## Fiber Optics in Harsh Environment Applications





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### Industrial Testing Comparisons

Requirement	Тгау	ICEA-596 (Indoor Cables)	ICEA-696 (Indoor/Outdoor Cables)
Abnormal Low Temperature – Impact	Condition for 4 hours. Drop 3 lb weight 3 ft (at -40°C and -25°C)	Drop 4.4 lb weight 6 in at -10°C	Drop 4.4 lb weight 6 in at -10°C
Mechanical Damage – Impact	Drop 5 lb weight 1 ft (at room temperature) Abnormal	Drop 4.4 lb weight 6 in at 23°C	Drop 6.6 lb weight 6 in at -10°C
Mechanical Damage – Crush	448 N/cm at 23°C	100 N/cm at 23°C	220 N/cm at 23°C
Cold Bend	Condition for 4 hours. Wrap around mandrel at -20°C	Wrap around mandrel at -10°C	Wrap around mandrel at -10°C
Weathering Resistance	Condition for 500 hours. Bend around mandrel at -30°C	No test	No test
Oil Resistance	Condition for 96 hours at 100°C. Test tensile and elongation	No test	No test

Note: All Corning industrial LSZH<sup>™</sup> cables meet these tray-rated specifications.

## Fiber Optics in Harsh Environment Applications

#### **Corning LANscape® Solutions for Harsh Environments**

offer the ideal ruggedized product portfolio necessary to endure the environmental and mechanical rigors prevalent in oil & gas, mining, manufacturing, transportation, and energy utilities infrastructures.

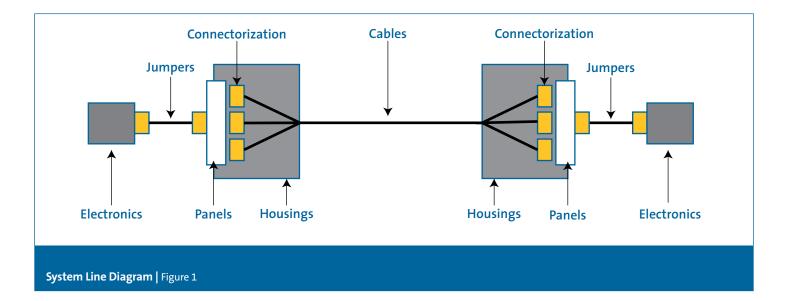
Keeping the network up and running in harsh environments requires more than just properly protecting the cabling from the elements. Product availability and lead time is critical. Corning harsh products are available and easy to use. As the most stocked fiber offering on the market, choosing products manufactured by Corning reduces lead times and expedites scheduling and permitting.

Corning harsh products are designed and engineered to protect against damage, breakage, exposure to extreme temperatures, shock, pressure, and other adverse conditions that could hinder performance. Our fiber optic cables meet the same UL and IEEE ratings that electrical cables are required to meet in industrial networks.

At Corning, we are committed to design innovation and certified product testing that makes it possible for us to provide the only certified all-optical, tip-to-tip harsh environment solution available in the industry today.

#### Features and Benefits of Fiber Optics in Harsh Environment Applications:

Increased reliability	Dependable uptime performance with greater ease-of-use during turn up or commissioning phases
Reduced downtime	Quick, efficient deployment, easy upgrades, less maintenance, and less time in the field for outside contractors with no need to replace cabling systems to meet future network demands
Optimal protection and safety	Rugged, dielectric design provides protection for optical fiber and for personnel with reduced risk of incidents due to shock, spark, or fire
More bandwidth for higher-data-rate transfer	Optical fiber infrastructure delivers reliable real-time monitoring and management now and in the future



# Oil & Gas Products

#### Cables

Indoor/Outdoor Cables	
xxxEUL-T4601D2N	Industrial LSZH™ <b>Tray-Rated</b> , Non-Armored, Double-Jacket Cable, single-mode (OS2)
xxxEUL-T4601DFN	Industrial LSZH <b>Tray-Rated</b> , Fiberglass-Armored, Double-Jacket Cable, single-mode (OS2)
Indoor Cables	
012K81-33130-D1	MIC® DX Indoor, Tight-Buffered, Dielectric-Armored Cable, riser-rated, 12 fiber, 62.5 μm multimode (OS1)
Outdoor Cables	
xxxEU4-T4701D20	ALTOS® Cable with FastAccess® Technology, non-armored, single-jacket, single-mode (OS2)
Note: Additional fiber type	es available for cables listed above. "xxx" denotes 012-216 for number of fibers in increments of 12.

#### Connectorization

#### **Splice Solution**

•	
Pigtailed cassettes fit into	a CCH housing with 3 m of prerouted 250 μm fiber. Required accessories included.
CCH-CS12-6T-POORE	ST® Compatible Connectors, 12 fiber, single-mode (OS2)
CCH-CS12-A9-P00RE	LC Duplex Connectors, 12 fiber, single-mode (OS2)
CCH-CS12-5T-P00KE	ST Compatible Connectors, 12 fiber, 62.5 μm multimode (OS1)
CCH-CS12-A8-P00KE	LC Connectors, 12 fiber, 62.5 μm multimode (OS1)
Note: Additional connecto	r styles, fiber types, and fiber counts are available.

#### Field-Installable

FAN-OD25-12	Fan-Out Kit, 12-fiber outdoor, 25-in legs. Required when installing UniCam® connectors on loose tube cable	
95-200-51	ST Compatible High-Performance UniCam Connector, single-mode (OS2)	
95-200-99	LC High-Performance UniCam Connector, single-mode (OS2)	
95-000-51	ST Compatible High-Performance UniCam Connector, 62.5 μm multimode (OS1)	
95-000-99	LC High-Performance UniCam Connector, 62.5 μm multimode (OS1)	
TKT-UNICAM-PFC	UniCam High-Performance Installation Tool Kit	
Note: The UniCam connector is tested to extreme temperature, humidity, vibration, and mechanical testing of both TIA/EIA-568-C3 and		

#### Telcordia GR-326.

#### Housings

Rack-Mountable Closet Connector Housings			
CCH-01U	Holds two CCH connector panels or pigtailed cassettes, 24-fiber capacity		
CCH-02U	Holds four CCH connector panels or pigtailed cassettes, 48-fiber capacity		
CCH-04U	Holds 12 CCH connector panels or pigtailed cassettes, 144-fiber capacity		
Wall-Mountable Con	Wall-Mountable Connector Housings		
WCH-02P	Holds two CCH connector panels (24-fiber capacity)*		
SPH-01P	Holds one CCH connector panel (12-fiber capacity)		
SPH-01P-DIN	Holds one CCH connector panel (12-fiber capacity), mounts to a DIN rail		
EDC-02P-NH	Environmental Distribution Center, NEMA 4X and IEC IP66 rated, holds two CCH connector panels		
	(24-fiber capacity)*		
ICH-02P	Industrial Connector Housing, NEMA 3S and IEC IP64 rated, holds two CCH connector panels		
	(24-fiber capacity)*		
*Additional fiber capacities are available			

\*Additional fiber capacities are available.

More and more, the oil and gas markets are turning to fiber optics for a number of applications. The advantages of larger bandwidths in a smaller footprint save space, weight, and installation time. The monitoring reliability for equipment performance, oil reserve levels, and environmental conditions make fiber optics an attractive option. Corning offers many products to assist in the procurement of natural resources.

#### **Connector Panels**

CCH-CP12-19T	ST® Compatible Adapter Panel, 12-fiber, single-mode (OS2)	
CCH-CP12-A9	LC Adapter Panel, 12-fiber, single-mode (OS2)	
CCH-CP12-15T	ST Compatible Adapter Panel, 12-fiber, 62.5 μm multimode (OM1)	
CCH-CP12-A8	LC Adapter Panel, 12-fiber, 62.5 μm multimode (OM1)	
Note: Additional connector styles, fiber types, and fiber counts are available.		

#### **Splice Closures for Outside Plant Cable**

SCG-8C-18-01	Splice Closure with gel end cap includes splice trays, up to 144-fiber capacity	
2806031-01	Heat-Shrink Splice Protectors, 40 mm long, pack of 50	
Ruggedized Fiber Optic Jumpers, 2-Fiber Zipcord, Riser-Rated, 2.9 mm		

616102G5R310xxM	ST Compatible to ST Compatible Jumper, single-mode (OS2)
040402G5R310xxM	LC Duplex to LC Duplex Jumper, single-mode (OS2)
505002K5R300xxM	ST Compatible to ST Compatible Jumper, 62.5 µm multimode (OM1)
050502K5R300xxM	LC Duplex to LC Duplex Jumper, 62.5 µm multimode (OM1)
Note: Additional connector	styles and fiber types are available. "xx" denotes length in meters, 01-10.



# Mining Products

#### **Indoor/Outdoor Cables**

xxxEUL-T4601D2M	Mining & Petrochemical LSZH™ Cable, single-mode (OS2)*	
xxxEUL-T4601D2N	Industrial LSZH Tray-Rated, Non-Armored, Double-Jacket Cable, single-mode (OS2)	
xxxEUL-T4601DFN	Industrial LSZH Tray-Rated, Fiberglass-Armored, Double-Jacket Cable, single-mode (OS2)	
xxxKUL-T4630D2M	Mining & Petrochemical LSZH Cable, 62.5 μm multimode (OM1)*	
*Listed MSHA 30 CFR Pt.7-K.		
Note: Additional fiber types available for cables listed above. "xxx" denotes 012-216 for number of fibers in increments of 12.		

#### Connectorization

#### **Splice Solution**

Pigtailed cassettes fit into a CCH housing with 3 m of prerouted 250 $\mu$ m fiber. Required accessories included.		
CC	H-CS12-6T-P00RE	ST® Compatible Connectors, 12 fiber, single-mode (OS2)
CC	H-CS12-A9-POORE	LC Duplex Connectors, 12 fiber, single-mode (OS2)
CC	H-CS12-5T-P00KE	ST Compatible Connectors, 12 fiber, 62.5 μm multimode (OM1)
CC	H-CS12-A8-P00KE	LC Connectors, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional connector styles, fiber types, and fiber counts are available.		
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FAN-OD25-12	Fan-Out Kit, 12-fiber outdoor, 25-in legs. Required when installing UniCam® connectors on loose tube cable
95-200-51	ST Compatible High-Performance UniCam Connector, single-mode (OS2)
95-200-99	LC High-Performance UniCam Connector, single-mode (OS2)
95-000-51	ST Compatible High-Performance UniCam Connector, 62.5 μm multimode (OM1)
95-000-99	LC High-Performance UniCam Connector, 62.5 μm multimode (OM1)
TKT-UNICAM-PFC	UniCam High-Performance Installation Tool Kit
Note: The UniCam connector is tested to extreme temperature, humidity, vibration, and mechanical testing of both TIA/EIA-568-C3 and	
Telcordia GR-326.	

#### Housings

Rack-Mountable Closet Connector Housings		
CCH-01U	Holds two CCH connector panels or pigtailed cassettes, 24-fiber capacity	
CCH-02U	Holds four CCH connector panels or pigtailed cassettes, 48-fiber capacity	
CCH-04U	Holds 12 CCH connector panels or pigtailed cassettes, 144-fiber capacity	
Wall-Mountable Connector Housings		
WCH-02P	Holds two CCH connector panels (24-fiber capacity)*	
SPH-01P	Holds one CCH connector panel (12-fiber capacity)	
SPH-01P-DIN	Holds one CCH connector panel (12-fiber capacity), mounts to a DIN rail	
EDC-02P-NH	Environmental Distribution Center, NEMA 4X and IEC IP66 rated, holds two CCH connector panels	
	(24-fiber capacity)*	
ICH-02P	Industrial Connector Housing, NEMA 3S and IEC IP64 rated,holds two CCH connector panels	
	(24-fiber capacity)*	
*Additional fiber capacities are available.		

Reliable communication in harsh mining environments is critical to employee safety and for meeting new federal requirements. Deploying and maintaining fiber optic networks can be challenging. Whether your mine is surface, sub-surface, mineral or metal, Corning offers a variety of products that are crush, shock, and temperature resistant.

#### **Connector Panels**

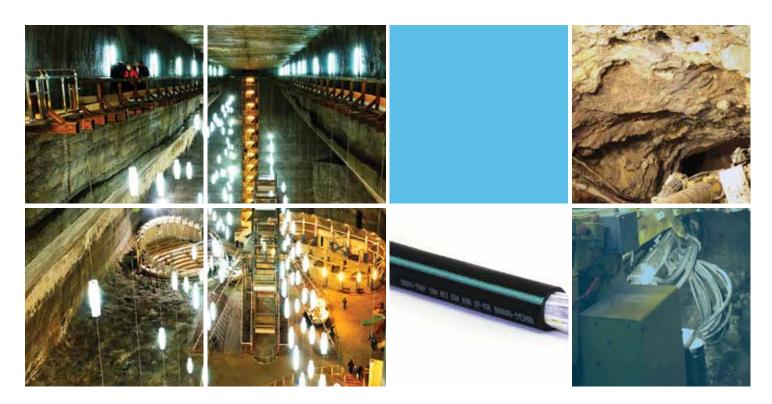
CCH-CP12-19T	ST® Compatible Adapter Panel, 12 fiber, single-mode (OS2)
CCH-CP12-A9	LC Adapter Panel, 12 fiber, single-mode (OS2)
CCH-CP12-15T	ST Compatible Adapter Panel, 12 fiber, 62.5 μm multimode (OM1)
CCH-CP12-A8	LC Adapter Panel, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional connector styles, fiber types, and fiber counts are available.	

#### **Splice Closures for Outside Plant Cable**

SCG-8C-18-01	Splice Closure with gel end cap includes splice trays, up to 144-fiber capacity
2806031-01	Heat-Shrink Splice Protectors, 40 mm long, pack of 50

#### Ruggedized Fiber Optic Jumpers, 2-Fiber Zipcord, Riser-Rated, 2.9 mm

616102G5R310xxM	ST Compatible to ST Compatible Jumper, single-mode (OS2)
040402G5R310xxM	LC Duplex to LC Duplex Jumper, single-mode (OS2)
505002K5R300xxM	ST Compatible to ST Compatible Jumper, 62.5 μm multimode (OM1)
050502K5R300xxM	LC Duplex to LC Duplex Jumper, 62.5 μm multimode (OM1)
Note: Additional connector	r styles and fiber types are available. "xx" denotes length in meters, 01-10.



# Manufacturing

#### Cables

Indoor/Outdoor Cables	
xxxEUL-T4601D2N	Industrial LSZH™ Tray-Rated, Non-Armored, Double-Jacket Cable, single-mode (OS2)
012E8F-31131-29	FREEDM® One Cable, tight-buffered, riser-rated, 12 fiber, single-mode (OS2)
012K8F-31130-29	FREEDM One Cable, tight-buffered, riser-rated, 12 fiber, 62.5 μm multimode (OM1)
Indoor Cables	
012K81-33130-D1	MIC <sup>®</sup> DX Indoor, Tight-Buffered, Dielectric-Armored Cable, riser-rated, 12 fiber,
	62.5 μm multimode (OM1)
NI-1- A J J'1'	as available for solves listed above "www" denotes 012 216 for number of floors in increments of 12

Note: Additional fiber types available for cables listed above. "xxx" denotes 012-216 for number of fibers in increments of 12.

#### Connectorization

#### **Splice Solution**

	•	
	Pigtailed cassettes fit into a	a CCH housing with 3 m of prerouted 250 $\mu m$ fiber. Required accessories included.
	CCH-CS12-6T-P00RE	ST® Compatible Connectors, 12 fiber, single-mode (OS2)
	CCH-CS12-A9-POORE	LC Duplex Connectors, 12 fiber, single-mode (OS2)
	CCH-CS12-5T-P00KE	ST Compatible Connectors, 12 fiber, 62.5 μm multimode (OM1)
	CCH-CS12-A8-P00KE	LC Connectors, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional connector styles, fiber types, and fiber counts are available.		

#### Field-Installable

FAN-OD25-12	Fan-Out Kit, 12-fiber outdoor, 25-in legs. Required when installing UniCam® connectors on loose tube cable
95-200-51	ST Compatible High-Performance UniCam Connector, single-mode (OS2)
95-200-99	LC High-Performance UniCam Connector, single-mode (OS2)
95-000-51	ST Compatible High-Performance UniCam Connector, 62.5 μm multimode (OM1)
95-000-99	LC High-Performance UniCam Connector, 62.5 μm multimode (OM1)
TKT-UNICAM-PFC	UniCam High-Performance Installation Tool Kit
Note: The UniCam connect	tor is tested to extreme temperature, humidity, vibration, and mechanical testing of both TIA/EIA-568-C3 and
Telcordia GR-326.	

#### Housings

Rack-Mountable Closet Connector Housings		
CCH-01U	Holds two CCH connector panels or pigtailed cassettes, 24-fiber capacity	
CCH-02U	Holds four CCH connector panels or pigtailed cassettes, 48-fiber capacity	
CCH-04U	Holds 12 CCH connector panels or pigtailed cassettes, 144-fiber capacity	
Wall-Mountable Connector Housings		
WCH-02P	Holds two CCH connector panels (24-fiber capacity)*	
SPH-01P	Holds one CCH connector panel (12-fiber capacity)	
SPH-01P-DIN	Holds one CCH connector panel (12-fiber capacity), mounts to a DIN rail	
EDC-02P-NH	Environmental Distribution Center, NEMA 4X and IEC IP66 rated, holds two CCH connector panels	
	(24-fiber capacity)*	
ICH-02P	Industrial Connector Housing, NEMA 3S and IEC IP64 rated, holds two CCH connector panels	
	(24-fiber capacity)*	
*Additional fiber capacities are available.		

Manufacturing | LAN-1553-AEN | Page 8

The ability to expand when needed without interrupting the network is critical in manufacturing today. Corning offers high-density tip-to-tip solutions that support moves, adds, and changes to communication systems efficiently.

#### **Connector Panels**

CCH-CP12-19T	ST® Compatible Adapter Panel, 12 fiber, single-mode (OS2)
CCH-CP12-A9	LC Adapter Panel, 12 fiber, single-mode (OS2)
CCH-CP12-15T	ST Compatible Adapter Panel, 12 fiber, 62.5 μm multimode (OM1)
CCH-CP12-A8	LC Adapter Panel, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional connector styles, fiber types, and fiber counts are available.	

#### **Splice Closures for Outside Plant Cable**

SCG-8C-18-01	Splice Closure with gel end cap includes splice trays, up to 144-fiber capacity
2806031-01	Heat-Shrink Splice Protectors, 40 mm long, pack of 50

#### Ruggedized Fiber Optic Jumpers, 2-Fiber Zipcord, Riser-Rated, 2.9 mm

616102G5R310xxM	ST Compatible to ST Compatible Jumper, single-mode (OS2)
040402G5R310xxM	LC Duplex to LC Duplex Jumper, single-mode (OS2)
505002K5R300xxM	ST Compatible to ST Compatible Jumper, 62.5 μm multimode (OM1)
050502K5R300xxM	LC Duplex to LC Duplex Jumper, 62.5 µm multimode (OM1)
Note: Additional connector	styles and fiber types are available. "xx" denotes length in meters, 01-10.



## Transportation

#### Cables

Indoor/Outdoor Cables	
xxxEUL-T4601D2N	Industrial LSZH™ Tray-Rated, Non-Armored, Double-Jacket Cable, single-mode (OS2)*
xxxEUL-T4601DFN	Industrial LSZH Tray-Rated, Fiberglass-Armored, Double-Jacket Cable, single-mode (OS2)*
Outdoor Cables	
xxxEU4-T4701D20	ALTOS® Cable with FastAccess® Technology, non-armored, single-jacket, single-mode (OS2)
xxxEUC-T4101A20	Armored ALTOS Lite™ Single-Jacket, Single-Armored Cable, single-mode (OS2)
*All LSZH meets NFPA 130	standards.

Note: Additional fiber types available for cables listed above. "xxx" denotes 012-216 for number of fibers in increments of 12.

#### **Connectorization**

#### **Splice Solution**

Pigtailed cassettes fit into a CCH housing	g with 3 m of prerouted 2	250 µm fiber. Require	d accessories included.

CCH-CS12-59-P00RE	SC Duplex Connectors, 12 fiber, single-mode (OS2)
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ZP006112EB4050F Zeux<sup>™</sup> Panel 50-ft Pigtail Assembly, ST compatible, 12 fiber, single-mode (OS2)\*

\*Fits inside standard traffic control cabinet.

Note: Additional connector styles, fiber types, and fiber counts are available.

#### **Field-Installable**

FAN-OD25-12	Fan-Out Kit, 12-fiber outdoor, 25-in legs. Required when installing UniCam® connectors on loose tube cable
95-200-51	ST Compatible High-Performance UniCam Connector, single-mode (OS2)
95-200-41	SC High-Performance UniCam Connector, single-mode (OS2)
TKT-UNICAM-PFC	UniCam High-Performance Installation Tool Kit
Note: The UniCam connector is tested to extreme temperature, humidity, vibration, and mechanical testing of both TIA/EIA-568-C3 an	
Telcordia GR-326.	

#### Housings

· · · · · · · · · · · · · · · · · · ·			
<b>Rack-Mountable Clos</b>	Rack-Mountable Closet Connector Housings		
CCH-01U	Holds two CCH connector panels or pigtailed cassettes, 24-fiber capacity		
CCH-02U	Holds four CCH connector panels or pigtailed cassettes, 48-fiber capacity		
CCH-04U	Holds 12 CCH connector panels or pigtailed cassettes, 144-fiber capacity		
Wall-Mountable Con	Wall-Mountable Connector Housings		
WCH-02P	Holds two CCH connector panels (24-fiber capacity)*		
SPH-01P	Holds one CCH connector panel (12-fiber capacity)		
SPH-01P-DIN	Holds one CCH connector panel (12-fiber capacity), mounts to a DIN rail		
EDC-02P-NH	Environmental Distribution Center, NEMA 4X and IEC IP66 rated, holds two CCH connector panels		
	(24-fiber capacity)*		
ICH-02P	Industrial Connector Housing, NEMA 3S and IEC IP64 rated, holds two CCH connector panels		
	(24-fiber capacity)*		
*Additional fiber capacities are available.			

Additional fiber capacities are available.

The use of fiber optics ensures a safer, more reliable transportation system. Railways, subways, highways, airways, and waterways all benefit from increased bandwidth, decreased footprints and faster moves, adds, and changes which require less contractor field time. Corning's products for harsh environment applications improve safety by better enabling video surveillance and traffic monitoring equipment and by providing real-time data control especially for reporting on weather conditions.

#### **Connector Panels**

CCH-CP12-19T	ST® Compatible Adapter Panel, 12 fiber, single-mode (OS2)	
CCH-CP12-59	SC Adapter Panel, 12 fiber, single-mode (OS2)	
Note: Additional connector styles, fiber types, and fiber counts are available.		

#### **Splice Closures for Outside Plant Cable**

SCG-8C-18-01	Splice Closure with gel end cap includes splice trays, up to 144-fiber capacity
2806031-01	Heat-Shrink Splice Protectors, 40 mm long, pack of 50

#### Ruggedized Fiber Optic Jumpers, 2-Fiber Zipcord, Riser-Rated, 2.9 mm

616102G5R310xxM	ST Compatible to ST Compatible Jumper, single-mode (OS2)
727202G5R310xxM	SC Duplex to SC Duplex Jumper, single-mode (OS2)
Note: Additional connecto	r styles and fiber types are available. "xx" denotes length in meters, 01-10.



# Energy Utilities

#### Cables

Indoor/Outdoor Cables	
xxxEUL-T4601D2N	Industrial LSZH™ Tray-Rated, Non-Armored, Double-Jacket Cable, single-mode (OS2)
xxxKUL-T4630D2N	Industrial LSZH Tray-Rated, Non-Armored, Double-Jacket Cable, 62.5 $\mu$ m multimode (OM1)
Outdoor Cables	
xxxEU4-T4701D20	ALTOS® Cable with FastAccess® Technology, non-armored, single-jacket, single-mode (OS2)
012EB4-14101A20	SST-Drop™ Single-Tube, All-Dielectric Cable, 12 fiber, single-mode (OS2)
012KB4-14130A20	SST-Drop Single-Tube, All-Dielectric Cable, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional fiber types available for cables listed above. "xxx" denotes 012-216 for number of fibers in increments of 12.	

#### Connectorization

#### **Splice Solution**

•	
Pigtailed cassettes fit into a	a CCH housing with 3 m of prerouted 250 $\mu m$ fiber. Required accessories included.
CCH-CS12-6T-P00RE	ST® Compatible Connectors, 12 fiber, single-mode (OS2)
CCH-CS12-59-POORE	SC Duplex Connectors, 12 fiber, single-mode (OS2)
CCH-CS12-5T-P00KE	ST Compatible Connectors, 12 fiber, 62.5 μm multimode (OM1)
CCH-CS12-56-P00KE	SC Connectors, 12 fiber, 62.5 μm multimode (OM1)
Note: Additional connector	styles, fiber types, and fiber counts are available.

#### Field-Installable

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95-200-41	SC High-Performance UniCam Connector, single-mode (OS2)	
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95-000-41	SC High-Performance UniCam Connector, 62.5 μm multimode (OM1)	
TKT-UNICAM-PFC	UniCam High-Performance Installation Tool Kit	
Note: The UniCam connector is tested to extreme temperature, humidity, vibration, and mechanical testing of both TIA/EIA-568-C3 and		
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#### Housings

Rack-Mountable Clo	set Connector Housings						
CCH-01U	Holds two CCH connector panels or pigtailed cassettes, 24-fiber capacity						
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SPH-01P	Holds one CCH connector panel (12-fiber capacity)						
SPH-01P-DIN	Holds one CCH connector panel (12-fiber capacity), mounts to a DIN rail						
EDC-02P-NH	Environmental Distribution Center, NEMA 4X and IEC IP66 rated, holds two CCH connector panels						
	(24-fiber capacity)*						
ICH-02P	Industrial Connector Housing, NEMA 3S and IEC IP64 rated, holds two CCH connector panels						
	(24-fiber capacity)*						
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\*Additional fiber capacities are available.

Fiber optics play a large role in the race to expand alternative energy sources. Wind and solar farms recognize the insulation protection that fiber offers from high-voltage shocks and the advantages of long haul versus copper. Corning's products provide a great solution for energy and utility initiatives.

#### **Connector Panels**

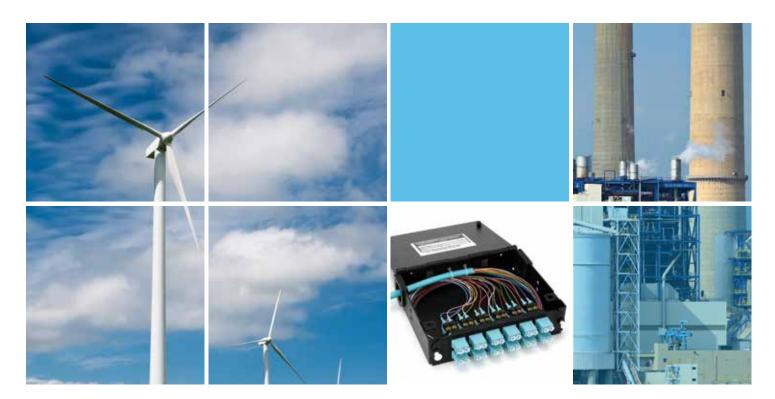
CCH-CP12-19T	ST® Compatible Adapter Panel, 12 fiber, single-mode (OS2)					
CCH-CP12-59	SC Adapter Panel, 12 fiber, single-mode (OS2)					
CCH-CP12-15T	ST Compatible Adapter Panel, 12 fiber, 62.5 $\mu$ m multimode (OM1)					
CCH-CP12-91	SC Adapter Panel, 12 fiber, 62.5 μm multimode (OM1)					
Note: Additional connector styles, fiber types, and fiber counts are available.						

#### **Splice Closures for Outside Plant Cable**

SCG-8C-18-01	Splice Closure with gel end cap includes splice trays, up to 144-fiber capacity
2806031-01	Heat-Shrink Splice Protectors, 40 mm long, pack of 50

#### Ruggedized Fiber Optic Jumpers, 2-Fiber Zipcord, Riser-Rated, 2.9 mm

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Note: Additional connector styles and fiber types are available. "xx" denotes length in meters, 01-10.							



## Cable Jacket Material Reference Guide

The information below is being provided to better understand the applications and specific characteristics of individual cables at a quick glance. Please refer to the individual family spec sheets for further specifications and ordering information or call Customer Care at 1-800-743-2675 with any questions.

	MIC <sup>®</sup> , MIC Unitized Riser	MIC DX Riser	MIC, MIC Unitized Interlocking Armor Riser	MIC, MIC Unitized Plenum	MIC DX Plenum	MIC, MIC Unitized Interlocking Armor Plenum	FREEDM®, FREEDM One, FREEDM One Unitized, FREEDM LST <sup>TM</sup> Riser	FREEDM Plenum	FREEDM One, FREEDM LST Plenum	Industrial LSZH <sup>***</sup>	Industrial LSZH Fiberglass-Armored	Mining and Petrochemical	ALTOS® with FastAccess® Technology	ALTOS Lite <sup>™</sup>	SST-Drop <sup>™</sup>
PVC Riser															
PVC Plenum															
PVDF															
LSZH															
MDPE															
Polyamide/Nylon Overjacket Available														•	
Indoor															
Outdoor															
Duct															
Aerial															
Direct Buried															
Low Friction															
UV Resistant															
Fungus Resistant															
Water Resistant															
Metallic Armor															
Dielectric Armor															
Fiberglass Armor															
Impact and Crush Resistance															
Rodent Resistance															
Tray Rated															
Petrochemical Resistance															
Minimum Operating Temperature °C (°F)	-20 (-4)	-20 (-4)	-20 (-4)	0 (32)	0 (32)	0 (32)	-40 (-40)	-40 (-40)	-40 (-40)	-50 (-58)	-50 (-58)	-50 (-58)	-40 (-40)	-40 (-40)	-40 (-40)
Maximum Operating Temperature °C (°F)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	75 (167)	75 (167)	75 (167)	70 (158)	70 (158)	70 (158)

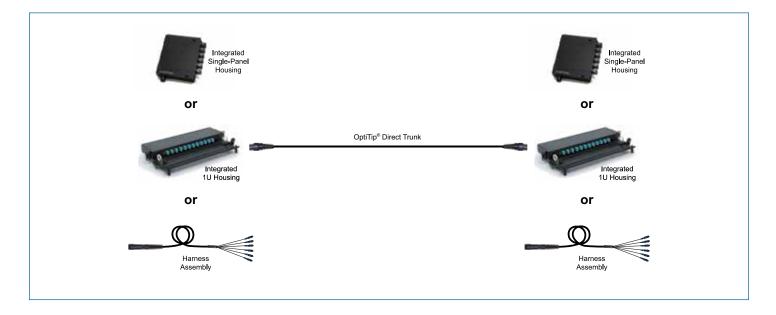
Corning OptiTip<sup>®</sup> assemblies are a modular set of factoryterminated components that can be easily configured into flexible point-to-point optical links.

The OptiTip connector is the key enabler for quick connection of up to 12 fibers at a time. The connector is based on the field-proven MTP<sup>®</sup> connector technology encapsulated in a hardened package suitable for use in any environment. OptiTip assemblies are a perfect choice for links where field fiber work is not desirable such as in high-bay areas, dirty, dusty, wet or muddy environments, hazardous areas, or limited access areas. OptiTip assemblies are installed and up and running in hours rather than days, with no special tools, equipment, or training necessary.

For more information, see LAN-731-EN.



#### **OptiTip to OptiTip Preterminated Solution**





For more information on Corning LANscape® Solutions for Harsh Environments, please contact us at 800-743-2675 or visit www.corning.com/opcomm.

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