

# Optical Fiber Color Codes

## AEN 29, Revision 11

This Applications Note addresses Corning Optical Communications' identification scheme for optical fiber cables. This identification scheme follows the TIA/EIA-598, "Optical Fiber Cable Color Coding." This standard is adopted by; Telcordia GR-20 – Generic Requirements for Optical Fiber and Optical Fiber Cable, Telcordia GR-409 - Generic Requirements for Indoor Fiber Optic Cable, the Rural Utility Service within 7 CFR1755.900, the Insulated Cable Engineers Association Incorporated, (ICEA) S-87-640, "Standard for Fiber Optic Outside Plant Communications Cable", S-83-596, "Standard for Fiber Optic Premises Distribution Cable"; and S-104-696, "Standard for Indoor-Outdoor Optical Fiber Cable."

TIA/EIA-598 defines identification schemes for fibers, buffered fibers, fiber units, and groups of fiber units within outside plant and premises optical fiber cables.

Corning Optical Communications' supports the adoption of TIA/EIA-598 because it promotes standardization throughout the optical fiber cable industry. Corning Optical Communications' has adopted this identification scheme in stranded loose tube designs, MiniXtend HD, and tight-buffered premises cable.

This method uniquely identifies fiber ribbons and fiber subunits. The legend will contain a corresponding printed numerical position number and/or color for use in identification. This standard also allows fiber units to be identified by other discernible colors as agreed to by the manufacturer and the user. For example, in Corning Optical Communications' single tube, loose tube cables such as FREEDM® LST™, for a fiber count less than or equal to 12 fibers, the buffer tube color will be one of the twelve standard colors, however, the identification scheme for the buffer tubes will follow the color code in the table to the right.

**Corning Optical Communications  
 Buffer Tube Color Code**

Position Number	Base Color and Tracer	Abbreviation
1	Blue	BL
2	Orange	OR
3	Green	GR
4	Brown	BR
5	Slate	SL
6	White	WH
7	Red	RD
8	Black	BK
9	Yellow	YL
10	Violet	VI
11	Rose	RS
12	Aqua	AQ
13 through 24	Same as colors 1 - 12 with Black tracer <sup>1</sup>	Example: 13 = BL/BK 17 = SL/BK 20 = BK/WH

Table 1: Buffer tube Identification

1. Black buffer tubes will use a white tracer if repeated.

**Corning Optical Communications  
MiniXtend® HD Fiber Color Code**

Position Number	Base Color and Tracer	Abbreviation
1	Blue	BL
2	Orange	OR
3	Green	GR
4	Brown	BR
5	Slate	SL
6	White	WH
7	Red	RD
8	Black	BK
9	Yellow	YL
10	Violet	VI
11	Rose	RS
12	Aqua	AQ
13 through 24	Same as colors 1 - 12 with Black tracer With the exception of fiber 20	Example: 13 = BL/BK 17 = SL/BK 20 <sup>1</sup> = OP/BK

**Table 2: MiniXtend® HD fiber Identification**

1. Repeated black fiber-20 will be transparent (opaque) with black tracer

For Corning Optical Communications' MiniXtend® HD Cable with 24 fibers per buffer tube, the fiber identification will follow a similar fiber color code. The first 12 fibers will be the standard color; fibers 13 through 24 will repeat the same color identification with black tracer, with the exception of fiber 20 "the second black fiber". This fiber will be opaque (transparent coating) with black tracer. This helps uniquely identify the fibers.

For further information, see ANSI/EIA-359A "EIA Standard Colors for Color Identification and Coding". To obtain copies of a standard, please call: Global Engineering Documents at 1-800-854-7179.

To elaborate on the ribbon identification method, ribbons are labeled with a redundant labeling scheme that is standard across all ribbon cable types. For a sample ribbon, let us use the first ribbon in a cable labeled 1-SM-BL-1 according to the current labeling scheme.

- 1) The first placeholder of the label represents that ribbon's number in the cable. In this example, the ribbon is numbered 1, the first ribbon of the cable.
- 2) The second placeholder is the type of fiber, so in this case the ribbon is labeled SM for single mode.
- 3) The third placeholder is the color designation for the ribbon. It is similar to the first placeholder, but cycles through the standard color code (blue, orange, green ...aqua). For simplicity, one can think of this as a bundle or group of 12 fibers that will have a matching color and number designator. In our example, the fiber is labeled BL because it is the first in the set of 12 colors defined above.
- 4) The last placeholder represents the set of 12 ribbons. It increments each time one cycles through the entire color code. In our example, the ribbon is in the first set of 12 because it is labeled 1.

The table below shows the convention described above and illustrates the ribbon labeling assuming a 216 Fiber LEAF ribbon cable. Note the patterns of the designator. In this cable, there are 18, 12 fiber ribbons for a total of 216 fibers.

**216 Fiber Ribbon Cable label**

<b>Ribbon</b>	<b>Designator</b>
1	1-LF-BL-1
2	2-LF-OR-1
3	3-LF-GR-1
4	4-LF-BR-1
5	5-LF-SL-1
6	6-LF-WH-1
7	7-LF-RD-1
8	8-LF-BK-1
9	9-LF-YW-1
10	10-LF-VI-1
11	11-LF-RS-1
12	12-LF-AQ-1
13	13-LF-BL-2
14	14-LF-OR-2
15	15-LF-GR-2
16	16-LF-BR-2
17	17-LF-SL-2
18	18-LF-WH-2

To reiterate the labeling scheme, let us use the 27<sup>th</sup> ribbon of another leaf ribbon cable. That ribbon would have the label 27-LF-GR-3 printed on it. So again, the 27 represents the 27<sup>th</sup> ribbon, LF is for Leaf fiber, GR is for the third ribbon of a set of 12, and 3 is for the third set of 12 ribbons.