



3D Systems ColorJet 3D Printer Extends Glassmaker's Reputation for Innovation

ARC North America uses ProJet® 260Plus to shave weeks off prototyping, reduce costs by up to 90 percent, and help close major business deals

When one thinks of glassware, technological innovation doesn't spring readily to mind. But it's an integral part of ARC's nearly 200-year-old tradition, enlightening every step of the product development process, from design to materials to manufacturing.

The most recent example of innovation comes from ARC's North American facility in Millville, New Jersey, whose 1,100 employees produce more than one million pieces of glassware each day. ARC North America is using a 3D Systems ProJet 260Plus printer to create full-color prototypes of its latest glassware designs, shaving weeks off its prototyping cycle and reducing its costs per prototype by up to 90%.

Faster path from imagination to reality

"We pride ourselves in developing both innovating shapes for our own brands such as Luminarc and Cristal d'Arques as well as bespoke brand vehicles for large national and international brands," says Jack Kontes, Vice President of Marketing for ARC North America. "The ProJet 260Plus helps us to move quickly from our imagination to reality. It's invaluable to us during product design to get the right shapes, proportions and ergonomics nailed. It's also an incredible sales vehicle for us to present our designs to customers."

The ProJet 260Plus produces photorealistic color models with full CMY capability, offering more than two million colors and fine detail of 0.8 mm (0.03 inches). The Visijet® PXL materials used by the printer can be sanded, drilled, tapped, painted and electroplated, further expanding the options available for replicating the characteristics of finished products.



CHALLENGE:

Faster turnaround time for glassware prototypes and better physical representations of new designs.

SOLUTION:

A 3D Systems ProJet 260Plus printer offering fast production speeds, fine detail, more than two million colors, and eco-friendly clean-up and material recycling.

RESULTS:

- Reducing prototype production from weeks to hours.
- Lowering costs for each prototype by as much as 90%.
- Better internal communication and understanding of new designs.
- Providing a major new sales tools that helps ARC North America close deals.





Joe Dougherty, Design Department Manager for ARC North America, checks on a 3D print run on the Projet 260Plus. The 3D printer is eco-friendly and safe to use in an office environment.

The level of detail and full color capability allows companies and their customers to better evaluate the look, feel and style of product designs. In ARC's case, the ability to accurately depict designs, logos and text that will decorate the final product is a major benefit.

Nearly immediate ROI

ARC North America decided upon the Projet 260Plus after several benchmarks conducted by 3D Systems reseller Solid Technologies, based in Blue Bell, Pennsylvania. Solid Technologies has a long-standing relationship with ARC, providing sales and support for CAD software and computer workstations since 1992.

Several factors played into the decision to select the Projet 260Plus according to Kontes:

- Fast print speeds that deliver models in hours, enabling more design experimentation and faster turnaround for customer presentations.
- Eliminating the need for support structures, which delivers the flexibility to print multiple designs within a single run.
- Simple, clean and quick post-processing without the need for toxic chemicals.
- Eco-friendliness that makes it suitable for the office environment and allows for efficient recycling of unused materials.

The Projet 260Plus provided a nearly immediate return on investment, according to Joe Dougherty, Design Department Manager for ARC North America.

"We used to send out our 3D models to be printed by an outside facility, which would take two to three weeks," says Dougherty. "That held back our design group. With the Projet 260Plus, we can go from 3D design on the computer to a full-color prototype in hours. Having this ability has dramatically reduced our lead time and allowed us to close deals much quicker."

The productivity gains go beyond cutting lead time for product development.

"There's a real cost savings," says Kontes. "We previously paid around \$100 for each print we sent out. We estimate our costs with the Projet to be around \$10-\$15 per print."



“The fact that we can react so quickly to customers’ needs has made a positive impact on our image.”

Helping to close the deal

The speed and quality of the prototypes has impressed customers, according to Ron Biagi, Vice President of Sales for ARC North America.

“The fact that we can react so quickly to customers’ needs has made a positive impact on our image.”

Brendan Marzano, National Account Manager, recounts how the 3D printed prototypes helped ARC close a deal with a major beer company.

“They were looking for a custom-made piece of glassware, something that would be a signature piece for them. The prototype helped them realize how this glass was going to look. When a company is making this kind of sizeable investment — possibly hundreds of thousands of dollars — it really helps to have something tangible to hold in their hands. For ARC, it’s an excellent way to differentiate ourselves from the competition.”

Underestimating the importance

The full-color, richly detailed prototypes provide a way for different constituencies within ARC — design, sales, marketing, engineering and manufacturing — to converge faster on design decisions.

“The second you put the prototype in front of engineers and production, they can quickly give you feedback beyond just what they would see on a screen,” says Dougherty, the design development manager.

Perhaps the only surprise for ARC North America is just how much a difference the ProJet 260Plus makes in its business.

“We significantly underestimated how important it would be,” says Kontes. “Almost every new shape of glass we design now is preceded by a 3D prototype.”



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