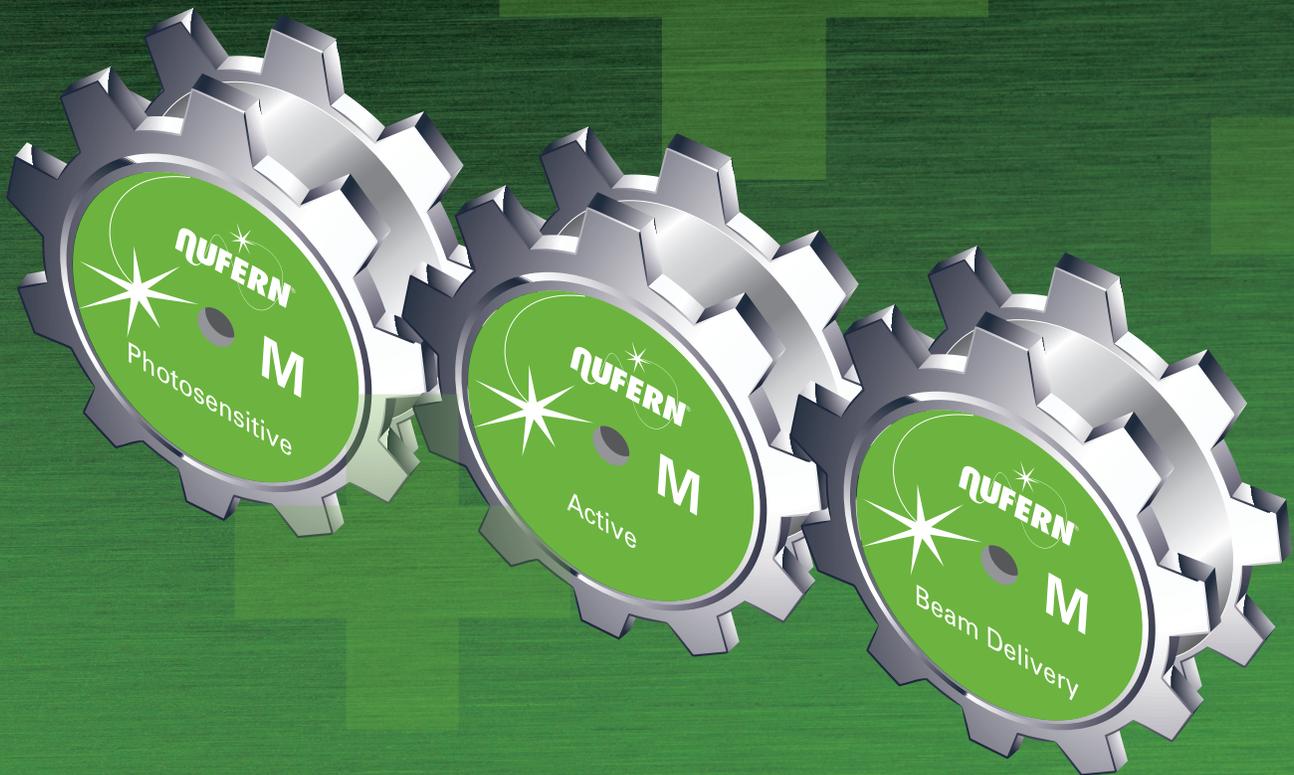


# NUMATCH™



## Tighter Tolerance Fibers for Optimized Splicing

### Optimize Manufacturing of High Performance Fiber Lasers & Amplifiers

High precision, repeatable splicing of fiber components made with various specialty fibers is the key to economical manufacturing of high performance fiber lasers. NuMATCH fiber sets have carefully chosen specifications with tight geometric and optical tolerances that facilitate repeatable splicing in volume manufacturing environments. Nufern also offers precision matched (M+) fibers with the ultimate lowest variations and with specified mode field diameters (MFD) for ease of integration in the highest power systems. OEMs and end users can easily specify that components for their products are made from Nufern's NuMATCH fibers, thus ensuring that all fibers and components used in production are spliced easily yielding the highest performance products.



COHERENT. | NUFERN



### Tighter Tolerances

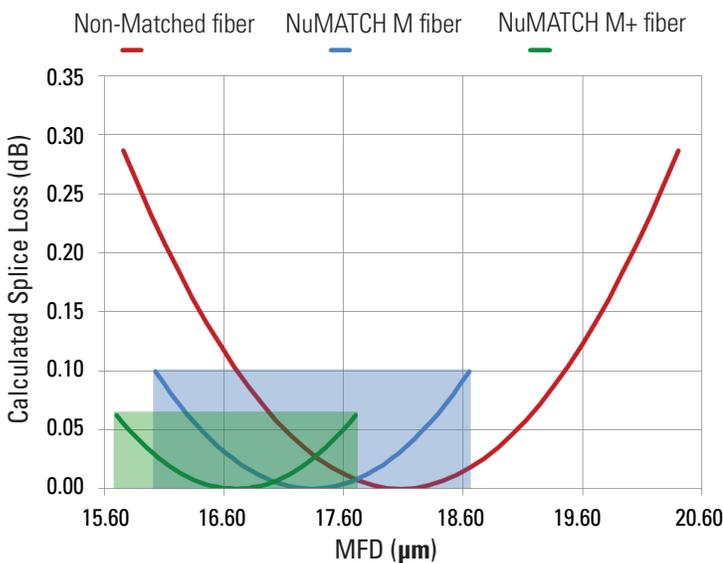
Nufern's NuMATCH™ active and passive fibers are used for the most demanding fiber laser applications requiring the highest performance and highest beam quality.

Our precision matched (M) fibers offer >25% tighter tolerances than our standard fibers.

Our ultra-matched (M+) fibers offer an additional 25% decrease in tolerance and directly specify the mode-field diameter (MFD) for the ultimate in performance.

- Minimize splice loss
- Improve thermal load management
- Improve beam quality
- Maximize production

### Calculated Splice Loss vs MFD Specification



### Broadest Wavelength Range

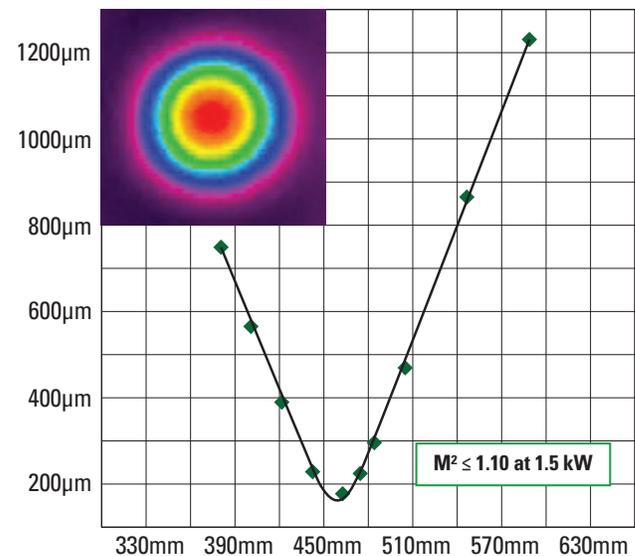
All of Nufern's Yb, Er/Yb, Tm, Ho active and passive fibers are available in complementary and precision matched sets for ease of manufacturing for your most demanding applications at all wavelengths.



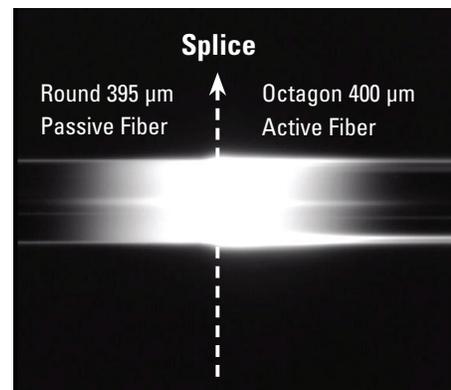
### Features and Benefits

Nufern continues to offer the largest range of matched fibers at all wavelengths for industrial production of fiber lasers for the widest range of applications including marking, micro-machining, cutting, welding, drilling and engraving.

- Tighter tolerance – Reduces the time and variability when splicing
- Repeatable splices – Reduces test and rework with lower splice loss
- High power – Reduces stray light and thermal load
- Broadest wavelength range – 1.0, 1.5 and 2.0 μm



Beam quality, M<sup>2</sup>, achieved with a 0.06 NA, 25/400 μm, Yb-fiber with M+ specifications operating at an output power of 1500 watts.



By optimizing the core sizes and NA, and specifying the MFD, M+ fibers have better matched MFD's for improved splice performance.