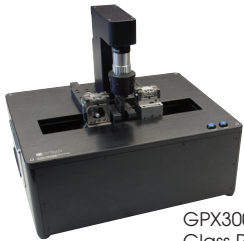


# GPX Series Glass Processors: Creating Lensed Fiber

## APPLICATION

Lensed fibers are well suited for applications such as light delivery, waveguide coupling, and device pigtailling. Capable of creating a focused spot a short distance from the fiber tip, they are utilized across a number of fields, including telecommunications, high-speed detection, sensing, and medical devices.

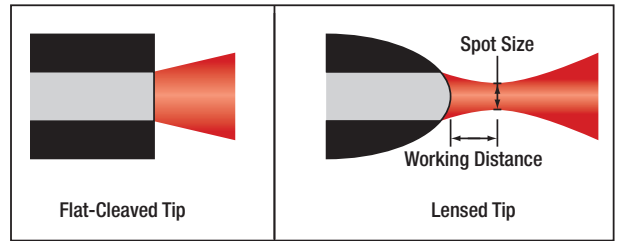
## EQUIPMENT NEEDED



GPX3000 Series  
Glass Processor



LDC Series Cleaver



Comparison between Flat-Cleaved Fiber and Lensed Fiber



Strip Tool



Cleaning Materials

## PROCESS NOTES

### Normalize with the inserts locked in the fiber holding blocks.

Normalization is the process by which a filament is driven with a pre-determined power. The degree to which it softens a fiber of a standard size and material is measured and automatically analyzed by image processing. In this way, small adjustments to the power can be used to compensate for natural changes of the heat profile over a filament's lifetime.

Locking the inserts assures that alignment of the left and right fiber holding blocks is maintained even as fibers are repeatedly loaded and unloaded.

### Window strip the fiber.

Window stripping a fiber removes a portion of the coating which is not at the end of the fiber. In order to maintain a clean strip interface at both ends of the window, it can be helpful to strip from one end to the middle of the window, and then from the other end to the middle of the window.

### Load the fiber across both fiber holding blocks.

For good repeatability, always load the fiber with the curl downwards. Be sure to not impart any excess tension or torsion during loading. Lift the fiber slightly, allowing the vacuum to draw it back into the V-groove naturally.

### In the splice file, use a negative hot push to taper and heat-break the fiber.

Hot push distance denotes how much the fiber holding blocks are moved closer together while the filament is on. A negative hot push will move the fiber holding blocks apart to pull on or draw the tensioned fiber. In this case, that pull will need to be long enough to not only draw the fiber thinner, but also cause it to heat-break.

### Fine tune the radius of curvature using the On-Duration.

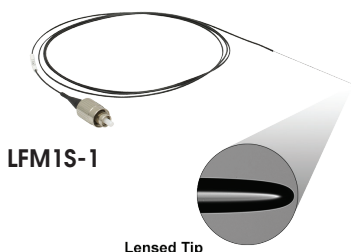
The filament stays at temperature for a time defined as the On-Duration. After the fiber breaks, surface tension will continue to form the broken fiber into a round shape. A longer On-Duration means that the glass is softened for a longer time and surface tension will form the tip into a larger radius.

To see this process and other fiber processing applications, visit our YouTube channel [here](#).



A Lensed Fiber being Drawn and Viewed using the FFS3 Software Suite, Included with Each Glass Processor

## LENSED FIBERS IN STOCK



LFM1S-1

Lensed Tip

- ◆ Graded-Index Multimode Fiber
- ◆  $\text{\O}25 \mu\text{m}$  Spot Size
- ◆  $30 \mu\text{m}$  Working Distance
- ◆ Scissor Cut or Terminated with FC/PC or SMA Connector

In addition to our stock options, a wide range of single mode and multimode fibers can be drawn into a lens with sub-micron precision in the radius of curvature.