

DATE. Mar. 27, 2024

No. SPPU-10383 (7)

M e s s r s . F O V

SPECIFICATION



FOR

HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)

(ACACIA)

Fujikura internal information

提出仕様書 No. Fujikura Specification No. (Proposed to customer)	先方仕様書 No. Customer Specification No.
Refer to Table1	Refer to Table1

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 T. Nakane

Approved by H. Hishikawa

*Fiber Optics Components Department
Optical Component Division*

*Manager,
Fiber Optics Components Department
Optical Component Division*

Fujikura Ltd.

1. General

1.1 Products Covered by this Specification

This specification covers Optical fiber array assembly for Acacia Communications.

1.2 Product Name and Part Number

Table1

	Product name	Fujikura Specification no.	Acacia Specifcation No.	Sanmina Part no.
1	HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)	PNJHI-0485-64-09	820-0005-03 Rev. B※	LFACM820-0005-03

※Although the version was revised from A to B before the last buy (laser printing on the boot, size change on the array pats), it was approved by cutomer that it would be manufactured in accordance with PNJHI-0485-64-09.

1.3 Drawing for manufacturing

[DRAS-12911/PNJHI-0485-72-01 \(Latest version\)](#)

2. Bill of materials

Table 2

No.	Name of Part	(Type), Drawing No. Specification No.	Maker/Supp lier	Q' ty	Remarks
1	LC connector (SM)	LC Metal Flange Kit, BTW, K-04-0033-0A, PNJHY-0048-22-134 (latest version)	Adamant	2	UPC polish Boot: Santoprene, white Cap: Housing cap, white Zr capillary included
2	LC connector (PM)	LC Connector (P) CPAI1-006I	-	(1 set)	UPC polish Except dust cap
2-1		Plug Frame LC (HPY) CPAI2-024D	Pronics Vietnam	1 pc	Blue
2-2		Ferrule Unit LC (P) B CPAI2-036E	Yuwa Vietnam	1 pc	Adamant zirconia capillary
2-3		LC Extender Cap CPAI2-026E	Pronics Vietnam	1 pc	Blue
2-4		LC BTW Buffer Adapter CPAI2-027E	Pronics Vietnam	1 pc	Santoprene, white
2-5		Spring LCP CPAI2-030A	Jyohoku Spring Saigon	1 pc	-
2-6		Dust Cap C-09-1500-05	Adamant	1 pc	Housing cap, PP, White
3	Fiber (PM)	BISM15-PX-U25D-H	Fujikura	1.25m	Coating: Natural

4	Fiber (SM)	ClearCurve ZBL GCS	Corning	2.50m	Corning Clearcurve-ZBL (200kpsi) 0.25mm Coating: Natural
5	3c V-groove	3CH FIBER ARRAY V-GROOVE ORN JFD-M-11-049, PNJHY-0145-71-01 /DRPT-10953 (Latest version)	Yamanashi	1	Angled polish, 8deg
6	3c Cover	3CH FIBER ARRAY COVER ORN, JFD-M-11-048, PNJHY-0145-71-02 (Latest version)	Yamanashi	1	
7	Glass preform	OD1.118, ID0.80x0.26, t0.8, DM2700PF ROCP44-10-31	Namics	2	-
8	Alloy50 ferrule	CPAS2-507A4	Micro-cut	1	1.27um Gold plating
9	Loose tube (SM, PM) (Connector side)	$\phi 0.5 \times 0.9$ Hytel 6356 HYTREL TUBE 6356 [0.5x0.9 NA] (NIREI), PNJHY-0102-24 -02 (latest version)	Nirei kogyo	0.045m x3	Color: Natural Connector side
10	Boot	810-0088-03 Rev.A	W&B Technology	1	-
11	Adhesive	Epotek 353ND	Epoxy technologi es	-	-
12	Adhesive	Bond Quick 5 A+B (80g/set)	Konishi	0.05gr	Filler between loose tube and fiber
13	UV Adhesive	World Rock 8776NL5F	Kyoritsu kagaku sango	0.005gr	Glass array assembly
14	UV Adhesive	UV resin U-2003F (250GM/BT)	Utsu	0.015gr	-
15	UV Adhesive	Optocast 3410		0.003gr	-
16	UV Adhesive	World Rock 8700-7 (5GM/Tube)	Fujikura	0.005gr	-
17	Paint marker	Edding 750 (Red)		=	Marking on PM fiber
18	Paint marker	Edding 750 (Black)		=	Marking on SM fiber
19	Package	Fiber Package Tray & Cover	FOV domestic purchase	0.2	5pcs of product/tray Base: Black Cover: Clear
20	Pink sponge (W30xL365xH15mm)	INOAC EAS-3	FOV domestic purchase	0.2	To prevent fiber and connector movement during transportation, Length of sponge should be the same as inner width of tray

21	Pink sponge (W10xL16xH12mm)	INOAC EAS-3	FOV domestic purchase	5	To hold fiber and connector on tray, Dimensions should be adjusted to fit groove of tray
22	Pink Sponge slit (12x5x311x12mm)	Sponge slit type(with adhesive tape, 20 slits) (CPAS2-118B4), or equivalent	FOV domestic purchase	0.2	FOV domestic purchase
23	Adhesive	TB3170B	ThreeBond	0.004gr	For temporary boding of PANDA LC connector ferrule
24	Label	Self Laminate TT327 1''x1.5'' 1 Across White label (25.4x38.1mm) (IDL-001IN-1)		1	
25	Clean Label	Brady B694, 70x20mm		0.2	

3. Product Specification

Table 3

Item	SPEC
Appearance	Refer to RQAP-00005(latest version)
Appearance of Glass Array	DRAS-12911/PNJHI-0485-72-01(latest version) No crack at stress applying parts
Appearance of Connector endface	DRAS-12911/PNJHI-0485-72-01(latest version) No crack at stress applying parts
Dimensions	DRAS-12911/PNJHI-0485-72-01(latest version)
Connector Fiber height	-50 ~ +50 nm
Connector Radius of curvature	7 to 25mm :LC connector
Connector Apex offset	$\leq 50 \mu\text{m}$
Connector B dimension	10.3 to 10.5mm :LC connector
Connector Ferrule endface diameter	0.6 to 0.85mm :LC ferrule
Polarization Extinction Ratio (-Polarization cross talk)	>20dB ,Wave length 1550nm Insert light to the glass array
Insertion loss	$\leq 0.5\text{dB}$, Wave length 1550nm
Return loss	$\geq 50\text{dB}$, Wave length 1550nm

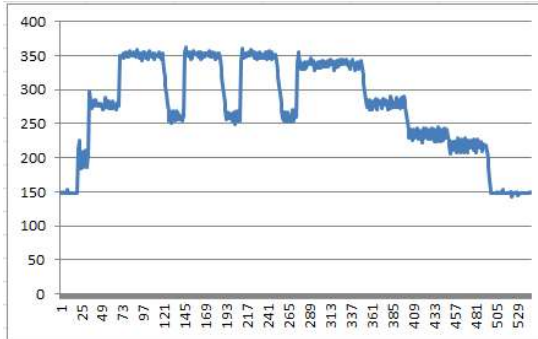
4. Glass Sealing

1) Ferrule & Glass preform

CPAS2-507A4 (NS-1) : Alloy50

Glass Preform : DM2700PF R0CP44-10-31 , 2pcs

2) Heating Profile



Step	1	2	3	4	5	6	7	8	9	10	11	12
Temp (deg. C)	185	275	347	250	347	250	347	250	330	275	225	210
Power (%)	10	10	10	10	10	10	10	10	10	10	10	10
Time (sec)	2	7	10	5	8	5	8	5	15	10	10	9

Emissivity : 0.21

3) Apply Optocast 3410 on top of glass solder

UV Power : 170-190mW/cm², Time : 15sec

Total amount is 2550-2850mJ/cm²

4) Apply WR8700-7 at non-hermetic side

UV Power : 120-140mW/cm², Time : 15sec => stop 2sec => 15sec

Total amount is 3600-4200mJ/cm²

5) Apply UV2003 to Cover Optocast 3410 and WR8700-7

4. Process Flow from Glass sealing until Adhesive application on ferrule

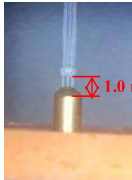

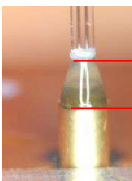

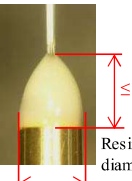
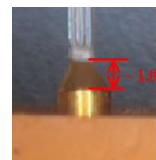
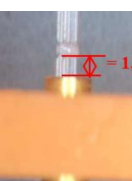
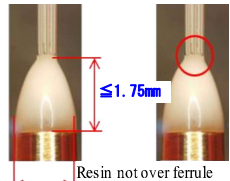
Glass sealing → Apply a line by UV2003 at top side on fiber →

Optocast 3410 on top side → Apply UV2003 cover Optocast 3410 →

Apply a line by UV2003 at bottom side on fiber → Apply 8700-7 at bottom →

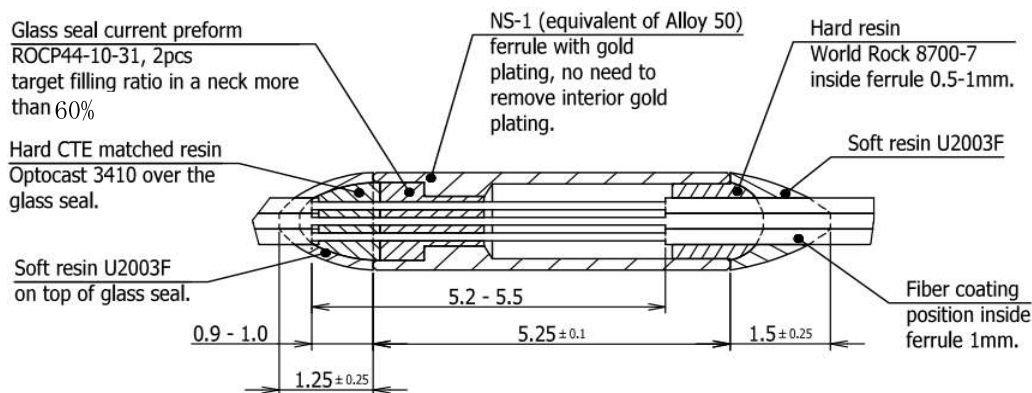
Apply UV2003 cover 8700-7 → Thermal post cure 120deg.C, 15min

5. Addhesive application (Countermeasure for UV coating crack)

STEP 1	 <p>Apply UV2003F on fiber at both side on top of ferrule, L=1.0mm</p>	STEP 5	 <p>Heat ferrule at 50C+/-5C (min: 1 minute, max: 5 minutes), go to step 6 immediately</p>
STEP 2	 <p>Apply Optocast 3410 on top of ferrule and curing, L=1.0mm</p>	STEP 6	 <p>Apply UV8700 at bottom of ferrule and curing</p>
STEP 3	 <p>Resin not over ferrule diameter</p> <p>Apply UV2003F cover Optocast 3410 and curing, L<=1.5mm</p>	STEP 7	 <p>Apply more UV8700 at bottom of ferrule and curing, L<=1.0mm</p>
STEP 4	 <p>Apply UV2003F on fiber of bottom ferrule at both side, L<=1.0mm</p>	STEP 8	 <p>Resin not over ferrule diameter</p> <p>Apply UV2003F cover UV8700 and curing, L<=1.75mm</p>

6. Fiber stripping position and adhesive inside the ferrule

Refer to [DRAS-12911/PNJHI-0485-72-01 \(latest version\)](#)



7. Product Aging

Thermal cycling shall not apply to the products.

8. Inspection items

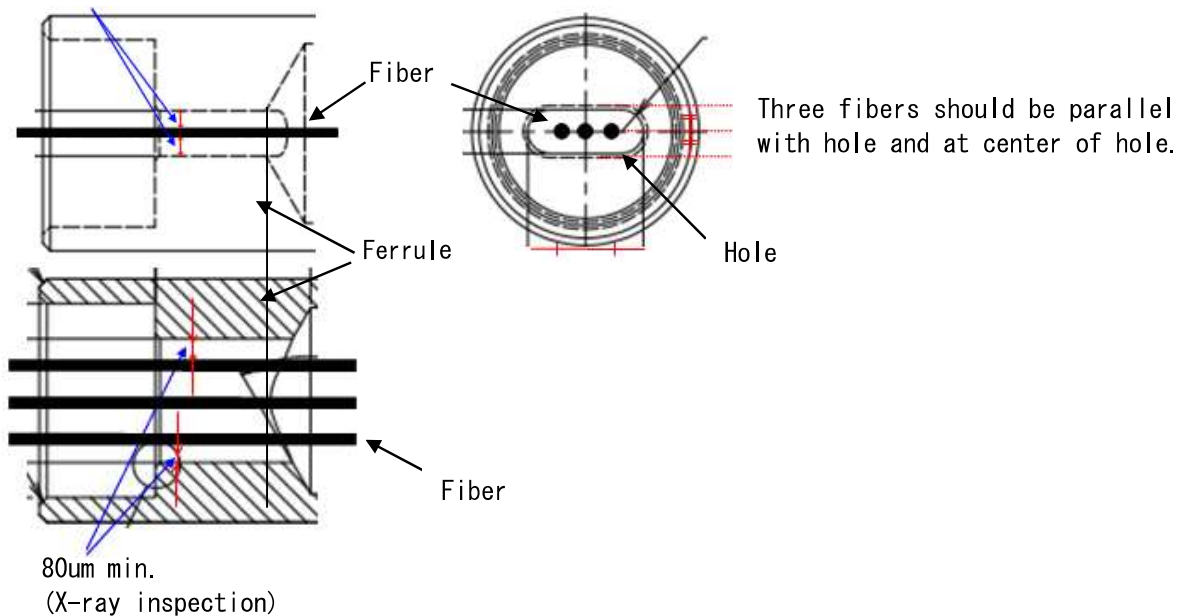
1) X-ray

Record X-ray photo of metal ferrule at two directions (0deg.: three fibers shown side by side in parallel, 90deg.)

-Alignment of Fiber position in hole of ferrule

87.5um +/- 25um

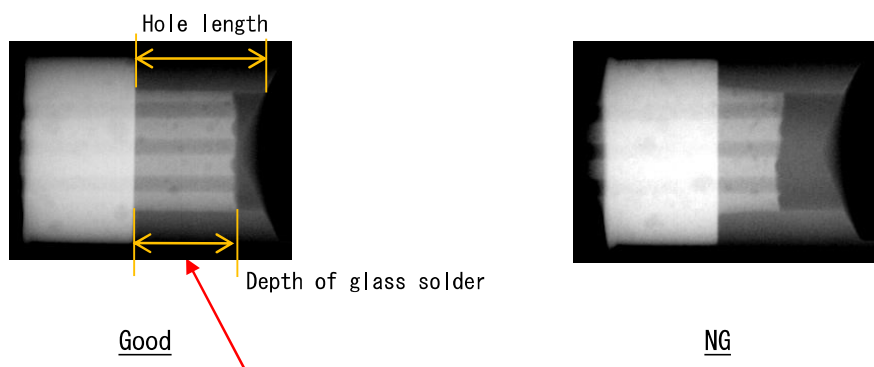
(X-ray inspection)



-Glass solder depth.

Depth should be more than 3/5 (more than 60%) of hole length of ferrule

Refer to the figure below.



Over 60% of the hole length, depth should be checked at minimum point

Area	Criteria						
Counterbore	Voids expose to the top surface	Void $\leq 125\mu\text{m}$: OK Void $> 125\mu\text{m}$: NG					
	Voids not expose to the top surface	Void $\leq 125\mu\text{m}$: OK					
				Void $> 125\mu\text{m}$ & $\leq 250\mu\text{m}$			
				1pc	2pcs	3pcs	4pcs
		Void $> 250\mu\text{m}$ & $\leq 625\mu\text{m}$ & Not touching the fibers Or Any pcs of voids within a $625\mu\text{m}$ diameter & Not touching the fibers	0pc	OK	OK	OK	NG
			1pc	OK	OK	NG	NG
			2pcs	NG			
	Void $> 625\mu\text{m}$: NG						
Hole	Void $\leq 62.5\mu\text{m}$: OK						
			Void $> 62.5\mu\text{m}$, $\leq 125\mu\text{m}$				
			1pc	2pcs	3pcs	4pcs	5pcs
	Void $> 125\mu\text{m}$, $\leq 187.5\mu\text{m}$	0pc	OK	OK	OK	OK	OK
		1pc	OK	OK	OK	NG	NG
		2pcs	NG				
	Void $> 187.5\mu\text{m}$: NG						

2) Leak Test

-Run m/c until get $3.0 \times 10^{-10} \text{ Pa} \cdot \text{m}^3/\text{sec}$ ($3.0 \times 10^{-9} \text{ atm} \cdot \text{cc}/\text{sec}$)

-Blowing helium for 7 sec

Record pressure at 5 sec after the start of helium blowing

-Pressure should keep reducing, not swing up/down during helium blowing

-Continue running machine and record pressure at 10 sec after the start of helium blowing.

-Pressure should keep reducing, not swing up/down after stop helium blowing

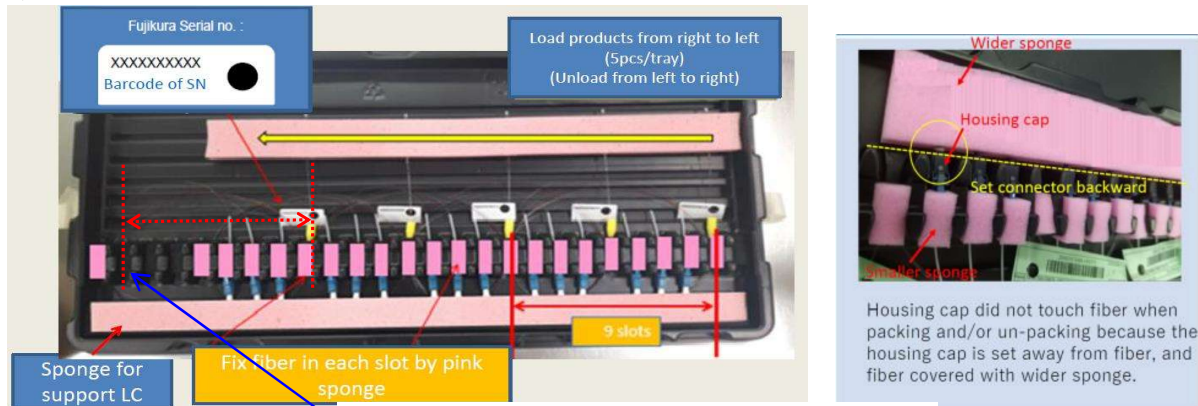
3) Fiber Appearance Inspection

Use stereo-microscope 25x

4) Reflectometer check

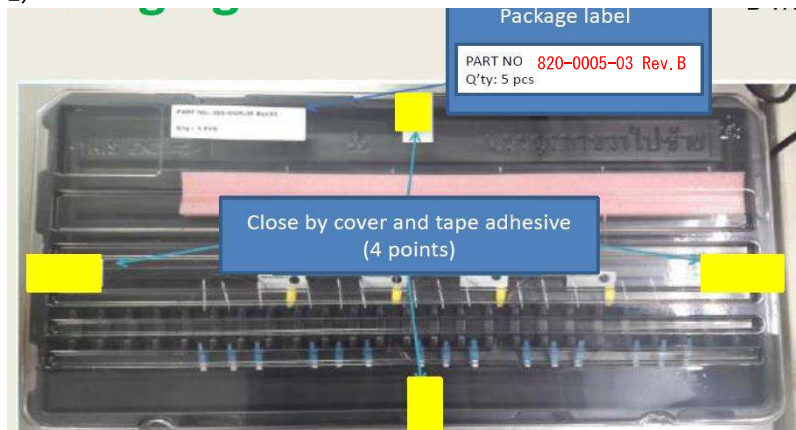
9. Packing

1)

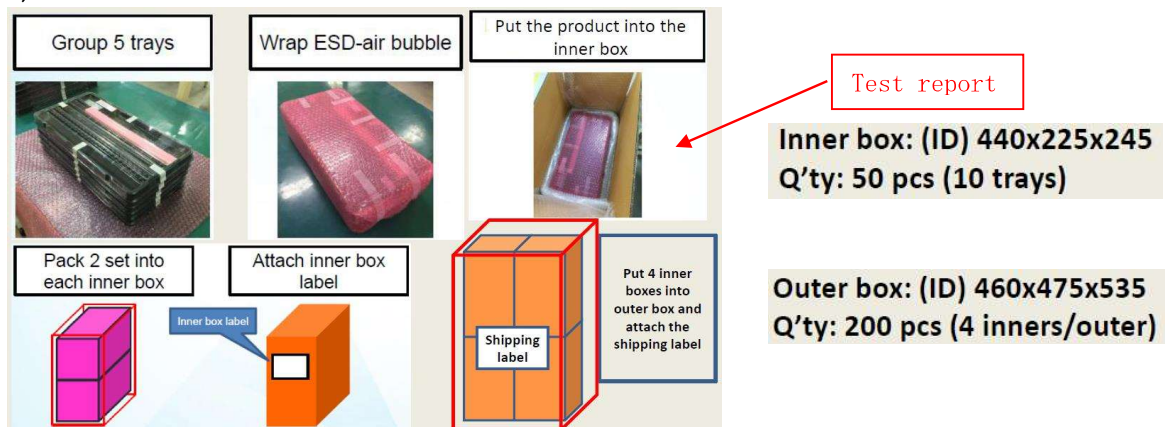


It is allowed to set fibers in the 8th slot if fiber length is too short for 9th slot.

2)



3)



Outer box for two inner box

CBO0068

2 inner box = 100pcs



Dimension: 584x299x610 (cm)
Estimated weight for shipping charge: 21.5 kg

Putting air bubble to fill the space

Outer box for one inner boxes

CBO0303

1 inner box = 50pcs



Dimension: 564x344x278 (cm)
Estimated weight for shipping charge: 11 kg

1 layer of box

Putting air bubble to fill the space

case that shipping quantity is not multiple of 200pcs,

use the outer box for one inner box, or the outer box for two inner boxes as well as the outer box for the four inner boxes to minimize total weight and volume (Ex. Table4).

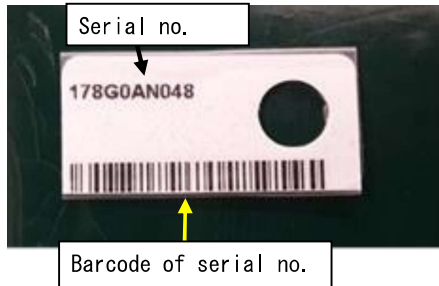
Table 4

Shipping quantity	Inner box 440x225x245 (cm)	Outer box 564x344x278 (cm)	Outer box 584x299x610 (cm)	Outer box 460x475x535 (cm)
50pcs	1	1	–	–
100pcs	2	–	1	–
150pcs	3 + 1 (dummy)	–	–	1
200pcs	4	–	–	1
250pcs	5	1	–	1
300pcs	6	–	1	1
350pcs	7 + 1 (dummy)	–	–	2

10. Tag

Attach a tag with serial no. and its barcode (CODE128) to each product.

Refer to Photo shown below.



11. Label

11.1 Label for Fabrinet

1) Tray cover

Acacia specification no. : Refer to Table1

Product name : Refer to Table1

Quantity in a tray : 5 PCS

PART No. : 820-0005-03 Rev.B
Product name : HERMETIC SFF FIBER ARRAY
ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)
Q'ty : 5PCS

< Label sample >

2) Inner Box Label

-FBN Part Number : Acacia spec. no., refer to Table1

-Part Description : Product name, refer to Table1

-Part Revision : Revision number of Acacia spec. no., refer to Table1

-Supplier Name : Fujikura Asia Ltd.

-MFG Part Number : Fujikura spec. no., refer to Table1

-MFG Date : Manufacturing date

-MFG Name : Fujikura Fiber Optics Vietnam Ltd.

-Customer PO No. : Fabrinet PO number, refer to PO from Fujikura

~~-Box Count : Box # of Total Boxes~~

-Quantity : Quantity in the Box

-Country of Origin : Made in Vietnam

FOV run number for inner box per PO and
use barcode for FOV internal control.
Ex 1/15, 2/15, .. 15/15

FBN part Number : 820-0005-03 Rev. B
 Part Description : HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)
 Part Revision : Rev. B
 Supplier Name : Fujikura Asia Ltd.
 MFG Part Number : PNJHI-0485-64-09
 MFG date : 2017-08-29
 MFG Name : Fujikura Fiber Optics Vietnam Ltd.
 Customer PO No. : *****
~~Box count : 1/4~~
 Quantity : 50 pcs
 Country of Origin : Made in Vietnam

FOV internal
barcode control



Example of Label

3) Outer Box Label

- Customer Name : Fabrinet Co., Ltd.
- Customer PO Number : Fabrinet PO number, refer to PO from Fujikura
- Product name : Product name, refer to Table1
- Customer Part Number : Acacia spec. no., refer to Table1
- Case Number
- Quantity
- Country of Origin : Made in Vietnam

Running number for each shipment
 Add inner box number under outer box number for FOV internal control
 Ex. 1/4 ; outer box number
 (1/15 -> 4/15) ; inner box number in small letter in a blanket

CUSTOMER: Fabrinet Co., Ltd		Customer's name
Customer PO Number		Customer's PO
P/O No.: hac-170810-00472-1		FJK PO
Customer Part Number: 820-0005-03 Rev. B MFG date: 29-Aug-2017		
PRODUCT NAME	QUANTITY (PCS)	
HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)	200	
DIMENSION (mm): L 444 W 434 H 225		
Net WT 0.61 Kg Gross WT 1.41 Kg		
MADE IN VIETNAM	1/2 (1/15 -> 4/15)	Case number

FOV internal barcode control

Example of Label

11.2 Label for Sanmina

Items shown below shall be indicated on labels.

1) Tray cover

Acacia specification no. ; Refer to Table1

Product name : Refer to Table1

Quantity in a tray ; 5 PCS

PART No. : 820-0005-03 Rev.B
Product name : HERMETIC SFF FIBER ARRAY
ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)
Q'ty : 5PCS

< sample label >

2) Inner Box label

-Lot number ; Fujikura PO no. – MMDD

MMDD: Originally planned shipping date,

MM: month, DD: day, ex. Aug.29 : "0829"

- Product name : Refer to Table1

-Sanmina part number ; Refer to Table1

-Quantity

-Country of Origin ; Made in Vietnam

Lot Number : FPO210038710-1-0701
Product name : HERMETIC SFF FIBER ARRAY
ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)
Part number : LFACM820-0005-03
Quantity : 50



Made in Vietnam

< sample label >

3) Outer Box Label

- Sanmina purchase order number ; Refer to PO from Fujikura
- Lot number ; Fujikura PO no. – MMDD
MMDD: Originally planned shipping date,
MM: month, DD: day , ex. Aug.29 : “0829”
- Sanmina part number (Customer part number) ; Refer to Table1
- Quantity
- Country of Origin ; Made in Vietnam
- Package count – (Examples: 1 of 5 or 1/5)

CUSTOMER: SANMINA-SCI(SHENZHEN)LTD.			
Customer PO Number MK98E0000152			
Lot number FPO190080436-1-0829			
Customer Part Number LFACM820-0005-03 MFG date 29-Aug-2019			
PRODUCT NAME			QUANTITY (PCS)
HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)			100
DIMENSION (mm): L 584 W 299 H 610			
Net WT 5.03 Kg		Gross WT 7.20 Kg	
MADE IN VIETNAM		3/3	

Example of Label

12. Certificate of Conformance

12.1 Certificate of Conformance for Fabrinet

CERTIFICATE OF CONFORMANCE (Test report) shall has items shown below.

- Company name ; Fujikura Fiber Optics Vietnam Ltd.
- Fabrinet purchase order number ; Refer to PO from Fujikura
- Fabrinet part number ; Acacia spec. no., refer to Table1
- Lot number
- Quantity
- Date
- Signature
- Format ; Refer to Fig.1 and Fig.2

12.2 RoHS CoC For Fabrinet

Put RoHS CoC (Fig.3) in the first box in every shipping to Fabrinet

12.3 Certificate of Conformance for Sanmina

CERTIFICATE OF CONFORMANCE (Test report) shall ~~be put in each inner box with products, which~~ has items shown below.

- Company name ; Fujikura Fiber Optics Vietnam Ltd.
- Lot number ; Fujikura PO no. – MMDD
MMDD: Originally planned shipping date,
MM: month, DD: day , ex. Aug.29 : "0829"
- Sanmina part number ; Refer to Table1
- Lot number
- Quantity
- Date
- Signature
- Format ; Refer to Fig.1 and Fig.2

12.4 Electric data

Save Certificate of Conformance data to the specific FTP server for Test Report data to CNC, then inform it FS-sho by e-mail.

~~Send PDF file of Test report for Sanmina to the following address.~~

~~Wataru Kobayashi / Fujikura Ltd.
Global Telecommunication Sales & Marketing Dept. II
E-mail: wataru.kobayashi@jp.fujikura.com~~

Send PDF file of Test report for Fabrinet to the following address

TO FAL mark.zhang@sg.fujikura.com
eunice.lim@sg.fujikura.com
keith.wong@sg.fujikura.com
joyce.ho@sg.fujikura.com

C. C. ~~Wataru Kobayashi / FJK Sales; wataru.kobayashi@jp.fujikura.com~~
Minoru Watanabe / FJK QA ; minoru.watanabe@jp.fujikura.com
Banchar Kruaboon / FAL Sales Eng. ; banchar.kruaboon@sg.fujikura.com

12.5 Fiber pitch and Fiber parallel data, and Array polished angle data to Acacia

Send Fiber pitch and parallel data, and array polished angle data (8deg. and 90deg. (V-groove side) of all the products shipped out for a month to FAL Mr. Banchar and Fujikura QA with Excel file by e-mail on the last Friday of the month.

-Use one Excel file for one week, one spreadsheet for one shipping (refer to Fig.4)

-E-mail attention:

FAL Mr. Banchar: banchar.kruaboon@sg.fujikura.com

Fujikura QA : Mr. Watanabe : minoru.watanabe@jp.fujikura.com

Mr. Sumida : koji.sumida@jp.fujikura.com

13. Ongoing Reliability Testing (ORT)

To confirm reliability of the products, regularly apply Temp. Cycle and Fiber integrity test to the representative samples from the normal production flow. Minor appearance defect that don't affect the test result, can be acceptable for the samples.

Save the test data to the specific FTP server for Test Report data to CNC, then inform it FS-sho/CNC by e-mail.

Table 4

Item	Conditions	Number of samples	Pass/Fail criteria	Frequency
Temp. Cycle	-40/+85 deg.C (30 min. at each temp./cycle), 100cycles	6pcs	$ER \geq 18\text{dB}$ $RL \geq 50\text{dB}$ $\Delta IL \leq 0.3\text{dB}$ Leak rate < $3 \times 10^{-9} \text{ atm} \cdot \text{cc/sec}$	Once in a quarter
Fiber Integrity	1) Straight pull of each fiber, 500g, 1min 2) Twist of each fiber, 500g, 10 cycles from 0° to 90° to -90° to 0° , at 3cm from fixed ferrule	6pcs	$ER \geq 18\text{dB}$ $RL \geq 50\text{dB}$ $\Delta IL \leq 0.3\text{dB}$ Leak rate < $3 \times 10^{-9} \text{ atm} \cdot \text{cc/sec}$	Once in a quarter

Measrs : FABRINET CO.,LTD.

Test Report

Ship Date : September 14, 2017

Product Name	Order Qty	Ship Qty	Delivered Qty	Remained Qty
800-0005-01 GLACIER FIBER ASSEMBLY,L-CUT,80UM FIBER	4150 Pes	303 Pes	3702 Pes	145 Pes
L KLONGNING AMPHUR KLONG LUANG				
Delivery Place : FABRINET CO.,LTD. 5/6 M				
Remarks : Rework LFF Fiber Array				

Fujikura Fiber Optics Vietnam Ltd.

Item	Date	Name
Issue	14-Sep-17	Sangkong P.
Check	14-Sep-17	
Approval	14-Sep-17	

Customer name : Fabrinet or Sanmina

Fabrinet: Customer P/O No. (Fabrinet P/O No.)
Sanmina : Lot No. (Fujikura PO No.-MMDD (Originally planned Shipping date))

Fabrinet or Sanmina

Product name

P/O No.
21201674003

Fig. 1

Inspection report

Product type: 800-0005-01 GLACIER FIBER ASSEMBLY L-CUT ROUND FIBER
Spec : QCS-11.02.L1.0015 Rev.08
Customer spec : 800-0005-01 Rev.B

Customer name: FABRINET CO., LTD.
Shipping date: 14/Sep/17

Total qty: 303 Pcs
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No	Serial No.	Core	Endface			Dimension			Glass			Endface			Connector			Appearance				
			Polished angle	PM axis alignment	Fiber pitch	Fiber parallel	Array Height	V-Groove height	Lid height	V-Groove width	Lid width	Array length	Lid length	Length between cover and end	Pin Height	Apex Offset	Radius		PM axis alignment	PER@1550	IL 1550	RL 1550
			98°±0.5°	0°±5°	250±1um	0±1um	1.22±0.1mm	78±0.04mm	43±0.04mm	1±0.1mm	1±0.1mm	2.8±0.2mm	11±0.2mm	11.5±0.3mm	50±0.3mm	0.50um	7-25mm	90°±5°	<20.0dB	<0.5dB	≥50dB	850-1050mm
1	17820BN169	1	97.59	1.69	250.28	0.00	0.00	Pass	Pass	Pass	Pass	2.73	1.05	Pass	15.90	12.74	12.74	90.60	25.96	0.16	50.70	1035
2		2			249.84	0.00	0.00	Pass	Pass	Pass	Pass	2.89	1.15	Pass	11.20	12.74	12.74	90.60	25.96	0.27	55.00	1035
3	17818BN26	3	97.99	1.27	249.93	-0.26	0.00	Pass	Pass	Pass	Pass	2.89	1.15	Pass	11.20	12.74	12.74	91.04	28.96	0.12	50.70	1035
4		4			250.17	0.00	0.00	Pass	Pass	Pass	Pass	2.75	1.03	Pass	16.20	10.16	10.16	91.04	28.96	0.30	52.70	1037
5	17816BN18	5	98.36	1.46	250.58	-0.41	0.00	Pass	Pass	Pass	Pass	2.75	1.03	Pass	7.50	12.78	12.78	90.95	22.62	0.08	50.30	1035
6		6			249.52	0.00	0.00	Pass	Pass	Pass	Pass	2.85	1.16	Pass	18.20	10.08	10.08	90.95	22.62	0.19	51.70	1035
7	17816BN47	7	98.14	2.14	250.37	-0.53	0.00	Pass	Pass	Pass	Pass	2.85	1.16	Pass	3.50	14.77	14.77	90.95	22.62	0.31	57.10	1030
8		8			250.37	0.00	0.00	Pass	Pass	Pass	Pass	2.85	1.16	Pass	16.70	11.08	11.08	90.95	22.62	0.08	50.30	1033
9	17710AN12	9	97.50	-0.74	250.13	-0.81	0.00	Pass	Pass	Pass	Pass	2.75	0.99	Pass	21.40	10.33	10.33	91.32	26.10	0.23	57.40	1037
10		10			249.66	0.00	0.00	Pass	Pass	Pass	Pass	2.80	1.07	Pass	18.20	11.60	11.60	90.69	27.15	0.10	55.00	1033
11	820AN002	11	97.71	0.57	250.09	0.00	0.00	Pass	Pass	Pass	Pass	2.79	1.05	Pass	17.80	11.62	11.62	90.42	32.94	0.04	54.70	1030
12		12			250.01	-0.79	0.00	Pass	Pass	Pass	Pass	2.73	0.99	Pass	4.60	11.57	11.57	90.42	32.94	0.10	57.30	1033
13	820BN451	13	98.50	-2.84	250.09	0.00	0.00	Pass	Pass	Pass	Pass	2.80	1.07	Pass	35.00	12.60	12.60	90.65	26.35	0.10	54.20	1034
14		14			249.36	0.00	0.00	Pass	Pass	Pass	Pass	2.80	1.07	Pass	13.70	11.08	11.08	90.65	26.35	0.10	52.80	1033
15	820AN029	15	97.83	1.16	249.69	-0.50	0.00	Pass	Pass	Pass	Pass	2.80	1.07	Pass	42.40	12.92	12.92	90.28	27.48	0.04	52.40	1035
16		16			250.40	0.00	0.00	Pass	Pass	Pass	Pass	2.84	1.14	Pass	17.90	9.08	9.08	90.28	27.48	0.07	59.50	1035
17	820BN112	17	97.94	-0.62	249.91	-0.38	0.00	Pass	Pass	Pass	Pass	2.84	1.14	Pass	21.00	13.28	13.28	91.26	20.83	0.11	51.20	1030
18		18			250.20	0.00	0.00	Pass	Pass	Pass	Pass	2.71	1.04	Pass	31.30	10.49	10.49	91.26	20.83	0.42	55.00	1030
19	17816BN40	19	97.91	0.98	250.43	-0.35	0.00	Pass	Pass	Pass	Pass	2.71	1.04	Pass	10.20	12.15	12.15	91.13	24.34	0.15	53.10	1035
20		20			250.00	0.00	0.00	Pass	Pass	Pass	Pass	2.71	1.04	Pass	11.90	12.39	12.39	91.13	24.34	0.07	51.60	1040
21	17816BN40	21	97.55	-0.78	250.02	-0.35	0.00	Pass	Pass	Pass	Pass	2.70	1.04	Pass	13.90	12.39	12.39	91.13	24.34	0.26	58.30	1033
22		22			249.66	0.00	0.00	Pass	Pass	Pass	Pass	2.70	1.04	Pass	16.10	10.33	10.33	91.13	24.34	0.02	51.00	1035
23	17816BN29	23	97.55	-0.78	250.08	-0.62	0.00	Pass	Pass	Pass	Pass	2.70	1.04	Pass	16.10	10.33	10.33	91.28	29.99	0.43	53.40	1033
24		24			250.02	0.00	0.00	Pass	Pass	Pass	Pass	2.80	1.04	Pass	23.00	10.98	10.98	91.28	29.99	0.30	58.50	1033
25	17818BN159	25	97.73	0.32	250.20	-0.24	0.00	Pass	Pass	Pass	Pass	2.80	1.04	Pass	-13.20	23.00	23.00	91.38	24.66	0.40	50.10	1033
26		26			249.88	0.00	0.00	Pass	Pass	Pass	Pass	2.80	1.04	Pass	-12.70	18.90	18.90	91.38	24.66	0.31	58.10	1033
27	17816BN28	27	97.58	2.32	250.62	-0.08	0.00	Pass	Pass	Pass	Pass	2.71	1.05	Pass	-18.20	12.60	12.60	91.38	24.66	0.19	50.40	1033
28		28			249.51	0.00	0.00	Pass	Pass	Pass	Pass	2.71	1.05	Pass	-13.80	21.90	21.90	91.27	28.61	0.40	53.00	1033
29	17816BN40	29	98.09	0.52	250.07	-0.35	0.00	Pass	Pass	Pass	Pass	2.85	1.14	Pass	-19.70	13.20	13.20	91.27	28.61	0.33	55.90	1032
30		30			250.03	0.00	0.00	Pass	Pass	Pass	Pass	2.85	1.14	Pass	-11.70	25.50	25.50	91.27	28.61	0.10	50.80	1038
31	17816BN04	31	98.09	0.52	250.07	-0.35	0.00	Pass	Pass	Pass	Pass	2.85	1.14	Pass	-17.30	5.00	5.00	90.47	23.71	0.17	56.20	1038
32		32			250.03	0.00	0.00	Pass	Pass	Pass	Pass	2.83	1.11	Pass	-13.80	22.50	22.50	90.47	23.71	0.14	50.50	1038
33	17816BN100	33	97.84	3.85	250.17	-0.81	0.00	Pass	Pass	Pass	Pass	2.83	1.11	Pass	-18.60	41.00	41.00	90.14	23.80	0.24	56.80	1036
34		34			249.91	0.00	0.00	Pass	Pass	Pass	Pass	2.73	1.05	Pass	-15.20	24.90	24.90	90.14	23.80	0.32	51.80	1036
35	17816BN037	35	98.01	-2.23	250.34	-0.38	0.00	Pass	Pass	Pass	Pass	2.73	1.05	Pass	-16.20	33.50	33.50	90.92	26.36	0.09	50.70	1035
36		36			249.78	0.00	0.00	Pass	Pass	Pass	Pass	2.73	1.05	Pass	-15.50	46.70	46.70	90.92	26.36	0.40	60.10	1035
37	17816BN033	37	98.01	-2.23	250.34	-0.38	0.00	Pass	Pass	Pass	Pass	2.73	1.05	Pass	-12.60	17.30	17.30	90.92	26.36	0.18	50.60	1035

Customer name : Fabrinet or Sanmina

>20 dB

Product name, Acacia or Fujikura spec. no.

Fig. 2

Customer name : Fabrinet or Sanmina

Product name, Acacia spec. no.,
Fujikura spec. no. (, Sanmina part no.)

Fig. 2



1440, MUTSUZAKI, SAKURA,
CHIBA 285-8550, JAPAN

TEL. +81-43-484-3972
FAX. +81-43-484-3980

Date: April 2, 2019

Messrs. Fabrinet Co.,Ltd

Dear Sirs,

This official letter is described about certificate for RoHS compliance for following products.

Customer P/N	Fujikura P/N	Product Description	Applicable RoHS Exemption
820-0005-03 Rev. B	PNJHI-0485-64-09	HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT	6(c) 7(c)-I

Regarding the management of environment, we Fujikura Ltd. represent and warrant that above products which we supply to you does not include any of the following prohibited hazardous ingredients in accordance with RoHS Directive 2011/65/EU and Directive 2015/863/EU:

- a) Cadmium(Cd)
- b) Lead(Pb)
- c) Hexavalent chromium(Cr VI)
- d) Mercury(Hg)
- e) Polybrominated Biphenyls(PBB)
- f) Polybrominated Diphenyl Ethers(PBDE)
- g) Di-(2-ethylhexyl)phthalate(DEHP) (CAS No. 117-81-7)
- h) Benzyl butyl phthalate(BBP) (CAS No. 84-74-2)
- i) Di-n-butylphthalate(DBP) (CAS No. 85-68-7)
- j) Diisobutyl Phthalate(DIBP) (CAS No. 84-69-5)

Sincerely,

Chisato Kikuchi

Manager,
Optical Fiber Systems Quality Assurance Department,
Quality Assurance Center,
Power & Telecommunication Systems Company,
Fujikura Ltd.

Fig. 3

Inspection report of Fiber pitch & Fiber Parallel

Product type:	HERMETIC SFF FIBER ARRAY ASSEMBLY WITH BOOT (ALLOY 50 FERRULE)	Customer name:	Fabrinet Co.,Ltd.
Spec:	PNJH-0485-64-09	Shipping date:	16-May-19
Customer spec:	820-0005-03Rev. B	Total q'ty:	100
PO:	FPO190024939-1		
Total judgement	Good	Lot No. (Fujikura PO No.-MMDD (Originally planned shipping da	

No	Serial No.	Core	Fiber pitch	Fiber Parallel	Judgement
			250±1 um	0±1 um	
1	A190500001	1	0.00	0.00	Good
		2	250.14	0.00	
		3	249.86	0.00	
2	A190500002	1	0.00	0.00	Good
		2	249.98	-0.11	
		3	250.04	0.00	
3	A190500003	1	0.00	0.00	Good
		2	249.82	-0.02	
		3	250.19	0.00	
4	A190500004	1	0.00	0.00	Good
		2	249.93	-0.10	
		3	250.10	0.00	
5	A190500005	1	0.00	0.00	Good
		2	250.15	-0.51	
		3	249.86	0.00	
6	A190500006	1	0.00	0.00	Good
		2	250.15	-0.21	
		3	249.87	0.00	
7	A190500007	1	0.00	0.00	Good
		2	250.43	0.26	
		3	249.59	0.00	
8	A190500008	1	0.00	0.00	Good
		2	250.47	-0.10	
		3	249.54	0.00	
9	A190500009	1	0.00	0.00	Good
		2	250.22	-0.33	
		3	249.80	0.00	
10	A190500010	1	0.00	0.00	Good
		2	249.93	0.14	
		3	250.08	0.00	
11	A190500011	1	0.00	0.00	Good
		2	249.98	-0.01	
		3	250.04	0.00	
12	A190500012	1	0.00	0.00	Good
		2	250.06	-0.28	
		3	249.94	0.00	
13	A190500013	1	0.00	0.00	Good
		2	250.05	-0.50	
		3	249.96	0.00	
14	A190500014	1	0.00	0.00	Good
		2	250.30	-0.12	
		3	249.70	0.00	
15	A190500015	1	0.00	0.00	Good
		2	250.42	-0.04	
		3	249.63	0.00	
16	A190500016	1	0.00	0.00	Good
		2	249.76	0.11	
		3	250.24	0.00	
17	A190500017	1	0.00	0.00	Good
		2	250.01	-0.62	
		3	250.04	0.00	
18	A190500018	1	0.00	0.00	Good
		2	249.90	0.08	
		3	250.12	0.00	
19	A190500019	1	0.00	0.00	Good
		2	249.84	-0.73	
		3	250.18	0.00	
20	A190500020	1	0.00	0.00	Good
		2	249.62	-0.50	
		3	250.40	0.00	

Fig. 4

添付資料

~~Appendix A~~

~~820-0005-03 Rev. A~~

~~PNJHI-0485-64-06A~~

~~PNJHI-0485-72-01~~

Rev.	Date	Description	Reason	Issued	Checked	Approved
-	MAR. 19, 2019			Sawada	Shida	Hanya
A	2019. 4. 8	-Changed product name in accordance with Acacia drawing -Added Acacia drawing no. to Table1 -Changed revision of Fujikura specification -Added 1.3 Drawing for manufacturing, changed CPAS4-215A4 to PNJHI-0485-72-01 -Changed spec. for glass sealing Alignment: 87.5um +/-40um --> 87.5um +/-25um Glass solder depth; more than 80% --> more than 60% Voids/Airbubbles; changed totally -Added 10. Inspection items -Changed name of label on Table2, TT727 --> TT327	-Customer drawing was issued, officially - Reviewed of internal spec. -Maker changed the name of label	Sawada	Uenoyama	Hanya
B	2019. 4. 26	-Changed "10. Inspection items" to "3. Product specification" -Deleted Test method and Inspection from Table4 -Moved "3. 3)X-ray photo", "6. Leak Test" "9. Fiber Appearance Inspection" to 8. Inspection	-	Sawada	Araki	Hanya
C	2019. 5. 27	-Added 12.4 Fiber pitch and Fiber parallel data to Acacia -Added Fig. 4	-Customer request	Sawada	Araki	Uenoyama
D	2019. 8. 22	-Changed criteria for voids in glass solder -Changed leak test procedure	-Reviewed criteria -Reduced leak test time	Sawada	Araki	Uenoyama

Rev.	Date	Description	Reason	Issued	Checked	Approved
E	2019, 8.30	-Added Sanmina part no. to Table1 -Added 11.2 Label for Sanmina -Added 12.3 Certificate of Conformance for Sanmina -Added Array polished angle to 12.4	-Customer request	Sawada	Araki	Hanya
F	2019, 9.30	9. Packing 1) Added "It is allowed to set fibers in the 8th slot if fiber length is too short for 9th slot"	-Countermeasure for the packing trouble of short fibers	Sawada	Araki	Hanya
G	2019, 11.19	Table2 -Changed model of LC connector parts -Added spec. no. for Hytrel tube -Changed definition of Lot no. to Sanmina MMDD: shipping date -->MMDD: originally planned shipping date -Discontinue printed test report (CoC) attachment to the products for Sanmina	-Customer request, EOL of boot material, Cost down (生産条件変更申請書JEHI-58-19-0027) -Updated - To avoid re-making labels and documents in case of shipping schedule change -Cost down	Sawada	Araki	Hanya
H	2019, 11.28	Table2 -Changed revision of the drawing for LC connector (P) and Ferrule unit LC(P)B. CPAI1-006H → CPAI1-006I CPAI2-036D → CPAI2-036E -Added 13. Ongoing Reliability Testing (ORT)	-Updated -Customer request	Sawada	Araki	Hanya

Rev.	Date	Description	Reason	Issued	Checked	Approved
1	2020. 9.17	-Changed document no. from PNJHI-0485-25-08H to SPPU-10383(1) -Changed box count/case no. on the box label for Fabrinet -Changed test report to Fabrinet -Changed UV adhesive for fiber array from World Rock 8776NL5 to World Rock 8776NL5F -Revised drawing PNJHI-0485-72-01 → PNJHI-0485-72-01A	-CNC document control system changed -Customer request (ref. JEHI-53-20-0004(2)) -EOL of World Rock 8776NL5 (ref. JEHI-53-2 0-0006) -Specified the minimum lid length	Sawada	Araki	Hanya
2	2020. 10.20	-12.4 Electric data Canceled sending Test Report PDF file to Fujikura Sales.	-Because FS-sho issue C oC based on FOV TR, and the sales send the CoC to Sanmina instead of FOV TR.	Sawada	Araki	Hanya
3	2020. 11.17	-Changed Appearance criteri a AppendixA → RQAP-00005 -Changed microscope magnifi cation for Fiber appearanc e inspection 20x → 25x	-JE-58-20-1024	Sawada	Araki	Hishikawa
4	2022. 3.9	Table-2 item 20,21 Pink sponge size change 9.Packing Added photo of new packing method Table-2 Revised drawing 3CH array Registered OBL DRPT-10953 Table-4 PER changed from $\geq 20\text{dB}$ to >20dB. (not include '=') Page 17/19 Test report format shall be changed from $\geq 20\text{dB}$ to >20dB.	Packing method change Make clear applied to preventive action of fiber damage. Approved 4M change JE-58-20-1030 Make clear tolerance Of Angle Correction Apply to customer spec	Araki	Sawada	Hishikawa

Rev.	Date	Description	Reason	Issued	Checked	Approved
5	2022. 6.13	10.1 label for Sanmina (1) tray label (2) inner box label Added product name 10.2 label for Fabrinet (1) tray label Added product name	Request from Vietnam custom mention production description or product name to inner packing	Araki	Sawada	Hishikawa
6	2024. 3.14	[1]Changed 820-0005-03Rev. A to Rev. B in the spec. [2]Added note in table1 [3]Changed DRAS-12911(1)/ PNJHI-0485-72-01A to DRAS- 12911(2)/PNJHI-0485-72-01B in the spec. [4]Changed PNJHI-0485-64-0 6A to PNJHI-0485-64-09 in spec.	[1]For Revision of cusotmer spec. [2]To clearly state cus tomer agreements during last-buy manufacturin g. [3][4]For Change of FJ K spec. (to cusotmer) . (Changed color marking on fiber to Laser mark ing on boot.)	Nakane	Araki	Hishikawa
7	2024. 3.27	[1]Changed DRAS-12911(2)/ PNJHI-0485-72-01B to DRAS- 12911/PNJHI-0485-72-01 (Late st version) in the spec.	[1] The drawings have b een revised to correct errors. Changed the exp ression so that SPPU do es not need to be revis ed every time the drawi ng is revised.	Nakane	Araki	Hishikawa