

SF-100

LIGHTNING

Fast and Flexible Maskless Lithography



High Throughput, Custom Microlithography for Patterning Features as small as 0.6 Microns

Based on the wildly successful SF-100 XPRESS, the SF-100 Lightning improves upon the XPRESS design by offering the same great flexible system that can now perform at high speeds. Through improved software control algorithms, the use of a high power LED light source and integrating confocal laser focusing, the SF-100 Lightning is designed for the R&D user who needs to produce a lot of product of varying applications, substrate sizes, materials and thicknesses.



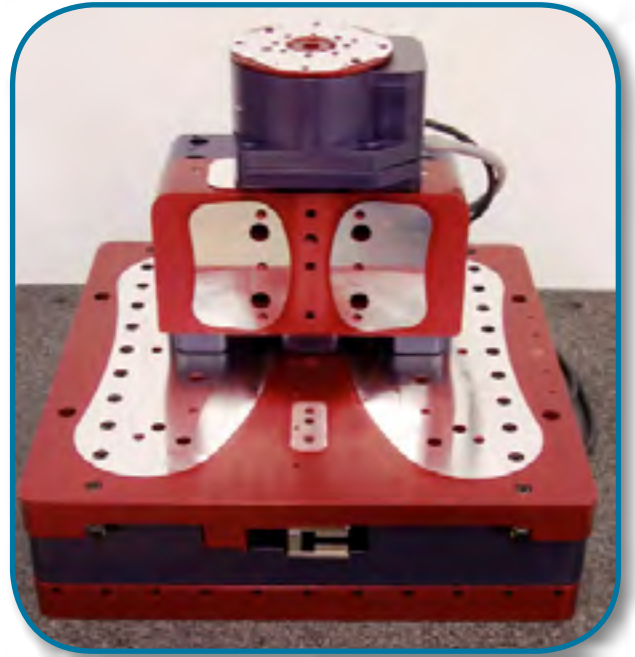
The SF-100 LIGHTNING Offers Many Standard Features that Provide Extraordinary Benefits

- High power LED light source provides energies at both 385nm and 405nm, ensuring compatibility with most commercial photoresists, polyimides, and SU8.
- Zero consumables on the system, ensure low operating costs.
- Field proven optical design integrated with patented Smart Filter Technology.
- Integrated CCD camera for in-line substrate viewing, supporting standard optical functions, such as auto focus and level-to-level alignment.
- Fully automated XYZ stage provides one button operation and auto stitching for large substrates.
- User friendly based software integrates all systems functions, while providing an open platform for software customization and integration with other systems.
- Labwindows™ based Vision Developers Module provides the basis for all camera functions on the system, ensuring reliability and ease of customization.
- Rapid prototyping of new designs and ideas without the need for costly photomasks.
- AMP's legendary customer service, engineering, and support services ensure your success.
- Complete two year warranty, including customer training at factory acceptance and at the customer site.

Linear Motor Stage Technology Exceeds the Requirements of Your Process

Beyond our proprietary optical design, the stage assembly is the most critical sub-assembly on the SF-100 LIGHTNING. Stitching accuracy is critical to obtain acceptable process results and high performance of your devices. Our linear motor stage assembly offers high precision, robust design, and repeatability that will ensure very tight stitching accuracy day in and day out. Typical results from this stage include:

	<i>X Axis</i>	<i>Y Axis</i>	<i>Z Axis</i>	<i>R Axis</i>
<i>Travel</i>	150mm	150mm	25mm	360 degrees
<i>Resolution</i>	4.88nm	4.88nm	4.88nm	0.03 arc-sec
<i>Accuracy</i>	+/- 200nm	+/- 200nm	+/- 200nm	N/A
<i>Repeatability</i>	+/-50nm	+/-50nm	+/-75nm	+/-1 arc-sec



Here's a Sampling of What an SF-100 LIGHTNING Can Do for You!

- The SF-100 LIGHTNING will save you money:
 - Each system includes a personal computer, so you do not need to provide your own PC.
 - Due to long life of LED light sources and overall system design, no consumables are needed to support the system.
 - Changing feature sizes requires only a different reduction lens, not an entire new set of optics and laser.
 - No spare parts are needed, due to the field proven inherent system reliability.
- Full area exposures are standard. You can expose any size features over the entire area of the stage movement, providing complete exposure capabilities over large areas. For example, if you have a 150mm x 150mm XY stage, you can expose 1 micron patterns over the full 150mm x 150mm area. Larger stages support complete exposures over larger substrates, even with small minimum features.
- Changing wavelengths is easy and low cost. Add your specific filters to the filter wheel, using standard 1" round optical filters, and you are off and running. Changing the filters requires a mouse click and a few seconds for the filter wheel to index. No need for changing lasers or other system optics.
- SU8 can be processed with the standard system configuration. No additional costs or set up time for different optics or lasers.
- Thick resist processing is a snap. Up to 1 millimeter thick resists have been processed on SF-100 LIGHTNING systems. All thick resist processes can be performed in single exposure step, without the need for complicated and slow Z stage movement.
- True 3D exposures are available, using single exposure techniques. We've been patterning curved and not-flat substrates for almost a decade, without the need to use Z movement or other complicated mechanisms.
- Simple gray scale lithography processing using 256 levels of grayscale. Grayscale design is easy using our GS Draw software which is included with every SF-100 LIGHTNING.
- Using our optional Sub-Micron smart filter, features smaller than one micron in size can be patterned on your SF-100 LIGHTNING.
- And, finally, you get all of the above with an extensive customer support package that includes multiple opportunities for customer training, system qualification, and process development support. Add in our remote access software to provide local support anytime via a directly link to our entire engineering staff, options for extended warranties, and other customer specific maintenance programs, and you are guaranteed success with your SF-100 LIGHTNING maskless lithography system.



Contact us for more information regarding any Advanced Micro Patterning Product.

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