



HES Cabling Systems

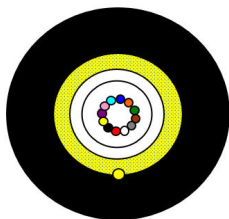
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Technical Specification

12 x 9/125 μ G.657.A1 Bend-Insensitive SM All-dielectric Single-Loose-Tube Indoor/Outdoor LSOH FO Cables

HCS Part Number: SA1-01201-xx7-BA

Revision 04/20 Date: 22 July 2020



12 color coded G.657.A1 bend-insensitive singlemode bare fibers contained in a single air-core loose tube, overall served with water-blocking swellable glass yarn and jacketed with black, UV resistant LSOH compound. The cable conforms to EU Regulation 305/2011 (CPR) Class B2ca-s1a,d1,a1 and it is suitable for both indoor and outdoor installations.

Cable Construction

Optical fibers	9/125 μ m ITU-T G.657.A1 Bend-insensitive Category A1 (MBR: 10mm).
Optical transmission properties	See below
Core diameter	See MFD below.
Clad diameter	125 $\pm$ 0.7 μ m
Cladding non-circularity	1% max.
Core/Cladding concentricity error	0.5 μ m max.
Coating/Cladding concentricity error	12 μ m max.
Primary coating diameter	245 $\pm$ 10 μ m
Proof test level	0.69 Gpa
Buffer coating	None.
Number of optical fibers	12
Fibers Color code	Below.
Core formation	12 color coded bare fibers contained in a single loose tube
Tube design	Air-core tube made of LSOH FR Polybutylene Terephthalate (PBT). Tube diameter: 2.30 mm nom.
Strength elements	Served swellable glass yarn, providing longitudinal water blocking.
Rip cord	PET rope inserted longitudinally under the jacket.
Overall jacket	UV resistant LSOH compound for indoor and outdoor use.
Jacket thickness	2.1 mm nom.
Overall diameter	8.3 $\pm$ 0.8 mm.
Color	Black, RAL 9005.
Surface Marking	HCS SA1-01201 DataLight SLT 12x9/125 μ G.657.A1 BI SM IEC 60332-1 INDOOR/OUTDOOR LSOH FO CABLE CE CPR Class B2ca-s1a,d1,a1 CE 2011/65/EU (RoHS-2) [Fwwyy] [Meter Mark] METER

Physical Properties	Value	Test Method
Tensile strength - short term	2000 N max. Fiber strain: $\leq$ 0.33%	IEC-60794-1-21 E1
Tensile strength - long term	700 N max. Δ IL: 0.05dB max.	IEC-60794-1-21 E1
Crush resistance	1500N/100mm max. 15 minutes. Δ IL: 0.05dB max.	IEC-60794-1-21 E3
Impact resistance	10 N·m max. 3 impacts. R=300mm Δ IL: 0.05dB max.	IEC-60794-1-21 E4
Torsion	1m, 100N, max. $\pm$ 180° 10 cycles. No damage	IEC-60794-1-21 E7
Repeated bending	R=20D, 100N, max. 35 cycles. No damage	IEC-60794-1-21 E6
Storage Temperature range	-40 to +70C	-
Installation Temperature range	-30 to +60C	-
Operating Temperature range	-40 to +70C	-
Bend radius during installation	20D min.	-
Bend radius - long term	10D min.	-
Longitudinal water blocking (outer section)	1m water, 3m cable, 24 hours, no water leak.	IEC-60794-1-22 F5A
Flame test	IEC 60332-1-2 & IEC 60332-1-3	IEC 60332-1
Acid gas	IEC 60754	IEC 60754
Smoke density	IEC 61034	IEC 61034
EU Regulation 305/2011 (CPR) conformance	Class B2ca-s1a,d1,a1. NB 1783	EN 13501
Total Weight	95 kg/km nom.	-

Optical Transmission Properties

Fiber	Fiber Type	Standards & basic properties	Attenuation dB/km			MFD		
			@1310nm Max	@1385nm Max	@1550nm Max	@1310nm μ m	@1385nm μ m	@1550nm μ m
A1	9/125 μ m Single Mode Optical Fiber	ITU-T G.657.A1 Bend Insensitive Zero dispersion wavelength: 1302-1322 nm Cable cutoff wavelength: 1260 nm max.	0.50	0.50	0.50	9.2 $\pm$ 0.3	9.6 $\pm$ 0.6	10.4 $\pm$ 0.5

Color Code

#	Color	#	Color	#	Color	#	Color	#	Color	#	Color
1	Blue	2	Orange	3	Green	4	Brown	5	Gray	6	White
7	Red	8	Black	9	Yellow	10	Violet	11	Pink	12	Aqua

This cable fully conforms to EU Directive 2011/65/EU (RoHS-2)