

Optical Fiber Cleaver FC-8R with Improved Operability and Maintainability

1. Outline

Optical networks are rapidly spreading across the world against the backdrop of increasing telecommunication traffic. In order to realize high-precision splicing, high quality preparation of optical fiber is critical. In particular, an optical fiber cleaver that cleaves the fiber with a mirror-like end face is regarded as being one of the most important tools that determine the splicing quality.

Sumitomo Electric Industries, Ltd. has been contributing to optical networking through its successful handheld optical fiber cleaver, FC-7R, equipped with a patented automatic blade rotator. We have now launched its successor, FC-8R, and here are the features of the new model.

2. Features

The product specifications of FC-8R are summarized in Table 1 below. In addition to a variety of highly regarded functions inherited from its predecessor, FC-8R features new functions for enhanced operability, including (1) a counter to show the number of cleaves; (2) switchable lid opening angles; (3) automatic blade rotation or fixed position; (4) an enlarged fiber offcut bin; and (5) even lighter weight.

2-1 Cleave counter

The cleaver blade that scratches the optical fiber gradually wears out as the number of cleaves increases, and cleaving beyond the blade's lifetime may cause chipping on the fiber end face. Such flaws of fiber end face can in turn lead to a degraded network, especially when working with field-installable connectors. For this reason, a simple means of monitoring the blade worn-out status and blade replacement timing has been eagerly awaited by users.

In order to respond to such demand, we have equipped our new product with a digital counter that shows the number of cleaves (Photo 2). This counter is designed to function only when the fiber holder is placed in the cleaver for operation, otherwise ignoring the cleaving movement.

2-2 Switchable lid opening angles

The lid opening angle of the previous model, FC-7R, was designed to be optimum for cleaving operation with one hand. However, the angle was not wide enough for daily maintenance and caused difficulty in cleaning. FC-8R has been improved by having two lid opening angles, delivering enhanced convenience both for cleaving operation and daily maintenance (Fig. 1).

2-3 Automatic blade rotation or fixed position

The automatic blade rotator which was popular among



Photo 1. External appearance



Photo 2. Cleave counter

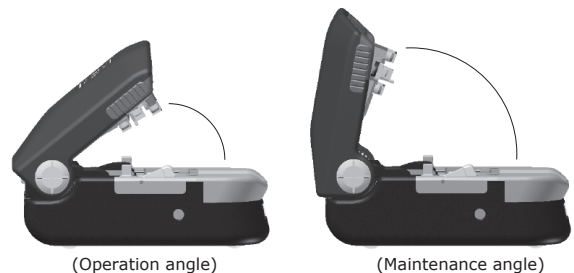


Fig. 1. Switchable lid angles

Table 1. Product specifications

Items	New model FC-8R	
Dimensions	58(W) × 98(D) × 49(H) mm	
Weight	Approx. 260 g	
Applicable fiber	Material	Silica glass
	Cladding diameter	125 μm
	Fiber count	Single to 12-fiber ribbon
Cleave length	Coating diameter	Single: 250 μm, 900 μm Ribbon fiber thickness: 0.25-0.4 mm
	Single	250 μm: 6-20 mm 900 μm: 10-20 mm
	Ribbon	10 mm
Automatic blade rotator	Rotating or fixed mode	
Cleave counter	Counts up to approx. 60,000	
Lid opening angles	Wide or narrow angle	
Blade lifetime	Approx. 60,000 cleaves	

FC-7R users has been improved and now comes with two modes: rotating or fixed. Switchable blade operation modes enable a limited section of the blade to be used while monitoring the number of cleaves with the counter. With this function, even when a part of the blade is damaged, a different workable section of the blade can still be used by switching the modes.

2-4 Enlarged fiber offcut bin

As the cleaver is now capable of handling up to 12-fiber ribbon cable, the bin size has been enlarged to 160% of the size of the previous model.

2-5 Weight reduction

To further improve the convenience of the compact cleaver, the weight has been reduced by 25% compared to the previous model.