



- Supported by the Hubbell Mission Critical<sup>®</sup> 25-Year Warranty
- Laser Optimized, High Macro Bend Performance, 100% Backward Compatible
- 10 GbE Application Assurance for all Standards-Supported Lengths
- RoHS Compliant, Flame-Retardant Cable, Manufactured Locally

**FEATURES**

- Laser optimized, high bandwidth, low bend radius for optimum transmission performance
- Premium bend-insensitive fiber for enhanced durability and maximum testing headroom
- Fibers supported: OM1, OM2, OM3, OM4, OS2
- Low dispersion, extended distance OM3 and OM4 performance at 10G/40G/100G data rates
- E-Z strip buffer with new dash style color stripes for contractor-friendly termination
- High performance fiber minimizes cable contribution to overall link loss budgets

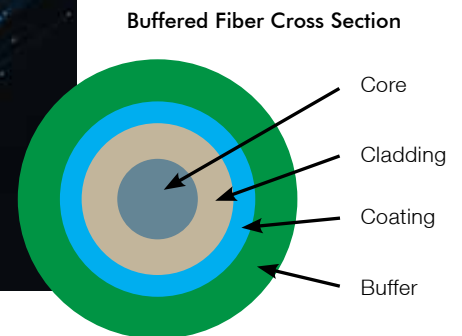
**SPECIFICATIONS**

- OM1 and OM2 core: legacy graded index
- OM3 and OM4 core: graded, laser optimized
- OS2 core: step index
- Tensile proof stress: ≥ 100 kpsi
- Fiber coating: acrylate
- Buffer layer: flame retardant PVC
- Temperature test range: -60° C to +85° C
- Dimensional specifications: see chart
- Performance specifications: see chart

**STANDARDS**

- TIA-492AAAA-A: OM1 Optical Fiber Standard
- TIA-492AAAB-A: OM2 Optical Fiber Standard
- TIA-492AAAC-B: OM3 Optical Fiber Standard
- TIA-492AAAD: OM4 Optical Fiber Standard
- TIA-492CAAA: OS2 Optical Fiber Standard
- IEC 60793-2-10: Multimode Fiber Specifications
- IEC 60793-2-50: Singlemode Fiber Specifications
- ITU-T-G651.1: Multimode Fiber Specifications
- ITU-T-G652D: Singlemode Fiber Specifications
- TIA-568-C.3: Optical Fiber Cabling Standard

HUBBELL **OptiChannel** Optical Fiber Specifications for Hubbell HFCD Series Cable



Optical fiber used in Hubbell's OptiChannel HFCD Series cable delivers high bandwidth optical network performance and reliability. Featuring high performance laser optimized OM3 and OM4 fiber, with ease of termination, all HFCD series fiber cables are supported by the Hubbell Mission Critical<sup>®</sup> 25-year warranty. Premium quality OM3, OM4 and OS2 fibers provide maximum durability and tight bend transmission performance. Tight bend rated fibers enhance cable performance, adding headroom to certification test results. Hubbell also remains committed to supporting legacy OM1 and OM2 fibers.

**FIBER PAIRING AND BUFFER COLOR SEQUENCE**

- 1-Blue, 2-Orange, 3-Green, 4-Brown, 5-Slate, 6-White
- 7-Red, 8-Black, 9-Yellow, 10-Violet, 11-Rose, 12-Aqua
- 13-Blue/Black, 14-Orange/Black, 15-Green/Black, 16-Brown/Black
- 17-Slate/Black, 18-White/Black, 19-Red/Black, 20-Black/White
- 21-Yellow/Black, 22-Violet/Black, 23-Rose/Black, 24-Aqua/Black
- Repeat colors 1 through 12 for each subunit cable

**APPLICATIONS**

- Indoor building LAN, backbone, and horizontal fiber cabling
- Data Center and Storage Area Network cabling
- Bandwidth-intensive, high speed data and video transmission
- Extended distance, non-conductive data links
- Indoor/Outdoor duct and campus cabling
- Commercial, medical, government and education facilities



**OPTICAL FIBER CABLE ORDERING INFORMATION**

Optical fiber described in this specification is supplied in the following Hubbell HFCD Series tight buffered cables:

- HFCD1 Series: Indoor Distribution
- HFCD1M Series: Indoor Distribution, Multi-Unit
- HFCD15 Series: Indoor Distribution, Armored
- HFCD14 Series: Indoor/Outdoor
- HFCD19 Series: Indoor/Outdoor Armored

**CABLE DELIVERY**

Refer to the HFCD series cable product literature for details. All HFCD Series fiber cables are priced and delivered in feet. Spool size and weight varies by cable and length ordered. Specify cable put-up lengths on purchase order. MOQ for non-stocked cables is 1,640 feet. MOQ for stocked cables is 500 feet. Contact Hubbell Premise Wiring for availability. Length ordered may be subject to a +/-10% production tolerance. Cut charges may apply to multi-reel orders.

**OPTICAL FIBER PERFORMANCE SPECIFICATIONS**

Fiber Type	Max Attenuation (dB/km)		Laser-Based EMB (MHz·Km)		1 Gb/s Link Distance (meters)		10 Gb/s Link Distance (meters)		40/100 Gb/s Link Distance (meters)	
	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm	850 nm	1300 nm
OM1	≤ 2.9	≤ 0.6	220	n/a	300	550	26	n/a	n/a	n/a
OM2	≤ 2.3	≤ 0.6	950	n/a	750	550	150	n/a	n/a	n/a
OM3	≤ 2.3	≤ 0.6	2000	n/a	1,000	550	300	n/a	140	n/a
OM4	≤ 2.3	≤ 0.6	4700	n/a	1,100	550	550	n/a	170	n/a
	<b>1310 nm</b>	<b>1550 nm</b>	<b>1310 nm</b>	<b>1550 nm</b>	<b>1310 nm</b>	<b>1550 nm</b>	<b>1310 nm</b>	<b>1550 nm</b>	<b>1310 nm</b>	<b>1550 nm</b>
OS2	≤ 0.35	≤ 0.20	n/a	n/a	n/a	n/a	10,000	40,000	10,000	n/a

Note: All link distance limits are based on 1.0 dB max connector loss and 3.0 dB/km max cable loss.  
 OM2, OM3, OM4, and OS2 are bend-insensitive versions, optimized for tight macro-bending performance.  
 See Hubbell cable literature for standard IEEE 802.3 application distances.

**OPTICAL FIBER DIMENSIONAL SPECIFICATIONS**

Fiber Type	Core Diameter (microns)	Cladding Diameter (microns)	Core-Clad Concentricity (microns)	Cladding Non-Circularity	Core Non-Circularity	Coating Diameter (microns)	Coating-Cladding Concentricity (microns)
OM1	62.5 ± 2.5 μm	125 ± 2.0 μm	≤ 1.5 μm	≤ 1.0%	≤ 5.0%	242 ± 5 μm	< 12 μm
OM2	50.0 ± 2.5 μm	125 ± 1.0 μm	≤ 1.5 μm	≤ 1.0%	≤ 5.0%	242 ± 5 μm	< 12 μm
OM3	50.0 ± 2.5 μm	125 ± 1.0 μm	≤ 1.5 μm	≤ 1.0%	≤ 5.0%	242 ± 5 μm	< 12 μm
OM4	50.0 ± 2.5 μm	125 ± 1.0 μm	≤ 1.5 μm	≤ 1.0%	≤ 5.0%	242 ± 5 μm	< 12 μm
OS2	8.2 μm**	125 ± 0.7 μm	≤ 0.5 μm	≤ 0.7%	n/a	242 ± 5 μm	< 12 μm

\*\*OS2 Mode field diameter at 1310 nm: 9.2 ± 0.4 μm; OS2 Mode field diameter at 1550 nm: 10.4 ± 0.4 μm.

**INSTALLATION TIPS**

- Verify the IEEE 802.3 application is supported for channel distance and attenuation limits (see chart above).
- During installation or operation, comply with maximum loading, minimum bend radius, and temperature limits.
- Always pull cables by the internal strength member, or fiber damage may result.
- Use proper tools for stripping and dressing out cable to avoid fiber damage.
- Adhere to best installation practices, avoiding kinks, crushing, and abrasion. Always use proper cable supports.
- Use recognized field termination methods. Fiber terminations shall be strain relieved from any cable weight.