



Member of LEONI Group

OptiGrade 550

OM4 Standard Compliant

High-Performance Graded Index Multimode Fiber series

With OptiGrade 550 j-fiber offers an OM4 standard compliant Multimode fiber. OptiGrade 550 ensures highest bandwidth performance for Premises, Local Area Network (LAN), Metropolitan Area Network (MAN) and Storage Area Network (SAN) while its low-cost 850 nm lasers (VCSEL) optimized design contributes to overall system cost reduction.

Beyond current OM4 standard performance compliance, OptiGrade 550 provides the potential to open future opportunities for higher speed Ethernet data rate transmission of 40/100 Gb/s data rates over shorter distances in one fiber.

Benefits

- Guarantees reliable system performance for 10 Gb/s Ethernet serial transmission over 550m
- Guaranteed OM4 compliance: Effective Modal Bandwidth (EMB) \geq 4700 MHz·km, Overfilled Launch Bandwidth (OFL) \geq 3500 MHz·km @ 850 nm
- Optimized for low cost 850 nm system applications using VCSEL as light sources
- Highest effective modal bandwidth values ensured by most stringent DMD characterization
- Guarantees all j-fiber multimode fiber standard features: easy to work with in cabling and installation and high-performance results; fully compatible with installed fiber base

Standardization and Compliances for OptiGrade OM4

- IEC 60793-2-10
- ITU G651.1
- TIA/EIA 492AAAC-B
- IEEE 802.3

For further information about our Multimode Fiber and other j-fiber products and services, please contact us:

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Performance Characteristics

		Spec. Values	Unit
Bandwidth (Overfilled Launch)	850 nm	≥ 3500	MHz·km
	1300 nm	≥ 500	MHz·km
Effective Modal Bandwidth (EMB)	850 nm	≥ 4700	MHz·km
Transmission Link lengths for 10 Gb/s ¹	850 nm	550	m
	1300 nm	300	m

¹ 850 nm operating wavelength, transmitters meeting encircled flux of ≤ 30% @ radius 4.5 μm and ≥ 86 % @ radius 19.0 μm. At 1300nm link length using LX4.

Optical Characteristics

		Spec. Values	Unit
Attenuation Coefficient ¹	850nm	≤ 2.3	dB/km
	1300nm	≤ 0.6	dB/km
Attenuation @ 1383 nm (OH-Peak)		< 2.0	dB/km
Attenuation Discontinuities (OTDR 1300 nm)		< 0.05	dB
Chromatic dispersion Zero Dispersion Wavelength λ ₀		1295 ≤ λ ₀ ≤ 1340	nm
Zero Dispersion Slope S ₀ – form 1295 ≤ λ ₀ ≤ 1310 – form 1310 ≤ λ ₀ ≤ 1340		≤ 0.105	ps/nm ² ·km
		≤ 0.000375·(1590-λ ₀)	ps/nm ² ·km
Macrobend loss ²	850nm	0.5	dB
	1300nm	0.5	dB
Numerical Aperture		0.200 ± 0.015	
Effective Group Index of Refraction	850nm	1.483	
	1300nm	1.478	

¹ Special attenuation values available upon request

² Mandrel radius 37,5mm, Number of turns 100.

Geometrical Characteristics

	Spec. Values	Unit
Core Diameter	50 ± 2.5	μm
Core Non-Circularity	≤ 5.0	%
Core/Clad Concentricity Error	≤ 1	μm
Cladding Diameter	125 ± 1.0	μm
Cladding Non-Circularity	≤ 1.0	%
Coating Diameter	242 ± 7	μm
Coating /Clad Concentricity Error	≤ 10	μm
Standard Lengths	1.1 - 8.8	km

Mechanical Characteristics

	Spec. Values	Unit
Proof Test	≥ 0.69	GPa
	≥ 8.8	N
Dynamic Tensile Strength Unaged Fiber (0.5m)	≥ 3.8	GPa
		GPa
Median Tensile Strength 15th Percentile Tensile Strength Aged Fiber (0.5m)	≥ 3.03	GPa
		GPa
Dynamic Fatigue Stress Corrosion Parameter n _d (typical)	≥ 23	
Operating Temperature Range	-60 to +85	°C
Coating Strip Force (typical)	1.9	N

Environmental Characteristics

	Spec. Values	Unit
	850/1300 nm	
Change of Temperature Attenuation increase, -60°C to +85°C	≤ 0.1	dB/km
Dry Heat Attenuation increase, 30 days at 85°C	≤ 0.1	dB/km
Damp Heat Attenuation increase, 30 days at 85°C/85% R.H.	≤ 0.1	dB/km
Water Immersion Attenuation increase, 30 days in 23°C water	≤ 0.1	dB/km

Coating

j-fiber Multimode optical fiber is protected with our enhanced coating material that guarantees long-term performance and reliability. The dual-layer acrylate material is user-friendly and compatible in all cable constructions, such as tight buffer and loose tube designs with low bending loss. Optimized for multimode fiber, the coating shows lowest microbending sensitivity. The coating is mechanically strippable and leaves no residue. Coating options for special applications are available on request.

Spool Size

	Size
Spool diameter	9.25"/23.5cm
Spool width	4.21"/10.7cm
Spindle	1"/2.54cm
Traverse width	3.75"/9.5cm

Environmental friendly Packaging

The shipping spool is designed to safeguard j-fiber optical fiber not only during shipping but also during subsequent handling in the customer's plant. It features smooth inside surfaces to ensure that the fiber is wound on and off the reel without the risk of breaking. The reel barrel is isolated via a polyethylene air cushion cover. The inside end of the fiber can be accessed for various measurements while still on the shipping spool. All reels and transport boxes are designed to take advantage of our recycling program.

Ordering Information

To order our OptiGrade 550 please call, fax or email us and specify the following parameters when ordering:

Fiber Type:	OptiGrade 550 50/125/242 μm
Fiber Quantity:	kms
Other:	desired ship date, reel length, special requests

All fibers and preforms are subject to j-fiber's ongoing process and quality improvement programs ensuring excellent performance and high reliability. We reserve the right to make changes to the above specification without notice.

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