

# High Performance Loose Tube Cable

**GRHL 12-192 fibers G657A1 TIA598A ft**

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## Features

- Up to 192 fibres
- Slim yet very durable design
- Air-blown installation, water jetting or traditional pulling
- The cable can be used as an aerial lashed solution
- Excellent optical performance with ultra-low loss G657A1 fibers
- Dry Core Cable

## Application

The Hexatronic slim outdoor loose-tube cable series combines state of the art installation performance, ultra-low attenuation and a high mechanical and environmental performance.

The cable type is typically used in transport applications such as terrestrial long-haul or metro networks where low attenuation and cable performance are prime concerns.

With a reduced outside cable diameter and optimised cable stiffness, the cables can be air-blown or water-jetted long distances without the need for splicing.

The cables can also be lashed to a messenger wire for aerial installation.

A reduced cable diameter also allows for reduced duct diameters which will simplify and reduce the cost of material handling in field.

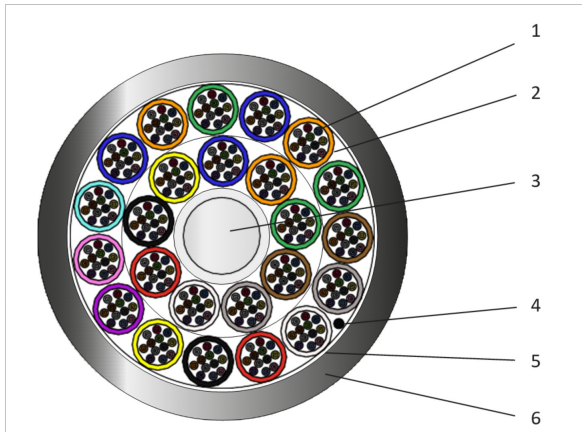
Thanks to the central strength member design and a robust sheath the cables can also be installed by traditional pulling techniques.

## Design

The cables are based on a dry concentric core, slim loose tube design with up to 16 jelly filled tubes per cable. The cables have one or two layers of inner protective tubes made of a robust PBT compound where each tube has 12 fibers.

The design facilitates easy fibre preparation and mid-span access.

## Product Information



- 1 Primary coated fiber: Silica, acrylate
- 2 Loose tube: PBT, jelly filled
- 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 Jacket
<b>Color Code</b>	TIA598
<b>Temperature, Operation [°F]</b>	-40 to 158 F (-40 to +70 C, upto 96F) -22 to 158 F (-30 to +70 C, 192F)
<b>Temperature, Storage [°F]</b>	-40 to 158 F (-40 to +70 C)
<b>Temperature, Installation [°F]</b>	5 to 122 F (-15 to +50 C)

<b>Water Blocking</b>	Length water blocking according to IEC 60794-1-2-F5B
<b>Fiber Type</b>	G657A1
<b>Attenuation @Wavelength [nm]</b>	1310/1383/1550
<b>Typical Attenuation [dB/km]</b>	0.32/0.32/0.18
<b>Average Attenuation [dB/km]</b>	0.33/0.33/0.21
<b>Maximum Attenuation [dB/km]</b>	0.36/0.36/0.23
<b>Conformance</b>	Length water blocking according to IEC 60794-1-2-F5B. Mechanical and environmental test in accordance with IEC 60794-5-10 Fiber parameters and tests according to the IEC series 60793-2 and 60793-1
<b>Marking</b>	Example of sheath marking, 1 time/meter: "HEXATRONIC A35 yymmddhh TOL4012128/192CF GRHL-U-CDGNRV 192/T12 G657A1 TIA598 xxxxx ft" where yymmddhh = year, month, day and hour of manufacture, xxxxx=running feet marking
<b>Installation Notes</b>	If the cable is installed by blowing the temperature shall be -15 to +40°C (5 to 104°F). The cable shall not be stored in direct sunlight. The sun may heat up the cable over the permitted temperature limit.
<b>Ordering Information</b>	Supplied lengths: 2, 4, 8 km

## 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

## Articles 8

Article name	Color	No. of Fibers	Layout	Bend Radius [in]	Tensile Force, Installation [lbs]	Tensile Force, Operation [lbs]	Crush [lbs/4"]	Diameter Ø [mm]	Weight [lbs/100ft]
<b>GRHL 12 G657A1 TIA598 ft (1x12f)</b> TOL4012128/12CF	Black	12	1x12	5.5	340	112	340	9.4	44
<b>GRHL 24 G657A1 TIA598 ft (2x12f)</b> TOL4012128/24CF	Black	24	2x12	5.5	340	112	340	9.4	44
<b>GRHL 36 G657A1 TIA598 ft (3x12f)</b> TOL4012128/36CF	Black	36	3x12	5.5	340	112	340	9.4	44
<b>GRHL 48 G657A1 TIA598 ft (4x12f)</b> TOL4012128/48CF	Black	48	4x12	5.5	340	155	340	9.4	44
<b>GRHL 72 G657A1 TIA598 ft (6x12f)</b> TOL4012128/72CF	Black	72	6x12	5.5	340	155	340	9.4	44
<b>GRHL 96 G657A1 TIA598 ft (8x12f)</b> TOL4012128/96CF	Black	96	8x12	6.3	900	340	340	10.7	60
<b>GRHL 144 G657A1 TIA598 ft (12x12f)</b> TOL4012128/144CF	Black	144	12x12	7	500	200	340	13.6	85
<b>GRHL 192 G657A1 TIA598 ft (16x12f)</b> TOL4012128/192CF	Black	192	16x12	7	540	330	340	13.6	85