NuMATCH™

Connecting High Performance
Fiber Laser & Amplifer Components

Optimize manufacturing of high performance Fiber Lasers & Amplifiers

Achieving the lowest cost highest performance splices is very important to the successful manufacture of high performance fiber based products. One key to attaining this level of performance is a combination of an optimized glass chemistry in the fiber along with very tightly controlled geometry and mechanical specifications of the several different fibers required to build these products. The NuMATCH fiber program at Nufern is assembling the many precision matched fibers on each fiber platform in such a way that OEMs and high end users in the scientific community can easily select fibers designed to work optimally in a single machine. Key functions such as amplification, reflecting, and beam delivery are augmented with the simplest possible highly uniform splicing attributes. Leading the way for OEMs with this series of fibers ensures that when an OEM selects a – M fiber with NuCOAT™ technology the best possible product results are achieved economically.

NUFERN®

www.nufern.com

OPTICAL FIBERS — FIBER GYRO COILS — DIRECTED ENERGY — FIBER LASERS & AMPLIFIERS

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Precision Matched LMA Double Clad Fiber Family

Precision matched fibers maximize the performance of splices between different fibers and maximizes the ease of making industrial quality splices.

Precision Table

Nufern 20/400 Precision Matched Fiber Set					
	Photosensitive	Active	Passive	PM Active	PM Passive
	PS-GDF-20/400-M	LMA-YDF-20/400-M	LMA-GDF-20/400-M	PLMA-YDF-20/400-M	PLMA-GDF-20/400-M
Core Diameter (µm)	20+/-1.5	20+/-1.5	20+/-1.5	20+/-1.5	20+/-1.5
Clad Diameter (µm)	400+/-5	400+/-10	395+/-5	405+/-10	395+/-10
Core NA	0.065+/-0.005	0.065+/-0.005	0.065+/-0.005	0.065+/-0.005	0.065+/-0.005
Clad NA	>0.46	>0.46	>0.46	>0.46	>0.46
Coating Diameter (µm)	550+/-15	550+/-15	550+/-15	550+/-15	550+/-15
Birefringence				0.0004	0.0004
Prooftest (kpsi)	>100	>100	>100	>100	>100

Complimentary Matched Fiber Family

A fiber is complimentary when it's core structure, size and composition allow light to propagate efficiently from one type of fiber to the other after splicing.

Complimentary Table

Nufern 20/130 Complimentary Fiber Set				
	Active	Passive	PM Active	PM Passive
	LMA-YDF-20/130-VIII	LMA-GDF-20/130	PLMA-YDF-20/130-VIII	PLMA-GDF-20/130
Core Diameter (um)	20+/-2	20+/-2	20+/-2	20+/-2
Clad Diameter (um)	130+/-2	130+/-1	130+/-1	130+/-1
Core NA	0.080+/-0.005	0.080+/-0.005	0.080+/-0.005	0.080+/-0.005
Clad NA	>0.46	>0.46	>0.46	>0.46
Coating Diameter (um)	245+/-10	245+/-10	245+/-10	245+/-10
Birefringence			0.0002	0.0002
Prooftest (kpsi)	>100	>100	>100	>100

Features & Benefits

- Matched fiber series - Ensures splice compatibility
- NuCOAT™ fluoroacrylate coating - Greater fiber durability in extreme environmental operating & storage conditions
- State of the art Yb-doped glass - Useful for generating high CW powers
- Precision matched set of fibers offer the most stringent specification and best performance in the industry
- All fiber proof tested to > 100 kpsi - Critical for ensuring long term reliability when coiling

Typical Applications

- Monolithic high power fiber lasers and amplifiers
- LMA fiber couplers, pump combiners and Bragg gratings
- High power pump and signal delivery pigtails
- Military, industrial and medical

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Capabilities and typical design parameters are described above. Various standard and OEM designs are available.

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