

Product Datasheet
fiber optic cable: InSky OPGW CA 72U 13.4mm 94kA2-s 61kN

Order information

Design	Part number
InSky OPGW CA 72U 13.4mm 94kA2-s 61kN	551812

Features



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

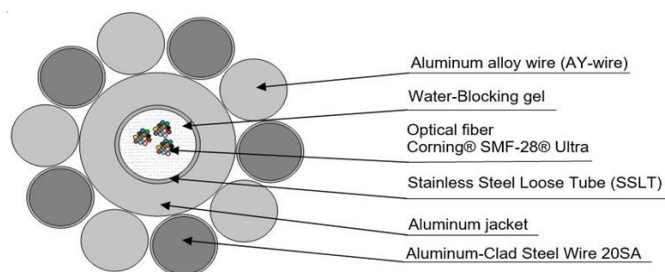


Aluminum alloy wires provide conductivity for fault current



Optical ground wire shields high-voltage conductors from lightning strikes

Design



Design element	Material	Count	Diameter	
			Metric (mm)	Customary (inches)
Central member	AC-SST	1	7.20	0.2835
1st stranded layer	20% ACS wire/AY-wire	5/5	3.10	0.1220

Technical Specifications

Mechanical	Metric	Customary
Cable diameter ± 0.2 mm (0.008 in)	13.4 mm	0.528 in
Cable unit weight	460 kg/km	0.309 lb/ft
Rated breaking strength (RBS) (Includes AL cladding, but not SSLT)	61.5 kN	13 823 lb
Maximum rated design tension (MRDT) (59% RBS) with 0.2% fiber strain	35.8 kN	8 050 lb
Zero fiber strain margin (ZFSM) (43% RBS)	26.4 kN	5 936 lb
Cross-sectional area of ACS wire	40.0 mm ²	0.062 in ²
Cross-sectional area of AY-wire / Aluminum Pipe	37.74 / 29.37 mm ²	0.058 / 0.046 in ²
Cable total cross-sectional area	107.1 mm ²	0.166 in ²
Modulus of Elasticity, initial	64.5 kN/mm ²	9 357 ksi
Modulus of Elasticity, final	95.0 kN/mm ²	13 781 ksi
Temperature coefficient of linear expansion	16.85 E ⁻⁶ /°C	9.36 E ⁻⁶ /°F
Southwire Sag10™ coefficient chart number	1-1439	-
Lay direction of outer layer	Left	-

Electrical	Metric	Customary
DC resistance at 20°C (68°F)	0.386 Ω /km	0.6216 Ω /mile
Short circuit capacity	94.0 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	13.7 kA	-
Rac/Rdc ratio	1.012	-
AC resistance at 25°C (77°F)	0.3976 Ω /km	0.6398 Ω /mile
AC resistance at 50°C (122°F)	0.4317 Ω /km	0.6947 Ω /mile
AC resistance at 75°C (167°F)	0.4658 Ω /km	0.7496 Ω /mile
Geometric Mean Radius (GMR)	2.9513 mm	0.0097 ft
Inductive Reactance (Xa) @ 60 Hz	0.3497 Ω /km	0.5627 Ω /mile
Capacitive Reactance (X'a) @ 60 Hz	0.1822 M Ω -km	0.1132 M Ω -mile

Optical		
ITU-T fiber compliance		G.652D & G.657.A1
Fiber manufacturer		Corning SMF-28 ULTRA
Fiber count (Actual/Maximum)		72/72
Fibers per SSLT		72

Color identification of optical fibers in 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

Color identification of the binding yarns for bundles 1-3 of 24 fibers:

1	2	3
		
Blue	Orange	Green

Other colors upon request

OPGW marking example

Marking is made on each 2 feet of cable

00001 FT	INCAB	InSky OPGW CA 72U 13.4mm 94kA2-s 61kN	2022
00001 FT	Length marking unit	13.4 mm	OPGW diameter
InSky OPGW	Optical ground wire trade name	94 kA ² ·s	Short circuit capacity
CA	Aluminum clad stainless steel tube	61 kN	Rated breaking strength (RBS)
72	Fiber count	2022	Year of production
U	Fiber type		

Customized marking upon request

Fiber Dimensional Specifications:

Core-Clad Concentricity	≤0.5 μ m
Cladding Diameter	125 ± 0.7 μ m
Cladding Non-Circularity	≤12 μ m
Coating Diameter	242 ± 5 μ m

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	7 590 m	24 902 ft
Minimum bending radius, no load (tension < 5% RBS)	178 mm	7 in
Minimum bending radius, loaded (tension ≥ 5% RBS)	203 mm	8 in
Standard sheave diameter: first, last, angles ≥ 60°	559 mm	22 in
Standard sheave diameter: tangents and angles ≤ 60°	356 mm	14 in

Operating parameters	Metric	Customary
Operating 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
Design life	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	Acceptance criteria
MRDT test (IEEE 1138-2021 p.6.5.1.3.)	35.8 kN	no change dB/test fiber km
Crush (IEEE 1138-2021 p.6.5.2.2.)	1.5 kN/cm	$\Delta\alpha^* < 0.05$ dB/ fiber; - no damage
Twist (IEEE 1138-2021 p.6.5.2.4.)	2 cycles @ twist angle $\pm 90^\circ$ per 1 m	$\Delta\alpha^* < 0.10$ dB/test fiber km
Water ingress test (IEEE 1138-2021 p.6.5.3.5.)	1 m for 1 hour	No water through end of cable
Temperature cycling** (IEEE 1138-2021 p.6.5.3.7.)	-50°C to +85°C for 2 cycles over ≥ 16 hours	$\Delta\alpha^* < 0.20$ dB/test fiber km
Seepage of flooding compound (IEEE 1138-2021 p.6.5.3.6.)	65°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