

Concentric Core Loose Tube Micro Cable

GNHL-U-CDGNRV (GNHLDV) Dielectric 12-144 Fibers G652D



Features

- Up to 144 fibers
- Super slim design or microducts down to 8mm
- Excellent installation performance
- Unique design with robust inner tubes
- Temperature range from -40 to +70°C
- Excellent bend performance, $\geq 30\text{mm}$
- Easy to prepare and identify fibers
- Halogen-free

Application

GNHLDV is a fiber optic micro cable for duct installation into microducts with an inner diameter of down to 8mm (12-72 fibers) or 10mm (96-144 fibers). The cable is part of the Hexatronic Micro Cable System. The system is used for installing optical fibers in all types of metropolitan, rural access networks and in the backbone network. The system provides an easy, cost-efficient rollout and maintenance, which creates the opportunity for increasing broadband penetration, with the capability to grow with user needs.

Design

The Micro Cables are designed with inner protective tubes made of a unique polymer compound. The compound gives a special strength to the product, while increasing the bending properties as well as other benefits such as extreme temperature resistance.

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.

Micro cables from 12 to 144 fibers consist of up to 12 loose tubes with 12 fibers per tubes.



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Typical Data

Temperature range

Operation -40 to +70°C

Storage -40 to +70°C

..... -45 to +70°C

Handling -15 to +50°C

Cable temperature,

blown installation -15 to +40°C

Bending radius

Cable bend radius, permanent

¼ turn/ single turn/ multiple turns

12-72 fiber 30/ 30/ 75 mm

96-144 fiber 35/ 35/ 90 mm

144 fiber 40/ 40/ 100 mm

Tensile force

During installation/ operation

12-72 fiber 800/ 100 N

96 fiber 1100/ 200 N

144 fiber 2500/ 300 N

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

12-144 fiber 2000 N/100 mm

Cable weight

12-72 fiber 28 kg/km

96 fiber 39 kg/km

144 fiber 35 kg/km

Typical installation performance*

Ducts, inner diameter 8 mm

12-96 fiber 2000 m

144 fiber n/a

Ducts, inner diameter 10 mm

12-96 fiber 2000 m

144 fiber 1000 m

Ducts, inner diameter 12 mm

12-144 fiber 2000 m

* 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.

Delivery Information

Supplied lengths 2, 4, 8 km

The cable is 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

The cable shall not be stored in direct sun light. The sun may heat up the cable over the permitted temperature limit

Design

Transmission Characteristics

Attenuation	@ 1310nm	@ 1550nm	@ 1625nm
Mean value in cable	0.36dB/km	0.22dB/km	0.25dB/km
Max value individual	0.38dB/km	0.25dB/km	0.30dB/km

1. Primary coated fiber Silica, acrylate

2. Loose tube PA

3. Central strength member Glass fiber reinforced plastic

4. Slit up yarn Aramide yarn

5. Wrapping Water blocking yarns

6. Sheath Polyethylene, halogen-free

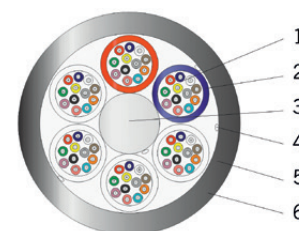
Color Code System

STD-E Fibers	1	2	3	4	5	6	7	8	9	10	11	12
	Red	Blue	White	Green	Yellow	Slate	Brown	Black	Orange	Violet	Rose	Aqua
STD-E Tubes	1	2	3-6				7	8-16				
	Red	Blue	White				Blue	White				

The above chart is a quick reference guide for identification of fibers and tubes in the most common cable designs.

For detailed information about the color code systems, please contact Hexatronic.

For cables with 24 fibers per tube, fiber 13-24 has the same color as 1-12 but marked with a ring. Exception: black fiber replaced with transparent fiber (ring marked). Black fillers can replace white tubes.



Ordering Information

Product Number	Number of Fibers/	Tubes	Fiber Type	Diameter (mm)	Color Code
TOL 401 9017/12A	12	1x12	G652D	5.7 ± 0.2	STD
TOL 401 9017/24A	24	2x12	G652D	5.7 ± 0.2	STD
TOL 401 9017/36A	36	13x2	G652D	5.7 ± 0.2	STD
TOL 401 9017/48A	48	4x12	G652D	5.7 ± 0.2	STD
TOL 401 9017/72A	72	6x12	G652D	5.7 ± 0.2	STD
TOL 401 9017/96A	96	8x12	G652D	6.7 ± 0.2	STD
TOL 401 9017/144A	144	12x12	G652D	8.3 ± 0.2	STD