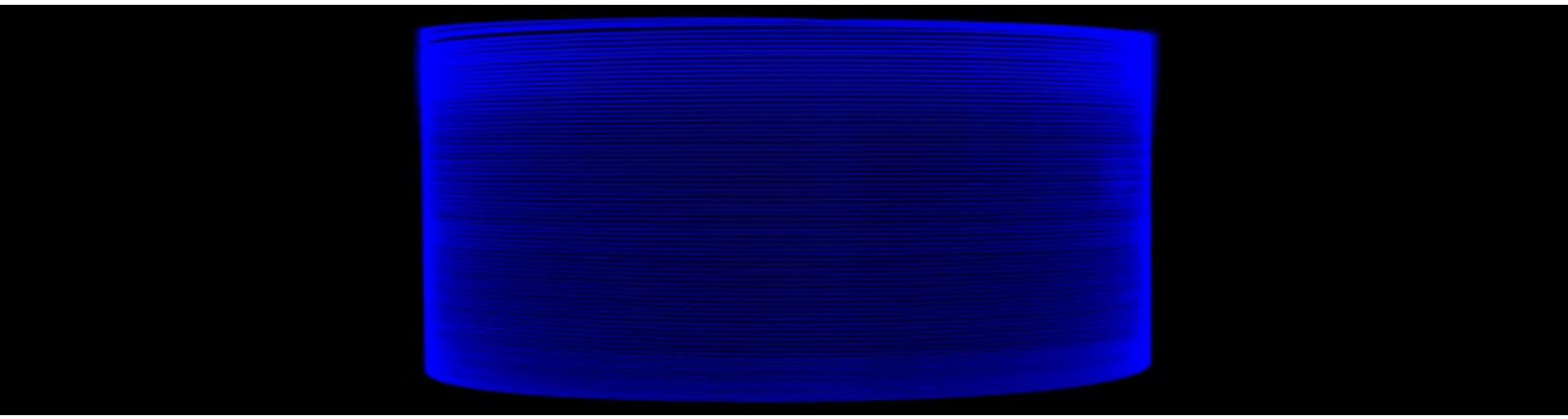
LIEKKI®

Large Mode Area Passive Fibers



LIEKKI® passive fibers are especially designed and manufactured to match the optical guiding properties of LIEKKI® large mode area Ytterbium and Thulium doped fibers. This enables optimal mode coupling with minimal splice loss for maintaining the power and excellent beam quality between all elements of a fiber laser or amplifier. High-quality Fiber Bragg Gratings can be written into all LIEKKI® passive fibers.

LIEKKI® passive fibers are available in single cladding, double cladding (DC), single cladding polarization maintaining (PM) and double cladding polarization maintaining configurations.

Features

- **Compatibility**:
  *real*NA — most accurate fiber core NA to enable superior matching of Rare-earth-doped and passive fibers for minimal splice loss
  Glass cladding diameter is designed to “fit-in” octagonal active fibers
  Industry standard active fiber geometries 125, 250, 400 µm
- **Writing of Fiber Bragg Gratings**: Fiber Bragg Gratings can be written into all large mode area passive fibers
- **Reliability**:
  Single cladding fibers feature a dual coated high-index acrylate coating
  Low-index acrylate (double cladding) coating proven to operate up to 150˚C and in extreme humidity.

Applications

- Pigtails for fiber lasers and amplifiers
- All-fiber subassemblies
- High brightness power delivery
- Fiber based components for fiber lasers (e.g. pump combiners; FBGs)

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Typical Fiber Specifications

(selected parameters only; complete fiber specifications available on request)

LIEKKI® Passive Fiber	Core µm	Cladding µm	Coating µm	Core NA[2]	Cladding NA, ≥	Birefringence, ≥	Core loss[3], ≤ dB/km	Proof test, ≥ kpsi	Matching Active Fiber
Passive-6/125	7.0 ± 0.5 (MFD[1])	125 ± 2	245 ± 15	0.120 (nominal)	-	-	5.0	100	Yb300-6/125(-PM) Yb1200-6/125DC
Passive-6/125DC	7.0 ± 0.5 (MFD[1])	125 ± 2	245 ± 15	0.120 (nominal)	0.48	-	5.0	100	Yb1200-6/125DC
Passive-6/125DC-PM	7.0 ± 0.5 (MFD[1])	125 ± 1	245 ± 15	0.120 (nominal)	0.48	2.0E-04	5.0	100	Yb1200-6/125DC-PM
Passive-10/125	10.0 ± 1.0	125 ± 2	245 ± 15	0.080 ± 0.005	-	-	5.0	100	Yb1200-10/125DC
Passive-10/125, 0.15NA	10.0 ± 1.0	125 ± 2	245 ± 15	0.150 ± 0.010	-	-	10.0	100	Tm1500-10/125DC
Passive-10/125-PM	10.0 ± 1.0	125 ± 1	245 ± 15	0.080 ± 0.005	-	1.4E-04	5.0	100	Yb1200-10/125DC-PM
Passive-10/125DC	10.0 ± 1.0	125 ± 2	245 ± 15	0.080 ± 0.005	0.48	-	5.0	100	Yb1200-10/125DC
Passive-10/125DC, 0.15NA	10.0 ± 1.0	125 ± 2	245 ± 15	0.150 ± 0.010	0.48	-	10.0	100	Tm1500-10/125DC
Passive-10/125DC-PM	10.0 ± 1.0	125 ± 1	245 ± 15	0.080 ± 0.005	0.48	1.4E-04	5.0	100	Yb1200-10/125DC-PM
Passive-12/125	12.5 ± 1.0	125 ± 2	245 ± 15	0.080 ± 0.005	-	-	5.0	100	Yb1200-12/125DC
Passive-12/125-PM	12.5 ± 1.0	125 ± 1	245 ± 15	0.080 ± 0.005	-	1.6E-04	5.0	100	Yb1200-12/125DC-PM
Passive-12/125DC	12.5 ± 1.0	125 ± 2	245 ± 15	0.080 ± 0.005	0.48	-	5.0	100	Yb1200-12/125DC
Passive-12/125DC-PM	12.5 ± 1.0	125 ± 1	245 ± 15	0.080 ± 0.005	0.48	1.6E-04	5.0	100	Yb1200-12/125DC-PM
Passive-20/125	20.0 ± 1.5	125 ± 2	245 ± 15	0.080 ± 0.005	-	-	15.0	100	Yb700-20/125DC Yb1200-20/125DC
Passive-20/125-PM (Yb800)	15.0 ± 1.0 (MFD[1])	125 ± 1	245 ± 15	-	-	0.8E-04	15.0	100	Yb800-20/125DC-PM
Passive-20/125-PM	20.0 ± 1.5	125 ± 1	245 ± 15	0.080 ± 0.005	-	0.8E-04	15.0	100	Yb1200-20/125DC-PM
Passive-20/125DC	20.0 ± 1.5	125 ± 2	245 ± 15	0.080 ± 0.005	0.48	-	15.0	100	Yb700-20/125DC Yb1200-20/125DC
Passive-20/125DC-PM (Yb800)	15.0 ± 1.0 (MFD[1])	125 ± 1	245 ± 15	-	0.48	0.8E-04	15.0	100	Yb800-20/125DC-PM
Passive-20/125DC-PM	20.0 ± 1.5	125 ± 1	245 ± 15	0.080 ± 0.005	0.48	0.8E-04	15.0	100	Yb1200-20/125DC-PM
Passive-12/250	12.5 ± 1.0	250 ± 5	350 ± 15	0.080 ± 0.005	-	-	5.0	100	Yb1200-12/250DC
Passive-12/250DC	12.5 ± 1.0	250 ± 5	350 ± 15	0.080 ± 0.005	0.48	-	5.0	100	Yb1200-12/250DC
Passive-14/250	14.0 ± 1.0	250 ± 5	350 ± 15	0.070 ± 0.005	-	-	5.0	100	Yb1200-14/250DC
Passive-14/250DC	14.0 ± 1.0	250 ± 5	350 ± 15	0.070 ± 0.005	0.48	-	5.0	100	Yb1200-14/250DC

(1) Core specification refers to the near-field mode field diameter at 1060nm.
(2) *real*NA
(3) Core background loss at 1200nm.

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Passive-20/250DC, 0.07NA	20.0 ± 1.5	250 ± 5	350 ± 15	0.070 ± 0.005	0.48	-	5.0	100	
Passive-20/250DC	20.0 ± 1.5	250 ± 5	350 ± 15	0.080 ± 0.005	0.48	-	5.0	100	
Passive-20/400 (Yb800)	17.0 ± 1.0 (MFD[1])	400 ± 5	500 ± 20	-	-	-	5.0	100	Yb800-20/400DC
Passive-20/400	20.0 ± 1.5	400 ± 5	520 ± 15	0.070 ± 0.005	-	-	5.0	100	Yb1200-20/400DC
Passive-20/400-PM	20.0 ± 1.5	400 ± 10	520 ± 15	0.065 ± 0.005	-	1.6E-04	5.0	100	Yb1200-20/400DC-PM
Passive-20/400DC (Yb800)	17.0 ± 1.0 (MFD[1])	400 ± 5	500 ± 20	-	0.48	-	5.0	100	Yb800-20/400DC
Passive-20/400DC (HP)	20.0 ± 1.5	400 ± 5	520 ± 15	0.065 ± 0.003	-	-	5.0	100	Yb1200-20/400DC (HP)
Passive-20/400DC-PM	20.0 ± 1.5	400 ± 5	520 ± 15	0.065 ± 0.005	0.48	1.6E-04	5.0	100	Yb1200-20/400DC-PM
Passive-25/250	25.0 ± 1.5	250 ± 5	350 ± 15	0.070 ± 0.005	-	-	5.0	100	Yb1200-25/250DC
Passive-25/250-PM	25.0 ± 1.5	250 ± 5	350 ± 15	0.070 ± 0.005	-	1.6E-04	5.0	100	Yb1200-25/250DC-PM
Passive-25/250-PM, 0.065NA	25.0 ± 1.5	250 ± 3	350 ± 15	0.065 ± 0.005	-	1.6E-04	5.0	100	Yb1200-25/250DC-PM
Passive-25/250-PM (Yb900)	18.0 ± 1.0 (MFD[1])	250 ± 3	350 ± 15	-	-	1.6E-04	5.0	100	Yb900-25/250DC-PM
Passive-25/250DC	25.0 ± 1.5	250 ± 5	350 ± 15	0.070 ± 0.005	0.48	-	5.0	100	Yb1200-25/250DC
Passive-25/250DC-PM	25.0 ± 1.5	250 ± 3	350 ± 15	0.070 ± 0.005	0.48	1.6E-04	5.0	100	Yb1200-25/250DC-PM
Passive-25/250DC-PM, 0.065 NA	25.0 ± 1.5	250 ± 5	350 ± 15	0.065 ± 0.005	0.48	1.6E-04	5.0	100	Yb1200-25/250DC-PM
Passive-25/250DC-PM (Yb900)	18.0 ± 1.0 (MFD[1])	250 ± 3	350 ± 15	-	0.48	1.6E-04	5.0	100	Yb900-25/250DC-PM
Passive-30/250	30.0 ± 2.0	250 ± 5	350 ± 15	0.070 ± 0.005	-	-	5.0	100	Yb1200-30/250DC
Passive-30/250-PM	30.0 ± 2.0	250 ± 5	350 ± 15	0.070 ± 0.005	-	1.6E-04	5.0	100	Yb1200-30/250DC-PM
Passive-30/250-PM, 0.060NA	30.0 ± 2.0	250 ± 5	350 ± 15	0.060 ± 0.005	-	1.6E-04	10.0	100	Yb1200-30/250DC-PM
Passive-30/250DC	30.0 ± 2.0	250 ± 5	350 ± 15	0.070 ± 0.005	0.48	-	5.0	100	Yb1200-30/250DC
Passive-30/250DC-PM	30.0 ± 2.0	250 ± 5	350 ± 15	0.070 ± 0.005	0.48	1.6E-04	5.0	100	Yb1200-30/250DC-PM
Passive-30/250DC-PM, 0.060NA	30.0 ± 2.0	250 ± 5	350 ± 15	0.060 ± 0.005	0.48	1.6E-04	10.0	100	Yb1200-30/250DC-PM

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