



FIBER SYSTEM SOLUTIONS PRODUCT GUIDE

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OPTICAL FIBER SYSTEM SOLUTIONS

CABLE ASSEMBLIES | DISTRIBUTION SYSTEMS | REPAIRS | CABLE & CONNECTORS



The leading innovator of interconnect technology for broadcast and pro A/V applications, Gepco delivers a full line of optical fiber solutions for high definition audio and video applications. Engineered and manufactured to industry leading standards, Gepco fiber systems bring the optical clarity and reliability required for high-bandwidth data transmission in television, video production, staging, outdoor broadcast and professional audio applications. With a complete range of cable assemblies, panels, components and accessories, Gepco's optical fiber systems product line provides a turn-key optical solution.

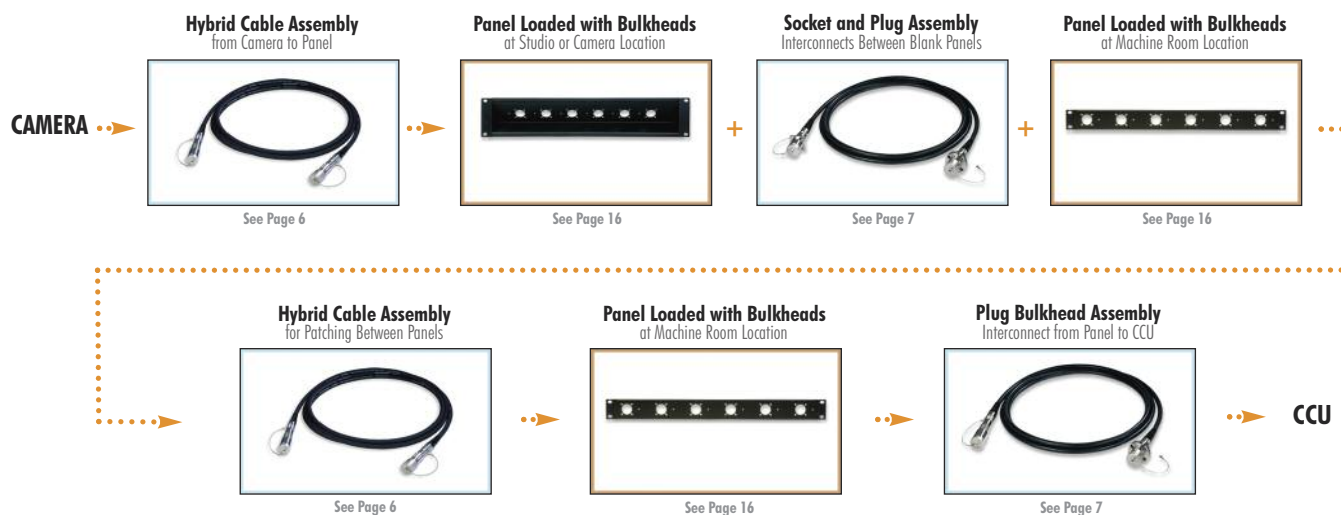
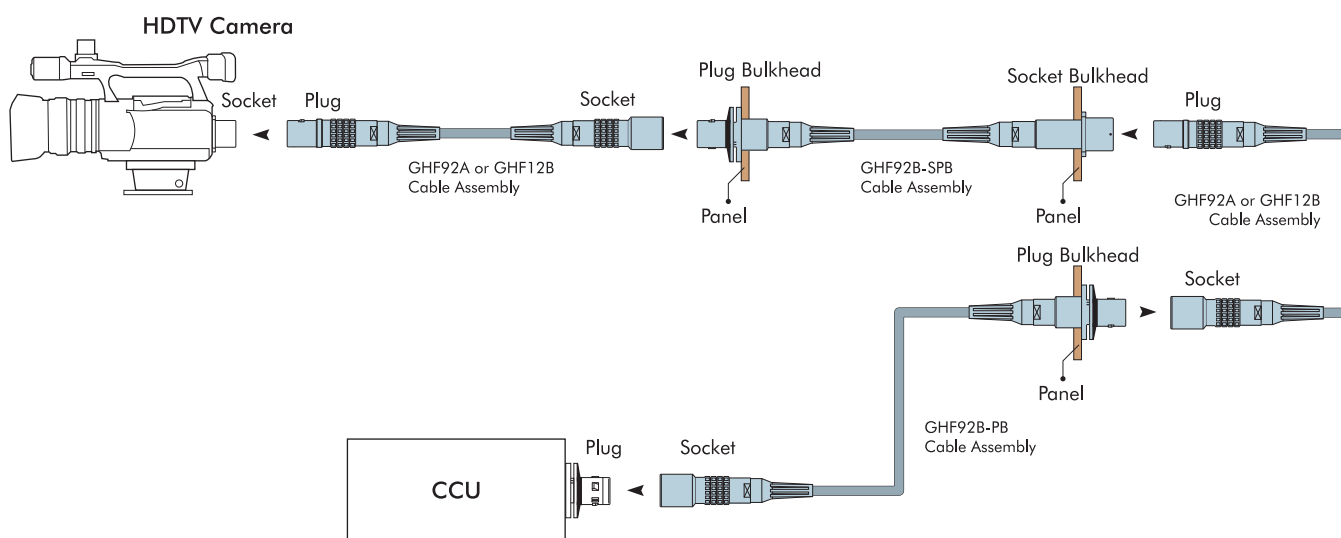


- Broadcast and Pro A/V
- Hybrid SMPTE HD Cameras
- Tactical Applications
- Distribution Systems
- Components
- Test Equipment and Accessories

SMPTE 304M/311M Hybrid Fiber Direct Cable Termination Configuration

- Lowest System Attenuation
- Utilized SMPTE 304M Panel Mount Connectors
- Field Terminated or Factory Terminated (If Installed with Body Removal and Installation Adapter)
- Blank Panels Available in Straight or Angled Configurations

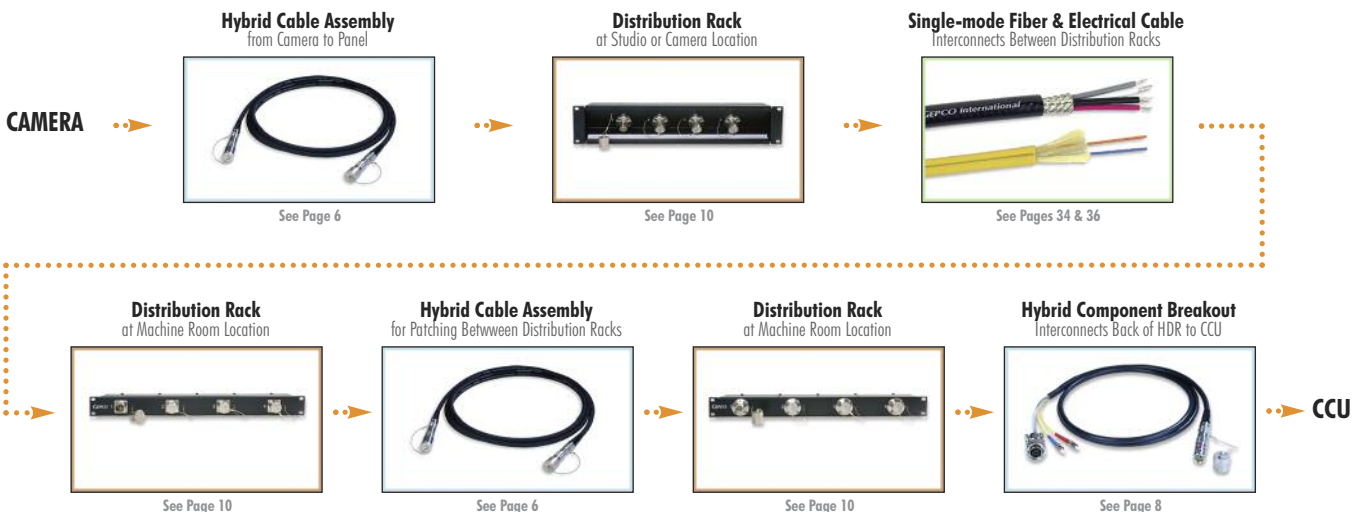
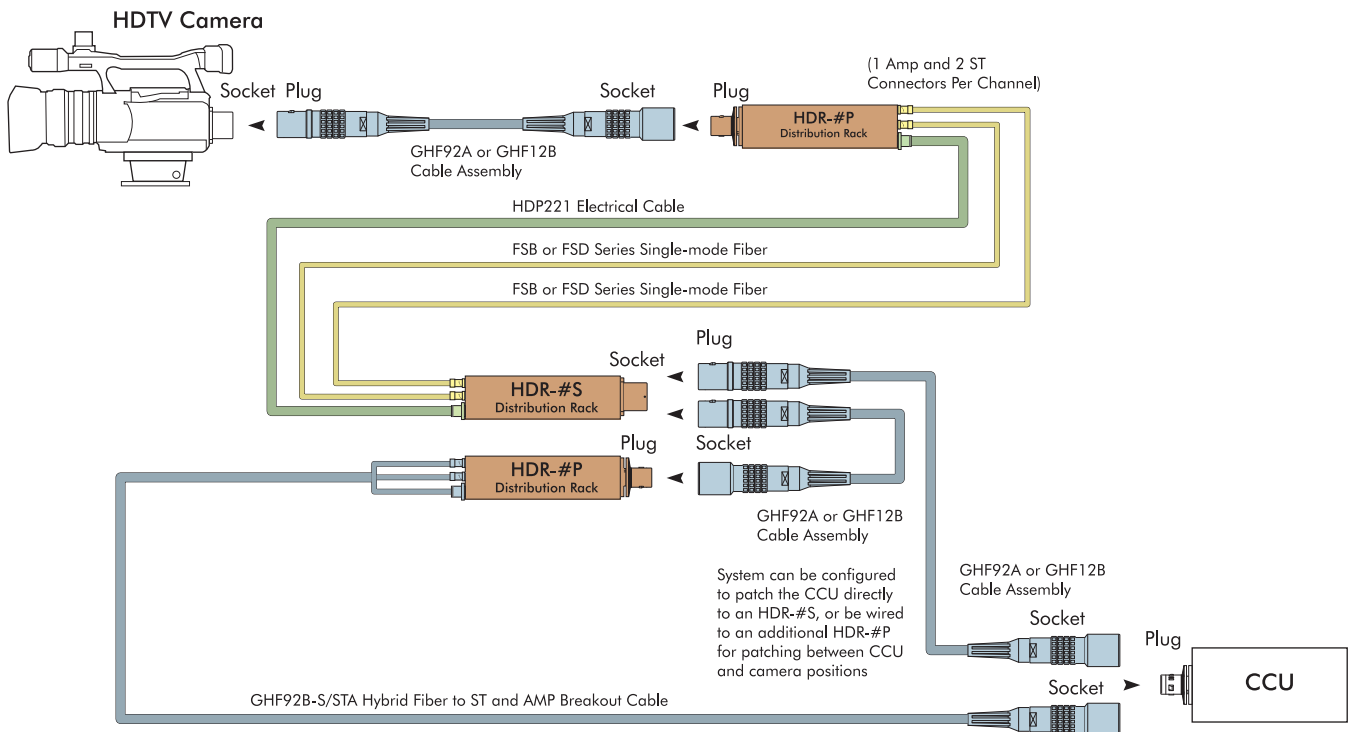
The Direct Cable termination method is achieved with panel mount SMPTE 304M hybrid fiber connectors directly terminated onto the hybrid cable that permanently interconnects between panels, junction boxes, and control room racks. Panel mount SMPTE 304M connectors offer the lowest overall insertion-loss at each breakout point. Panel Mount connector must be field terminated or factory terminated and installed on-site with the DCS.3K.175.72LN installation tool.



SMPTE 304M/311M Hybrid Fiber Distribution Rack Configuration

- Easy to Field-install and Terminate
- Modular Channels can be Reconfigured On-site
- Replaceable Contact Jumpers for Field Serviceability
- Does not Require Specialized Labor or Tooling
- Uses Cost Effective, General Purpose Fiber and Electrical Cables

Gepco HDR and HDRA distribution racks offer an exceptionally flexible and modular solution to the field deployment and installation of permanent installation SMPTE hybrid camera cables. With the Distribution Rack method, SMPTE 304M connectors are broken out to separate electrical and optical elements on the back of the distribution rack. These separate elements can then be readily terminated to fiber and electrical cabling without the need for the specialized labor or tooling required for the termination of SMPTE hybrid fiber.



SMPTE 304M/311M Hybrid Fiber Cable Assemblies

Gepco GHF hybrid fiber and copper camera cables, terminated with SMPTE 304M connectors for high definition video camera to CCU interconnects.

Gepco SMPTE hybrid fiber cables utilize two single-mode fibers for high bit-rate signal transmission and copper elements for auxiliary and signal electrical connections. Each fiber is coated with a high tensile strength coating for exceptional durability and strength. The copper elements feature a heat resistant PE insulation material for dependable performance in high temperature environments.

Fiber contacts are machine polished to meet or exceed all SMPTE standards. With typical UPC performance of -55dB RL, Gepco hybrid fiber cables achieve exceptional optical clarity to deliver reliable performance and low transmission loss.

FEATURES & BENEFITS

- Machine Polished
- -55dB Return Loss (Typical)
- Portable, Extra-rugged, and Permanent Install Versions
- Lemo or Canare Connectors
- Extra-rugged Designs
- Heat Resistant
- Meets or Exceeds SMPTE 304M/311M Standards

Portable: Heavy-duty 12mm Type



Cable Type
HDC120P

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug,
1 Socket with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

PART NUMBER: GHF12B-0-(length)

Portable: Thin Profile 9.2mm Type



(One end shown with optional overbody boot. Please specify when ordering.)

Cable Type
HDC920

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug,
1 Socket with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

Overbody Rubber Boot

PART NUMBER: GHF92A-0-(length)

-OB Add for Overbody Boot Option

SMPTE 304M/311M Hybrid Fiber Cable Assemblies

Standard In-line: Permanent Installation



Cable Type
HDC920R

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug,
1 Socket with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

PART NUMBER: GHF92B-0-(length)

Plug Bulkhead: Permanent Installation



Cable Type
HDC920R

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug Bulk-
head, 1 Socket with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

PART NUMBER: GHF92B-0-(length)-PB

Socket Bulkhead: Permanent Installation



Cable Type
HDC920R

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug,
1 Socket Bulkhead with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

PART NUMBER: GHF92B-0-(length)-SB

Plug & Socket Bulkhead: Permanent Installation



Cable Type
HDC920R

Connector Type
SMPTE 304M Hybrid Connectors - 1 Plug Bulk-
head, 1 Socket Bulkhead with Metal Dust Caps

Standard Lengths
50', 100', 164', 250', 328', 500', 656'

Options
Lemo or Canare Connectors

PART NUMBER: GHF92B-0-(length)-SPB

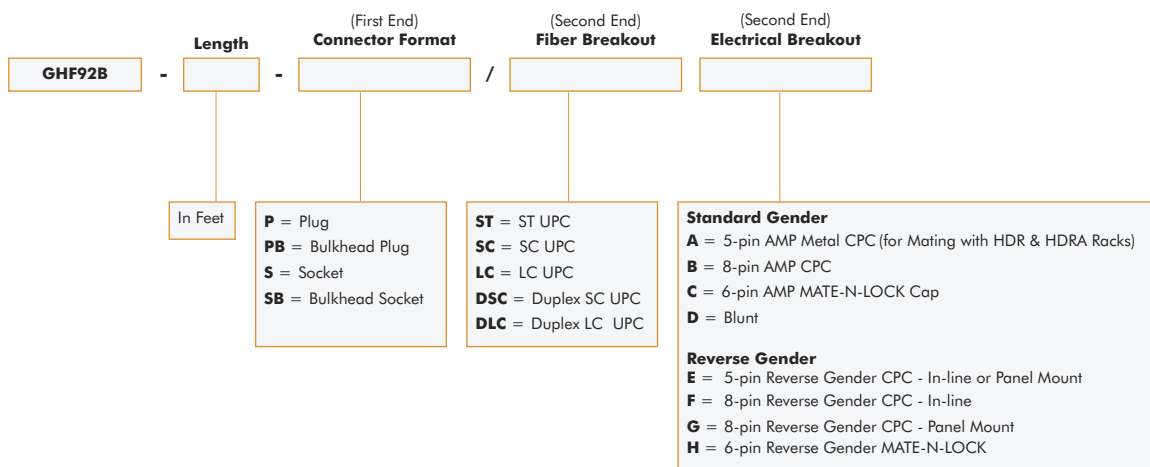
Hybrid Fiber Breakout: In-line Cable

FEATURES & BENEFITS

- ST/SC/LC Optical Breakout
- AMP Electrical Breakout
- Machine Polished to -55dB RL (Typical)
- CMR Rated 311M Hybrid Cable for Permanent Installation
- Available in Short or Long Cable Lengths
- For Interfacing SMPTE Hybrid Devices with the Back Panel of Distribution Panels or Other Component Level Devices

Gepco hybrid fiber breakout cables offer an in-line solution for breaking out SMPTE 304M Hybrid connectors to separate optical and electrical connectors. This solution allows for the interfacing of SMPTE hybrid camera devices, such as CCUs, directly to the back of a Gepco HDR/HDRA distribution rack.

As with all Gepco GHF cables, the breakout series is machine polished to meet or exceed all SMPTE 304M/311M standards. Terminated with HDC920R riser rated 9.2mm cable, breakout cables can be used in most permanent installation environments.



Fiber Connector Options



Electrical Connector Options



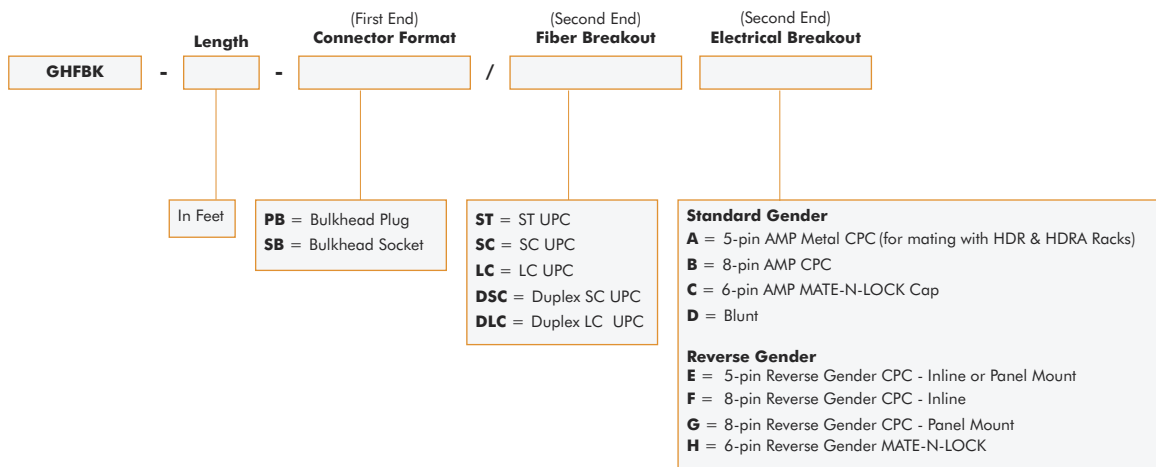
Hybrid Fiber Breakout: Internal Distribution

FEATURES & BENEFITS

- ST/SC/LC Optical Breakout
- AMP Electrical Breakout
- Machine Polished to -55dB RL (Typical)
- Uses Short Length Fiber and Electrical Elements
- For Panel Mounting in Blank Panels or as a Replacement in Hybrid Devices

Hybrid Fiber internal distribution cables do not use conventional hybrid 311M cables and are intended for internal equipment or panel wiring only. The SMPTE 304M end uses OEM style, non-cable-mount hybrid connectors and is terminated to insulated copper wire and individual, simplex breakout fibers. The component breakout end has ST, SC, or LC optical connectors, while the copper elements feature AMP or blunt ends.

As with all Gepco GHF cables, the breakout series is machine polished to meet or exceed all SMPTE 304M/311M standards.



Fiber Connector Options



Electrical Connector Options



Hybrid Fiber Distribution Racks

The HDR system of hybrid fiber distribution racks distributes the electrical and fiber components of the SMPTE hybrid connectors over separate optical and electrical components allowing for simplified in-wall installation. The discrete optical and electrical elements between boxes

can now be interconnected with conventional distribution-type fiber and Gepco's HDP electrical cable, thereby eliminating the need for specialized on-site hybrid fiber termination.

In addition, the HDR system offers improved field serviceability. The internal fiber jumpers can be easily replaced when damaged or worn, eliminating the costly need to completely replace the SMPTE hybrid connectors. The HDR chassis is constructed from rugged, powder-coated steel, all optical components feature machine-polished ceramic ferrules with ceramic sleeves, and the electrical connectors are rugged, metal-shell CPC types.



FEATURES & BENEFITS

- Breaks Out Lemo HD Camera Connectors to Discrete Electrical & Fiber Connectors
- Machine-polished Optical Contacts & Ceramic Sleeves
- Easy to Field Install
- Replaceable Fiber Jumpers
- Expandable up to Six Channels
- 1RU Chassis or 2RU Angled Chassis Versions

Assemblies & Specifications

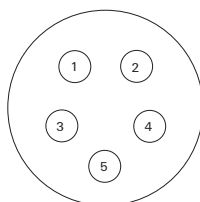
Part #	# of Channels	Connectors	Dimensions	Chassis Material/Color	Optical Specifications	Comments
Hybrid Fiber Distribution Rack						
<i>SMPTE 304M Connector to ST and Electrical Breakout</i>						
HDR-#x or HDA-#x	1, 2, 3, 4, 5, or 6	Front: SMPTE 304M Hybrid Fiber Connectors with Metal Dust Caps (1 per channel) Rear: ST Female Metal Barrels (Ceramic Sleeve) Internally Coupled to Metal Body ST Connectors (2 per channel) AMP Metal-shell 5-pin CPC Receptacle (1 per channel)	Straight: 1.75" High (1RU) x 19" Wide x 3" Deep Angled: 3.5" High (2 RU) x 19" Wide x 3 3/4" Deep Angled Front Panel	Steel/Black	Single-mode Optical Fiber, 8.3μ Mode Field, 125μ Cladding Diameter >45dB @ 1310nm Return Loss ST Contacts (PC Machine-polished) >45dB @ 1310nm Return Loss Hybrid Contacts (Machine-polished) <0.50 dB @ 1310nm Total Insertion Loss per Fiber Element SMPTE 304M Compliant	Lemo F2 fiber contacts in the hybrid connectors break out to two female ST connectors per channel. Auxiliary con- tacts, signal contacts and ground break out to the five contacts in the CPC connector. One, two and three channel versions can be expanded to four.

Part # Code x = Gender of Hybrid Fiber Connectors (P = Plug, S = Socket)
 # = Number of Channels

Rear Panel Breakout per Channel



AMP 5-pin: Front View



AMP 5-pin Electrical Pinout

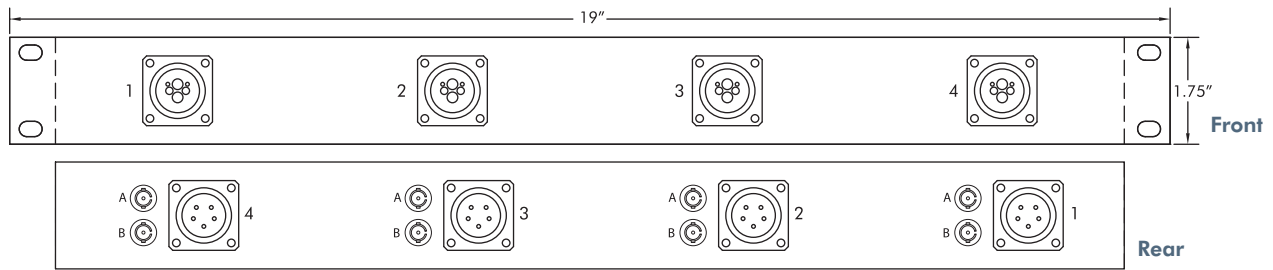
Pin 1 = Gray signal conductor (low voltage)
Pin 2 = Red signal conductor (low voltage)
Pin 3 = White auxiliary conductor (high voltage)
Pin 4 = Black auxiliary conductor (high voltage)
Pin 5 = Ground

ST Fiber Code

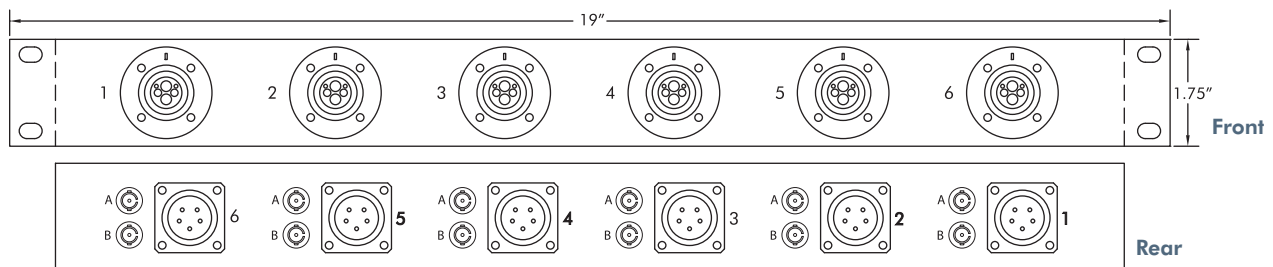
Fiber A = Top blue fiber in hybrid connector
Fiber B = Lower yellow fiber in hybrid connector

Hybrid Fiber Distribution Racks

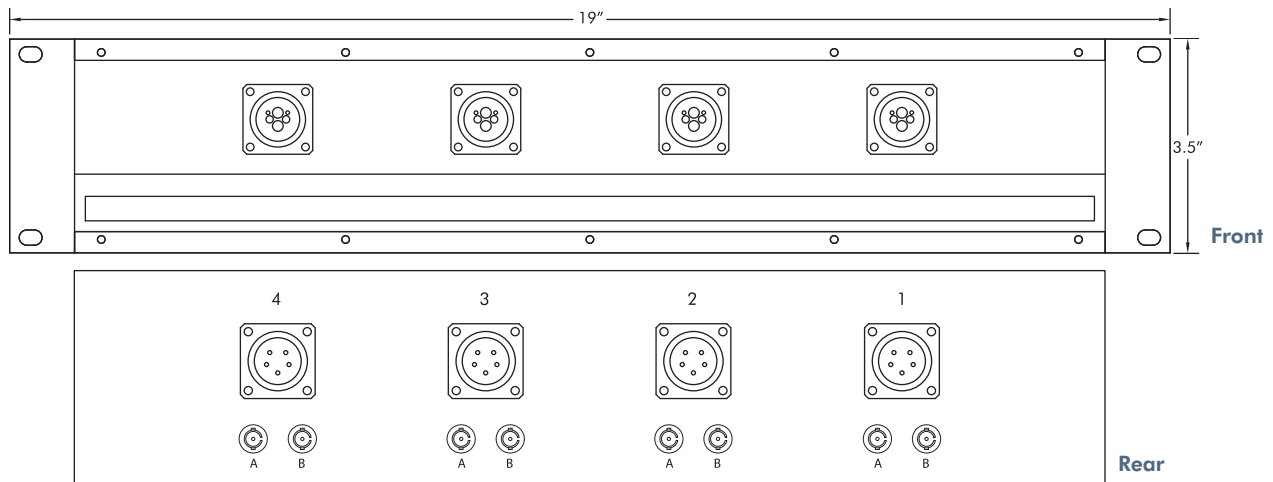
HDR-4S Front View and HDR-4(P or S) Rear View



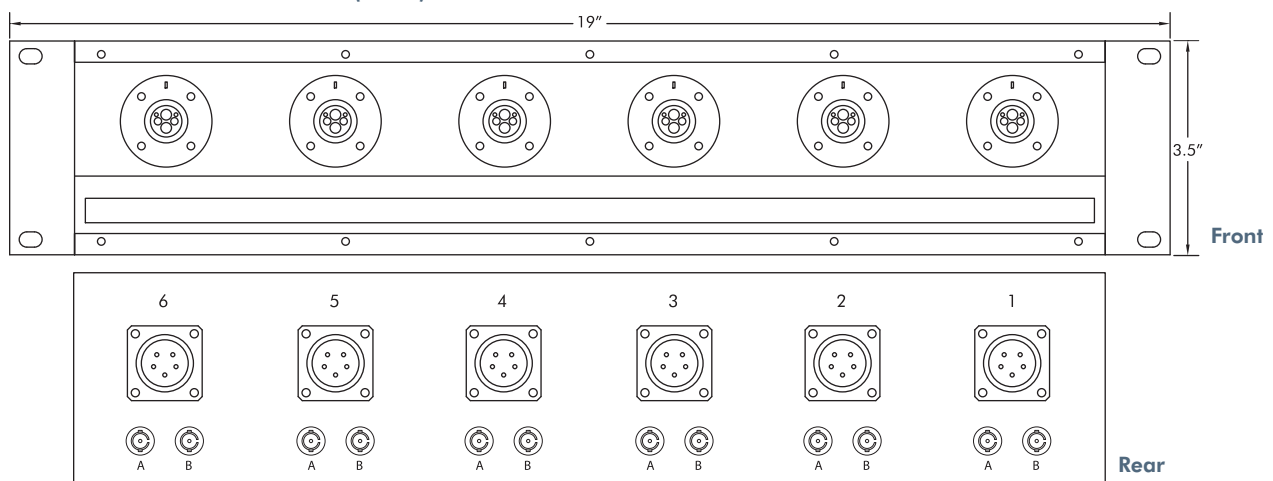
HDR-6P Front View and HDR-6(P or S) Rear View



HDRA-4S Front View and HDRA-4(P or S) Rear View



HDRA-6P Front View and HDRA-6(P or S) Rear View



Hybrid Fiber Breakout Boxes

The HBB series of portable SMPTE 304M boxes breaks out the hybrid camera connector to two ST female connectors on a recessed, protective metal top-plate with optional electrical connectors. The breakout of the hybrid connector to discrete, industry-standard optical and electrical components allows for an HD camera to CCU interconnection over existing fiber tie-lines in facilities where hybrid fiber interconnects may not be present.

All optical components feature machine-polished ceramic ferrules and ceramic sleeves for superior optical alignment and low loss. The chassis is constructed from heavy-gage anodized aluminum for use in remote production environments. In addition to the standard configuration, the HBB breakout box is also available with XLR or 5-pin AMP connectors that are hard wired to the power and/or signal components of the SMPTE hybrid connectors.



FEATURES & BENEFITS

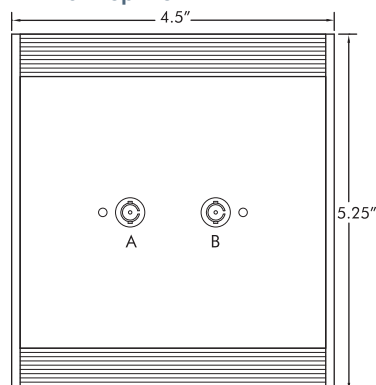
- Breaks Out SMPTE 304M Connector to Interface with Existing SM Fiber Tie-lines
- Machine-polished Optical Contacts & Ceramic Sleeves
- Replaceable Fiber Jumpers
- Rugged Aluminum Chassis
- Optional XLR or 5-pin AMP Connectors
- Includes Metal Dust Caps

Assemblies & Specifications

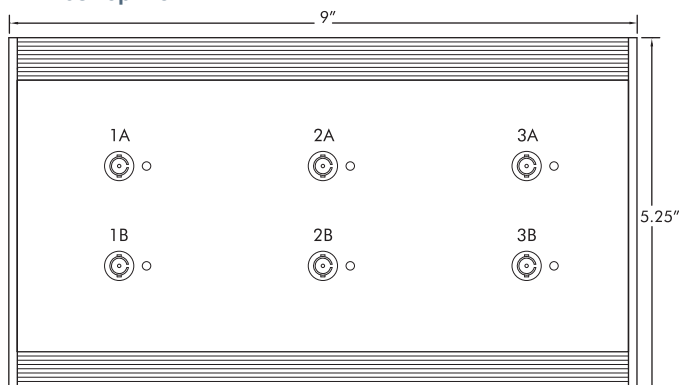
Part #	# of Channels	Connectors	Optional Electrical Connector	Chassis Dimensions	Chassis Material	Optical Specifications
Hybrid Fiber to ST Breakout Box Three-channel, 9" Long Chassis						
HBB903xy	3	(6) Female ST Barrels with Dust Caps (Metal Housing, Ceramic Sleeve) Internally Coupled with Metal Body ST Connectors with Ceramic Ferrules (3) Hybrid Fiber SMPTE 304M Connector (Plug or Socket) with Metal Dust Caps	(3) 5-pin Amp CPC Connector -or- (3) Male or Female XLR (Power elements from fiber are not terminated.) Also available without electrical connectors.	4.5" High x 5.25" Wide x 9" Long	1/8" Extruded Aluminum (Black Anodized)	Single-mode Optical Fiber, 8.3μ Mode Field, 125μ Cladding Diameter >45dB @ 1310nm Return Loss ST Contacts (PC Machine-polished) >45dB @ 1310nm Return Loss Lemo F2 Contacts (Machine-polished) <0.50dB @ 1310nm Total Insertion Loss per Fiber Element SMPTE 304M Compliant
Hybrid Fiber to ST Breakout Box Single-channel, Small Footprint Type						
HBB901xy/4.5	1	(2) Female ST Barrels with Dust Caps (Metal Housing, Ceramic Sleeve) Internally Coupled with Metal Body ST Connectors with Ceramic Ferrules (1) Hybrid Fiber SMPTE 304M Connector (Plug or Socket) with Metal Dust Caps	(1) 5-pin Amp CPC Connector -or- (1) Male or Female XLR (Power elements from fiber are not terminated.) Also available without electrical connectors.	4.5" High x 5.25" Wide x 4.5" Long	1/8" Extruded Aluminum (Black Anodized)	Single-mode Optical Fiber, 8.3μ Mode Field, 125μ Cladding Diameter >45dB @ 1310nm Return Loss ST Contacts (PC Machine-polished) >45dB @ 1310nm Return Loss Lemo F2 Contacts (Machine-polished) <0.50dB @ 1310nm Total Insertion Loss per Fiber Element SMPTE 304M Compliant
Part # Code x = Gender of Lemo Connectors (P = Plug, S = Socket) y = Gender of Electrical Connectors (XF = Female XLRs, XM = Male XLRs, A = Amp 5-pin CPC)						

Hybrid Fiber Breakout Boxes

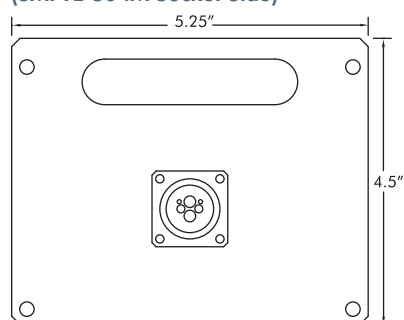
HBB901 Top View



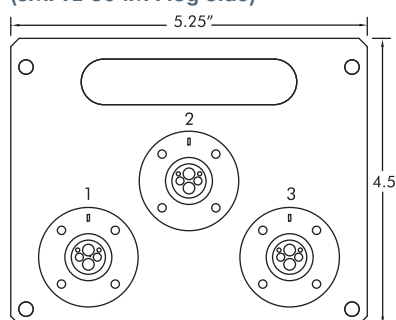
HBB903 Top View



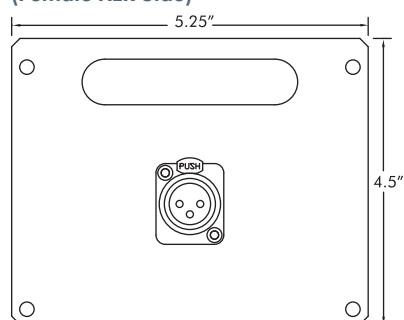
HBB901 Side View
(SMPTE 304M Socket Side)



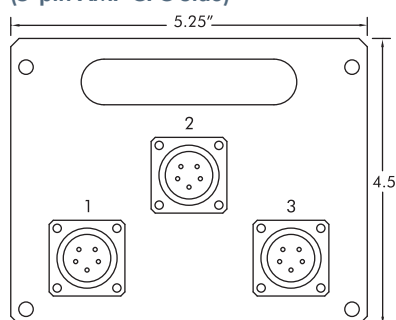
HBB903 Side View
(SMPTE 304M Plug Side)



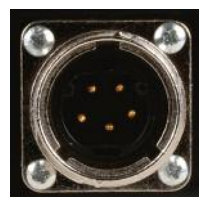
HBB901 Side View
(Female XLR Socket Side)



HBB903 Side View
(5-pin AMP CPC Side)



Side Panel Electrical Connector Options



AMP 5-Pin

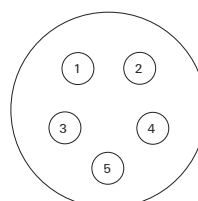


XLR Male



XLR Female

AMP 5-pin: Front View



ST Fiber Code

Fiber A = Top blue fiber in hybrid connector
Fiber B = Lower yellow fiber in hybrid connector

AMP 5-pin Electrical Pinout (Optional)





Pin 1 = Gray signal conductor (low voltage)
Pin 2 = Red signal conductor (low voltage)
Pin 3 = White auxiliary conductor (high voltage)
Pin 4 = Black auxiliary conductor (high voltage)
Pin 5 = Ground





XLR Pinout (Optional)

Pin 1 = Ground
Pin 2 = Red signal conductor (low voltage)
Pin 3 = Gray signal conductor (low voltage)

Black & white power elements in hybrid fiber connector are floated with no connector.



Hybrid Fiber Rack Accessories & Parts

REPLACEMENT PARTS AND TOOLS	Part Number	Description
	HDR-JMP-F2/ST	Replacement F2 to ST Internal Jumper
	AMP-66182-1	Replacement AMP Pins
	AMP-305183	AMP Pin Extraction Tool
	AMP-208719-1	Amp 5-pin Panel Mount Connector




CABLE MOUNT ELECTRICAL CONNECTORS	Part Number	Description
	AMP-208718-1	AMP 5-pin Cable Mount CPC Plug
	AMP-208945-5	AMP CPC Metal Shell with Clamp
	AMP-66183-1	Amp CPC Socket (for 26 - 20 AWG Wire)
	AMP-66181-1	Amp CPC Socket (for 18 - 16 AWG Wire)

Cleaning Tools & Instructions


ALIGNMENT REMOVAL TOOLS

	Part Number	Description
	DCS.F2.035.PN	Dual-ended Tool for Plug-end Alignment Sleeve Removal of SMPTE 304M Connectors
	DCS.91.F23.LA	Single-ended Tool for Plug-end Alignment Sleeve Removal of SMPTE 304M Connectors with Cotton Swab Reservoir


CLEANING SWABS AND TOOLS

	Part Number	Description	Quantity per Package
	WST.KI.125.34	Premoistened Cotton Swabs - Pack of 2 (One Dry, One Wet) for SMPTE 304M, ST, SC, or LC Contacts	2
	GEP-HFCS	Bag of 100 Cotton Swabs (Not Premoistened) for SMPTE 304M, ST, SC, or LC Contacts	100
	SCK-SC-250	Cleaning Tool for Female Panel Mount ST, SC or Other 2.5mm Fiber Contacts	1 (525+ Cleaning Uses)
	SCK-SC-125	Cleaning Tool for Female Panel Mount LC or Other 1.25mm Fiber Contacts	1 (525+ Cleaning Uses)

MICROSCOPE KITS

	Part Number	Description
	WST.CI.100.1A	Microscope Kit - Includes Scope, LCD Display, Positioner for F2 SMPTE 304M Fiber Contacts, Positioner for 2.5mm Fiber Contacts, Battery and Charger, DCS.F2.035.PN Extraction Tool, Carrying Case
	WST.CI.201.1A	Includes all of the Components in the Standard WST.CI.100.1A Kit, Plus a Visual Fault Finder with Tip, Launch Cable for Fault Finder, and 50 Premoistened Cotton Swabs

CABLE TESTER

	Part Number	Description
	FCT-FCKIT	Field Test Set for SMPTE 304M Hybrid Fiber Cables - Tests for Insertion and Return Loss, and Electrical Continuity for Shorts/Opens - Does not Fault Locate Damage

Hybrid Fiber Blank Panels

Gepco HBP panels offer a pre-engineered solution for the mounting of SMPTE 304M hybrid fiber connectors in a 19" rack. Available in 1RU, 2RU, and angled 2RU versions, all panels feature Gepco's unique Universal Punch Mount that allows for plug or socket connectors to be mounted in any position. Each position also features a hole for mounting the dust cap lanyard eyelets directly to the panel.

The HBP panels are used in the Direct Cable Termination method (see page four for system configuration details). When using HBP panels with pre-terminated cable assemblies, the connector body of the cable assembly can be removed, allowing for the assembly to be passed through the panel hole punch from the rear and reassembled from the front.

FEATURES & BENEFITS

- 1RU, 2U, or Angled 2RU Versions
- Universal Punch Mount Accommodates Plug or Socket Connectors (Does Not Accommodate PEW Connectors)
- Works with Lemo or Canare Brand Connectors
- Additional Hole for Dust Cap Lanyard Mounting
- Can Be Loaded with Pre-terminated Cable Assemblies

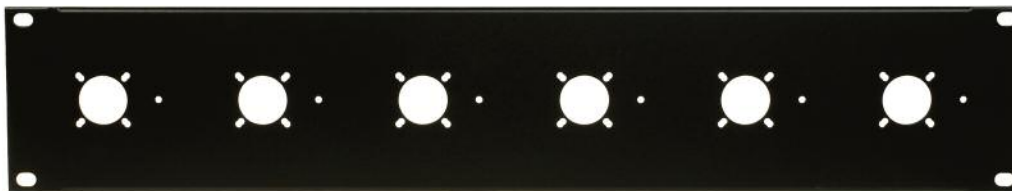
Angled 2RU Panel

PART NUMBER: HBPA-*U * Designates Number of Holes (1-6)



Straight 2RU Panel

PART NUMBER: HBP2-*U * Designates Number of Holes (1-6)



Straight 1RU Panel

PART NUMBER: HBP1-*U * Designates Number of Holes (1-6)



Note: Custom panels are also available. Please contact Gepco for details.

Ideal for Use With Bulkhead or Breakout Hybrid Fiber Cable Assemblies:



Bulkhead Hybrid (See page 7)



In-line Breakout (See page 8)



Internal Breakout (See page 9)

Modular Isolation Panel System

Gepco's modular isolation panel system is designed to provide flexibility and expansion capabilities for the mounting of hybrid fiber and triax connectors in a 19-inch rack format. The all-metal HMPF frame provides seven positions for the connector module mounts and is angled to reduce the bend radius and clearance required for the interfacing cables. Available in four types, the nonconductive plastic HMP modules provide electrical isolation between connectors and are available in SMPTE 304M, Kings Tri-Loc, Neutrik OpticalCon® and blank versions.

FEATURES & BENEFITS

- Modular Design
- Electrically Isolates Connectors
- Angled Front Reduces Cable Bend Radius
- All-metal Frame
- Nonconductive Plastic Modules
- Available for SMPTE 304M, Kings Tri-Loc and Neutrik OpticalCon® Connector Formats



	Type	Part Number	Application	Material	Dimensions
	Modular Frame	HMPF	Angled 2RU Frame with Open Positions for up to 7 Modules	Steel	2RU: 3.5"H x 19"W
	SMPTE Universal Module	HMP-S	Universal Punch Plug or Socket SMPTE 304M Hybrid Fiber Connectors	Nonconductive Plastic	2" x 2"
	Triax Module	HMP-T	Triax Punch for Male or Female Kings Brand Triax Connectors	Nonconductive Plastic	2" x 2"
	Neutrik OpticalCon® Module	HMP-N	Punch for Neutrik OpticalCon® Connector	Nonconductive Plastic	2" x 2"
	Blank Module	HMP-B	Blank Filler Module	Nonconductive Plastic	2" x 2"

Ideal for Use With Bulkhead or Breakout Hybrid Fiber Cable Assemblies:



Bulkhead Hybrid (See page 7)



In-line Breakout (See page 8)



Internal Breakout (See page 9)

Feedthrough Panels & Chassis

Gepco's series of feedthrough panels provides a convenient, pre-engineered solution for bulkhead interfacing of general-purpose ST, SC or LC optical fiber formats. Utilizing premium grade, zirconia sleeve connectors, Gepco feedthrough panels deliver precision optical alignment and low insertion loss. Available in two configurations, the flanged panel series provides extra rigidity to minimize panel flexing, while the chassis series provides a complete rear enclosure for cable management.

FEATURES & BENEFITS

- Precision, Zirconia Sleeve Connectors
- Available with ST, SC, or LC Format Connectors
- Flanged Panel Series for Extra Rigidity
- Chassis Series for Integrated Cable Management
- Black Anodized and Engraved



Part Number	Panel Type	Connector Format	Number of Positions	Dimensions	Additional Features
FP1-xxST FC1-xxST	Flat Chassis	ST Feedthrough	6, 8, 10, or 12	1RU: 1.75"W x 19"H 1RU: 1.75"H x 19"W x 3"D	Zirconia Sleeve, Metal Dust Caps
FP1-xxSC FC1-xxSC	Flat Chassis	SC Feedthrough	6, 8, 10, or 12	1RU: 1.75"W x 19"H 1RU: 1.75"H x 19"W x 3"D	Zirconia Sleeve, Spring Loaded Shutter
FP1-xxSCD FC1-xxSCD	Flat Chassis	SC Duplex Feedthrough	4, 6, or 8	1RU: 1.75"W x 19"H 1RU: 1.75"H x 19"W x 3"D	Zirconia Sleeve
FP1-xxLC FC1-xxLC	Flat Chassis	LC Feedthrough	6, 8, 10, or 12	1RU: 1.75"W x 19"H 1RU: 1.75"H x 19"W x 3"D	Zirconia Sleeve
FP1-xxLCD FC1-xxLCD	Flat Chassis	LC Duplex Feedthrough	6, 8, 10, or 12	1RU: 1.75"W x 19"H 1RU: 1.75"H x 19"W x 3"D	Zirconia Sleeve, Spring Loaded Shutter

Custom Panels

In addition to pre-engineered panels, chassis, and distribution systems, Gepco can custom design and manufacture panels to custom installation requirements. Panels can be fabricated from aluminum, steel, or stainless steel in a variety of colors, paint, or anodized finishes. Connector punches can be made for a complete range of broadcast and professional A/V connector formats. Engraving, filling, and custom silkscreening options finish off the complete customized interface solution for your venue or facility.

FEATURES & BENEFITS

- Completely Customized Panels
- Aluminum, Steel or Stainless Steel
- Wide Range of Connector Punches Available
- Engraved, Filled or Silkscreened
- Loaded with Connectors or Blank
- Flat, Flanged, or Chassis Configurations



Connector Formats

ST Feedthrough
 SC Feedthrough
 LC Feedthrough
 SMPTE 304M Plug Bulkhead
 SMPTE 304M Socket Bulkhead
 Neutrik OpticalCon®
 TAC-4/12
 BNC
 Triax
 Audio Connectors

Materials

Aluminum
 Steel
 Stainless Steel

Finishes

Anodized
 Painted
 Powder Coated
 Engraved
 Silk Screened












Lemo Hybrid Fiber SMPTE 304M Connectors



The original and industry standard in SMPTE 304M connectors, Lemo 3K series connectors deliver the performance and dependability required in demanding broadcast and production applications. These latest generation of Lemo 3K connectors feature an integrated cable grip collet, braid crimp, and strength member anchor for exceptional pull, bend, and strain relief. In addition, all exterior components are now machined from stainless steel for superior hardness and corrosion resistance. The F2 optical contacts deliver consistent end-face geometry and long-term mating life.

FEATURES & BENEFITS

- Original and Industry Standard HDTV Camera Connector
- Stainless Steel Exterior Components
- Integrated Collet, Crimp, and Anchor Strain Relief System
- Precision F2 Optical Contacts
- In-line Cable Mount, Chassis Cable Mount, and Breakout Versions
- Meets or Exceeds SMPTE 304M Standards

	Part Number	Configuration	Gender	Cable Type	Notes
	FUW.3K.93C.TLMC96	Cable Mount	Plug	9.2mm	Heavy-duty Strain Relief & Stainless Steel Body
	PUW.3K.93C.TLCC96	Cable Mount	Socket	9.2mm	Heavy-duty Strain Relief & Stainless Steel Body
	FUW.3K.93C.TLMC12	Cable Mount	Plug	12mm	Heavy-duty 12mm Stainless Steel Body
	PUW.3K.93C.TLCC12	Cable Mount	Socket	12mm	Heavy-duty 12mm Stainless Steel Body
	FMW.3K.93C.TLMC96Z	Panel Mount	Plug	9.2mm	Square Flange with Mounting Holes, Stainless Steel
	PBW.3K.93C.TLCC96Z	Panel Mount	Socket	9.2mm	Square Flange with Mounting Holes
	PEW.3K.93C.TLCC96Z	Panel Mount	Socket	9.2mm	Round with Locking Ring, Stainless Steel
	FXW.3K.93C.TLM	Panel Mount	Plug	Breakout	Not for Cable Mount, OEM Devices Only, Stainless Steel
	EDW.3K.93C.TLC	Panel Mount	Socket	Breakout	Not for Cable Mount, OEM Devices Only, Stainless Steel
	PSS.F2.BB2.LCE30	F2 Fiber Contact	Plug	9.2mm or 12mm	For Use with any Lemo SMPTE 304M Plug: Requires 2 per Connector
	FFS.F2.BB2.LCE30	F2 Fiber Contact	Socket	9.2mm or 12mm	For Use with any Lemo SMPTE 304M Socket: Requires 2 per Connector

Canare Hybrid Fiber SMPTE 304M Connectors



Canare's innovative SMPTE 304M connectors were designed for consistent performance, durability and simplified field cleaning. Canare FC Hybrid Fiber connectors feature an integrated cable grip collet, braid crimp, and strength member anchor for exceptional pull, bend, and strain relief. All exterior components are made from high-polish, nickel-plated brass for exceptional hardness and corrosion resistance. The Canare optical contacts deliver consistent end-face geometry and long-term mating life.

FEATURES & BENEFITS

- High-polish, Nickel-plated Brass Exterior Components
- Unique, Easy-access End Face for Quick Cleaning
- Integrated Collet, Crimp, and Anchor Strain Relief System
- Precision Optical Contacts
- In-line Cable Mount, Chassis Cable Mount, and Breakout Versions
- Meets or Exceeds SMPTE 304M Standards

	Part Number	Configuration	Gender	Cable Type	Notes
	FCF	Cable Mount	Plug	9.2mm	Heavy-duty Strain Relief Design
	FCM	Cable Mount	Socket	9.2mm	Heavy-duty Strain Relief Design
	FCFRC	Panel Mount	Plug	9.2mm	Square Flange with Mounting Holes
	FCMRC	Panel Mount	Socket	9.2mm	Square Flange with Mounting Holes
	FCFR	Panel Mount	Plug	Breakout	Not for Cable Mount, OEM Devices Only
	FCMR	Panel Mount	Socket	Breakout	Not for Cable Mount, OEM Devices Only
	FCA120	Cable or Panel	Plug or Socket	12mm	Adapter for Terminating 9.2mm Connectors to 12mm Cable

SMPTE 304M Dust Caps, Boots & Installation Tools

These Gepco, Lemo, and Canare brand accessories provide additional protection, weather resistance, and flex-relief to SMPTE 304M series hybrid fiber connectors. The stainless steel dust caps protect the end face and optical fiber contacts from exterior contamination when the connector is unmated and not in use. They feature a heavy-gage, coated lanyard chain to virtually eliminate breakage and fraying. Overbody boots provide exceptional full-connector protection, while the standard boot option provides additional flex relief to the connector and cable.

Also available is the DCS series cable pulling adapter. This adapter replaces the connector body during cable installation, allowing for a pre-terminated hybrid fiber cable to be pulled in a permanent installation application.

FEATURES & BENEFITS

- Stainless Steel Dust Caps with Heavy Duty Lanyard
- Overbody Boots for Full Connector Protection
- Standard Flex-relief Boots
- Cable Pulling Adapter for Installing Pre-terminated Cables

	Part Number	Description	Compatibility
	HPDC	Stainless Steel Dust Cap	Cable Mount Plug, Lemo or Canare
	HSDC	Stainless Steel Dust Cap	Cable Mount Socket, Lemo or Canare
	HPDC-PM	Stainless Steel Dust Cap	Panel Mount Plug, Lemo or Canare
	HSDC-PM	Stainless Steel Dust Cap	Panel Mount Socket, Lemo or Canare
	GMF.3K.085.EANZ	Full Body Plug Boot	Lemo 9.2mm FUW Plug Cable Mount Connector
	GMR.3K.085.EANZ	Full Body Socket Boot	Lemo 9.2mm PUW Cable Mount Socket Connector
	DCS.3K.175.72LN	Cable Pulling Slug	Temporarily Replaces Body of Lemo FUW, PUW, FMW, PBW, or PEW Connectors for Pulling Cable in a Permanent Installation
	GMA.3B.090.DN	Bend Relief Boot 9.2mm	Lemo 9.2mm FGW, PHW, FMW, PBW, or PEW Connectors (Not Compatible with Standard FUW and PUW Connectors)
	GMA.4B.011.DN	Bend Relief Boot 12mm	Lemo 12mm FGW or PHW Connectors (Not Compatible with Standard FUW and PUW Connectors)
	CB29	Full Body Plug Boot	Canare FCM 9.2mm Socket Connector
	CB30	Full Body Socket Boot	Canare FCF 9.2mm Plug Connector

Panel Mount Fiber Connectors

Feedthrough, panel mount, fiber connectors provide precision alignment and mating between two cable mount connectors. With the exception of the TAC-4/12 types, these connectors do not contain a ceramic ferrule or optical fiber elements. Terminated cables must be mated to both sides of the panel mount feedthrough to complete the interconnect.

General purpose, industry standard ST, SC, and LC formats are available in multiple configurations, including shuttered versions for the SC and LC formats. Neutrik OpticalCon™ panel mount connectors use a LC duplex format feedthrough that is shuttered for contaminant protection. As with the standard LC feedthroughs, OpticalCon™ connectors require a duplex LC connector to complete the interconnect and panel wiring.

The TAC-4/12 panel mount connectors utilize fiber termini that must be bonded to the fiber and machine polished. The hermaphroditic design of the TAC-4/12 format permits the panel mount versions to be mated to either end of a TAC4/12 cable assembly.

FEATURES & BENEFITS

- Panel Mount Configurations
- ST, SC, LC, and General-purpose Formats
- Weather-tight Shuttered Versions Available
- Zirconia Sleeves
- Precision Optical Alignment
- Neutrik OpticalCon®
- TAC-4/12 Connectors

	Connector Format	Part Number	Alignment Sleeve	Manufacturer	Mating
	ST Feedthrough	216-101-E	Zirconia (Ceramic)	Senko	Couples Two Male, Cable Mount STs
	SC Feedthrough	277-101-1N 222-101-1N (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko	Couples Two Male, Cable Mount SCs
	SC Feedthrough with External Shutter	227-101-1E 222-101-1E (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko	Couples Two Male, Cable Mount SCs
	SC Feedthrough - Duplex	227-201-1N 222-201-1N (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko	Couples Four Male, Cable Mount SCs
	LC Feedthrough	999-111	Zirconia (Ceramic)	Senko	Couples Two Male, Cable Mount LCs
	LC Feedthrough - Duplex (SC Footprint)	999-411 999-311 (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko	Couples Four Male, Cable Mount LCs
	LC Feedthrough - Duplex (SC Footprint) with External Shutter	999-411-1E 999-311-1E (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko	Couples Four Male, Cable Mount LCs
	OpticalCon™ - Optalloy Finish IP65 Waterproof	NO2-4FDW NO2-4FDW-1 (with Ground Tab)	Zirconia (Ceramic)	Neutrik	Mates with In-line Neutrik OpticalCon™ or Standard Duplex LC
	OpticalCon™ - Ruthenium Finish IP65 Waterproof	NO2-4FDW-R NO2-4FDW-1-R (with Ground Tab)	Zirconia (Ceramic)	Neutrik	Mates with In-line Neutrik OpticalCon™ or Standard Duplex LC
	Amphenol Four-channel Tactical Connector	1098080-A1	Uses Fiber Termini, not a Feedthrough Device	Amphenol	Must be terminated and machine polished with 6 Amphenol M29504/14 Termini, and 6 Amphenol M29504/15 Termini. Termini are sold separately.
	Amphenol Twelve-channel Tactical Connector	F512A8080X111F	Uses Fiber Termini, not a Feedthrough Device	Amphenol	Must be terminated and machine polished with 6 Amphenol M29504/14 Termini, and 6 Amphenol MIL29B1999C Termini. Termini are sold separately.

TAC-4 & TAC-12 Cable Assemblies

FEATURES & BENEFITS

- Factory Terminated in the USA
- Machine Polished
- 4 or 12 Channels per Connector
- Hermaphroditic Design Enables Mating to Cable or Panel Mount Connectors in Either Direction
- Extra-rugged Metal Shell
- Dust Cap Included



TAC-4 and TAC-12 cable assemblies by Gepco are built for the transmission of multiple optical fiber elements in hostile and portable applications. Each connector contains four or twelve elements in an extra-rugged, hermaphroditic connector shell. The hermaphroditic design enables cables to be mated to either TAC-4/12 panel connectors or other TAC-4/12 cables in any direction providing flexibility for cable link expansion and eliminating cables from being directionally misdeployed. Machine polished and terminated in the US, Gepco TAC-4/12 cables have exceptionally low return-loss and attenuation with consistent end-face geometry. TAC-4/12 cables are available in almost any length and are custom terminated to user specifications.

Overall Specifications

Part #	# of Channels	Connectors	Cable Type	Available Lengths	Color
GTS4-0-(length)	(4) Single-mode Fiber	(2) Amphenol TAC-4, SMPTE 358M	Tactical, Polyurethane Jacket, .220" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Black Finish Connector Body
<i>TAC-4 SMPTE 358M Hermaphroditic Assembly: Single-mode</i>					
GTM4/50-0-(length)	(4) 50 μ m Multi-mode Fiber	(2) Amphenol TAC-4, SMPTE 358M	Tactical, Polyurethane Jacket, .220" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Black Finish Connector Body
<i>TAC-4 SMPTE 358M Hermaphroditic Assembly: 50 μm Multi-mode</i>					
GTM4/62-0-(length)	(4) 62.5 μ m Multi-mode Fiber	(2) Amphenol TAC-4, SMPTE 358M	Tactical, Polyurethane Jacket, .220" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Black Finish Connector Body
<i>TAC-4 SMPTE 358M Hermaphroditic Assembly: 62.5 μm Multi-mode</i>					
GTS12-0-(length)	(12) Single-mode Fiber	(2) Amphenol TAC-12	Tactical, Polyurethane Jacket, .260" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Gray Finish Connector Body
<i>TAC-12 Hermaphroditic Assembly: Single-mode</i>					
GTM12/50-0-(length)	(12) 50 μ m Multi-mode Fiber	(2) Amphenol TAC-12	Tactical, Polyurethane Jacket, .260" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Gray Finish Connector Body
<i>TAC-12 Hermaphroditic Assembly: 50 μm Multi-mode</i>					
GTM12/62-0-(length)	(12) 62.5 μ m Multi-mode Fiber	(2) Amphenol TAC-12	Tactical, Polyurethane Jacket, .260" Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Gray Finish Connector Body
<i>TAC-12 Hermaphroditic Assembly: 62.5 μm Multi-mode</i>					

Mechanical Performance Specifications

Operating Temperature	Minimum Bend Radius
-55°C to +85°C	1.8" (TAC-4), 2.1" (TAC-12)

Optical Performance Specifications

Fiber Type	Cable Loss	Connector Loss	Connector Back Reflection
8.3 μ m Single-mode Fiber, 50 μ m Multi-mode Fiber, or 62.5 μ m Multi-mode Fiber	< 0.5dB/km @ 1310/1550nm (Single-mode) < 3.5 dB/km @ 850nm (Multi-mode) < 1dB/km @ 1300nm (Multi-mode)	<.5dB (per Connection)	-55dB RL (Typical), -45dB RL (Max)

OpticalCon® Fiber Optic Cable Assemblies

FEATURES & BENEFITS

- Factory Terminated in the US
- Machine Polished
- Two Fiber Channels per Connector
- Industry Standard LC Fiber Contacts
- Unique Shutter Mechanism Protects Contacts from Damage and Contamination
- -55dB Return Loss (Typical)
- Ruggedized Body
- Tactical Optical Fiber Cable

Neutrik OpticalCon® cable assemblies by Gepco provide a streamlined and ruggedized solution for the deployment and interfacing of optical fiber in commercial and professional A/V applications. The OpticalCon® connector features a ruggedized body design, high performance LC fiber contacts, and a unique shutter mechanism to protect against damage and contamination. Machine polished and terminated in the US, OpticalCon® assemblies by Gepco provide exceptionally low return-loss, attenuation, and consistent end-face geometry. OpticalCon® assemblies are available in almost any length and are custom terminated to user specifications.



Overall Specifications					
Part #	# of Channels	Connectors	Cable Type	Available Lengths	Color
GNO2S-0-(length)	Two Single-mode Fiber	(2) Neutrik OpticalCon®, NO2SX	Tactical, Polyurethane Jacket, 5mm Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Nickle Finish Connector Body
	OpticalCon® Cable Assembly: SINGLE-MODE				
GNO2M-0-(length)	Two Multi-mode Fiber	(2) Neutrik OpticalCon®, NO2MX	Tactical, Polyurethane Jacket, 5mm Diameter	50', 100', 164', 250', 328', 500', 656', or Custom	Black Cable Jacket Nickle Finish Connector Body
	OpticalCon® Cable Assembly: MULTI-MODE				
Mechanical Performance Specifications					
Cable Retention Force	Lifetime	Insertion/Withdrawl Force	Operating Temperature	Minimum Bend Radius	
500N	>1000 Cycles	<45N	-25°C to +75°C	4cm	
Optical Performance Specifications					
Type	Fiber Type	Cable Loss	Connector Loss	Connector Back Reflection	
LC-UPC (Straight Polish)	9 μm Single-mode Fiber or 50 μm Multi-mode Fiber	< 0.5dB/km @ 1310/1550nm (Single-mode)	<.5dB (per Connection)	-55dB RL (Typical), -45dB RL (Max)	
		< 3dB/km @ 850nm (Multi-mode)			
		< 1dB/km @ 1300nm (Multi-mode)			

* OpticalCon is a registered trademark of Neutrik AG All Rights Reserved

Also Available with Cable Reeler

Add reeler part number to suffix.

Standard configuration has cable mount connector on both ends. Optional bulkhead on reel is also available. Add "B" to end of reeler suffix of part number.



GT310



GT380



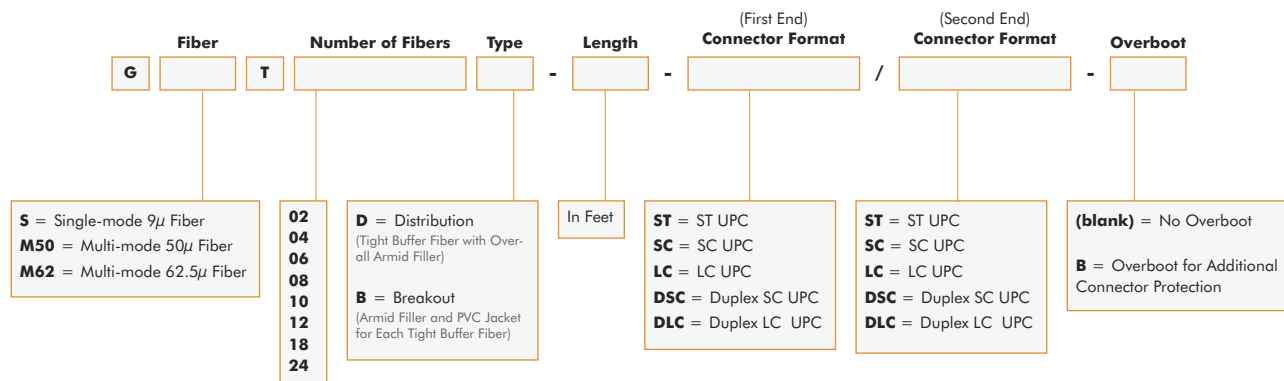
GT520

ST/SC/LC Tactical Snakes

FEATURES & BENEFITS

- Machine Polished -55dB SRL UPC Quality
- 100% Tested and Verified
- Low Attenuation and Return Loss
- Precision Fiber Connectors
- Distribution and Breakout Versions
- Heavy-duty Polyurethane Master Jacket
- Ruggedized, Tactical Grade, Internal Construction
- Optional Overboot Protects Connector Fanout

Gepco's tactical optical fiber snakes are terminated with precision ST, SC, or LC format connectors to ruggedized, optical fiber snake cable for use in hostile environments. Available with single-mode or multi-mode optical fiber, tactical fiber cable assemblies come in two construction types: distribution and breakout. Distribution cables feature multiple tight-buffered fibers and an overall armid filler under a heavy-duty, polyurethane master jacket. Breakout versions have individual armid fillers and PVC jackets for each tight-buffered fiber, in addition to the overall polyurethane master jacket, to provide added protection. Precision machine polished to UPC standards, Gepco tactical fiber optic snakes deliver the performance required in professional A/V and broadcast fiber optic formats.



Example Part Numbers

GST02D-10-ST/ST (Single-mode 9μ Fiber, 2 Fibers, Distribution, 10 Feet, ST Connector First End, ST Connector Second End, No Boot Cover)

GST10B-25-SC/LC-B (Single-mode 9μ Fiber, 10 Fibers, Breakout, 25 Feet, SC Connector First End, LC Connector Second End, Overboot)

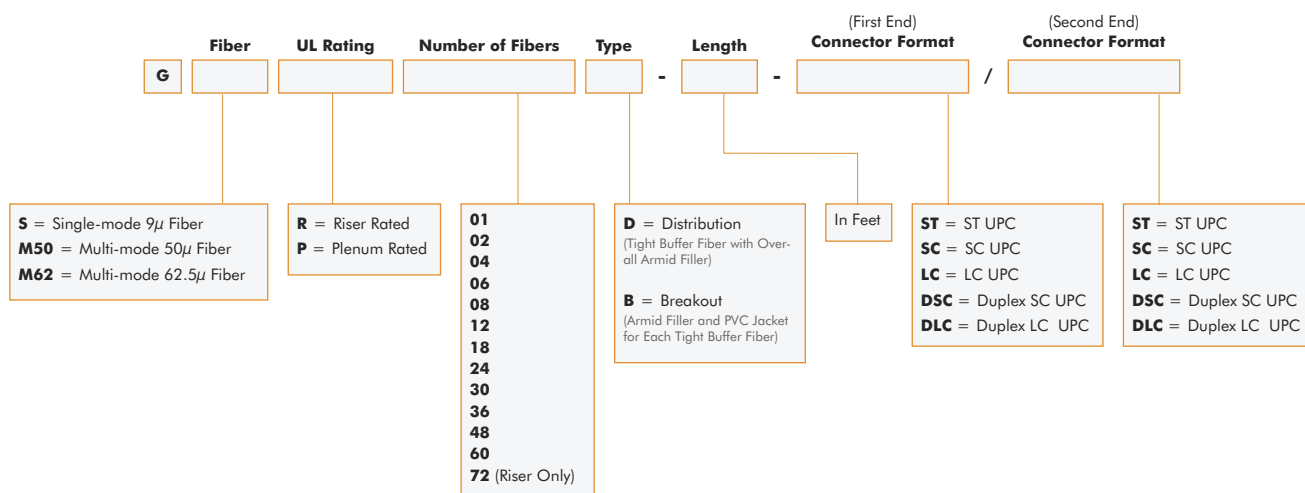
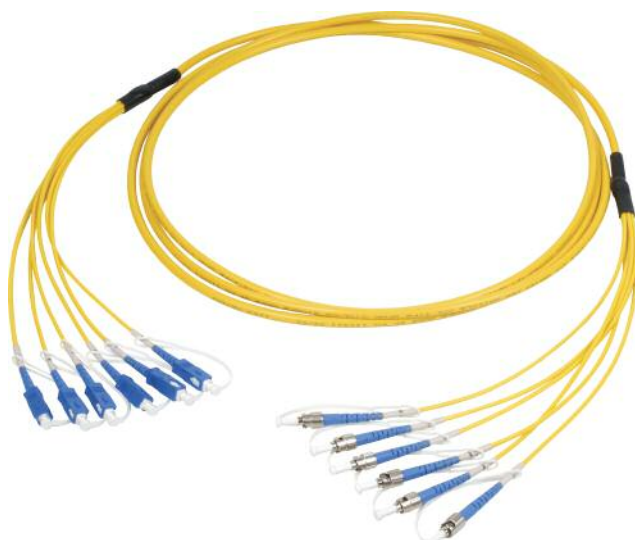
GM62T12D-12-LC/ST (Multi-mode 62.5μ Fiber, 12 Fibers, Distribution, 12 Feet, LC Connector First End, ST Connector Second End, No Boot Cover)

ST/SC/LC Permanent Install Snakes

FEATURES & BENEFITS

- Machine Polished -55dB SRL UPC Quality
- 100% Tested and Verified
- Low Attenuation and Return Loss
- Precision Fiber Connectors
- Distribution and Breakout Versions
- Plenum or Riser Rated for Permanent Install

Gepco's optical fiber snakes are terminated with precision ST, SC, or LC format connectors to plenum or riser rated cable for permanent installation. Available with single-mode or multi-mode optical fiber, permanent install cable assemblies come in distribution and breakout cable constructions. Precision machined polished to UPC standards, all Gepco fiber optic assemblies deliver the performance required in professional A/V and broadcast fiber optic formats.



Example Part Numbers

GSR02D-25-ST/ST (Single-mode 9μ Fiber, Riser Rated, 2 Fibers, Distribution, 25 Feet, ST Connector First End, ST Connector Second End)

GSP08B-50-SC/LC (Single-mode 9μ Fiber, Plenum Rated, 8 Fibers, Breakout, 50 Feet, SC Connector First End, LC Connector Second End)

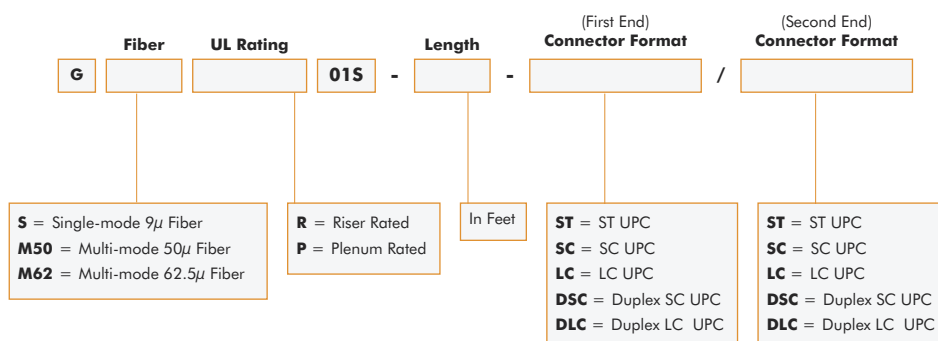
GM62R12D-10-LC/ST (Multi-mode 62.5μ Fiber, Riser Rated, 12 Fibers, Distribution, 10 Feet, LC Connector First End, ST Connector Second End)

ST/SC/LC Simplex Cables

FEATURES & BENEFITS

- Machine Polished -55dB SRL UPC Quality
- 100% Tested and Verified
- Low Attenuation and Return Loss
- Precision Fiber Connectors
- Plenum or Riser Rated for Permanent Install

Gepco's optical fiber assemblies are terminated with precision ST, SC, or LC format connectors to plenum or riser rated cable for permanent installation. Available with single-mode or multi-mode optical fiber, simplex cable assemblies are precision machined polished to UPC standards. All Gepco fiber optic assemblies deliver the performance required in professional A/V and broadcast fiber optic formats.



Example Part Numbers

GSR01S-25-ST/ST (Single-mode 9μ Fiber, Riser Rated, 25 Feet, ST Connector First End, ST Connector Second End)

GSP01S-50-SC/LC (Single-mode 9μ Fiber, Plenum Rated, 50 Feet, SC Connector First End, LC Connector Second End)

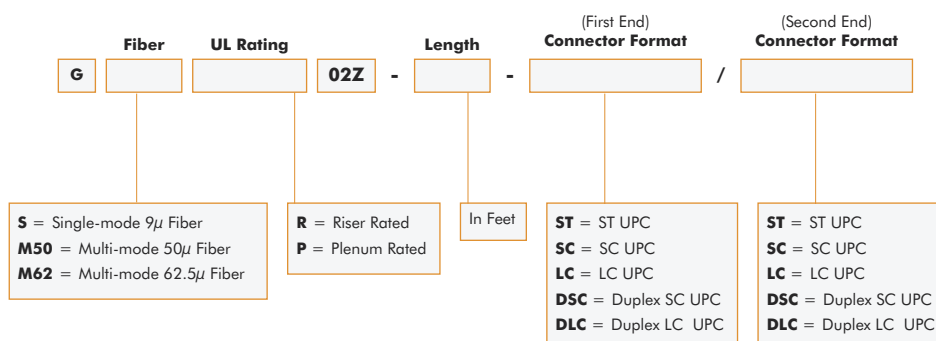
GM62R01S-10-LC/ST (Multi-mode 62.5μ Fiber, Riser Rated, 10 Feet, LC Connector First End, ST Connector Second End)

ST/SC/LC Duplex Cables

FEATURES & BENEFITS

- Machine Polished -55dB SRL UPC Quality
- 100% Tested and Verified
- Low Attenuation and Return Loss
- Precision Fiber Connectors
- Plenum or Riser Rated for Permanent Install

Gepco's optical fiber assemblies are terminated with precision ST, SC, or LC format connectors to plenum or riser rated cable for permanent installation. Available with single-mode or multi-mode optical fiber, duplex cable assemblies are precision machined polished to UPC standards. All Gepco fiber optic assemblies deliver the performance required in professional A/V and broadcast fiber optic formats.



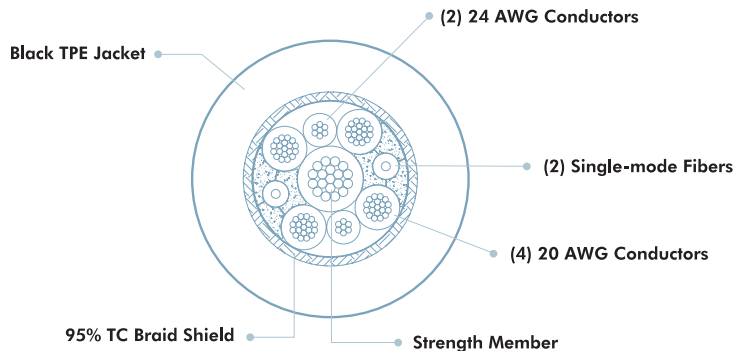
Example Part Numbers

GSR02Z-25-ST/ST (Single-mode 9μ Fiber, Riser Rated, 25 Feet, ST Connector First End, ST Connector Second End)

GSP02Z-50-SC/LC (Single-mode 9μ Fiber, Plenum Rated, 50 Feet, SC Connector First End, LC Connector Second End)

GM62R02Z-10-LC/ST (Multi-mode 62.5μ Fiber, Riser Rated, 10 Feet, LC Connector First End, ST Connector Second End)

9.2mm Hybrid Fiber Optic: Extra Flexible



Fiber optic and copper conductor SMPTE 311M hybrid cable for High Definition video cameras. In the hybrid 311M format, the HD video signal is transmitted over two single-mode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylon-based polymer with increased tensile strength is used for the fiber coatings, and a 16-gage steel strength member is cabled at the center of the cable core. All copper elements feature heat-resistant PE insulation and are shielded by a dense 95% copper braid. The outer jacket is a flexible, riser-rated PVC for permanent installation applications.

FEATURES & BENEFITS

- Extra-flexible TPE Jacket
- Ultra-low Attenuation
- SMPTE 311M Compliant
- Single-mode Optical Glass Fibers
- Proprietary Fiber Coating for Increased Tensile Strength
- Six Copper Conductors
- Heat Resistant
- Strength Member for Additional Durability
- Copper Braid Shield

Mechanical Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	Overall Shield	UL Type	Approx. Weight
HDC920	9.2mm	Flexible TPE, Black	95% TC Braid	AWM	90 lbs/Mft
Extra-flexible 9.2mm Hybrid Camera Cable					

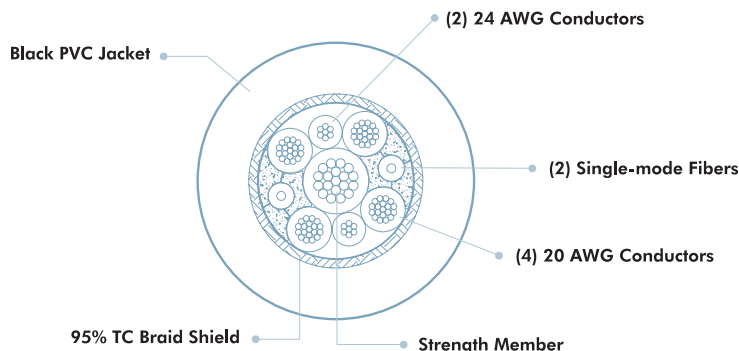
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single Mode 8.3 μ m Mode Field, 125 μ m Cladding	CPE Tight Buffer, .9mm	One Blue & One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, .045"	One Red & One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, .060"	Two White & Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, .084"	One White

Electrical & Optical Specifications

Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
<0.70 dB/km @ 1310/1550nm	23.8 Ω /Mft	9.7 Ω /Mft	5.4 Ω /Mft	>10M Ω /km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)	311M Compliant (Meets or Exceeds)

9.2mm Hybrid Fiber Optic: Permanent Install



Fiber optic and copper conductor SMPTE 311M hybrid cable for High Definition video cameras. In the hybrid 311M format, the HD video signal is transmitted over two single-mode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylon-based polymer with increased tensile strength is used for the fiber coatings, and a 16 gage steel strength member is cabled at the center of the cable core. All copper elements feature heat-resistant PE insulation and are shielded by a dense 95% copper braid. The outer jacket is an extra-flexible, abrasion-resistant TPE comound that is ideal for portable, studio, and outdoor broadcast applications.

FEATURES & BENEFITS

- Riser-rated PVC Jacket
- Ultra-low Attenuation
- SMPTE 311M Compliant
- Single-mode Optical Glass Fibers
- Proprietary Fiber Coating for Increased Tensile Strength
- Six Copper Conductors
- Heat Resistant
- Strength Member for Additional Durability
- Copper Braid Shield

Mechanical Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	Overall Shield	UL Type	Approx. Weight
HDC920R	9.2mm	PVC, Black	95% TC Braid	CMR	91 lbs/Mft
<i>Permanent Install 9.2mm Hybrid Camera Cable</i>					

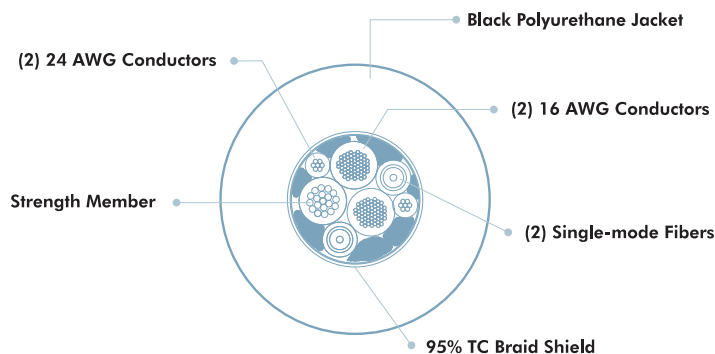
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single Mode 8.3 μ m Mode Field, 125 μ m Cladding	CPE Tight Buffer, .9mm	One Blue & One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, .045"	One Red & One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, .060"	Two White & Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, .084"	One White

Electrical & Optical Specifications

Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
<0.70 dB/km @ 1310/1550nm	23.8 Ω /Mft	9.7 Ω /Mft	5.4 Ω /Mft	>10M Ω /km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)	311M Compliant (Meets or Exceeds)

12mm Heavy-duty Hybrid Fiber Optic



Extra-durable 12mm Hybrid Fiber cable for improved durability in High Definition camera to CCU interconnects. In addition to the steel strength member and nylon-based polymer fiber coating, each fiber optic element has a Kevlar wrap and PVC jacket for greater strength and protection. For the power elements, HDC120P utilizes two auxiliary conductors for streamlined termination, thereby reducing the possibility of electrical faults. All copper elements now feature heat-resistant PE insulation and are shielded by a dense 95% copper braid. For additional durability, the outer jacket is made with an extra-tough polyurethane compound that is exceptionally abrasion and puncture resistant.

FEATURES & BENEFITS

- Heavy-duty Polyurethane Jacket
- Ultra-low Attenuation
- SMPTE 311M Compliant
- Single-mode Optical Fibers with Kevlar & PVC Jackets
- Proprietary Fiber Coating for Increased Tensile Strength
- Four Large-gage Copper Conductors
- Heat Resistant
- Strength Member for Additional Durability

Mechanical Specifications

Part #	Nominal OD	Master Jacket (Type, Colors)	Overall Shield	Approx. Weight
HDC120P	12.0mm	Polyurethane, Black	95% TC Braid	135 lbs/Mft
Heavy-duty 12mm Hybrid Fiber Camera Cable				

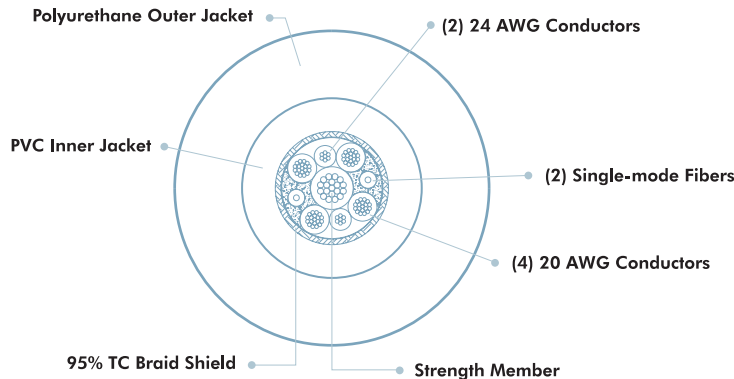
Mechanical Specifications (Series)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single-mode Fiber Optic (8.3 μ m Mode Field, 125 μ m Cladding)	CPE Fiber Coating, Kevlar Wrap, Tight Tube PVC Jacket, .062" Finished O.D.	One Blue, One Yellow
Signal	2	24 AWG (19x36) Stranded TC	PE, .044"	One Red, One Gray
Auxiliary	2	16 AWG (65x34) Stranded TC	PE, .084"	One White, One Black
Strength Member	1	16 AWG Stranded Steel	PVC, .087"	One White

Electrical & Optical Specifications

Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
<0.70 dB/km @ 1310/1550nm	23.8 Ω /Mft	4.5 Ω /Mft	2.6 Ω /Mft	>10M Ω /km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)	311M Compliant (Meets or Exceeds)

16mm Heavy-duty Hybrid Fiber Optic



Fiber optic and copper conductor SMPTE 311M hybrid cable for High Definition video cameras. In the hybrid 311M format, the HD video signal is transmitted over two single-mode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylon-based polymer with increased tensile strength is used for the fiber coatings, and a 16 gage steel strength member is cabled at the center of the cable core. All copper elements now feature heat-resistant PE insulation and are shielded by a dense 95% copper braid. The HDC160 features a double-jacket construction for extra durability and increased diameter.

FEATURES & BENEFITS

- Double (PU & PVC) Jackets
- Ultra-low Attenuation
- SMPTE 311M Compliant
- Single-mode Optical Glass Fibers
- Proprietary Fiber Coating for Increased Tensile Strength
- Six Copper Conductors
- Heat Resistant
- Strength Member for Additional Durability
- Copper Braid Shield

Mechanical Specifications (General)

Part #	Nominal OD	Inner Jacket (Type, Colors, Diameter)	Outer Jacket (Type, Colors)	Overall Shield	Approx. Weight
HDC160	16.0mm	Flexible PVC, Black, 9.2mm	Polyurethane, Black	95% TC Braid	195 lbs/Mft
<i>Extra-flexible 16mm Hybrid Camera Cable</i>					

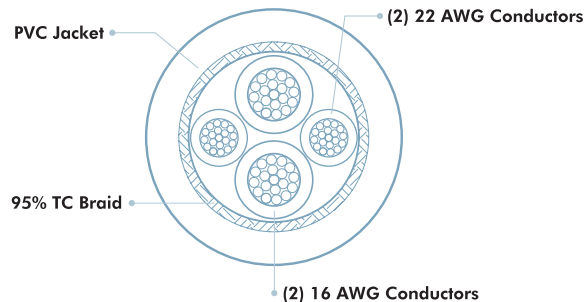
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single Mode 8.3 μ m Mode Field, 125 μ m Cladding	CPE Tight Buffer, .9mm	One Blue & One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, .045"	One Red & One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, .060"	Two White & Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, .084"	One White

Electrical & Optical Specifications

Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
<0.70 dB/km @ 1310/1550nm	23.8 Ω /Mft	9.7 Ω /Mft	5.4 Ω /Mft	>10M Ω /km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)	311M Compliant (Meets or Exceeds)

HD Camera Electrical Cable



Unique electrical cables constructed from only the copper elements utilized in the hybrid fiber camera cables. When used with single-mode fiber optic cables and the Gepco HDR hybrid fiber distribution rack, the HDP series provides an alternative to permanently installing rack-to-rack infrastructure wiring. Gepco's breakout system consists of an HDR distribution rack that allows for a hybrid fiber connector's elements to be distributed over separate copper and optical cables. This system greatly simplifies on-site HD camera permanent installation cabling and termination. The HD series is UL-rated and available in plenum and riser versions.

FEATURES & BENEFITS

- Specialized Electrical-only Design
- Four Large-gage Copper Conductors
- Heat Resistant
- Tinned-copper Braid Shield
- Riser or Plenum Rated

Mechanical Specifications

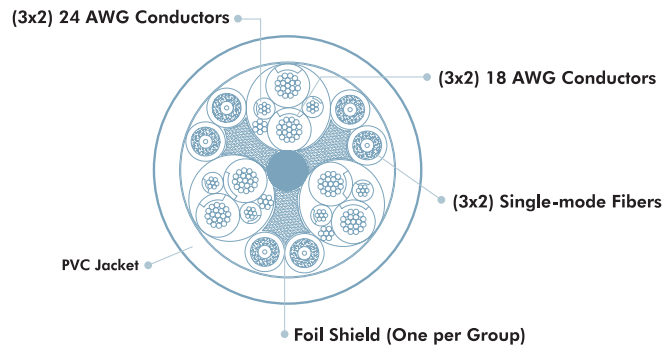
Part #	# of Conductors	Nominal OD	Auxiliary Conductors	Auxiliary Insulation (Type, OD)	Signal Conductors	Signal Insulation	Shield	Jacket (Type, Colors)	UL Type	Approx. Weight
HDP221	2 Auxiliary 2 Signal	.315"	16 AWG (65x34) Stranded TC	PE, .020"	22 AWG (19x34) Stranded TC	PE, .015"	90% TC Braid	PVC, Black	CMR	76 lbs/Mft
Single-channel HD Electrical Cable										
HDP221P	2 Auxiliary 2 Signal	.205"	16 AWG (65x34) Stranded TC	FEP, .010"	22 AWG (19x34) Stranded TC	FEP, .010"	90% TC Braid	Plenum PVC, White	CMP	58 lbs/Mft
Single-channel HD Electrical Cable: Plenum										

Electrical & Optical Specifications

Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
15.3 Ω/Mft	4.5 Ω/Mft	2.6 Ω/Mft	> 10M Ω/km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)	Compliant with Electrical Specifications for SMPTE 311M

Note: Speed-wrap or multi-pair jacket versions available upon special request.

Three-channel Fiber Cable



The HDC3R three-position hybrid fiber cable is a unique solution for the distribution of up to three SMPTE hybrid fiber camera positions in a permanent installation application. Each channel within the HDC3R features a group of elements that consist of two single-mode fibers, two auxiliary copper conductors, two signal copper conductors, and a foil shield with drain wire. The foil shields feature nonconductive backings and edges to provide electrical isolation between the three shields. The single-mode fiber elements feature a breakout-style Kevlar and PVC jacket construction for added durability and secure connector termination. The PVC jacket is orange with a yellow stripe for easy identification and has a low-friction surface for easy installation through conduit.

FEATURES & BENEFITS

- Unique Hybrid Composite Construction
- Low-loss Single-mode Optical Fiber
- Three Groups of Fiber and Copper Elements
- Interconnects up to Three SMPTE 304M Based HD Camera Systems
- Cost Effective
- UL Riser Rated

Mechanical Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	UL Type	Approx. Weight
HDC3R	.600"	PVC, Orange with Yellow Stripe	CMR	170 lbs/Mft
Three-channel Hybrid Fiber Camera Cable				

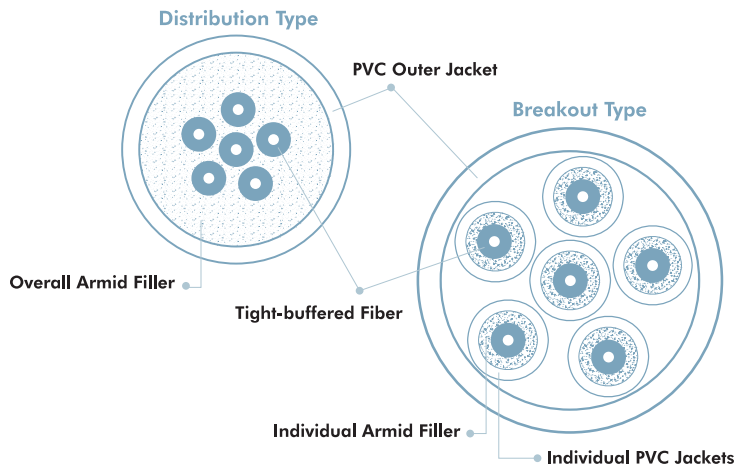
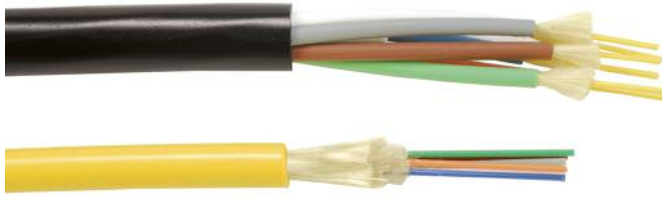
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	6 (3 Groups of 2)	Single-mode Fiber Optic (8.3 μ m Mode Field, 125 μ m Cladding)	PVC Fiber Coating, Kevlar Wrap, Tube PVC Jacket, 3mm Finished O.D.	Yellow with Alphanumeric Print
Signal	6 (3 Groups of 2)	24 AWG (17x32) Stranded TC	PVC, .040"	One Red, One Gray (Solid or with Yellow or Orange Stripe)
Auxiliary	6 (3 Groups of 2)	18 AWG (19x30) Stranded TC	PVC, .082"	One White, One Black (Solid or with Yellow or Orange Stripe)
Shield	3 (1 per Group)	100% Foil with 24 AWG (7x32) Stranded TC Drain	-----	-----

Electrical & Optical Specifications

Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature
<0.70 dB/km @ 1310/1550nm	23.8 Ω /Mft	6.0 Ω /Mft	>10M Ω /km	3000 Volts RMS @ 20°C, 60Hz for 1 min.	-40°C to +75°C (@ 0 to 95% humidity)

Single-mode Optical Fiber: Permanent Installation



Low-loss, single-mode, fiber optic cable available in breakout and distribution type constructions, UL plenum or riser rated. The modal dispersion characteristics of single-mode glass enable transmission of high bit-rate data, thereby making this fiber type ideal, and the standard, for HD video signal transmission. When used in conjunction with Gepco electrical HD cables and the HDR distribution rack system, FS Series fiber can be used for the optical interconnect between camera positions.

FEATURES & BENEFITS

- Low-loss, Single-mode Optical Glass Fibers
- Distribution & Breakout Type Constructions
- Aramid Filler
- 1 Through 144 Elements
- PVC or PVDF Jacket
- Riser or Plenum Rated

Fiber Specifications

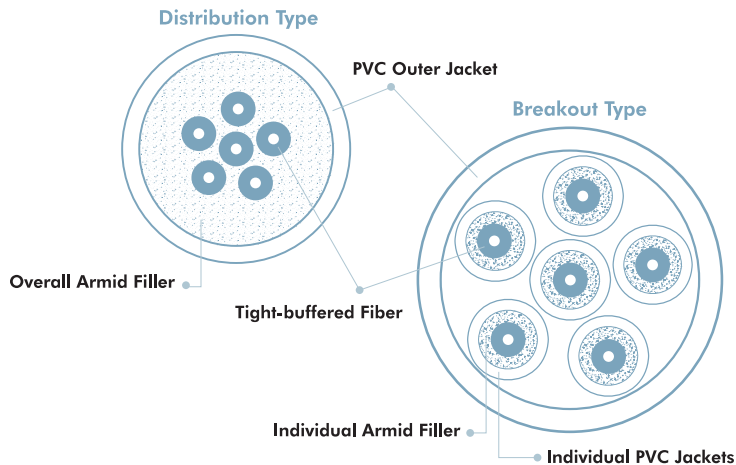
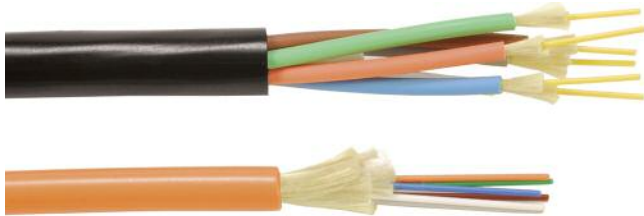
Type	Mode Field Diameter	Cladding Diameter	Maximum Attenuation
Single Mode	8.3 μ m	125 μ m	≤ 0.70 dB/Km @ 1310/1550nm

Mechanical Specifications

Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Maximum Tension		Minimum Bend Radius		Weight	UL Type
					Installation (Pulling)	Operating	Installation (Pulling)	Operating		
FSD**R	Acrylate Tight Buffer Coating (.9mm OD) with Overall Aramid Filler	2	.180"	PVC	310 lbs	100 lbs	2.7"	1.8"	14 lbs/Mft	OFNR
		4	.200"	PVC	310 lbs	100 lbs	3.0"	2.0"	17 lbs/Mft	
		6	.220"	PVC	310 lbs	100 lbs	3.3"	2.2"	19 lbs/Mft	
		8	.240"	PVC	360 lbs	120 lbs	3.6"	2.4"	22 lbs/Mft	
		12	.260"	PVC	600 lbs	135 lbs	3.9"	2.6"	25 lbs/Mft	
		24	.330"	PVC	670 lbs	220 lbs	5.0"	3.3"	44 lbs/Mft	
		36	.350"	PVC	670 lbs	220 lbs	5.3"	3.5"	51 lbs/Mft	
Single-mode Distribution: Riser Rated										
FSD**P	Acrylate Tight Buffer Coating (.9mm OD) with Overall Aramid Filler	2	.160"	Plenum PVC	270 lbs	90 lbs	2.4"	1.6"	9 lbs/Mft	OFNP
		4	.180"	Plenum PVC	270 lbs	90 lbs	2.7"	1.8"	11 lbs/Mft	
		6	.200"	Plenum PVC	310 lbs	100 lbs	3.0"	2.0"	15 lbs/Mft	
		8	.220"	Plenum PVC	360 lbs	120 lbs	3.3"	2.2"	19 lbs/Mft	
		12	.220"	Plenum PVC	400 lbs	135 lbs	3.3"	2.2"	19 lbs/Mft	
		24	.280"	PVDF	670 lbs	220 lbs	4.2"	4.2"	36 lbs/Mft	
		36	.310"	PVDF	670 lbs	220 lbs	4.7"	4.7"	52 lbs/Mft	
Single-mode Distribution: Plenum Rated										
FSB**R	Acrylate Tight Buffer Coating (.9mm OD) with Aramid Filler & PVC Tube Jacket for Each Fiber	1 (Simplex)	.110"	PVC	110 lbs	70 lbs	2"	1.2"	5 lbs/Mft	OFNR
		2 (Duplex)	.110"x.230"	PVC	220 lbs	110 lbs	2"	1.2"	11 lbs/Mft	
		2	.280"	PVC	270 lbs	110 lbs	4.2"	2.8"	34 lbs/Mft	
		4	.310"	PVC	450 lbs	180 lbs	4.7"	3.1"	44 lbs/Mft	
		6	.370"	PVC	670 lbs	270 lbs	5.6"	3.7"	55 lbs/Mft	
		8	.450"	PVC	900 lbs	380 lbs	6.8"	4.5"	75 lbs/Mft	
		12	.490"	PVC	1350 lbs	560 lbs	7.4"	4.9"	101 lbs/Mft	
		24	.690"	PVC	2250 lbs	850 lbs	10.4"	6.9"	183 lbs/Mft	
		36	.790"	PVC	3150 lbs	1350 lbs	11.9"	7.9"	214 lbs/Mft	
Single-mode Breakout: Riser Rated										
FSB**P	Acrylate Tight Buffer Coating (.9mm OD) with Aramid Filler & Plenum PVC or PVDF Tube Jacket for Each Fiber	1 (Simplex)	.110"	Plenum PVC	110 lbs	70 lbs	2"	1.2"	6 lbs/Mft	OFNP
		2 (Duplex)	.110"x.230"	Plenum PVC	220 lbs	110 lbs	2"	1.2"	12 lbs/Mft	
		2	.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		4	.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		6	.280"	PVDF	540 lbs	130 lbs	4.2"	4.2"	32 lbs/Mft	
		8	.330"	PVDF	720 lbs	180 lbs	5.0"	5.0"	48 lbs/Mft	
		12	.390"	PVDF	1080 lbs	270 lbs	5.9"	5.9"	63 lbs/Mft	
		24	.510"	PVDF	1620 lbs	400 lbs	7.7"	7.7"	99 lbs/Mft	
		36	.630"	PVDF	2160 lbs	540 lbs	9.5"	9.5"	154 lbs/Mft	
Single-mode Breakout: Plenum Rated										

Other fiber counts available up to 144 elements. Please consult Gepco for details.
Call for color availability.

Multi-mode Optical Fiber: Permanent Installation



Indoor/outdoor distribution multi-mode fiber for audio, video, or data networking applications. This series is available in both breakout and distribution type constructions. Distribution types feature individually coated fibers with an overall Kevlar filler and jacket. Breakout types have individual Kevlar fillers and tube jackets over each individual fiber for added strength and durability when breaking out the individual fibers. Both types are available in plenum and riser constructions for permanent installation in almost any environment.

FEATURES & BENEFITS

- Low-loss, Multi-mode Optical Glass Fibers
- Distribution & Breakout Type Constructions
- Armid Filler
- 1 Through 144 Elements
- PVC or PVDF Jacket
- Riser or Plenum Rated

Fiber Specifications

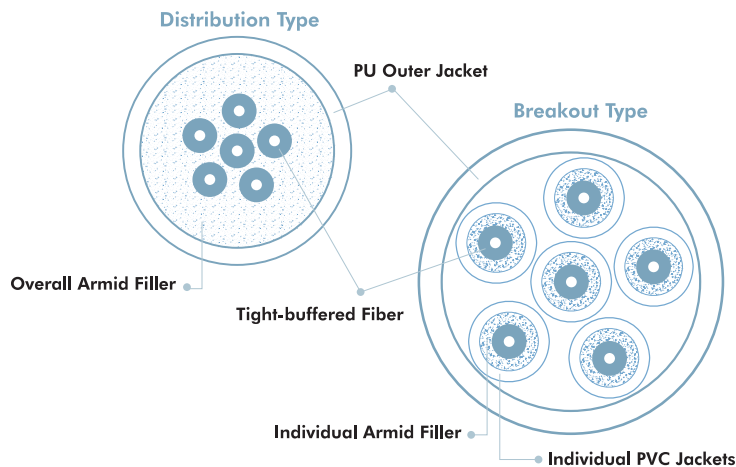
Type	Mode Field Diameter	Cladding Diameter	Maximum Attenuation
Multi-mode	62.5 μm or 50 μm	125 μm	3.50 dB/Km @ 850nm, 1.00 dB/Km @ 1550nm

Mechanical Specifications

Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Maximum Tension		Minimum Bend Radius		Weight	UL Type
					Installation (Pulling)	Operating	Installation (Pulling)	Operating		
FMD**R (62.5 μm fiber) or FMD**R/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Overall Armid Filler	2	.180"	PVC	310 lbs	100 lbs	2.7"	1.8"	14 lbs/Mft	OFNR
		4	.200"	PVC	310 lbs	100 lbs	3.0"	2.0"	17 lbs/Mft	
		6	.220"	PVC	310 lbs	100 lbs	3.3"	2.2"	19 lbs/Mft	
		8	.240"	PVC	360 lbs	120 lbs	3.6"	2.4"	22 lbs/Mft	
		12	.260"	PVC	600 lbs	135 lbs	3.9"	2.6"	25 lbs/Mft	
		24	.330"	PVC	670 lbs	220 lbs	5.0"	3.3"	44 lbs/Mft	
* = Number of Elements		36	.350"	PVC	670 lbs	220 lbs	5.3"	3.5"	51 lbs/Mft	
Multi-mode Distribution Fiber: Riser Rated										
FMD**P (62.5 μm fiber) or FMD**P/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Overall Armid Filler	2	.160"	Plenum PVC	270 lbs	90 lbs	2.4"	1.6"	9 lbs/Mft	OFNP
		4	.180"	Plenum PVC	270 lbs	90 lbs	2.7"	1.8"	11 lbs/Mft	
		6	.200"	Plenum PVC	310 lbs	100 lbs	3.0"	2.0"	15 lbs/Mft	
		8	.220"	Plenum PVC	360 lbs	120 lbs	3.3"	2.2"	19 lbs/Mft	
		12	.220"	Plenum PVC	400 lbs	135 lbs	3.3"	2.2"	19 lbs/Mft	
		24	.280"	PVDF	670 lbs	220 lbs	4.2"	4.2"	36 lbs/Mft	
* = Number of Elements		36	.310"	PVDF	670 lbs	220 lbs	4.7"	4.7"	52 lbs/Mft	
Multi-mode Distribution Fiber: Plenum Rated										
FMB**R (62.5 μm fiber) or FMB**R/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Armid Filler & PVC Tube Jacket for Each Fiber	1 (Simplex)	.110"	PVC	110 lbs	70 lbs	2"	1.2"	5 lbs/Mft	OFNR
		2 (Duplex)	.110"x.230"	PVC	220 lbs	110 lbs	2"	1.2"	11 lbs/Mft	
		2	.280"	PVC	270 lbs	110 lbs	4.2"	2.8"	34 lbs/Mft	
		4	.310"	PVC	450 lbs	180 lbs	4.7"	3.1"	44 lbs/Mft	
		6	.370"	PVC	670 lbs	270 lbs	5.6"	3.7"	55 lbs/Mft	
		8	.450"	PVC	900 lbs	380 lbs	6.8"	4.5"	75 lbs/Mft	
		12	.490"	PVC	1350 lbs	560 lbs	7.4"	4.9"	101 lbs/Mft	
		24	.690"	PVC	2250 lbs	850 lbs	10.4"	6.9"	183 lbs/Mft	
* = Number of Elements		36	.790"	PVC	3150 lbs	1350 lbs	11.9"	7.9"	214 lbs/Mft	
Multi-mode Breakout Fiber: Riser Rated										
FMB**P (62.5 μm fiber) or FMB**P/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Armid Filler & Plenum PVC or PVDF Tube Jacket for Each Fiber	1 (Simplex)	.110"	Plenum PVC	110 lbs	70 lbs	2"	1.2"	6 lbs/Mft	OFNP
		2 (Duplex)	.110"x.230"	Plenum PVC	220 lbs	110 lbs	2"	1.2"	12 lbs/Mft	
		2	.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		4	.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		6	.280"	PVDF	540 lbs	130 lbs	4.2"	4.2"	32 lbs/Mft	
		8	.330"	PVDF	720 lbs	180 lbs	5.0"	5.0"	48 lbs/Mft	
		12	.390"	PVDF	1080 lbs	270 lbs	5.9"	5.9"	63 lbs/Mft	
		24	.510"	PVDF	1620 lbs	400 lbs	7.7"	7.7"	99 lbs/Mft	
* = Number of Elements		36	.630"	PVDF	2160 lbs	540 lbs	9.5"	9.5"	154 lbs/Mft	
Multi-mode Breakout Fiber: Plenum Rated										

Other fiber counts available up to 144 elements. Please consult Gepco for details.
Call for color availability.

Single-mode Optical Fiber: Tactical



Exceptionally rugged, light-weight, single-mode fiber optic cables for portable applications in harsh environments. Available in both distribution and breakout style constructions, all tactical cables feature an abrasion-, chemical-, and cut-resistant outer polyurethane jacket. The 125 μ m single-mode fiber elements are coated with a 900 μ m, hard elastomeric, tight-buffer. Available in two series, the distribution series features an armid strength member filler for exceptional strength, while the breakout series features armid strength members within a tube elastomeric jacket for each fiber to provide additional strength and crush resistance.

FEATURES & BENEFITS

- Exceptionally Rugged
- Crush Resistant
- Low-loss Single-mode Fiber
- Distribution & Breakout Type Constructions
- Armid Filler
- Polyurethane Outer Jacket
- Meets or Exceeds TIA/EIA Mil

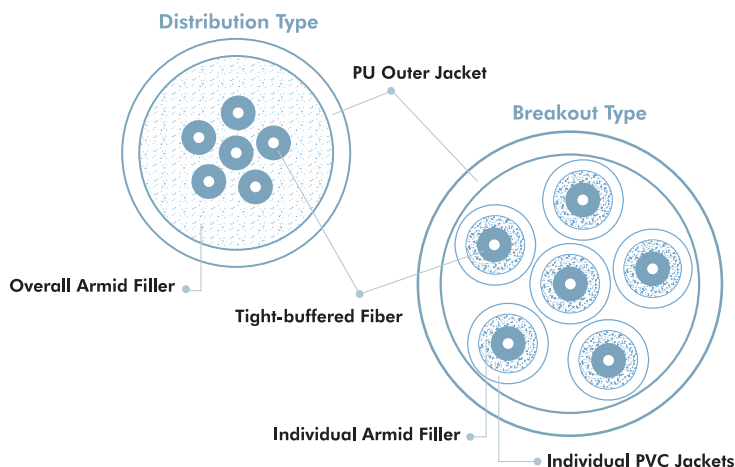
Fiber Specifications

Type	Mode Field Diameter	Cladding Diameter	Maximum Attenuation
Single-mode	8.3 μ m	125 μ m	≤ 0.50 dB/Km @ 1310/1550nm

Mechanical Specifications

Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.	Number of Elements	Nominal OD	Tensile Load		Minimum Bend Radius		Weight
										Short Term	Long Term	Installation (Pulling)	Operating	
FSD**T * = Number of Elements	Acrylate Tight Buffer Coating (.9mm OD) with Overall Kevlar Filler	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	.200"	1,800 lbs	600 lbs	3.2"	1.6"	15 lbs/Mft
								4	.220"	1,800 lbs	600 lbs	3.6"	1.8"	19 lbs/Mft
								6	.240"	1,800 lbs	600 lbs	3.8"	1.9"	19 lbs/Mft
								8	.260"	1,800 lbs	600 lbs	4.2"	2.1"	26 lbs/Mft
								10	.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft
								12	.260"	2,100 lbs	700 lbs	4.2"	2.1"	34 lbs/Mft
								18	.300"	2,400 lbs	800 lbs	4.8"	2.4"	40 lbs/Mft
								24	.330"	3,000 lbs	1000 lbs	5.4"	2.7"	50 lbs/Mft
Tactical Single-mode Fiber: Distribution														
FSB**T * = Number of Elements	Acrylate Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket for Each Fiber	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	.260"	2,200 lbs	550 lbs	4.2"	2.1"	21 lbs/Mft
								4	.290"	2,200 lbs	550 lbs	4.6"	2.3"	28 lbs/Mft
								6	.340"	2,400 lbs	600 lbs	5.4"	2.7"	36 lbs/Mft
								8	.390"	3,200 lbs	800 lbs	6.2"	3.1"	50 lbs/Mft
								10	.450"	4,000 lbs	1000 lbs	7.2"	3.6"	59 lbs/Mft
								12	.480"	4,800 lbs	1200 lbs	7.6"	3.8"	65 lbs/Mft
								18	.570"	7,200 lbs	1,800 lbs	9.2"	4.6"	73 lbs/Mft
								24	.570"	9,600 lbs	2,400 lbs	9.2"	4.6"	105 lbs/Mft
Tactical Single-mode Fiber: Breakout														

Multi-mode Optical Fiber: Tactical



Exceptionally rugged, light-weight, single-mode fiber optic cables for portable applications in harsh environments. Available in both distribution and breakout style constructions, all tactical cables feature an abrasion-, chemical-, and cut-resistant outer polyurethane jacket. The 125 μ m multi-mode fiber elements are coated with a 900 μ m, hard elastomeric, tight buffer. Available in two series, the distribution series features an aramid strength member filler for exceptional strength, while the breakout series features aramid strength members within a tube elastomeric jacket for each fiber to provide additional strength and crush resistance.

FEATURES & BENEFITS

- Exceptionally Rugged
- Crush Resistant
- Low-loss Multi-mode Fiber
- Distribution & Breakout Type Constructions
- Aramid Filler
- Polyurethane Outer Jacket
- Meets or Exceeds TIA/EIA Mil

Fiber Specifications														
Type		Mode Field Diameter					Cladding Diameter			Maximum Attenuation				
Multi-mode		62.5 μm or 50 μm					125 μm			≤ 3.50 dB/Km @ 850nm, ≤ 1.00 dB/Km @ 1550nm				
Mechanical Specifications														
Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.	Number of Elements	Nominal OD	Tensile Load		Minimum Bend Radius		Weight
										Short Term	Long Term	Installation (Pulling)	Operating	
FMD**T (62.5 μm fiber) or FMD**T/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Overall Kevlar Filler	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	.200"	1,800 lbs	600 lbs	3.2"	1.6"	15 lbs/Mft
								4	.220"	1,800 lbs	600 lbs	3.6"	1.8"	19 lbs/Mft
								6	.240"	1,800 lbs	600 lbs	3.8"	1.9"	19 lbs/Mft
								8	.260"	1,800 lbs	600 lbs	4.2"	2.1"	26 lbs/Mft
								10	.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft
								12	.260"	2,100 lbs	700 lbs	4.2"	2.1"	34 lbs/Mft
								18	.300"	2,400 lbs	800 lbs	4.8"	2.4"	40 lbs/Mft
* = Number of Elements								24	.330"	3,000 lbs	1000 lbs	5.4"	2.7"	50 lbs/Mft
Tactical Multi-mode Fiber: Distribution														
FMB**T (62.5 μm fiber) or FMB**T/50 (50 μm fiber)	Acrylate Tight Buffer Coating (.9mm OD) with Kevlar Filler & PVC Tube Jacket for Each Fiber	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	.260"	2,200 lbs	550 lbs	4.2"	2.1"	21 lbs/Mft
								4	.290"	2,200 lbs	550 lbs	4.6"	2.3"	28 lbs/Mft
								6	.340"	2,400 lbs	600 lbs	5.4"	2.7"	36 lbs/Mft
								8	.390"	3,200 lbs	800 lbs	6.2"	3.1"	50 lbs/Mft
								10	.450"	4,000 lbs	1000 lbs	7.2"	3.6"	59 lbs/Mft
								12	.480"	4,800 lbs	1200 lbs	7.6"	3.8"	65 lbs/Mft
								18	.570"	7,200 lbs	1,800 lbs	9.2"	4.6"	73 lbs/Mft
* = Number of Elements								24	.570"	9,600 lbs	2,400 lbs	9.2"	4.6"	105 lbs/Mft
Tactical Multi-mode Fiber: Breakout														

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