Figure 4® Modular

Scalable, semi-automated 3D manufacturing solution designed to grow with your prototyping and production needs
Productive and Cost-Effective Digital Molding with Figure 4 Modular

Figure 4 Modular is a scalable manufacturing solution that grows with your business

WIDE RANGE OF APPLICATIONS
3D Systems’ Figure 4 platform delivers high quality parts in a diverse range of robust materials. Use Figure 4 for rapid functional prototyping and concept models, end-use durable plastic parts, digital texturing applications, elastomeric parts, rapid tooling of molds, master patterns, jigs and fixtures, and in complement of traditional injection molding and cast urethane processes.

SPEED, ACCURACY AND REPEATABILITY THROUGH FIGURE 4 TECHNOLOGY
Our versatile Figure 4 solutions use projector-based imaging to quickly form each layer in a single image, combined with non-contact membrane Digital Light Printing (DLP) technology for ultra-fast print speeds up to 100 mm/hour. Throughput and time-to-part is further enhanced with a light-based UV curing process that takes minutes versus hours with heat-based curing processes, enabling same day print and ship.

Your designs go from CAD to prototyping to manufacturing using a common technology to accelerate and simplify your manufacturing process and time-to-market. Digital molding reduces development costs, increases productivity and eliminates tooling requirements. These systems also deliver repeatable, true-to-CAD part accuracy with six sigma repeatability.

GROW WITH FIGURE 4, FROM PROTOTYPING TO PRODUCTION
Figure 4 solutions allow manufacturing capacity to grow alongside demand—from a standalone printer for rapid prototyping to modular mid-volume direct production systems that grow as your volume grows, up to a fully-automated, fully-integrated production platform for a complete factory solution.

Produce parts up to 346 mm high with Figure 4 Modular
Figure 4 Modular
Scalable solution for same-day prototyping and direct 3D production

Figure 4 Modular is a scalable, semi-automated 3D production solution that grows with your business, enabling capacity to meet your present and future needs, up to 10,000 parts per month, for unprecedented manufacturing agility.

With expandable capacity up to 24 print engines, automated job management and queuing, automated material delivery, and centralized post-processing, Figure 4 Modular’s end-to-end digital manufacturing workflow is ideal for low to mid volume production and bridge manufacturing. In addition, each printer can run different materials and different jobs as part of a single high throughput line serving a multitude of parts being produced.

MODULAR SCALABILITY
The base configuration of Figure 4 Modular is comprised of a single printer and a central controller. This can be easily scaled to up to 24 printer modules on a single controller, with layout configuration flexibility, empowering production to rapidly multiply without disruption to the shop floor.

LOW TOTAL COST OF OPERATIONS
Figure 4 Modular enables companies to move directly into manufacturing from a digital CAD file, bypassing tooling costs and delays to start delivering final parts immediately.

This semi-automated solution reduces labor through automated job management and queuing, and an automated material feed system.

UNPARALLELED FLEXIBILITY
Figure 4 Modular’s individual printers enable simultaneous production of a wide variety of part sizes and shapes, in multiple materials for a diverse range of parts for production and prototyping.

END-TO-END PRODUCTIVITY
Fast and easy print jobs preparation, ultra-fast print speeds, post-curing in minutes instead of hours and production management ensure high parts throughput with high accuracy and repeatability.

* UV curing is a required step for finishing parts, and 3D Systems has two light-based UV curing units available.

Bumper plugs printed on Figure 4 platform in Figure 4 ELAST-BLK 10
Broad Range of Materials

3D Systems’ Material Design Center has over 30 years of proven R&D experience and process development expertise. The materials available for Figure 4 Modular include a broad and expanding range of materials.

**Figure 4** TOUGH-GRY 10
High speed, ABS-like dark gray material for production applications

**Figure 4** TOUGH-GRY 15
Economical, ABS-like gray material for production applications

**Figure 4** FLEX-BLK 10
Flexible, exceptional durability, polypropylene-like black material for production applications

**Figure 4** ELAST-BLK 10
Elastomeric black material for design and validation of rubber-like parts

**Figure 4** TOUGH-BLK 20*
Rigid ABS-like black material for production applications

**Figure 4** MED-AMB 10*
Transparent biocompatible material capable of meeting ISO 10993-5, 10 criteria

**Figure 4** JCAST-GRN*
Castable green material for jewelry applications

* Expected availability in 2019

NOTE: Not all materials are available in all countries – please consult your local sales representative for availability

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**APPLICATIONS VERSATILITY - EXAMPLES**

- Electrical connector in Figure 4 TOUGH-GRY 10, TOUGH-GRY 15 AND ELAST-BLK 10
- Painted automotive door handle in Figure 4 TOUGH-GRY 15
- Rubber-like bumper plug prototype in Figure 4 ELAST-BLK 10
- Textured gear shift cover in Figure 4 TOUGH-GRY 10
- Re-manufacturing of legacy pilot knob in Figure 4 TOUGH-GRY 10
- Customized ear buds in Figure 4 TOUGH-GRY 15
Post-Processing Units

Centralized UV curing post-processing units are available as part of the overall solution. UV curing is a required step for finishing parts and obtaining the final material properties. Figure 4 materials use a light-based curing process which takes minutes versus hours for heat-based curing processes. 3D Systems has two optional light-based curing units available:

**FIGURE 4 UV CURE UNIT 350**

Equipped with 12 UV light bulbs placed inside of the four walls, the Figure 4 UV Cure Unit 350 achieves highly efficient and uniform curing of parts printed in Figure 4 materials. The interior allows you to place products on multiple layers to cure more parts at once, and is optimized for Figure 4 Modular parts at the maximum build height of 346 mm.

**LC-3DPRINT BOX UV POST-CURING UNIT**

The LC-3DPrint Box is available for UV-curing parts and is the recommended UV-curing unit for Figure 4 Modular print materials for parts under 195 mm. The LC-3DPrint Box is a revolutionary UV light box equipped with 12 UV light bulbs strategically placed inside to ensure a product is illuminated from all sides, which results in a quick and uniform curing cycle.
### Figure 4 Modular

<table>
<thead>
<tr>
<th>Technology</th>
<th>Digital Light Printing (DLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build Volume (xyz)</td>
<td>124.8 x 70.2 x 346 mm (4.9 x 2.8 x 13.6 in)</td>
</tr>
<tr>
<td>Print Speed</td>
<td>Up to 100mm/hr</td>
</tr>
<tr>
<td>Small Feature Accuracy and Repeatability</td>
<td>Cpk &gt; 2.0</td>
</tr>
<tr>
<td>Max Resolution</td>
<td>1920 x 1080 pixels</td>
</tr>
<tr>
<td>Pixel Pitch</td>
<td>65 microns (0.0025 in) (390.8 effective PPI)</td>
</tr>
<tr>
<td>Software</td>
<td>3D Sprint for preparing and optimizing design file data and managing the additive manufacturing process. 3D Connect for proactive and preventative remote diagnostics, bringing IoT management to 3D production.</td>
</tr>
</tbody>
</table>
| Build Materials     | Figure 4 TOUGH-GRY 10 – Rigid dark gray  
Figure 4 TOUGH-GRY 15 – Rigid gray  
Figure 4 FLEX-BLK 10 – Flexible black  
Figure 4 ELAST-BLK 10 – Elastomeric black  
Figure 4 TOUGH-BLK 20* – Rigid black  
Figure 4 MED-AMB 10* – Transparent biocompatible  
Figure 4 JCAST-GRN* – Jewelry casting |
| Material Handling   | Automated replenishment |
| Configurations      | Base unit (controller and a printer), scalable to a total of 24 printer units per controller |
| Post-Processing     | Optional centralized post-curing accessories:  
3D Systems Figure 4 UV Cure Unit 350 or LC-3DPrint Box |

* Expected availability in 2019

Digital texturing printed with Figure 4 technology in Figure 4 TOUGH-GRY 15

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Warranty/Disclaimer: The performance characteristics of these products may vary according to product application, operating conditions, material combined with, or with end use. 3D Systems makes no warranties of any type, express or implied, including, but not limited to, the warranties of merchantability or fitness for a particular use.