

Comparison of ADSS Optical Cable Energy Saving and Power Consumption Performance

Article Overview

ADSS (All-Dielectric Self-Supporting) optical cables offer significant energy-saving and power consumption advantages over traditional overhead optical cables due to their lightweight, dielectric design, and reduced operational requirements.

ADSS Cable Design and Energy Efficiency

ADSS cables are fully dielectric, containing no metallic components, with tensile strength provided by aramid yarn and reinforcement via fiberglass-reinforced plastic (FRP) rods . This design allows installation directly on high-voltage power lines without risk of induced voltage or electrical arcing, eliminating the need for grounding wires or counterpoise systems. By avoiding metallic conductors, ADSS cables reduce energy losses associated with induced currents and minimize the risk of electrical faults, which indirectly contributes to energy savings .

Power Consumption and Operational Savings

Compared to traditional overhead cables like OPGW (Optical Ground Wire) or lashed figure-8 cables, ADSS cables are significantly lighter—for example, an 80 m span 48-fiber ADSS weighs 85 kg/km versus 310 kg/km for OPGW . This lower weight reduces the mechanical load on towers and poles, allowing for simpler installation with fewer linemen and less crane usage, which translates into lower energy consu...

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ABSTRACT In order to reduce power consumption among optical networks power saver method is used. The technique of reducing

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Energy Efficiency Findings in Optical Networks

While current optical networking techniques are already reducing power consumption, more power-reduction innovation are needed

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