



-Not to scale-

Cable Construction		
- Number of fibers	12	24
- Number of loose tubes x Number of fibers per tube	1x12	2x12
- Loose Tubes	SZ stranded around central member	
- Material	Polycarbon+PBT	
- Outer Diameter	3.40 mm ± 3%	
- Type of water resistive filling compound	Thixotropic jelly (at 250C 0.85 +0.05g/cm ³ and Drip point ≥ 700C)	
- Filler (if required)		
-Material	PE	
- Number of copper cable	2	
- Type of copper cable	H07V-K 1x2,5 mm ² 450/750V	
- Central Strength Member		
- Material	GFRP	
- Diameter	1,60 ± 0.07 mm	
- Core wrapping		
- Material	Polyester tape	
- Armor & rodent protection		
-Material	Corrugated steel tape (2-side laminated 0.155mm ±0.015)	
- Outer Sheath		
- Material	HDPE	
- Thickness (Nominal)	1,3 ± 0,2 mm	
- Cable diameter	12,7 ± 0,2 mm	
- Cable weight (approx.)	188 kg/km	

- Mechanical characteristics		(All optical measurements at 1550 nm)	
Test	Test Standard	Specified Value	Acceptance Criteria
- Tensile Force Installation	IEC 60794-1-2-E1B	Load= 800 N, Duration of load: 15 min, Cable length \geq 50 m	Fiber elongation strain $\epsilon_f \leq 0.33 \%$
- Crush Resistance	IEC 60794-1-2-E3	Length of plate: 100 mm Duration of load: 15 min, Number of positions where the load shall be applied : 3, Force applied: 2500 N/100 mm.	$\Delta\alpha \leq 0,05$ dB, no damage
- Tube Crush Resistance	IEC 60794-1-2-E3	Length of plate = 100mm Duration of load = 15min Number of positions where the load shall be applied = 3 Load (plate/plate) = 500N At least 10 fibers spliced in series	Under visual examination without magnification there shall be no damage to the tube. There shall be no variation in attenuation during and after the test for the sum of all spliced fibres. $\Delta\alpha \leq 0,05$ dB
- Impact	IEC 60794-1-2-E4	One impact in 3 different places spaced not less than 500 mm apart Anvil radius $r=10$ mm Impact energy $E=3J$	$\Delta\alpha \leq 0,05$ dB, no damage
- Torsion	IEC 60794-1-2-E7	Length under test= 1 m, Number of turns/cycle= ± 1 , Number of cycles= 5, Load 100 N	$\Delta\alpha \leq 0,1$ dB, no damage There shall be no permanent change in attenuation after the test.
- Repeated bending	IEC 60794-1-2-E6	Cable length $L \geq 1$ m, Radius $r=15*d$ but ≥ 250 mm (d =cable diameter) 75 N load, 20 cycles, Duration of cycle: approx. 2s	No damage
- Bend	IEC 60794-1-2-E11	Radius $r=20*d$ but ≥ 250 mm (d =cable diameter), Number of turns/helix=4, Number of cycles=3	$\Delta\alpha \leq 0,05$ dB, no damage

- Environmental Characteristics		
Test	Test Standard	Specified Value
- Temperature cycling	IEC 60794-1-2-F1	Storage -30 to + 70 °C, Installation -5 to + 50 °C, Operation -20 to + 70 °C

- Identification	
- Cable Marking	1m ±1% Intervals in white color with hot print.
- Identification of cable ¹	CENKABLO <year of manufacture> <number of fibers> FO <type of fibers> <length marking in meter>
- Color of fillers ² (if required)	Black
- Color of loose tube ²	1. Red, 2. Green
- Color of fibers ²	1.Red, 2.Green, 3.Blue, 4.Yellow, 5.White, 6.Grey, 7.Brown, 8.Violet, 9.Turquoise, 10.Black, 11.Orange, 12.Pink,
- Color of Cu cables	1-Red, 2-Black
- Color of outer sheath ²	Black

¹ This inscription is standard imprint. It can be changed according to request.

² The other tube, fiber and sheath colors are optional.

- Delivery Information	
- Drum length/Tolerance ³	2000 m ± 5%
- Drum Flange diameter ³	1100 mm
- Drum core diameter ³	500 mm
- Outside width ³	860 mm
- Central hole diameter	85 mm

³ Drum dimensions can change depends on cable length on a drum. Standard delivery length is 2 km. Other delivery lengths are optional.

- Transmission characteristics	
-Refer to fiber data	

COPPER WIRE CHARACTERISTICS

STANDARD NO : TS 9758 HD 21.3 S3

CABLE TYPE : H07V-K 1x2,5 mm² 450/750V

TESTS (PHYSICAL AND MECANICAL)	STANDART SPECT.
Conductor Resistance	TS 6570 HD 383 S2 (max. 7,98 Ω/km)
Voltage Test to Completed Cable (2000V)	TS 9756 HD 21,1 S4
Insulation Resistance on Completed Cable	TS 9756 HD 21.1 S4 TS 9758 HD 21.5 S3 (min 0,009 M Ωxkm)
Conformity of Construction Condition	VISUAL
Measurement of Insulation Thickness	TS 9758 HD 21.3S3 (0.8mm)
Measurement of Out Thickness	TS 9758 HD 21.3S3 (3.4-4.1mm)
Elongation Test Before Ageing (Insulation)	TS 9756 HD 21.1 S4 Table 1 (%125, 12,5 N/mm ²)
Elongation Test After Ageing (Insulation)	TS 9756 HD 21.1 S4 Table 1 (%125, 12,5 N/mm ²)
Resistance Against Expansion of Flame	TS EN 50265-2-1