

DATE. Jun. 10, 2021

No. SPPU-10744 (1)

FOV:PNJHC-1100-25-01N

SG :PNJHC-1100-24-01N

*Messrs. FOV Ltd*  
*Messrs. Suzuki Giken Co., Ltd.*

# SPECIFICATION



FOR

Patch cord with Simplex/Duplex connector requirements

(Standard products for Data Center)

Fujikura internal information

提出仕様書 No. Fujikura Specification No. (Proposed to customer)	先方仕様書 No. Customer Specification No.
PNJHC-1100-51-01B	

仕様書がない場合には斜線  を入れること。(空欄にしない)  
In the absence of Fujikura/Customer specifications, fill an oblique line  in the column. (Don't leave the column blank.)

*Prepared by K. Sato*

*Approved by T. Yoshida*

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*Optical Cable System Division*

*Manager,*  
*Fiber Optics Components Department*  
*Optical Cable System Division*

## Fujikura Ltd.

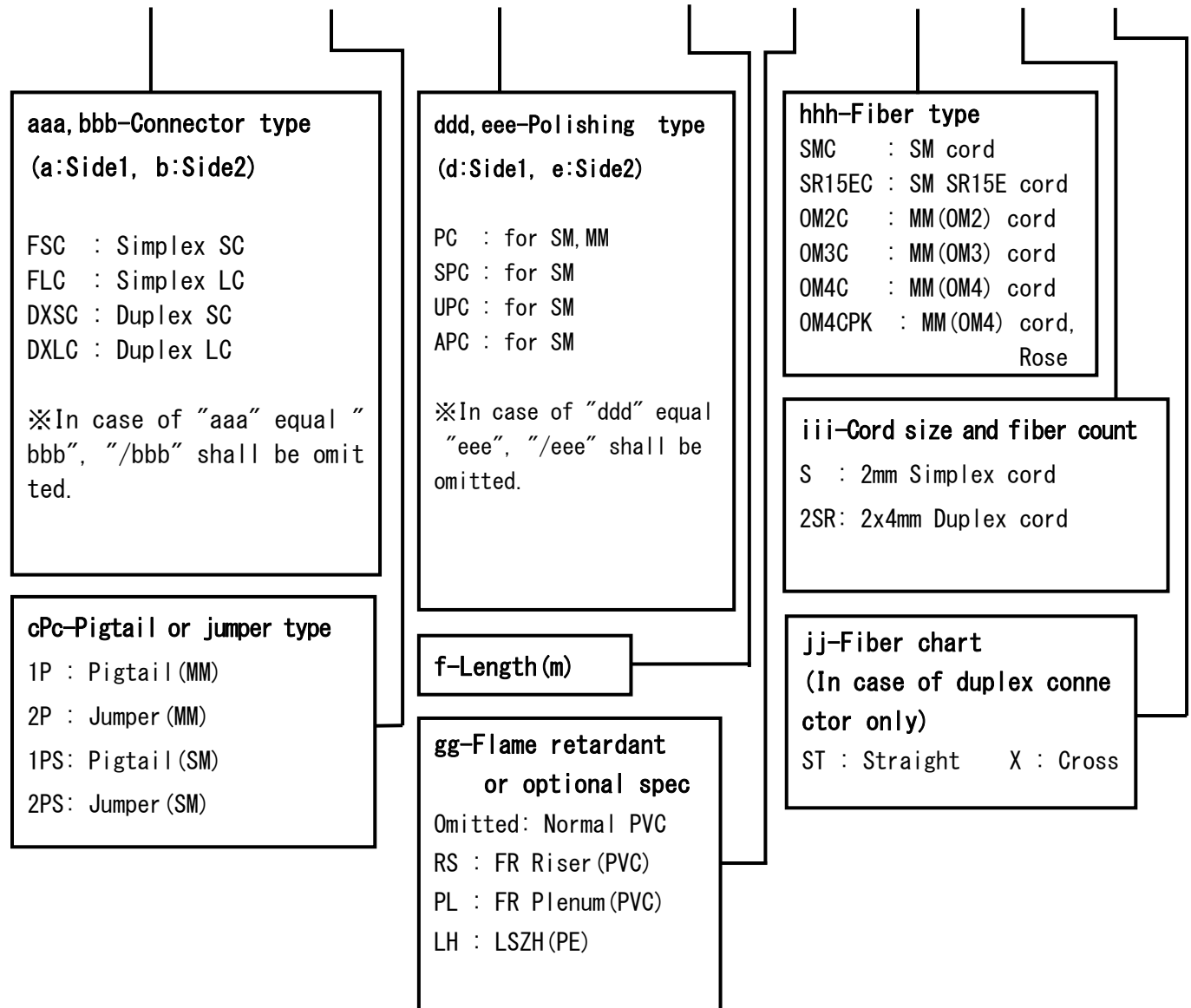
## 1. General

### 1.1 Products Covered by this Specification

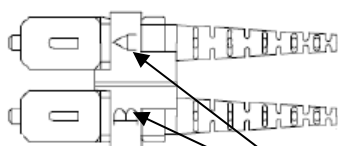
This specification covers single fiber jumper and pigtail cords.

### 1.2 Product name

aaa (/bbb) -cPc-ddd (/eee) -fM (-gg) -hhh-iii-jj



Duplex SC (Duplex Clip)



A, B

Do Laser marking

## 2. Specifications

### 2.1 Appearance

There should be no damage, scratch and dirt on the products when visually checked.

### 2.2 Physical Dimensions

The physical dimensions are shown in Fig.1

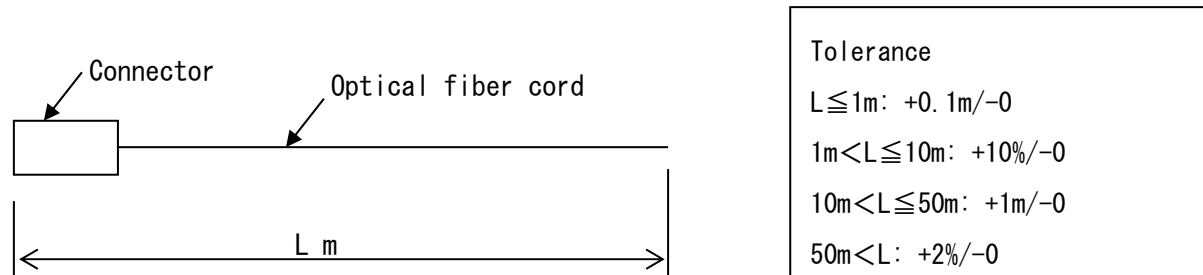


Fig.1-1 Pigtail (Simplex cord)

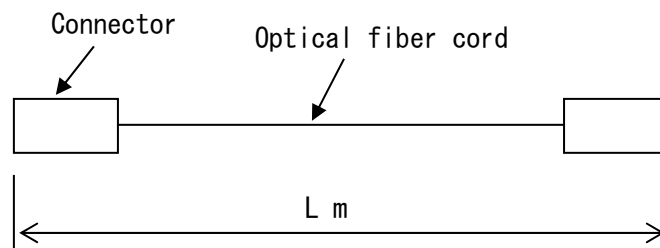


Fig.1-2 Jumper (Simplex cord)

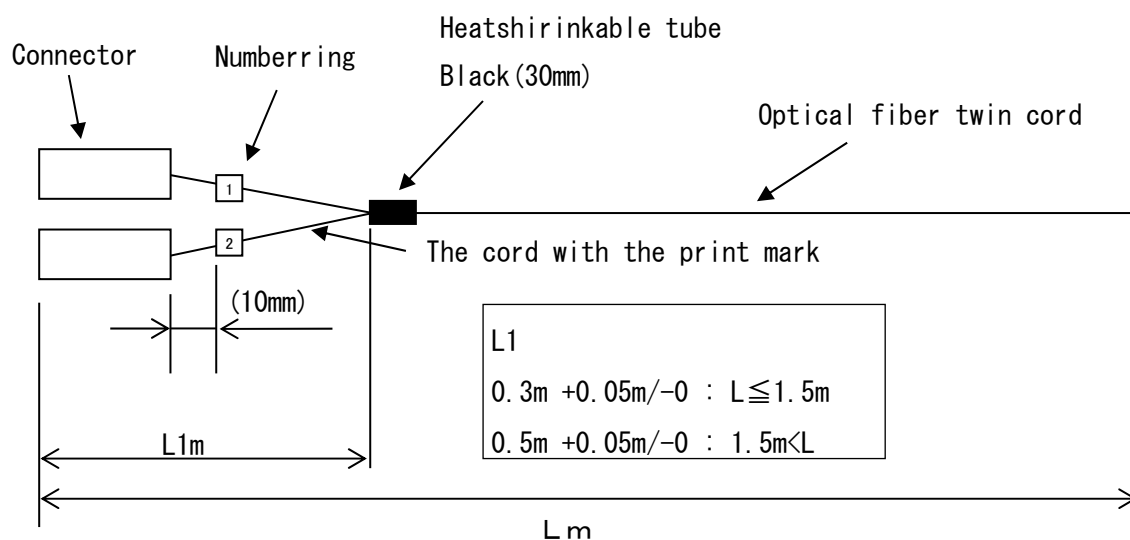


Fig.1-3 Pigtail (Duplex cord)

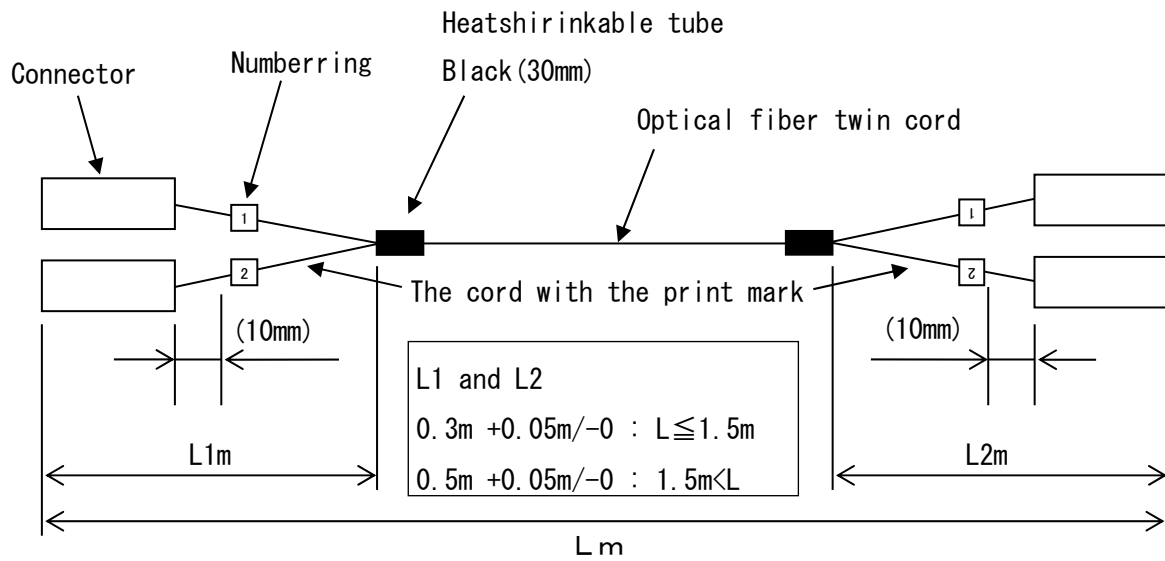
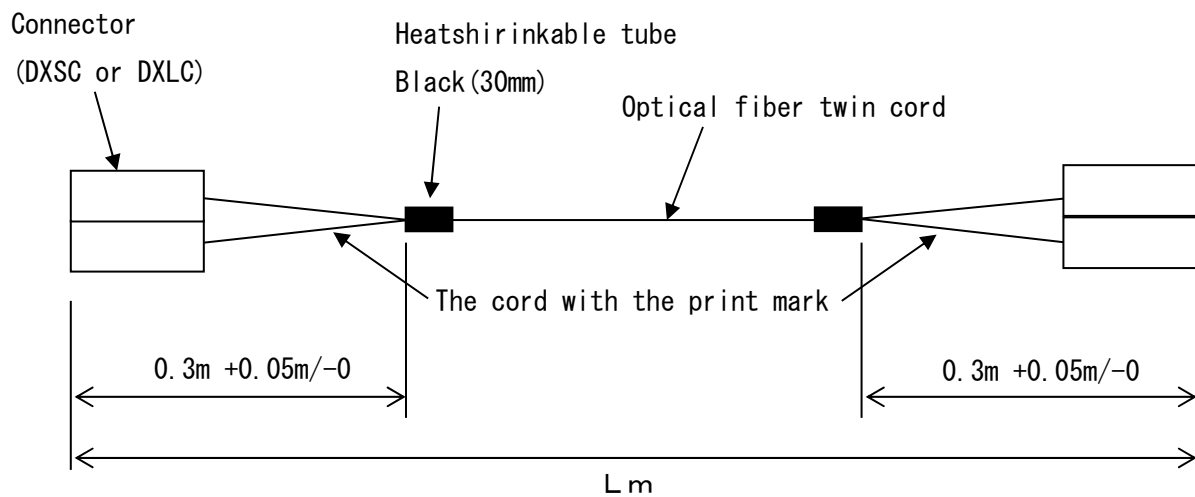


Fig.1-4 Jumper (Duplex cord)

Fiber chart (DXSC)

Type:ST (Straight connect)

Type:X (Cross connect)

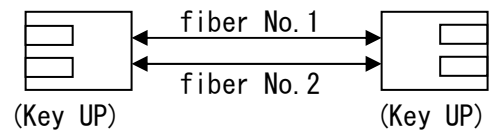
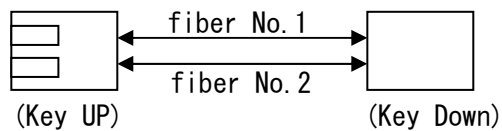
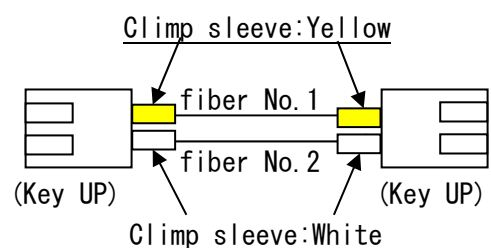
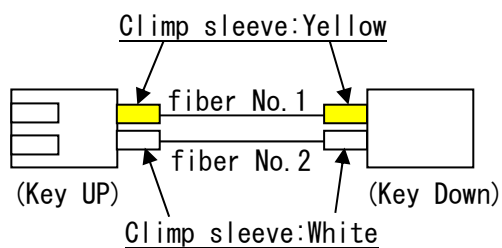
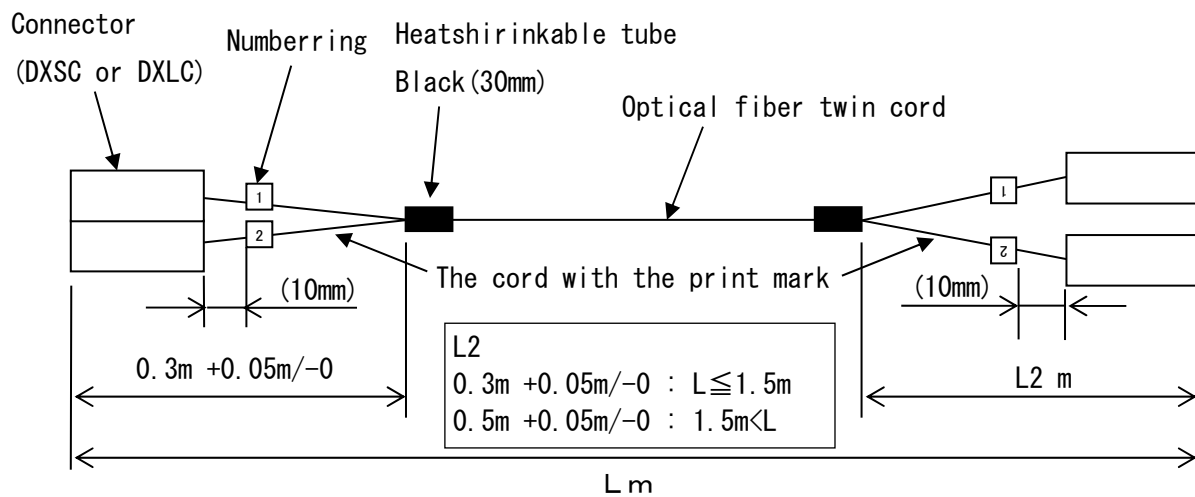
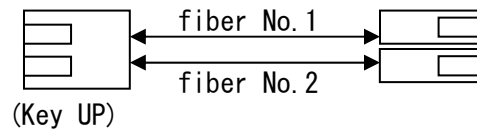
Fiber chart (DXLC)

Fig.1-5 Jumper (Duplex cord)



### Fiber chart (DXSC)



### Fiber chart (DXLC)

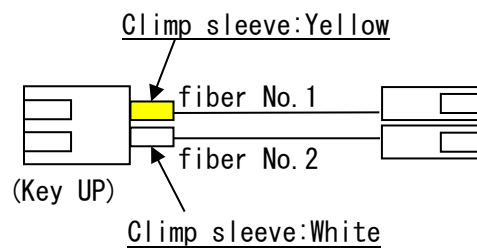


Fig. 1-6 Jumper (Duplex/Simplex cord)

### 2.3 Components and Materials to be Used for the Products

The product shall be made from the components and materials stipulated in Table 1.

Table 1-1 Material list for Connectors

Type aa/bb	Component or Material	Description	Specification	Maker
FSC	Simplex SC Connector For SM	SM Ferrule	Zirconia for SM	Adamant or Seiko Giken
		SC connector housing	IEC61754-4 Housing :Blue Boot :Blue(PC)、 Lavender (SPC, UPC)	SANWA or WCFO
	Simplex SC Connector For SM (APC)	SM Ferrule	Zirconia for APC	Adamant or Seiko Giken
		SC connector housing	IEC61754-4 Housing :Green Boot :Green	SANWA or WCFO
	Simplex SC Connector For MM	MM Ferrule	Zirconia for MM	Adamant or Seiko Giken
		SC connector housing	IEC61754-4 Housing :Blue Boot :Blue	SANWA or WCFO
FLC	Simplex LC Connector For SM	Ferrule, for SM	Zirconia for SM	Adamant
		Simplex LC connector Kit, SM	IEC61754-20 Housing:Blue Boot : White Climp sleeve : Yellow	Adamant
	Simplex LC Connector For SM (APC)	Ferrule, for SM	Zirconia for APC	Adamant
		Simplex LC connector Kit, SM	IEC61754-20 Housing:Green Boot : White or Green Climp sleeve : Yellow	Adamant
	Simplex LC Connector For MM	Ferrule, for MM	Zirconia for MM	Adamant
		Simplex LC connector Kit, MM	IEC61754-20 Housing:Beige Boot: White Climp sleeve : White	Adamant

Type aa/bb	Component or Material	Description	Specification	Maker
DXSC	Duplex SC connector For SM	SM Ferrule	Zirconia for SM	Adamant or Seiko Giken
		SC connector housing	IEC61754-4 Housing : Blue Boot : Blue(PC) Lavender (SPC, UPC)	SANWA or WCFO
		Duplex clip	Black, FOP-0669	Suncall
	Duplex SC connector For MM	MM Ferrule	Zirconia for MM	Adamant or Seiko Giken
		SC connector housing	IEC61754-4 Housing : Blue Boot : Blue	SANWA or WCFO
		Duplex clip	Black, FOP-0669	Suncall
DXLC	Duplex LC Connector For SM	Ferrule, for SM	IEC61754-20	Adamant (PNJHY-0048-22-38 or PNJHY-0048-22-39 Latest version) or ACON
		Duplex LC connector Kit, SM	IEC61754-20 Housing : Blue Boot : White Clip :Blue Crimp sleeve: White & Yellow	
	Duplex LC Connector For MM	Ferrule, for MM	IEC61754-20	Adamant (PNJHY-0048-22-37 or PNJHY-0048-22-06 Latest version) or ACON
		Duplex Lc connector Kit, MM	IEC61754-20 Housing : Beige Boot : White Clip :Beige Crimp sleeve: White & Yellow	

Table 1-2 Material list for Optical Fiber cord

Type ff-ggg-hhh	Component or Material	Description	Remarks
RS-SMC-S	SM, 2mm Simplex cord, Riser	SR0019201001 or SR0019201901 (SR0019202001 or SR0019202901)	AFL, Yellow
RS-SMC-2SR	SM, 2x4mm Duplex cord, Riser	ZR0029201001 or ZR0029201901 (ZR0029202001 or ZR0029202901)	AFL, Yellow
RS-SR15EC-S	SM, SR15E, 2mm Simplex cord, Riser	SR001K201001 or SR001K201901 (SR001K202001 or SR001K202901)	AFL, Yellow
RS-SR15EC-2SR	SM, SR15E, 2x4mm Duplex cord, Riser	ZR002K201001 or ZR002K201901 (ZR002K202001 or ZR002K202901)	AFL, Yellow
RS-OM2C-2SR	MM(OM2), 2x4mm Duplex cord, Riser	ZR0025201001 or ZR0025201001-BIF (ZR0025202001)	AFL, Orange
RS-OM3C-S	MM(OM3), 2mm Simplex cord, Riser	SR001L201C01 or SR001L201C01-BIF (SR001L202C01)	AFL, Aqua
RS-OM3C-2SR	MM(OM3), 2x4mm Duplex cord, Riser	ZR002L201C01 or ZR002L201C01-BIF (ZR002L202C01 or ZR002L202C01-BIF)	AFL, Aqua
RS-OM4C-2SR	MM(OM4), 2x4mm Duplex cord, Riser	ZR002C201C01 or ZR002C201C01-BIF (ZR002C202C01 or ZR002C202C01-BIF)	AFL, Aqua
RS-OM4CPK-2SR	MM(OM4), 2x4mm Duplex cord, Riser	ZR002C201B01 or ZR002C201B01-BIF (ZR002C202B01 or ZR002C202B01-BIF)	AFL, Rose
PL-SMC-S	SM, 2mm Simplex cord, Plenum	SP0019201001 or SP0019201901 (SP0019202001 or SP0019202901)	AFL, Yellow
PL-SMC-2SR	SM, 2x4mm Duplex cord, Plenum	ZP0029201001 or ZP0029201901 (ZP0029202001 or ZP0029202901)	AFL, Yellow
PL-SR15EC-S	SM, SR15E, 2mm Simplex cord, Plenum	SP001K201001 or SP001K201901 (SP001K202001 or SP001K202901)	AFL, Yellow
PL-SR15EC-2SR	SM, SR15E, 2x4mm Duplex cord, Plenum	ZP002K201001 or ZP002K201901 (ZP002K202001 or ZP002K202901)	AFL, Yellow
PL-OM2C-2SR	MM(OM2), 2x4mm Duplex cord, Plenum	ZP0025201001 or ZP0025201001-BIF (ZP0025202001)	AFL, Orange
PL-OM3C-2SR	MM(OM3), 2x4mm Duplex cord, Plenum	ZP002L201C01 or ZP002L201C01-BIF (ZP002L202C01 or ZP002L202C01-BIF)	AFL, Aqua
PL-OM4C-2SR	MM(OM4), 2x4mm Duplex cord, Plenum	ZP002C201C01 or ZP002C201C01-BIF (ZP002C202C01 or ZP002C202C01-BIF)	AFL, Aqua
LH-SMC-S	SM, 2mm Simplex cord, LSZH	SE001920100E or SE001920190E (SE001920200E or SE001920290E)	AFL, Yellow
LH-SMC-2SR	SM, 2x4mm Duplex cord, LSZH	ZE002920100E or ZE002920190E (ZE002920200E or ZE002920290E)	AFL, Yellow
LH-SR15EC-S	SM, SR15E, 2mm Simplex cord, LSZH	SE001K20100E or SE001K20190E SE001K20200E or SE001K20290E)	AFL, Yellow
LH-SR15EC-2SR	SM, SR15E, 2x4mm Duplex cord, LSZH	ZE002K20100E or ZE002K20190E (ZE002K20200E or ZE002K20290E)	AFL, Yellow



LH-OM2C-2SR	MM (OM2), 2x4mm Duplex cord, LSZH	ZE002520100E or ZE002520100E-BIF (ZE002520200E)	AFL, Orange
LH-OM3C-2SR	MM (OM3), 2x4mm Duplex cord, LSZH	ZE002L201C0E or ZE002L201C0E-BIF (ZE002L202C0E or ZE002L202C0E-BIF)	AFL, Aqua
LH-OM4C-2SR	MM (OM4), 2x4mm Duplex cord, LSZH	ZE002C201C0E or ZE002C201C0E-BIF (ZE002C202C0E or ZE002C202C0E-BIF)	AFL, Aqua

(\*)Standard cord printing should be “AFL” print, but “Fujikura” print is acceptable.

(AFL P/N : xx00xx201xxx :AFL Printing)

(\*\*)Cord shall be applied aging 70°C, 48h.

## 2.4 Specifications and Measurement conditions of Optical characteristics

The product shall meet the optical characteristics under measurement condition specified in Table 2~5

### 1) PC polishing

Table 2

Parameters	Condition	Spec.	Wave-length
Insertion loss	SM	$\leq 0.3\text{dB}$	$1.31\mu\text{m}$ (SM)
	MM	$\leq 0.3\text{dB}$	$0.85\mu\text{m}$ (MM)
Return loss	SM	$\geq 26\text{dB}$	$1.31\mu\text{m}$ (SM)
	MM	$\geq 25\text{dB}$	$0.85\mu\text{m}$ (MM)
Fiber height	Ferrule endface	$-50\sim+50\text{nm}$	
Radius of Curvature	Ferrule endface	$10\sim 25\text{mm}$ $7\sim 25\text{mm}$ (for LC)	
Apex Offset	Ferrule endface	$\leq 50\mu\text{m}$	

### 2) SPC polishing

Table 3

Parameters	Condition	Spec.	Wave-length
Insertion loss	SM,	$\leq 0.3\text{dB}$	$1.31\mu\text{m}$
Return loss	SM	$\geq 40\text{dB}$	
Fiber height	Ferrule endface	$-50\sim+50\text{nm}$	
Radius of Curvature	Ferrule endface	$10\sim 25\text{mm}$ $7\sim 25\text{mm}$ (for LC)	
Apex Offset	Ferrule endface	$\leq 50\mu\text{m}$	

## 3) UPC polishing

Table 4

Parameters	Condition	Spec.	Wave-length
Insertion loss	SM	$\leq 0.3\text{dB}$	$1.31\text{ }\mu\text{m}$
Return loss	SM	$\geq 50\text{dB}$	
Fiber height	Ferrule endface	$-50\sim+50\text{ nm}$	
Radius of Curvature	Ferrule endface	$10\sim 25\text{mm}$ $7\sim 25\text{mm (for LC)}$	
Apex Offset	Ferrule endface	$\leq 50\text{ }\mu\text{m}$	

## 4) APC polishing

Table 5

Parameters	Condition	Spec.	Wave-length
Insertion loss	SM	$\leq 0.5\text{dB}$	$1.31\text{ }\mu\text{m}$
Return loss	SM	$\geq 60\text{dB}$	
Fiber height	Ferrule endface	$-50\sim+50\text{ nm}$	
Angle	Ferrule endface	$8^\circ$	
Radius of Curvature	Ferrule endface	$5\sim 12\text{mm}$	
Apex Offset	Ferrule endface	$\leq 50\text{ }\mu\text{m}$	

## 2.5 Checklist

Test items	Quality Assessment Criteria	Sample size
Appearance	No damage, scratch and dirt	All
Structure	Conform to Fig. 1	All
Composition, Length	Conform to order	All
Insertion loss	As specified in Table-2 ~ Table-5	All
Return loss	As specified in Table-2 ~ Table-5	All
Reflect meter measurement	No fiber broken	All
Fiber height	$-50\sim+50\text{ nm}$	All
Radius of Curvature	$10\sim 25\text{mm}$ , $7\sim 25\text{mm (LC)}$	All
Apex Offset	$\leq 50\text{ }\mu\text{m}$	All

Note: These items can be performed as part of the manufacturing process.

### 3. Test Report

The following items shall be included in the test report.

The test report shall be provided as electric data using Excel by E-mail.

#### 3.1 Product Type

The specific Product Type shall be recorded.

#### 3.2 P/O number and Fujikura Mfg. number

P/O number and Fujikura Mfg. number shall be recorded.

#### 3.3 Specification number

The specification number that is applied to the products shall be recorded.

#### 3.4 Serial Number

The serial number of the each product shall be recorded in the test report.

#### 3.5 Optical data

Optical data of the each product measured according to 2.4 shall be recorded.

#### 3.6 Product length

The length of one product per lot shall be recorded in the test report.

### 4. Packing

Follow the following specification for packing.

PNJHA-0038-25-01(latest version):Method of packing

PNJAA-0007-36-02(latest version):Packing specification

### 5. Environmental requirement

Follow the PNJAA-0068-25-01(latest version)

: General Specification on Substance Control Requirements

Rev.	Date	History	Reason	Issued	Checked	Approved
初版	2012.06.18			Uenoyama	Y. Tanaka	Ouchi
A	2012.09.25	Page1 Change product name Page7-8 Correct scribal error	Selectable different polishing type for each ends	Uenoyama	Y. Tanaka	Ouchi
B	2012.10.05	Table1.2 Add AFL P/N for SM and SR15E  Table2 Add Return loss spec	To make clear spec  To meet TIA/EIA-568-C.3	Y. Tanaka	Uenoyama	Ouchi
C	2014.8.27	Fig. 1-5 Jumper (Duplex cord) L1m, L2m → 0.3m	mistake	K. Sato	Uenoyama	Hishikawa
D	2015.03.09	Title Fujikura Specification No. PNJHC-1100-51-01A →PNJHC-1100-51-01B  2.3 Table 1-2 Added RS-OM3C-S	Revision of the spec  As of the customer's request	Nishimura	Uenoyama	Sawada
E	2015.6.26	Table1-2 Add cord aging	Correct mistake	Uenoyama	Nishimura	Sawada
F	2015.07.27	2.3 Table 1-2  RS-OM3C-2SR ZR002L202C01 →ZR002L202C01 or ZR002L202C01-BIF  RS-OM4C-2SR ZR002C202C01 →ZR002C202C01 or ZR002C202C01-BIF  PL-OM3C-2SR ZP002L202C01 →ZP002L202C01 or ZP002L202C01-BIF  PL-OM4C-2SR ZP002C202C01 →ZP002C202C01 or ZP002C202C01-BIF  LH-OM3C-2SR ZE002L20200E →ZE002L20200E or ZE002L20200E-BIF  LH-OM4C-2SR ZE002C202C0E →ZE002C202C0E-BIF	Request from FOV (in order to match the name with AFL's description)	Nishimura	Sato	Hishikawa

Rev.	Date	History	Reason	Issued	Checked	Approved
G	2016. 1. 12	Add Fig.1-6 2.5 Checklist Radius of Curvature Add 7~25mm	Customer request  Correct mistake	Sato	Sawada	Hishikawa
	2016. 7. 4	Add for Suzuki Giken	Updated			
H	2016. 8. 25	Table1-1 DXLC Standard DXLC added.	FOV request	Sato	Uenoyama	Yoshida
I	2016. 10. 3	Product name and Table1-2 "OM4CPK" is added.	Updated	Sato	Uenoyama	Yoshida
J	2016. Nov. 4	/Table1-2 Description /Add Fiber model number AFL was changed to the standard	Update	Sato	Uenoyama	Yoshida
K	2016. Nov. 22	/1.2 Product name Fig of Duplex LC is deleted. /Tabel 1-1 DXLC Ferrule of DXLC is deleted. ACON of SM DXLC is added.	Mistake	Sato	Uenoyama	Yoshida
L	2017. Mar. 24	Table2 Return loss MM $\geq 20\text{dB}$ $\rightarrow$ $\geq 25\text{dB}$	Mistake	Sato	Uenoyama	Yoshida
M	2020. Mar. 24	Table1-1 Simplex LC connector Kit,MM Delete for "Clip:Beige"	Correct mistake	Sato	Aoyagi	Yoshida
(1) N	2021. Jun. 10	Table 1-2 : RS-OM3C-S Duplex $\rightarrow$ Simplex	Mistake	Sato	Aoyagi	Yoshida