



## ● Application

The OPGW (Optical Ground Wire) with a central stainless steel tube is an ideal solution for transmission lines requiring both electrical grounding and fiber optic communication. Its compact size allows it to house up to 72 fibers within a diameter starting at only 12mm, making it suitable for upgrading existing shield wires on overloaded transmission towers. This dual-purpose cable provides robust protection against lightning strikes and facilitates high-speed data transmission, making it a preferred choice for modernizing power grids and enhancing communication capabilities.

## ● Construction

Central Loose Tube Type:

Fiber Protection: Fibers are placed loosely in a sealed, water-resistant central aluminum tube filled with water-blocking gel, providing protection during installation and operation under severe environmental conditions. Depending on engineering requirements, the stainless steel tube may also be aluminum-clad steel.

Mechanical Strength: The stainless steel optical tube is centrally located and protected by one or multiple layers of aluminum-clad steel, aluminum alloy wires, or steel wires. These metallic wires provide mechanical strength to endure severe installation and operating conditions and offer conductivity to control temperature rise during short circuit conditions.

Fiber Identification: Each optical fiber is clearly distinguishable using a fiber identification system that includes coloring and ring marks.

Compact Design: This design features high mechanical strength and fault current rating within a smaller diameter, resulting in excellent sag tension performance.

## ● Specification

- IEC 60793-1: Optical fiber Part 1: Generic specifications
- IEC 60793-2: Optical fiber Part 2: Product specifications
- ITU-T G.652: Characteristics of a single-mode optical fiber cable
- ITU-T G.655: Characteristics of a non-zero dispersion-shifted single-mode optical fiber and cable
- EIA/TIA 598: Color code of fiber optic cables
- IEC 60794-4-10: Aerial optical cables along electrical power lines – Family specification for OPGW
- IEC 60794-1-2: Optical fiber cables-Part 1-2: Generic specification - Basic optical cable test procedures
- IEEE1138-2009: IEEE Standard for testing and performance for optical ground wire (OPGW) for use on electric utility power lines
- IEC 61232: Aluminum-clad steel wire for electrical purposes
- IEC 60104: Aluminum magnesium-silicon alloy wire for overhead line conductors
- IEC 61089: Round wire concentric lay overhead electrical stranded conductors

## ● Eastful Cable Lab



We have CNAS Accredited Facility to assure conformity assessment services with a focus on quality, expertise, and customer satisfaction.

CNAS has international mutual recognition among IAF, ILAC, APLAC and PAC.

## ● Accreditation

We meet the requirements of ISO9001, ISO14001, ISO45001 and ISO50001 and our cables have certificate of CCC, RoHS, CASC, UL, cUL, TÜV Rheinland and CCS.



## ● National Green Factory



Our facility has been awarded of National Green Factory by Ministry of Industry and Information Technology of China. We are committed to the development of high-end, intelligent and green manufacturing industry.

\*The overall energy consumption level of green factories is better than the energy efficiency benchmark level.

## ● Technical Parameters

Fibers	Fault Current	Total Nominal Cross Section Area	Total Nominal Cross Section Area	Overall Dia.	Overall Dia.	Weight	Weight	RBS	RBS
No.	kA <sup>2</sup> sec	in <sup>2</sup>	mm <sup>2</sup>	inch	mm	lb/ft	kg/km	lbs	kb
24	51	0.1273	85.05	0.484	12.3	0.321	0.478	17390	7888
36	46	0.1202	80.34	0.484	12.3	0.313	0.466	16107	7306
24	97	0.1603	107.13	0.544	13.8	0.338	0.503	16984	7704
24	121	0.1722	115.05	0.563	14.3	0.328	0.488	15611	7081
96	147	0.2046	136.72	0.63	16	0.472	0.702	24048	10908
96	154	0.2046	136.72	0.63	16	0.45	0.67	22384	10153
96	186	0.2246	150.11	0.662	16.8	0.499	0.742	24183	10969
144	134	0.1926	128.68	0.63	16	0.449	0.668	21865	9918
144	134	0.1926	128.68	0.63	16	0.449	0.668	21934	9949
144	161	0.2114	141.29	0.662	16.8	0.499	0.743	23598	10704

Item #	Fibers	Fault Current	Total Nominal Cross Section Area	Total Nominal Cross Section Area	Overall Dia.	Overall Dia.	Weight	Weight	RBS	RBS
		kA <sup>2</sup> sec	in <sup>2</sup>	mm <sup>2</sup>	inch	mm	lb/ft	kg/km	lbs	kb
OPGW-2S 1/24 (M85/R77-51)	24	51	0.1273	85.05	0.484	12.3	0.321	0.478	17390	7888
OPGW-2S 2/18 (M80/R72-46)	36	46	0.1202	80.34	0.484	12.3	0.313	0.466	16107	7306
OPGW-2S 1/24 (M107/R76-97)	24	97	0.1603	107.13	0.544	13.8	0.338	0.503	16984	7704
OPGW-2S 1/24 (M115/R69-121)	24	121	0.1722	115.05	0.563	14.3	0.328	0.488	15611	7081
OPGW-2S 2/48 (M137/R107-147)	96	147	0.2046	136.72	0.63	16	0.472	0.702	24048	10908
OPGW-2S 2/48 (M137/R100-154)	96	154	0.2046	136.72	0.63	16	0.45	0.67	22384	10153
OPGW-2S 2/48 (M150/R107-186)	96	186	0.2246	150.11	0.662	16.8	0.499	0.742	24183	10969
OPGW-2S 3/48 (M129/R97-134)	144	134	0.1926	128.68	0.63	16	0.449	0.668	21865	9918
OPGW-2S 3/48 (M129/R98-134)	144	134	0.1926	128.68	0.63	16	0.449	0.668	21934	9949
OPGW-2S 3/48 (M141/R105-161)	144	161	0.2114	141.29	0.662	16.8	0.499	0.743	23598	10704