



CABLE ASSEMBLIES

IBUTION SYSTEMS

CONNECTORS

TOOLS

ORIES

CABLE







FIBER SYSTEM SOLUTIONS PRODUCT GUIDE

🏹 General Cable

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CABLE ASSEMBLIES

- Factory Terminated by Gepco
- Precision Machine Polishing
- UPC Quality to Achieve -55dB Typical Return Loss
- Meets or Exceeds SMPTE Standards
- Permanent Install, Portable and Tactical Options
- Premium Connectors and Components
- 100% Tested and Verified

DISTRIBUTION SYSTEMS

- Field-Installable Systems
- Modular, Expandable, and Custom Designs
- Multiple Connection Choices
- Electrically Isolated Connector Mounts
- Internal Cable Management Options for Security
 and Streamlined Breakout
- Fusion Splice Options
- Premium Connectors and Components
- 100% Tested and Verified

CABLE

- Precision Engineered with Premium Materials
- Permanent Install, Portable and Tactical Options
- Meets or Exceeds SMPTE Standards
- 100% Tested and Verified

FIBER SYSTEM SOLUTIONS

CABLE ASSEMBLIES | DISTRIBUTION SYSTEMS | CONNECTORS | TOOLS | ACCESSORIES | CABLE



s the leading innovator of interconnect technology for the professional broadcast market, Gepco International[®] delivers a full line of fiber system solutions for high-definition audio and video applications. Engineered and manufactured to industry-leading standards, Gepco[®] Brand fiber system products 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 & PRO AV

In addition to Gepco Brand cable, cable assemblies, breakout racks, boxes and panels, Gepco offers the following components and accessories:



- SMPTE 304M Connectors
- Panel Mount Fiber Connectors

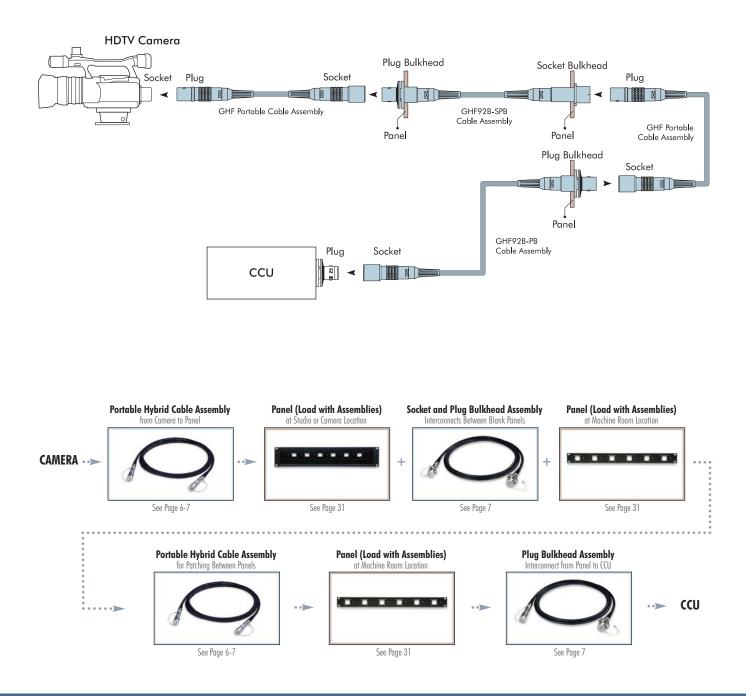
🗘 General Cable

- Replacement Parts
- Cleaning Tools
- Microscopes
- Test Equipment
- Fusion Splicers

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

- Lowest System Attenuation
- Utilizes 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

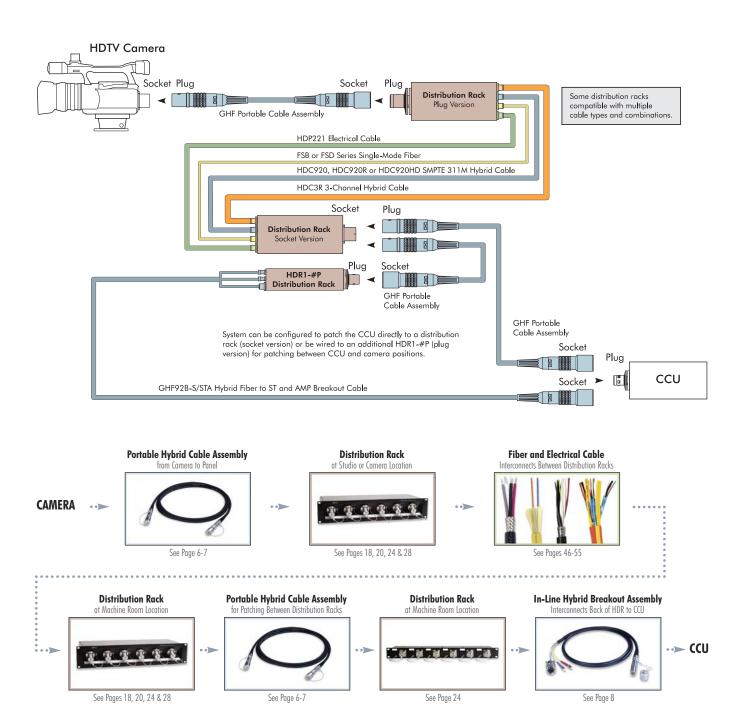
The Direct Cable termination method is achieved with panel mount SMPTE 304M hybrid fiber connectors directly terminated onto the hybrid cable that permanently interconnects between panels, junction boxes, and control room racks. Panel mount SMPTE 304M connectors offer the lowest overall insertion-loss at each breakout point. Panel mount connectors must be field- or factory-terminated and installed onsite with the DCS.3K.175.72LN installation tool (page 37).



SMPTE 304M/311M Hybrid Fiber Distribution Rack Configuration

- Easy to Field-Install and Terminate
- Modular Channels Can Be Reconfigured Onsite
- Replaceable Contact Jumpers for Field Serviceability
- Uses Cost-Effective, General Purpose Fiber and Electrical Cables

Gepco[®] Brand 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 cable.



SMPTE 304M/311M Hybrid Fiber Cable Assemblies

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

The GHF assemblies 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.

Portable: Heavy-Duty 16mm Type

FEATURES & BENEFITS

- **Machine Polished** •
- -55dB Return Loss (Typical) •
- Portable, Extra-Rugged and Permanent Install Versions •
- . LEMO[®] Connectors
- Heat-Resistant .
- Meets or Exceeds SMPTE 304M/311M Standards •

Cable Type HDC160

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

Options

Options

LEMO[®] Connectors

LEMO[®] Connectors

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

PART NUMBER: GHF16A-0-(length)

Cable Type HDC120P

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

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

PART NUMBER: GHF12B-0-(length)

Cable Type HDC920HD

Connector Type

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

Options LEMO[®] Connectors Overbody Rubber Boot

PART NUMBER: GHF92HD-0-(length)

SMPTE 304M Hybrid Connectors - 1 Plug,

1 Socket with Metal Dust Caps

-OB Add for Overbody Boot Option





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

LEMO® is a registered trademark of Interlemo Holding, S.A.

www.gepco.com | 800.966.0069

SMPTE 304M/311M Hybrid Fiber Cable Assemblies

Portable: Extra-Flexible 9.2mm Type



Permanent Installation: Standard In-Line



Permanent Installation: Plug Bulkhead



Permanent Installation: Socket Bulkhead



Permanent Installation: Plug & Socket Bulkhead



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Cable Type HDC920

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

PART NUMBER: GHF92A-0-(length)

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

Options LEMO[®] Connectors Overbody Rubber Boot

Standard Lenaths

LEMO[®] Connectors

Options

-OB Add for Overbody Boot Option

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

Cable Type HDC920R

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

PART NUMBER: GHF92B-0-(length)

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

Connector Type SMPTE 304M Hybrid Connectors - 1 Plug Bulkhead, 1 Socket with Metal Dust Caps **Options** LEMO[®] Connectors

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

Cable Type HDC920R

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[®] Connectors

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

Cable Type HDC920R

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

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

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

Options LEMO[®] Connectors

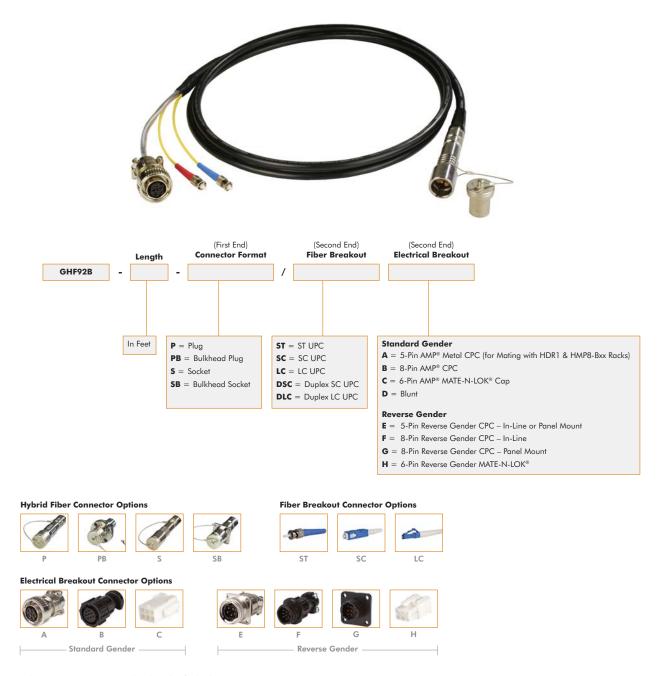
Hybrid Fiber Breakout: In-Line Cable

Gepco[®] Brand hybrid fiber breakout cables offer an in-line solution for breaking out SMPTE 304M hybrid fiber 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 HDR1 or HMP8-Bxx 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.

FEATURES & BENEFITS

- ST/SC/LC Optical Breakout
- AMP[®] Electrical Breakout
- Machine Polished to -55dB RL (Typical)
- Riser 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



 $\mathsf{AMP}^{\circledast}$ and $\mathsf{MATE}\text{-}\mathsf{N}\text{-}\mathsf{LOK}^{\circledast}$ are registered trademarks of Whitaker Corporation.

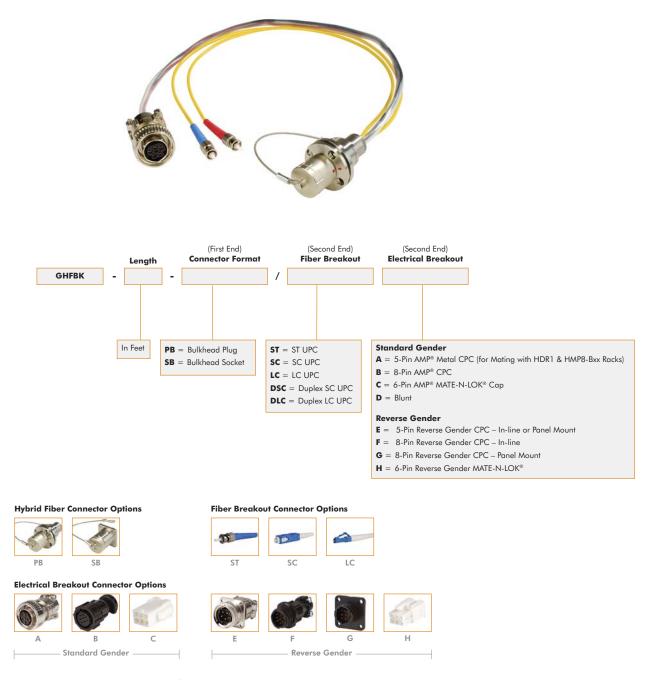
Hybrid Fiber Breakout: Internal Distribution

Gepco[®] Brand 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.

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



 $\mathsf{AMP}^{\circledast}$ and $\mathsf{MATE}\text{-}\mathsf{N}\text{-}\mathsf{LOK}^{\circledast}$ are registered trademarks of Whitaker Corporation.

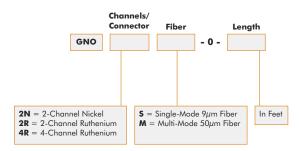
Neutrik® opticalCON® Fiber Optic Cable Assemblies

Neutrik® opticalCON® cable assemblies by Gepco provide a streamlined and ruggedized solution for the deployment and interfacing of optical fiber in commercial and professional AV 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 USA, opticalCON assemblies by Gepco provide exceptionally low return-loss, low attenuation, and consistent end-face geometry. opticalCON assemblies are available in almost any length and are custom terminated to user specifications.

FEATURES & BENEFITS

- Machine Polished
- Two or Four 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
- Additional Protection from Included Boot





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.



Overall Specifications

of Channels: 2 or 4

 ${\rm Connectors:}~(2)$ Neutrik® opticalCON®, Nickel (2-Channel) or Ruthenium Finish (2 and 4-Channel) Connector Body with Boot

Cable Type: Tactical, Polyurethane Jacket, 5mm Diameter, Black

Available Lengths: 50', 100', 164', 250', 328', 500', 656', or Custom

Mechanical Performance Specifications

Cable Retention Force: 500N

Lifetime: >1000 Cycles

Insertion/Withdrawal Force: <45N

Operating Temperature: -25°C to +75°C

Minimum Bend Radius: 4cm

Optical Performance Specifications

Type: LC-UPC (Straight Polish)

Fiber Type: 9µm Single-Mode Fiber or 50µm Multi-Mode Fiber

Cable Loss:

< 0.5dB/km @ 1310/1550nm (Single-Mode) < 3dB/km @ 850nm (Multi-Mode) < 1dB/km @ 1300nm (Multi-Mode)

Connector Loss: <0.5dB (per Connection)

Connector Back Reflection: -55dB RL (Typical), -45dB RL (Max)

Neutrik® and opticalCON® are registered trademarks of Neutrik AG.

Neutrik® opticalCON® Panel Mount Connectors & Accessories



Connector Specifications					
Part Number	Connector Description	Fiber	Shell Ground Contact	Manufacturer	Mating
NO2-4FDW	Panel Mount opticalCON®, Hard Nickel Plating	2	_	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NO2-4FDW-R	Panel Mount opticalCON®, Ruthenium Plating	2	_	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NO2-4FDW-1	Panel Mount opticalCON®, Hard Nickel Plating	2	1	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NO2-4FDW-1-R	Panel Mount opticalCON®, Ruthenium Plating	2	1	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NO4FDW-R	Panel Mount opticalCON®, Ruthenium Plating	4	_	Neutrik®	Mates with In-Line 4-Channel Neutrik® opticalCON® or Standard LC
NA02M-4\$75W	Coupler opticalCON [®] , Black	2 x LC-Duplex Multi-Mode PC	_	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NA025-4575W	Coupler opticalCON [®] , Blue	2 x LC-Duplex Single-Mode PC	_	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NA02SA-4S75W	Coupler opticalCON®, Green	2 x LC-Duplex Single-Mode APC	_	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NA04MW	Coupler opticalCON®, Black	4 x Multi-Mode PC	_	Neutrik®	Mates with In-Line 4-Channel Neutrik® opticalCON® or Standard LC
NA045W	Coupler opticalCON®, Blue	4 x Single-Mode PC	_	Neutrik®	Mates with In-Line 4-Channel Neutrik® opticalCON [®] or Standard LC
NA04SAW	Coupler opticalCON®- Green	4 x Single-Mode APC	_	Neutrik [®]	Mates with In-Line 4-Channel Neutrik® opticalCON® or Standard LC

Note: Color of coupler indicates the fiber mode included (black: multi-mode, blue: single-mode, green: single-mode APC).



CAS-FOCD opticalCON® Cleaning Kit

- Hand Microscope (400x Magnification) with Microscope Adapters for opticalCON[®] and 2.5mm Ferrules
- opticalCON Cleaning Box (Contains lint-free wipes; optimized for opticalCON fiber cleaning.)
- DRY Cleaners for 1.25mm and 2.5mm
- Fiber Optic Cleaning Fluid (Non-flammable)

TAC-4 & TAC-12 Cable Assemblies

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 12 elements in an extrarugged, 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, Gepco[®] Brand 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.

FEATURES & BENEFITS

- 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
- For Mobile Production Applications



Fiber GT	Connector Format	(Multi-Mode) Core Diameter	Length
S = Single-Mode M = Multi-Mode	4 = TAC-4 12 = TAC-12	(blank) = N/A Single-Moc / 50 = 50μm / 62 = 62.5μm	le In Feet

Overall Specifications

of Channels: 4 or 12

Connectors: (2) Amphenol® TAC-4 SMPTE 358M or (2) Amphenol® TAC-12

Cable Type: Tactical, Polyurethane Jacket, 0.220" (TAC-4) or 0.260" (TAC-12) Diameter

Available Lengths: 50', 100', 164', 250', 328', 500', 656', or Custom

Color: Black Cable Jacket, Black Finish (TAC-4) or Gray Finish(TAC-12) Connector Body

Mechanical Performance Specifications

Operating Temperature: -25°C to +75°C

Minimum Bend Radius: 4cm

Optical Performance Specifications

Fiber Type: $8.3 \mu m$ Single-Mode Fiber, $50 \mu m$ Multi-Mode Fiber, or $62.5 \mu m$ Multi-Mode Fiber

Cable Loss:

- < 0.5dB/km @ 1310/1550nm (Single-Mode)
- < 3.5dB/km @ 850nm (Multi-Mode) < 1dB/km @ 1300nm (Multi-Mode)

Connector Loss: <0.5dB (per Connection)

Connector Back Reflection: -55dB RL (Typical), -45dB RL (Max)

TAC-4 & TAC-12 Connectors



Connector Specifications				
Part Number	Connector Format	Alignment Sleeve	Manufacturer	Mating
1098080-A1	Panel Mount Amphenol® 4-Channel Tactical Connector	Uses Fiber Termini, not a Feedthrough Device	Amphenol®	Must be terminated and machine polished with 2 Amphenol® M29504/14 Termini, and 2 Amphenol® M29504/15 Termini. Termini are sold separately.
FS12A8080X111F	Panel Mount Amphenol® 12-Channel Tactical Connector	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.
1091000-A1	Cable Mount Amphenol® 4-Channel Tactical Connector	Uses Fiber Termini, not a Feedthrough Device	Amphenol®	Must be terminated and machine polished with 2 Amphenol® M29504/14 Termini, and 2 Amphenol® M29504/15 Termini. Termini are sold separately.
FS12A1000F1-1F	Cable Mount Amphenol® 12-Channel Tactical Connector	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.

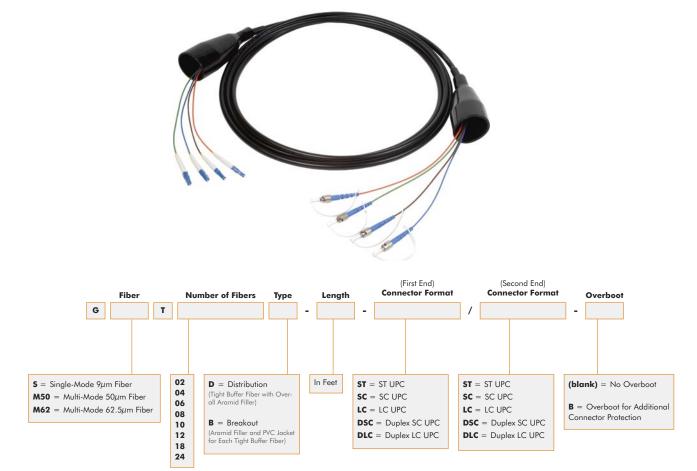
Amphenol® is a registered trademark of Amphenol Corporation.

ST/SC/LC Tactical Snakes

Gepco[®] Brand'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 singlemode 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 aramid filler under a heavy-duty, polyurethane master jacket. Breakout versions have individual aramid fillers and elastomeric 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 AV and broadcast fiber optic formats.

FEATURES & BENEFITS

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



Example Part Numbers

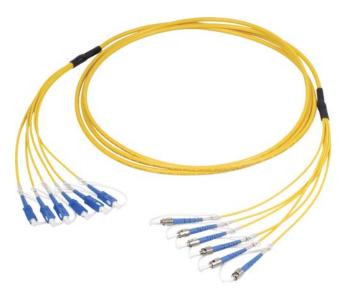
GST02D-10-ST/ST (Single-Mode 9μm Fiber, 2 Fibers, Distribution, 10 Feet, ST Connector First End, ST Connector Second End, No Boot Cover)
 GST10B-25-SC/LC-B (Single-Mode 9μm Fiber, 10 Fibers, Breakout, 25 Feet, SC Connector First End, LC Connector Second End, Overboot)
 GM62T12D-12-LC/ST (Multi-Mode 62.5μm Fiber, 12 Fibers, Distribution, 12 Feet, LC Connector First End, ST Connector Second End, No Boot Cover)

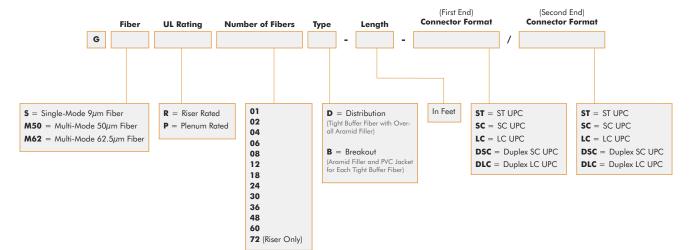
ST/SC/LC Permanent Install Snakes

Gepco® Brand'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 AV and broadcast fiber optic formats.

FEATURES & BENEFITS

- Machine Polished -55dB RL (Typical) 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





Example Part Numbers

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

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

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

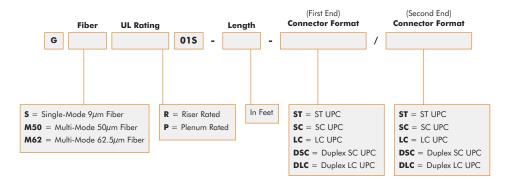
ST/SC/LC Simplex Cables

Gepco® Brand'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 AV and broadcast fiber optic formats.

FEATURES & BENEFITS

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





Example Part Numbers

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

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

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

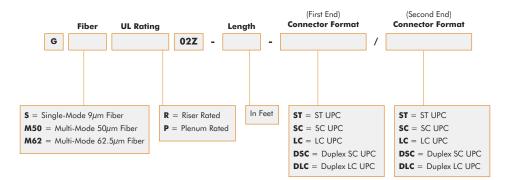
ST/SC/LC Duplex Cables

Gepco® Brand'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 AV and broadcast fiber optic formats.

FEATURES & BENEFITS

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





Example Part Numbers

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

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

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

HMD Modular Distribution Rack



The new Gepco[®] Brand HMD Modular Distribution Rack provides a field terminatable solution for the deployment of hybrid fiber connectors in an expandable chassis system. With internal cable management and component SC plus electrical element breakout, the HMD allows for all electrical and fiber termination to occur within the chassis, streamlining and protecting the cable breakout.

Unique to the HMD, the SC breakout at each position allows for the hybrid connectors to be replaced, serviced or expanded via a quick disconnect. The SC termination of the interconnecting cable between HMD racks can be field terminated with epoxy and polish, quick cleave, or fusion splice SC fiber connectors. To facilitate cable management of SC fusion spliced connectors, each breakout position also features an additional splice holder clip within the HMD chassis.

For flexibility in cable options, the HMD features configurable rear cable ports (six plus two) that accommodate a wide range of cable types and combinations. The HMD can be terminated to a variety of combinations of HDC920 9.2mm hybrid fiber, discrete electrical and fiber cables, or up to two HDC3R 3-channel hybrid cables.

All HMD configurations come with six electrically isolated connector positions for expandability. Each position can ordered or expanded with SMPTE 304M plug, SMPTE 304M socket, or Neutrik® opticalCON® format connectors, with future connector modules available as they are released.

FEATURES & BENEFITS

- Internal SC and Electrical Breakout Distribution
- Internal Cable Management for Security and Streamlined Breakout
- Field Installable
- Mating Fiber Can Be Terminated with Polish, Quick Cleave, or Fusion Splice SC Connectors
- Can Be Spliced with Any Type of Fusion Splicer (with SC Splice Connector Option)
- Electrically Isolated Connector Mounts
- Rear Cable Ports for Maximum Cable Strain Relief
- Easy to Expand, 6-Channel Frame
- Connector Modules for SMPTE 304M and opticalCON® Format Connectors



Terminate mating cable with SC connector options



Rear cable ports



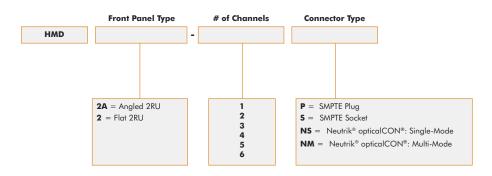
Internal SC and electrical breakout



Expandable, electrically isolated connector modules

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Ordering & Product Specifications



Mechanical Specifications

Dimensions: 2RU-3.5" H x 19" W x 5.75" D

Optical Connector Specifications:

LEMO® SMPTE 304M or Neutrik® opticalCON® : 1 per Channel (2 Fibers) SC-PC Duplex Breakout: 1 per Channel (2 Fibers) -55dB Typical RL, 0.4dB Max IL Connector End

Electrical Breakout:

6-Position AMP® MATE-N-LOK® Connector

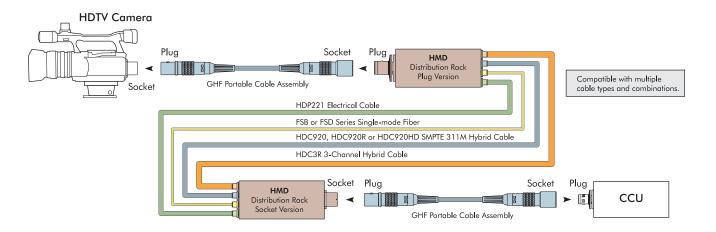
Rear Panel Cable Management:

(6) Ports for Electrical/Hybrid Fiber Cable (2) Ports for Fiber/3-Channel Hybrid Fiber Cable

Included Accessories: Mating AMP® MATE-N-LOK® Connector(s) Gland Seals for HDP221, HDC920 or HDC920R Gland Seals for 2- to 4-Channel Distribution Fiber Cland Seals for 2- to 12 Changel Distribution Fiber Gland Seals for 6- to 12-Channel Distribution Fiber

Optional Accessories

-		
Part Number	Description	Compatibility Notes
GSKIT-HDP221P	Gland Seal Kit for HDP221P Plenum Electrical Cable	Kit for One Strain Relief
GSKIT-BKFBR-S	Gland Seal Kit for Breakout Fiber: 2-, 4- or 6-Channel Riser or Plenum, 8-Channel Plenum	Kit for One Strain Relief
GSKIT-BKFBR-L	Gland Seal Kit for Breakout Fiber: 8-Channel Riser, 12-Channel Riser or Plenum	Kit for One Strain Relief
GSKIT-HDC3R	Gland Seal Kit for HDC3R 3-Channel Hybrid Cable	Kit for One Strain Relief
HMD-EKIT-P	SMPTE Plug Expansion Module Kit	For HMD Frames
HMD-EKIT-S	SMPTE Socket Expansion Module Kit	For HMD Frames
HMD-EKIT-NS	Neutrik® opticalCON® Single-Mode Expansion Module Kit	For HMD Frames
HMD-EKIT-NM	Neutrik® opticalCON® Multi-Mode Expansion Module Kit	For HMD Frames



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HMS Modular Fusion Splice Rack



The new Gepco[®] Brand HMS Modular Fusion Splice Rack provides a field terminatable solution for the deployment of hybrid fiber connectors in an expandable chassis system. With an internal cable management and fusion splice tray system, the HMS allows for all electrical and fiber termination to occur within the chassis, streamlining and protecting the cable breakout. Because the fusion splice occurs within the chassis, not in the connector, almost any type of hybrid connector can be terminated with any type of fusion splicer.

For flexibility in cable options, the HMS features configurable rear cable ports (six plus two) that accommodate a wide range of cable types and combinations. The HMS can be terminated to a variety of combinations of HDC920 9.2mm hybrid fiber, discrete electrical and fiber cables, or up to two HDC3R 3-channel hybrid cables.

All HMS configurations come with six electrically isolated connector positions for expandability. Each position can ordered or expanded with SMPTE 304M Plug, SMPTE 304M Socket, or Neutrik® opticalCON® format connectors, with future connector modules available as they are released.

FEATURES & BENEFITS

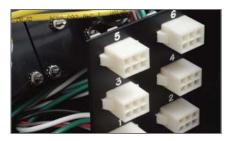
- Internal Fusion Splice Tray
- Internal Cable Management for Security and Streamlined Breakout
- Field Installable and Terminatable
- Splice with Any Type of Fusion Splicer
- Electrically Isolated Connector Mounts
- Rear Cable Ports for Maximum Cable Strain Relief
- Easy to Expand, 6-Channel Frame
- Connector Modules for SMPTE 304M and opticalCON[®] Format Connectors



Rear ports with integrated cable strain relief and seal

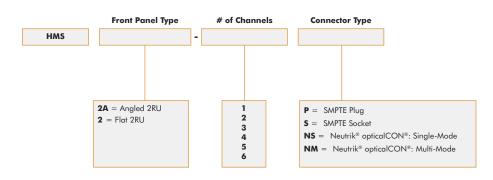


Internal fusion splice tray with cable management



Quick disconnect electrical breakout

Ordering & Product Specifications



Mechanical Specifications

Dimensions: 2RU-3.5" H x 19" W x 6.5" D

Optical Connector Specifications: LEMO® SMPTE 304M or Neutrik® opticalCON® Fiber Contacts: 2 per Channel -55dB Typical RL, 0.2dB Max IL Connector End

Opposite End Blunt for Fusion Splicing

Electrical Breakout: 6-Position AMP[®] MATE-N-LOK[®] Connector

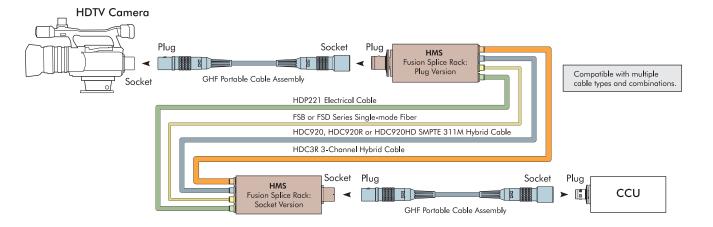
Rear Panel Cable Management: (6) Ports for Electrical/Hybrid Fiber Cable

(6) Ports for Electrical/Hybrid Fiber Cable(2) Ports for Fiber/3-Channel Hybrid Fiber Cable

Included Accessories:

Mating AMP® MATE-N-LOK® Connector(s) Fusion Splice Heat Shrink Gland Seals for HDP221, HDC920 or HDC920R Gland Seals for 2- to 4-Channel Distribution Fiber Gland Seals for 6- to 12-Channel Distribution Fiber

Optional Accessories			
Part Number	Description	Compatibility Notes	
GSKIT-HDP221P	Gland Seal Kit for HDP221P Plenum Electrical Cable	Kit for One Strain Relief	
GSKIT-BKFBR-S	Gland Seal Kit for Breakout Fiber: 2-, 4- or 6-Channel Riser or Plenum, 8-Channel Plenum	Kit for One Strain Relief	
GSKIT-BKFBR-L	Gland Seal Kit for Breakout Fiber: 8-Channel Riser, 12-Channel Riser or Plenum	Kit for One Strain Relief	
GSKIT-HDC3R	Gland Seal Kit for HDC3R 3-Channel Hybrid Cable	Kit for One Strain Relief	
HMS-EKIT-P	SMPTE Plug Expansion Module Kit	For HMS Frames	
HMS-EKIT-S	SMPTE Socket Expansion Module Kit	For HMS Frames	
HMS-EKIT-NS	Neutrik® opticalCON® Single-Mode Expansion Module Kit	For HMS Frames	
HMS-EKIT-NM	Neutrik® opticalCON® Multi-Mode Expansion Module Kit	For HMS Frames	



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HSB Fusion Splice Box





Optional rack panel and base

The new Gepco[®] Brand HSB Fusion Splice Box provides a field terminatable solution for the deployment of hybrid fiber cable in a compact chassis. Specifically designed for hybrid camera applications, the HSB features configurable cable ports and a custom fusion splice tray specifically designed for use with 9.2mm SMPTE hybrid cable, discrete electrical and fiber cables, or the HDC3R 3-channel hybrid cable.

Internally, the optical fibers terminate within the HSB's custom fusion splice tray—using the included splice heat shrink and cable management accessories—while the electrical elements terminate with quick-disconnect, 6-position, plastic AMP® connectors. For the external component breakout, the HSB series utilizes metal, twist-and-lock ST and 5-pin connectors for a secure and reliable exterior mating interface.

To permanently install the HSB splice box, an optional base kit can be added to mount the HSB splice box to a wall or floor, or it can be rack mounted with an optional rack panel. For up to eight channels for splicing, two HSBs can be mounted in a single 3RU rack panel.

FEATURES & BENEFITS

- Custom Fusion Splice Tray for Hybrid Cables
- Internal Cable Management for Security and Streamlined Breakout
- Configurable Cable Ports for Strain Relief of Multiple Cable
 Formats
- Field Installable and Terminatable
- Can Be Spliced with Any Type of Fusion Splicer
- Twist-and-Lock, Metal-Body, External Connectors for Exceptional Durability
- Expandable up to Four Channels



Rugged, twist-and-lock, 5-pin electrical and ST fiber breakout

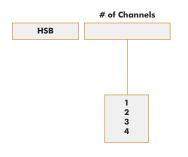


Configurable ports for multiple cable-type compatibility



Custom fusion splice tray with cable management

Ordering & Product Specifications



Mechanical Specifications

Dimensions: 11.5" L x 5.5" W x 2.5" H

Optical Connector Specifications:

ST Female (2 per Channel) -55dB Typical RL, 0.2dB Max IL Connector End Opposite End Blunt for Fusion Splicing

Electrical Breakout:

6-Position AMP® MATE-N-LOK® Connector (Internal) 5-Position AMP® CPC (External)

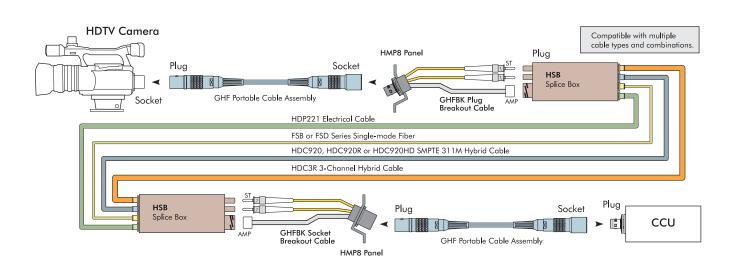
Panel Cable Management Ports: (1-4) Ports for Electrical/Hybrid Fiber Cable

(1-4) Ports for Electrical/Hybrid Fiber Cable(1) Port for Fiber/3-Channel Hybrid Fiber Cable

Included Accessories:

Mating AMP[®] MATE-N-LOK[®] Connector(s) Fusion Splice Heat Shrink Gland Seal(s) for HDP221, HDC920 or HDC920R Gland Seal for 2- to 4-Channel Distribution Fiber Gland Seal for 6- to 12-Channel Distribution Fiber

Optional Accessories			
Part Number	Description	Compatibility Notes	
GSKIT-HDP221P	Gland Seal Kit for HDP221P Plenum Electrical Cable	Kit for One Strain Relief	
GSKIT-BKFBR-S	Gland Seal Kit for Breakout Fiber: 2-, 4- or 6-Channel Riser or Plenum, 8-Channel Plenum	Kit for One Strain Relief	
GSKIT-BKFBR-L	Gland Seal Kit for Breakout Fiber: 8-Channel Riser, 12-Channel Riser or Plenum	Kit for One Strain Relief	
GSKIT-HDC3R	Gland Seal Kit for HDC3R 3-Channel Hybrid Cable	Kit for One Strain Relief	
HSB-EKIT	Expansion Splice Kit for 1 Hybrid Channel	For HSB Splice Boxes	
HSB-BASE	Base Feet for Floor or Wall Mounting	For HSB Splice Boxes	
HSB-RP1	2RU Panel for Rack Mounting One HSB Box	For HSB Splice Boxes	
HSB-RP2	3RU Panel for Rack Mounting Two HSB Boxes	For HSB Splice Boxes	
GHFBK-3-PB/STA	Plug Pigtail Breakout Cable with ST and AMP® 5-Pin	For HMP8 Panels and HSB Boxes	
GHFBK-3-SB/STA	Socket Pigtail Breakout Cable with ST and AMP® 5-Pin	For HMP8 Panels and HSB Boxes	



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HDR1 High-Density, Hybrid Fiber Distribution Rack



The new Gepco[®] Brand HDR1 High-Density Distribution Rack delivers a hybrid fiber breakout or patching solution in a compact 1RU frame. With the highest density available, the HDR1 can deliver up to six positions in a 1RU space, or up to 12 positions in a 2RU space (with two HDR1 units). Commonly used for machine room patching of multiple camera positions to available CCU control units, the HDR1 provides a streamlined cross-connect or general purpose hybrid breakout system.

Each hybrid connector position of the HDR1 externally breaks out to separate fiber and electrical connectors on the rear of the panel. To provide rugged external connector interfacing, the HDR1 utilizes ST fiber and metal circular, 5-pin electrical connectors. These connector breakout formats can easily be terminated onsite without the need for specialized hybrid connector tooling.

All positions on the new HDR1 are completely electrically isolated by nonconductive connector mounts on the front, and the hybrid connector shells are wired to isolated pins on the rear of the chassis. For custom user-labeling and identification, each position features a designation strip. Available with SMPTE 304M plug, SMPTE 304M socket, or Neutrik[®] opticalCON[®] format connectors, every configuration comes loaded in a standard frame that can be expanded up to six channels with pre-terminated connector modules.

FEATURES & BENEFITS

- High-Density 1RU Chassis
- External ST Fiber and Metal Circular Electrical Breakout
- Electrically Isolated Connector Mounts
- Designation Strip for Each Position
- Ideal for Machine Room Patching
- Field Installable and Terminatable
- Expandable 6-Channel Frame
- Connector Modules for SMPTE 304M and opticalCON[®] Format Connectors



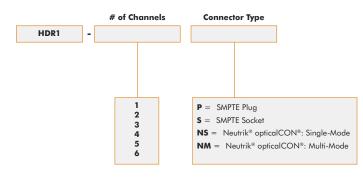
Electrically isolated connector modules



Rear panel with fiber and electrical component breakout

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Ordering & Product Specifications



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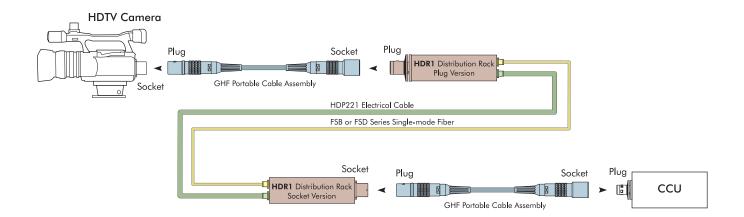
Dimensions: 1RU-1.75" H x 19" W x 3" D

Optical Connector Specifications: LEMO® SMPTE 304M: 1 per Channel (2 Fibers) ST Breakout: 2 per Channel (2 Fibers) -55dB Typical RL, 0.4dB Max IL

Electrical Breakout: 5-Pin Metal AMP® CPC

Included Accessories: Mating AMP® 5-Pin CPC Connectors

Optional Accessories			
Part Number	Description	Compatibility Notes	
HDR1-EKIT-P	SMPTE Plug Expansion Module Kit	For HDR1 Frames	
HDR1-EKIT-S	SMPTE Socket Expansion Module Kit	For HDR1 Frames	
HDR1-EKIT-NS	Neutrik [®] opticalCON [®] Single-Mode Expansion Module Kit	For HDR1 Frames	
HDR1-EKIT-NM	Neutrik® opticalCON® Multi-Mode Expansion Module Kit	For HDR1 Frames	



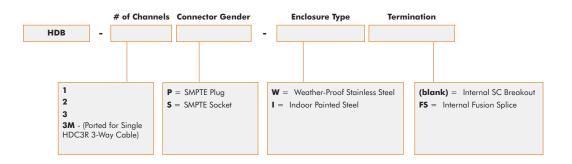
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SMPTE Field and Studio Boxes



FEATURES & BENEFITS

- Field Box for SMPTE 304M Interconnects
- Weather-Proof Stainless Steel or Indoor-Rated Steel Versions
- Hinged Top Panel with Clamps
- Internal SC Breakout or Fusion Splice Tray
- Configurable Cord Grips/Cable Management
- Distributes Hybrid Connector Over Fiber and Copper • Distribution, SMPTE 311M or 3-Channel Hybrid Cables
- . Available in 1-, 2- or 3-Channel Configurations



Mechanical Specifications

Dimensions:

 8° L x 6" W x 4" D Standard 1, 2 or 3ch and 1ch Fusion Splice Models: Stainless Steel 8° L x 6" W x 3.5" D Standard 1, 2 or 3ch and 1ch Fusion Splice Models: Indoor Painted Stee 10" L x 8" W x 4" D Fusion Splice 2 and 3ch Models: Stainless Steel or Indoor Painted Steel

0.75" Flanged Base with Mounting Holes

Optical Connector Specifications: SMPTE 304M LEMO® Stainless Steel Connector (Plug or Socket) SMPTE 304M Dust Cap with Weather Seal and Coated Lanyard SC-PC Single-Mode Breakout (Internal Breakout Version Only - 2 per Channel)

Fiber Contacts: 2 per Channel -55dB Typical RL, 0.4dB Max IL (SMPTE and SC Contacts)

Electrical Breakout Specifications: 6-Pin AMP[®] MATE-N-LOK[®] Cap: 3 Pins, 2 Sockets

Cord Grips: 1-, 2- or 3-Channel Models: Electrical Only/Hybrid Fiber Ports - (1 per Channel): Cable OD 0.310" - 0.380": HDP221, HDC920 or HDC920R

Fiber Ports - (1 per Channel): Cable OD 0.130" - 0.190", 2-Strand Distribution Cable OD 0.250" - 0.310", 2-Strand Breakout Note: Secondary Cord Grip Can Be Replaced with Included Weather-Proof Hole Plug

Cord Grips: 3M Models for HDC3R 3-Way Cable: Single Cord Grip for 3-Way Hybrid Cable

Cable OD 0.500" - 0.630"



Top Cable Ports

Standard Model

Internal SC Fiber and AMP® Electrical Breakout

Field-Installed Cables Can Be Terminated by Polishing, Field Term Gel, or Fusion Splicing SC Connectors

Standard Model Includes Splice Holder for SC Spliced Connector

Fusion Splice Model

Internal Fusion Splice Tray for Full Figure-8 Cable Management

AMP® Electrical Breakout Panel

Used for Splicing SMPTE Connector Directly to Field-Installed Cable Without SC Breakout

Included Accessories

Gland Seals for 9.2mm Hybrid/HDP221 Electrical Cable, 2-Strand Distribution Fiber, and 2-Strand Breakout Fiber (1, 2 and 3ch Models Only)

Gland Seals for HDC3R 3-Way Fiber Cable (3M Models Only)

Mating AMP® Connectors for Electrical Breakout

Optional Accessories

GSKIT-HDP221P - Gland Seal Kit or HDP221P Plenum Electrical Cable: Kit for One Strain Relief

FSC-SC - Factory Polished Connector with 12" Tight Buffer 900µm SM Fiber for Fusion Splicing

318-191-627 - Field Term SC Connector for 900µm - Quick Cleave with IM Gel

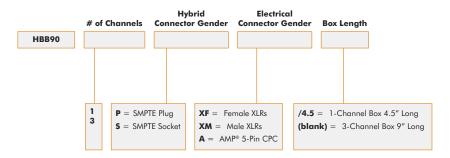
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Hybrid Fiber Breakout Boxes



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



The Gepco® Brand 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-gauge 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.

Mechanical Specifications

Dimensions:

4.5" L x 5.25" W x 4.5" D Standard 1ch Model: 1/8" Extruded Aluminum (Black Anodized)

Optical Connector Specifications: SMPTE 304M LEMO® Stainless Steel Connector (Plug or Socket) with Stainless Steel Dust Cap with Weather Seal and Coated Lanyard SC-PC Single-Mode Breakout

Fiber Contacts: 2 per Channel -55dB Typical RL, 0.4dB Max IL (SMPTE and SC Contacts)

Electrical Breakout Specifications:

5-Pin Metal AMP® CPC (Breaks out auxiliary, signal, and ground elements.) Male or Female XLR (Auxiliary elements from fiber are not terminated.)

Side Panel Electrical Connector Options

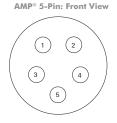


AMP[®] 5-Pin



XLR Male

XLR Female



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 = GroundPin 2 = Red Signal Conductor (Low-Voltage)

Pin 3 = Gray Signal Conductor (Low-Voltage)

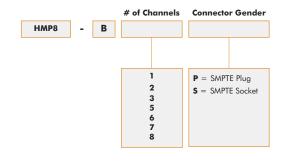
Black & white power elements in hybrid fiber connector are floated with no connector.

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HMP8-Bxx SMPTE 304M Breakout Rack



The Gepco® Brand HMP8-Bxx is a completely terminated and loaded version of the HMP8 Modular Panel (opposite page). Positions are loaded with factory terminated SMPTE 304M connectors, which break out to 5-pin/ST connectors that are mounted in the rear connector panel attachment. Choose from one to eight loaded positions in socket or plug gender configurations. Unused positions are filled with blank modules that can later be removed and expanded with additional SMPTE 304M breakout cable modules.



FEATURES & APPLICATIONS

- Loaded and Terminated HMP8 Breakout Rack
- SMPTE 304M Plug or Socket to 5-Pin/ST Breakout
- Angled Front Panel
- Electrically Isolated Connectors
- Available with One to Eight Breakout Positions
- Expandable

Specifications

Frame Dimensions: 2RU-3.5" H x 19" W x 3" D

Optical Specifications Two Fiber Contacts per Channel -55dB Typical RL

0.4dB Max IL (Both Ends in Closed Loop)

Front Panel

 $1\ \text{LEMO}^{\otimes}\ \text{SMPTE}\ 304\text{M}$ Connector per Channel Stainless Steel Connector Body with Stainless Steel Dust Cap

Rear Panel

Electrical Breakout: 1 AMP[®] 5-Pin Connector per Channel Optical Breakout: 2 ST Connectors per Channel

Optional Accessories			
Part Number	Description	Compatibility Notes	
HMP8-EKIT-P	LEMO [®] SMPTE 304M Plug Expansion Kit	For HMP8 Frames	
HMP8-EKIT-S	LEMO [®] SMPTE 304M Socket Expansion Kit	For HMP8 Frames	



Top View



Rear View

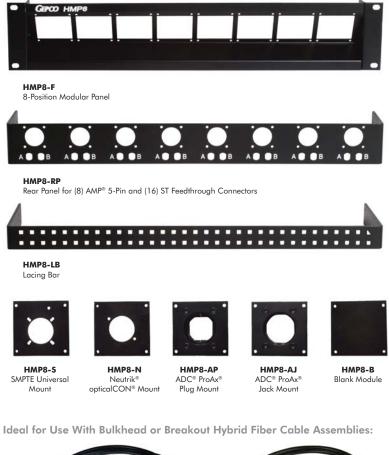
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HMP8 Modular Hybrid Fiber and Triax Panel

GEPCO[®]



The Gepco® Brand HMP8 modular panel system provides a completely configurable and electrically isolated connector-mounting solution in an angled 2RU rack unit system. With the HMP8 frame, up to eight triax and/or hybrid fiber connectors can be mounted in various combinations to customize the interface panel for each system. Available in five types, the nonconductive plastic HMP8 modules provide electrical isolation between connectors and are available in SMPTE 304M, Neutrik® opticalCON®, ADC® ProAx® and blank versions. In addition, optional rear cable management breakout or lacing bar panels can be attached to the HMP8 frame to provide additional security and strain relief for hybrid fiber pigtail breakout cables.



FEATURES & APPLICATIONS

- **Custom Configurable 8-Position Frame** •
- Angled Front Panel Reduces Cable Bend Radius .
- **Electrically Isolated Connectors** •
- All-Metal Frame
- Nonconductive Plastic Modules
- **Optional Rear Connector or Lacing Bar Panel Attachments**
- ADC® ProAx®, SMPTE 304M, and • Neutrik[®] opticalCON[®] Mounts

Specifications

HMP8-F Dimensions 2RU-3.5" H x 19" W x 1.31" D

HMP8-RP Dimensions 2.1" H x 17.1" W x 3" D

HMP8-LB Dimensions 1.1" H x 17.1" W x 5" D





In-Line Breakout (See page 8)



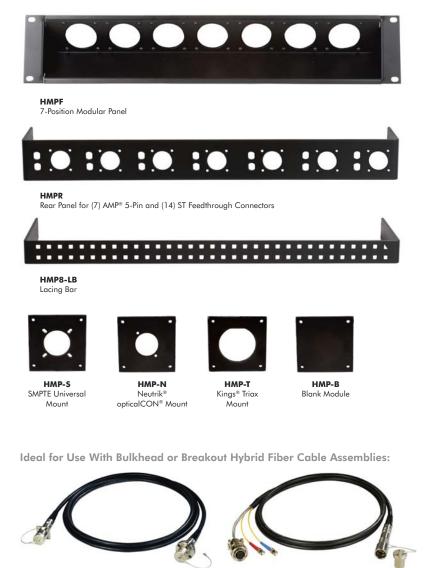
Internal Breakout (See page 9)

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Modular Isolation Panel System



Gepco[®] Brand'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. In addition, optional rear cable management breakout or lacing bar panels can be attached to the HMPF frame to provide additional security and strain relief for hybrid fiber pigtail breakout cables.



In-Line Breakout (See page 8)

FEATURES & BENEFITS

- Custom Configurable 7-Position Frame
- Angled Front Reduces Cable Bend Radius
- Electrically Isolates Connectors
- All-Metal Frame
- Nonconductive Plastic Modules
- Optional Rear Connector or Lacing Bar Panel Attachments
- SMPTE 304M, Kings[®] Tri-Loc[®] and Neutrik[®] opticalCON[®] Connector Mounts

Specifications

HMPF Dimensions 2RU-3.5" H x 19" W

HMPR Dimensions 1.36" H x 17.1" W x 3.7" D

HMP8-LB Dimensions

Module Dimensions 2" H x 2" W



Internal Breakout (See page 9)

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Bulkhead Hybrid (See page 7)

Hybrid Fiber Blank Panels

Gepco[®] Brand 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.

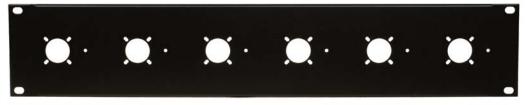
The HBP panels are used in the Direct Cable Termination method (see page 4 for system configuration details). When using HBP panels with pre-terminated cable assemblies, the connector body of the cable assembly can be removed, allowing for the assembly to be passed through the panel hole punch from the rear and reassembled from the front.

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:





In-Line Breakout (See page 8)



FEATURES & BENEFITS

1RU, 2U, or Angled 2RU Versions

Works with LEMO[®] Brand Connectors

Universal Punch Mount Accommodates Plug or Socket

Connectors (Does not accommodate PEW Connectors)

Can Be Loaded with Pre-terminated Cable Assemblies

Additional Hole for Dust Cap Lanyard Mounting

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Internal Breakout (See page 9)

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Bulkhead Hybrid (See page 7)

Feedthrough Panels & Chassis

Gepco® Brand'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



Specification	s				
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"H x 19"W 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"H x 19"W 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"H x 19"W 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"H x 19"W 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"H x 19"W 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 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 AV connector formats. Engraving, filling, and custom silk-screening 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 Silk Screened
- Loaded with Connectors or Blank
- Flat, Flanged, or Chassis Configurations

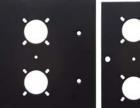


Connector Formats ST Feedthrough SC Feedthrough LC Feedthrough SMPTE 304M Plug Bulkhead SMPTE 304M Socket Bulkhead Neutrik® opticalCON® TAC-4/12 BNC Triax Audio Connectors <u>Materials</u> Aluminum Steel Stainless Steel Finishes Anodized Painted Powder Coated Engraved Silk Screened

Neutrik® and opticalCON® are registered trademarks of Neutrik AG.

Floor Box Plates







FBP-GP2-S2

FBP-MM-S2 FBP-MM-S1

FEATURES & BENEFITS

- Connector Plates for Mystery[™], FSR[™] and Ace[™] Floor Boxes
- SMPTE 304M Universal Punch Fits Plug or Socket Connectors (Not compatible with PEW Type)
- Black Anodized Aluminum
- Custom Configurations Also Available

Specifications			
Part Number	Floor Box Type Compatibility	Number of SMPTE 304M Universal Punches	
FBP-MD-S	Mystery™ Duoline	1	
FBP-MM-S1	Mystery™ Moduline	1	
FBP-MM-S2	Mystery™ Moduline	2	
FBP-FL-S1	FSR™ FL-2000	1	
FBP-FL-S2	FSR™ FL-2000	2	
FBP-FL-S3	FSR™ FL-2000	3	
FBP-FL-S4	FSR™ FL-2000	4	
FBP-FL-S5	FSR™ FL-2000	5	
FBP-FL-S6	FSR™ FL-2000	6	
FBP-FL-S7	FSR™ FL-2000	7	
FBP-FL-S8	FSR™ FL-2000	8	
BP-GP1-S1	1 Gang for FSR™ or Ace™	1	
BP-GP2-S1	2 Gang for FSR™ or Ace™	1	
FBP-GP2-S2	2 Gang for FSR™ or Ace™	2	
FBP-GP3-S1	3 Gang for FSR™ or Ace™	1	
-BP-GP3-S2	3 Gang for FSR™ or Ace™	2	
FBP-GP3-S3	3 Gang for FSR™ or Ace™	3	
FBP-GP4-S1	4 Gang for FSR™ or Ace™	1	
FBP-GP4-S2	4 Gang for FSR™ or Ace™	2	
FBP-GP4-S3	4 Gang for FSR™ or Ace™	3	
FBP-GP4-S4	4 Gang for FSR™ or Ace™	4	
FBP-GP6-S1	6 Gang for FSR™ or Ace™	1	
FBP-GP6-S2	6 Gang for FSR™ or Ace™	2	
FBP-GP6-S3	6 Gang for FSR™ or Ace™	3	
FBP-GP6-S4	6 Gang for FSR™ or Ace™	4	
FBP-GP6-S5	6 Gang for FSR™ or Ace™	5	
FBP-GP6-S6	6 Gang for FSR™ or Ace™	6	

Mystery™ is a trademark of Mystery Electronics, LLC. FSR™ is a trademark of FSR Incorporated. Ace™ is a trademark of Ace Backstage Co., Inc.

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
and the	ST Feedthrough	216-101-Е	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
No. N	SC Feedthrough - Duplex	227-201-1N 222-201-1N (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Four Male, Cable Mount SCs
C	LC Feedthrough	999-111	Zirconia (Ceramic)	Senko®	Couples Two Male, Cable Mount LCs
12	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®, Hard Nickel Plating	NO2-4FDW NO2-4FDW-1 (with Shell Ground Contact)	Zirconia (Ceramic)	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
	opticalCON®, Ruthenium Plating	NO2-4FDW-R NO2-4FDW-1-R (with Shell Ground Contact)	Zirconia (Ceramic)	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
0	opticalCON®, Ruthenium Plating	NO4FDW-R	Zirconia (Ceramic)	Neutrik®	Mates with In-Line 4-Channel Neutrik® opticalCON® or Standard LC
IN	Amphenol [®] 4-Channel Tactical Connector	1098080-A1	Uses Fiber Termini, not a Feedthrough Device	Amphenol®	Must be terminated and machine polished with 2 Amphenol® M29504/14 Termini, and 2 Amphenol® M29504/15 Termini. Termini are sold separately.
	Amphenol® 12-Channel Tactical Connector	FS12A8080X111F	Uses Fiber Termini, not a Feedthrough Device	Amphenol®	Must be terminated and machine polished with 6 Amphenol® M29504/14 Termini, and 6 Amphenol® ML2981999C Termini. Termini are sold separately.

Neutrik® and opticalCON® are registered trademarks of Neutrik AG. Amphenol® is a registered trademark of Amphenol Corporation.

LEMO[®] Hybrid Fiber SMPTE 304M Connectors

LEMO® 3K series connectors, the original and industry standard in SMPTE 304M 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
4	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

LEMO® is a registered trademark of Interlemo Holding, S.A.

SMPTE 304M Dust Caps, Boots & Installation Tools

These Gepco® Brand and LEMO® 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-gauge, 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 and the 3k.93C.U0729 extended shell and midpiece. The adapter replaces the connector body during cable installation, allowing for a pre-terminated hybrid fiber cable to be pulled in a permanent installation application, while the extended shell extends the body of the connector for fusion splicing.

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
- Extended Shell and Midpiece for Fusion Splice Process

	Part Number	Description	Compatibility
	HPDC	Stainless Steel Dust Cap	SMPTE 304M Cable Mount Plug
	HSDC	Stainless Steel Dust Cap	SMPTE 304M Cable Mount Socket
~	HPDC-PM	Stainless Steel Dust Cap	SMPTE 304M Panel Mount Plug
-	HSDC-PM	Stainless Steel Dust Cap	SMPTE 304M Panel Mount Socket
	GMF.3K.085.EANZ	Full Body Plug Boot	LEMO® 9.2mm FUW Cable Mount Plug Connector
	GMP.3K.085.EANZ	Full Body Socket Boot	LEMO® 9.2mm PUW Cable Mount Socket Connector
	GMF.3K.085.U0729	Full Body Plug Boot	LEMO® 9.2mm FUW Cable Mount Plug Connector with Fusion Splice Option
	GMP.3K.085.U0279	Full Body Socket Boot	LEMO® 9.2mm PUW Cable Mount Socket Connector with Fusion Splice Option
	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)
0	DC5.3K.175.72LN	Cable Pulling Slug	Temporarily Replaces Body of LEMO® FUW, PUW, FMW, PBW, or PEW Connectors for Pulling Cable in a Permanent Installation
	3K.93C.U0729	Extended Shell and Midpiece for Fusion Splice Process	Extends Body of LEMO® 9.2mm FUW, PUW, PBW, FMW and PEW Connectors for Fusion Splicing (Note: Only compatible LEMO® Connectors that contain "C96" in the part number)

LEMO® is a registered trademark of Interlemo Holding, S.A.

Fiber Systems Accessories, Parts & Tools

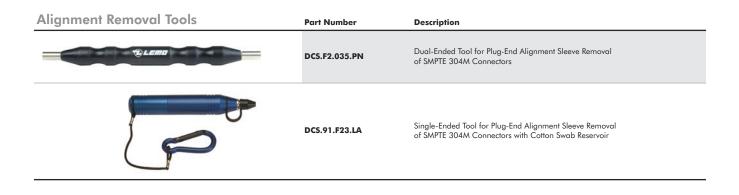
Replacement Parts & Tools	Part Number	Description
	HDR-JMP-F2/SC HDR-JMP-F2/ST HDR-JMP-F2/BLUNT	Replacement F2 to SC Internal Jumper Replacement F2 to ST Internal Jumper Replacement F2 to Blunt Internal Jumper
	FSC-F2	Fusion Splice F2 Contact Kit Includes 2 Pre-terminated F2 Contacts, 2 Splice Sleeves and 2 Alignment Devices (LEMO® FSS.F2.BA2.U0729)
	FSC-SC	Fusion Splice SC Contact Kit Includes 2 Pre-terminated SC Contacts and 2 Splice Sleeves
	AMP-66182-1	Replacement AMP® Pins
AMP average and a second	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)

Reelers	Manufacturer	Features/Options
	Hannay®	Material: Rugged Steel and Aluminum Frame Size: Standard, Large, and Extra-Large Sizes Types: Stackable or Light-Weight with Optional Divider Panels for Fanouts Additional Options: Heavy-Duty Locking Casters

AMP® is a registered trademark of Whitaker Corporation. Hannay® is a registered trademark of Hannay Reels, Inc.

Fiber Systems Accessories, Parts & Tools



Cleaning Swabs & 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
	HFCS	Cotton Swabs (Not Premoistened) for SMPTE 304M, ST, SC, or LC Contacts	100
	HFCD	Double Ended (2.0/2.5mm) Optical Connector Cleaner, Stick-Type for Cleaning Ferrule-End Faces of SMPTE 304M Connectors and Adapters	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)

USB Microscope with Analytical Software



FEATURES & BENEFITS

- USB Format Probe
- Bench-Top Testing and Cataloging
- 450x 1500x Variable Magnification
- 0.5µm Resolution
- Analytical PC Application Included
- Contamination and Scratch Analysis Against User Defined Criteria
- Includes Tips for SMPTE F2 and ST/SC/FC Contacts
- Optional Tips Also Available

Specificati	ons						
Part Number	Display Size	Magnification	PC Interface	Resolution	Software Included	Accessories Included	Tips Included
FS-USB	None (Uses PC)	450x - 1500x	USB	0.5µm	Analytical Software	Lightweight Rugged Carry Case	SMPTE F2 Universal Tip, SMPTE F2 Plug Tip, 2.5mm ST/SC/FC Tip

Additional Tips			
Connector Format	Part Number	Description	Included with Scope Kit
ST/SC/FC	FSTIP-ST/SC/FC	2.5mm ST, SC, or FC In-Line	Yes
ST/SC/FC APC	FSTIP-ST/SC/FC-APC	2.5mm ST-APC, SC-APC, or FC-APC In-Line	No - Optional
ST Panel	FSTIP-STPM	ST Panel Mount (Does Not Require Connector Removal)	No - Optional
SC Panel	FSTIP-SCPM	SC Panel Mount (Does Not Require Connector Removal)	No - Optional
SC-APC Panel	FSTIP-SCPM-APC	SC-APC Panel Mount (Does Not Require Connector Removal)	No - Optional
FC Panel	FSTIP-FCPM	FC Panel Mount (Does Not Require Connector Removal)	No - Optional
FC-APC Panel	FSTIP-FCPM-APC	FC-APC Panel Mount (Does Not Require Connector Removal)	No - Optional
LC	FSTIP-LC	1.25mm LC In-Line	No - Optional
LC-APC	FSTIP-LC-APC	1.25mm LC-APC In-Line	No - Optional
LC Panel	FSTIP-LCPM	LC Panel Mount (Does Not Require Connector Removal)	No - Optional
SMPTE F2 Universal	FSTIP-F2U	SMPTE F2 Universal Plug or Socket	Yes
SMPTE F2 Plug	FSTIP-F2P	SMPTE F2 Plug (Does Not Require Connector Removal)	Yes

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Portable Microscope with USB Output



- Rugged Chassis and Probe
- Portable
- Rechargeable Battery
- 3.5" TFT Display
- 200x Magnification
- USB Port with Image Capture Software
- Includes Tips for SMPTE F2 and ST/SC/FC Contacts
- Optional Tips Also Available

Specificatio	ns						
Part Number	Display Size	Magnification	PC Interface	Resolution	Software Included	Accessories Included	Tips Included
FS-200	3.5" TFT	200x	USB	1μ m (Viewable to 0.5μ m)	Image Capture	Soft Cary Bag, AC Charger	SMPTE F2 Universal Tip, SMPTE F2 Plug Tip, 2.5mm ST/SC/FC Tip

Additional Tips			
Connector Format	Part Number	Description	Included with Scope Kit
ST/SC/FC	FSTIP-ST/SC/FC	2.5mm ST, SC, or FC In-Line	Yes
ST/SC/FC APC	FSTIP-ST/SC/FC-APC	2.5mm ST-APC, SC-APC, or FC-APC In-Line	No - Optional
ST Panel	FSTIP-STPM	ST Panel Mount (Does Not Require Connector Removal)	No - Optional
SC Panel	FSTIP-SCPM	SC Panel Mount (Does Not Require Connector Removal)	No - Optional
SC-APC Panel	FSTIP-SCPM-APC	SC-APC Panel Mount (Does Not Require Connector Removal)	No - Optional
FC Panel	FSTIP-FCPM	FC Panel Mount (Does Not Require Connector Removal)	No - Optional
FC-APC Panel	FSTIP-FCPM-APC	FC-APC Panel Mount (Does Not Require Connector Removal)	No - Optional
LC	FSTIP-LC	1.25mm LC In-Line	No - Optional
LC-APC	FSTIP-LC-APC	1.25mm LC-APC In-Line	No - Optional
LC Panel	FSTIP-LCPM	LC Panel Mount (Does Not Require Connector Removal)	No - Optional
SMPTE F2 Universal	FSTIP-F2U	SMPTE F2 Universal Plug or Socket	Yes
SMPTE F2 Plug	FSTIP-F2P	SMPTE F2 Plug (Does Not Require Connector Removal)	Yes

LEMO[®] Microscope Kit



FEATURES & BENEFITS

- Rugged Carrying Case
- Portable
- Rechargeable Battery and Charger
- 3.5" TFT-LCD Display
- Foldable Monitor Set with Adjustable Viewing Angle
- One-Hand Operation
- Fast, Easy Focus

Specifications	
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

LEMO® is a registered trademark of Interlemo Holding, S.A.

Test Equipment



HîLîte NNOTES

VFI2

HiLite

Visual Fault Finders

The VFI2 and HiLite by Noyes® are compact but powerful visible red laser sources designed to troubleshoot faults on fiber optic cables. Light generated by these units will escape from sharp bends and breaks in jacketed or bare fibers, as well as poorly mated connectors. They can identify faults in fiber optic cable jumpers, distribution frames, patch panels, and splice trays.

Specification	s	
	VFI2	HiLite
Emitter type	Red Laser	Red Laser
Wavelength	650 ± 10 nm	650 ± 10 nm
Output Power	1 mW (into Single-Mode fiber)	1 mW (into Single-Mode Fiber)
Modulation	2 Hz or CW selected	2 Hz
Connector Type	Universal Adapter (2.5 mm Included)	2.5 mm Fixed
Power	2 AA Alkaline Batteries (60 Hours Typical)	1 AAA Alkaline Battery (4 Hours Typical)
Size (H x W x D)	5.5" x 2.4" x 1.3"	2.8" x 1.4" x 0.6"
Includes	VFI2 Unit, Instruction Card, and Carrying Case	HiLite Unit, Instruction Card, and Carrying Case

Insertion Loss Test Set

The SMLP 5-5 test kit by Noyes® combines the OPM5-2D optical power meter and OLS4 integrated LED and Laser Light source and is ideally suited for testing fiber optic networks with hybrid (single-mode and multi-mode) cables.

Ordering Informe	ation		
Model	Includes		
SMLP 5-5	OLS4 Optical Light Source, OMP5-2D Boots, Adapter Cap, USB Cable, PC C 62.5µm Mandrels, SMLP 5-5 Test Kit L	ompatible Software a	nd User's Guide, 50 and
Optical Power Me	ter Specifications		
Calibrated Wavelengths	850, 1300, 1310, 1490, 15	50 nm	
Tone Detection	270Hz, 330Hz, 1kHz, 2kHz	Range: +6 to -50	dBm, +6 to -45 dBm for 850 nm
Measurement Units	dB, dBm, µW		
Power	2 AA Batteries (300 Hours)		
Size (H x W x D)	5.5" × 3.2" × 1.5"		
Integrated Laser	and LED Source Specifications	;	
	Multi-Mode Optical	Port S	ingle-Mode Optical Port
Emitter Type	LED	L	aser
Wavelengths (Dual from S	Single Port) 850 ± 30 nm 1300	-10/+50nm 1	310 ± 20 nm 1550 ± 20nm
Output Power	> -20 dBm, 62.5µm M	ulti-Mode 0	dBm, 9µm Single-Mode
Battery Life	30 Hours Typical	7	2 Hours Typical
Power	2 AA Batteries	2	AA Batteries
Size (H x W x D)	5.5" × 3.2" × 1.5"	5	.5" x 3.2" x 1.5"



OLS4

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SMPTE Launch Cables

Gepco® Brand SMPTE launch cables adapt test equipment to hybrid fiber distribution systems and cables. Single-mode breakout riser cable is terminated with SMPTE 304M hybrid fiber connector (plug or socket) on one end with two SC fiber connectors on the other end.

Specifications			
Part Number	Length in Feet	First End Connector	Second End Connector
GHTJ-20-SC-P	20	SMPTE 304M Plug	SC
GHTJ-20S-C-S	20	SMPTE 304M Socket	SC

Noyes® is a registered trademark of AFL Telecommunications, LLC.

AFL® Fusion Splicers





FEATURES & BENEFITS

- Rugged Construction Providing Shock, Dust and Moisture Resistance
- Dual Monitor Position with Automatic Image Orientation
- Automatic Arc Calibration
- User-Selectable Fiber Clamping Method Sheath Clamp or Fiber Holders
- Auto-Start Tube Heater
- Color LCD Display Visible in Bright Sunlight
- Simultaneous Battery Charge and Splicer Operation
- Long-Life Battery
- USB Port
- Data and Video Download Software Included

The AFL® FSM-18S and FSM-60S fusion splicers set the standard for core fusion splicing by incorporating a user-friendly interface with enhanced features to provide the most rugged and reliable fusion splicers in the market today. The new rugged construction adds improved reliability by resisting shock, dust and rain, and can withstand a 30-inch drop test.

Ordering Information										
Part Number	Splicing Method	Fiber Type	Typical Average Splice Loss	Cladding Diameter	Coating Diameter	Dimensions				
FSM-18S	Cladding Alignment	SM, MM, DS, NZDS	0.05dB with SM 0.02dB with MM	125µm	100µm - 1000µm	5.3″W x 6.3″D x 5.6″H				
FSM-60S	Core Alignment	SM, MM, DS, NZDS	0.02dB with SM 0.01dB with MM	80µm - 150µm	100µm - 1000µm	5.3″W x 6.3″D x 5.6″H				

3SAE® Fusion Splicer



FEATURES & BENEFITS

- Terminate or Repair LEMO[®] SMPTE 304M Connectors with Connector Body Modification and F2 Fusion Splice Kit
- Repair Damaged SMPTE 311 Hybrid Cables Onsite
- Terminate Permanent Cables Onsite
- Does Not Require Polishing or Connector Epoxy Curing
- 100% Compatible with LEMO[®] SMPTE 304M Connectors
- Splices Standard 125µm Fibers with 250µm and 900µm Coatings

Terminate or repair damaged SMPTE 311 hybrid cables onsite in a fraction of the time as conventional methods—without the need for expensive polishers—with 3SAE®'s S177A-HD fusion splicer. Developed for use with LEMO® 3k.93C series connectors, the S177A-HD enables splice-on termination, eliminating the time and expense associated with shipping cables to be repaired. Fusion splice process requires extended shell and midpiece for LEMO® connectors and F2 splice contact kit.

Ordering Information										
Part Number	Splicing Method	Fiber Type	Typical Average Splice Loss	Cladding Diameter	Coating Diameter	Dimensions				
\$177A-HD	Core Alignment	SM, MM, DS, NZDS and More	0.02dB with SM 0.01dB with MM	80µm - 220µm	100µm - 1000µm	5.1″W x 10.2″D x 5.4″H				

Additional Parts Required



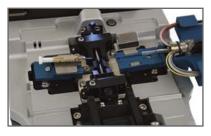
Extended Shell and Midpiece For Fusion Splice Process Part Number 3K.93C.U0729

Extends Body of LEMO[®] 9.2mm FUW, PUW, PBW, FMW and PEW Connectors for Fusion Splicing (Note: Only compatible LEMO[®] Connectors that contain "C96" in the part number)



F2 Splice Contact Kit Part Number FSC-F2

Includes 2 Pre-terminated F2 Contacts, 2 Splice Sleeves and 2 Alignment Devices (LEMO® FSS.F2.BA2.U0729)



Detailed view of splicer

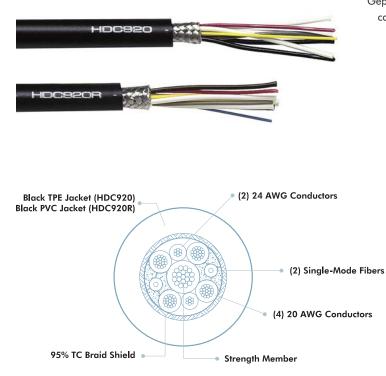


Extended shell and midpiece

3SAE® is a registered trademark of 3SAE Technologies, Inc. LEMO® is a registered trademark of Interlemo Holding, S.A.

GEPCO

9.2mm Hybrid Fiber Optic Cable

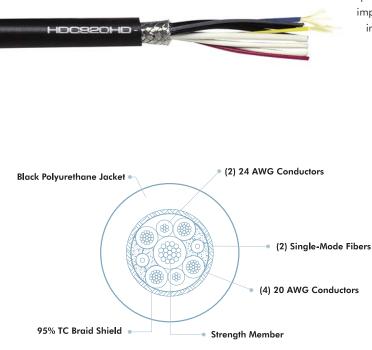


Gepco® Brand fiber optic and copper conductor SMPTE 311M hybrid cable is available for high-definition video cameras. In the hybrid 311M format, the HD video signal is transmitted over two singlemode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylonbased polymer with increased tensile strength is used for the fiber coatings, and a 16-gauge 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 HDC920 comes in an extra-flexible, abrasion-resistant TPE compound that is ideal for portable, studio, and outdoor broadcast applications, while the HDC920R comes in a flexible, riser rated PVC outer jacket for permanent installation applications.

- Extra-Flexible TPE or 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 S	pecifications (Ge	eneral)							
Part #	Nominal OD	Μα	ster Jacket (Type, Cold	ors)	Overall Shield	UL Type	Approx. Weight		
HDC920	9.2mm	Flex	tible TPE, Black		95% TC Braid	_	90 lbs/Mft		
	Extra-Flexible 9.2m	m Hybrid Camera C	able						
HDC920R	9.2mm	PVC	C, Black		95% TC Braid	CMR	91 lbs/Mft		
	Permanent Install 9	.2mm Hybrid Came	ra Cable						
Mechanical S	pecifications (Co	mponents)							
Component	Number	Туре	Type Insulation (Type, OD) Color Co			lor Code			
Optical	2		Mode 8.3µm Mode Field, Cladding	(CPE Tight Buffer, 0.9mm	Or	One Blue, One Yellow		
Signal	2	24 AW	G (7x32) Stranded TC	I	PE, 0.045"	Or	ne Red, One Gray		
Auxiliary	4	20 AW	G (19x32) Stranded TC	I	PE, 0.060"	Two	o White, Two Black		
Strength Member	1	16 AW	G Stranded Steel	I	PVC, 0.084"	Or	ne White		
Electrical & O	ptical Specificati	ions							
Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE e Standard		
<0.50 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	-40°C to +75 min. (@ 0 to 95% ł			

9.2mm Heavy-Duty Hybrid Fiber Optic Cable

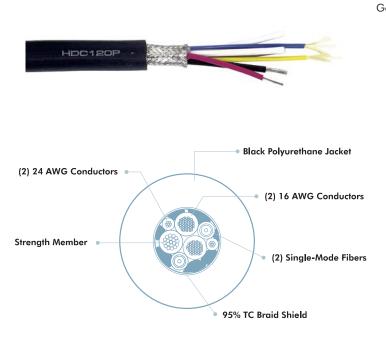


Gepco[®] Brand extra-durable 9.2mm hybrid fiber cable provides improved durability in high-definition camera-to-CCU interconnects. In addition to the steel strength member and nylonbased polymer fiber coating, each fiber optic element has a Kevlar[®] wrap and PVC jacket for greater strength and protection. For the power elements, HDC920HD utilizes two signal and four auxiliary conductors. 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 abrasionand puncture-resistant.

- 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
- Six Copper Conductors
- Heat-Resistant
- Strength Member for Additional Durability
- Copper Braid Shield

Part #	Nominal OD		Master Jacke	et (Type, Colors)		Overall S	hield Ap	prox. Weight	
HDC920HD	9.2mm		Polyurethane, I	Black		95% TC Br	aid 95	lbs/Mft	
	Heavy-Duty 9.2	2mm Hybrid Camero	a Cable						
Mechanical Sp	ecifications (Co	mponents)							
Component	Number	Туре			Insu	lation (Type, OD)	Color Code		
Optical	2		Single-Mode Fiber Optic (8.3µm Mode Field, 125µm Cladding)			Fiber Coating, ar [®] Wrap, Tube PVC Jacket, 2″ Finished O.D.	One Blue, One Yellow		
Signal	2	24 AW	G (7x32) Stranded TC		PE, 0.045"		One Red, On	One Red, One Gray	
Auxiliary	4	20 AW	G (19x32) Stranded T	С	PE, 0.060"		Two White, Tv	Two White, Two Black	
Strength Member	1	16 AW	G Stranded Steel		PVC,	0.084″	One White		
Electrical & Op	otical Specificati	ons							
Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Sign	al)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard	
<0.50 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 Cable



Gepco[®] Brand extra-durable 12mm Hybrid Fiber cable provides improved durability in high-definition camera-to-CCU interconnects. In addition to the steel strength member and nylonbased 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 abrasionand puncture-resistant.

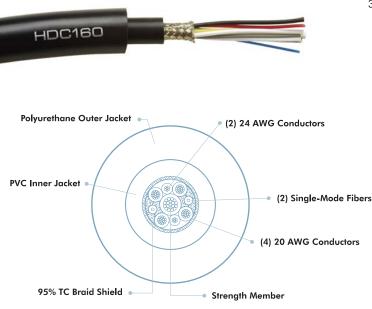
FEATURES & BENEFITS

- 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 Gauge Copper Conductors
- Heat-Resistant
- Strength Member for Additional Durability

Mechanical S	pecifications						
Part #	Nominal OD	M	aster Jacket (Type,	Colors)	Overall Shield		Approx. Weight
HDC120P	12.0mm	Pol	yurethane, Black		95% TC Braid		135 lbs/Mft
	Heavy-Duty 12m	m Hybrid Fiber Came	ra Cable				
Mechanical S	pecifications (S	eries)					
Component	Numbe	er Type			Insulation (Type,	OD) Color Code	
Optical	2		Mode Fiber Optic Mode Field, 125µm	Cladding)	CPE Fiber Coating, Kevlar® Wrap, Tight Tube PVC Jac 0.062" Finished O.	ket, One Blue, O	one Yellow
Signal	2	24 AW	G (19x36) Stranded	TC	PE, 0.044"	One Red, Or	ne Gray
Auxiliary	2	16 AW	G (65x34) Stranded	TC	PE, 0.084"	One White,	One Black
Strength Member	1	16 AW	G Stranded Steel		PVC, 0.087"	One White	
Electrical & O	ptical Specifica	tions					
Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Operating Temperature	SMPTE Standard
<0.50 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 Exceed

Kevlar® is a registered trademark of E. I. du Pont de Nemours and Company.

16mm Heavy-Duty Hybrid Fiber Optic Cable

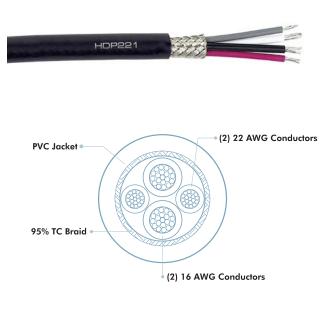


Gepco® Brand fiber optic and copper conductor SMPTE 311M hybrid cable is available for high-definition video cameras. In the hybrid 311M format, the HD video signal is transmitted over two singlemode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylonbased polymer with increased tensile strength is used for the fiber coatings, and a 16 gauge 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.

- 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 (Ge	eneral)							
Part #	Nominal OD	Inner Jacket (Typ	oe, Colors, Diameter)	Outer Ja	cket (Type, Colors)	Over	all Shield	Approx. Weight	
HDC160	16.0mm	Flexible PVC, Black	, 9.2mm	Polyuretha	ne, Black	95%	TC Braid	195 lbs/Mft	
	Extra-Flexible 16mm H	lybrid Camera Cable							
Mechanical	Specifications (Co	mponents)							
Component	Number	Туре			Insulation (Type	e, OD)	Color Code		
Optical	2		Node 8.3µm Mode Field Cladding	,	CPE Tight Buffer,	CPE Tight Buffer, 0.9mm		ne Yellow	
Signal	2	24 AW0	G (7x32) Stranded TC		PE, 0.045"	PE, 0.045"		ne Gray	
Auxiliary	4	20 AW	G (19x32) Stranded TC		PE, 0.060"	PE, 0.060"		Two White, Two Black	
Strength Member	1	16 AW0	G Stranded Steel		PVC, 0.084"		One White		
Electrical &	Optical Specificat	ions							
Fiber Attenuation	Signal Conductor DCR	Power Conductor DCR	Shield DCR	Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Signal)	Oper Temp	ating erature	SMPTE Standard	
<0.50 dB/km @ 1310/1550nm	23.8 Ω/Mft	9.7 Ω/M ft	5.4 Ω/Mft	>10M Ω/km	3000 Volts RMS @ 20°C, 60Hz for 1 min.		to +75°C o 95% humidity)	311M Compliant (Meets or Exceed	

HD Camera Electrical Cable



Unique Gepco® Brand electrical cables are 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 onsite HD camera permanent installation cabling and termination. The HD series is UL-rated and available in plenum and riser versions.

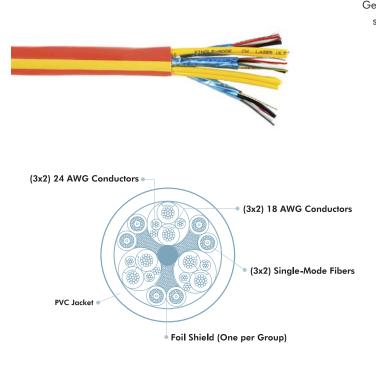
FEATURES & BENEFITS

- Specialized Electrical-Only Design
- Four Large Gauge Copper Conductors
- Heat-Resistant
- Tinned-Copper Braid Shield
- UL Riser or Plenum Rated

Part #	# of Conductors	Nominal OD	Auxiliary Conductors	Auxiliary Insulation (Type, OD)	Signal Conductors	Signal Insulation	Shield	Jacket (Type, Col	UI ors) Ty	pe	Approx. Weight
HDP221	2 Auxiliary 2 Signal	.315″	16 AWG (65x34) Stranded TC	PE, 0.020"	22 AWG (19x34) Stranded TC	PE, 0.015"	90% TC Braid	PVC, Black	CA	٨R	76 Ibs/Mft
	Single-Channel HD	Electrical Cable	9								
HDP221P	2 Auxiliary 2 Signal	.205″	16 AWG (65x34) Stranded TC	FEP, 0.010"	22 AWG (19x34) Stranded TC	FEP, 0.010"	90% TC Braid	Plenum PV White	с, сл	٨P	58 Ibs/Mft
	Single-Channel HD	Electrical Cable	e: Plenum								
Electrica	l & Optical Specifi	ications									
Signal Conductor DCR	Power Conductor DCR	r Shie DCF		Insulation Resistance (Power or Signal)	Dielectric Strength (Power or Si	gnal)	Operating Temperature		MPTE Standard		
15.3 Ω/Mft	4.5 Ω/Mft	2.6	Ω/Mft	>10M Ω/km	3000 Volts RA @ 20°C, 60H		-40°C to +75° (@ 0 to 95% h		Compliant wit ations for SN		

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

3-Channel Fiber Cable



Gepco[®] Brand HDC3R 3-channel 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.

- 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 Solution
- UL Riser Rated

Part #	Nominal OD	Master	Jacket (Type, Colors)		UL Type		Approx. Weight
HDC3R	0.600″	PVC, O	range with Yellow Stripe		CMR		170 lbs/Mft
	3-Channel Hybrid F	iber Camera Cable					
Mechania	al Specifications (Cor	mponents)					
Component	Number	Туре		Insulation (Ty	pe, OD)	Color Code	
Optical	6 (3 Groups of 2)	Single-Mode Fiber Optic (8.3µm Mode Field, 125µm Clado	ling)	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, 0.040"		One Red, One Gray (Solid or with Yellow or Orange Stripe)	
Auxiliary	6 (3 Groups of 2)	18 AWG (19x30) Stranded TC		PVC, 0.082"		One White, One with Yellow or C	e Black (Solid or Drange Stripe)
Shield	3 (1 per Group)	100% Foil with 24 AWG (7x32) Str	randed TC Drain				
Electrical	& Optical Specificati	ons					
Fiber Attenuation	Signal Conducto DCR	Power r Conductor DCR	Insulation Resistance (Power or Signa		Dielectric Strength (Power or Signal)		perating mperature
<0.50 dB/km @ 1310/1550	nm 23.8 Ω/Mf	t 6.0 Ω/Mft	>10M Ω/km		3000 Volts RMS @ 20°C, 60Hz for 1 min.		0°C to +75°C 0 to 95% humidity)

CABLE

Fiber Specifications

FPCO

UL

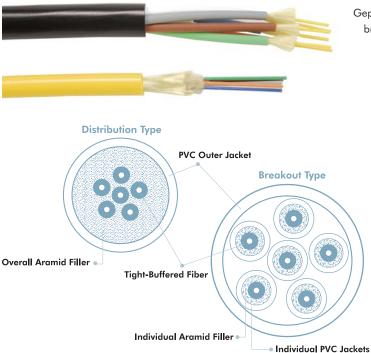
Type

OFNR

OFNP

OFNR

Single-Mode Optical Fiber: Permanent Installation



Gepco® Brand low-loss, single-mode, fiber optic cable is available in breakout and distribution types, in either UL plenum or riser rated versions. 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

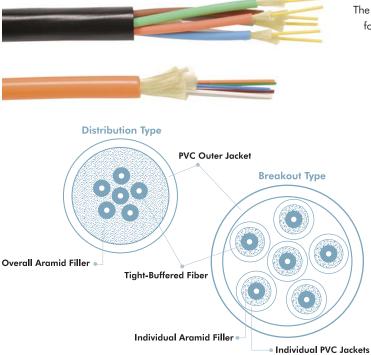
- Low-Loss, Single-Mode Optical Glass Fibers •
- **Distribution & Breakout Type Constructions** •
- Aramid Filler •
- 1 Through 144 Elements
- **PVC or PVDF Jacket** •
- UL Riser or Plenum Rated •

Туре		Mode Fiel	d Diameter		Cladding Dia	neter	N	Naximum Atten	uation
Single Mod	le	8.3µm			125µm		≤	0.70 dB/Km @	1310/1550nm
Mecha	nical Specifications								
					Maximum Tension		Minimum Bend Radius		
Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Installation (Pulling)	Operating	Installation (Pulling)	Operating	Weight
		2	0.180″	PVC	310 lbs	100 lbs	2.7"	1.8″	14 lbs/Mft
FSD**R	Acrylate Tight Buffer	4	0.200"	PVC	310 lbs	100 lbs	3.0"	2.0"	17 lbs/Mft
F3D**K	Coating (0.9mm OD)	6	0.220"	PVC	310 lbs	100 lbs	3.3″	2.2"	19 lbs/Mft
* 51 1	with Overall	8	0.240"	PVC	360 lbs	120 lbs	3.6″	2.4"	22 lbs/Mft
*=Number of Elements	Aramid Filler	12	0.260"	PVC	600 lbs	135 lbs	3.9″	2.6"	25 lbs/Mft
of Elements		24	0.330"	PVC	670 lbs	220 lbs	5.0"	3.3"	44 lbs/Mft
		36	0.350"	PVC	670 lbs	220 lbs	5.3"	3.5″	51 lbs/Mft
	Single-Mode Distribution	: Riser Rated							
		2	0.160"	Plenum PVC	270 lbs	90 lbs	2.4"	1.6″	9 lbs/Mft
FCD++D	Acrylate Tight Buffer	4	0.180″	Plenum PVC	270 lbs	90 lbs	2.7"	1.8″	11 lbs/Mft
FSD**P	Coating (0.9mm OD)	6	0.200"	Plenum PVC	310 lbs	100 lbs	3.0"	2.0"	15 lbs/Mft
* 51 1	with Overall	8	0.220"	Plenum PVC	360 lbs	120 lbs	3.3″	2.2"	19 lbs/Mft
*=Number of Elements	Aramid Filler	12	0.220"	Plenum PVC	400 lbs	135 lbs	3.3″	2.2"	19 lbs/Mft
of Elements		24	0.280"	PVDF	670 lbs	220 lbs	4.2"	4.2"	36 lbs/Mft
		36	0.310"	PVDF	670 lbs	220 lbs	4.7"	4.7"	52 lbs/Mft
	Single-Mode Distribution	: Plenum Rated							
		1 (Simplex)	0.110″	PVC	110 lbs	70 lbs	2″	1.2″	5 lbs/Mft
		2 (Duplex)	0.110"x0.230"	PVC	220 lbs	110 lbs	2″	1.2"	11 lbs/Mft
FSB**R	Acrylate Tight Buffer	2	0.280"	PVC	270 lbs	110 lbs	4.2"	2.8"	34 lbs/Mft
F2B**R	Coating (0.9mm OD)	4	0.310"	PVC	450 lbs	180 lbs	4.7"	3.1″	44 lbs/Mft
*=Number	with Aramid Filler &	6	0.370"	PVC	670 lbs	270 lbs	5.6″	3.7″	55 lbs/Mft
*=Number of Elements	PVC Tube Jacket for	8	0.450"	PVC	900 lbs	380 lbs	6.8″	4.5″	75 lbs/Mft
OI LIEMENTS	Each Fiber	12	0.490"	PVC	1350 lbs	560 lbs	7.4″	4.9"	101 lbs/Mft
		24	0.690"	PVC	2250 lbs	850 lbs	10.4"	6.9"	183 lbs/Mft

		24	0.690"	PVC	2250 lbs	850 lbs	10.4"	6.9"	183 lbs/Mft	
		36	0.790"	PVC	3150 lbs	1350 lbs	11.9″	7.9″	214 lbs/Mft	
	Single-Mode Breakout: Rise	r Rated								
		1 (Simplex)	0.110″	Plenum PVC	110 lbs	70 lbs	2″	1.2"	6 lbs/Mft	
		2 (Duplex)	0.110"x0.230"	Plenum PVC	220 lbs	110 lbs	2″	1.2"	12 lbs/Mft	
FSB**P	Acrylate Tight Buffer	2	0.240"	PVDF	360 lbs	90 lbs	3.6″	3.6"	23 lbs/Mft	
L2D. L	Coating (0.9mm OD)	4	0.240"	PVDF	360 lbs	90 lbs	3.6″	3.6"	23 lbs/Mft	
*=Number	*=Number with Aramid Filler &	6	0.280"	PVDF	540 lbs	130 lbs	4.2"	4.2"	32 lbs/Mft	OFNP
of Elements	Plenum PVC or PVDF Tube	8	0.330"	PVDF	720 lbs	180 lbs	5.0"	5.0"	48 lbs/Mft	
Of Elements	Jacket for Each Fiber	12	0.390"	PVDF	1080 lbs	270 lbs	5.9"	5.9"	63 lbs/Mft	
		24	0.510"	PVDF	1620 lbs	400 lbs	7.7″	7.7″	99 lbs/Mft	
		36	0.630"	PVDF	2160 lbs	540 lbs	9.5″	9.5″	154 lbs/Mft	
	Single-Mode Breakout: Plen	um Rated								

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

Multi-Mode Optical Fiber: Permanent Installation



The Gepco® Brand indoor/outdoor distribution multi-mode fiber series for audio, video, or data networking applications is available in both breakout and distribution type constructions. Distribution types feature individually coated fibers with an overall aramid filler and jacket. Breakout types have individual aramid 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.

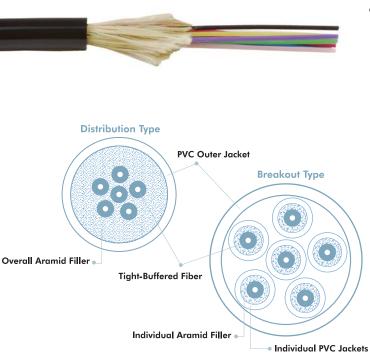
FEATURES & BENEFITS

- Low-Loss, Multi-Mode Optical Glass Fibers
- Distribution & Breakout Type Constructions
- Aramid Filler
- 1 Through 144 Elements
- PVC or PVDF Jacket
- UL Riser or Plenum Rated

Туре		Mode Field	Diameter		Cladding Diame	eter	Maximum Attenuation 3.50 dB/Km @ 850nm, 1.00 dB/Km @ 1550nm			
Multi-Mode		62.5µm or 5	i0µm		125µm					
Mechani	cal Specifications									
					Maximun	n Tension	Minimum B	end Radius		
Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Installation (Pulling)	Operating	Installation (Pulling)	Operating	Weight	UL Type
FMD**R		2	0.180″	PVC	310 lbs	100 lbs	2.7"	1.8″	14 lbs/Mft	
62.5µm fiber)	Acrylate Tight Buffer	4	0.200"	PVC	310 lbs	100 lbs	3.0″	2.0"	17 lbs/Mft	
or	Coating (0.9mm OD)	6	0.220"	PVC	310 lbs	100 lbs	3.3″	2.2"	19 lbs/Mft	
MD**R/50	with Overall	8	0.240"	PVC	360 lbs	120 lbs	3.6″	2.4"	22 lbs/Mft	OFN
50µm fiber)	Aramid Filler	12	0.260"	PVC	600 lbs	135 lbs	3.9″	2.6"	25 lbs/Mft	
.,,		24	0.330"	PVC	670 lbs	220 lbs	5.0"	3.3″	44 lbs/Mft	
=Number		36	0.350"	PVC	670 lbs	220 lbs	5.3″	3.5″	51 lbs/Mft	
f Elements	Multi-Mode Distribution Fibe	r: Riser Rated								
MD**P		2	0.160″	Plenum PVC	270 lbs	90 lbs	2.4"	1.6″	9 lbs/Mft	
	Acrylate Tight Buffer	4	0.180"	Plenum PVC	270 lbs	90 lbs	2.7″	1.8″	11 lbs/Mft	
62.5μm fiber) or	Coating (0.9mm OD)	6	0.200″	Plenum PVC	310 lbs	100 lbs	3.0″	2.0"	15 lbs/Mft	
MD**P/50	with Overall	8	0.220"	Plenum PVC	360 lbs	120 lbs	3.3"	2.2"	19 lbs/Mft	OFN
50µm fiber)	Aramid Filler	12	0.220"	Plenum PVC	400 lbs	135 lbs	3.3″	2.2"	19 lbs/Mft	
ooµnn noer)		24	0.280″	PVDF	670 lbs	220 lbs	4.2"	4.2"	36 lbs/Mft	
=Number		36	0.310"	PVDF	670 lbs	220 lbs	4.7"	4.7"	52 lbs/Mft	
of Elements	Multi-Mode Distribution Fibe	r: Plenum Rated								
		1 (Simplex)	0.110″	PVC	110 lbs	70 lbs	2″	1.2″	5 lbs/Mft	
		2 (Duplex)	0.110"x0.230"	PVC	220 lbs	110 lbs	2"	1.2"	11 lbs/Mft	
MB**R	Acrylate Tight Buffer	2	0.280"	PVC	270 lbs	110 lbs	4.2"	2.8"	34 lbs/Mft	
62.5μm fiber)	Coating (0.9mm OD)	4	0.310"	PVC	450 lbs	180 lbs	4.7"	3.1"	44 lbs/Mft	
or MB**R/50	with Aramid Filler &	6	0.370"	PVC	670 lbs	270 lbs	5.6"	3.7"	55 lbs/Mft	OFN
,	PVC Tube Jacket for	8	0.450"	PVC	900 lbs	380 lbs	6.8"	4.5"	75 lbs/Mft	0111
50µm fiber)	Each Fiber	12	0.490"	PVC	1350 lbs	560 lbs	7.4″	4.9"	101 lbs/Mft	
=Number		24	0.690"	PVC	2250 lbs	850 lbs	10.4"	6.9"	183 lbs/Mft	
f Elements		36	0.790"	PVC	3150 lbs	1350 lbs	11.9"	7.9″	214 lbs/Mft	
Elements	Multi-Mode Breakout Fiber: I		0.770	140	5150 lbs	1350 lbs	11.7	1.7	214 105/1411	
	Woll-Wode Dreakour riber. I	1 (Simplex)	0.110″	Plenum PVC	110 lbs	70 lbs	2″	1.2″	6 lbs/Mft	
		2 (Duplex)	0.110"x0.230"	Plenum PVC	220 lbs	110 lbs	2"	1.2"	12 lbs/Mft	
MB**P	Acrylate Tight Buffer	2 (Duplex) 2	0.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
52.5μm fiber)	Coating (0.9mm OD)	4	0.240"	PVDF	360 lbs	90 lbs	3.6″	3.6"	23 lbs/Mft 23 lbs/Mft	
or	with Aramid Filler & Plenum	4	0.240"	PVDF		90 lbs 130 lbs	3.6" 4.2"	3.6" 4.2"	32 lbs/Mft 32 lbs/Mft	OFN
MB**P/50	PVC or PVDF Tube Jacket for	8			540 lbs					OFN
50µm fiber)	Each Fiber		0.330"	PVDF	720 lbs	180 lbs	5.0"	5.0"	48 lbs/Mft	
	Luci l'iber	12	0.390"	PVDF	1080 lbs	270 lbs	5.9"	5.9"	63 lbs/Mft	
=Number		24	0.510"	PVDF	1620 lbs	400 lbs	7.7"	7.7"	99 lbs/Mft	
of Elements		36	0.630"	PVDF	2160 lbs	540 lbs	9.5″	9.5″	154 lbs/Mft	

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

Single-Mode Optical Fiber: Tactical

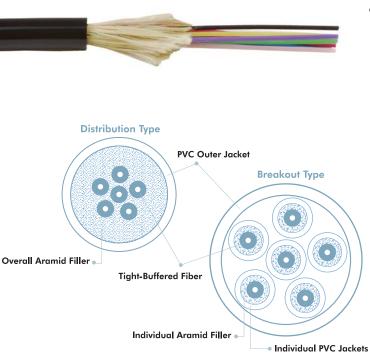


Gepco[®] Brand exceptionally rugged, light-weight, single-mode fiber optic cables are available for portable applications in harsh environments. Available in both distribution and breakout style constructions, all tactical cables feature an abrasion-, chemicaland cut-resistant outer polyurethane jacket. The 125µm single-mode fiber elements are coated with a 900µm, 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.

- Exceptionally Rugged
- Crush-Resistant
- Low-Loss Single-Mode Fiber
- Distribution & Breakout Type Constructions
- Aramid Filler
- Polyurethane Outer Jacket
- Meets or Exceeds TIA/EIA (Military Req.)

Type Mode Field Diameter					Cladding	Diameter			Maxim	um Attenuati	on				
Single-Mode	šingle-Mode 8.3μm				125µm				≤ 0.50	dB/Km @ 1310)/1550nm				
Mechai	nical Specifica	itions													
						Number		Tensil	e Load	Minimum B	end Radius	Radius			
Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.	of Elements		Short Term	Long Term	Installation (Pulling)	Operating	Weight	
								2	0.200″	1,800 lbs	600 lbs	3.2"	1.6″	15 lbs/Mft	
	Acrylate Tight							4	0.220"	1,800 lbs	600 lbs	3.6″	1.8″	19 lbs/Mft	
FSD**T	Buffer Coating				7000	6	0.240"	1,800 lbs	600 lbs	3.8″	1.9″	19 lbs/Mft			
*=Number	(0.9mm OD)	PU,	440	200	2000	to		-70°C	8	0.260"	1,800 lbs	600 lbs	4.2"	2.1″	26 lbs/Mft
of Elements	with ()verall	Black	N/cm	Impacts	Cycles		+85°C	10	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft	
Of Elefficinis								12	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	34 lbs/Mft	
								18	0.300"	2,400 lbs	800 lbs	4.8"	2.4"	40 lbs/Mft	
								24	0.330"	3,000 lbs	1000 lbs	5.4"	2.7"	50 lbs/Mft	
	Tactical Single-	Mode Fibe	r: Distribution												
	Acrylate Tight							2	0.260″	2,200 lbs	550 lbs	4.2"	2.1″	21 lbs/Mft	
	Buffer Coating						-70°C to +85°C	4	0.290"	2,200 lbs	550 lbs	4.6"	2.3″	28 lbs/Mft	
FSB**T	(0.9mm OD)					5500		6	0.340"	2,400 lbs	600 lbs	5.4"	2.7″	36 lbs/Mft	
*=Number	with Aramid	PU,	440	200	2000	-55°C		8	0.390"	3,200 lbs	800 lbs	6.2"	3.1″	50 lbs/Mft	
of Elements	Filler &	Black	N/cm	Impacts	Cycles	to +85°C		10	0.450"	4,000 lbs	1000 lbs	7.2″	3.6″	59 lbs/Mft	
or clothonis	Elastomeric						. 00 0	12	0.480"	4,800 lbs	1200 lbs	7.6″	3.8″	65 lbs/Mft	
	Tube Jacket for Each Fiber							18	0.570"	7,200 lbs	1,800 lbs	9.2"	4.6"	73 lbs/Mft	
	for each Fiber							24	0.570"	9,600 lbs	2,400 lbs	9.2″	4.6"	105 lbs/Mft	
	Tactical Single-	Mode Fibe	r: Breakout												

Multi-Mode Optical Fiber: Tactical



Gepco[®] Brand exceptionally rugged, light-weight, single-mode fiber optic cables are available for portable applications in harsh environments. Available in both distribution and breakout style constructions, all tactical cables feature an abrasion-, chemicaland cut-resistant outer polyurethane jacket. The 125µm multi-mode fiber elements are coated with a 900µm, 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.

- Exceptionally Rugged
- Crush-Resistant
- Low-Loss Multi-Mode Fiber
- Distribution & Breakout Type Constructions
- Aramid Filler
- Polyurethane Outer Jacket
- Meets or Exceeds TIA/EIA (Military Req.)

Туре	Type Mode Field Diameter						Cladding	Diameter			Maxim	num Attenuati	ion	
Multi-Mode	Aulti-Mode 62.5µm or 50µm					125μm ≤ 3.50 dB/Km @ 850nm, ≤ 1.00 dB/Km @ 1550nm								
Mechani	ical Specifica	tions												
								Number		Tensil	e Load	Minimum B	end Radius	
Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.			Short Term	Long Term	Installation (Pulling)	Operating	Weight
								2	0.200″	1,800 lbs	600 lbs	3.2"	1.6″	15 lbs/Mft
FMD**T	Acrylate Tight Buffer Coating (0.9mm OD) PU, with Overall Black Aramid Filler	t		200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	4	0.220"	1,800 lbs	600 lbs	3.6″	1.8″	19 lbs/Mft
62.5µm fiber)								6	0.240"	1,800 lbs	600 lbs	3.8"	1.9″	19 lbs/Mft
or		PU,	440					8	0.260"	1,800 lbs	600 lbs	4.2"	2.1"	26 lbs/Mft
FMD**T/50		Black	x N/cm					10	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft
(50µm fiber)								12	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	34 lbs/Mft
'=Number								18	0.300"	2,400 lbs	800 lbs	4.8"	2.4"	40 lbs/Mft
of Elements								24	0.330"	3,000 lbs	1000 lbs	5.4"	2.7"	50 lbs/Mft
	Tactical Multi-N	lode Fiber	: Distribution											
	Acrylate Tight							2	0.260"	2,200 lbs	550 lbs	4.2"	2.1″	21 lbs/Mft
FMB**T	Buffer Coating						-70°C to +85°C	4	0.290"	2,200 lbs	550 lbs	4.6"	2.3″	28 lbs/Mft
(62.5µm fiber)	(0.9mm OD)							6	0.340"	2,400 lbs	600 lbs	5.4"	2.7″	36 lbs/Mft
or	with Aramid	PU,	440	200	2000	-55°C		8	0.390"	3,200 lbs	800 lbs	6.2"	3.1″	50 lbs/Mft
MB**T/50	Filler &	Black	ack N/cm	Impacts	Cycles	to +85°C		10	0.450"	4,000 lbs	1000 lbs	7.2″	3.6″	59 lbs/Mft
50µm fiber)	Elastomeric					100 0	100 0	12	0.480"	4,800 lbs	1200 lbs	7.6″	3.8″	65 lbs/Mft
*=Number	Tube Jacket							18	0.570"	7,200 lbs	1,800 lbs	9.2″	4.6″	73 lbs/Mft
*=Number of Elements	for Each Fiber							24	0.570"	9,600 lbs	2,400 lbs	9.2"	4.6"	105 lbs/Mft

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eadquarters and Manufacturing 1770 Birchwood Avenue Des Plaines, IL 60018 800.966.0069 P. 847.795.9555 F. 847.795.8770

Branch Office and Distribution Center 1000 N. Lake Street Burbank, CA 91502 P. 818.569.5222 F. 818.569.5226

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Form No. GEP-0018-0310