

Product Datasheet
fiber optic cable InSky OPGW C 48U 9.1mm 11kA2-s 54kN

Order information

Design
InSky OPGW C 48U 9.1mm 11kA2-s 54kN

Part number
0112-103232

Features



Enhanced corrosion resistance: ACS wires and aluminum-clad stainless steel tube

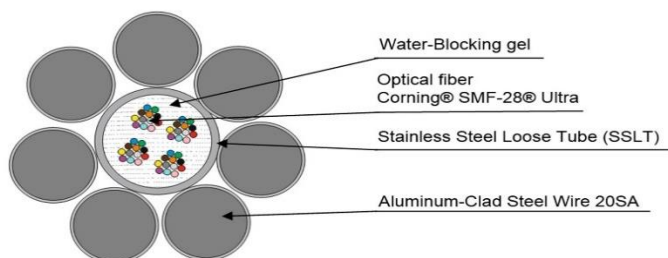


Aluminum alloy wires provide conductivity for fault current



Optical ground wire shields high-voltage conductors from lightning strikes

Design



Design element	Material	Count	Diameter	
			Metric (mm)	Customary (inches)
Center member	SSLT	1	3.60	0.1417
1st stranded layer	20% ACS wire	7	2.75	0.1083

Technical Specifications

Mechanical	Metric	Customary
Cable diameter ± 0.2 mm (0.008 in)	9.1 mm	0.358 in
Cable unit weight	299 kg/km	0.201 lb/ft
Rated breaking strength (RBS) (without SSLT's)	54.1 kN	12 161 lb
Maximum rated design tension (MRDT) (57% RBS) with 0.2% fiber strain	30.5 kN	6 858 lb
Zero fiber strain margin (ZFSM) (42% RBS)	22.3 kN	5 014 lb
Cross-sectional area of ACS wire	43.7 mm ²	0.068 in ²
Cross-sectional area of AY-wire	0 mm ²	0 in ²
Cable total cross-sectional area	43.7 mm ²	0.068 in ²
Modulus of Elasticity, initial	132.5 kN/mm ²	19 221 ksi
Modulus of Elasticity, final	154.4 kN/mm ²	22 398 ksi
Temperature coefficient of linear expansion	12.74 E ⁻⁶ /°C	7.08 E ⁻⁶ /°F
Southwire Sag10™ coefficient chart number	1-1140	-
Lay direction of outer layer	Left	-

Electrical	Metric	Customary
DC resistance at 20°C (68°F)	2.016 Ω/km	3.2449 Ω/mile
Short circuit capacity	11.0 kA ² ·s	-
Basis: Initial cable temp = 40°C (104°F), Final = 210°C (410°F), Duration = 0.5 s		
Short current circuit for 0.5 s	4.7 kA	-
Rac/Rdc ratio	1.027	-
AC resistance at 25°C (77°F)	2.1070 Ω/km	3.3908 Ω/mile
AC resistance at 50°C (122°F)	2.2930 Ω/km	3.6901 Ω/mile
AC resistance at 75°C (167°F)	2.4789 Ω/km	3.9894 Ω/mile
Geometric Mean Radius (GMR)	0.4954 mm	0.0016 ft
Inductive Reactance (Xa) @ 60 Hz	0.4842 Ω/km	0.7793 Ω/mile
Capacitive Reactance (X'a) @ 60 Hz	0.2007 MΩ·km	0.1247 MΩ·mile

Optical		
ITU-T fiber compliance		G.652D & G.657.A1
Fiber manufacturer		Corning SMF-28 ULTRA
Fiber count (Actual/Maximum)		48/48
Fibers per SSLT		48

Color identification of optical fibers in each SSLT is according to ANSI/TIA-598-D-2014

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	Natural	Yellow	Violet	Rose	Aqua
1 ring											
25	26	27	28	29	30	31	32	33	34	35	36
											
Blue	Orange	Green	Brown	Slate	White	Red	Natural	Yellow	Violet	Rose	Aqua
2 rings											
37	38	39	40	41	42	43	44	45	46	47	48
											
Blue	Orange	Green	Brown	Slate	White	Red	Natural	Yellow	Violet	Rose	Aqua
3 rings											

Color identification of the binding yarns for bundles 1-4 of 12 fibers in each:

1	2	3	4
			
Blue	Orange	Green	Brown

Other colors upon request

Fiber Dimensional Specifications:	
Core-Clad Concentricity	≤0.5 μm
Cladding Diameter	125 ± 0.7 μm
Cladding Non-Circularity	≤12 μm
Coating Diameter	242 ± 5 μm

Final Maximum Individual Attenuation Limits:	
Wavelength	dB/km
1310 nm	0.34
1383 nm	0.34
1490 nm	0.23
1550 nm	0.20
1625 nm	0.22

Reel Packing and Handling	Metric	Customary
Maximum reel length	9 740 m	31 955 ft
Minimum bending radius, no load (tension < 5% RBS)	127 mm	5 in
Minimum bending radius, loaded (tension ≥ 5% RBS)	152 mm	6 in
Standard sheave diameter: first, last, angles ≥ 60°	381 mm	15 in
Standard sheave diameter: tangents and angles ≤ 60°	229 mm	9 in

Operating parameters	Metric	Customary
Operation temperature	-50°C ... +85°C	-58°F ... +185°F
Installation temperature	-30°C ... +50°C	-22°F ... +122°F
Transportation and storage temperature	-50°C ... +70°C	-58°F ... +158°F
Life time	50 years	

Standards	International	USA
ACS wire	IEC 61232	ASTM B415
AY wire	IEC 60104	ASTM B398
OPGW cable	IEC 60794	IEEE 1138

Key Performance Testing		
Parameter	Nominal value	Evaluation criterion
Strain margin test (IEEE 1138-2009 p.6.4.1.3.)	30.5 kN	$\Delta\alpha^* < 0.20$ dB/test fiber km; - no damage
Crush (IEEE 1138-2009 p.6.4.2.2.)	1.0 kN/cm	$\Delta\alpha^* < 0.05$ dB/ fiber; - no damage
Twist (IEEE 1138-2009 p.6.4.2.4.)	2 cycles @ twist angle $\pm 90^\circ$ per 1 m	$\Delta\alpha^* < 0.10$ dB/test fiber km
Water ingress test (IEEE 1138-2009 p.6.4.3.5.)	1 m for 1 hour	No water through end of cable
Temperature cycling** (IEEE 1138-2009 p.6.4.3.7.)	-50°C to +85°C for 2 cycles over ≥ 16 hours	$\Delta\alpha^* < 0.20$ dB/test fiber km
Seepage of flooding compound (IEEE 1138-2009 p.6.4.3.6.)	65°C	No dripped compound

* - attenuation increase at standard wavelengths

** - other temperature range upon request

Reel Packing and Marking Notes

- Standard packing is non-returnable wooden reels
- Reel diameter ≥ 40 x cable OD
- ≥ 2 m of inside end of cable is affixed to flange
- Cable ends are sealed with waterproof covers
- Label on the outer flange of the reel contains the following information:
cable type, customer's name and PO, reel number, production date, cable length, cable weight net/gross
- Flange marking includes: manufacturer's name and website, rotation direction, cable end indication, shipping and handling summary, labels "Fragile" and "Handle with care"
- A Cable Passport is attached to each reel and provides the following information:
cable type, technical standard number, cable length, fiber type, fiber coloring, fibers/tube, tube identification coloring, final attenuation for all fibers, refractive index of the fiber, fiber manufacturer and production date
- Each Cable Passport is affixed to the inner flange. Additional information can be included on the Cable Passport upon request

All values are nominal and are subject to normal manufacturing tolerances and to change without notice