

FUJIKURA 45S

CLAD ALIGNMENT SPLICER

PRODUCT OVERVIEW

The 45S is a small cladding alignment V-groove splicer with substantial performance.

With its ground-breaking simultaneous fibre preparation features, improved operation, and exceptional reliability, the 45S raises the bar for FTTx splicers. From fibre preparation through to completion of heating, the 45S simplifies and speeds-up the complete splice process compared to our previous model, without compromising on the quality of splice.

The 45S's accelerated performance is achieved through faster preparation and heating times. Simultaneous fibre preparation streamlines the splicing process and an improved heater ensures the rapid heating performance.

Stable and consistent low loss splicing is achieved thanks to Active Fusion Control Technology and Active Blade Management Technology, which reduce the need for rework and re-splicing.

Control of the 45S is through an adjustable colour touchscreen which ensures easy operation and visibility in all environments. Convenience is further bolstered by the improved V-groove illumination and the benefit of easy splice protector positioning. The machine reassures users of reliable splice results using CORE loss estimation using Warm Image Splicing Technology.



Features

- Simultaneous fibre preparation streamlines the splicing process.
- The 45S also makes it possible to load two fibres into the splicer at the same time.
- Active fusion control by cleave condition.
- Active fusion control by fibre brightness.
- Wireless connectivity between the 45S and CT50 fibre-cleaver enables automatic cleaver blade rotation.
- The 45S has a new heater that contributes to its accelerated performance.
- An increased Z-stroke range, allows the 45S to automatically correct the position of the fibre if it is slightly misplaced.
- Long lasting battery, with uninterrupted operation for up to 230 splice and heat cycles.

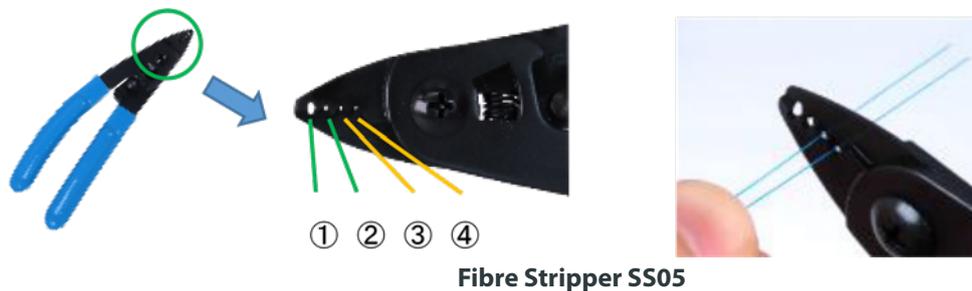
Faster Operation

Simultaneous Fibre Preparation

Fibre preparation, stripping, cleaving, and setting in the splicer usually needs repeating separately for both left and right-side fibres. The 45S process does away with that and enables simultaneous fibre preparation thanks to the new SS05 double fibre stripper, the new AD16 fibre adapter for the CT50 cleaver and the clever set plate mechanism of the 45S itself.

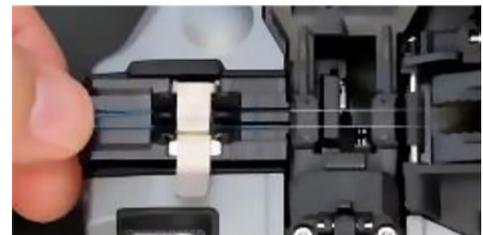
Simultaneous Fibre Stripping

The SS05 fibre stripper is equipped with four blades: 1 for 2.3mm, 2 for 900µm, 3, 4 for 250µm fibres. Using blades 3 & 4 allows simultaneous stripping of 250µm fibres.



Simultaneous Fibre Cleaving

The new AD16 fibre adapter for the CT50 cleaver is equipped with two grooves. Placing one fibre in each groove provides simultaneous cleaving.



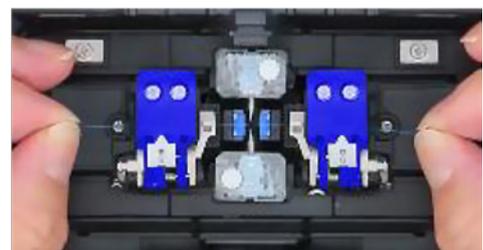
Simultaneous Fibre Setting



Two handed



One handed

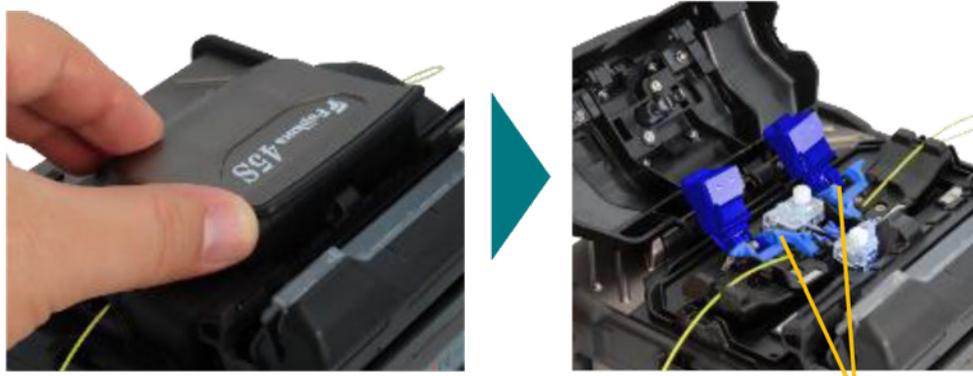


Simultaneously fibre setting

Faster Fibre Transportation Time

The 45S is equipped with a mechanism linking the wind protector and fibre clamp so when you open wind protector, the fibre clamps opens automatically.

The 45S is also equipped with retention clamps which are reputed by our conventional fusion splicer models. The retention clamps prevent the fibre from jumping out after the fibre clamps are opened. These mechanisms work in tandem to provide easy fibre handling and a reduction in the time it takes to transfer the fibre to the heater.



Faster Heating Time

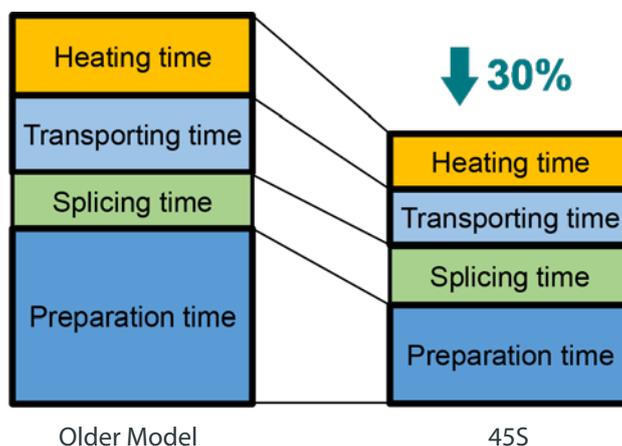
The 45S is equipped with a dual-plate heater mechanism which speeds up the heating time to between 22 and 25 seconds when using the FP-03 sleeve.



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. In addition, since the heating operation is constantly optimised, the average heating time changes depending on the usage conditions of the fusion splicer.

30% Faster Than Previous Model

Thanks to the way the 45S streamlines the preparation process, reduces transport time and delivers faster heating, it is 30% faster than the 41S+ it replaces.



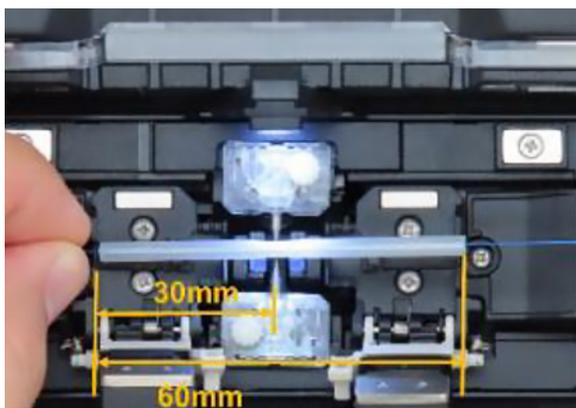
User-friendly Design

Movable LCD Monitor

The 45S is equipped with a movable 4.95-inch colour LCD monitor to ensure optimum visibility in a range of conditions, even when outside under direct sunlight.



Easy Sleeve Positioning



The space between the edges of the left and right fibre clamp edges is 60mm, as per the image to the left.

This distance allows for easy sleeve positioning, with the splice point positioned in the middle of the sleeve.

The scale on the heater shows the guide for other sleeve lengths, for example 40mm.

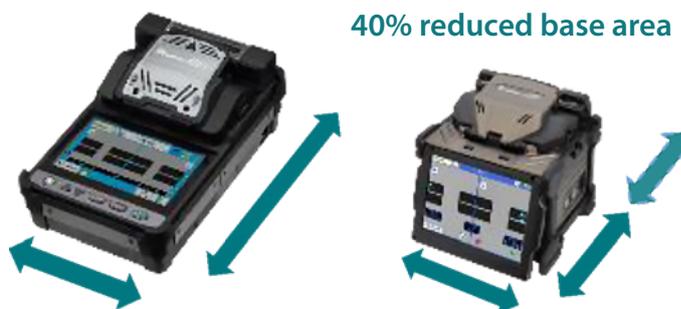
Removable Battery

The removable battery makes replacement easy and convenient.



Smaller Footprint

The cube shape provides a reduced base area while also giving the user a large operating space.



Versatile Functionality

Carrying Case With Work Tray

The configurable 455 carrying case provides various usage configurations.

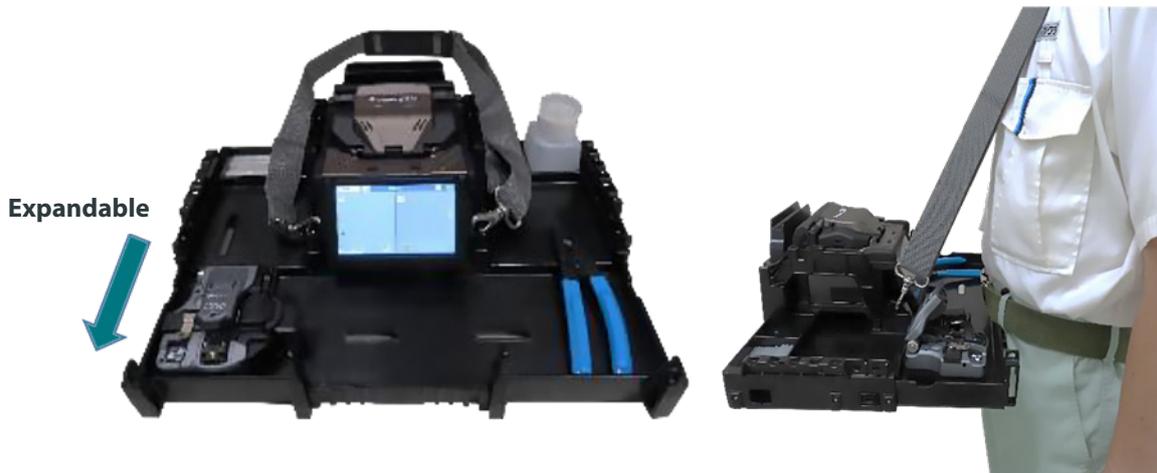


Configuration example 1
Open the carry case and start operation.

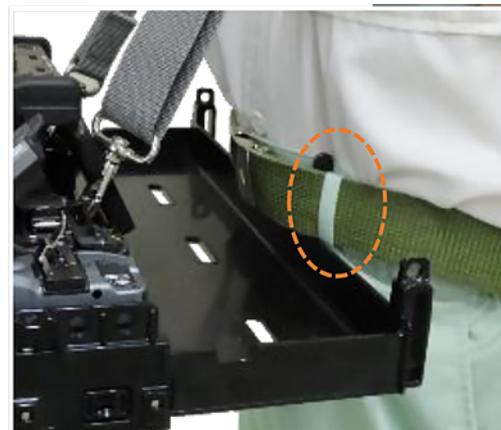


Configuration example 2
Remove the work tray and put on top of the carry case.

Removing the work tray from the carry case allows the tray to expand. Using the work tray with the strap provides a portable work surface and the strap can be fixed to the work tray at the sides of the splicer to secure the usability.



Secure working space



Increased security when used with a belt

Consistent Quality

Active Fusion Control

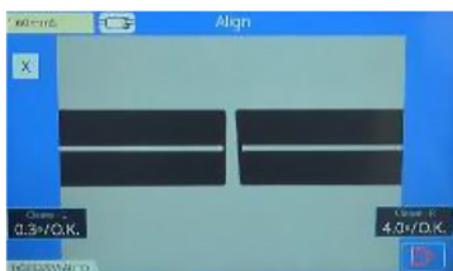
The 45S is equipped with Fujikura Active Fusion Control Technology, which analyses the fibre image during fusion and controls the arc discharge accordingly. The result is stable splice loss irrespective of the environment.



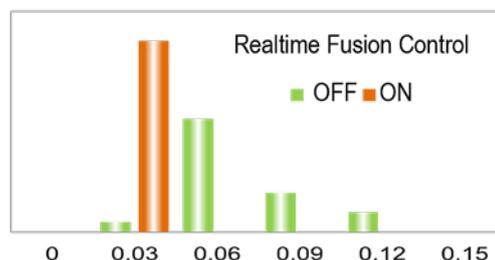
ACTIVE FUSION
CONTROL TECHNOLOGY

Control By Fibre Cleaved Surface

A bad cleave end face is a potential reason for high splice loss. The 45S can address this because it's equipped to control fusion according to the condition of the cleaved surface. This function helps reduce splice loss by compensating for poor cleaves.



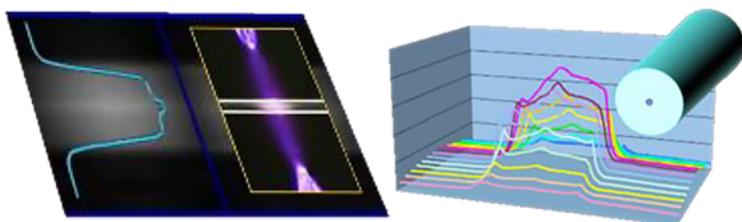
Splicing loss of cleave angle fibre: $3^\circ < \theta < 5^\circ$



Fujikura test result of ITU-T G652 fibres measured by cut-back method. The splice loss may vary depending on operating environment or fibre characteristics.

Real-time Fusion Control

The 45S analyses the fibre image during fusion and controls fusion power according to the real-time condition of the fibre. This helps to minimise splice loss irrespective of the environment.



Analysing fibre image during fusion

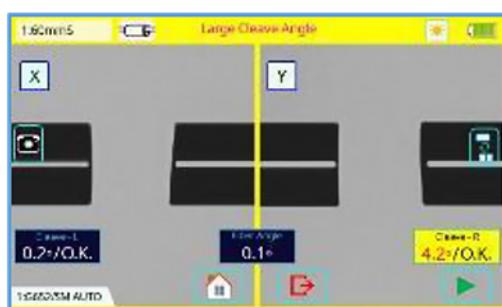
This process also provides Warm Splice Image (WSI) technology. WSI analyses during the splice and provides loss estimation, even though the 45S is a clad alignment splicer.

It prevents the case of "good loss estimation but bad actual loss".

Active Blade Management



ACTIVE BLADE
MANAGEMENT TECHNOLOGY



Additional Features

Splice+ App

The Splice+ app provides convenient splicer management by wireless communications, between the 45S and mobile phone.

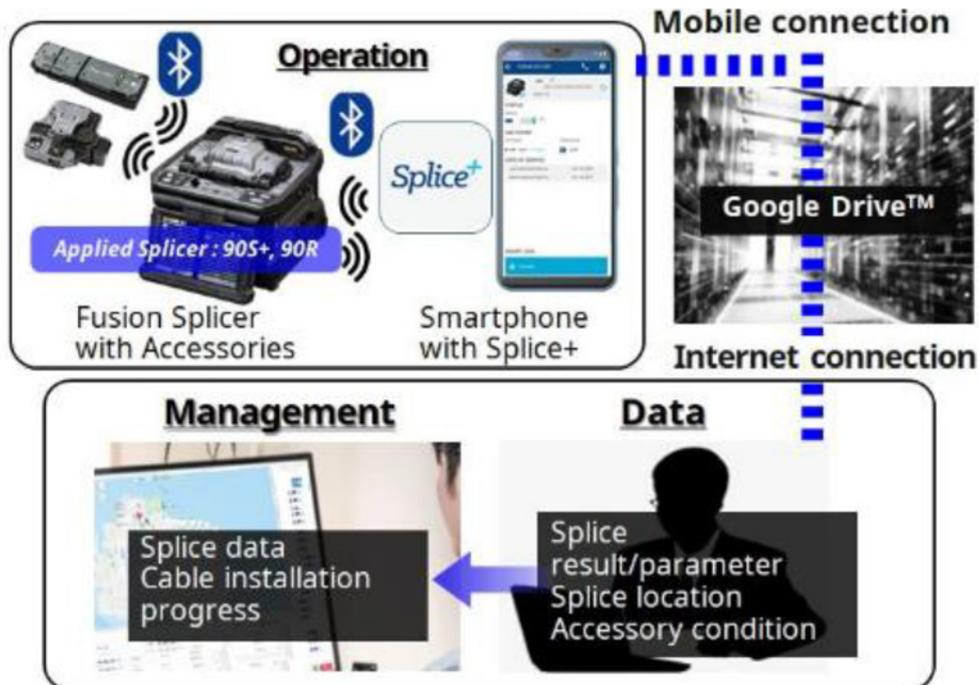
Smart Lock

A break in the pairing of wireless communication between the splicer and mobile phone can lock the splicer which prevents misuse and works as an anti-theft measure.



Data Management

The data management function retrieves data from the splicer and saves it to the cloud. This data can include the GPS data of a phone, which is useful for splicer operation management.



You can find and obtain Splice+ App from Google Play and App Store.



Specifications / Items

45S Standard Items

Description	Model No.	Qty
Clad Alignment Fusion Splicer	45S	1pc
1 - Battery Pack*	BTR-17	1pc
2 - AC Adapter	ADC-21	1pc
3 - AC Power Cord	ACC-08, 09, 10, 11 or 12	1pc
4 - USB Cable	USB-01	1pc
5 - Electrodes, for spare	ELCT2-16B	1pair
6 - Carrying Case	CC-45	1pc
7 - Work Tray	WT-10	1pc
8 - Tripod Screw	TS-03	1pc
9 - Carrying Case Strap	ST-03	1pc
10 - Alcohol Dispenser	AP-02	1pc
11 - Quick Reference Guide	QRG-8-E, C or J	1pc
Single Fibre Stripper	SS05	1pc
Optical Fibre Cleaver	CT50	1pc
a - Fibre Scrap Collector	FDB-05	1pc
b - Fibre Setting Plate	AD-16A	1pc
c - Case, for cleaver	CC-37	1pc
d - Hexagonal Wrench	HEX-01	1pc



* Please follow IATA regulation when shipping the battery by air



Specifications / Items

45S Specifications



Item		Specification
Fibre alignment method		Active clad alignment
Fibre count can be spliced		Single fibre
Applicable fibre	Fibre Type	Single mode fibre Multi mode fibre
	Cladding dia.	Approx. 125µm
Applicable coating	Sheath clamp	Coating dia.: Max. 300µm
		Cleave length : 5 to 16mm *1
Fibre splice performance	Splice loss *2	ITU-T G.652 : Avg. 0.03dB
		ITU-T G.651 : Avg. 0.01dB
		ITU-T G.653 : Avg. 0.05dB
		ITU-T G.655 : Avg. 0.05dB
		ITU-T G.657 : Avg. 0.03dB
	Splice time *3	SM FAST mode : Avg. 6 to 7 sec.
Applicable protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66mm
	Sleeve dia.	Max. 6.0mm before shrinking
Sleeve heat performance	Heat time *4	60mm mode : Avg. 15 to 22sec.
		60mm slim mode : Avg. 15 to 17sec.
Fibre tensile test force		Approx. 2.0N
Electrode life *5		Approx. 6000 splices
Physical description	Dimensions W	Approx. 131mm w/o projection
	Dimensions D	Approx. 123mm w/o projection
	Dimensions H	Approx. 121mm w/o projection
	Weight	Approx. 1.4kg inc. battery
Environmental condition	Temperature	Operate : -10 to 50 °C
		Storage : -40 to 80 °C
	Humidity	Operate : 0 to 95%RH non-condensing
Storage : 0 to 95%RH non-condensing		
	Altitude	Max. 5000m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1A
	Type	Rechargeable Lithium Ion
Battery pack	Output	Approx. DC14.4V, 3190mAh
		Capacity *6
		60mm slim mode : Approx. 230 splice and heat cycles
	Temperature	Recharge : 0 to 40 °C
		Long Term Storage : -20 to 30 °C
Battery life *7	Approx. 500 recharge cycles	
Display	LCD monitor	TFT 4.95 inches with touch screen
	Magnification	Approx. 132 to 300x
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type - Approx. DC5V, 500mA
	Wireless *8	Bluetooth 5.2

Item		Specification
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	Fusion control
		Blade management and control
	Reference guide	PDF file stored in splicer
	Sheath clamp	Open with/without Wind Protector
		Close with fibre setting
Electrode	Replaceable without tool	

Notes

- *1 Cleave length range depending on fibre type
5 to 16mm : 125µm cladding dia. and 250µm coating dia.
10 to 16mm : 125µm cladding dia. and 400 or 900µm coating dia.
- *2 Measured with a cut-back method relevant to ITU-T and IEC standard after splicing Fujikura identical fibres. The average splice loss changes depending on the environmental condition and fibre characteristics.
- *3 Measured at room temperature. The definition of splice time is from the fibre image appeared in LCD monitor to the estimated loss displayed. The average splice time changes depending on the environmental conditions, fibre type, and fibre 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. In addition, since the heating operation is constantly optimized, the average heating time changes depending on the usage conditions of the fusion splicer.
- *5 The electrode life changes depending on the environmental conditions, fibre type and splice modes.
- *6 Test condition
(1) Splice and heat time: 1 minute cycle
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
The battery capacity changes when testing with a 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.

45S Options

Item	Model	Remarks
Fibre Setting Plate	AD-50	Optional fibre setting plate
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fibre Scrap Collector	FDB-05	Scrap collector
Side Cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

Specifications / Items

CT50 Specifications



Item		Specification
Applicable fibre	Fibre type	Single mode fibre
		Multi mode fibre
	Fibre count	Single and up to 16 fibre ribbon
	Cladding dia.	Approx. 125µm
Applicable coating	Fibre setting plate	AD-10-M24 : Max. 900µm coating diameter AD-50 : Max. 3mm coating diameter
	Fibre holder	Coating shape. : Refer to splicer options
Cleave length	Fibre setting plate	AD-10-M24 : 5 to 20mm * ¹
		AD-50 *C.D. : coating diameter C.D. = 250µm or less : 5 to 20mm * ¹ 250µm < C.D. < =900µm : 10 to 20mm 900µm < C.D. < =3mm : 14 to 20mm
	Fibre holder	Approx. 10mm
Cleave angle * ²	Single fibre	Avg. 0.3 to 0.9 degrees
	Fibre ribbon	Avg. 0.3 to 1.2 degrees
Blade life * ³		Approx. 60000 fibre cleaves
Physical description	Dimensions W	Approx. 117mm without projection * ⁴
	Dimensions D	Approx. 94mm without projection * ⁴
	Dimensions H	Approx. 59mm without projection * ⁴
	Weight	Approx. 306g inc. battery & AD-10-M24
Environmental condition	Temperature	Operate : -10 to 50 °C Storage : -40 to 80 °C
		Humidity
Battery		2 pieces of LR03, AAA dry battery
Wireless interface * ⁵		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Holding mechanism for the fibre holder		Installed
Other features	Blade rotation	Motorised rotation
		Manual rotation dial
	Replaceable parts	Blade
		Clamp arm

Notes

- *1 When the cleave length is less than 10mm, the coating diameter should be 250µm 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 less than 10mm.
- *2 Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibres and ribbon fibres. 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 fibre type cleaved.
- *4 Measured in a condition when closing the lever.
- *5 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

CT50 Options

Item	Model	Remarks
Fibre Setting Plate	AD-50	Optional fibre setting plate
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fibre Scrap Collector	FDB-05	Scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

