

# Fiber - Optic Systems

Overview

## Canare Sports Venue Solutions

Canare's optical camera cables are used around the world. In the broadcast industry, where precise transmission performance is essential, a high level of stability is required. For decades, Canare has focused on these critical factors and has earned a strong reputation for reliability. The following diagram shows typical Canare products used in stadiums to help you select the most suitable options.



Technical Trend

IP Connectivity Products

Fiber - Optic Systems

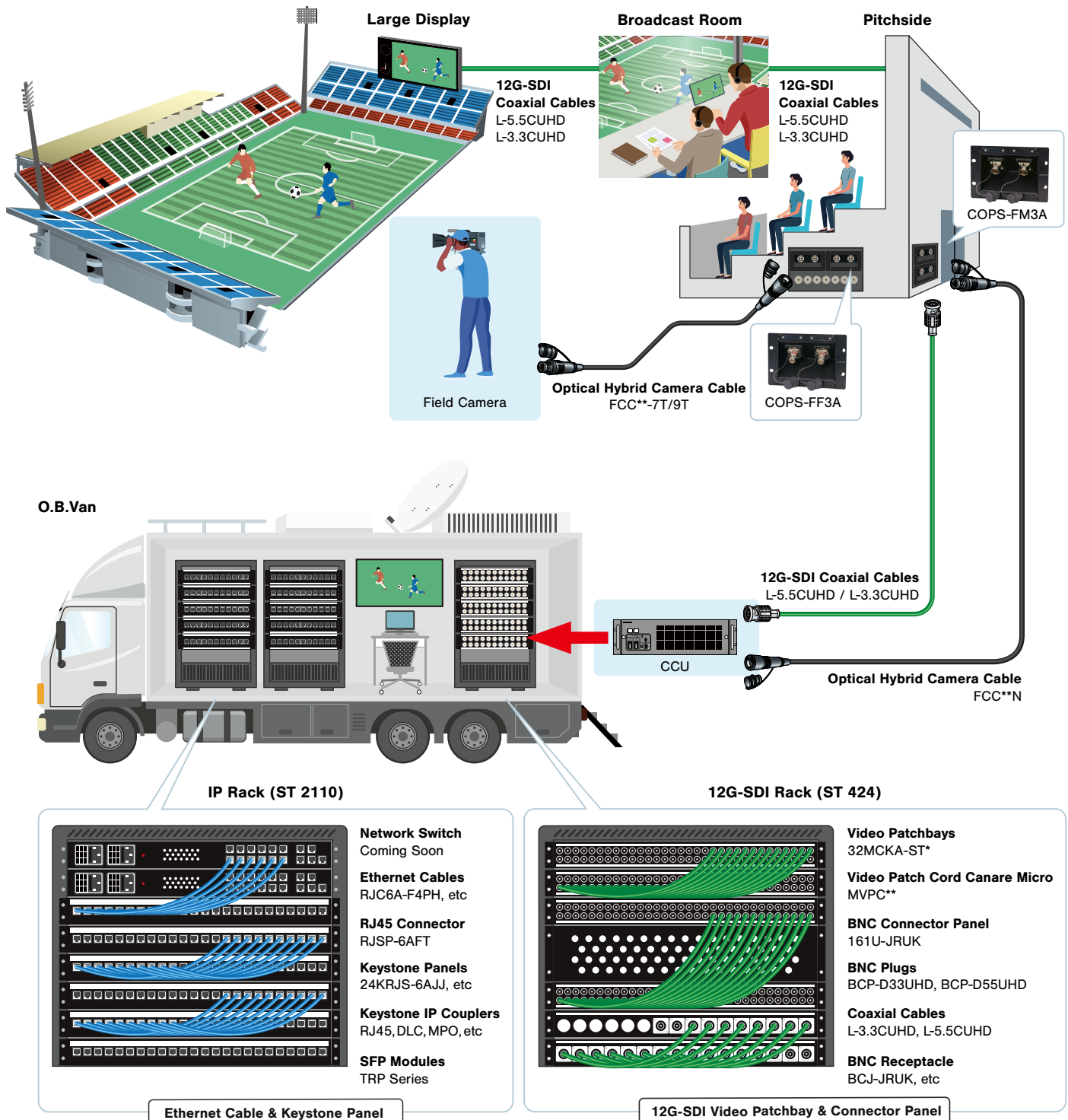
Connectors

Cables

Panels & Patchbays

Multichannel Systems

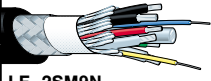
Cable Assemblies



# Fiber - Optic Systems

## HFO Camera Cables

### Hybrid Fiber-optic Camera Cables (SMPTE ST 311)

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D. (mm)	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
 <b>LF-2SM9N</b> Jacket color: <b>BLK</b>	<b>LF-2SM9N</b>	Call	9.2	12.0	Abrasion-resistance PVC	9/24/0.10TA 91%	700	2.6	6 × Nom. O.D.	-40 to +75	2 × SM 9/125 (low-water-peak) Unit O.D. 0.9 mm	4 × 20 AWG 21 / 0.18TA Unit O.D. 1.7 mm	2 × 25 AWG 7 / 0.18TA Unit O.D. 1.2 mm
	<b>LF-2SM16</b>		16	29.0	Double Jacket PVC								

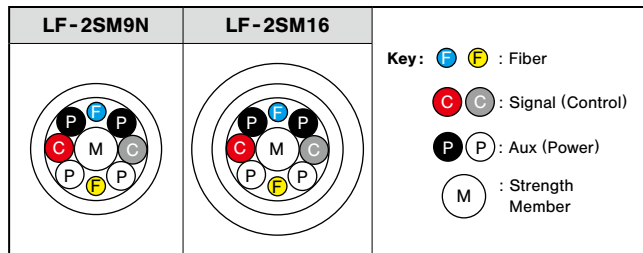
#### LF-2SM9N

- For general use.
- Abrasion - resistance Jacket enhance the adaptability to all studio and outside broadcast applications.
- Cost effective

Website




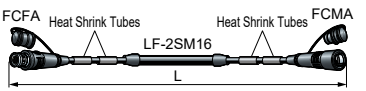
#### Cross Section



#### LF-2SM16

- For studio use.
- O.D. 16mm Double Jacket prevents the cable from being jammed under a camera pedestal dolly.

### Camera to CCU

Type	Model	Length (m)
 Jacket color: <b>BLK</b>	<b>FCC10N</b>	10
	<b>FCC20N</b>	20
	<b>FCC25N</b>	25
	<b>FCC30N</b>	30
	<b>FCC50N</b>	50
	<b>FCC100N</b>	100
 Jacket color: <b>BLK</b>	<b>FCC150N</b>	150
	<b>FCC200N</b>	200
	<b>FCC30A - WJ</b>	30
	<b>FCC50A - WJ</b>	50

- Standard and widely-used models.
- Heat shrink tubes help in labeling.
- FCC\*\*A - WJ prevents the cable from being jammed under a camera pedestal dolly by its O.D. 16mm double jacket.
- 7 - color connector rings included.
- \* Canare OC series (Hybrid-OPS profile) is also available. (see page 13)

Website



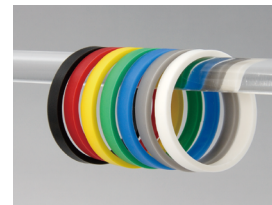
Website



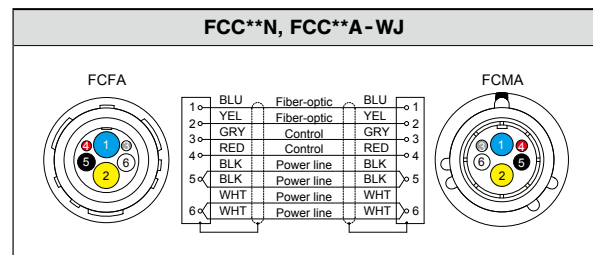
FCFA



FCMA



Color Rings



Wiring Diagram

### HFO Protective Covers

Any-time-fit-on protector for SMPTE connector - the new traditional

Model	Shape	Component	Color
<b>FC-CV-F-SET-**</b>	Female	1 × Boot	RD: <b>Red</b> GR: <b>Green</b> YL: <b>Yellow</b> BK: <b>Black</b>
<b>FC-CV-M-SET-**</b>	Male	1 × Holder	

Please specify the color such as FC-CV-F-SET-RD

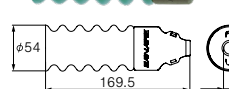
Cover: PVC, Holder: PE

- Canare exclusive retrofittable construction (patent pending)
- Fit for Canare FC series and other SMPTE 304 plugs
- Heavy-duty and harsh environment applications
- Quality verified over shock resistance tests

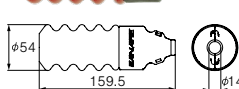
Website



- Not available for Canare OC series
- The male and female are for FCMA and FCFA or equivalent respectively.



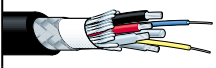
FC-CV-F-SET-GR



FC-CV-M-SET-RD



**Slim Hybrid Fiber-optic Camera Cable**

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D. (mm)	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
	<b>LF-2SM7N</b>	Call	7.1	7.3	Abrasion-resistance PVC	8/24/0.10TA 91%	300	1.4	6 × Nom. O.D.	-40 to +75	2 × SM 9/125 (low-water-peak) Unit O.D. 0.9 mm	2 × 20 AWG 21 / 0.18TA Unit O.D. 1.7 mm	2 × 25 AWG 7 / 0.18A Unit O.D. 1.2 mm

Jacket color: **BLK**

**LF-2SM7N**

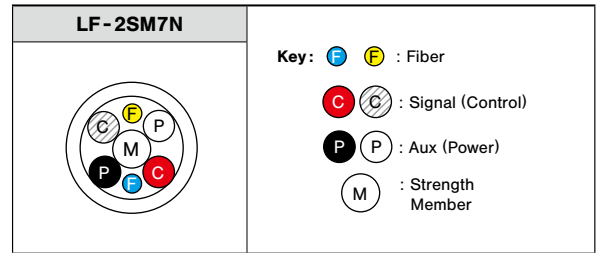
- O.D. 7 mm of slim profile and approx. 40% lighter than LF-2SM9N.
- Best fit for mobile applications.
- The power transmission distance is approx. twice as long as the previous model LF-2SM7R.

**Note:** The power transmission distance is shorter than typical HFO camera cables (approx. 50% of LF-2SM9N). Please contact us for more information.

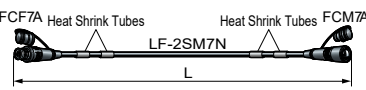
Website



**Cross Section**



**Camera to CCU**

Type	Model	Length (m)
	<b>FCC10-7N</b>	10
	<b>FCC20-7N</b>	20
	<b>FCC25-7N</b>	25
	<b>FCC30-7N</b>	30
	<b>FCC50-7N</b>	50
	<b>FCC100-7N</b>	100

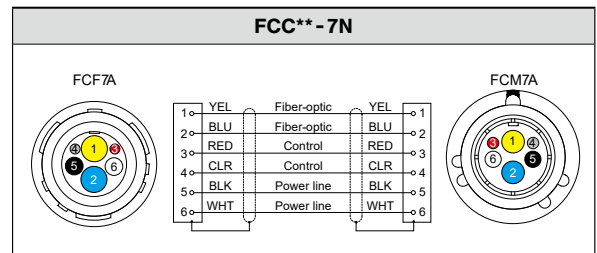
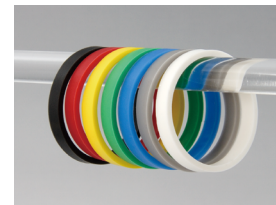
Jacket color: **BLK**

- Equipped with slim and lightweight cable.
- FCC100-7N is approx. 5 kg lighter than typical 100m HFO camera cable as FCC100N.
- Heat shrink tubes help in labeling.
- 7-color connector rings included.

Website



**Note:** The power transmission distance of FCC\*\* - 7N is approx. half of that of the FCC\*\*N. \* Canare OC series (Hybrid-OPS profile) is also available. (see page 13)



**END OF SALE**

**Hybrid Fiber-Optic Camera Cable Checker**

The following products have reached their end of sale status. Nevertheless, Canare will promise our users that our dedicated support services will persist uninterrupted.

Kit Model	Individual Model	
	Measuring Unit	Loop-back Unit
<b>FCT-FCKIT RED</b>	FCT-FC RED	FCT-FCLB RED
<b>FCT-OCKIT RED</b>	FCT-OC RED	FCT-OCLB RED



Technical Trend

IP Connectivity Products

Fiber-Optic Systems

Connectors

Cables

Panels & Patchbays

Multichannel Systems



Cable Assemblies

# Fiber - Optic Systems

## HFO Camera Cables

### Tough & Flexible HFO Camera Cables

Thermoplastic polyurethane type jacket offers amazing flexibility and superior mechanical properties; Crush Resistance, Impact Resistance and Cyclic Flexing exceed that of MIL.

Type	Model	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Overall Shield	Tension Tolerance (N)	Strength Member O.D.	Min. Bend Radius	Temp. Range (deg C)	Channel Unit		
											Fiber	Aux. (Power)	Signal (Control)
 Jacket color: <b>BLK DEEP RED DEEP GRN</b>	<b>LF-2SM9T</b>	Call	9.2	9.8	TPU + PVC	N/A	1500	1.8 mm + Tensile strength fiber	Equal to Nom. O.D.	-40 to +75	2 x SM 9/125 (low-water-peak) Unit O.D. 0.9 mm	4 x 20 AWG 102 / 0.08A Unit O.D. 1.75 mm	2 x 25 AWG 24 / 0.08A Unit O.D. 1.2mm
 Jacket color: <b>BLK</b>	<b>LF-2SM7T</b>	Call	7.1	5.5	TPU + PVC	N/A	1000	0.63 mm + Tensile strength fiber	Equal to Nom. O.D.	-40 to +75	2 x SM 9/125 (low-water-peak) Unit O.D. 1.7 mm	2 x 23 AWG 60 / 0.08A Unit O.D. 1.4 mm	2 x 26 AWG 30 / 0.08A Unit O.D. 1.1 mm

#### LF-2SM9T

- Heavy-duty yet Flexible.
- Ideal for remote broadcast applications.
- Minimum bend radius: 9.2 mm.

#### LF-2SM7T

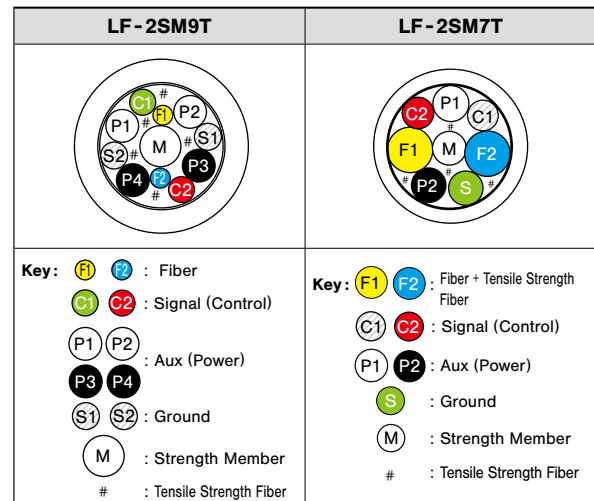
- Flexible, Slim, Lightweight, and moreover, Heavy-duty.
- Ideal for short-distance remote broadcast applications of up to 200 meters.
- O.D. 7.1 mm and weighing only 5.5 kg/100 m, it's so easy to carry around.
- Minimum bend radius: 7.1 mm.
- Fiber units include tensile strength fiber.

**Note:** The power supply distance of LF-2SM7T is shorter than other HFO camera cables. (approx. 30% of LF-2SM9T)  
LF-2SM7T requires a special technique during a connector assembly, so you can buy the cable assemblies shown below.

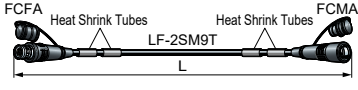

Website



#### Cross Section



#### Camera to CCU

Type	Model	Length (m)
 Jacket color: <b>BLK DEEP RED DEEP GRN</b>	<b>FCC10-9T</b>	10
	<b>FCC20-9T</b>	20
	<b>FCC25-9T</b>	25
	<b>FCC30-9T</b>	30
	<b>FCC50-9T</b>	50
	<b>FCC100-9T</b>	100
 Jacket color: <b>BLK</b>	<b>FCC150-9T</b>	150
	<b>FCC200-9T</b>	200
	<b>FCC10-7T</b>	10
	<b>FCC20-7T</b>	20
	<b>FCC25-7T</b>	25
	<b>FCC30-7T</b>	30
	<b>FCC50-7T</b>	50
	<b>FCC100-7T</b>	100

- Tough & Flexible cable
- Fit for mobile applications in harsh environments.
- Heat shrink tubes help in labeling.
- 7-color connector rings included.

Website



FCC\*\*-9T

Website



FCC\*\*-7T

**Note:** The power transmission distance of FCC\*\*-7T is quite shorter than typical HFO camera cables.

\* Canare OC seires (Hybrid-OPS profile) is also available. Please contact us for more details.



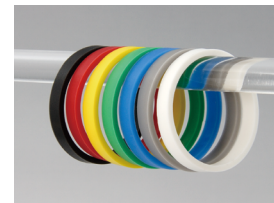
FCC\*\*-7T



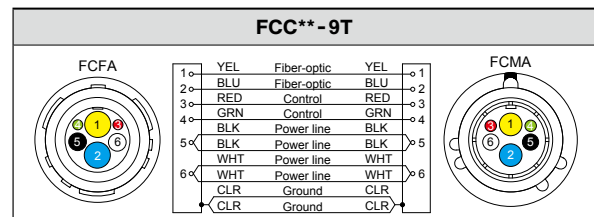
FCFA, FCF7A



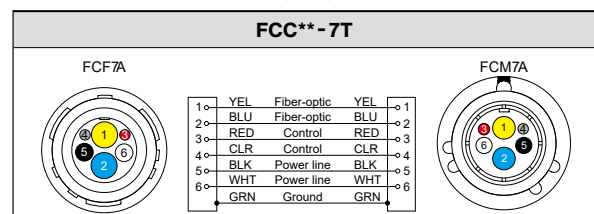
FCMA, FCM7A



Color Rings



Wiring Diagram



Wiring Diagram

## HFO Camera Cable Assemblies (Flanged Type)

### Panel to CCU

Type	Model	Length (m)
	FCC05N-FRCM	5
	FCC10N-FRCM	10
	FCC05N-FMRC	5
	FCC10N-FMRC	10

Jacket color: **BLK** IU-FCF-SET included

Jacket color: **BLK** IU-FCM-SET included

\* Canare OC series (Hybrid-OPS profile) is also available. (see page 13)

- HFO camera cable with the flange for panel mounting.
- SMPTE ST 304, ST 311, and ARIB BTA S-1005B compliant.
- Return loss: 45dB or greater ( $\lambda=1.3\mu\text{m}$ ).
- Insertion loss: 0.5dB or less ( $\lambda=1.3\mu\text{m}$ ).
- Connector body material is stainless steel.
- Color rings and insulation plates included.
- See below for the panel hole dimensions.

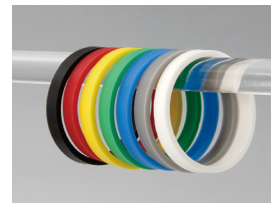
Website



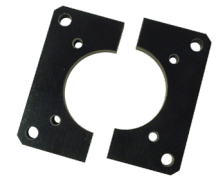
FCFRCA



FCMRCA



Color Rings



IU-FC\*-SET

## HFO Camera Receptacle Cables

### Pigtails

Type	Model	Length (m)
	FCS015A-FR	1.5
	FCS015A-MR	1.5

Jacket color: **BLK** IU-FCF-SET included

Jacket color: **BLK** IU-FCM-SET included

\* Canare OC series (Hybrid-OPS profile) is also available. (see page 13)

- Ideal for connecting wall terminal panels to splice enclosures, etc.
- Return loss: 45dB or greater ( $\lambda=1.3\mu\text{m}$ ).
- Insertion loss: 0.5dB or less ( $\lambda=1.3\mu\text{m}$ ).
- Connector body material is stainless steel.
- Insulation plates included.
- See below for the panel hole dimensions.

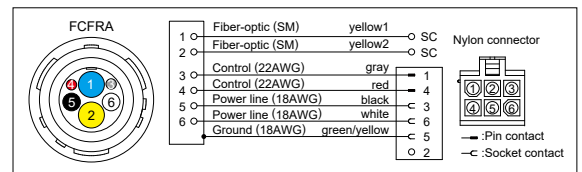
Website



FCFRCA



FCMRCA



Wiring Diagram

## Insulation Plate

Ideal for perfect insulation between individual connector and panel.

Model	Suitable Connector
IU-FCM-SET	FCMRA, FCMRCA
IU-FCF-SET	FCFRA, FCFRCA

- Material: Bakelite (phenolic resin)
- Mounting screws included.

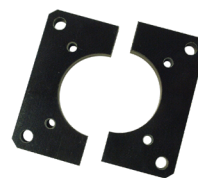
## Extraction Tool

Extraction tool helps easy to clean Canare HFO connectors.

Model	Suitable Connector
ASPT-1	FCFA, FCF7A, FCFRA, FCFRCA

- Tool to be used to release the alignment sleeve unit when cleaning HFO connectors.

\* Use the CLETOP 2.5/2.0 (100) cleaning stick to clean fiber-optic camera connectors.

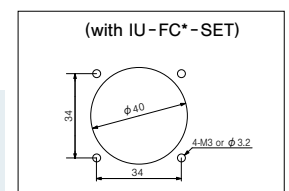


IU-FC\*-SET

Website



### Hole Dimensions



ASPT-1

Website



Quick-release  
US Patent No.7241055B2

# Fiber-Optic Systems

## HFO Camera Cables

### HFO Camera Cable Assemblies (Japanese Style)

Canare OC hybrid camera connectors are commonly used in Japan and Asian countries. It includes the same combination of SMPTE 304 but different pinouts. Improved reliabilities and advanced maintenance features.



#### OC connectors

- Symmetric pinout
- Finger detachable insulator
- Better grip, proper connections
- SMPTE 311 cable ready
- Camera MFGs accepted
- Hybrid-OPS profile



#### FC connectors

- SMPTE and ARIB standard
- Detachable insulator with tool
- Widely used in the market
- Hybrid-3K profile

### Camera to CCU

**O C C 1 0 0 - N**

#### Series name

Cable mount plugs  
Male and female

#### Lengths

01 = 1 meters  
100 = 100 meters  
Call for stocked lengths.

#### Cable type

**N** : LF-2SM9N O.D. 9 mm PVC Jacket (most common)  
**7N** : LF-2SM7N O.D. 7 mm PVC Jacket  
**9T** : LF-2SM9T O.D. 9 mm TPU Jacket w/o Shield  
**7T** : LF-2SM7T O.D. 7 mm TPU Jacket w/o Shield  
TPU = Thermoplastic Polyurethane

Website



OCFA



OCMA

### Panel to CCU

**O C C 0 5 N - F R C M**

#### Series name

PNL mount M to  
cable mount F  
and vice versa

#### Lengths

05 = 5 meters  
10 = 10 meters  
Call for custom lengths.

#### Connector type

**FRCM** : OCFRCB-OCMA  
**FMRC** : OCMRCA-OCFA

Website



OCFRCB



OCMRCA

Cable type: LF-2SM9N

### Pigtails

**O C S 0 1 5 - F R**

#### Series name

OC breakout

#### Lengths

015 = 1.5 meters  
Call for custom lengths.

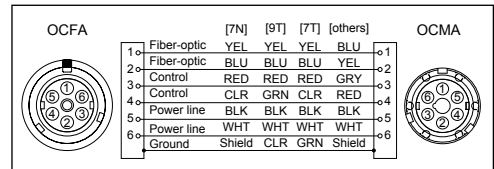
#### Connector type

**FR** : OCFA to 2 × SC, 1 × Nylon  
**MR** : OCMRA to 2 × SC, 1 × Nylon

Website



Wiring Diagram for OCC



### SMPTE Conversion

**F C M 0 2 N - O C F**

#### Connector A

**FCM** : FCMA  
**FCF** : FCFA

#### Lengths

02 = 2meters  
Call for custom lengths.

#### Connector B

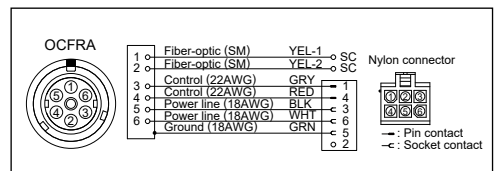
**OCF** : OCFA  
**OCM** : OCMA

Website

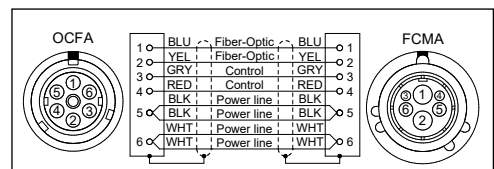


FCF02N-OCM

Cable type: LF-2SM9N  
Call for custom models.



Wiring Diagram for Conversion



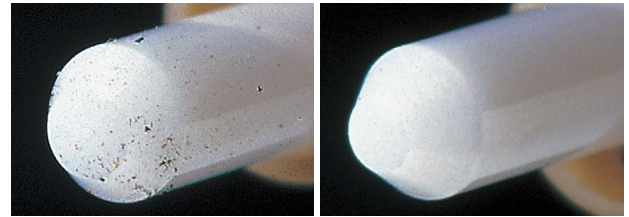
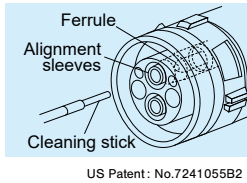
Wiring Diagram for Conversion

### Technical Note

#### Maintaining Hybrid Fiber-Optic Camera Connectors

The connector sections to be cleaned are the key parts, including the tips and sides of ferrules, the interior walls of alignment sleeves and the interior and exterior of connector shells. Note that scratches and particles of foreign matter on the tip of the ferrule can have a disabling effect on fiber-optic transmission. The following procedures should be used when cleaning hybrid fiber-optic camera connectors.

- For Plugs, the interior surfaces of alignment sleeves and the tips of ferrules are to be cleaned with the non-alcohol treated cleaning stick using a gentle stroking action. Canare FCFA and FCFRA enhance easy cleaning procedure for its innovative alignment sleeve and insulator detachable design.
- For Jacks, it is important to clean both the tips and sides of the completely protruding ferrules with the cleaning stick.
- Both the male and female connector shells tend to attract dust and metal particles, so it is important to clean both the insides and outsides using cotton gauze or similar material.



#### Cleaning Stick Model: CLETOP 2.5/2.0

- Compact and disposable
- Allows cleaning both the tips and sides of ferrules
- Manufactured by NTT-AT



#### IBC Brand Cleaner M-20 Model: 14347 CLEANER

- Easy "one-push" cleaner
- Allows cleaning the tips of ferrules without removing alignment sleeve
- Manufactured by US Conec



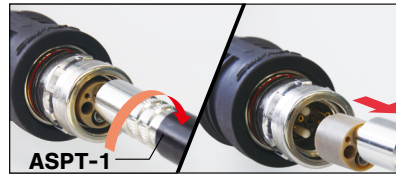
#### Cleaning guide for female connectors

##### ■ FC Series FCFA / FCF7A / FCFRA / FCFRCA

##### ■ OC Series & OM6 Series OCFA / OCF7A / OCFRA / OCFRCB / OM6PA / OM6PRA

#### 1 Extract an insulator unit

For FC series, use a removal tool: ASPT-1. OC series does not require special tool. Minus driver or coin should be fine.



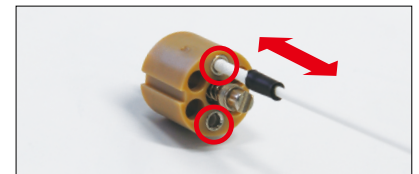
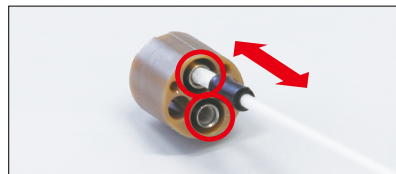
#### 2 Clean up ferrules

Canare suggests using CLETOP(photo shown). This stick features ferrule guide for efficient cleaning. For monitoring, a fiber scope will be handy as it displays real time ferrule surface.



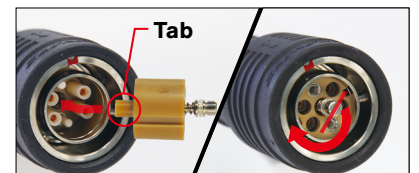
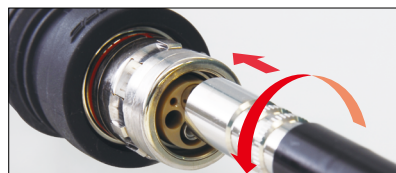
#### 3 Dust away on alignment sleeves

Dust also remains on inner part of alignment sleeve. Another end of CLETOP is ideal for wiping inside of alignment sleeve.



#### 4 Put back the unit in place

The right position marked on dots. Insert the unit to the end-click sound. Press again with your finger to make sure properly placed. Insufficient locking may cause an issue-unit remaining on male connector.

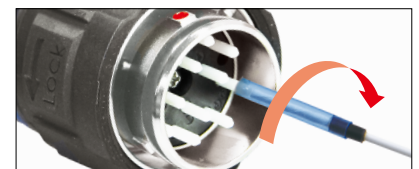


##### ■ OM12 Series OM12JR / OM12J

##### OM12PR / OM12P

#### 1 Put back the unit in place

The OM12 Series does not have a removable insulator unit. Please clean the ferrule directly. When using the CLETOP stick, use the non-tubed side for OM12JR and OM12J, and the tubed side for OM12PR and OM12P.



# Fiber - Optic Systems

## HFO Camera Connector Panels

### Hybrid Fiber-optic Camera Connector Panels

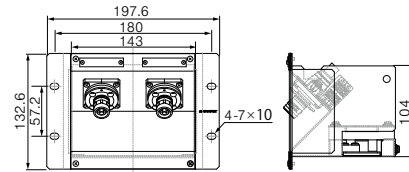
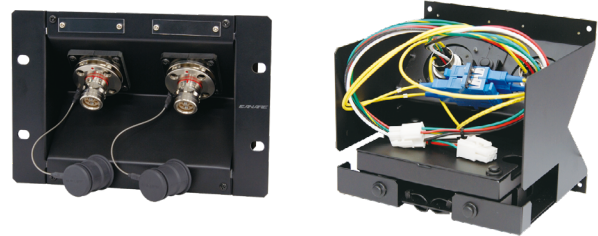
Pre-terminated HFO camera connector panel with built-in splice enclosure box provides easy and quick installation between HD camera system and terminal panel or rack. By combining the unit and frame, HFO camera connector panel enables a variety of layouts depending on the system design.



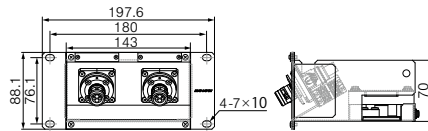
#### ■ COPS Series (SMPTE)

Model	Panel Size	HFO Connectors* (Assembly)
<b>COPS-FF3A</b>	Wall Mount Type 3RU Height, W: 197.6mm	2 × FCFRA (FCS003A-FR)
<b>COPS-FM3A</b>		2 × FCMRA (FCS003A-MR)
<b>COPS-FF2A</b>	Wall Mount Type 2RU Height, W: 197.6mm	2 × FCFRA (FCS003A-FR)
<b>COPS-FM2A</b>		2 × FCMRA (FCS003A-MR)
<b>COPS3-FF3A</b>	Rack Mount Type 3RU	6 × FCFRA (FCS003A-FR)
<b>COPS3-FM3A</b>		6 × FCMRA (FCS003A-MR)
<b>COPS3-FF2A</b>	Rack Mount Type 2RU	6 × FCFRA (FCS003A-FR)
<b>COPS3-FM2A</b>		6 × FCMRA (FCS003A-MR)

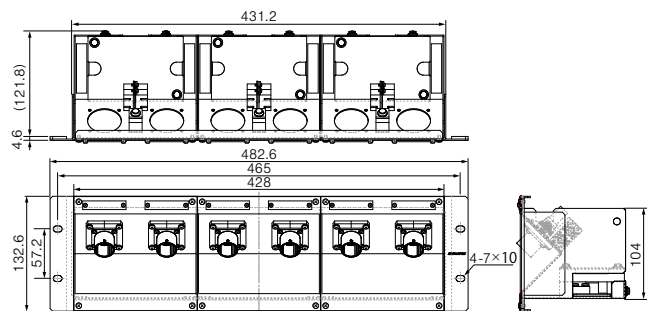
\*HFO connectors are pre-terminated. (length: 0.3 m)  
\*Canare OC series (Hybrid-OPS profile) is also available. Please contact us for more details.



**COPS-FF3A**



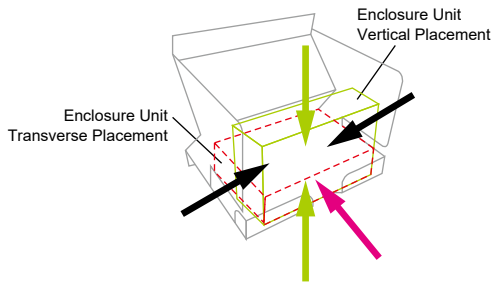
**COPS-FF2A**



**COPS3-FM3A**

#### Key Features and Benefits

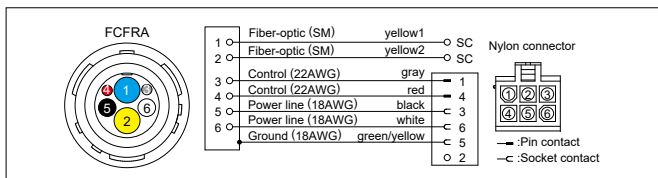
- Exclusive "5-directional Wiring"
- Convenient to build I/O interface between HD facilities and HD OB vans
- Variety of choice of 2RU/3RU and wall/rack mount
- Pre-terminated HFO connectors reduce installation time dramatically.
- Cost effective
- Lightweight aluminum chassis



5 directions of cabling as indicated by colored arrows

- Vertical/Transverse placement
- Transverse placement
- Vertical placement

**5-directional Wiring**  
JP Patent No.4388540



Wiring Diagram

**Accessories:**  
Fiber-optic cable w/SC connector (2m), grounding cable, nylon connector, pin contact, socket contact, tie-band, fusion splice protection sleeve, splice holder, color-coded tube, mounting screw, laser warning label.

**Note:** Assembly tools for the nylon connectors are NOT include.  
(AMP 91529-1: 26 to 22 AWG and AMP 91536-1: 20x2 to 16 AWG)

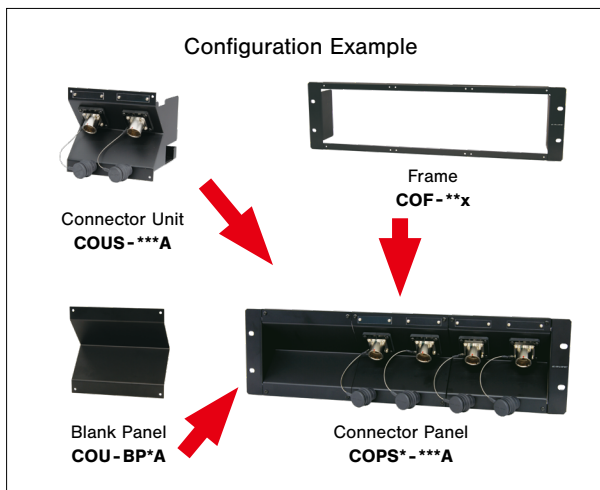
### Individual Frame and Unit

Model	Height	Description
COUS-FF3A	3RU	Connector Unit of COPS(3)-FF3A
COUS-FM3A		Connector Unit of COPS(3)-FM3A
COF-13C		Frame of COPS (for 1 unit)
COF-33B		Frame of COPS3 (for 3 units)
COUS-FF2A	2RU	Connector Unit of COPS(3)-FF2A
COUS-FM2A		Connector Unit of COPS(3)-FM2A
COF-12B		Frame of COPS (for 1 unit)
COF-32A		Frame of COPS3 (for 3 units)

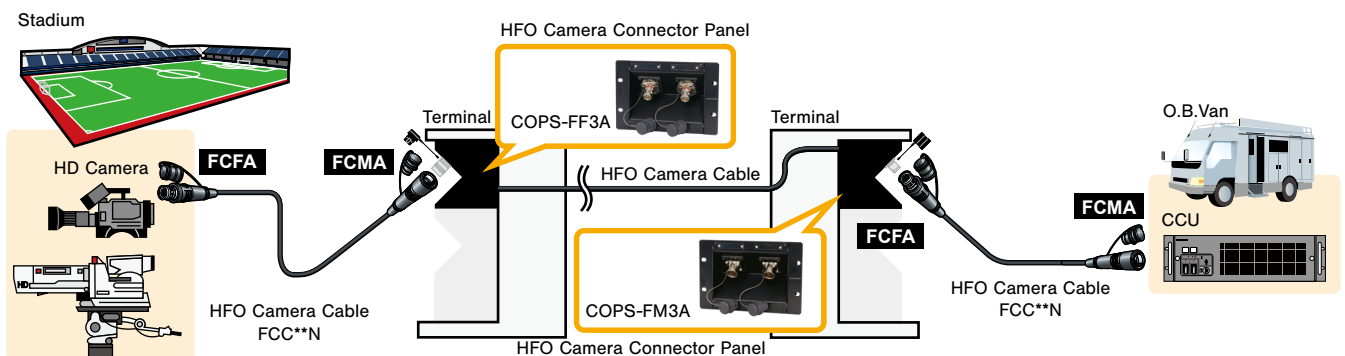
\*HFO connectors are pre-terminated. (length: 0.3 m)  
 \*Canare OC series (Hybrid-OPS profile) is also available. Please contact us for more details.

### Optional Parts

Model	Type	Suitable Frame/Unit
COU-BP3A	Blank Panel	COF-13A, COF-33B (3RU frames)
COU-BP2A		COF-12A, COF-32A (2RU frames)
COU-CV3	Top Cover	COUS-FF3A, COUS-FM3A (3RU units)
COU-CV2		COUS-FF2A, COUS-FM2A (2RU units)



### <Example of Use>



## Hybrid Fiber-optic Splice Enclosures

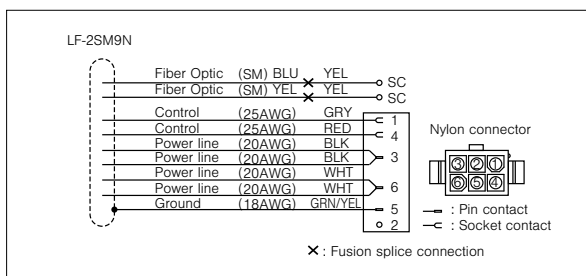
The optimized fiber-optic splice enclosures for use with HFO camera cables.

Model	No. of cables (capacity)	No. of splice trays	No. of Adapters	
			SC	Nylon
FCE-2	2	1	4	2
FCE-4	4	2	8	4
FCE-6	6	3	12	6

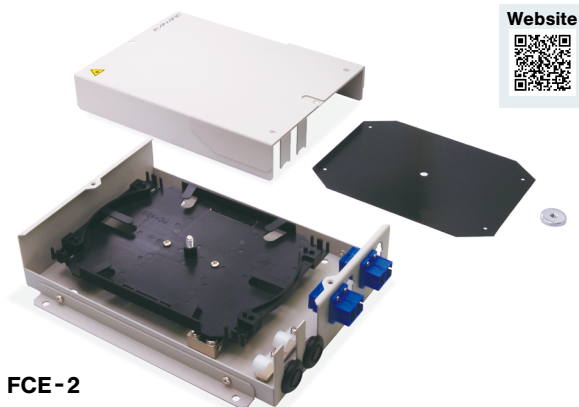
- Used to protect fusion splice connection parts
- Designed for use with LF-2SM9N
- Easy cable installation
- Can be placed vertically or horizontally
- Detachable brackets and a connector protection cover
- Insulated tension member clamp

### Note :

The following tools are required for installing the nylon connector.  
 AMP 91529-1 (26 to 22 AWG) and AMP 91536-1 (20 × 2 to 16 AWG)

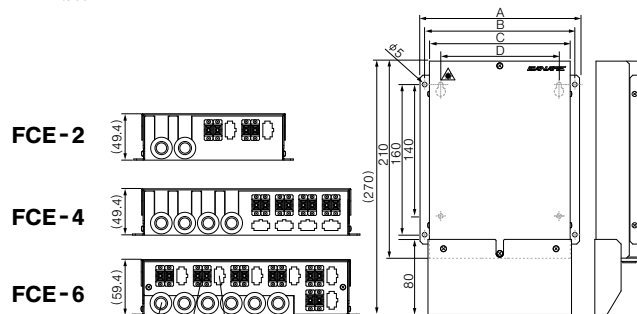


Wiring Diagram



### FCE-2

Accessories:  
 Fiber-optic cable w/SC connector (2m), splice holder, fusion splice protection sleeve, nylon connector, pin contact, socket contact, tie band, grounding cable, color-coded tube.



Type	FCE-2	FCE-4 FCE-6
A	170mm	240mm
B	160mm	230mm
C	150mm	220mm
D	126mm	196mm

# Fiber - Optic Systems

## Multi-Channel Snake

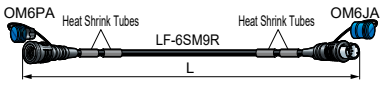
### Multi-Channel Fiber Optic Cables

Canare fiber-optic snake products are developed by extending ideas of SMPTE HFO camera solution. Individual multiple ferrules and robust metal chassis are engineered for heavy duty applications such as sports events or live productions connecting OBVAN to FOH stage box or venues.

- Canare exclusive design
- Heavy-duty alternative to MTP/MPO connectors
- Abrasion-resistance cable jacket
- Single-mode, ITU-T G.657.A2 low bending loss and low water-peak fiber
- Tensile strength: 500 N or less
- RL: 45 dB or greater ( $\lambda = 1.3 \mu\text{m}$ )
- Open to any SM optical signal
- 2mm SMPTE Ferrules

### OM6 Series

#### Trunk Cable : Plug - Jack

Type	Model	Length (m)
	OM6C10	10
	OM6C20	20
	OM6C25	25
	OM6C35	35
	OM6C50	50
	OM6C100	100
	OM6C150	150
OM6C200	200	

Jacket color: **BLK**



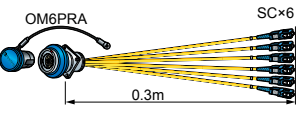
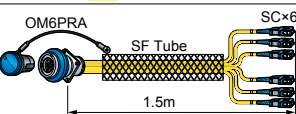
OM6PA



OM6JA

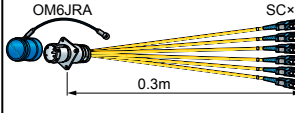
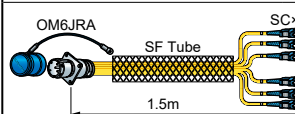


#### Fantail : P Receptacle to SC

Type	Model	Length (m)
	OM6S003-PR	0.3
	OM6S015-PR	1.5

Jacket color: **YEL** IU-FCM-SET included

#### Fantail : J Receptacle to SC

Type	Model	Length (m)
	OM6S003-JR	0.3
	OM6S015-JR	1.5

Jacket color: **YEL** IU-FCM-SET included



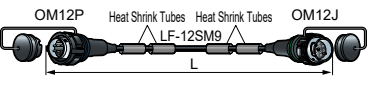
OM6PRA



OM6JRA

### OM12 Series

#### Trunk Cable : Plug - Jack

Type	Model	Length (m)
	OM12C10	10
	OM12C20	20
	OM12C30	30
	OM12C40	40
	OM12C50	50
	OM12C100	100

Jacket color: **BLK**



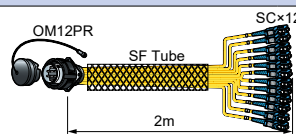
OM12P



OM12J

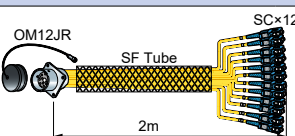


#### Fantail : P Receptacle to SC

Type	Model	Length (m)
	OM12S02-PR	2

Jacket color: **YEL**

#### Fantail : J Receptacle to SC

Type	Model	Length (m)
	OM12S02-JR	2

Jacket color: **YEL**

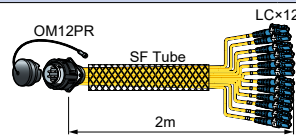


OM12PR



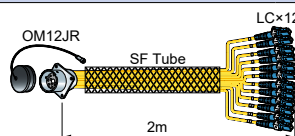
OM12JR

#### Fantail : P Receptacle to LC

Type	Model	Length (m)
	OM12S02-PR-L	2

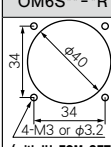
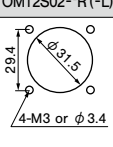
Jacket color: **YEL**

#### Fantail : J Receptacle to LC

Type	Model	Length (m)
	OM12S02-JR-L	2

Jacket color: **YEL**

#### Hole Dimensions

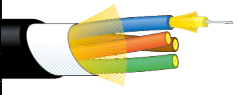
OM6S**-*R	OM12S02-*R(-L)
	

(with IU-FCM-SET)

### Tactical Fiber-optic Cable



Particularly rugged multichannel fiber-optic cable designed for mobile applications.

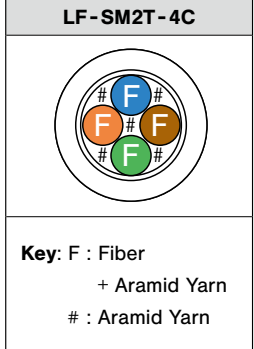
Type	Model	No. of Ch.	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Tension Tolerance (N)	Strength Member	Min. Bend Radius	Temp. Range (deg C)	Fiber-optic Unit		
										Fiber	Attenuation	Unit O.D.
	<b>LF-SM2T-4C</b>	4	100 200 500	7.8	4.9	1400	Aramid yarn	Equal to Nom. O.D.	-55 to +85	SM 9/125 (low-water-peak)	0.6 dB/km @1310 nm	2.0 mm including aramid yarn

Jacket color: **BLK**



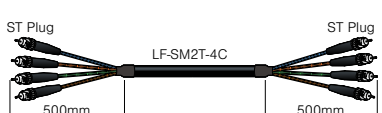
#### LF-SM2T-4C

- Heavy-duty and high flexibility
- \* Crush resistance: 2,000 N/cm
- \* Impact resistance: 300 impacts
- \* Cycle flexing: 20,000 cycles
- Single-mode
- Color-coded breakout type unit
- Thermoplastic polyurethane jacket
- Aramid yarn strength member
- 4-channel cable best suited for Quad-link 3G-SDI signals.

#### Cross Section



#### Cable Assemblies

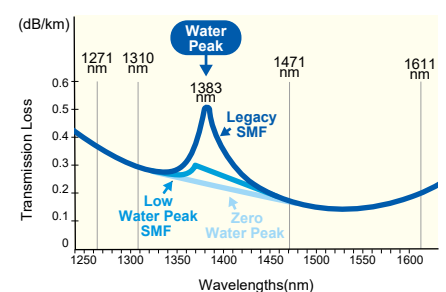
Type	Model	Length (m)
	<b>4FS50T-SS</b>	50
	<b>4FS100T-SS</b>	100
	<b>4FS150T-SS</b>	150
	<b>4FS200T-SS</b>	200
	<b>4FS50T-LS</b>	50
	<b>4FS100T-LS</b>	100
	<b>4FS150T-LS</b>	150
	<b>4FS200T-LS</b>	200
	<b>4FS50T-ST</b>	50
	<b>4FS100T-ST</b>	100
	<b>4FS150T-ST</b>	150
	<b>4FS200T-ST</b>	200

Jacket color: **BLK**

## Technical Note

### Canare's Single-mode Fiber-optic Cables

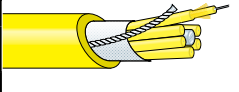
Canare's single mode fiber (SMF) cables are compliant with ITU-T G.652.D as well as ITU-T G.657.A2. Our SMF cables feature less water peak and excellent wavelength multiplexing capabilities in minimum 7.5mm bending radius per a unit, which gives you cabling even easier.



ITU-T	Category	Bend Radius (mm)	Number of Turns (times)	Bending Loss(Max. at)	
				$\lambda=1550\text{nm}$ (dB)	$\lambda=1625\text{nm}$ (dB)
G.657	A1	15	10	0.25	1.0
		10	1	0.75	1.5
	A2	<b>15</b>	<b>10</b>	<b>0.03</b>	<b>0.1</b>
		<b>10</b>	<b>1</b>	<b>0.1</b>	<b>0.2</b>
		<b>7.5</b>	<b>1</b>	<b>0.5</b>	<b>1.0</b>
	B2	15	10	0.03	0.1
		10	1	0.1	0.2
		7.5	1	0.5	1.0
	B3	10	1	0.03	0.1
		7.5	1	0.08	0.25
	5	1	0.15	0.45	



### Single-mode Fiber-optic Cables (Multichannel)

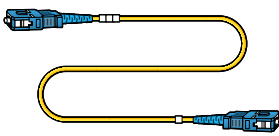
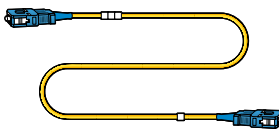
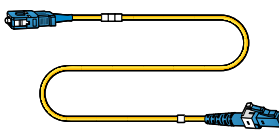
Type	Model	No. of Ch.	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Outer Jacket	Tension Tolerance (N)	Min. Bend Radius	Temp. Range (deg C)	Fiber-optic Unit		
										Fiber	Attenuation	Unit O.D.
	<b>LF-SM2-2C</b>	2	Call	7.4	5.4	PVC	290	10 x Nom. O.D.	-40 to +75	SM 9/125 + Aramid yarn + PVC jacket	0.5 dB/km @1310nm	2.0 mm including aramid yarn
	<b>LF-SM2-4C</b>	4		7.4	5.5		290					
	<b>LF-SM2-6C</b>	6		9.0	7.3		300					
	<b>LF-SM2-8C</b>	8		10.0	10.4		780					
	<b>LF-SM2-12C</b>	12		12.8	14.2		780					
	<b>LF-SM2-16C</b>	16		14.7	16.3		780					
	<b>LF-SM2-24C</b>	24		15.0	18.3		780					

- Smooth PVC Jacket
- Including a central strength member and a rip cord.

# Fiber - Optic Systems

## Fiber - optic Cables

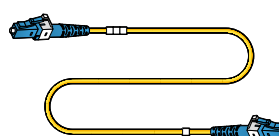
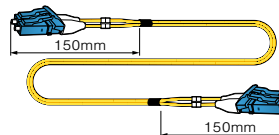
### Single-mode Fiber Optic Patch Cables

Type	Model	Length (m)
<b>SC - SC</b> 	FS3C002A - S	0.2
	FS3C003A - S	0.3
	FS3C005A - S	0.5
	FS3C007A - S	0.7
	FS3C01A - S	1
	FS3C02A - S	2
<b>SC - SC</b> 	FS2C002A - SS	0.2
	FS2C003A - SS	0.3
	FS2C005A - SS	0.5
	FS2C007A - SS	0.7
	FS2C01A - SS	1
	FS2C02A - SS	2
<b>SC - LC</b> 	FS2C002A - SS/LS	0.2
	FS2C003A - SS/LS	0.3
	FS2C005A - SS/LS	0.5
	FS2C007A - SS/LS	0.7
	FS2C01A - SS/LS	1
	FS2C02A - SS/LS	2

Jacket color: **YEL** Cable O.D.: 3 mm

Jacket color: **YEL** Cable O.D.: 2 mm

Jacket color: **YEL** Cable O.D.: 2 mm

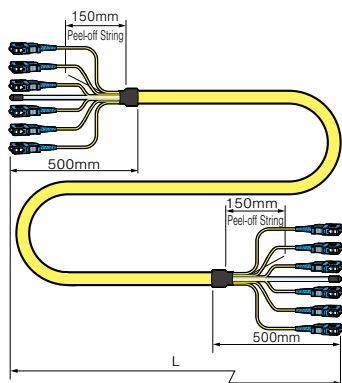
Type	Model	Length (m)
<b>LC - LC</b> 	FS2C002A - LS	0.2
	FS2C003A - LS	0.3
	FS2C005A - LS	0.5
	FS2C007A - LS	0.7
	FS2C01A - LS	1
	FS2C02A - LS	2
<b>LC - LC Duplex</b> 	2FSZ2S005A - DLS	0.5
	2FSZ2S007A - DLS	0.7
	2FSZ2S01A - DLS	1
	2FSZ2S02A - DLS	2
	2FSZ2S03A - DLS	3
	2FSZ2S04A - DLS	4

Jacket color: **YEL** Cable O.D.: 2 mm

- ITU-T G.652.D/G.657.A2
- Low - water - peak
- Minimum bend radius : 10 mm
- Insertion loss : 0.5 dB max.
- Return loss : 50 dB max. (UPC)
- UL type OFNR



### Single-mode Fiber Optic Fantails

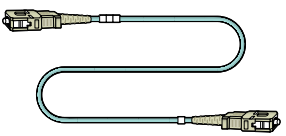
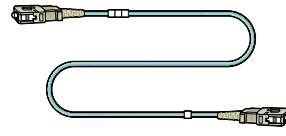
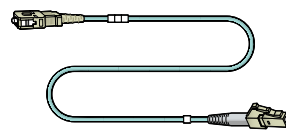
Type	Channel	Model	Length (m)	Fiber Optic Cable		
				Part Number	Unit O.D. (mm)	Nom. O.D. (mm)
<b>SC - SC</b> 	2	2FS10 - S	10	LF - SM2 - 2C	7.4	2
		2FS20 - S	20			
		2FS50 - S	50			
	4	4FS10 - S	10	LF - SM2 - 4C	7.4	
		4FS20 - S	20			
		4FS50 - S	50			
	6	6FS10 - S	10	LF - SM2 - 6C	9.0	
		6FS20 - S	20			
		6FS50 - S	50			
	8	8FS10 - S	10	LF - SM2 - 8C	10.0	
		8FS20 - S	20			
		8FS50 - S	50			
12	12FS10 - S	10	LF - SM2 - 12C	12.8		
	12FS20 - S	20				
	12FS50 - S	50				
16	16FS10 - S	10	LF - SM2 - 16C	14.7		
	16FS20 - S	20				
	16FS50 - S	50				
24	24FS10 - S	10	LF - SM2 - 24C	15.3		
	24FS20 - S	20				
	24FS50 - S	50				

Jacket color: **YEL**

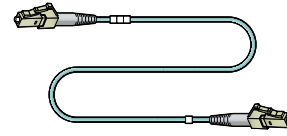
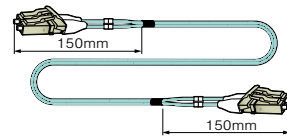
- Flexible cable with reliable bellcore boots
- Adjustable fantail length with peel - off string
- UPC polishing; Return loss  $\geq 50$ dB for single mode
- Transmission loss 0.5dB at  $\lambda=1.31\mu\text{m}$  and 0.4dB at  $\lambda=1.55\mu\text{m}$



### OM3 Multi-mode Fiber Optic Patch Cables

Type	Model	Length (m)
 Jacket color: <b>AQUA</b> Cable O.D.: 3 mm	FM33C005-S	0.5
	FM33C01-S	1
	FM33C03-S	3
	FM33C05-S	5
 Jacket color: <b>AQUA</b> Cable O.D.: 2 mm	FM32C005-SS	0.5
	FM32C01-SS	1
	FM32C03-SS	3
	FM32C05-SS	5
 Jacket color: <b>AQUA</b> Cable O.D.: 2 mm	FM32C005-SS/LS	0.5
	FM32C01-SS/LS	1
	FM32C03-SS/LS	3
	FM32C05-SS/LS	5

- Fiber type : Multi-mode 50/125 OM3
- Typically used in 10 Gigabit Ethernet
- Minimum bend radius: 10 mm

Type	Model	Length (m)
 Jacket color: <b>AQUA</b> Cable O.D.: 2 mm	FM32C005-LS	0.5
	FM32C01-LS	1
	FM32C03-LS	3
	FM32C05-LS	5
 Jacket color: <b>AQUA</b> Cable O.D.: 2 mm	2FM3Z2S005-DLS	0.5
	2FM3Z2S01-DLS	1
	2FM3Z2S03-DLS	3
	2FM3Z2S05-DLS	5

- Insertion loss: 0.3 dB max.
- Return loss: 30 dB max. (PC)
- UL type OFNR

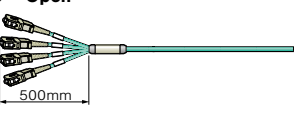
Website



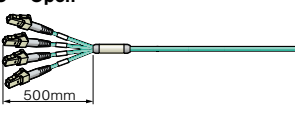
Website



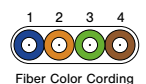
### OM3 Multi-mode Fiber Optic Fan-out Cables

Type	Model	Length (m)
 Jacket color: <b>AQUA</b>	4FO-M3-015-SS	1.5
	4FO-M3-03-SS	3
	4FO-M3-05-SS	5

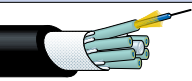
- 4-core Multimode 50/125 OM3 Ribbon Fiber
- Typically used in 10 Gigabit Ethernet
- Insertion loss: 0.3 dB max.
- Return loss: 30 dB max. (PC)

Type	Model	Length (m)
 Jacket color: <b>AQUA</b>	4FO-M3-015-LS	1.5
	4FO-M3-03-LS	3
	4FO-M3-05-LS	5

- Ribbon fiber cable : 2.1 × 3.5 mm outer dimensions
- Fan-out unit : 2 mm outer diameter, 500 mm length
- Fan-out tubing : 8 mm outer diameter
- UL type OFNR



### Multi-core OM3 Multi-mode Fiber Optic Cables

Type	Model	No. of Ch.	Sales Units (m)	Nom. O.D. (mm)	Weight kg/100m	Tension Tolerance (N)	Min. Bend Radius	Temp. Range (deg C)	Fiber-optic Unit		
									Fiber	Attenuation	Dim. (mm)
 Jacket color: <b>BLK</b> Unit color: <b>AQUA</b>	LF-M32T-6C <b>New</b>	6	Call	9.2	8.0	700	6 × Nom. O.D.	-40 to +75	MM 50/125	3 dB/km @850nm 1 dB/km @1300nm	2.0 (round)
	LF-M32-4C-EM	4		7.4	5.6	290					
LF-M32-6C-EM	6	9.0		7.5	300						
LF-M32-8C-EM	8	10.1		10.8	780						
 Jacket color: <b>BLK</b> Unit color: <b>AQUA</b>	LF-M3R4-12C-EM	12 (3×4 core)		7.4	5.6	300		-20 to +60			1.5 × 2.5 (ribbon)

Jacket material : Flame retardant PE

- OM3 fiber; typically used in 10 Gigabit Ethernet.
- Including a central strength member and a rip cord.
- Each unit has aramid strength member.