



# Datasheet



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# Core Alignment Fusion Splicer

## 90S

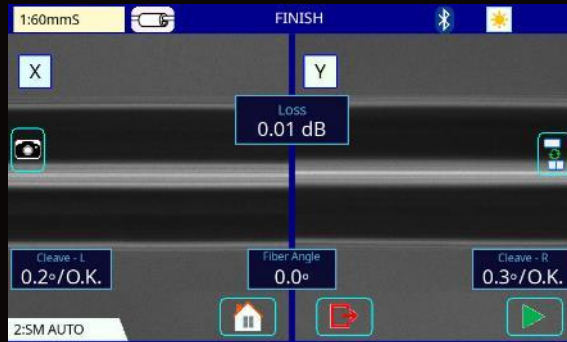
*Designed to keep you going*



# True Core Alignment

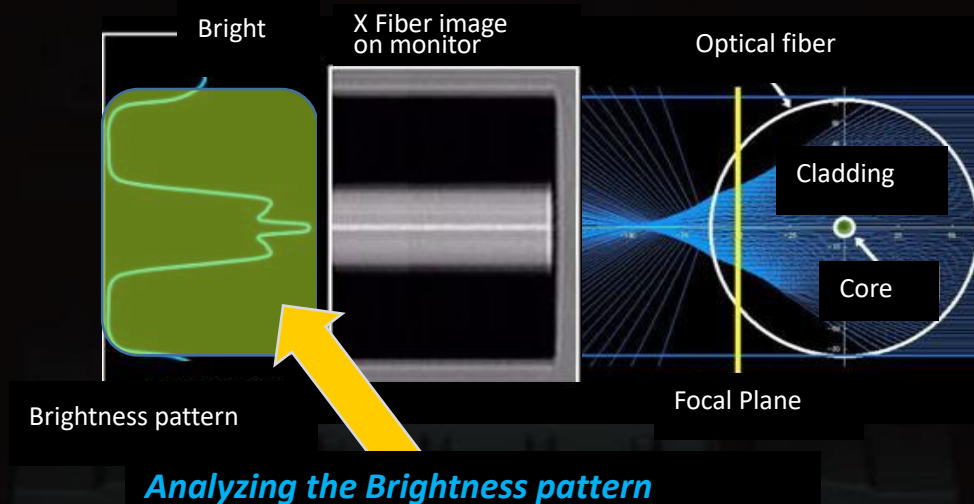
## 1. Core Alignment Technology

The 90S fusion splicer has high precision lenses which provide accurate core to core alignment regardless of core-cladding concentricity error. Also, the lenses allow the splicer to discriminate between fiber types.



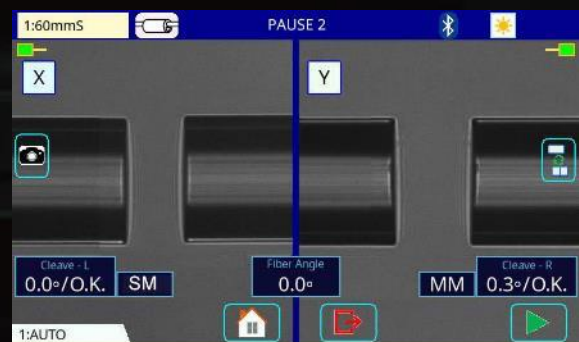
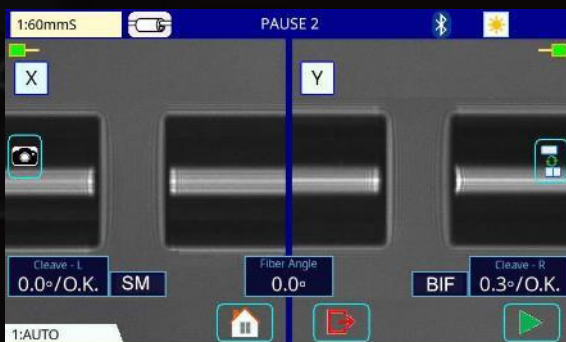
## 2. Advanced Image Processing Technology

The 90S possesses advanced image processing technology which analyzes the profile of the fiber image as a brightness pattern. The 90S finds the true core position and achieves the consistent lower splice loss.



## 3. Fiber Discrimination Function

The 90S fusion splicer automatically identifies the optimum arc discharge parameters in accordance with the fiber type.



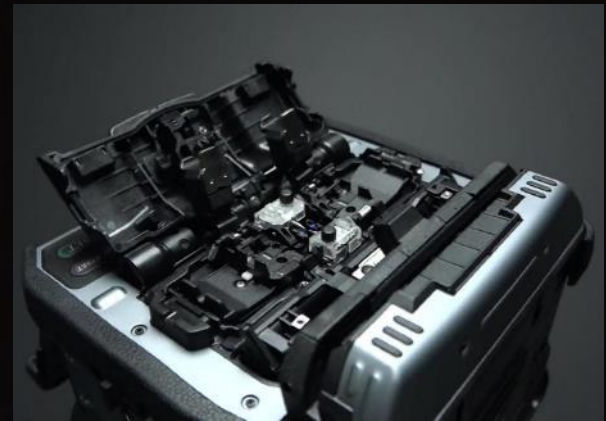
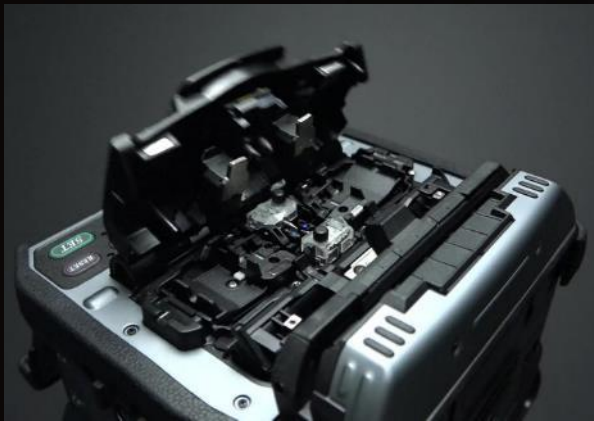
# Faster Automation

The faster automated features of the 90S fusion splicer reduce installation times. With this splicer, an operator can complete the entire splicing process from splicing to heating without touching the 90S and only moving the fiber.

Wind protectors

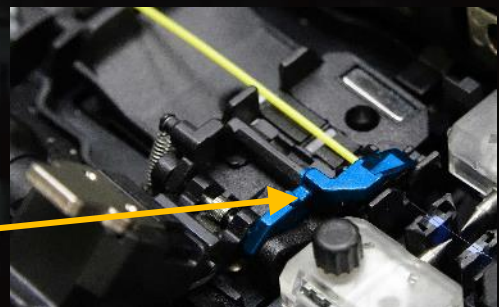


Tube heater clamp

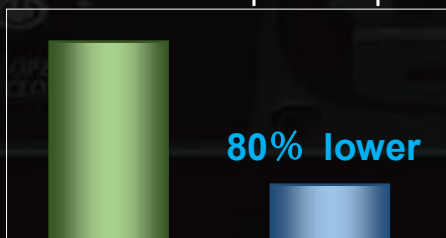


The fiber retention clamps support the automated operations. When the sheath clamps open automatically after splicing, the fiber retention clamps gently hold the spliced fiber to keep it from flying out. The retention clamps release when the fiber is lifted by the operator.

Fiber retention clamp



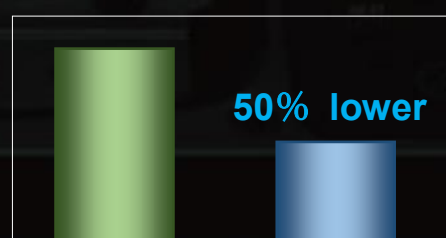
Time for opening wind protector and sheath clamp after splicing



70S

New 90S

Time for placing fiber into heater



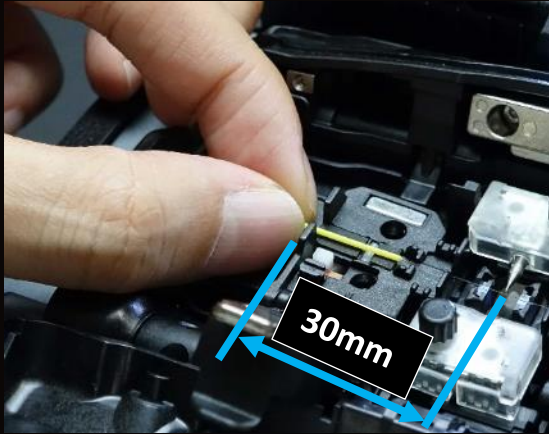
70S

New 90S

# User Friendly

## 1. Easy Fiber Protection Sleeve Positioning

The shape of the sheath clamp is optimized for the 60mm length protection sleeve. The length from splice point to the edge of the sheath clamp is 30mm. Therefore, it is easy to center the protection sleeve over the splice by using your finger as the reference splice point.



## 2. Carrying Case

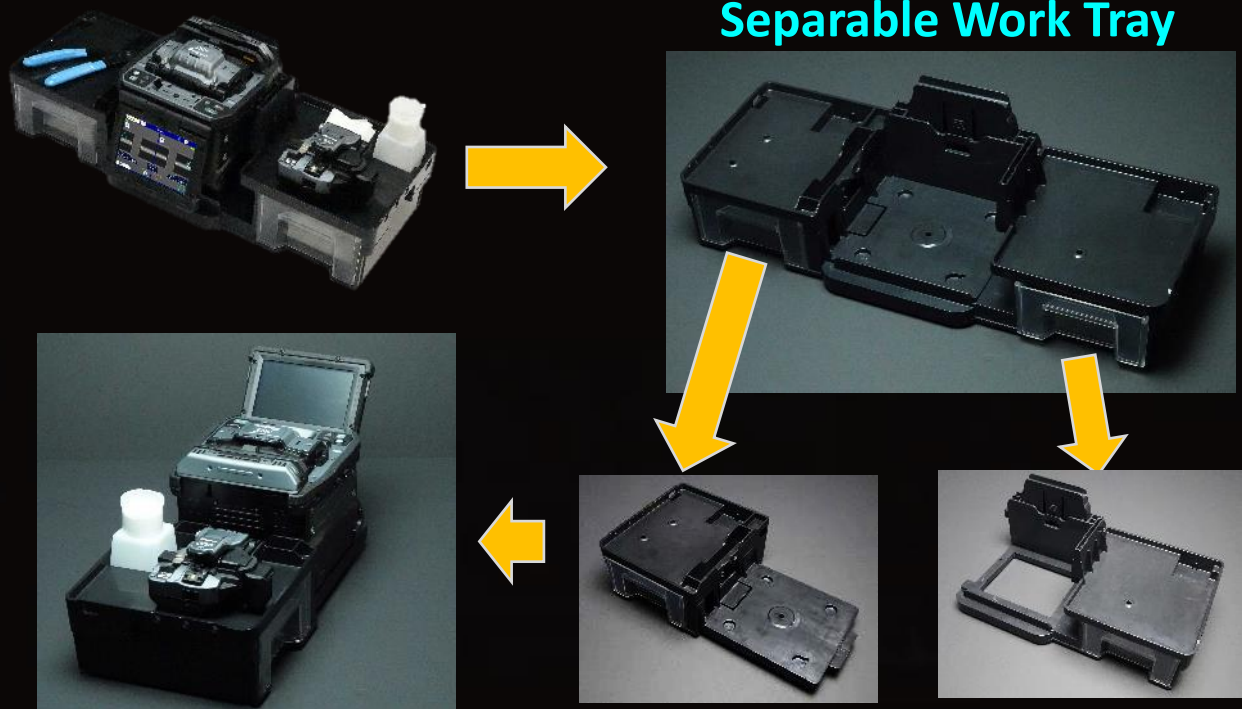
There are multiple ways to utilize the 90S carrying case. The 90S is ready to use just by opening the case, but it is also possible to use the 90S on top of the carrying case or only with the work tray depending on the work environment.



# User Friendly

## 3. Work Tray

The newly designed work tray has many functions. There are two drawers for storage, and the drawers are large enough to store tools or battery packs. Also, the work tray can be divided in two, so it is configurable to fit your work space.



### Plenty of space in carrying case



Cleaver & Stripper



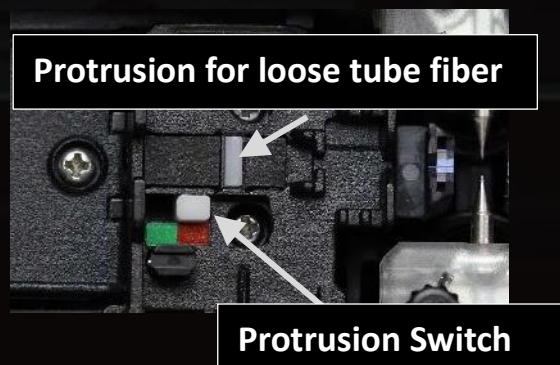
Battery packs



Large storage space under work tray

## 4. Loose Tube Compatibility

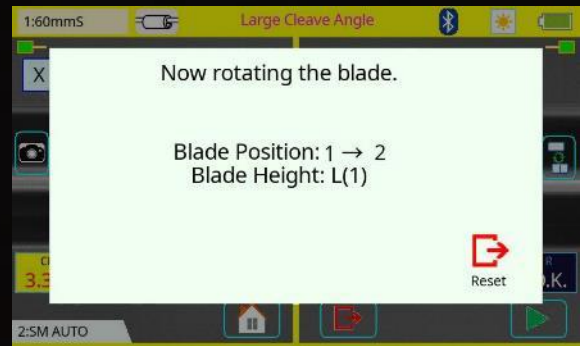
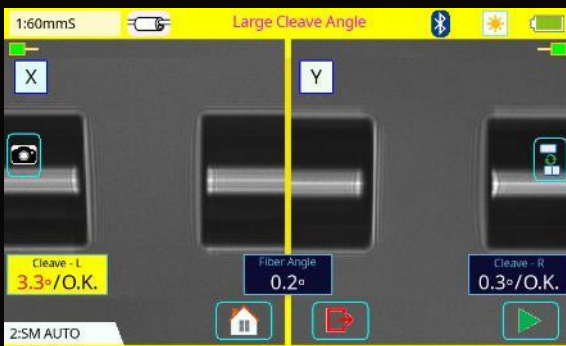
The sheath clamp of the 90S fusion splicer is compatible with loose tube fiber. The Protrusion part on of the sheath clamp for loose tube fiber engages or retracts by simply changing the switch position with your finger.



# Active Blade Management Technology

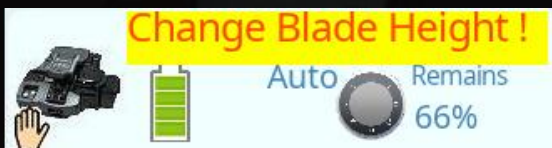
## 1. Automatic Blade Rotation

The 90S fusion splicer and CT50 fiber cleaver are enabled with wireless data connectivity. This capability allows automatic cleaver blade rotation when the splicer judges the blade is worn. Also, the 90S fusion splicer can connect to two CT50s simultaneously.



## 2. Blade Life Management

The 90S fusion splicer displays the remaining blade life and informs the user when a blade height change, position change, or new blade is required.



		No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8
H (1)		0	0	0	0	0	0	0	0
M (2)		0	0	0	0	0	0	0	0
L (1)		1014	1041	1175	1167	1522	1134	1530	1439
		Blade Height : L(1)							
		Recommended Position							
		Reset							
		No.9							
		No.10							
		No.11							
		No.12							
		No.13							
		No.14							
		No.15							
		No.16							
H (1)		0	0	0	0	0	0	0	0
M (2)		0	0	0	0	0	0	0	0
L (1)		1185	1218	1025	1407	1338	1484	1259	1060

# Standard Package

## 90S Standard Package



Description	Model No.	Qty
Core Alignment Fusion Splicer	90S	1pc
(1) Battery Pack*	BTR-15	1pc
(2) AC Adapter	ADC-20	1pc
(3) AC Power Cord	ACC-14, 15, 16 or 17	1pc
(4) USB Cable	USB-01	1pc
(5) Fusion Splicer Strap	ST-02	1pc
(6) Electrodes (spare)	ELCT2-16B	1pair
(7) Fiber Holder Set Plate	SP-03	1pair
(8) Carrying Case	CC-39	1pc
(9) Work Tray Left	WT-09L	1pc
(10) Work Tray Right	WT-09R	1pc
(11) Work Tray J-Plate	JP-09	1pc
(12) Tripod Screw	TS-03	2pcs
(13) Carrying Case Strap	ST-03	1pc
(14) Alcohol Dispenser	AP-02	1pc
(15) Quick Reference Guide	QRG-02-E, C or J	1pc
Single Fiber Stripper	SS03 or SS01	1pc
Optical Fiber Cleaver	CT50	1pc
(1) Fiber Scrap Collector	FDB-05	1pc
(2) Fiber Setting Plate	AD-10-M24	1pc
(3) Case (for Cleaver)	CC-37	1pc
(4) Hexagonal Wrench	HEX-01	1pc

\* Please follow IATA regulation when shipping the battery by air.





# Specifications



## 90S Specifications

Item	Specification	
Fiber alignment method	Active core alignment	
Fiber count can be spliced	Single fiber	
Applicable fiber	Fiber type	Single mode optical fiber Multi mode optical fiber
	Cladding dia.	80 to 150µm
Applicable coating	Sheath clamp	Coating dia. : Max. 3,000µm Cleave length : 5 to 16mm *1
Fiber splice performance	Splice loss *2	ITU-T G.652 : Avg. 0.02dB
		ITU-T G.651 : Avg. 0.01dB
		ITU-T G.653 : Avg. 0.04dB
		ITU-T G.655 : Avg. 0.04dB
		ITU-T G.657 : Avg. 0.02dB
Applicable protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66mm
Sleeve heat performance	Heat time *4	Max. 6.0mm before shrinking
		60mm slim mode : Avg. 9 to 10sec. 60mm mode : Avg. 13 to 15sec.
Fiber tensile test force	Approx. 2.0N	
Electrode life *5	Approx. 5,000 splices	
Physical description	Dimensions W	Approx. 170mm without projection
	Dimensions D	Approx. 173mm without projection
	Dimensions H	Approx. 150mm without projection
	Weight	Approx. 2.8kg including battery
Environmental condition	Temperature	Operate : -10 to 50 degreeC Storage : -40 to 80 degreeC
	Humidity	Operate : 0 to 95%RH non-condensing Storage : 0 to 95%RH non-condensing
	Altitude	Max. 5,000m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V / 6,380mAh
	Capacity *6	Approx. 300 splice and heat cycles
	Temperature	Recharge : 0 to 30 degreeC Storage : -20 to 30 degreeC
Display	Battery life *7	Approx. 500 recharge cycles
	LCD monitor	TFT 5 inches with touch screen
Magnification	200 to 320x	
	LED lamp	
Interface	V-grooves	PC
	External LED lamp	USB2.0 Mini B type
		Approx. DC5V, 500mA
	Ribbon Stripper	Mini DIN 6pin DC12V, Max. 1A
Wireless *8	Bluetooth 4.1 LE	
Data storage	Splice mode	100 splice modes
	Heat mode	30 heat modes
	Splice result	20,000 splices
	Splice image	100 images
Screw hole for tripod	1/4-20UNC	
Other features	Automatic functions	Splice mode select by fiber type analysis
		Discharge power calibration
		Wind protector : open/close
		Sheath clamp : open
		Heater lid : open/close
		Heater clamp : open/close
	Reference guide	Video and PDF file stored in splicer
Sheath clamp	Easy sleeve positioning clamp	
Electrode	Replaceable without tool	

## 90S Options

Item	Model	Remark
Battery pack*9	BTR-15	Battery pack for replacement
Electrodes	ELCT2-16B	Electrodes for replacement
Fiber holder	FH-70-250	250µm coating diameter
	FH-70-900	900µm coating diameter
	FH-FC-20	900µm in 2mm diameter cable
	FH-FC-30	900µm in 3mm diameter cable
DC Adapter	DCA-03	Connect AC adapter not through battery
DC power cord	DCC-20	Car cigar socket to BTR-15/DCA-03
	DCC-21	Car battery to BTR-15/DCA-03
Transfer Clamp	CLAMP-DC-12	Transferring drop cable on work tray
J-Plate	JP-10	Attaching to splicer, not to work tray
	JP-10-FC	JP-10 with fiber clamps
Protection sleeve	FP-03	60mm Max. 900µm coating diameter
	FP-03(L=40)	40mm Max. 900µm coating diameter
	FP-03M	FP-03 with non-magnetic material

### Notes

\*1: Cleave length range depending on fiber type

5 to 16mm : 125µm cladding dia. / 250µm coating dia.

10 to 16mm : 125µm cladding dia. / 400 or 900µm coating dia.

5 to 10mm : 80µm cladding dia. / 160µm coating dia.

\*2: Measured with a cut-back method relevant to ITU-T and IEC standard after splicing Fujikura identical fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.

\*3: Measured at room temperature. The definition of splice time is from the fiber image appeared in LCD monitor to the estimated loss displayed. The average splice time changes depending on the environmental conditions, fiber type, and fiber characteristics.

\*4: Measured at room temperature with the AC adapter. The heat time is defined from the start beep sound to the finish beep sound. The average heat time changes depending on the environmental conditions, sleeve type and battery pack condition.

\*5: The electrode life changes depending on the environmental conditions, fiber type and splice modes.

\*6: Test condition

(1) Splice and heat time : 2 minutes cycle

(2) Using the splicer power save settings

(3) Using a not degraded battery

(4) At room temperature

The battery capacity changes when testing with different conditions from the above.

\*7: The battery capacity decreases to a half after approx. 500 discharge and recharge cycles, The battery life is shortened further when using outside of the storage temperature range, operating temperature range, if completely discharged by storing for a long time without recharging.

\*8: Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

\*9: Please follow IATA regulation when shipping the battery by air.

# Specifications

## SS01/03 Specifications



Item	SS01	SS03
1) Stripping coating dia.	250um	250um
Fiber dia. after stripping	125um cladding	125um cladding
2) Stripping coating dia.	None	900um
Fiber dia. after stripping	None	250um coating
3) Stripping coating dia.	None	2000 to 3000um
Fiber dia. after stripping	None	900um coating
Dimension	Approx. 164 x 45 x 5mm	
Weight	Approx. 100g	

## Fiber Protection Sleeve Specifications



Item	FP-03/FPS series	FP-04/05 series
Outer tube material	Polyethylene	
Inner tube material	Ethylene-Vinyl Acetate	
Strength member	Stainless	Quartz glass
Heat shrink operation	Temperature: -10 to 50 degreeC	
	Humidity: 0 to 95% non-condensing	
Storage	Temperature: -40 to 60 degreeC	
	Humidity: 0 to 95% non-condensing	

## CT50 Specifications



Item		Specifications
Applicable fiber	Fiber type	Single mode optical fiber Multi mode optical fiber
	Fiber count	Up to 16 fiber ribbon
	Cladding dia.	Approx. 125um
Applicable coating	Fiber plate	AD-10-M24 : Max. 900um coating diameter AD-50 : Max. 3mm coating diameter
	Fiber holder	Coating shape. : Refer to splicer options AD-10-M24 : 5 to 20mm *1 AD-50 [CD : coating diameter] CD= 250um or less : 5 to 20mm *1 250um < CD < 1000um : 10 to 20mm 1000um < CD < 3mm : 14 to 20mm
Cleave length	Fiber holder	Approx. 10mm
	Fiber plate	AD-10-M24 : 5 to 20mm *1 AD-50 [CD : coating diameter] CD= 250um or less : 5 to 20mm *1 250um < CD < 1000um : 10 to 20mm 1000um < CD < 3mm : 14 to 20mm
Cleave angle *2	Single fiber	Avg. 0.3 to 0.9 degrees
	Fiber ribbon	Avg. 0.3 to 1.2 degrees
Blade life *3		Approx. 60,000 fiber cleaves
Physical description	Dimensions W	Approx. 120mm when closing the lever
	Dimensions D	Approx. 95mm when closing the lever
	Dimensions H	Approx. 58mm when closing the lever
	Weight	Approx. 305g including battery and AD-10-M24
Environmental condition	Temperature	Operate : -10 to 50 degreeC Storage : -40 to 80 degreeC
	Humidity	Operate : 0 to 95% non-condensing Storage : 0 to 95% non-condensing
Battery		2 pieces of LR03/AAA dry battery
Wireless interface *4		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Other features	Blade rotation	Motorized rotation
		Manual rotation dial
	Replaceable parts	Blade Clamp arm

## CT50 Options

Item	Model Name	Remark
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fiber Scrap Collector	FDB-05	Spare scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector

### Notes

- \*1: When the cleave length is from 5 to 10mm, the coating diameter should be 250um or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification when the cleave length is 5 to 10mm.
- \*2: Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibers and 12 fiber ribbons. The cleave length is set from 10 to 16mm. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.
- \*3: The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.
- \*4: Bluetooth® word mark and logos are the registered trademarks of Bluetooth SIG, Inc.

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