




Concentric Core Loose Tube Micro Cable - The Viper Series

Micro cable 12-432 fibre G657A1

Product Overview

The Hexatronic Viper series of micro cables are characterized by state of the art installation performance when installed by blowing into microducts. Installation in access networks typically containing difficult routes are facilitated by the enhanced performance of the Viper cables.

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

The micro cables are based on a slim loose tube design with up to 36 tubes per cable. The design facilitates easy fibre preparation and mid-span access. The cables are suitable for long-distance and air blown installations with an inner diameter of as little as 8 to 16mm.



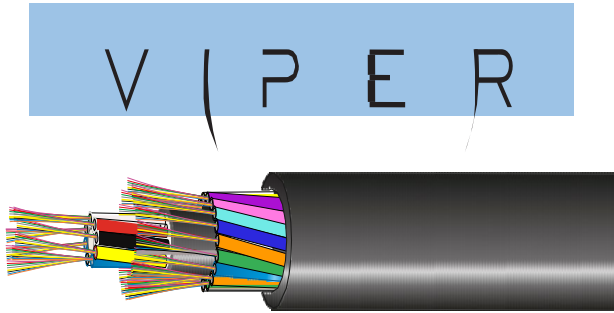
Features

- Up to 432 fibres in a super slim design
- Ultra low attenuation for all wavelengths
- Excellent installation performance
- Unique design with robust inner tubes that do not kink
- Temperature range from -45 to $+70^{\circ}$
- Excellent bend performance, >70 mm
- Easy to prepare and identify fibres

Design

The micro cables are designed with one, two or three layers 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 fibres.

As a result, the Viper micro cables are more durable during the installation process as they can withstand rough handling. The unique cable design with an extended operational temperature range 45 to $+70^{\circ}$ can be used in many environments, on all continents where heat and cold are often a major concern.



Typical Data

Temperature range

Operation	-45 to +70°C
Storage.....	-45 to +70°C
Handling.....	-15 to +50°C

Bending radius

Cable bend radius, permanent, multiple turns 12-72 fibre	75 mm
96 fibre	80 mm
144 fibre	70 mm
192 fibre	80 mm
288 fibre	80 mm
432 fibre	175 mm

Bending test, 10m coil at minimum bend radius.

All cables meet max 0.05dB attenuation change during bend @ 1550nm.

Tensile force:

12-72 fibre.....	1200/50 N
96 fibre.....	1200/20 N
144 fibre.....	1000/100 N
192 fibre.....	2500/170 N
288 fibre.....	3000/100 N
432 fibre.....	1800/250 N

Crush resistance ($\Delta\alpha \leq 0.05$ dB after test, no damage)

12-72 fibre.....	2000 N/100mm
96 fibre.....	1000 N/100mm
144 fibre.....	2000 N/100mm
192 fibre.....	5000 N/100mm
288 fibre.....	2000 N/100mm
432 fibre.....	2000 N/100mm

Crush resistance during load.

At 500N load all cables meet max 0.05dB attenuation change @ 1550nm

Impact resistance:

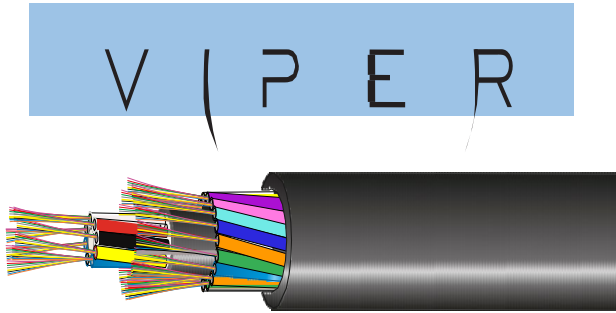
12-72 fibre.....	2 J
96-288 fibre	3 J
432 fibre.....	5 J

Torsion resistance

All cables pass $\pm 180^\circ$ torsion test with no damage and no change in attenuation (<0.05dB @ 1550nm) after test.

Typical installation performance

Ducts, inner diameter 8mm	
12-96 fibre.....	2000 m
Ducts, inner diameter 10mm	
12-96 fibre.....	2000 m
144, 192 fibre.....	1000 m
Ducts, inner diameter 12mm	
12-192 fibre.....	2000 m
Ducts, inner diameter 16 mm	
288, 432 fibre.....	2000 m



Delivery Information

Supplied lengths 2 and 4km

The cable is length water blocking according to IEC 60794-1-2-FSB. Mechanical and environmental test in accordance with IEC 60794-5-10 fibre parameters and tests according to the IEC series 60793-2 and 60793-1

The cable shall not be stored in direct sunlight.

Design

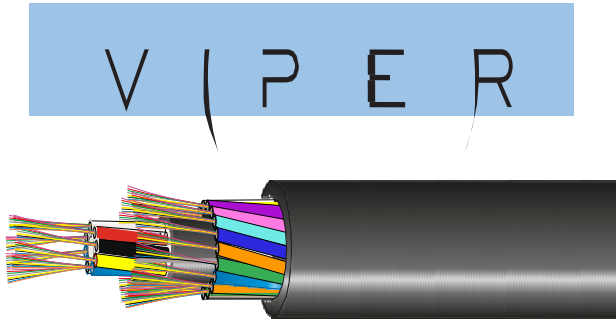
- Primary coated fibre.....Silica, acrylate
- Loose tube.....PA
- Slit up yarn.....Aramide yarn
- Wrapping.....Water blocking yarns
- Sheath.....Polyethylene, halogen-free



432f example



96f example



Transmission Characteristics and Key Fibre Data

Optical fibre type.....ITU G.657.A1

Chromatic dispersion at 1550nm.....<18ps/nm.km

Zero dispersion wavelength range.....1300-1324nm

Zero dispersion slope.....<0.092/nm².km

PMD individual fibre≤0.1ps/√km

PMD link value.....≤0.06ps/√km

Cable cut off wavelength≤1260nm

Mode field diameter at 1310nm.....9.2 ± 0.4µm

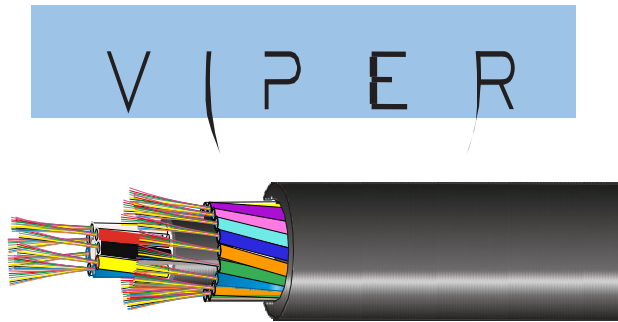
Mode field diameter at 1550nm.....10.4 ± 0.5 µm

Cladding diameter.....125.0 ± 0.7µm

Coating diameter.....242 ± 7µm (un-coloured)

Cable Fibre Attenuation

Attenuation	@ 1310nm	@ 1383nm	@ 1550nm	@ 1625nm
Typical	0.32dB/km	0.32dB/km	0.18dB/km	0.20dB/km
Max average in Cable	0.33dB/km	0.33dB/km	0.21dB/km	0.23dB/km
Max individual	0.36dB/km	0.36dB/km	0.23dB/km	0.25dB/km



Sheath Marking

HEXATRONIC A34 TOL4019032/96C T12 G657A1 TIA-598 xxxxm

Colour code

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

Ordering Information

Part number	Description
CFNB-H4019022/12C-4	CFNB - Micro cable - Viper - 12f - A1 - TIA598 - 4000m
CFNB-H4019022/12C-3	CFNB - Micro cable - Viper - 12f - A1 - TIA598 - 2000m
CFNB-H4019022/24C-4	CFNB - Micro cable - Viper - 24f - A1 - TIA598 - 4000m
CFNB-H4019022/24C-3	CFNB - Micro cable - Viper - 24f - A1 - TIA598 - 2000m
CFNB-H4019022/36C-4	CFNB - Micro cable - Viper - 36f - A1 - TIA598 - 4000m
CFNB-H4019022/36C-3	CFNB - Micro cable - Viper - 36f - A1 - TIA598 - 2000m
CFNB-H4019022/72C-4	CFNB - Micro cable - Viper - 72f - A1 - TIA598 - 4000m
CFNB-H4019022/72C-3	CFNB - Micro cable - Viper - 72f - A1 - TIA598 - 2000m
CFNB-H4019022/48C-4	CFNB - Micro cable - Viper - 48f - A1 - TIA598 - 4000m
CFNB-H4019022/48C-3	CFNB - Micro cable - Viper - 48f - A1 - TIA598 - 2000m
CFNB-H4019032/96C-4	CFNB - Micro cable - Viper - 96f - A1 - TIA598 - 4000m
CFNB-H4019032/96C-3	CFNB - Micro cable - Viper - 96f - A1 - TIA598 - 2000m
CFNB-H4019053/144C-4	CFNB - Micro cable - Viper - 144f - A1 - TIA598 - 4000m
CFNB-H4019053/144C-3	CFNB - Micro cable - Viper - 144f - A1 - TIA598 - 2000m
CFNB-H4019039/288C-4	CFNB - Micro cable - Viper - 288f - A1 - TIA598 - 4000m
CFNB-H4019039/288C-3	CFNB - Micro cable - Viper - 288f - A1 - TIA598 - 2000m
CFNB-H4019028/432C-4	CFNB - Micro cable - Viper - 432f - A1 - TIA598 - 4000m
CFNB-H4019028/432C-3	CFNB - Micro cable - Viper - 432f - A1 - TIA598 - 2000m