



Single-mode LMA Fibers

Features

- Endlessly single mode (no cutoff) and low loss
- High power handling and low nonlinearities
- Mode field diameter is wavelength independent
- Core sizes from 5 to 25 microns

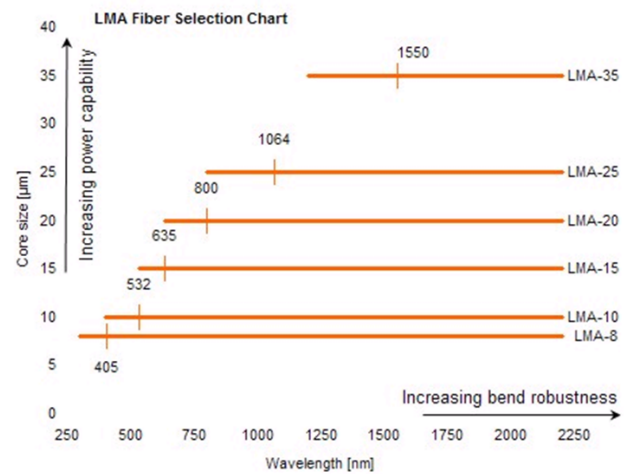
Applications

- Single-mode transport and delivery
- Ultra broadband transmission
- Short pulse and high power delivery

Our selection of Large Mode Area (LMA) fibers covers a range of fibers for diffraction-limited power delivery. The large mode area enables higher power levels without nonlinear effects or material damage. With standard technology, you have to trade large mode areas for single-mode operation, but the Crystal Fibre LMA fibers provide single mode operation in the entire transmission window of the fiber — also known as endlessly single mode operation — making them ideal for broad band applications. Some of the fibers are also available in polarization-maintaining versions.

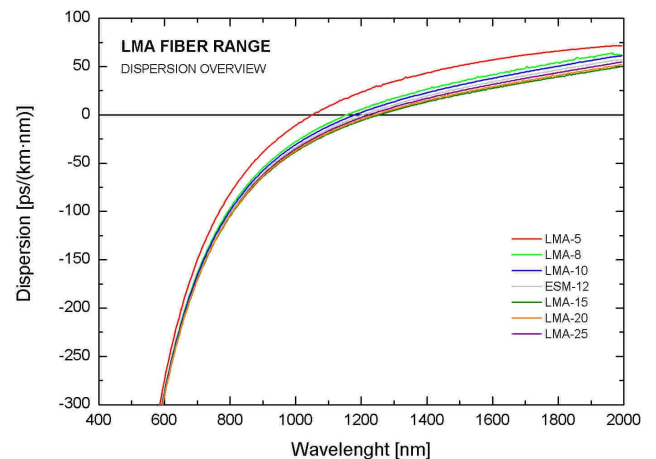
The chart below provides an overview of the fibers. Please refer to the individual fiber data sheets for more detailed information.

Most fibers are available with a variety of termination and cabling options, and some are available in our standard *aeroGUIDE* configurations and as fiber delivery systems for our SuperK range of supercontinuum lasers.



Above: For high power delivery, it is important to choose the largest feasible core size. However, single mode fibers become bend sensitive at some short wavelength edge - the larger the core size, the longer the wavelength the bend loss induced edge will have. The chart provides a general guide to help choose the most appropriate fiber for a given wavelength.

Below: The dispersion of the LMA fibers is close to the material dispersion of silica.



Nominal parameter	LMA-5	LMA-8	LMA-10	ESM-12	LMA-15	LMA-20	LMA-25	LMA-PM-5	LMA-PM10	LMA-PM15
Core size [µm]	5	8	10	12	15	20	25	5	10	15
Cladding diameter [µm]	125	125	125	125	230	230	258	125	230	230
Coating diameter [µm]	245	245	245	245	350	350	410	245	350	350
MFD @ 1064 nm (1/e ²)[µm]	4.7	7.5	8.8	10.3	12.8	16.5	20.9	4.4	8.6	12.6
Relative power handling	Low	Low	Moderate	Moderate	High	High	High	Low	Moderate	Moderate
Relative bend loss at short WL	Low	Low	Moderate	High	Moderate	High	High	Low	Moderate	Moderate
Min. WL [nm]	400	400	500	700	500	700	900	400	500	600
Max. WL [nm]	1700	1700	1700	1700	1700	1700	1700	1200	1700	1700

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