

## BendBright™ OM4-BiDi 200 μm

Fiber OM4-BiDi optimised for Advanced 800G and Terabit BiDi applications



### APPLICABLE STANDARDS

- IEC / EN 60793-2-10: type A1-OM4
- ISO / IEC 11801: Category OM4
- TIA / EIA 492 AAAF

Issue Date: August 2024

Supersedes: February 2024

## OPTICAL SPECIFICATIONS

### BANDWIDTH (EMB)

Attribute	Units	Specified Values
Effective Modal Bandwidth at 850 nm	MHz·km	≥ 4700
Effective Modal Bandwidth at 910 nm	MHz·km	≥ 3100

### BANDWIDTH (OFL)

Attribute	Units	Specified Values
Overfilled Modal Bandwidth at 850 nm	MHz·km	≥ 3500
Overfilled Modal Bandwidth at 1300 nm	MHz·km	≥ 500

### ATTENUATION

Attribute	Units	Specified Values
Attenuation coefficient at 850 nm	dB/km	≤ 2.3
Attenuation coefficient at 910 nm	dB/km	≤ 1.8
Attenuation coefficient at 1300 nm	dB/km	≤ 0.6

### NUMERICAL APERTURE

Attribute	Specified Values
Numerical aperture	0.200 ± 0.015

### MACROBENDING LOSS

Conditions	Wavelength	Units	Specified Values
Mandrel Radius = 7.5 mm, 2 Turns	850 / 1300 nm	dB	≤ 0.2 / ≤ 0.5
Mandrel Radius = 15 mm, 2 Turns	850 / 1300 nm	dB	≤ 0.1 / ≤ 0.3

## MULTIMODE SYSTEM REACH

IEEE Standard or MSA	Units	Transmission Distance
Terabit BiDi 1.6T-SR8.2	m	100
Terabit BiDi 1.6T-VR8.2	m	70
Terabit BiDi 800G-SR4.2	m	100
Terabit BiDi 800G-VR4.2	m	70
800GBASE-SR8	m	100
800GBASE-VR8	m	50
400GBASE-SR4.2	m	100
400GBASE-SR8	m	100

## CHROMATIC DISPERSION

Attribute	Conditions	Units	Specified Values
Zero Dispersion Wavelength, $\lambda_0$		nm	$1295 \leq \lambda_0 \leq 1340$
Zero Dispersion Slope, $S_0$	$1295 \leq \lambda_0 \leq 1310$	ps/[nm <sup>2</sup> ·km]	$\leq 0.105$
	$1310 \leq \lambda_0 \leq 1340$	ps/[nm <sup>2</sup> ·km]	$\leq 0.000375 (1590 - \lambda_0)$

## BACKSCATTER CHARACTERISTICS <sup>1</sup>

Attribute	Conditions	Units	Specified Values
Point Discontinuity <sup>2</sup>	850 nm, 1300 nm	dB	$\leq 0.1$
Irregularities over fibre length	850 nm, 1300 nm	dB	$\leq 0.1$
Group Index of Refraction at 850 nm	-	-	1.482 (typical)
Group Index of Refraction at 1300 nm	-	-	1.477 (typical)

<sup>1</sup> OTDR measurement with 0.5  $\mu$ s pulse width.

<sup>2</sup> Mean of bi-directional measurement

## GEOMETRICAL SPECIFICATIONS

### GLASS GEOMETRY

Attribute	Units	Specified Values
Core Diameter	$\mu$ m	$50 \pm 2.5$
Core non-Circularity	%	$\leq 5$
Core-Cladding Concentricity Error	$\mu$ m	$\leq 1.0$
Cladding Diameter	$\mu$ m	$125.0 \pm 1.0$
Cladding non-Circularity	%	$\leq 0.7$

## COATING GEOMETRY

Attribute	Units	Specified Values
Coating Diameter	μm	200 ± 7
Coating non-Circularity	%	≤ 5
Coating-Cladding Concentricity Error	μm	≤ 10

## MECHANICAL SPECIFICATIONS

### Proof Test <sup>3</sup>

The entire spool length is subjected to a tensile proof stress ≥ 0.7 GPa (100 kpsi) ; 1% strain equivalent

<sup>3</sup> Higher proof test available upon request

## COATING PERFORMANCE

Attribute	Units	Specified Values
Average Coating Strip Force, unaged and aged <sup>4</sup>	N	$0.4 \leq F_{\text{avg-strip}} \leq 3.0$
Peak Coating Strip Force, unaged and aged <sup>4</sup>	N	$0.4 \leq F_{\text{peak-strip}} \leq 8.9$

<sup>4</sup> Aging at 23°C, 30 days

## FIBRE STRENGTH

Attribute	Units	Specified Values
Dynamic Tensile Strength (0.5 meter gauge length), unaged and aged <sup>5</sup>	GPa	median > 3.8 (550 kpsi)
Dynamic Fatigue, unaged and aged <sup>5</sup>	-	$n_d \geq 20$

<sup>5</sup> Aging at 85°C, 85% RH, 30 days

## ENVIRONMENTAL SPECIFICATIONS

Environmental test	Test Conditions	Induced attenuation at 850, 1300 nm (dB/km)
Temperature Cycling	-60°C to +85°C	≤ 0.1
Temperature - Humidity Cycling	-10°C to +85°C, 4-98% RH	≤ 0.1
Water Immersion	30 days; 23°C	≤ 0.1
Dry Heat	30 days ; 85°C	≤ 0.1
Damp Heat	30 days; 85°C; 85% RH	≤ 0.1

## OTHERS

Attribute	Specified Values
Length	Up to 8.8 km per spool
Coating	Acrylate Coating (Clear)

All measurements in accordance with ITU-T G650 recommendations

© PRYSMIAN GROUP 2024, All Rights Reserved

All sizes and values without tolerances are reference values. Specifications are for product as supplied by Prysmian: any modification or alteration afterwards of product may give different result. The information contained within this document must not be copied, reprinted or reproduced in any form, either wholly or in part, without the written consent of Prysmian. The information is believed to be correct at the time of issue. Prysmian reserves the right to amend this specification without prior notice. This specification is not contractually valid unless specifically authorized by Prysmian.