



# High Performance Universal Micro Cable

12-144 fibers G657A1 TIA598 ft

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## Features

- Up to 144 fibers
- Super slim design
- Excellent installation performance
- Robust design for duct installation in ground or lashed aerial
- Other challenging applications such as façade deployment etc.
- Unique design with robust inner tubes that do not kink
- Temperature range from -40 to +70°C in operation
- Excellent bend performance,  $\geq 100$  mm
- Easy to prepare and identify fibers
- Ultra low attenuation in cable

## Application

The Hexatronic micro cables are characterized by state of the art installation performance when installed by blowing into microducts. This more robust product is designed to also be used in aerial installation by lashing.

All parameters such as cable diameter, sheath friction, cable stiffness, extra robust jacket etc are optimized for best installation performance without compromising mechanical or environmental properties.

The micro cables are based on a slim loose tube design with up to 24 tubes per cable. The design facilitates fiber preparation and mid-span access. The cables are suitable for long-distance, air blown installation in microducts, with an inner diameter of 12 to 16 mm. The cables have excellent bend performance and an extremely wide operational temperature range.

## Design

The Micro Cables are designed with one layer of inner protective tubes made of a unique Polyamide compound. The Polyamide gives a special strength to the product, while increasing the bending properties as well as other benefits such as extreme temperature resistance. Each tube contains 12 or 24 fibers. As a result, The Micro Cables are more durable during the installation process as they are able to withstand rough handling. The unique cable design with an extended operational temperature range of -40 to +70°C can be used in many environments, on all continents where heat and cold are often a major concern.

## Product Information

- 1 Primary coated fiber: Silica, acrylate
- 2 Loose tube: PA
- 3 Central strength member: Glass fiber reinforced plastic, PE
- 4 Slit up yarn: Aramide yarn
- 5 Wrapping: Water blocking yarns
- 6 Sheath: Polyethylene, halogen-free

Black fillers can replace empty white tubes.

## Technical Information

<b>Product Color</b>	Black Sheath
<b>Color Code</b>	TIA598
<b>Temperature, Operation [°C]</b>	-40 to +70
<b>Temperature, Storage [°C]</b>	-45 to +70

<b>Temperature, Installation [°C]</b>	-15 to +50
<b>Water Blocking</b>	Longitudinal water blocking according to IEC 60794-1-2-F5C
<b>Fiber Type</b>	G657A1
<b>Attenuation @Wavelength [nm]</b>	1310/1550
<b>Typical Attenuation [dB/km]</b>	0.32/0.18
<b>Average Attenuation [dB/km]</b>	0.33/0.21
<b>Maximum Attenuation [dB/km]</b>	0.36/0.23
<b>Conformance</b>	<p>Longitudinal water blocking according to IEC 60794-1-2-F5C. Mechanical and environmental tests in accordance with IEC 60794-5-10. Fiber parameters and tests according to the IEC series 60793-2 and 60793-1.</p> <p>Max allowed tension during operation according to IEC 60794-1-21-E1: fiber <math>\leq 0.2\%</math>, and attenuation increase <math>\leq 0.05</math> dB/km</p> <p>Max allowed tension during installation according to IEC 60794-1-21-E1: fiber <math>\leq 0.6\%</math></p>
<b>Marking</b>	The cables are length marked in feet, and the tubes and fibers are color coded according to TIA598 (Bellcore).
<b>Installation Notes</b>	<p>Typical installation performance:</p> <ul style="list-style-type: none"> <li>▪ Ducts ID 12 mm, cable OD <math>\leq 9</math> mm: 2000 m</li> <li>▪ Ducts ID 14 mm, cable OD <math>\leq 10.5</math> mm: 2000 m</li> <li>▪ Ducts ID 15-16 mm, cable OD <math>&lt; 11</math> mm: 2000 m, cable OD 11-12 mm: 1500 m</li> </ul> <p>Installation performance verified on Hexatronic test track, according to IEC 60794. Installation performance is affected by the installed path, environmental conditions, installation equipment etc and actual performance may therefore deviate from the above specified values.</p> <p>If the cable is installed by blowing the temperature shall be -15 to +40°C. The cable shall not be stored in direct sunlight. The sun may heat up the cable over the permitted temperature limit.</p>
<b>Ordering Information</b>	Supplied lengths: 2, 4, 8 km (96 and 144f max length 6km)

## Technical Details

TIA-598 Fibers and Tubes	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua
	13	14	15	16	17	18	19	20	21	22	23	24
	Blue	Orange	Green	Brown	Slate	White	Red	Clear	Yellow	Violet	Rose	Aqua

TIA 598 Color Code Chart

## Articles 5

Article name	Color	No. of Fibers	Layout	Bend Radius [mm]	Tensile Force, Installation [N]	Crush [N/100 mm]	Diameter Ø [mm]	Weight [kg/km]	Length [m]
<b>GNHL 24 G657A1 (2x12f) TIA598 ft</b> TOL4019046/24CF	Black	24	2x12	100	800	2000	7.7	48	8000/K12, 4000/K10, 2000/K8
<b>GNHL 48 G657A1 (4x12f) TIA598 ft</b> TOL4019046/48CF	Black	48	4x12	100	800	2000	7.7	48	8000/K12, 4000/K10, 2000/K8
<b>GNHL 72 G657A1 (6x12f) TIA598 ft</b> TOL4019046/72CF	Black	72	6x12	100	1100	2000	7.7	48	8000/K12, 4000/K10, 2000/K8
<b>GNHL 96 G657A1 (8x12f) TIA598</b> TOL4019046/96CF	Black	96	8x12	120	1200	2000	8.7	62	6000/K12, 4000/K12, 2000/K10
<b>GNHL 144 G657A1 (6x24f) TIA598</b> TOL4019046/144CF	Black	144	6x24	120	1600	2000	8.9	64	6000/K12, 4000/K12, 2000/K10