

Product Datasheet
InSky OPGW CA 48U 11.8mm 43kA2-s 74kN

Order information

Design
InSky OPGW CA 48U 11.8mm 43kA2-s 74kN

Part number
0162-45816

Features



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

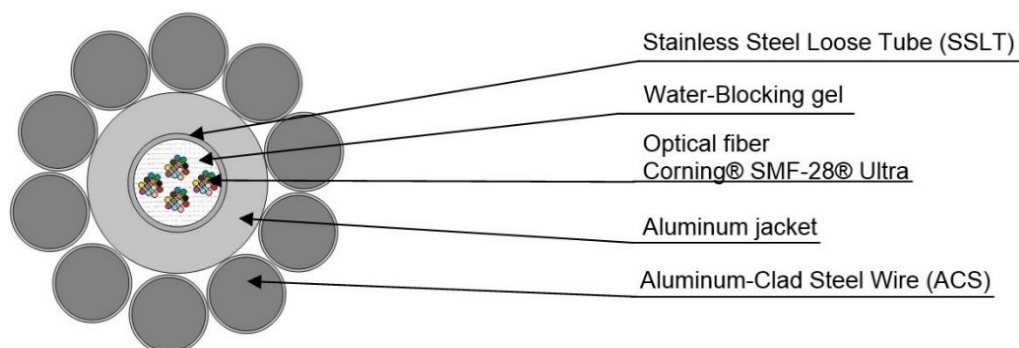


Aluminum alloy wires provide conductivity for fault current



Optical ground wire shields high-voltage conductors from lightning strikes

Design



Design element	Material	Count	Diameter	
			Metric (mm)	Customary (inches)
Center member	AC-SST	1	6.40	0.252
1st stranded layer	20% ACS wire	10	2.70	0.106

Technical Specifications

Mechanical	Metric	Customary
Cable diameter	11.8 mm	0.465 in
Cable unit weight	468 kg/km	0.314 lb/ft
Rated breaking strength (RBS)(without SSLT's)	74.4 kN	16 740 lb
Maximum rated design tension (MRDT) (56% RBS) with 0.2% fiber strain	41.0 kN	9 219 lb
Zero fiber strain margin (ZFSM) (41% RBS)	29.9 kN	6 723 lb
Cross-sectional area of ACS wire	59.3 mm ²	0.092 in ²
Cross-sectional area of AY wire	22.5 mm ²	0.035 in ²
Cable total cross-sectional area	81.9 mm ²	0.127 in ²
Modulus of Elasticity, initial	94.9 kN/mm ²	13 767 ksi
Modulus of Elasticity, final	125.2 kN/mm ²	18 162 ksi
Temperature coefficient of linear expansion	13.96 E ⁻⁶ /°C	7.76 E ⁻⁶ /°F
Southwire Sag10™ coefficient chart number	1-1427	-
Lay direction of outer layer	Left	-

Electrical	Metric	Customary
DC resistance at 20°C (68°F)	0.698 Ω/km	1.1225 Ω/mile
Short circuit capacity	43.4 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	9.4 kA	-
Rac/Rdc ratio	1.012	-
AC resistance at 25°C (77°F)	0.7179 Ω/km	1.1553 Ω/mile
AC resistance at 50°C (122°F)	0.7797 Ω/km	1.2547 Ω/mile
AC resistance at 75°C (167°F)	0.8414 Ω/km	1.3541 Ω/mile
Geometric Mean Radius (GMR)	0.7257 mm	0.0024 ft
Inductive Reactance (Xa) @ 60 Hz	0.4554 Ω/km	0.7329 Ω/mile
Capacitive Reactance (X'a) @ 60 Hz	0.1883 MΩ-km	0.1170 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	9 980 m	32 743 ft
Minimum bending radius, no load (tension < 5% RBS)	178 mm	7 in
Minimum bending radius, loaded (tension ≥ 5% RBS)	178 mm	7 in
Standard sheave diameter: first, last, angles ≥ 60°	483 mm	19 in
Standard sheave diameter: tangents and angles ≤ 60°	305 mm	12 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
Tensile strength (IEC 60794-1-21 method E1)	41.0 kN	$\Delta\alpha^* \leq 0.05$ dB; no damage
Crush (IEC 60794-1-21 method E3)	1.0 kN/cm	
Repeated bending (IEC 60794-1-21 method E6)	20 cycles @ bending radius $\pm 90^\circ$	
Torsion (IEC 60794-1-21 method E7)	10 cycles @ torsion angle $\pm 360^\circ$ applied over 4 m	
Impact (IEC 60794-1-21 method E4)	Impact energy 20 J	
Water penetration (IEC 60794-1-22 method F5B)	3 m for 24 hours	No water through end of cable
Temperature cycling** (IEC 60794-1-22 method F1)	-50°C to +85°C for 3 cycles over ≥ 24 hours	$\Delta\alpha^* \leq 0.05$ dB/km
Compound flow (IEC 60794-1-21 method E14)	70°C	No dripped compound

* - attenuation increase at standard wavelengths

** - other temperature range upon request

Reel Packing and Marking Notes

1. Standard packing is non-returnable wooden reels
2. Reel diameter $\geq 40 \times$ cable OD
3. ≥ 2 m of inside end of cable is affixed to flange
4. Cable ends are sealed with waterproof covers
5. 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
6. Flange marking includes: manufacturer's name and website, rotation direction, cable end indication, shipping and handling summary, labels "Fragile" and "Handle with care"
7. 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
8. 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