 microns (0.002in) in Super High Speed mode</p>	<p><b>For J826:</b> Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – ±100µ; above 100mm – ±200µ</p> <p><b>For J835 and J850:</b> Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100mm – ±100µ; above 100mm – ±200µ or ± 0.06% of part length, whichever is greater</p>



**Compatible materials:** VeroPureWhite, VeroBlackPlus, VeroBlue, VeroGray, VeroCyan, VeroMagenta, VeroYellow, Vero Vivid range, VeroClear, RGD720 (transparent), VeroUltraClear, TangoPlus, TangoBlackPlus, Agilus30 (black, white and transparent), Digital ABS Plus (ivory and green), DraftGrey and VeroFlex range.

## Materials

Hard-wearing, heat-resistant, rigid, flexible, transparent or multi-coloured - we not only supply the widest range of 3D-printing materials on the planet, but can help you **get the best out of them.**

From clear, rubber-like and bio-compatible photopolymers to tough high-performance thermoplastics, Stratasys materials enable you to produce the highest-quality parts to meet the demands of every application.

By opening the door to fast, affordable and super-lifelike functional prototyping and dynamic production techniques, the power is placed firmly in the hands of designers and engineers at every stage of development.



# PolyJet Photopolymers

## Biocompatible:

**Vero MED70, Vero MED90**

High dimensional stability and colourless transparency

Supports a range of medical applications, eg hearing aids

Suitable for prolonged skin contact and short-term mucosal-membrane contact

Five medical approvals around cytotoxicity, genotoxicity, delayed type hypersensitivity, irritation and USP plastic class VI

## Digital materials:

Wide range of flexibility, from Shore A 27 to Shore A 95

Creative freedom thanks to diverse physical properties, colours and tones

Rigid material options, from simulated standard plastics to tough and temperature resistant

Vibrant colours (500,000-plus on J850)

Create a single model with up to 82 distinct material properties

## Digital ABS:

Simulates ABS plastics by combining strength with temperature resistance

Creates realistic, precise and tough models

High-impact strength and a superior finish

Ideal for functional prototypes, manufacturing tools, moulds, snap-fits, casings, electrical parts and engine parts and covers

Digital ABS2 Plus offers enhanced dimensional stability for thermal functional testing

## High Temperature:

**RGD525**

Highest heat resistance of any PolyJet standalone material and excellent dimensional stability

Heat deflection temperature of 80°C after thermal treatment

Ideal for thermal testing of static parts, eg plumbing fixtures and household appliances

Applications include jigs and fixtures, exhibition modelling under strong lighting and hot air/water testing

Combines with PolyJet rubber-like materials to produce varying Shore A values, grey shades and high temperature parts with overmoulding



# PolyJet Photopolymers



## Transparent:

**VeroClear, RGD720,  
VeroUltraClear**

Print clear and tinted parts, visualise placement of internal features

Excellent stability and smoothness

Ideal for form and fit testing of see-through models, eg glass consumer products, eyewear, light covers, medical devices and visualisation of liquid flow

Combine with colour materials for stunning transparent shades

## Simulated Polypropylene:

**Durus White, Rigur**

Simulates the appearance and functionality of polypropylene

Tough and flexible

Ideal for prototyping containers, packaging, flexible snap-fit components, living hinges, toys, battery cases, lab equipment and automotive parts

High impact resilience and impressive elongation at break

## **VeroFlex/VeroFlex Vivid:**

Available in cyan, magenta and yellow

Wide range of colour blends and textures, from opaque to transparent

Unique combination of stiffness and flexibility

Ideal for all prototyping phases of eyewear design and manufacture, from design verification to performance testing

Features can help to dramatically shorten product development time

## **Rigid:**

**VeroPureWhite, VeroGray, VeroBlackPlus, VeroWhitePlus, VeroYellow, VeroCyan, VeroMagenta, VeroMagentaV, VeroYellowV, VeroCyanV, VeroBlue, DraftGrey**

Brilliant colour options and blends for unprecedented design freedom

Provides excellent detail visualisation and dimensional stability

Combines with rubber-like materials for overmoulding, soft-touch handles and more

Blends with other photopolymers to vary hardness, flexibility, translucency or heat resistance

Ideal for reliable form and function testing, moving and assembled parts, electronic components, surgical models, manufacturing tooling and silicone moulding

## **Rubber-like:**

**TangoBlack, TangoGray, TangoBlackPlus, TangoPlus, Agilus30 Black, Agilus30 White, Agilus30 Clear**

Offers elastomer qualities such as tear resistance and tensile strength for functional testing and verification

Combine with rigid materials for a variety of Shore A values, from Shore A 27 to Shore A 95

Ideal for overmouldings and soft-touch coatings in applications such as grips, gaskets, handles, knobs, pulls, seals, hoses and footwear

Verify prototypes that require shock absorption, vibration damping or non-slip surface characteristics

Blend Tango with other photopolymers for different hardness, elongation and tear resistance levels

## **Dental:**

**MED610, VeroGlaze MED620, MED625FLX, VeroDent MED670, VeroDentPlus MED690**

Superior accuracy and dimensional stability

Suitable for a range of appliances and functional models for dentistry/ orthodontics, eg surgical guides, crown and bridge work

Prints look and feel like real teeth and gums

# A better way of working

**Infrequent need, a lack of time, limited knowledge - there are many reasons that some businesses favour using a bureau over in-house 3D printing.**

However, thanks to so many recent major advancements in the technology, we guarantee there's a better way.

In addition to the immediate time and cost savings of removing the outsourcing process, Stratasys systems employ versatile and intuitive design-to-print software to create low-cost parts in an ever-growing range of high-class materials, with ultimate accuracy and reliability.

No major training requirements, a streamlined design function and improved models on demand –an on-site machine is the fastest, most efficient and most cost-effective route to get your products to market.

“

With 3D printing, we can play with textures and transparency, as well as blending a wide gamut of colours to achieve an incredible result, quickly and cost-effectively. This arms us to not only dramatically reduce our turnaround time, but helps improve communication with the designers, enabling us to achieve the best product possible. ”

– Luca Bordin, Safilo

# Rapid prototyping: **Total design freedom**

Freed from the time and cost constraints of traditional machining methods, designers and producers are 3D-printing stunningly authentic concept models.

Using advanced materials so good, so varied and so compatible even in a single build, these lifelike creations are ready to test, hone and perfect before you move to production with complete confidence.

With the power to produce more low-cost design iterations quickly and in-house, premium-quality final products can reach the marketplace faster and data can remain confidential until they do.

Rapid prototyping technology not only suits today's most innovative manufacturers, but – thanks to our partnerships with schools, colleges and universities all around the UK - shapes the industry leaders of tomorrow.

“

Customers can't believe prototypes are coming out with full colours, full textures, full gradient – it's the game changer.”

– Michael Librus, Synergy

Product range

# FDM Technology

**Fused deposition modelling (FDM) printing builds parts layer by layer from the bottom up, by heating and depositing thermoplastic filament.**

It is a popular technique among modern manufacturers who are seeking viable alternatives to metal production, for example, where fabrication is extremely time-consuming, tooling is expensive and achieving complex shapes is difficult.

FDM uses engineering-grade thermoplastics to create accurate, repeatable, environmentally stable, lightweight but high-strength shapes faster than ever before, reducing waste and energy usage in the process.

Prints are tough enough to be used as advanced conceptual models, functional prototypes, manufacturing tools and production parts.



# F-Series

# F170, F270 and F370

## KEY FEATURES

- Office friendly
- Precision performance
- Industrial-grade printing

**Harnessing powerful FDM technology in an office-friendly design, the Stratasys F-Series is the world's most reliable range of industrial-grade 3D printers.**

Built on 30 years of research and development, the systems represent versatility, intelligence, quality and affordability, enabling users to produce everything from fast, low-cost concept models to durable and repeatable assemblies.

The F-Series works with up to five materials to produce complex parts with precision, while advanced features like Fast Draft mode and soluble support are designed to shorten lead times and keep users ahead of the competition.

Getting started is as easy as plug in and print, giving your entire team access to professional 3D printing, while fast and easy material swaps help to further maximise output.

It is possible to go directly from CAD file formats to print with GrabCAD Print software, making the F-Series the most efficient route to transform ideas into reality.

“

The F170 is a workhorse. We know when we place a print on, no matter how big it is or how many parts are on the bed, it will print 100 per cent of the time. It keeps the development cycle moving at speed.”

– Craig Lynn, Filament



Model	Size and weight	Build envelope	Materials available	Layer thickness	Accuracy
F170	1626 x 864 x 711mm / 227kg	254 x 254 x 254mm	4	0.127mm (0.005in); 0.178mm (0.007in); 0.254mm (0.010in); 0.330mm (0.013in)	Parts are produced with an accuracy of +/- .200mm (.008in), or +/- .002mm/mm (.002in/in), whichever is greater
F270	(as above)	305 x 254 x 305mm	4	(as above)	(as above)
F370	(as above)	355 x 254 x 355mm	5	(as above)	(as above)



Compatible materials: ABS-M30, ABS-ESD7, ASA, Diran 410MF07, PLA, TPU 92A, PC-ABS, Nylon 6.

# F120

**The F120 has been designed with simplicity in mind and provides designers, engineers and educators with the smoothest route yet to affordable, industrial-grade 3D printing.**

The desktop plug-and-print solution – also the quietest machine on the market - is suitable for design studios, offices or classroom environments and requires no prior expertise.

It is proven to work for 250 hours uninterrupted thanks to large filament boxes, printing up to three times faster than competing systems and therefore offering an extremely quick return on investment.

Supported by intuitive design-to-print GrabCAD software and a user-friendly touchscreen interface, the F120 meets all Stratasys standards in terms of accuracy, durability and low maintenance.

Streamlined workflows allow the concept iteration and verification process to become a much quicker one, meaning users can quickly adapt to the technology and begin producing high-quality parts on demand.

## KEY FEATURES

- Affordable and simple
- Industrial-grade printing
- Quietest machine on market



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy
889 x 870 x 721mm / 124kg	254 x 254 x 254mm	2	0.127mm (0.005in); 0.178mm (0.007in); 0.254mm (0.010in); 0.330mm (0.013in)	Parts are produced with an accuracy of +/- .200mm (.008in), or +/- .002mm/mm (.002in/in), whichever is greater



Compatible materials: VABS-M30, ASA.

# Fortus 380mc and Fortus 450mc

## KEY FEATURES

- User-friendly interface
- Engineering-grade thermoplastics
- High material capacity

Whether for jigs, fixtures, factory tooling, end-use parts or functional prototypes to withstand stringent testing, the Fortus range strikes the balance between print efficiency, detail and toughness.

These advanced systems feature a touch-screen interface for ease of use and can quickly turn out accurate, reliable and high-strength components using many of the engineering-grade thermoplastics typical in traditional manufacturing processes.

Complex, high-requirement part production means hardware, circuitry and other materials can be embedded into parts easily, with minimal down time for changeover, while high-capacity material options make for impressive unattended build times.

As Fortus machines emit no noxious fumes, chemicals or waste, they can be installed anywhere and get to work immediately, their easy-to-replace build trays and loading options requiring no major training requirements.

In addition to the eight high-performance thermoplastics available on the Fortus 380mc, the Fortus 450mc offers a bigger build tray and uses the incredibly tough Nylon 12CF (carbon fiber) and ULTEM resins, for specialised industries such as medical, aerospace, research and defence.

GrabCAD Print software reads and understands CAD files natively to ensure agility and complete freedom during design.

“

The ability to produce in-house has put us back in control of prioritising production to suit the demands of the customer program. Fixtures that have cost us in excess of £2,000 in the past can now be made for a couple of hundred pounds. Importantly, the machine's user interface and offline software is easy to use.”

– James Stuart-Young, Moog Aircraft Group



Model	Size and weight	Build envelope	Materials available	Layer thickness	Accuracy
Fortus 380mc	130 x 90 x 198cm / 601kg	355 x 305 x 305mm	8	0.127mm (0.005in); 0.178mm (0.007in); 0.254mm (0.010in); 0.330mm (0.013in)	Parts are produced within an accuracy of ± .127mm (± .005in) or ± .0015mm/mm (± .001 in/in), whichever is greater
Fortus 450mc	(as above)	406 x 355 x 406mm	12	(as above)	(as above)



Compatible materials: ABS-ESD7, ABS-M30, ABS-M30i, Antero 800NA, ASA, Nylon 12, Nylon 12 Carbon Fiber, PC, PC-ABS, PC-ISO, ULTEM 9085, ULTEM 1010, ST-130.

# Fortus 380mc Carbon Fiber Edition

## KEY FEATURES

- High strength end-use parts/tooling
- High-speed performance
- Ultimate reliability

The Fortus 380mc Carbon Fiber Edition guarantees accurate, reliable, optimum-strength parts using ASA and Nylon 12 Carbon Fiber, a material boasting a higher stiffness-to-weight ratio than any of its rivals.

Incredibly light but tough, it is an engineering-grade thermoplastic that gives unparalleled strength for dependable functional prototyping, end-use parts and rugged tooling, often replacing low-volume metal parts in the toughest applications.

Stratasys carbon fiber contains 35 per cent chopped carbon fibres, compared with the 15 per cent figure of its nearest competitor, and achieves 30 to 50 per cent higher density on finished builds.

Those traits make it a popular choice for UAV components and tooling in aerospace, for example, as well as for bumpers, fixtures and brackets in automotive and transportation, in addition to sporting goods and general manufacturing aids.

In terms of printing speed, the Fortus 380 Carbon Fiber Edition is four to five times faster than anything else out there using carbon fiber – but that does not come at an inflated price or at the expense of quality.

An easily soluble support system allows users to create more complex geometries, with the support material adhering to the build tray - a far more reliable method than gluing parts to the bed, which can lead to peeling and movement.

“

Carbon-filled nylon is excellent for producing end-of-arm tooling because it's strong and durable but also lightweight, meaning the robots can run faster and we can maximise payload. 3D printing gives us greater design flexibility and complexity doesn't increase cost. It has become massively important to the way that we produce all of our jigs and fixtures.”

– Simon Grainger, Rutland Plastics



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy
130 x 90 x 198cm / 601kg	355 x 305 x 305mm	2	0.127mm (0.005in); 0.178mm (0.007in); 0.254mm (0.010in); 0.330mm (0.013in)	Parts are produced within an accuracy of $\pm .127\text{mm}$ ( $\pm .005\text{in}$ ) or $\pm .0015\text{mm/mm}$ ( $\pm .0015\text{ in/in}$ ), whichever is greater



Compatible materials: ASA, Nylon 12 Carbon Fiber.

# F900

**Designed to handle the most demanding manufacturing needs, the Stratasys F900 offers the largest build size of any FDM system and is tailored specifically for heavy industries.**

It uses a wide range of engineering-grade thermoplastics for applications that require high performance, biocompatibility, static dissipation or resistance to impact, heat, chemicals or UV radiation, allowing users to balance fine feature detail and fast build.

The F900 can create robust production parts, jigs, fixtures, factory tooling and functional prototypes, utilising an internal camera and GrabCAD print software for enhanced visualisation, streamlined workflows and easier job monitoring.

Dual material bays, high-capacity material options and the availability of an Acceleration Kit means production can be scaled up quickly.

Production phase optimisation with Insight Software allows design changes on the fly, while operators can revise production materials without delaying the overall production schedule.

The F900 Pro is an upgrade option to the F900, delivering superior material properties and the lowest part-to-part variance when using ULTEM 9085 resin. It employs hardware and process differentiators relative to standard F900 systems to enhance repeatability, part performance and yield.

“

The F900 can produce parts which are both large and highly detailed in a multitude of layouts and a multitude of materials, so when it comes to engineering especially it's the machine we focus on because we can offer a more bespoke and accurate material for a client's needs. It's ridiculously reliable.

– Jake Augur, Fluxaxis

”

## KEY FEATURES

- Largest FDM build size
- Engineering-grade thermoplastics
- High-capacity materials



Size and weight	Build envelope	Materials available	Layer thickness	Accuracy
2772 x 1683 x 2027mm / 2,869kg	914 x 610 x 914mm	14	0.127mm (0.005in); 0.178mm (0.007in); 0.254mm (0.010in); 0.330mm (0.013in); 0.508mm (0.020in)	Parts are produced within an accuracy of +/- .089mm or +/- .0015mm per mm (+/- .0035in or +/- .0015in per in), whichever is greater



**Compatible materials:** ABS-ESD7, ABS-M30, ABS-M30i, Antero 800NA, Antero 840CN03, ASA, PC, PC-ABS, PC-ISO, ULTEM 1010, ULTEM 9085, ST-130, Nylon 12, Nylon 6, Nylon 12 Carbon Fiber.

# FDM Thermoplastics

## ABS-ESD7:

Static dissipative properties for applications where a static charge could damage products, impair performance or cause an explosion

Ideal for electronic parts with circuit boards, as well as the transportation and industrial equipment industries

Widely used for functional prototypes of fuel storage and delivery products, cases, enclosures and packaging

## ABS-M30:

Strong and versatile – good for form, fit and functional applications

Good blend of mechanical and aesthetic properties

Lowest-cost material in the thermoplastics range

## ABS-M30i:

High strength and biocompatible – well suited to the medical, pharmaceutical and food packaging industries

Sterilisable using gamma radiation or ethylene oxide methods

Ideal for surgical planning models as well as functional prototyping, manufacturing tools, fixtures and end-use parts

## Antero 800NA:

PEKK-based thermoplastic – high strength and low wear

Impressive heat and chemical resistance

Low outgassing and high dimensional stability

Lighter alternative to aluminium and steel, ideal for aerospace applications

## Antero 840CN03:

PEKK-based electrostatic discharge (ESD) thermoplastic

Unprecedented strength, heat and chemical resistance

Low outgassing and consistent static dissipative properties

Lighter-weight alternative to metal, ideal for aerospace and high-demand applications

## ASA:

Best aesthetics of any FDM material

Exceptional UV stability – well-suited for functional prototyping of outdoor parts

Wide variety of colours, making it attractive for the design of consumer sporting goods, tools and automotive components/accessories

All-purpose solution

## Diran 410MF07:

Durable, nylon-based thermoplastic

Exceptional durability, toughness and resistance to hydrocarbon-based chemicals

Smooth, low-friction surface quality for non-marring factory floor tooling

## FDM Nylon 6:

Superior strength, durability and toughness

Clean finish and high break resistance

Ideal for manufacturing tools, prototypes and models that must be able to handle the rigours of a production environment



## FDM Nylon 12:

Toughest nylon in additive manufacturing

Combines superior elongation and anti-fatigue properties

Excellent for repetitive snap fits and press-fit inserts, as well as components requiring threaded inserts

Simple, clean process – no powders

## FDM Nylon 12 Carbon Fiber:

Carbon fibre-reinforced (35% chopped carbon fibres) for unparalleled flexural strength

Delivers incredibly light but tough parts

Highest stiffness-to-weight ratio available

Ideal for functional prototyping, end-use parts and rugged tooling, often replacing low-volume metal parts in industries like aerospace and automotive

## PC:

Industrial thermoplastic with superior mechanical properties

Accurate, durable and stable

High heat resistance for parts that can withstand functional testing

High tensile and flexural strength - ideal for demanding prototyping needs, tooling and fixtures

## PC-ABS:

Superior mechanical properties and heat resistance

Excellent feature definition and surface appeal

Hands-free support removal with soluble support

One of the most widely used industrial thermoplastics

## PC-ISO:

Biocompatible and high strength

Ideal for applications in the pharmaceutical, food packaging and medical industries

Sterilisable using gamma radiation or ethylene oxide sterilisation methods

Complies with ISO 10993 and USP Class VI standards

## PLA:

Fast and economical printing in 11 colour options

High tensile strength and stiffness ratio

Low melting point, meaning less heat and power are required to produce parts

Ideal for quick concept verification and keeping costs down

## PPSF/PPSU:

Mechanically superior material with high strength

Excellent heat and chemical resistance

Ideal for demanding applications in caustic and high-temperature environments

Impressive dimensional accuracy

## ST130:

Designed specifically for hollow composite parts

Fast, hands-free dissolution time

High heat and autoclave pressure resistance

# FDM Thermoplastics

## TPU 92A:

Elastomer material with Shore A value of 92

Flexible, durable and resilient – ideal for applications such as hoses, tubes, air ducts and vibration dampeners

Compatible with soluble support

Eliminates expensive and time-consuming moulding or casting methods

## ULTEM 1010:

High heat resistance, chemical resistance and tensile strength

Food safety and biocompatibility certification

Outstanding toughness and thermal stability

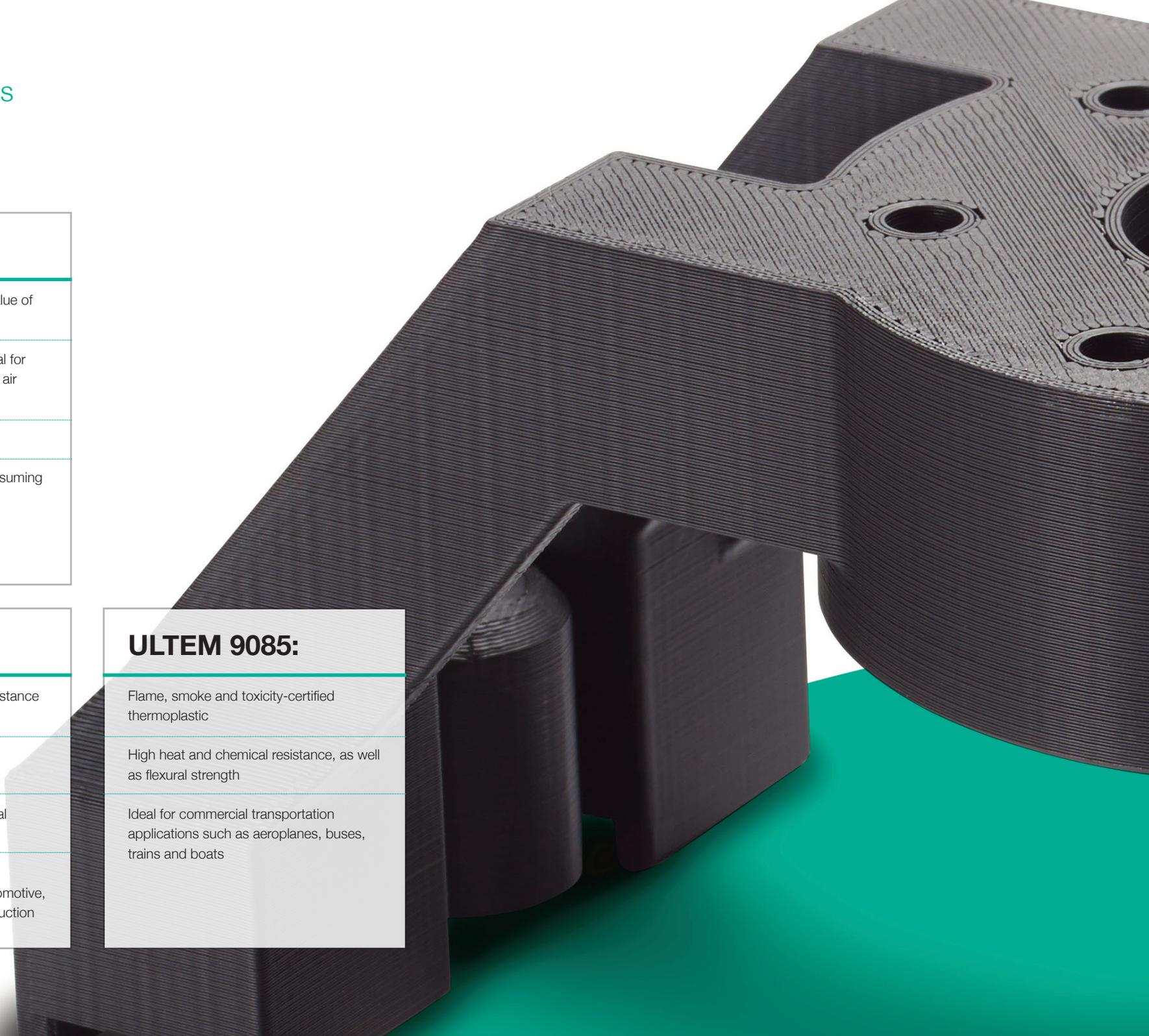
Good fit for advanced tooling and prototyping applications in the automotive, aerospace, medical and food production industries

## ULTEM 9085:

Flame, smoke and toxicity-certified thermoplastic

High heat and chemical resistance, as well as flexural strength

Ideal for commercial transportation applications such as aeroplanes, buses, trains and boats



# Think it, then make it

**At the heart of the additive manufacturing revolution are production systems capable of building customised, repeatable and intricate structures with the same engineering-grade and high-performance thermoplastics used in traditional processes.**

But there's one big difference: by eliminating the expense and inhibitions associated with machining, 3D printing has made it possible to do it in an accessible, timely and economical way.

This direct digital manufacturing approach means engineers are free to create and evolve low-volume parts with organic shapes and intricate geometries. Inventories are now digital files at your fingertips.

Bespoke end-use parts pioneered by Stratasys technology are delivering huge cost and efficiency savings for companies the world over by reducing scrap, saving on warehouse space and improving speed to market.

By allowing them to collaborate more effectively and respond more rapidly to client demand, businesses are gaining the edge over their rivals.

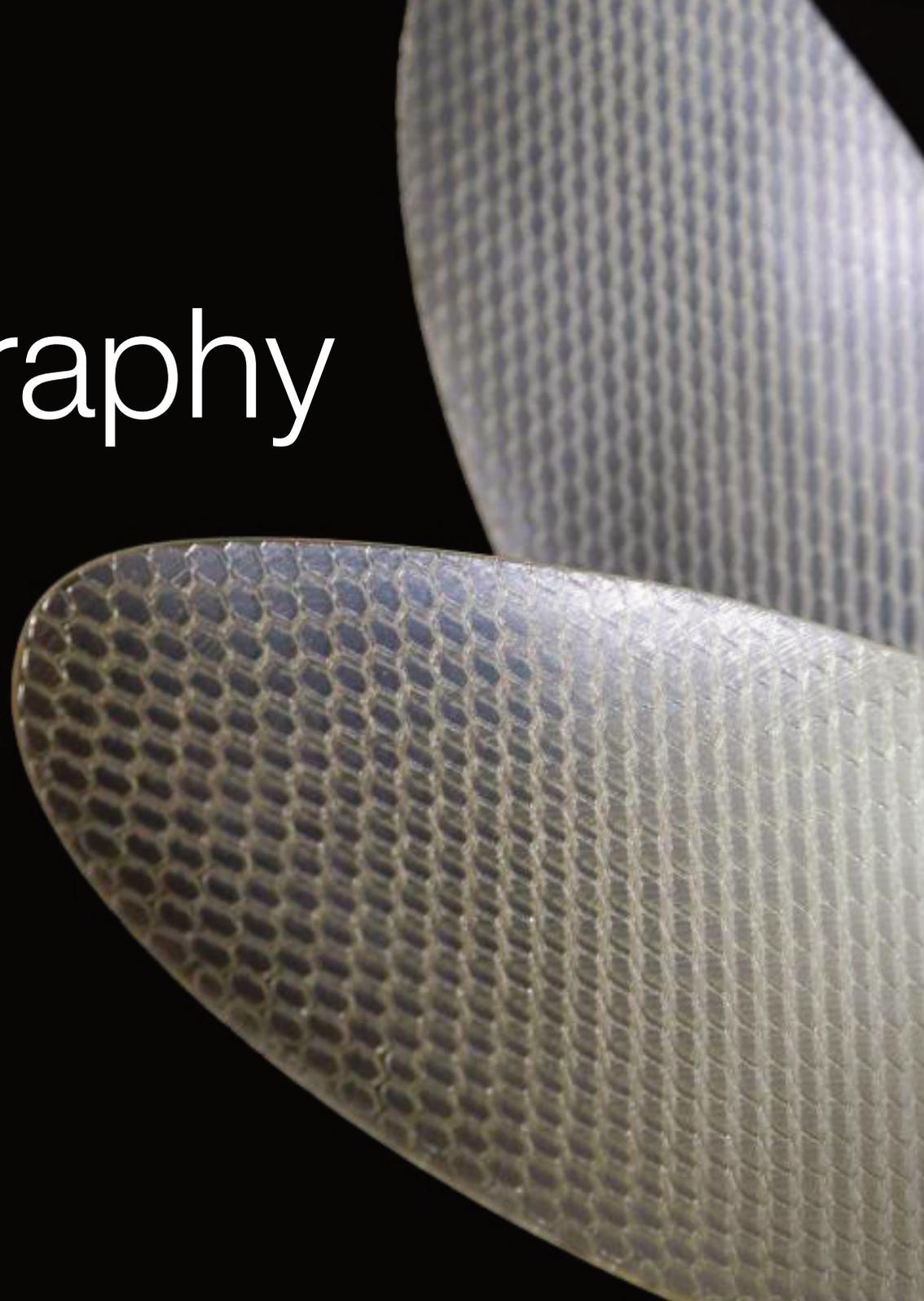
Product range

# Stereolithography Technology

**The SLA method creates models by selectively curing a polymer resin layer by layer using an ultraviolet (UV) laser beam, so that liquid plastics are turned into detailed solids.**

The technology has become popular for its ability to produce high-accuracy parts with fine features and smooth surface finish, often using versatile materials with isotropic and watertight properties.

A wide range of formulation configurations are available with SLA resins, while minimal post-processing time means parts can easily be sanded, polished and painted – ideal for accelerating innovation and supporting production across a plethora of industries.



# V650 Flex

## KEY FEATURES

- Large-scale capacity
- Advanced resins
- Unprecedented speed

**The V650 Flex provides the benefits of stereolithography (SLA) 3D printing in a configurable, large-scale system with twice the print capacity of its nearest rival.**

Open-source material capability removes the limitations normally associated with the SLA technique, so that users benefit from the flexibility of using any 355nm resin and can fine-tune print results for specific applications.

Supported by intuitive SolidView build preparation software, the V650 Flex features adjustable beam spot sizes and interchangeable vats for enhanced control, detail and output, while an uninterrupted power supply allows continued operation even during power outages.

Smaller footprint, reduced downtime and increased workflow – the V650 Flex is SLA reimaged.

A pre-verified range of resins has been honed specifically to maximise the productivity, accuracy, reliability and efficiency of the system:

- Somos Element - dimensionally stable, antimony-free resin with superior finish and low residual ash, designed specifically for investment casting patterns
- Somos NeXt - a tough, durable resin with the look, feel and performance of traditional thermoplastics
- Somos PerFORM - heat-tolerant, high-stiffness material with exceptional resolution for demanding applications such as tooling, housings and wind tunnel test models
- Somos Watershed XC11122 – a clear material offering unparalleled clarity and water resistance with ABS and PBT-like properties



Size and weight	Build envelope	Materials available	Maximum part weight	Beam diameter	Maximum part drawing speed	X/Y resolution
1400 x 1270 x 2210mm / 771kg	Up to 508 x 508 x 584mm	Open source	54.4kg	0.008 - 0.027in (203 - 686µm)	700 ips @ 0.030in (762µm) beam size; 150 ips @ 0.005in (127µm) beam size	0.0005in (2,000 dpi)



**Compatible materials:** Somos Element, Somos NeXt, Somos PerFORM, Somos Watershed XC 11122

# Tools without the tooling

**Ensuring quality, efficiency and worker safety, highly customised jigs and fixtures are used to position, hold, protect and organise components during manufacturing.**

3D printing has yielded a faster and more accurate method of producing them, transforming the traditional fabrication process and slashing lead times and costs.

Without the limitations of tool configuration, tools can be freely designed for optimal performance, adjusted quickly to suit changing need and created on demand.

The economical production of complex shapes in materials that improve efficiency and performance, provide high strength-to-weight ratio and are flame, smoke and toxicity compliant, for example, is now the norm.

## **A new age of manufacturing**

An increasing number of the most successful companies on the planet are advocates of 3D printing.

As they continue to employ more complex and bespoke applications than ever before, experienced users must position themselves at the cutting edge of the latest technological developments to remain ahead of the competition.

Working with SYS Systems means access to the very highest-quality thermoplastics available, offering full colour and multiple texture options.

Our aim is to help organisations achieve advanced manufacturing on a whole new level.



# Fulfil your potential

**Once a business has discovered the benefits of an in-house 3D printer, they tell us without fail that they would never again be without one.**

The next challenge is to help them reach their maximum potential by improving functionality and extending their capabilities – and that's what we do best.

Whether it's stronger and more temperature-resistant materials, an increased print tray volume, more consistent part quality or a faster build, best-in-class Stratasys technology supplied by SYS Systems turns good operations into truly great ones.

# GrabCAD

## Print

**Intuitive, easy to use and completely free to download with Stratasys, GrabCAD Print is the most complete 3D-printing software solution on the market.**

With the ability to read and understand CAD files natively, it allows users to get the 3D-printed parts they need quickly and easily by simplifying the preparation, scheduling, monitoring and reporting of jobs.

Smart default settings, tool tips and notifications make for a seamless printing process, while a cloud connection means the software can be accessed remotely from any browser on any device – ideal for keeping production moving while you're away from the office.

A straightforward interface makes the professional printing of high-quality parts as easy as loading a part and clicking go.

### 3D printing with Pantone colours

The Stratasys J826, J835 and J850 are the first 3D printers in the world to be Pantone validated and, through the Pantone Matching System (PMS), offer peerless design realism.

Pantone, a leading global authority on professional colour standards in multiple industries, helps designers, modellers and manufacturers all over the world accurately define, communicate and consistently reproduce colours.

At the click of a mouse, GrabCAD Print makes the CMYK colours accessible so that they can be matched to almost 2,000 printable Pantone shades.

The process dramatically reduces the time and cost associated with traditional paint or iterative colour-matching processes and ensures superior fidelity.



- Print directly from CAD
- Easily process CAD files, with no specific expertise required
- Organize, manage and monitor printers and print queues from anywhere
- Stay up to date with email notifications
- Analyse material usage, history and utilisation of your printer with in-depth reports and dashboards
- Print stronger, lighter, purpose-built parts faster
- Reduce iterations through targeted parameter control
- Get up and running immediately, with no complex software or training required



# Claw Gripper



Asmb.

## Models

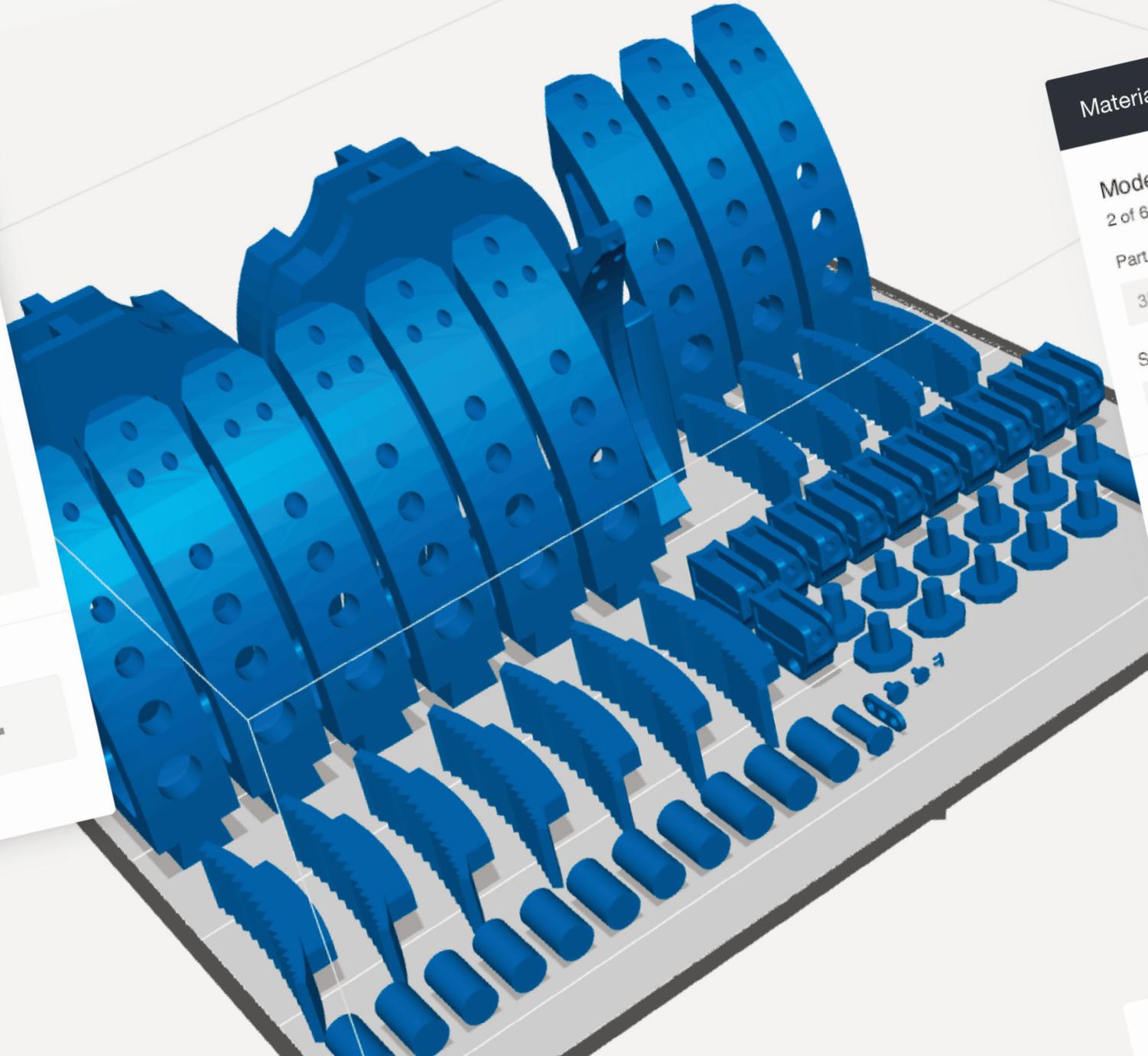
Add another model +

- - Black Small Pivot.STL
- - Long Claw Bone.STL !
- - Long Claw Gripper.STL
- - Carpal Extender.STL
- - Pivot Press-Pin.STL
- - Press Pin Sh.SDLASM

## Build Plates



1 - Claw Gripper



## Materials

### Model Settings

2 of 6 Models selected

Part Fill Style:

3D Preview

Support Style

SMART

### Tray Settings

Slice Height

0.01 in

Model Material

ABS P

Slice Height

ABS

Part

# Industry Advantages

## Aerospace

**Replace high-value, low-volume CNC-milled parts** to dramatically speed up production and reduce costs

**Identify design issues more quickly** by producing realistic prototypes for functional testing, before committing to expensive and time-consuming production

**Produce fixtures and lightweight, flight-worthy parts** (eg housings and ductwork) in a fraction of the time it takes using traditional manufacturing methods

**Avoid high machining costs** for custom tools or parts needed for maintenance by creating jigs and fixtures quickly and affordably



## Automotive

Prototype, test and produce tools, jigs, fixtures and street-ready parts with **unprecedented speed**

**Simulate the look, feel and function** of seals, gaskets, living hinges, soft-touch parts, moulds, snap-fits and product casings

**Avoid scrap and retooling** by testing injection moulds and other tools before machining them, maximising production-floor efficiency

**Unleash the creativity** of your designers and manufacturers with solutions that bring ideas to life, free from time or financial constraints

Customise repairs, restorations and accessories with **3D-printed materials**



## Medical

**Validate device performance** on patient-derived 3D-printed anatomical models

Based on real patient imaging, **mimic a variety of tissue and bone properties in a single print**

Accelerate product development from **accurate 3D-printed concept models** to pre-clinical testing, at a fraction of the cost

Create functional, bio-compatible parts while eliminating medical manufacturing constraints, **making production more agile**

Reduce scrap, **achieve unmatched design freedom**, simplify short production runs and reduce warehousing costs



## Consumer Goods

**Produce ultra-realistic prototypes** in hours rather than days, speeding up product design/improvement cycles and reducing lead times

**Reduce the risk of intellectual property** theft by developing everything in-house

**Free the imaginations of designers and manufacturers** by empowering them to visualise it, then create it

**Remove complexity from workflows** by producing full-scale prototypes straight from CAD designs, allowing hands-on customer insights

Craft products around **specific consumer wants and needs** by keeping the design-to-production process lean



## Education

**Break down barriers** and enhance student learning in STEM subjects, as well as art and design

Facilitate potentially **ground-breaking research projects**

**Invest in the future of additive manufacturing** as a huge growth area

Boost an institution's reputation as a **leader in its field**



## Industrial & Services

**Use physical multi-colour/multi-material models** to convey ideas to clients in a more precise and realistic way, encouraging detailed feedback

Print short-run tooling to **prove products and manufacturing processes** before making big investments

Realise significant **time and cost savings** over conventional tooling methods

Reduce lead times and **speed up concept to production**

**Achieve low-cost, fast turnarounds** on special tooling items – such as jigs and fixtures – for internal use



# Why buy from **SYS Systems?**

Driven on by our 'Precision, Performance, Perfected' core values alongside a passion for innovation, we are proud to be a Stratasys platinum partner in the UK and Ireland.

This accolade, afforded only to companies with the very highest standards, reflects the unrivalled knowledge of our experienced and fully accredited 3D-printing support professionals. It is what helps to set us apart.

Our certification to ISO 9001:2015 is your guarantee that we consistently meet the very highest expectations when it comes to supply, installation, training and support.

As part of our uncompromising approach to the customer experience throughout a machine's entire lifetime, we strive to remedy any issues at the first point of contact and make help immediately available whenever it is needed.

Regardless of status or sector, we focus on individual business needs and create made-to-measure solutions that will give superior performance for years to come, maximising efficiency and unlocking potential for growth.

**You – and your 3D printer – couldn't be in more capable hands.**

“

It's our aim to make the customer journey a smooth and positive one. We pride ourselves on developing close relationships that deliver the best possible outcomes for each and every business we work with. ”

- **SYS Systems Service Manager Jamie Taylor**

# There's never been a better time to invest...

In-house 3D printing is now more achievable and affordable than ever thanks to our bespoke finance options, designed to support every requirement.

If you don't want the worry of ownership, depreciation and maintenance, then contract hire is a popular choice.

To secure ownership at the end of the term of an agreement, our hire purchase options – with finance administered through Investec – work flexibly.

Our trade in and upgrade scheme makes it easy to replace your old 3D printer for a new Stratasys model, enhancing your capabilities with the most up-to-date modelling, software and material technologies.

We'll even give you up to the original value back against a new Stratasys printer.

As soon as your machine is in place, your operatives will be given fully certified core training on product-specific software, materials and maintenance, meaning work can start immediately and your investment begins paying dividends right there and then.

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## FLEXIBLE FINANCE:

Own a 3D printer for as little as £60 per week



Expand your capabilities without breaking the bank - get up to the original value of your old 3D printer back when you part-exchange it for a new Stratasys machine.

**More materials. More colours. More flexibility.**  
**More efficient production.**



Ask us about a free, no-obligation quote.

# Much more than just 3D printing...

SYS Systems is part of the Carfulan Group, which provides the full range of complementary manufacturing technologies to help you make better products and streamline business processes.



PART OF THE  
**CARFULAN**  
GROUP

## **OGP UK**

- provider of world-leading multi-sensor measurement systems for unrivalled performance in the quality control of manufactured parts and components.

## **ZOLLER UK**

- delivers improved manufacturing efficiency through best-in-class tool presetting, inspection and management solutions.

## **VICIVISION UK**

- specialist in high-performance, non-contact measuring machines for precision cylindrical parts such as valves, screws and camshafts.



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