GEPCO®
INTERNATIONAL

CABLE ASSEMBLIES DISTRIBUTION SYSTEMS CONNECTORS TOOLS ACCESSORIES CABLE




FIBER SYSTEM SOLUTIONS

PRODUCT GUIDE

General Cable

TABLE OF CONTENTS

GEPCO® INTERNATIONAL

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

As 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:

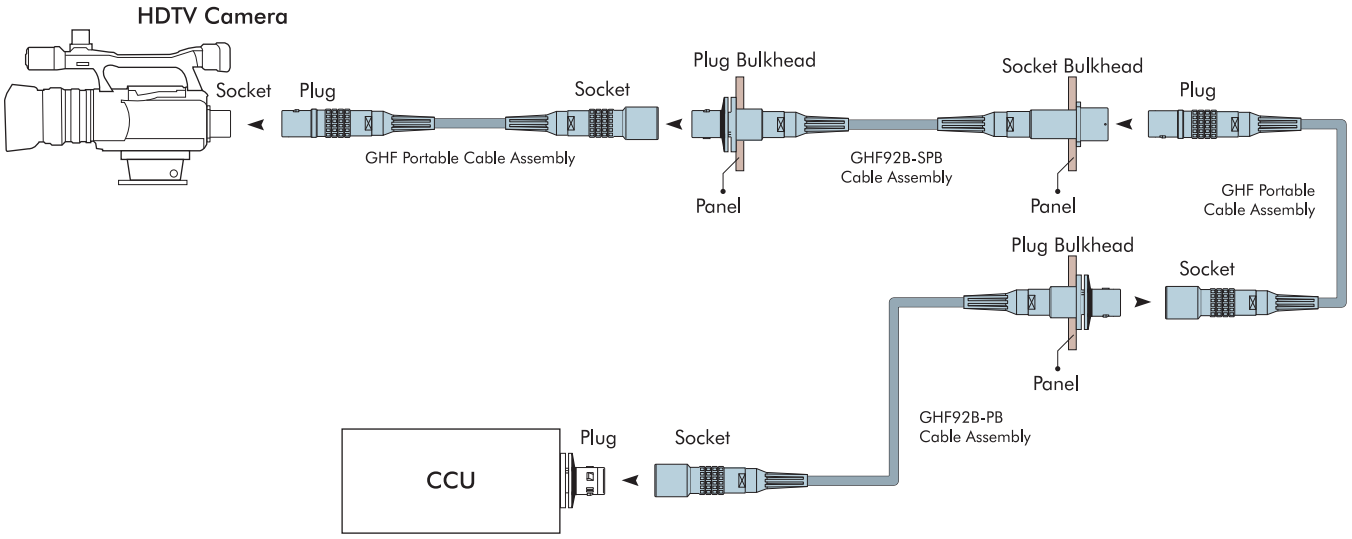
- SMPTE 304M Connectors
- Panel Mount Fiber Connectors
- Replacement Parts
- Cleaning Tools
- Microscopes
- Test Equipment
- Fusion Splicers

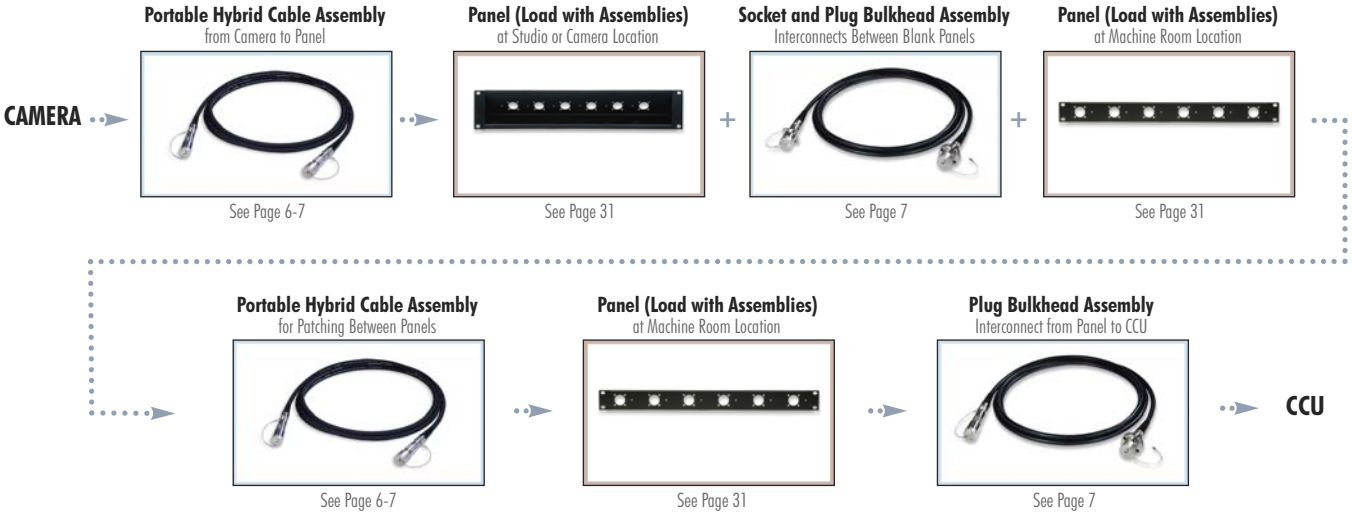
General Cable

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).

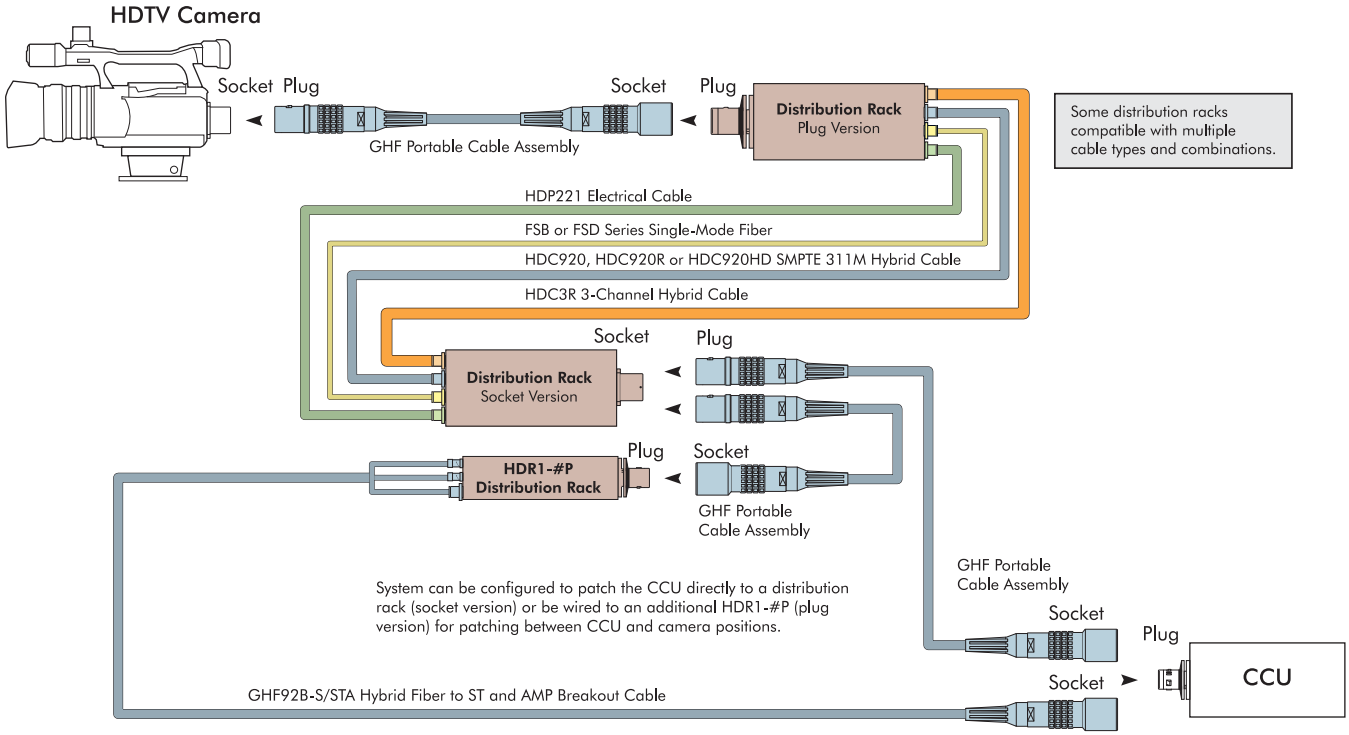


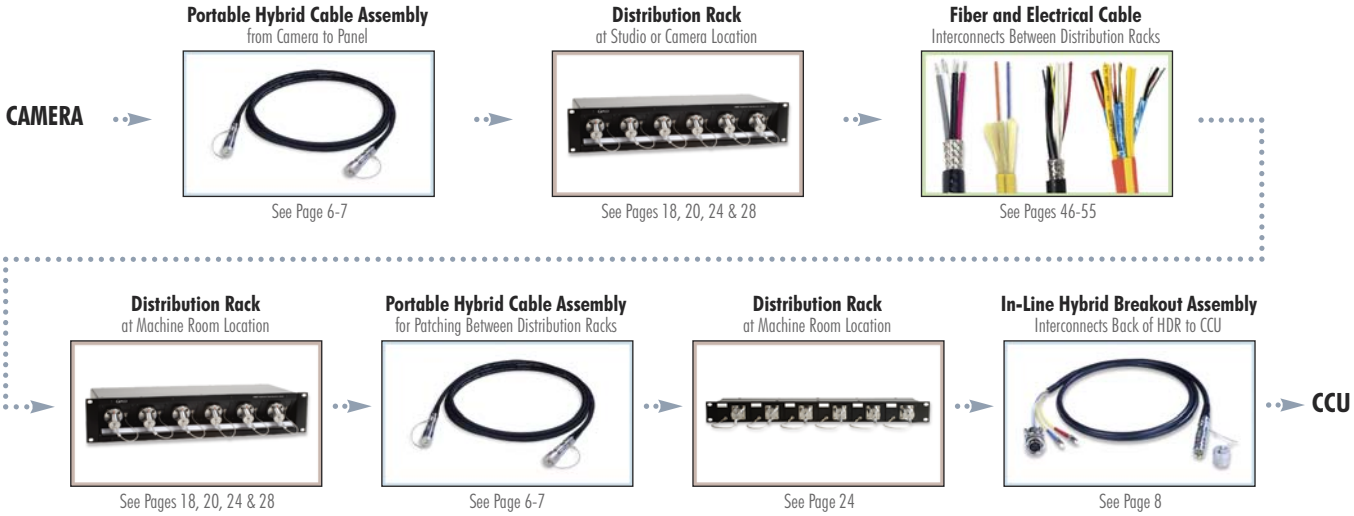


SMPTE 304M/311M Hybrid Fiber Distribution Rack Configuration

- 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.

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

Portable: Heavy-Duty 16mm Type

Cable Type
HDC160

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

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

Options
LEMO® Connectors

PART NUMBER: GHF16A-0-(length)

Portable: Heavy-Duty 12mm Type

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

Options
LEMO® Connectors

PART NUMBER: GHF12B-0-(length)

Portable: Heavy-Duty 9.2mm Type

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

Cable Type
HDC920HD

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

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

Options
LEMO® Connectors
Overbody Rubber Boot

PART NUMBER: GHF92HD-0-(length)

-OB Add for Overbody Boot Option

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

SMPTE 304M/311M Hybrid Fiber Cable Assemblies

Portable: Extra-Flexible 9.2mm Type

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

Cable Type
HDC920

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

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

Options
LEMO® Connectors
Overbody Rubber Boot

PART NUMBER: GHF92A-0-(length)

-OB Add for Overbody Boot Option

Permanent Installation: Standard In-Line

Cable Type
HDC920R

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

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

Options
LEMO® Connectors

PART NUMBER: GHF92B-0-(length)

Permanent Installation: Plug Bulkhead

Cable Type
HDC920R

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

Permanent Installation: Socket Bulkhead

Cable Type
HDC920R

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

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

Options
LEMO® Connectors

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

Permanent Installation: Plug & Socket Bulkhead

Cable Type
HDC920R

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

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

Options
LEMO® Connectors

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

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

GHF92B	-	Length	-	(First End) Connector Format	/	(Second End) Fiber Breakout	(Second End) Electrical Breakout

Length
In Feet

(First End) Connector Format
P = Plug
PB = Bulkhead Plug
S = Socket
SB = Bulkhead Socket

(Second End) Fiber Breakout
ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

(Second End) Electrical Breakout

Standard Gender
A = 5-Pin AMP® Metal CPC (for Mating with HDR1 & HMP8-Bxx Racks)
B = 8-Pin AMP® CPC
C = 6-Pin AMP® MATE-N-LOK® Cap
D = Blunt

Reverse Gender
E = 5-Pin Reverse Gender CPC – In-Line or Panel Mount
F = 8-Pin Reverse Gender CPC – In-Line
G = 8-Pin Reverse Gender CPC – Panel Mount
H = 6-Pin Reverse Gender MATE-N-LOK®

Hybrid Fiber Connector Options

P PB S SB

Fiber Breakout Connector Options

ST SC LC

Electrical Breakout Connector Options

A B C — Standard Gender

E F G H — Reverse Gender

AMP® and MATE-N-LOK® 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

GHFBK	-	Length	-	(First End) Connector Format	/	(Second End) Fiber Breakout	(Second End) Electrical Breakout

Length
In Feet

(First End) Connector Format
PB = Bulkhead Plug
SB = Bulkhead Socket

(Second End) Fiber Breakout
ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

(Second End) Electrical Breakout

Standard Gender
A = 5-Pin AMP® Metal CPC (for Mating with HDR1 & HMP8-Bxx Racks)
B = 8-Pin AMP® CPC
C = 6-Pin AMP® MATE-N-LOK® Cap
D = Blunt

Reverse Gender
E = 5-Pin Reverse Gender CPC – In-line or Panel Mount
F = 8-Pin Reverse Gender CPC – In-line
G = 8-Pin Reverse Gender CPC – Panel Mount
H = 6-Pin Reverse Gender MATE-N-LOK®

Hybrid Fiber Connector Options

PB SB

Fiber Breakout Connector Options

ST SC LC

Electrical Breakout Connector Options

A B C — Standard Gender

E F G H — Reverse Gender

AMP® and MATE-N-LOK® 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

Channels/ Connector		Fiber		Length
GNO			- 0 -	

2N = 2-Channel Nickel
2R = 2-Channel Ruthenium
4R = 4-Channel Ruthenium

S = Single-Mode 9µm Fiber
M = Multi-Mode 50µm Fiber

In Feet

Also Available with Cable Reeler
Add reeler part number to suffix.

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

GT310 GT380 GT520

Overall Specifications

# of Channels: 2 or 4

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® 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-4S75W	Coupler opticalCON®, Black	2 x LC-Duplex Multi-Mode PC	—	Neutrik®	Mates with In-Line 2-Channel Neutrik® opticalCON® or Standard Duplex LC
NA02S-4S75W	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
NA04SW	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

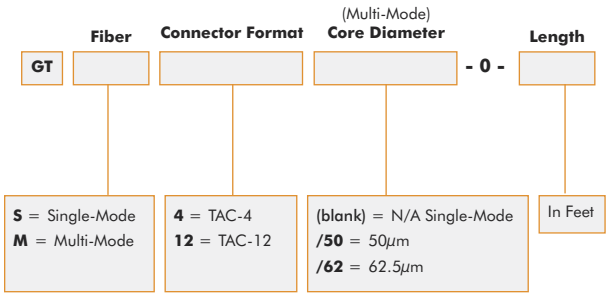
- Hand Microscope (400x Magnification) with Microscope Adapters for opticalCON® and 2.5mm Ferrules
- opticalCON Cleaning Box (Contains lint-free wipes; optimized for opticalCON fiber cleaning.)
- DRY Cleaners for 1.25mm and 2.5mm
- Fiber Optic Cleaning Fluid (Non-flammable)

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 extra-rugged, hermaphroditic connector shell. The hermaphroditic design enables cables to be mated to either TAC-4/12 panel connectors or other TAC-4/12 cables in any direction providing flexibility for cable link expansion and eliminating cables from being directionally misdeployed. Machine polished, 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



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: 8.3µm Single-Mode Fiber, 50µm Multi-Mode Fiber, or 62.5µm 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.

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 single-mode or multi-mode optical fiber, tactical fiber cable assemblies come in two construction types: distribution and breakout. Distribution cables feature multiple tight-buffered fibers and an overall 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

	Fiber		Number of Fibers	Type		Length		(First End) Connector Format		(Second End) Connector Format		Overboot
G		T			-		-		/		-	

S = Single-Mode 9µm Fiber
M50 = Multi-Mode 50µm Fiber
M62 = Multi-Mode 62.5µm Fiber

02
04
06
08
10
12
18
24

D = Distribution
(Tight Buffer Fiber with Overall Aramid Filler)

B = Breakout
(Aramid Filler and PVC Jacket for Each Tight Buffer Fiber)

In Feet

ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

(blank) = No Overboot

B = Overboot for Additional Connector Protection

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

	Fiber	UL Rating	Number of Fibers	Type		Length		(First End) Connector Format	/	(Second End) Connector Format
G					-		-		/	

Fiber
- **S** = Single-Mode 9µm Fiber
- **M50** = Multi-Mode 50µm Fiber
- **M62** = Multi-Mode 62.5µm Fiber

UL Rating
- **R** = Riser Rated
- **P** = Plenum Rated

Number of Fibers
01, **02**, **04**, **06**, **08**, **12**, **18**, **24**, **30**, **36**, **48**, **60**, **72** (Riser Only)

Type
- **D** = Distribution (Tight Buffer Fiber with Overall Aramid Filler)
- **B** = Breakout (Aramid Filler and PVC Jacket for Each Tight Buffer Fiber)

Length
In Feet

(First End) Connector Format
- **ST** = ST UPC
- **SC** = SC UPC
- **LC** = LC UPC
- **DSC** = Duplex SC UPC
- **DLC** = Duplex LC UPC

(Second End) Connector Format
- **ST** = ST UPC
- **SC** = SC UPC
- **LC** = LC UPC
- **DSC** = Duplex SC UPC
- **DLC** = Duplex LC UPC

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

	Fiber	UL Rating		Length		(First End) Connector Format	/	(Second End) Connector Format
G			01S	-	-			

S = Single-Mode 9µm Fiber
M50 = Multi-Mode 50µm Fiber
M62 = Multi-Mode 62.5µm Fiber

R = Riser Rated
P = Plenum Rated

In Feet

ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

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

	Fiber	UL Rating		Length		(First End) Connector Format		(Second End) Connector Format
G			02Z	-	-		/	

Fiber
S = Single-Mode 9µm Fiber
M50 = Multi-Mode 50µm Fiber
M62 = Multi-Mode 62.5µm Fiber

UL Rating
R = Riser Rated
P = Plenum Rated

Length
In Feet

(First End) Connector Format
ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

(Second End) Connector Format
ST = ST UPC
SC = SC UPC
LC = LC UPC
DSC = Duplex SC UPC
DLC = Duplex LC UPC

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

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

Ordering & Product Specifications

	Front Panel Type		# of Channels		Connector Type
HMD		-			

2A = Angled 2RU
2 = Flat 2RU

1
2
3
4
5
6

P = SMPTE Plug
S = SMPTE Socket
NS = Neutrik® opticalCON®: Single-Mode
NM = Neutrik® opticalCON®: Multi-Mode

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

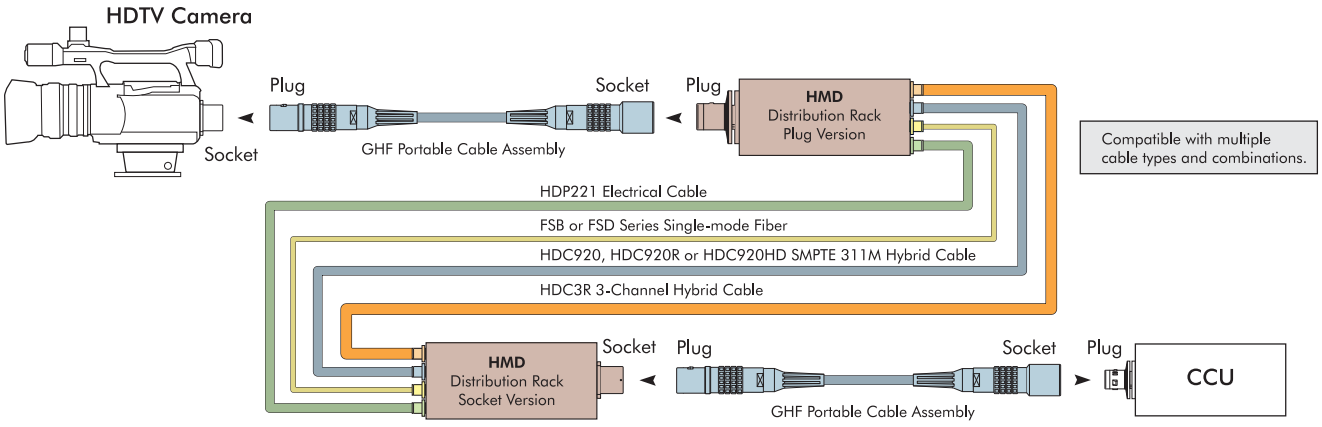
Electrical Breakout:
6-Position AMP® MATE-N-LOK® Connector

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
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



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.

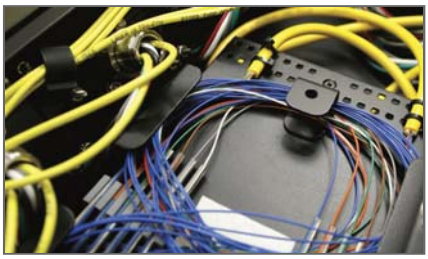
For flexibility in cable options, the HMS features configurable rear cable ports (six plus two) that accommodate a wide range of cable types and combinations. The HMS can be terminated to a variety of combinations of HDC920 9.2mm hybrid fiber, discrete electrical and fiber cables, or up to two HDC3R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

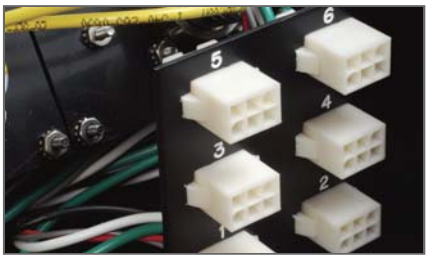
FEATURES & BENEFITS

- 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

	Front Panel Type		# of Channels		Connector Type
HMS		-			

Front Panel Type
- **2A** = Angled 2RU
- **2** = Flat 2RU

# of Channels
- **1**
- **2**
- **3**
- **4**
- **5**
- **6**

Connector Type
- **P** = SMPTE Plug
- **S** = SMPTE Socket
- **NS** = Neutrik® opticalCON®: Single-Mode
- **NM** = Neutrik® opticalCON®: Multi-Mode

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

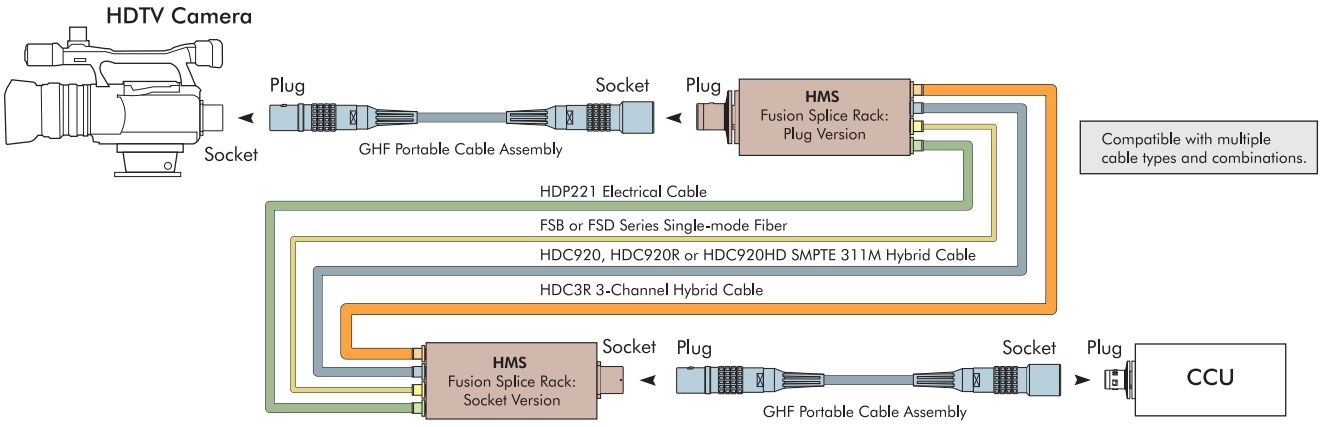
Electrical Breakout:
6-Position AMP® MATE-N-LOK® Connector

Rear Panel Cable Management:
(6) Ports for Electrical/Hybrid Fiber Cable
(2) Ports for Fiber/3-Channel Hybrid Fiber Cable

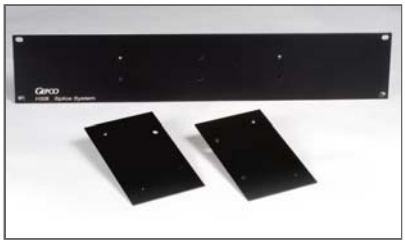
Included Accessories:
Mating AMP® MATE-N-LOK® Connector(s)
Fusion Splice Heat Shrink
Gland Seals for HDP221, HDC920 or HDC920R
Gland Seals for 2- to 4-Channel Distribution Fiber
Gland Seals for 6- to 12-Channel Distribution Fiber

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



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

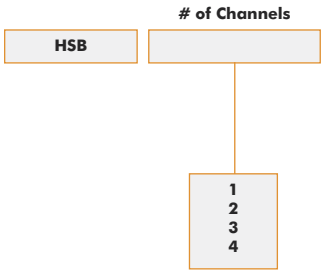
Rugged, twist-and-lock, 5-pin electrical and ST fiber breakout

Configurable ports for multiple cable-type compatibility

Custom fusion splice tray with cable management

AMP® is a registered trademark of Whitaker Corporation.

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

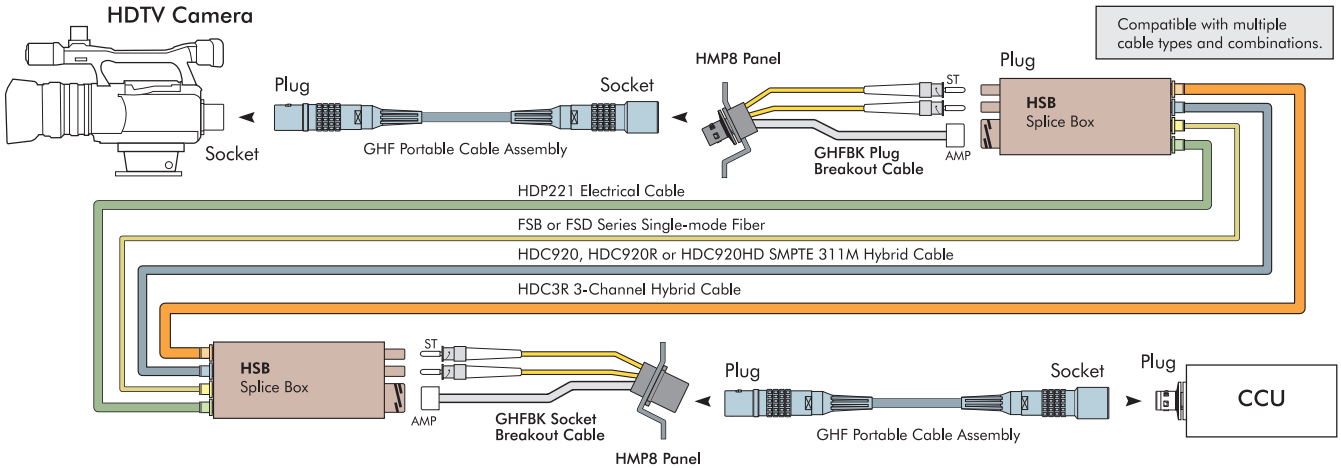
Electrical Breakout:
6-Position AMP® MATE-N-LOK® Connector (Internal)
5-Position AMP® CPC (External)

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



AMP® and MATE-N-LOK® are registered trademarks of Whitaker Corporation.

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

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

Ordering & Product Specifications

	# of Channels		Connector Type
HDR1	-		

# of Channels
1
2
3
4
5
6

Connector Type
P = SMPTE Plug
S = SMPTE Socket
NS = Neutrik® opticalCON®: Single-Mode
NM = Neutrik® opticalCON®: Multi-Mode

Mechanical Specifications

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

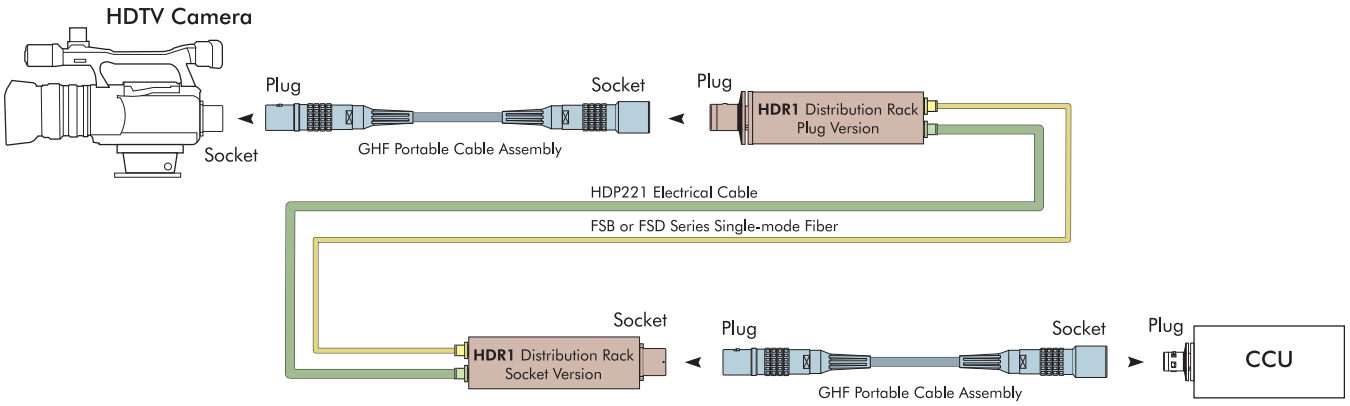
Optical Connector Specifications:
LEMO® SMPTE 304M: 1 per Channel (2 Fibers)
ST Breakout: 2 per Channel (2 Fibers)
-55dB Typical RL, 0.4dB Max IL

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



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

HDB	-	# of Channels	Connector Gender	-	Enclosure Type	Termination
		1 **2** **3** **3M** - (Ported for Single HDC3R 3-Way Cable)	**P** = SMPTE Plug **S** = SMPTE Socket		**W** = Weather-Proof Stainless Steel **I** = Indoor Painted Steel	**(blank)** = Internal SC Breakout **FS** = Internal Fusion Splice

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 Steel
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

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

	# of Channels	Hybrid Connector Gender	Electrical Connector Gender	Box Length
HBB90				
	1 = 1-Channel **3** = 3-Channel	**P** = SMPTE Plug **S** = SMPTE Socket	**XF** = Female XLRs **XM** = Male XLRs **A** = AMP® 5-Pin CPC	**/4.5** = 1-Channel Box 4.5" Long **(blank)** = 3-Channel Box 9" Long

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

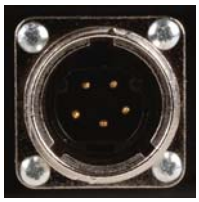
Dimensions:
4.5" L x 5.25" W x 4.5" D Standard 1ch Model: 1/8" Extruded Aluminum (Black Anodized)

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.)

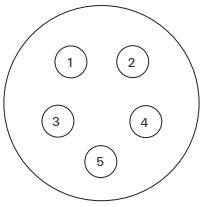
Side Panel Electrical Connector Options


AMP® 5-Pin


XLR Male

XLR Female

AMP® 5-Pin: Front View



ST Fiber Code
Fiber A = Top Blue Fiber in Hybrid Connector
Fiber B = Lower Yellow Fiber in Hybrid Connector

AMP® 5-Pin Electrical Pinout (Optional)
Pin 1 = Gray Signal Conductor (Low-Voltage)
Pin 2 = Red Signal Conductor (Low-Voltage)
Pin 3 = White Auxiliary Conductor (High-Voltage)
Pin 4 = Black Auxiliary Conductor (High-Voltage)
Pin 5 = Ground

XLR Pinout (Optional)
Pin 1 = Ground
Pin 2 = Red Signal Conductor (Low-Voltage)
Pin 3 = Gray Signal Conductor (Low-Voltage)

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

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.

		# of Channels	Connector Gender
HMP8	- B		
		1 2 3 5 6 7 8	**P** = SMPTE Plug **S** = SMPTE Socket

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 LEMO® SMPTE 304M 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

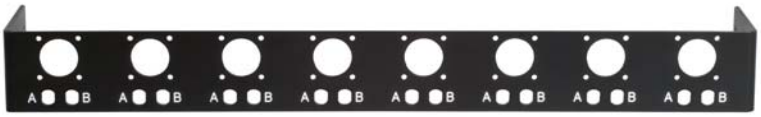
Rear View

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

HMP8 Modular Hybrid Fiber and Triax Panel

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.

HMP8-F
8-Position Modular Panel



HMP8-RP
Rear Panel for (8) AMP® 5-Pin and (16) ST Feedthrough Connectors

HMP8-LB
Lacing Bar

HMP8-S
SMPTE Universal Mount

HMP8-N
Neutrik® opticalCON® Mount

HMP8-AP
ADC® ProAx® Plug Mount

HMP8-AJ
ADC® ProAx® Jack Mount

HMP8-B
Blank Module

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

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

Bulkhead Hybrid (See page 7)

In-Line Breakout (See page 8)

Internal Breakout (See page 9)

Modular Isolation Panel System

Gepco® 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.

HMPF
7-Position Modular Panel

HMPR
Rear Panel for (7) AMP® 5-Pin and (14) ST Feedthrough Connectors

HMP8-LB
Lacing Bar

HMP-S
SMPTE Universal Mount

HMP-N
Neutrik® opticalCON® Mount

HMP-T
Kings® Triax Mount

HMP-B
Blank Module

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
1.1" H x 71.1" W x 5" D

Module Dimensions
2" H x 2" W

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

Bulkhead Hybrid (See page 7)

In-Line Breakout (See page 8)

Internal Breakout (See page 9)

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.

FEATURES & BENEFITS

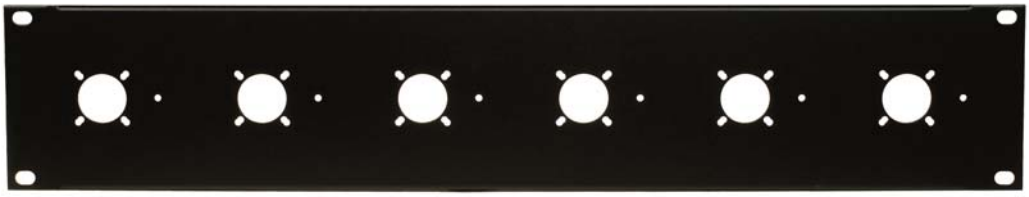
- 1RU, 2U, or Angled 2RU Versions
- Universal Punch Mount Accommodates Plug or Socket Connectors (Does not accommodate PEW Connectors)
- Works with LEMO® Brand Connectors
- Additional Hole for Dust Cap Lanyard Mounting
- Can Be Loaded with Pre-terminated Cable Assemblies

Angled 2RU Panel

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

Straight 2RU Panel

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



Straight 1RU Panel

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

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

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

Bulkhead Hybrid (See page 7)

In-Line Breakout (See page 8)

Internal Breakout (See page 9)

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

Specifications

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

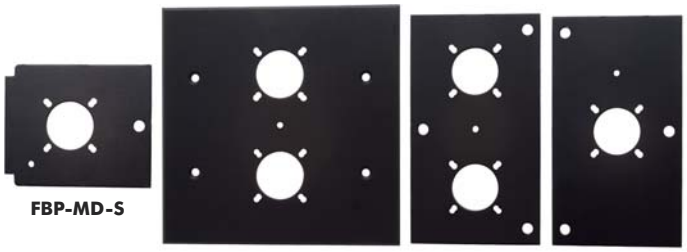
- Completely Customized Panels
- Aluminum, Steel or Stainless Steel
- Wide Range of Connector Punches Available
- Engraved, Filled or Silk Screened
- Loaded with Connectors or Blank
- Flat, Flanged, or Chassis Configurations

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

Materials
Aluminum
Steel
Stainless Steel

Finishes
Anodized
Painted
Powder Coated
Engraved
Silk Screened

Floor Box Plates



FBP-MD-S 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
FBP-GP1-S1	1 Gang for FSR™ or Ace™	1
FBP-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
FBP-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

Panel Mount Fiber Connectors

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

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

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

FEATURES & BENEFITS

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

	Connector Format	Part Number	Alignment Sleeve	Manufacturer	Mating
	ST Feedthrough	**216-101-E**	Zirconia (Ceramic)	Senko®	Couples Two Male, Cable Mount STs
	SC Feedthrough	**277-101-1N** **222-101-1N** (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Two Male, Cable Mount SCs
	SC Feedthrough with External Shutter	**227-101-1E** **222-101-1E** (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Two Male, Cable Mount SCs
	SC Feedthrough - Duplex	**227-201-1N** **222-201-1N** (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Four Male, Cable Mount SCs
	LC Feedthrough	**999-111**	Zirconia (Ceramic)	Senko®	Couples Two Male, Cable Mount LCs
	LC Feedthrough - Duplex (SC Footprint)	**999-411** **999-311** (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Four Male, Cable Mount LCs
	LC Feedthrough - Duplex (SC Footprint) with External Shutter	**999-411-1E** **999-311-1E** (with Flange & Mounting Holes)	Zirconia (Ceramic)	Senko®	Couples Four Male, Cable Mount LCs
	opticalCON®, 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
	opticalCON®, Ruthenium Plating	**NO4FDW-R**	Zirconia (Ceramic)	Neutrik®	Mates with In-Line 4-Channel Neutrik® opticalCON® or Standard LC
	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® MIL29B1999C Termini. Termini are sold separately.

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
	**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

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)
	**DCS.3K.175.72LN**	Cable Pulling Slug	Temporarily Replaces Body of LEMO® FUW, PUW, FMW, PBW, or PEW Connectors for Pulling Cable in a Permanent Installation
	**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)

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-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

Fiber Systems Accessories, Parts & Tools

Alignment Removal Tools

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

Cleaning Swabs & 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

Specifications

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

Portable Microscope with USB Output

FEATURES & BENEFITS

- 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

Specifications

Part Number	Display Size	Magnification	PC Interface	Resolution	Software Included	Accessories Included	Tips Included
FS-200	3.5" TFT	200x	USB	1μm (Viewable to 0.5μm)	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

Test Equipment

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.

Specifications

	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 Information

Model	Includes
SMLP 5-5	OLS4 Optical Light Source, OMP5-2D Optical Power Meter, AA Batteries, Protective Rubber Boots, Adapter Cap, USB Cable, PC Compatible Software and User's Guide, 50 and 62.5µm Mandrels, SMLP 5-5 Test Kit User's Guide, and Carry Case

Optical Power Meter Specifications

Calibrated Wavelengths	850, 1300, 1310, 1490, 1550 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" x 3.2" x 1.5"

Integrated Laser and LED Source Specifications

	Multi-Mode Optical Port	Single-Mode Optical Port
Emitter Type	LED	Laser
Wavelengths (Dual from Single Port)	850 ± 30 nm | 1300 -10/+50nm	1310 ± 20 nm | 1550 ± 20nm
Output Power	> -20 dBm, 62.5µm Multi-Mode	0 dBm, 9µm Single-Mode
Battery Life	30 Hours Typical	72 Hours Typical
Power	2 AA Batteries	2 AA Batteries
Size (H x W x D)	5.5" x 3.2" x 1.5"	5.5" x 3.2" x 1.5"

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

AFL® Fusion Splicers

FSM-18S

FSM-60S

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.

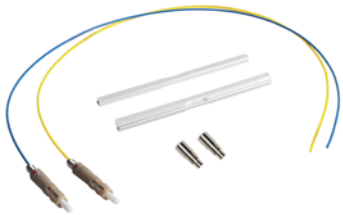
Ordering Information

Part Number	Splicing Method	Fiber Type	Typical Average Splice Loss	Cladding Diameter	Coating Diameter	Dimensions
S177A-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

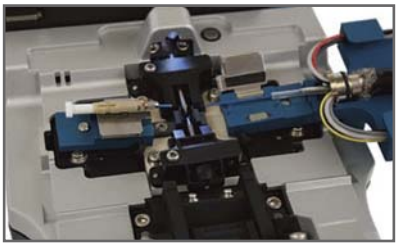
Extended Shell and Midpiece For Fusion Splice Process
Part Number 3K.93C.U0729

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

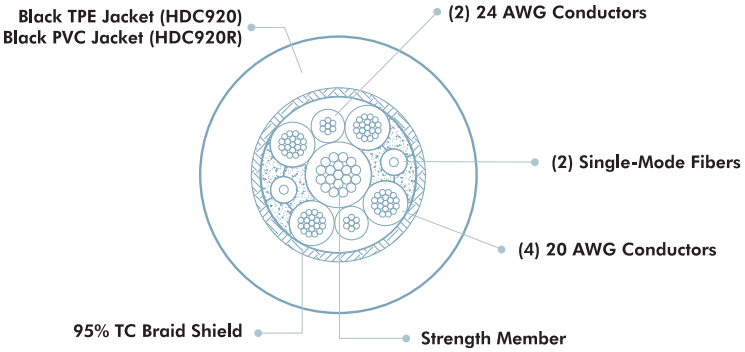
Includes 2 Pre-terminated F2 Contacts, 2 Splice Sleeves and 2 Alignment Devices (LEMO® FSS.F2.BA2.U0729)



Detailed view of splicer

Extended shell and midpiece

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 single-mode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylon-based polymer with increased tensile strength is used for the fiber coatings, and a 16-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.

FEATURES & BENEFITS

- 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 Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	Overall Shield	UL Type	Approx. Weight
HDC920	9.2mm	Flexible TPE, Black	95% TC Braid	—	90 lbs/Mft
	Extra-Flexible 9.2mm Hybrid Camera Cable				
HDC920R	9.2mm	PVC, Black	95% TC Braid	CMR	91 lbs/Mft
	Permanent Install 9.2mm Hybrid Camera Cable				

Mechanical Specifications (Components)

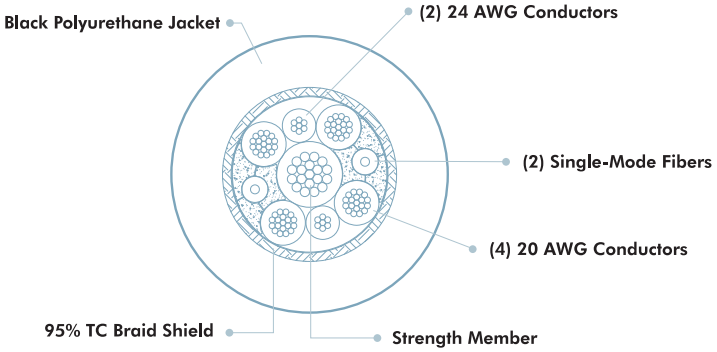
Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single Mode 8.3µm Mode Field, 125µm Cladding	CPE Tight Buffer, 0.9mm	One Blue, One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, 0.045"	One Red, One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, 0.060"	Two White, Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, 0.084"	One White

Electrical & Optical Specifications

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

9.2mm 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 nylon-based polymer fiber coating, each fiber optic element has a Kevlar® wrap and PVC jacket for greater strength and protection. For the power elements, 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 abrasion- and puncture-resistant.



FEATURES & BENEFITS

- Heavy-Duty Polyurethane Jacket
- Ultra-Low Attenuation
- SMPTE 311M Compliant
- Single-Mode Optical Fibers with Kevlar® & PVC Jackets
- Proprietary Fiber Coating for Increased Tensile Strength
- Six Copper Conductors
- Heat-Resistant
- Strength Member for Additional Durability
- Copper Braid Shield

Mechanical Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	Overall Shield	Approx. Weight
HDC920HD	9.2mm	Polyurethane, Black	95% TC Braid	95 lbs/Mft
	Heavy-Duty 9.2mm Hybrid Camera Cable			

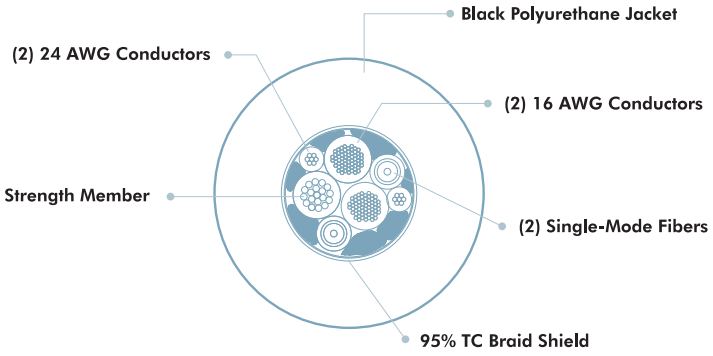
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single-Mode Fiber Optic (8.3µm Mode Field, 125µm Cladding)	CPE Fiber Coating, Kevlar® Wrap, Tight Tube PVC Jacket, 0.062" Finished O.D.	One Blue, One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, 0.045"	One Red, One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, 0.060"	Two White, Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, 0.084"	One White

Electrical & Optical Specifications

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

12mm Heavy-Duty Hybrid Fiber Optic 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 nylon-based polymer fiber coating, each fiber optic element has a Kevlar® wrap and PVC jacket for greater strength and protection. For the power elements, HDC120P utilizes two auxiliary conductors for streamlined termination, thereby reducing the possibility of electrical faults. All copper elements now feature heat-resistant PE insulation and are shielded by a dense 95% copper braid. For additional durability, the outer jacket is made with an extra-tough polyurethane compound that is exceptionally abrasion- and puncture-resistant.

FEATURES & BENEFITS

- Heavy-Duty Polyurethane Jacket
- Ultra-Low Attenuation
- SMPTE 311M Compliant
- Single-Mode Optical Fibers with Kevlar® & PVC Jackets
- Proprietary Fiber Coating for Increased Tensile Strength
- Four Large Gauge Copper Conductors
- Heat-Resistant
- Strength Member for Additional Durability

Mechanical Specifications

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

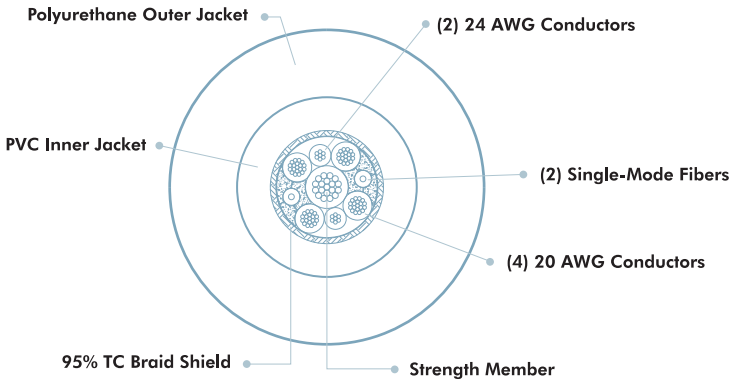
Mechanical Specifications (Series)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single-Mode Fiber Optic (8.3µm Mode Field, 125µm Cladding)	CPE Fiber Coating, Kevlar® Wrap, Tight Tube PVC Jacket, 0.062" Finished O.D.	One Blue, One Yellow
Signal	2	24 AWG (19x36) Stranded TC	PE, 0.044"	One Red, One Gray
Auxiliary	2	16 AWG (65x34) Stranded TC	PE, 0.084"	One White, One Black
Strength Member	1	16 AWG Stranded Steel	PVC, 0.087"	One White

Electrical & Optical Specifications

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

16mm Heavy-Duty Hybrid Fiber Optic 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 single-mode optical fibers to ensure accurate and extended-distance data transmission. To increase the durability, a special nylon-based polymer with increased tensile strength is used for the fiber coatings, and a 16 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.

FEATURES & BENEFITS

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

Mechanical Specifications (General)

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

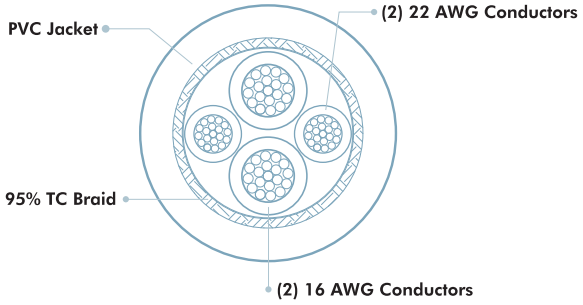
Mechanical Specifications (Components)

Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	2	Single Mode 8.3µm Mode Field, 125µm Cladding	CPE Tight Buffer, 0.9mm	One Blue, One Yellow
Signal	2	24 AWG (7x32) Stranded TC	PE, 0.045"	One Red, One Gray
Auxiliary	4	20 AWG (19x32) Stranded TC	PE, 0.060"	Two White, Two Black
Strength Member	1	16 AWG Stranded Steel	PVC, 0.084"	One White

Electrical & Optical Specifications

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

HD Camera Electrical Cable



Unique 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

Mechanical Specifications

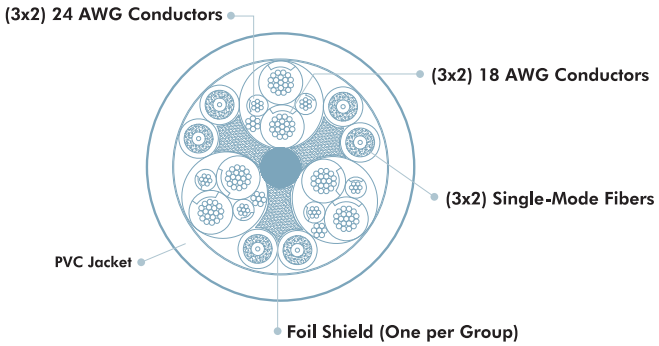
Part #	# of Conductors	Nominal OD	Auxiliary Conductors	Auxiliary Insulation (Type, OD)	Signal Conductors	Signal Insulation	Shield	Jacket (Type, Colors)	UL Type	Approx. Weight
HDP221	2 Auxiliary 2 Signal	.315"	16 AWG (65x34) Stranded TC	PE, 0.020"	22 AWG (19x34) Stranded TC	PE, 0.015"	90% TC Braid	PVC, Black	CMR	76 lbs/Mft
	Single-Channel HD Electrical Cable									
HDP221P	2 Auxiliary 2 Signal	.205"	16 AWG (65x34) Stranded TC	FEP, 0.010"	22 AWG (19x34) Stranded TC	FEP, 0.010"	90% TC Braid	Plenum PVC, White	CMP	58 lbs/Mft
	Single-Channel HD Electrical Cable: Plenum									

Electrical & Optical Specifications

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

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

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.

FEATURES & BENEFITS

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

Mechanical Specifications (General)

Part #	Nominal OD	Master Jacket (Type, Colors)	UL Type	Approx. Weight
HDC3R	0.600"	PVC, Orange with Yellow Stripe	CMR	170 lbs/Mft
	3-Channel Hybrid Fiber Camera Cable			

Mechanical Specifications (Components)

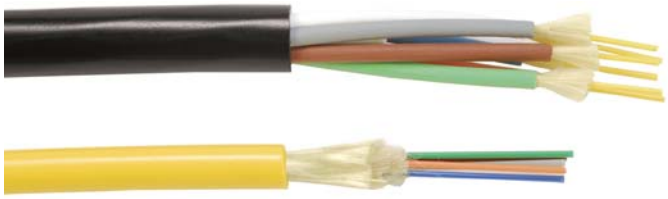
Component	Number	Type	Insulation (Type, OD)	Color Code
Optical	6 (3 Groups of 2)	Single-Mode Fiber Optic (8.3µm Mode Field, 125µm Cladding)	PVC Fiber Coating, Kevlar® Wrap, Tube PVC Jacket, 3mm Finished O.D.	Yellow with Alphanumeric Print
Signal	6 (3 Groups of 2)	24 AWG (17x32) Stranded TC	PVC, 0.040"	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 Black (Solid or with Yellow or Orange Stripe)
Shield	3 (1 per Group)	100% Foil with 24 AWG (7x32) Stranded TC Drain	-----	-----

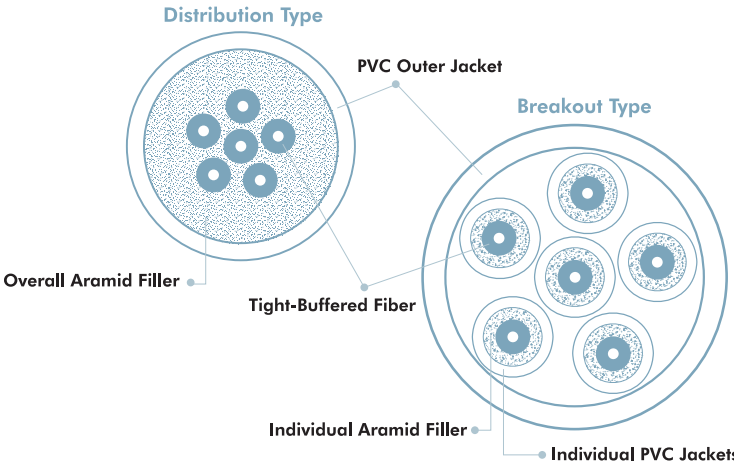
Electrical & Optical Specifications

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

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

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

Fiber Specifications

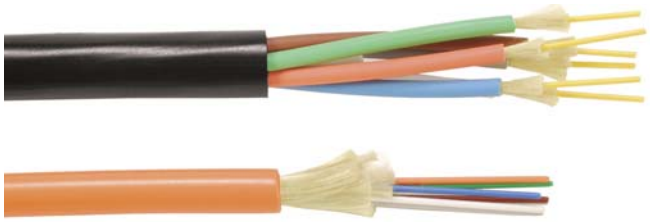
Type	Mode Field Diameter	Cladding Diameter	Maximum Attenuation
Single Mode	8.3µm	125µm	≤ 0.70 dB/Km @ 1310/1550nm

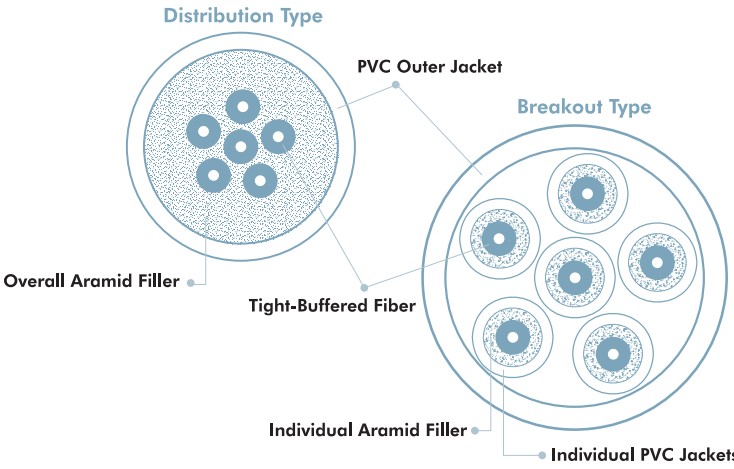
Mechanical Specifications

Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Maximum Tension: Installation (Pulling)	Maximum Tension: Operating	Minimum Bend Radius: Installation (Pulling)	Minimum Bend Radius: Operating	Weight	UL Type
FSDR** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	2	0.180″	PVC	310 lbs	100 lbs	2.7″	1.8″	14 lbs/Mft	OFNR
		4	0.200″	PVC	310 lbs	100 lbs	3.0″	2.0″	17 lbs/Mft	
		6	0.220″	PVC	310 lbs	100 lbs	3.3″	2.2″	19 lbs/Mft	
		8	0.240″	PVC	360 lbs	120 lbs	3.6″	2.4″	22 lbs/Mft	
		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	
		36	0.350″	PVC	670 lbs	220 lbs	5.3″	3.5″	51 lbs/Mft	
	Single-Mode Distribution: Riser Rated									
FSDP** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	2	0.160″	Plenum PVC	270 lbs	90 lbs	2.4″	1.6″	9 lbs/Mft	OFNP
		4	0.180″	Plenum PVC	270 lbs	90 lbs	2.7″	1.8″	11 lbs/Mft	
		6	0.200″	Plenum PVC	310 lbs	100 lbs	3.0″	2.0″	15 lbs/Mft	
		8	0.220″	Plenum PVC	360 lbs	120 lbs	3.3″	2.2″	19 lbs/Mft	
		12	0.220″	Plenum PVC	400 lbs	135 lbs	3.3″	2.2″	19 lbs/Mft	
		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									
FSBR** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & PVC Tube Jacket for Each Fiber	1 (Simplex)	0.110″	PVC	110 lbs	70 lbs	2″	1.2″	5 lbs/Mft	OFNR
		2 (Duplex)	0.110″x0.230″	PVC	220 lbs	110 lbs	2″	1.2″	11 lbs/Mft	
		2	0.280″	PVC	270 lbs	110 lbs	4.2″	2.8″	34 lbs/Mft	
		4	0.310″	PVC	450 lbs	180 lbs	4.7″	3.1″	44 lbs/Mft	
		6	0.370″	PVC	670 lbs	270 lbs	5.6″	3.7″	55 lbs/Mft	
		8	0.450″	PVC	900 lbs	380 lbs	6.8″	4.5″	75 lbs/Mft	
		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	
		36	0.790″	PVC	3150 lbs	1350 lbs	11.9″	7.9″	214 lbs/Mft	
	Single-Mode Breakout: Riser Rated									
FSBP** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & Plenum PVC or PVDF Tube Jacket for Each Fiber	1 (Simplex)	0.110″	Plenum PVC	110 lbs	70 lbs	2″	1.2″	6 lbs/Mft	OFNP
		2 (Duplex)	0.110″x0.230″	Plenum PVC	220 lbs	110 lbs	2″	1.2″	12 lbs/Mft	
		2	0.240″	PVDF	360 lbs	90 lbs	3.6″	3.6″	23 lbs/Mft	
		4	0.240″	PVDF	360 lbs	90 lbs	3.6″	3.6″	23 lbs/Mft	
		6	0.280″	PVDF	540 lbs	130 lbs	4.2″	4.2″	32 lbs/Mft	
		8	0.330″	PVDF	720 lbs	180 lbs	5.0″	5.0″	48 lbs/Mft	
		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: Plenum 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

Fiber Specifications

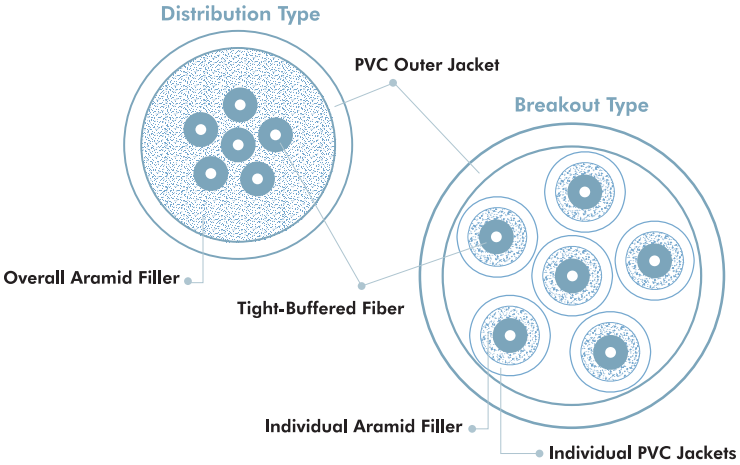
Type	Mode Field Diameter	Cladding Diameter	Maximum Attenuation
Multi-Mode	62.5µm or 50µm	125µm	3.50 dB/Km @ 850nm, 1.00 dB/Km @ 1550nm

Mechanical Specifications

Part #	Fiber Buffer	Number of Elements	Nominal OD	Outer Jacket	Maximum Tension: Installation (Pulling)	Maximum Tension: Operating	Minimum Bend Radius: Installation (Pulling)	Minimum Bend Radius: Operating	Weight	UL Type
FMDR** (62.5µm fiber) **or** **FMD**R/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	2	0.180"	PVC	310 lbs	100 lbs	2.7"	1.8"	14 lbs/Mft	
		4	0.200"	PVC	310 lbs	100 lbs	3.0"	2.0"	17 lbs/Mft	
		6	0.220"	PVC	310 lbs	100 lbs	3.3"	2.2"	19 lbs/Mft	
		8	0.240"	PVC	360 lbs	120 lbs	3.6"	2.4"	22 lbs/Mft	OFNR
		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	
		36	0.350"	PVC	670 lbs	220 lbs	5.3"	3.5"	51 lbs/Mft	
	Multi-Mode Distribution Fiber: Riser Rated									
FMDP** (62.5µm fiber) **or** **FMD**P/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	2	0.160"	Plenum PVC	270 lbs	90 lbs	2.4"	1.6"	9 lbs/Mft	
		4	0.180"	Plenum PVC	270 lbs	90 lbs	2.7"	1.8"	11 lbs/Mft	
		6	0.200"	Plenum PVC	310 lbs	100 lbs	3.0"	2.0"	15 lbs/Mft	
		8	0.220"	Plenum PVC	360 lbs	120 lbs	3.3"	2.2"	19 lbs/Mft	OFNP
		12	0.220"	Plenum PVC	400 lbs	135 lbs	3.3"	2.2"	19 lbs/Mft	
		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	
	Multi-Mode Distribution Fiber: Plenum Rated									
FMBR** (62.5µm fiber) **or** **FMB**R/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & PVC Tube Jacket for Each Fiber	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	
		2	0.280"	PVC	270 lbs	110 lbs	4.2"	2.8"	34 lbs/Mft	
		4	0.310"	PVC	450 lbs	180 lbs	4.7"	3.1"	44 lbs/Mft	
		6	0.370"	PVC	670 lbs	270 lbs	5.6"	3.7"	55 lbs/Mft	OFNR
		8	0.450"	PVC	900 lbs	380 lbs	6.8"	4.5"	75 lbs/Mft	
		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	
		36	0.790"	PVC	3150 lbs	1350 lbs	11.9"	7.9"	214 lbs/Mft	
	Multi-Mode Breakout Fiber: Riser Rated									
FMBP** (62.5µm fiber) **or** **FMB**P/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & Plenum PVC or PVDF Tube Jacket for Each Fiber	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	
		2	0.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		4	0.240"	PVDF	360 lbs	90 lbs	3.6"	3.6"	23 lbs/Mft	
		6	0.280"	PVDF	540 lbs	130 lbs	4.2"	4.2"	32 lbs/Mft	OFNP
		8	0.330"	PVDF	720 lbs	180 lbs	5.0"	5.0"	48 lbs/Mft	
		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	
	Multi-Mode Breakout Fiber: Plenum Rated									

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-, chemical- and 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.

FEATURES & BENEFITS

- 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.)

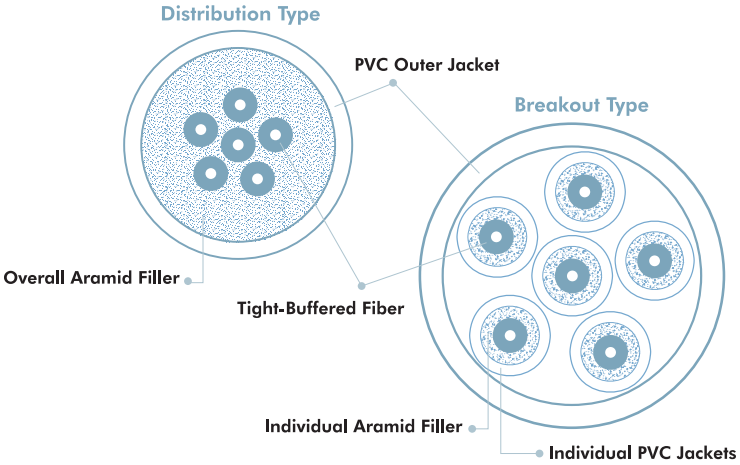
Fiber Specifications

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

Mechanical Specifications

Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.	Number of Elements	Nominal OD	Tensile Load: Short Term	Tensile Load: Long Term	Minimum Bend Radius: Installation (Pulling)	Minimum Bend Radius: Operating	Weight
FSDT** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	0.200"	1,800 lbs	600 lbs	3.2"	1.6"	15 lbs/Mft
								4	0.220"	1,800 lbs	600 lbs	3.6"	1.8"	19 lbs/Mft
								6	0.240"	1,800 lbs	600 lbs	3.8"	1.9"	19 lbs/Mft
								8	0.260"	1,800 lbs	600 lbs	4.2"	2.1"	26 lbs/Mft
								10	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft
								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 Fiber: Distribution													
FSBT** *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & Elastomeric Tube Jacket for Each Fiber	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	0.260"	2,200 lbs	550 lbs	4.2"	2.1"	21 lbs/Mft
								4	0.290"	2,200 lbs	550 lbs	4.6"	2.3"	28 lbs/Mft
								6	0.340"	2,400 lbs	600 lbs	5.4"	2.7"	36 lbs/Mft
								8	0.390"	3,200 lbs	800 lbs	6.2"	3.1"	50 lbs/Mft
								10	0.450"	4,000 lbs	1000 lbs	7.2"	3.6"	59 lbs/Mft
								12	0.480"	4,800 lbs	1200 lbs	7.6"	3.8"	65 lbs/Mft
								18	0.570"	7,200 lbs	1,800 lbs	9.2"	4.6"	73 lbs/Mft
								24	0.570"	9,600 lbs	2,400 lbs	9.2"	4.6"	105 lbs/Mft
	Tactical Single-Mode Fiber: 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-, chemical- and 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.

FEATURES & BENEFITS

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

Fiber Specifications

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

Mechanical Specifications

Part #	Fiber Buffer	Outer Jacket	Crush Resistance	Impact Resistance	Flex Resistance	Operating Temp.	Storage Temp.	Number of Elements	Nominal OD	Tensile Load: Short Term	Tensile Load: Long Term	Minimum Bend Radius: Installation (Pulling)	Minimum Bend Radius: Operating	Weight
FMDT** (62.5µm fiber) **or FMD**T/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Overall Aramid Filler	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	0.200"	1,800 lbs	600 lbs	3.2"	1.6"	15 lbs/Mft
								4	0.220"	1,800 lbs	600 lbs	3.6"	1.8"	19 lbs/Mft
								6	0.240"	1,800 lbs	600 lbs	3.8"	1.9"	19 lbs/Mft
								8	0.260"	1,800 lbs	600 lbs	4.2"	2.1"	26 lbs/Mft
								10	0.260"	2,100 lbs	700 lbs	4.2"	2.1"	30 lbs/Mft
								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 Multi-Mode Fiber: Distribution													
FMBT** (62.5µm fiber) **or FMB**T/50** (50µm fiber) *=Number of Elements	Acrylate Tight Buffer Coating (0.9mm OD) with Aramid Filler & Elastomeric Tube Jacket for Each Fiber	PU, Black	440 N/cm	200 Impacts	2000 Cycles	-55°C to +85°C	-70°C to +85°C	2	0.260"	2,200 lbs	550 lbs	4.2"	2.1"	21 lbs/Mft
								4	0.290"	2,200 lbs	550 lbs	4.6"	2.3"	28 lbs/Mft
								6	0.340"	2,400 lbs	600 lbs	5.4"	2.7"	36 lbs/Mft
								8	0.390"	3,200 lbs	800 lbs	6.2"	3.1"	50 lbs/Mft
								10	0.450"	4,000 lbs	1000 lbs	7.2"	3.6"	59 lbs/Mft
								12	0.480"	4,800 lbs	1200 lbs	7.6"	3.8"	65 lbs/Mft
								18	0.570"	7,200 lbs	1,800 lbs	9.2"	4.6"	73 lbs/Mft
								24	0.570"	9,600 lbs	2,400 lbs	9.2"	4.6"	105 lbs/Mft
	Tactical Multi-Mode Fiber: Breakout													

Headquarters 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

Distribution Center
Clifton, NJ

www.gepco.com

Form No. GEP-0018-0310