



Leading Optical Innovations

# PowerGuide<sup>®</sup> Loose Tube Fiber Optic Cables

Your Solution for High-Performance ADSS Cable



# PowerGuide® ADSS Cables

For Performance You Can Count On

When you need a durable, high-performance cabling solution for your electrical power network or other aerial use, look to the PowerGuide® family of loose tube fiber optic cables. Whether your application is long or short span, requires increased carrying capacity, or involves high electric field space potentials, we offer a PowerGuide cable to meet your needs. In fact, the unsurpassed optical performance, durability, and reliability of our PowerGuide cables have placed them among the world's leading all-dielectric, self-supporting (ADSS) cables. Delivering seamless performance from the national power grid to your living room, the PowerGuide product line includes:



## PowerGuide®

As one of the world's most popular ADSS cables, PowerGuide's exceptional field reliability and long-span capability (up to 3,281 feet/1000 meters or more)\* make it today's prime cabling solution for demanding, high-performance aerial applications, including power transmission and distribution networks.



## PowerGuide® ShortSpan

Among the most compact ADSS cables available today, PowerGuide ShortSpan combines ease of handling with outstanding performance and reliability to offer an ideal, cost-effective solution for short spans ranging up to 760 feet (231 meters)\*, including distribution networks and duct installations.



## PowerGuide® AccuTube

With one of the highest fiber counts of any ADSS cable in the world, PowerGuide AccuTube delivers increased carrying capacity and easy mass fusion splicing to meet the demands of today's high-growth, high-bandwidth networks.

**Each PowerGuide cable design offers:**

- Proven all-dielectric loose tube construction for outstanding performance, reliability, and immunity to electromagnetic fields, eliminating the need for expensive cable shielding or grounding
- Fast, one-step installation using simple attachment hardware (without a pre-installed messenger) and normally without interrupting electrical service
- Integrated, torque-balanced aramid yarn strength elements for superior cable strength and stability

- A round cable profile that minimizes wind and ice loading for reduced cable sag and tensile forces on towers and support hardware
- Full qualification in accordance with applicable Telcordia Technologies, EIA/TIA, IEEE, and RUS standards

**The matrix below outlines the key applications and span lengths for each PowerGuide cable design. Our technical staff is available to provide additional information and assist you in selecting the right cable for your fiber optic installation. For questions or assistance, please contact us at 877-416-9883.**

Cable	Fiber Counts	Span Lengths	Applications
<b>PowerGuide®</b>	2 to 288	3,281 feet (1,000 meters or more)*	<ul style="list-style-type: none"> <li>• Aerial use (self-supporting)</li> <li>• Long spans (including electric transmission towers and river crossings)</li> <li>• Power transmission and distribution networks</li> <li>• Direct use in ducts</li> <li>• Aerial-to-duct transitions</li> <li>• Electric field space potentials up to 12 kV</li> </ul>
<b>PowerGuide® TR (Tracking Resistant)</b>	2 to 288	Same as above	<ul style="list-style-type: none"> <li>• Same as above, except for electric field space potentials up to 25 kV</li> </ul>
<b>PowerGuide® ShortSpan</b>	2 to 72	Up to 760 feet (231 meters)*	<ul style="list-style-type: none"> <li>• Aerial use (self-supporting)</li> <li>• Short spans (including distribution networks)</li> <li>• Direct use in ducts</li> <li>• Aerial-to-duct transitions</li> <li>• Aerial-to-underground installations</li> </ul>
<b>PowerGuide® AccuTube</b>	300 to 864	Up to 1,000 feet (300 meters)*	<ul style="list-style-type: none"> <li>• Aerial use (self-supporting)</li> <li>• High-growth and high-bandwidth applications</li> <li>• Mass fusion splicing for high-density applications</li> <li>• Transmission and distribution networks</li> </ul>

\* Exact span lengths depend on loading conditions, fiber counts, and clearance requirements.

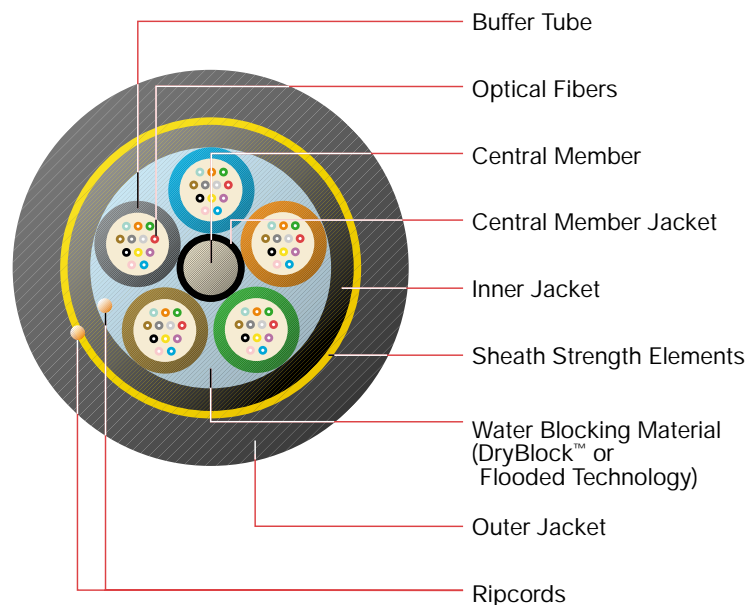
# PowerGuide®

## Double Jacket, All-Dielectric, Self-Supporting (ADSS) Aerial Loose Tube Fiber Optic Cable

PowerGuide® is your prime cabling solution for high-performance aerial applications, including power transmission and distribution networks, with excellent long-span capability up to 3,281 feet (1,000 meters or more)\*. Each PowerGuide cable is custom designed to ensure exceptional long-term reliability and performance.

### PowerGuide Tracking Resistant (TR) Cable

Because ADSS cables are often installed near energized power conductors, we offer two PowerGuide outer jacket materials. For electric field space potentials up to 12 kV, PowerGuide cable features a polyethylene sheath. For space potentials up to 25 kV, PowerGuide Tracking Resistant cable features a specially formulated jacket that resists tracking (dry band arcing). Contact us for a complete system analysis to determine which PowerGuide cable design to employ.



### Design

Our highly reliable, field-proven loose tube design lies at the core of each PowerGuide cable. In this design, the optical fibers are placed within color-coded, gel-filled buffer tubes to protect the fibers from external forces. The buffer tubes are then stranded around a dielectric central member using the reverse oscillating lay (ROL) stranding technique for fast mid-span fiber access. Water-blocking material is then applied to the cable core to prevent water migration. In the final step, a carefully determined number of

aramid strength elements are placed between inner and outer MDPE jackets to achieve the performance needed for your application. Using a comprehensive software program, our engineers can analyze electric field space potentials to determine the appropriate outer jacket material and provide recommended cable attachment locations for your application. This custom design ensures stable optical performance over a wide range of loads and temperatures, and assures a long cable life.

### Features

- Fiber counts to 288
- Custom engineered per application
- Single cable diameter for 2 to 60 fibers simplifies hardware selection and splicing
- Proven all-dielectric loose tube construction
- Special tracking resistant sheath available for high field space potentials (see PowerGuide Tracking Resistant cable above)
- Broad range of fiber types

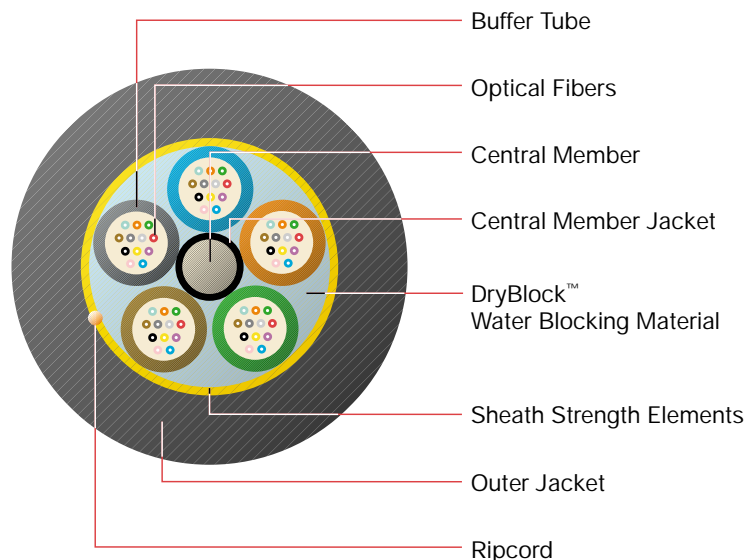
### Benefits

- Outstanding optical performance, durability, and field reliability
- Excellent long-span capability
- Fast, one-step installation for valuable time and cost savings
- Easily strippable sheath for quick, convenient cable preparation
- RUS listed

# PowerGuide® ShortSpan

## Single Jacket, All-Dielectric, Self-Supporting (ADSS) Aerial Loose Tube Fiber Optic Cable

PowerGuide® ShortSpan offers an excellent solution for short aerial cable spans ranging up to 760 feet (231 meters)\*, including distribution networks and duct installations. Featuring one of the world's smallest ADSS cable diameters, ShortSpan is lightweight and easy to handle, saving time and money on installation. This cable's compact size and small bend radius make it easy to use in aerial-to-underground installations.



### Design

Our proven loose tube design is at the heart of our PowerGuide ShortSpan cable. The optical fibers are placed within color-coded, gel-filled buffer tubes to protect them from mechanical and environmental forces. The buffer tubes are then stranded around a dielectric central member, using the reverse oscillating lay (ROL) stranding technique.

Unlike other methods, ROL makes it easy to "untwist" the buffer tubes and gain quick mid-span access. Next, DryBlock water-blocking material is applied, and aramid strength elements are placed over the cable core. In the final step, a robust medium-density polyethylene (MDPE) outer jacket is applied to complete the construction of a lightweight, durable cable that is easy to handle and install.

### Features

- Fiber counts to 72
- Small nominal cable diameter and bend radius
- Smaller round profile further minimizes wind and ice loading
- Single cable diameter for 2 to 60 fibers simplifies hardware selection and splicing
- Broad range of fiber types

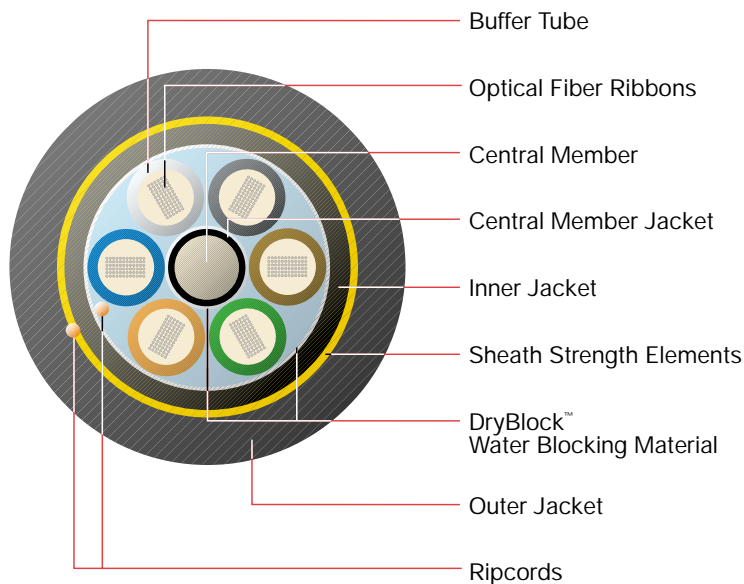
### Benefits

- Excellent short-span capability
- Effective, economical alternative for short spans
- Lightweight and easy to handle and install
- Single MDPE jacket for fast, convenient cable preparation
- RUS listed

# PowerGuide® AccuTube

## Double Jacket, All-Dielectric, Self-Supporting (ADSS), Enhanced AccuRibbon® in Loose Tube Fiber Optic Cable

PowerGuide® AccuTube is designed to meet the demands of today's high-growth, high-bandwidth communications applications. With up to 864 fibers in a single cable, PowerGuide AccuTube delivers increased carrying capacity with one of the highest fiber counts of any ADSS cable in the world. The result is a cable that allows easy, cost-effective mass fusion splicing while delivering powerful, reliable performance.



### Design

The performance of PowerGuide AccuTube cable begins with our proven loose tube design and construction. Each Enhanced AccuRibbon® matrix contains 12 optical fibers color-coded for easy fiber management. Up to 12 matrix structures are arranged within each gel-filled loose buffer tube. Next, up to six color-coded buffer tubes are stranded around a dielectric central member using the reverse

oscillating lay (ROL) stranding technique for fast mid-span fiber access. The cable core is then protected with DryBlock water-blocking material for excellent water penetration resistance and easier cable handling. Finally, a carefully determined number of aramid strength elements are placed between inner and outer MDPE jackets to deliver the strength needed for your specific application.

### Features

- Fiber counts from 300 to 864
- Enhanced AccuRibbon technology for efficient, cost-effective mass fusion splicing
- Custom engineered per application
- DryBlock water-blocking technology for a more craft-friendly cable core

### Benefits

- Increased bandwidth and carrying capacity for high-density applications
- Efficient cost-effective mass fusion splicing for easier installation and savings on labor costs
- Excellent performance for span lengths up to 1,000 feet (300 meters), depending on sag and loading conditions



## PowerGuide, Tracking Resistant, and ShortSpan Performance Data

Parameters	Specifications	Typical Test Results	Test Performed
Low and High Temperature Bend	4 Turns @ -30°C & +60°C	Complies at 6 Turns @ -40°C & +70°C	FOTP-37
Impact Resistance	25 Impacts	Complies at 100 Impacts	FOTP-25
Compressive Strength	≥ 220 N/cm	≥ 220 N/cm	FOTP-41
Tensile Strength of Cable	Custom design tensile strength variable based on application		
Cable Twist	10 Cycles	Complies at 100 Cycles	FOTP-85
Cable Cyclic Flex	25 Cycles	Complies at 100 Cycles	FOTP-104
Cable Freezing	No Attenuation Change	No Attenuation Change	FOTP-98
Water Penetration	No Leakage	No Leakage	FOTP-82
Filling Compound Flow	No Flow @ 80°C	No Flow @ 80°C	FOTP-81
Temperature Cycling	Operation: -40°C to +70°C  Installation: -30°C to +70°C Storage/Shipping: -40°C to +75°C	-40°C to +70°C -60°C to +70°C * * Available on request -30°C to +70°C -40°C to +75°C	FOTP-3
Cable Aging	+85°C 168 hr. exposure	+85°C 168 hr. exposure	FOTP-3
High Frequency (aeolian) Vibration	100 Million Vibration Cycles	No Mechanical Damage to Cable or Hardware	IEEE P1222
Low Frequency (galloping) Vibration	100 Thousand Vibration Cycles	No Mechanical Damage to Cable or Hardware	IEEE P1222
Electrical Testing	to 12 kV space potential for PowerGuide	No adverse effects to polyethylene jacket	IEEE P1222
Electrical Testing	to 25 kV space potential for PowerGuide Tracking Resistant	No adverse effects to specially formulated jacket	IEEE P1222

Please contact us for detailed cable specifications and performance data.



Leading Optical Innovations

For additional information please contact your sales representative. You can also visit our website at <http://www.ofsoptics.com> or call 1-877-416-9883 or 1-888-fiberhelp.

[www.ofsoptics.com](http://www.ofsoptics.com)

Copyright © 2004 Furukawa Electric North America, Inc. All rights reserved, printed in USA.

PowerGuide, AccuTube, DryBlock, AccuRibbon, AllWave, and TrueWave are trademarks of Furukawa Electric North America, Inc.

OFS  
Marketing Communications  
PG - 12/04 - OFS1448