Rare-earth-doped fibers

INO has been manufacturing rare-earth-doped fibers for more than ten years. The inventory that we currently have includes more than 70 different types. We offer Erbium, Ytterbium, Neodymium, Thulium, Terbium and Samarium-doped fibers along with co-doped fibers like Erbium-Ytterbium. INO also has the capability to customize fiber to suit your needs. Our vast experience enables us to match a large range of characteristics to meet specific requirements for refractive index profile, numerical aperture, rare-earth element concentration, cut-off wavelength and others. Our lab is also fully equipped to offer a complete characterization of the fibers made in-house or from another supplier. The tests we perform include: refractive index profile of the fiber, absorption measurement, cut-off wavelength, mode-field diameter, chemical analysis, environmental testing, radiation testing and more.

The fibers we currently carry in stock are listed below

ERBIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
Er 103	Er	SM	0,16	4 µm	900 nm	3dB/m @ 980 nm	4 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 105	Er	SM	0,16	4 µm	900 nm	5dB/m @ 980 nm	7 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 107	Er	SM	0,16	4 µm	900 nm	7dB/m @ 980 nm	9 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 109	Er	SM	0,16	4 µm	900 nm	11dB/m @ 980 nm	11 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 112	Er	SM	0,2	4 µm	900 nm	9dB/m @ 980 nm	17 dB/m @ 1531 nm	< 25 dB/km @ 1200 nm
Er 123	Er	SM	0,16	4 µm	900 nm	23dB/m @ 980 nm	35 dB/m @ 1531 nm	< 25 dB/km @ 1200 nm
Er 203	Er	SM	0,16	4 µm	900 nm	3dB/m @ 980 nm	4 dB/m @ 1531 nm	< 3 dB/km @ 1200 nm
Er 205	Er	SM	0,16	4 µm	900 nm	5dB/m @ 980 nm	7 dB/m @ 1531 nm	< 3 dB/km @ 1200 nm
Er 207	Er	SM	0,16	4 µm	900 nm	7dB/m @ 980 nm	9 dB/m @ 1531 nm	< 3 dB/km @ 1200 nm
Er 209	Er	SM	0,16	4 µm	900 nm	9dB/m @ 980 nm	11 dB/m @ 1531 nm	< 3 dB/km @ 1200 nm
Er 301	Er	SM	0,23	4 µm	900 nm	0.3dB/m @ 980 nm	0.7 dB/m @ 1531 nm	< 25 dB/km @ 1200 nm
Er 303	Er	SM	0,23	4 µm	1400 nm	3 dB/m @ 1480 nm	8 dB/m @ 1531 nm	< 15 dB/km @ 1200 nm
Er 304	Er	SM	0,23	4 µm	900 nm	4dB/m @ 980 nm	5 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 503	Er	SM,PM	0,16	4 µm	900 nm	3dB/m @ 980 nm	4 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 506	Er	SM,PM	0,16	4 µm	1350 nm	6dB/m @ 980 nm	9 dB/m @ 1531 nm	< 10 dB/km @ 1200 nm
Er 609	Er	MM	0,12	15 µm	NA	9dB/m @ 980 nm	18 dB/m @ 1532 nm	< 200 dB/km @ 1100 nm
Er 612	Er	SM	0,11	7 µm	900 nm	12dB/m @ 980 nm	15 dB/m @ 1531 nm	< 25 dB/km @ 1200 nm
Er 612	Er	MM	0,12	16 µm	NA	12dB/m @ 980 nm	25 dB/m @ 1532 nm	< 175 dB/km @ 1100 nm
Er 616	Er	MM	0,19	30 µm	NA	16dB/m @ 980 nm	30 dB/m @ 1535 nm	< 10 dB/km @ 1100 nm
Er 616	Er	MM	0,16	30 µm	NA	16dB/m @ 980 nm	30 dB/m @ 1532 nm	< 10 dB/km @ 1100 nm
Er 620	Er	MM	0,11	10 µm	NA	20dB/m @ 980 nm	44 dB/m @ 1532 nm	< 30 dB/km @ 1100 nm
Er 634	Er	MM	0,19	22 µm	NA	35dB/m @ 980 nm	60 dB/m @ 1535 nm	< 15 dB/km @ 1100 nm
Er 635	Er	MM	0,22	30 µm	NA	34dB/m @ 980 nm	80 dB/m @ 1535 nm	< 26 dB/km @ 1200 nm
Er 636	Er	MM	0,18	30 µm	NA	35dB/m @ 980 nm	80 dB/m @ 1532 nm	< 200 dB/km @ 1100 nm
Er 707	Er / La	SM				7 dB/m @ 980 n	15 dB/m @ 1535 n	< 200 dB/km @ 1200 nm

Er 103, 105, 107, 109 and 112 are offered with 4.5 or 6.5 wt % of aluminum.

YTTERBIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
Yb 103	Yb	SM	0,19	3.4 µm	900 nm		27 dB/m @ 974 nm	< 15 dB/km @ 1200 nm
Yb 113	Yb	SM	0,16	3.4 µm	900 nm	65dB/m @ 914 nm	130 dB/m @ 974 nm	< 10 dB/km @ 1200 nm
Yb 152	Yb	SM	0,14	5.25 µm	800 nm		524 dB/m @ 979 nm	< 15 dB/km @ 1200 nm
Yb 198	Yb	SM	0,26	2.8 µm	900 nm	290dB/m @ 925 nm	975 dB/m @ 979 nm	< 30 dB/km @ 1200 nm
Yb 214	Yb	SM	0,12	6 µm	900 nm		1400 dB/m @ 979 nm	< 20 dB/km @ 1175 nm
Yb 630	Yb	MM, PM	0,18	7 µm	NA		30 dB/m @ 979 nm	< 20 dB/km @ 1200 nm

THULIUM AND THULIUM-HOLMIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
TH 550	Tm-Ho	SM	0,12	11.3 µm	TBA	500 dB/m @ 791 nm		TBA
TH 512	Tm-Ho	SM	0,16	9 µm	1800 nm	122 dB/m @ 791	155 dB/m @ 1212	< 300 dB/km @ 1200 nm
TH 520	Tm-Ho	SM	0,16	9 µm	1800	205 dB/m @ 791	524 dB/m @ 979 n	< 500 dB/km @ 1200 nm
Tm 130	TM	SM	0,16	3.8 µm	750	16dB/m @ 800 nm	30 dB/m @ 790 nm	< 300 dB/km @ 1200 nm
Tm 646	TM	MM	0,17	16.5 µm	NA	465 dB/m @ 791 nm		< 200 dB/km @ 875 nm

SAMARIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0 µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
Sm 119	TM	SM	0,16	6.4 µm	995 nm	19dB/m @ 1458 nm		< 10 dB/km @ 1200 nm

ERBIUM-YTTERBIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
EY 103	Er-Yb	SM	0,08	9.6 µm	1300 nm	250 dB/m @ 980 nm	42 dB/m @ 1535 nm	< 120 dB/km @ 1200 nm
EY 103	Er-Yb	SM	0,12	5.9 µm	780 nm	280 dB/m @ 977 nm	11 dB/m @ 1535 nm	< 280 dB/km @ 1147 nm
EY 105	Er-Yb	SM	0,19	4.2 µm	950 nm	28dB/m @ 1536 nm	509 dB/m @ 974 nm	< 800 dB/km @ 1200 nm
EY 107	Er-Yb	SM	0,18	4.2 µm	950 nm	683 dB/m @ 980 nm	36 dB/m @ 1537 nm	<350 dB/km @ 1200 nm
EY 110	Er-Yb	SM	0,17	4.2 µm	1060 nm	985 dB/m @ 975 nm	37 dB/m @ 1537 nm	<350 dB/km @ 1350 nm
EY 112	Er-Yb	SM	0,21	4 µm	1100 nm	1200 dB/m @ 980 nm	47 dB/m @ 1535 nm	< 50dB/km @ 1230 nm
EY 115	Er-Yb	SM	0,12	8.5 µm	1250 nm	1534 dB/m @ 980 nm	42 dB/m @ 1535 nm	< 280 dB/km @ 1350nm
EY 150	Er-Yb	SM	0,11	9 µm	1000 nm	26dB/m @ 1536 nm	502 dB/m @ 979 nm	< 160 dB/km @ 1200 nm
EY 203	Er-Yb	SM	0,14	5.4 µm	1000 nm	263 dB/m @ 977 nm	12 dB/m @ 1538 nm	< 280 dB/km @ 1147 nm
EY 304	Er-Yb	SM	0,15	5.1 µm	970 nm	353 dB/m @ 978 nm	10 dB/m @ 1538 nm	<230 dB/km @ 1350 nm
EY 550	Er-Yb	SM,PM	0,18	2.5 X 9µm	950 nm	580 dB/m @ 980 nm	15 dB/m @ 1535 nm	< 600 dB/km @ 1200 nm
EY 602	Er-Yb	SM	0,15	40.4 µm	NA	206 dB/m @ 980 nm	18 dB/m @ 1535 nm	<150 dB/km @ 1200 nm
EY 610	Er-Yb	MM, P	0,29	20.7 µm	NA	1010 dB/m @ 980 nm	70 dB/m @1534 nm	< 75 dB/km @ 1200 nm

NEODYMIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
Nd 100	Nd	SM	0,17	3.4 µm	812 nm	1.8 dB/m @ 807 nm		< 10 dB/km @ 1200 nm
Nd 101	Nd	SM	0,16	4 µm	875 nm	12 dB/m @ 807 nm		< 10 dB/km @ 1200 nm
Nd 102	Nd	SM	0,16	4 µm	775 nm	23 dB/m @ 807 nm		< 10 dB/km @ 1200 nm
Nd 103	Nd	SM	0,16	4 µm	800 nm	27 dB/m @ 810 nm		< 50 dB/km @ 1200 nm
Nd 109	Nd	SM	0,15	5 µm	900 nm	90dB/m @ 810 nm		< 20 dB/km @ 1290 nm
Nd 121	Nd	SM	0,14	5 µm	1300 nm	209 dB/m @ 813 nm	36dB/m @ 880 nm	<30 dB/km @ 1100 nm
Nd 127	Nd	SM	0,2	5 µm	800 nm	275dB/m @ 807 nm	110dB/m @ 880 nm	< 45 dB/km @ 1100 nm
Nd 131	Nd	SM	0,09	7.4 µm	800 nm	310dB/m @ 810 nm	420dB/m @ 870 nm	<30 dB/km @ 1050 nm
Nd 138	Nd	SM	0,14	4.24 µm	900 nm	380 dB/m @ 807 nm		< 15 dB/km @ 1160 nm
Nd 150	Nd	SM	0,2	5 µm	800 nm	500dB/m @ 810	284dB/m @ 820 nm	< 10 dB/km @ 1200 nm
Nd 201	Nd	SM	0,11	6.4 µm	900 nm	16 dB/m @ 813 nm		< 3 dB/km @ 1150 nm
Nd 202	Nd	SM	0,1	7.1 µm	940 nm	24 dB/m @ 807 nm		< 3 dB/km @ 1150 nm
Nd 504	Nd	MM	0,14	20 µm	NA	40 dB/m @ 810 nm		< 50 dB/km @ 1150 nm
Nd 507	Nd	MM	0,14	30 µm	NA	75 dB/m @ 811 nm		< 20 dB/km @ 1200 nm
Nd 509	Nd	MM	0,15	28 µm	NA	286 dB/m @ 810 nm		< 15 dB/km @ 1100 nm
Nd 515	Nd	MM	0,17	12.4 µm	NA	155dB/m @ 804	32 dB/m @ 878 nm	< 100 dB/km @ 1200 nm
Nd 523	Nd	MM	0,2	12.4 µm	NA	238 dB/m @ 805 nm	98 dB/m @ 879 nm	< 100 dB/km @ 1200 nm
Nd 529	Nd	MM	0,14	13 µm	NA	287 dB/m @ 810 nm		< 30 dB/km @ 1150 nm

TERBIUM-YTTERBIUM

Product number	Dopant	Type *	NA (eff.) ± 10 %	Core dia. ±1.0µm	Cut-Off ±50 nm	Absorption (dB/m) ± 1dB/m	Absorption (dB/m) ± 1dB/m	Losses
TY 150	Tb-Yb	SM	0,19	1.9 µm	700 nm		400 dB/m @ 980 nm	< 300 dB/km @ 1200 nm

Type

SM: Single mode MM: Multi mode PM: Polarization maintaining

FOR MORE INFORMATION OR QUESTIONS:
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