

BRU-SF10

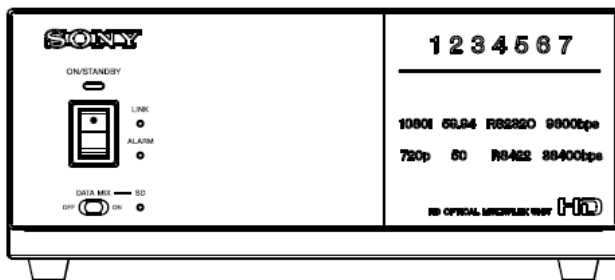
1. Single mode fiber cable supported

The BRU-SF10 supports single mode optical fiber cable ensuring 2,000m transmission at maximum.

2. Status display on the front panel

The following various status displays are newly added on the front panel of the BRU-SF10 to increase its usability.

- 1080i/720p, 59.94/50, RS-232C/422, 9600/38400bps
- Camera ID : 1~7



3. Monitor output

By inserting the BRBK-HSD2, the HD/SD-SDI output card into optional card slot, the BRU-SF10 enables monitor output. By turning off data mix, it enables various camera settings without displaying OSD on video out signal (main line).

4. Uncompressed digital transmission

The BRU-SF10 features uncompressed multiple signal operation via a single cable. Video, sync, pan/tilt control, camera control signal and audio line-in signal can be transmitted using with the CCFC-S200, single mode optical fiber cable and the BRBK-SF1, HD optical multiplex card. The distance between the BRU-SF10 and the BRC-Z330/-H900 can be extended to a maximum 2,000m (6,560 feet). The Single cable operation makes it possible to integrate the camera system easily.

5. Variety of video signal output

The BRU-SF10 is equipped with analog RGB or Y/Pb/Pr signal output as standard. Furthermore, 2 built-in optional

card slots enable to provide various signals in order to broaden the range of applications. For instance, HD-SDI signal can be provided when installing the BRBK-HSD2 into the card slot. Two same kinds of cards can be installed into the BRU-SF10 at the same time.

6. External sync signal input/output equipped

When multiple BRC-Z330 or BRC-H900 HD cameras or combination of BRC-Z330 and BRC-H900 HD cameras are connected via the Optical Fiber Cable, the video signal can be synchronized by inputting the sync signal into the external sync input connector.

7. Audio line output connectors (phono jacks, L/R) equipped

The BRU-SF10 allows output of stereo audio line signals that are transmitted from the BRBK-SF1 HD Optical Multiplex Card inserted into the BRC-Z330/-H900 HD camera.

8. RS-232C/RS-422 serial control by VISCA™

All of camera and pan/tilt functions can be controlled via VISCA commands with a remote controller or a PC. This unit incorporates the VISCA Mini DIN 8pin connectors for RS-232C control between BRU-SF10 and BRC-Z330/-H900. Additionally, the dedicated 9pin connector is incorporated for RS-422 control from far location. While the RS-232C is extended up to 15m (50feet) officially, the RS-422 is up to approximately 1.2km (4,000feet). The data transmission speed of the RS-422 and the RS-232C can be selected either 9600bps or 38400bps.

BRBK-SA1

Analog SD output card

The BRBK-SA1 enables down convert to analog SD output signal when installed into the BRU-SF10 built-in card slot. This can be used as an optional card for the BRC-Z330/-H900*.

*Note: Although the BRBK-SA1 can be used with the BRC-Z330/1, in case of using with previous version of the BRC-Z330, it requires version upgrade.

BRBK-HSD2

HD/SD-SDI output card

The BRBK-HSD2 provides HD-SDI signal when installed into the BRU-SF10 built-in card slot. By turning off data mix, it enables various camera settings without displaying OSD on video out signal (main line). This can be used as an optional card for the BRC-Z330*/-H900.

Note 1: Although the BRBK-HSD2 can be used with the BRC-Z330/1, in case of using with previous version of the BRC-Z330, it requires version upgrade.

BRBK-SF1

1. HD optical multiplex card

The BRBK-SF1 provides high quality optical multiplex HD signal and audio line-in signal when installed into the BRC-Z330* /-H900 built-in card slot.

Note: Although the BRBK-SF1 can be used with the BRC-Z330/1, in case of using with previous version of the BRC-Z330, it requires version upgrade.

2. Audio line input

The BRBK-SF1 is equipped with phono jack for Audio input. By installing the BRBK-SF1 into the BRC-Z330/-H900, image signal of the BRC-Z330/-H900 and analog audio signal received by the BRBK-SF1 can be simultaneously transferred to the BRU-SF10 via single mode optical fiber cable. This is effective when a microphone is set near the BRC-Z330/-H900 located in distant place while the BRU-SF10 located by an operator who needs both image and audio at the same time.

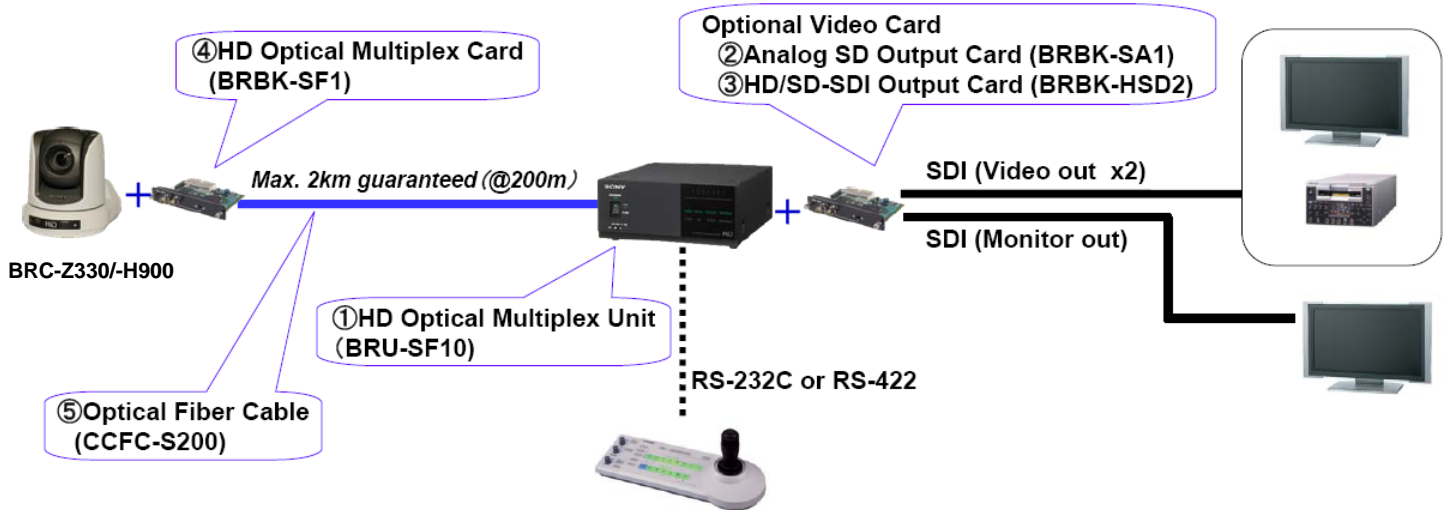
CCFC-S200

Single mode optical fiber cable

The CCFC-S200 is a single mode optical fiber cable for connecting the BRC-Z330/-H900 (with BRBK-SF1) to the BRU-SF10. The CCFC-S200 can transmit uncompressed digital data without any deterioration. It can be extended up to 2000m (6,560 feet) using with supplied cable extension adaptor.

System Configurations

(When the BRBK-HSD2 x1 is inserted into the BRU-SF10)

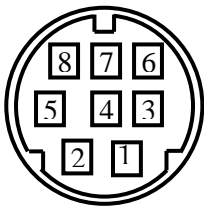


Note: The BRBK-HD2 for the BRC-Z330/-H900 can not be used with the BRU-SF10.

Pin Assignment and Connection

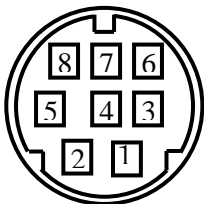
BRU-SF10

VISCA RS-232C IN pin assignment



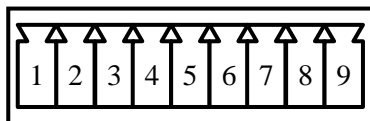
Pin No.	Name	Signals
1	DTR	Data Transmission Ready (INPUT)
2	DSR	Data Set Ready (INPUT)
3	TXD	Transmit Data (INPUT)
4	GND	Ground
5	RXD	Receive Data (INPUT)
6	GND	Ground
7	N.C.	No Connection
8	N.C.	No Connection

VISCA RS-232C OUT pin assignment



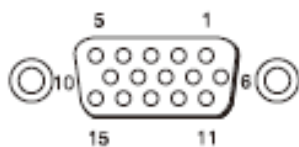
Pin No.	Name	Signals
1	DTR	Data Transmission Ready (OUTPUT)
2	DSR	Data Set Ready (OUTPUT)
3	TXD	Transmit Data (OUTPUT)
4	GND	Ground
5	RXD	Receive Data (OUTPUT)
6	GND	Ground
7	N.C.	No Connection
8	N.C.	No Connection

VISCA RS-422 pin assignment



Pin No.	Name	Signals
1	RXD OUT-	Receive Data (OUT) -
2	RXD OUT+	Receive Data (OUT) +
3	TXD OUT-	Transmit Data (OUT) -
4	TXD OUT+	Transmit Data (OUT) +
5	GND	Ground
6	RXD IN-	Receive Data (IN) -
7	RXD IN+	Receive Data (IN) +
8	TXD IN-	Transmit Data (IN) -
9	TXD IN+	Transmit Data (IN) +

D-Sub 15P pin assignment



Pin No.	Functions			
	When setting YPbPr COMPONENT	When setting COMPONENT at VD	When setting RGB at SYNC	When setting RGB at VD
1	Pr-OUT	Pr-OUT	R-OUT	R-OUT
2	Y-OUT	Y-OUT	G-OUT	G-OUT
3	Pb-OUT	Pb-OUT	B-OUT	B-OUT
4	GND	GND	GND	GND
5	GND	GND	GND	GND
6	GND	GND	GND	GND
7	GND	GND	GND	GND
8	GND	GND	GND	GND
9	NC	NC	NC	NC
10	GND	GND	GND	GND
11	GND	GND	GND	GND
12	NC	NC	NC	NC
13	HD-OUT	HD-OUT	HD-OUT	HD-OUT
14	3 Value SYNC-OUT	2 Value VD-OUT	3 Value SYNC-OUT	2 Value VD-OUT
15	NC	NC	NC	NC

Specifications

BRU-SF10 Brochure specifications

Optical fiber	LC Duplex Fiber Connector
Video output	D-Sub 15 pin: Component (Y/Pb/Pr) or RGB, HD, VD or SYNC
External sync input	BNC
External sync output	BNC
Audio line output	Phono jack x2 (L/R)
Camera control	Mini DIN 8 pin: RS-232C (VISCA IN), Mini DIN 8 pin: RS-232C (VISCA OUT), Connector plug 9 pin: RS-422 (VISCA IN/OUT)
Optional card slots	2 slots
Operating temperature	0 to 40 °C (32 to 104 °F)
Storage temperature	-20 to 60 °C (-4 to 140 °F)
Power requirements	12 V DC (10.8 V to 13.2 V DC)
Power consumption	Max. 15.6W (with optional cards)
Dimensions (WxHxD)	210 x 86 x 240 mm (8 3/8 x 3 1/2 x 9 1/2 inches)
Mass	2.0kg (4 lb 7oz)
Supplied accessories	AC adaptor (1), Power cord (1), DC-cord secure connection attachment (1), RS-422 connector plug (1), RS-232C connecting cable (3 m, Mini DIN 8 pin) (1), Operating instructions (1)

BRU-SF10 Additional specifications

Selectable external sync	Standard Sync RGB three-state Sync Y three-state Sync SD Sync
External Sync. Lock capability	Loop Trough Out

BRBK-SA1

Video output	BNC x1: VIDEO, Mini DIN 4pin x1: S VIDEO, D-sub 9pin x1: RGB/SYNC
Power supply	12 V DC (supplied from the camera or the Optical Multiplex Unit)

Power consumption	3.7 W max.
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	20% to 80% (no condensation)
Storage temperature	–20 °C to + 60 °C (–4 °F to +140 °F)
Storage humidity	20% to 95% (no condensation)
Dimensions	134 × 25.6 × 74.6 mm (w/h/d) (5 3/8 × 1 1/16 × 3 inches) (not including the projected parts)
Mass	Approx. 125g (4.4 oz)
Supplied accessories	Operating instructions (1)

BRBK-HSD2

Video output	BNC x3, HD-SDI or SD-SDI
Power supply	12 V DC (supplied from the camera or the Optical Multiplex Unit)
Power consumption	2.9 W max.
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	20% to 80% (no condensation)
Storage temperature	– 20 °C to + 60 °C (–4 °F to +140 °F)
Storage humidity	20% to 95% (no condensation)
Dimensions	134 × 25.6 × 74.6 mm (w/h/d) (5 3/8 × 1 1/16 × 3 inches) (not including the projected parts)
Mass	Approx. 120g (4.2 oz)
Supplied accessories	Operating instructions (1)

BRBK-SF1

Optical connector	LC duplex Fiber connector (1)
Audio line input	Phono jack, right (1)/left (1)
Power supply	12 V DC (supplied from the camera)
Power consumption	2.9 W max.
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	20 % to 80 % (no condensation)
Storage temperature	–20 °C to + 60 °C (–4 °F to +140 °F)
Storage humidity	20 % to 95 % (no condensation)
Dimensions	134 × 25.6 × 74.6 mm (w/h/d) (5 3/8 × 1 1/16 × 3 inches) (not including the projected parts)

Mass	Approx. 130 g (4.6 oz)
Supplied accessories	Operating instructions (1)

CCFC-S200

Type	LC duplex optical fiber cable
Length	200m (656feet)
Weight	Approx. 3.6kg (7lb 15oz)
Supplied accessories	Extension adaptor (1)

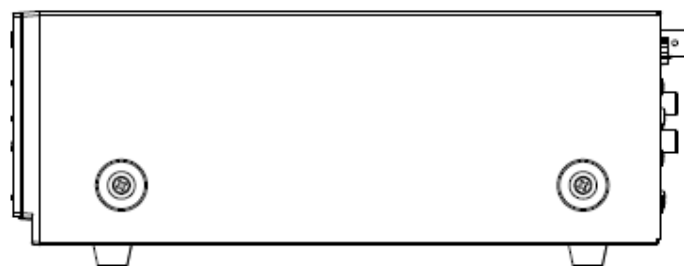
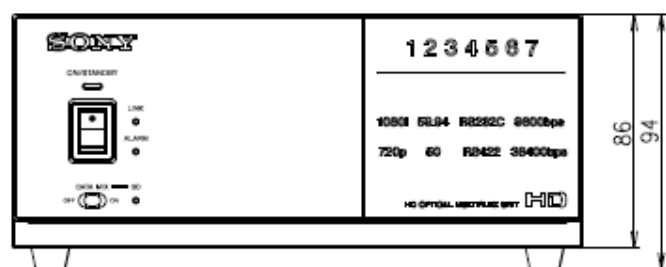
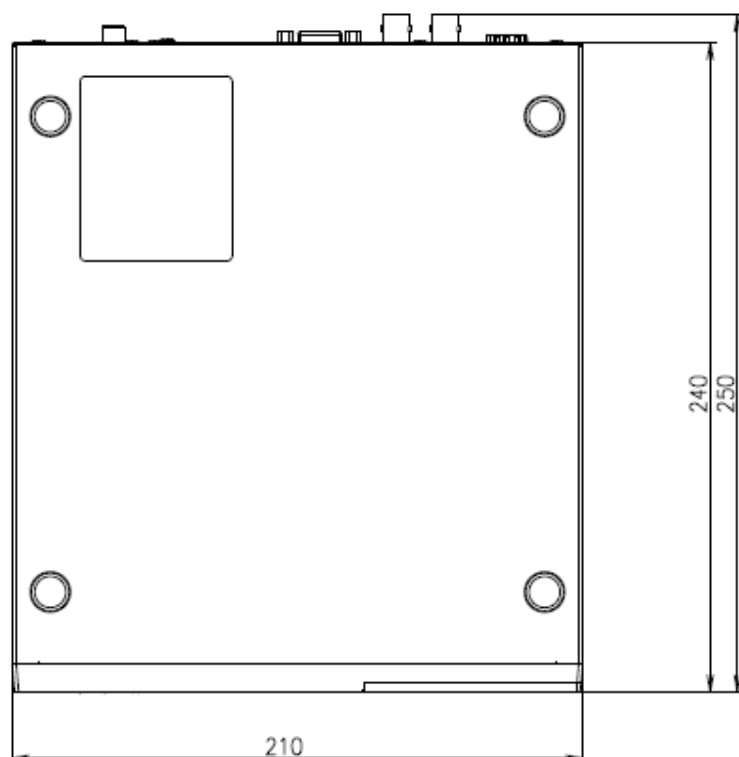
Safety approval

BRU-SF10 UC UL+cUL: UL60950-1/CSA C22.2 No.60950-1
FCC/IC: Digital Device Class A
Laser: DHHS/DNHW

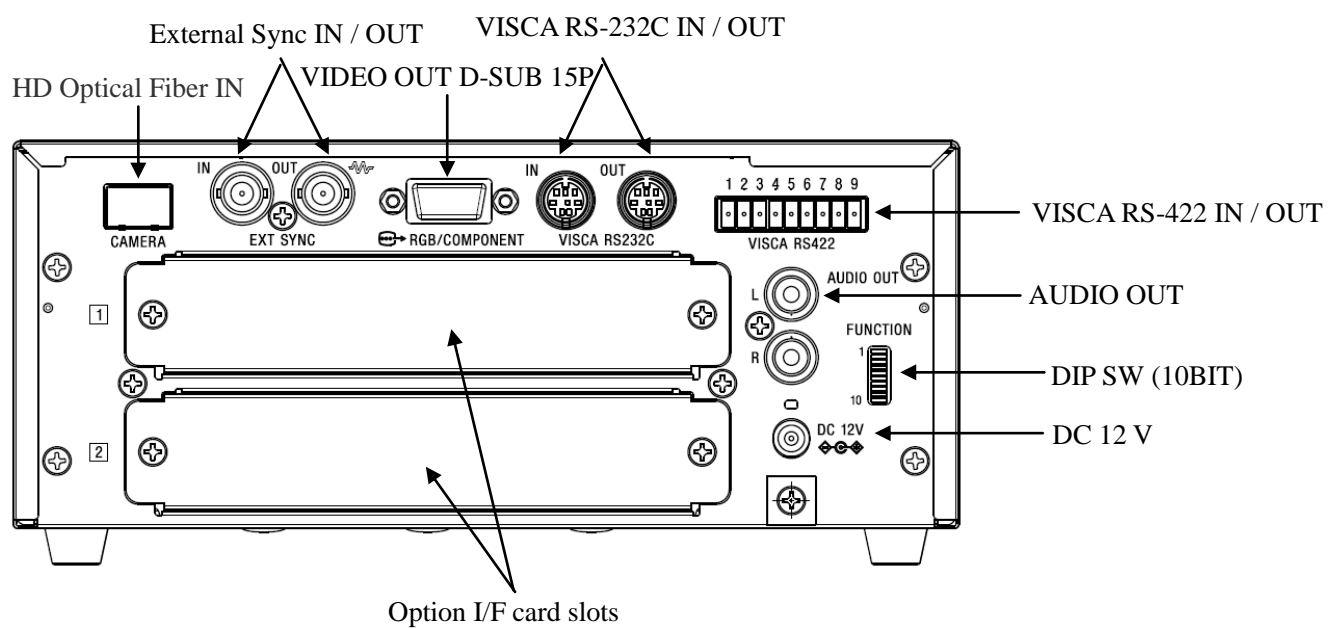
BRBK-SA1 WW	North America	FCC/IC: Digital Device Class A
BRBK-HSD2 WW	North America	FCC/IC: Digital Device Class A
BRBK-SF1 WW	North America	FCC/IC: Digital Device Class A
		Laser: DHHS/DNHW

External appearance

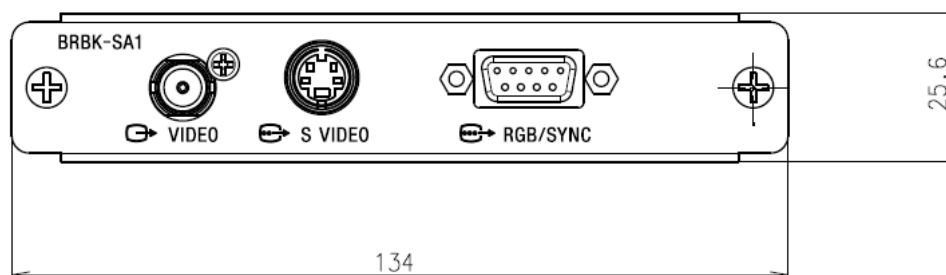
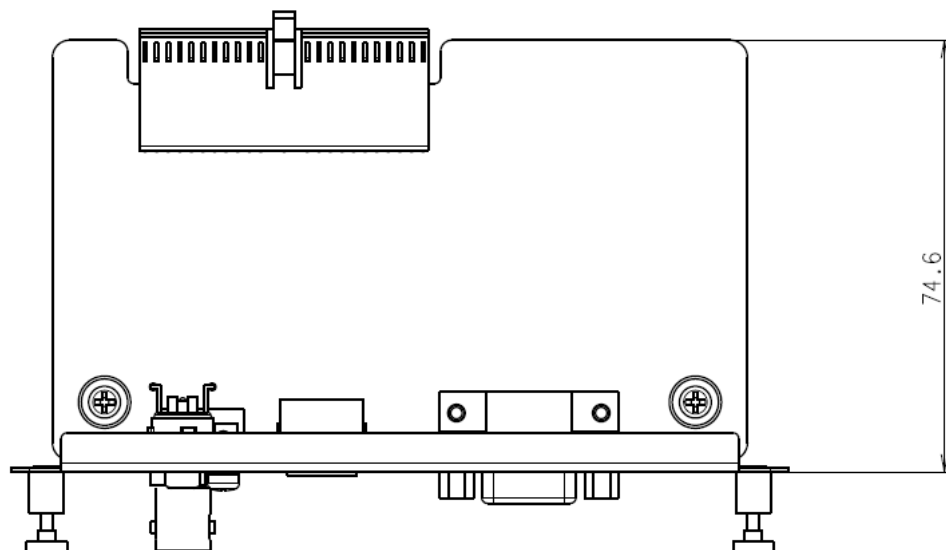
BRU-SF10



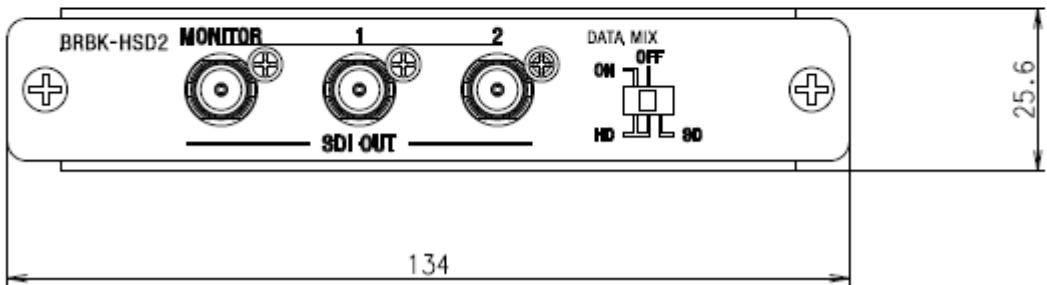
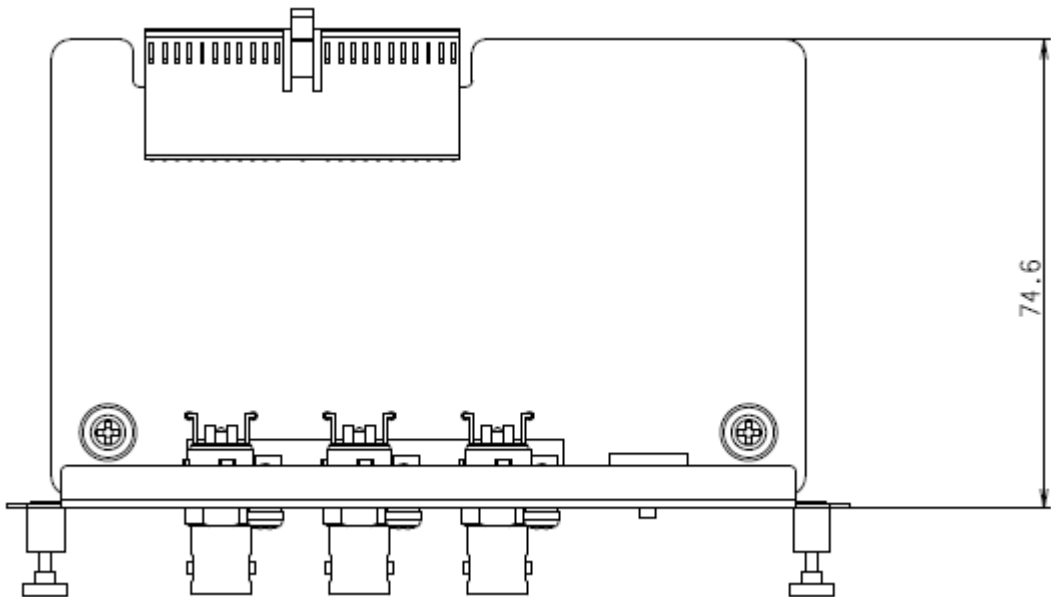
Rear Panel



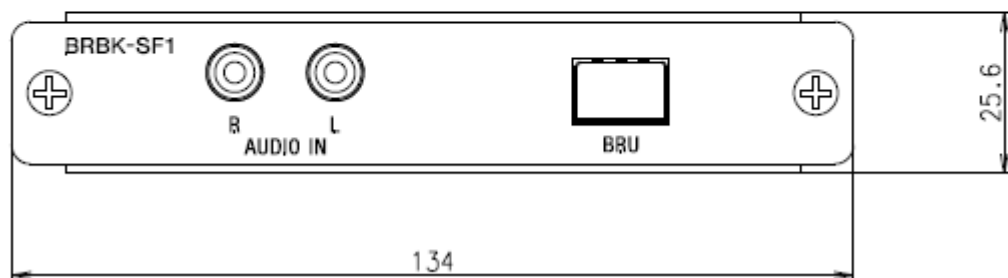
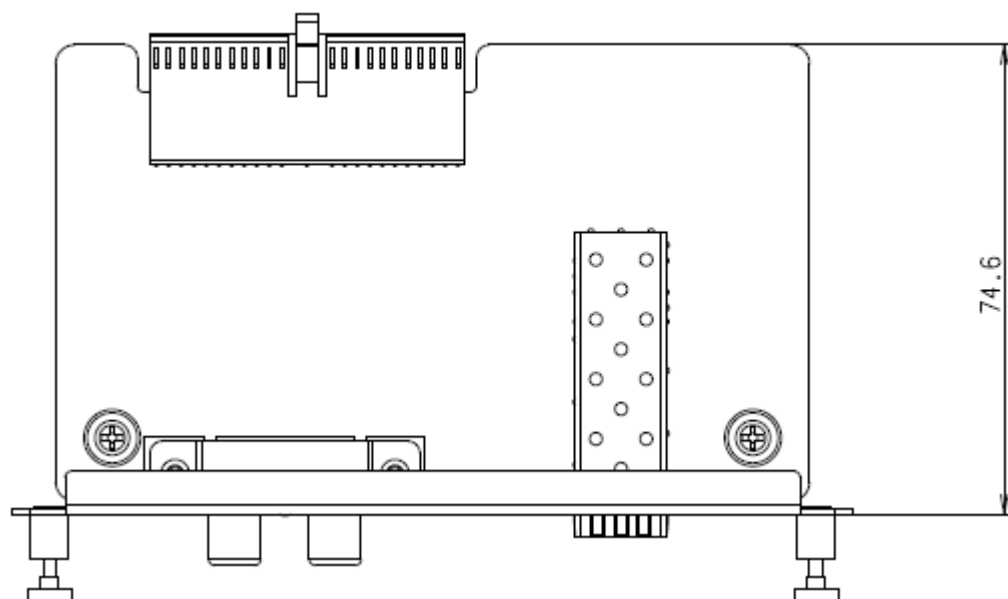
BRBK-SA1






BRBK-HSD2



BRBK-SF1



Comparison Chart1

Model name	BRU-SF10	BRU-H700	BRU-300/P
Appearance			
Fiber cable Max. extension	2,000m (CCFC-S200)	1,000m (CCFC-M100HG)	500m (CCFC-M100)
Video output	Analog RGB, Y/Pb/Pr	Analog RGB, Y/Pb/Pr	VBS, Y/C
RS-232C / RS-422	Yes		
Sync system	INT/EXT		
Power requirements	DC 12 V	59.94i: AC 100 to 120V, 50/60Hz 50i: AC 220 to 240V, 50/60Hz	NTSC: AC 100 to 120V, 50/60Hz PAL: AC 220 to 240V, 50/60Hz
Power consumption	Max. 15.6W (with optional cards)	Max. 10W (without optional cards)	9W (without optional cards)
Dimensions (WxHxD)	210x86x240	210x86x240	212x88x233

CCFC-S200 Specification

1. General information

This specification covers the descriptions of the optical fiber cable with connector.

The following describes the structure and the characteristics of it.

2. Product Name

Nonflammable SM type optical fiber cable with duplex LC connector plug on both sides

3. Cable Name

FR-SMC • 10/125 • 04 • 2XSF < Cord Color: Yellow, Sheath Color: Black, VW-1 >

Cable specification number: JAT-19216B

4. Applicable standard

- (1) JIS C 6820 General rules of optical fiber
- (2) JIS C 6823 Measurement methods for attenuation of optical fibers
- (3) JIS C 6825 Test methods for structure parameter of single mode optical fibers
- (4) JIS C 6835 Silica glass single mode optical fibers

5. Environment condition

Storage temperature: -20 degrees to +60 degrees

Operating temperature: -15 degrees to +60 degrees

Storage humidity: Less than 95%RH

Operating humidity: Less than 85%RH


6. Structure

6.1 Optical fiber cord

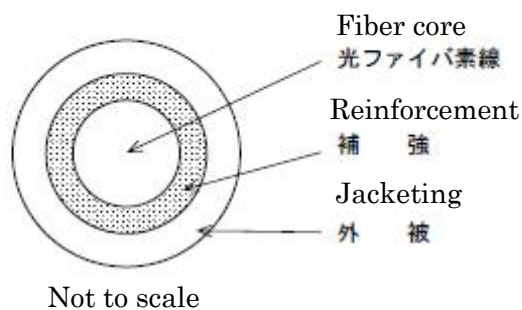
Item		Unit	Construction
Fiber type		-	Single mode (SM) silica glass optical fiber
Mode field diameter		um	9.2±0.7
Cladding diameter		um	125±1
Concentricity error		um	Max. 0.8
Cladding noncircular ratio		%	Max. 2
Interception wavelength		um	1.10~1.29
Fiber curl radius		m	Min. 2
Proof level		%	Min. 1
Material		-	UV curable material
Diameter		um	250±15
Reinforcement		-	Aramid yarn
Jacketing	Material	-	Flame retardant polyethylene
	Color	-	Yellow
Diameter (approx.)		mm	1.5

6.2 Optical fiber cable

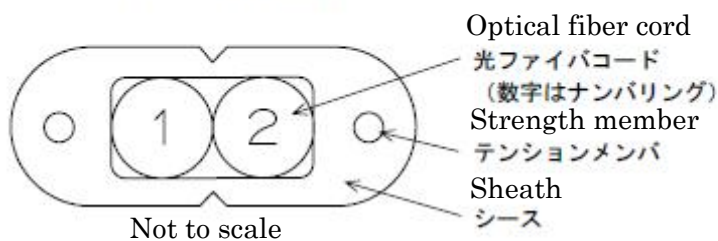
Item		Unit	Construction
No. of core		-	2
Optical fiber cord		-	Refer to 6.1
Strength member	Material	-	Steel wire
	Size	No./mm	1/0.4
	No.	-	2
Stranding		-	Arrange optical fiber cords and strength member as below
Sheath	Material	-	Flame retardant polyethylene
	Color	-	Black
Cable diameter		mm	5.8±0.5 x 2.6±0.3
Weight (approx.)		kg/km	17

*"FUJIKURA-S E49075  AWM VW-1 SM" is serially printed on the surface of cable sheath.

<光ファイバコード構造図>



<ケーブル構造図>



*Identification of optical fiber cord shall be made by sequential number printed on the jacketing (numbering).

6.3 Optical Connector

Connector type	Specification	Structure	Polishing
Duplex LC connector plug	IEC 61754-20	PNJHY-0048-61-04B	SPC polishing

6.4 The structure of optical fiber cable with connector plug on both side

Flame retardant SM type optical fiber cable with duplex LC connector plug on both side: Refer to PNJHG-3200-62-05A

The structure of part relieving the cord bending near connector plug: Refer to PNJHG-3200-62-02B

7. Optical characteristics

7.1 Optical fiber core wire

Item	Wave length	Characteristics	Conversion	
			L	Conversion formula
Attenuation	$\lambda=1.31\mu\text{m}$	Less than 0.40dB/km	$0.2 \leq L < 1$	Max. $0.25 \times L + 0.15$ dB
			$L < 0.2$	Max. 0.2 dB
Zero dispersion wavelength	-	1.300~1.324 μm	-	-
Zero dispersion slope	-	Less than 0.093ps/nm ² km	-	-

L=Cable length (Km)

7.2 Optical connector

Connector	Insertion loss	Return loss
DuplexLC	Max. 0.5dB	Min. 40dB

*Cable with connector add connection loss of connector to transmission loss of cable

8. Mechanical characteristics

8.1 Optical fiber cord

Item	Characteristics
Permissible tensile force	Max. 90N (Max. 9kgf)
Permissible bending radius	Min. 30mm

8.2 Optical fiber cable

Item	Characteristics
Permissible tensile force	Max. 140N (Max. 15kgf)
Permissible bending radius (Only thickness direction)	Min. 40mm

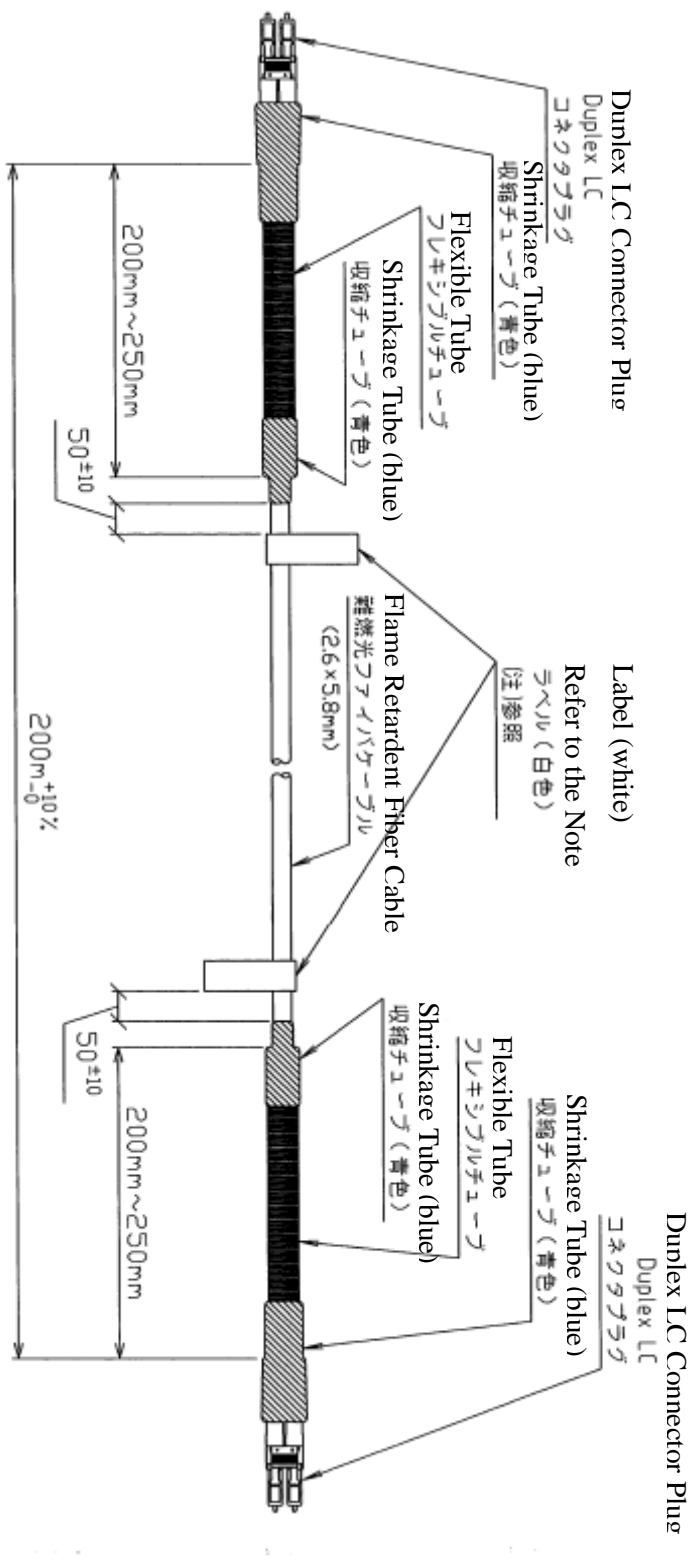
9. Flame retardant characteristics

9.1 Optical fiber cable

Item	Characteristics
Flame retardant test	Approved UL1581 VW-1

10. Package

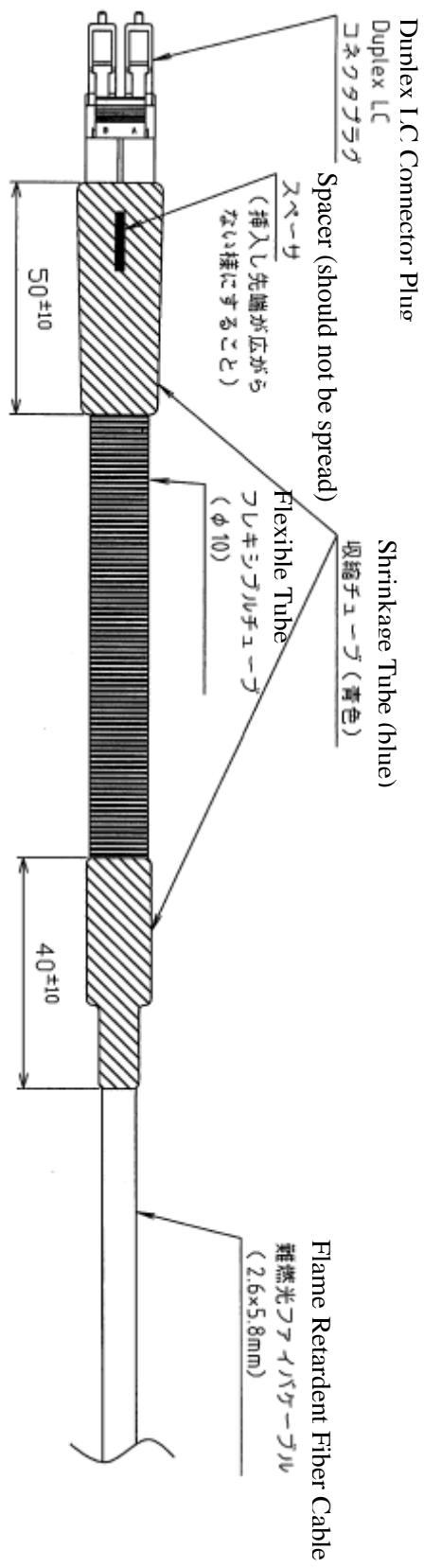
The cable is winded up in a coil and the connector part should be protected from damage while transportation



Note: The following items should be on the label
 (注)ラベルには下記項目を表示する。
 Product name ・ 製番 (CCFC-S200)
 Serial number ・ シリアル番号
 ・ 製造年月
 Produced year, month and day

Nonflammable optical fiber cable with
 duplex LC connector plugs on both sides

unit:mm



unit:mm

Nonflammable optical fiber cable with
duplex LC connector plugs on both sides



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