



Production features & specifications

It's been quite a wait, but the time is at hand! You may have already heard some of the changes and improvements we've made to your Glowforge while preparing it for production, but we know you're busy and might have missed some details.

This is the definitive list of what you should expect from your Glowforge when it arrives. This supersedes all previous specifications and descriptions. Also, while your Glowforge is a complete production unit, the software is still in beta, so this will describe features that are still in progress. Please read carefully so you can make sure your Glowforge meets your expectations.

If you discover that your Glowforge doesn't work for your needs after all, we're so very sorry - you can contact support to cancel your order.

Design With Just a Pen

Also called "Trace," this lets you create a design from scratch by drawing, meaning you don't need to learn complicated CAD or design software to create incredible prints.

✓ Done?

Yes! Every time we bring Glowforge units to public events like Maker Faire, we get to watch hundreds of laser novices, adults and children alike, design amazing creations that they can print on the spot and take home to enjoy. We've also seen Glowforge customers use this for everything from advanced decorative designs to quick DIY fixes - for example, trimming a part by just drawing a line on it.

Bonus:

Secret keystrokes can refine your picture to make lines thicker or thinner: hold down either the command key on mac or control key on a PC, then press up and down for lighter and darker. Hold down cmd/ctrl-shift-up or down to make your drawing smoother or more accurate. Click to change engraves into cuts.

We've also improved the image recognition so it works with more than just big black pens - our customers are using it to create designs from high resolution inkjet prints

and quick pencil sketches. We've even seen them put their phones in their Glowforge with a picture on the screen to scan it!

Precision Preview

You can see what your Glowforge sees, drag your design into place, and preview exactly where it's going to go and what it will look like. You can switch between cut and engrave settings and look at the difference. Then, when you print, everything lands right where you put it.

✓ Done?

Yes! This is one of the things that customers love most about their Glowforge - it's easy to align an engraving with something you want to embellish, or position your design in just the right spot on your material.

📝 To Do:

We're continuing to improve accuracy - current software can experience a shift of up to 0.25" between preview and printing on objects placed near the far edges of the bed. You'll have the best results making sure your bed is sitting squarely and flat, and using Proofgrade materials.

🔗 Bonus:

When your print is ready, we show you a high speed preview of the cut file so you can see exactly what the laser is going to do before you hit the button. When you start printing, the software shows precisely what's being printed and how much time is left. More secret keystrokes when you're arranging your design: hold down spacebar and click-and-drag to pan; ctrl/cmd + or - to zoom in or out.

3D Autofocus

The precision laser beam on your Glowforge automatically focuses on both flat and curved surfaces.

✓ Done?

The software uses a low power visible laser and 5 megapixel camera to measure the height of your material to the thickness of a human hair, then focuses precisely so every cut is as quick and clean as it is powerful. Single-point autofocus works perfectly for flat material.

📝 To Do:

Multipoint autofocus, which can continuously change focus to print on curved surfaces.

🔗 Bonus:

We've implemented manual focus as well. If you'd like to experiment with the artistic

and unusual effects of a defocused laser, you can type in a focus height to override the autofocus settings.

Recognize Materials

The onboard cameras automatically detect Proofgrade™ materials to automatically configure power, speed, focus, and other settings. Just pick “cut” or “engrave” and every print comes out perfectly.

Done?

Yes! To paraphrase one of our customers: "Proofgrade makes things fire and forget; just choose 'cut' or 'engrave' and push the button".

To Do:

Recognize devices like Macbooks and iPhones. Proofgrade materials do not yet have UV barcodes, but have visible barcodes instead.

Bonus:

Choose variations like light, medium, or dark engraving to customize the look of your design.

Catalog

Print beautiful things quickly, with perfect results any time using premium designs from the Glowforge catalog.

Done?

The design catalog has beautiful, useful, and fascinating products with detailed photo instructions that will ensure you print perfectly every time.

Bonus:

As part of our thank-you for sticking with us for so long, designs from the video that appear in the catalog are yours FREE! Some are there already, and more continue to be added.

Compatible

Print from any device, design program, or file type.

✓ **Done?**

SVG, PDF, PNG, GIF, and JPG compatibility. Print from desktop Safari, Chrome, Edge, or Firefox browsers. Some tablet and phone browser support. Convert most file types to be compatible with Inkscape.

 **To Do:**

Tablet and mobile are still in development. Add support for many more file types. Software plugins to simplify printing.

Just one plug

All you need is a standard household outlet (120 volts, 15 amps, with 800 watts of available power) to use your Glowforge.

✓ **Done?**

Yes!

Optical Alignment

Cameras make sure your print goes precisely where you put it, for easy layout and double-sided engravings.

✓ **Done?**

Both lid and head cameras are dialed in to make the system easy to use. The system auto-aligns itself with the onboard cameras every time it turns on.

 **To Do:**

Improved positioning accuracy and double sided engraving.

Precision within a kerf

The Glowforge software automatically compensates for the hairsbreadth thickness of your laser beam to make everything fit the first time.

 **To Do:**

Not released yet. When we turn it on, there will be options for both Proofgrade and other materials.

3D high-res engraving

1,000 DPI resolution & variable depth relief engraves with multiple passes.

 **Done?**

Yes!

 **Bonus:**

Stunning photo engraves and 3D engraves. We dialed up the resolution 35% higher than our specifications to 1,355 DPI . It looks incredible already and we're still improving it.

Safe for schools

 **Done?**

The Glowforge Basic is a Class 1 laser product. The Glowforge Pro requires the (included) Pro Shields for use around children.

 **To Do:**

NRTL listing will be completed for later production runs (see next page for details).

Material Capability

Print with dozens of natural materials.

 **Done?**

Yes. Note that you can only use materials that are guaranteed to be CO2 laser compatible. That includes Proofgrade materials from us and materials from suppliers (like Inventables) who sell material that they guarantee is laser-compatible. While any compatible material will work in a Glowforge, we cannot offer technical support for non-Proofgrade materials.

 **To Do:**

Save settings when you use non-Proofgrade materials.

WORK AREA

Ample work space to create large projects from sturdy materials.

✓ Done?

The material rests on a 18" x 20" working bed. The printable area is 11" x 19.5". The maximum thickness of material with tray installed is 0.5"; the maximum thickness of material with the tray removed is 2". The focus range is 0.5".

📝 To Do:

When the laser is moving at maximum speed, it needs room to slow down near the top, bottom, and both sides. We'll be updating the software to compensate for that so it can give you more working space - up to 11.5" x 20" for slow movements like cuts; less for faster motions like engraves.

🎁 Bonus:

Our original specs for thickness were only 1.5" with tray removed - we were able to increase that to 2.0" for you.

Cameras

Two five-megapixel cameras, one wide-angle in the lid and one macro in the head.

✓ Done?

Yes!

One Button Print

Print from the web interface, then click the beautiful pulsing button to confirm.

✓ Done?

Yes!

Cloud-Based

Work from anywhere with an internet connection.

✓ Done?

Yes!

yes!

 **Bonus:**

If you lose connectivity during a print, no problem - it will finish anyway.

Wi-Fi

Set up your Glowforge anywhere with strong Wi-Fi signal (2.4 GHz b/g/n). Easy setup from your web browser.

 **Done?**

Yes!

 **To Do:**

There is not yet support for Wi-Fi signals that require you to access a web page before connecting, like hotel Wi-Fi often does.

 **Bonus:**

Works on slow connections. If the connection comes and goes, your Glowforge automatically reconnects.

Case

High modulus injection molded plastic case. Custom extruded aluminum linear rails with belt-driven v-wheel carrier. Heat treated glass surface that blocks ultraviolet and infrared laser light.

 **Done?**

Yes! And it's gorgeous.

Linear motion system

Dual hybrid stepper Y axis allows for self-calibration. Single hybrid stepper X axis for extremely precise engraving.

 **Done?**

Yes!

Cooling

Closed loop self-contained internal liquid cooling.

✓ **Done?**

Yes!

Exhaust

4" exhaust hookup or Glowforge Air Filter required.

✓ **Done?**

Yes.

📍 **Bonus:**

Ships with a 4 inch diameter, 8 foot long exhaust hose at no extra charge. You can use it with a dryer exhaust hookup or a nearby window.

Lighting

Dual high-powered internal white LED strips, white LED macro illumination for camera head, UV macro illumination for camera head.

✓ **Done?**

Yes!

Power Consumption

Glowforge uses no more power than a typical kitchen appliance.

✓ **Done?**

Peak power consumption is 800W, 120 VAC, similar to a toaster or coffee maker, so it works from a standard outlet.

Safety Interlocks

Built-in sensors prevent access to infrared laser light. If the lid is opened, the laser will turn off immediately.

 **Done?**

Yes!

 **Bonus:**

The Glowforge app will tell you when your lid is even slightly ajar.

Pro Speed

A Glowforge Pro is more powerful and uses upgraded laser optics to cut about 20% faster than Basic units.

 **Done?**

Yes! Our Pro units come equipped with more powerful laser tubes and premium laser optics, which deliver more power to your materials. You'll see this reflected in shorter print times on cuts.

 **Bonus:**

We're planning a future software update to unlock even faster motions with the improved linear system. This will speed up startup, scores, and engraves, resulting in even faster prints.

Pro Passthrough

Passthrough slot allows the use of material that's up to 1/4" (6.3mm) high, up to 20" (50.8cm) wide, and as long as desired

 **Done?**

Front and rear slots are designed seamlessly into the unit and each is equipped with protective laser-absorbing curtains to maximize safety while in use. You can carefully move and align each print as you use large material.

 **To Do:**

We're improving the lid and head camera operation so that the passthrough feature automatically aligns your extra-long designs for you. The software will roll out later this year. Until then, you can align long prints by hand.

Pro Glasses

Glowforge Pro units come with laser safety glasses, at no extra charge.

✓ Done?

For some operations with the Glowforge Pro, you may need to wear safety glasses. Laser safety glasses like the **Noir EC2-53W glasses** are usually \$90 per pair, but we're including them, at no extra charge, in every Pro shipment. These are premium safety glasses which can be used alone or worn over prescription glasses.

🔗 Bonus:

We'll sell extra pairs in case you want to have them on hand for visiting friends or family (or fashionable everyday wear).

Pro Shields

Use your Glowforge Pro in public or with kids safely with the Pro Shields.

🔗 To Do:

We heard from Pro customers that they want to use their Pro without the passthrough slots. To meet that need, we've developed a set of Pro Shields that finger-tighten right into the passthrough slot of your Glowforge Pro. They ensure that nothing - material or laser light - comes in or out.

🔗 Bonus:

We'll ship Pro Shields to every Pro owner separately later this year, at no extra charge.

Pro Cooling

A Glowforge Pro operates in warmer environments continuously.

✓ Done?

Yes! Our Pro units have a thermoelectric cooler installed that can chill the coolant below room temperature. This allows it to operate in warmer environments, and reduces or eliminates cooling periods during long prints.

There's a lot here, because you're getting an incredible machine! We can't wait to get it to you. On the next page, you'll tell us if you want it now or later.

Continue