



LDC-400 LARGE DIAMETER CLEAVER



Precision Cleaver for Standard, Large Diameter and Specialty Optical Fibers

Strip



Clean



Cleave



Splice



Recoat



Test



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LDC-400

The LDC-400 is a versatile optical fiber cleaver that can be used to produce precise and consistent flat and angled cleaves on fibers ranging from 80 microns to 1.25 mm (coating up to 3 mm) in diameter. This tension-and-scribe system combines the well-proven precision diamond blade scribing technology used in Vytran's LDC-200 and LDC-200-G cleavers and FFS-2000 fusion splicing workstation with the tensioning capabilities of our linear proof tester products.

By using the same tension-and-scribe method that works so well to cleave telecom fibers, the LDC-400 handles large specialty fibers, yielding flat, perpendicular cleaves with mirror-quality end-face finishes.

The cleaver is fully automated with programmable cleave tension, rotation angle and scribe conditions, and includes special processes for cleaving photonic crystal fiber (PCF), highly stressed fibers, or capillary tubing. The LDC-400 can also be used to cleave many non-circular fibers typically used in fiber laser systems. It uses the same bottom v-groove inserts as our GPX and LFS systems, and through the use of a transfer clamp the cleaved fiber can be conveniently moved from the cleaver to the GPX/LFS system. The fact that the registration is maintained and programmable between the cleaver and splicer allows for easy fabrication of end-caps and mode field adaptors. Fiber inserts must be ordered separately based on the range of fiber sizes to be used.

Key Markets

Telecommunications • Aerospace and Defense • Fiber Laser • Sensing • Medical • Research

Options

1 Angle Cleave

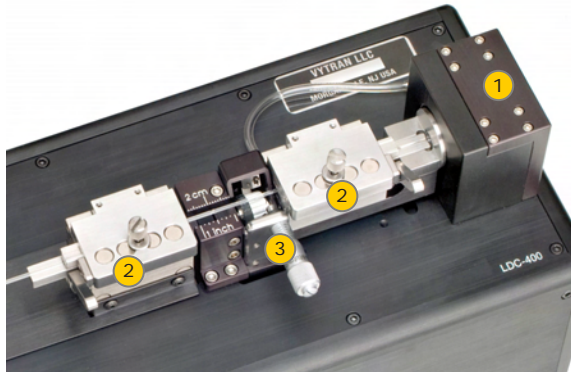
The angle cleave option adds a rotary drive mechanism that can introduce a torsional component to the pre-scribe tension. This can be used to produce angle cleaves of up to 15 degrees, a common requirement for reducing back reflections at a cleaved end-face.

2 Fiber Holding Block Inserts

A series of individual fiber holding block inserts, or a full set, can be purchased for fiber sizes from 80 microns to 1.25 mm.

3 PCF and Large Diameter cleave backstop

This option is required to cleave photonic crystal fibers and very large diameter fibers. It enables a smoother cleave surface.



Fiber Types	LDC-400 Basic Configuration	Angle Cleave Option	Micrometer Backstop Option
SM, PM and MM fibers up to 800 μm in cladding diameter for flat cleaves	•		Recommended for highly stressed fibers
SM, PM, and MM fibers up to 800 μm in cladding diameter for angle cleaves (up to 15 deg)	•	•	Recommended for highly stressed fibers
PCF, PBF, SM, PM, MM fibers above 800 μm in cladding diameter, capillary tubes, non-circular fibers, and specialty devices (combiners, etc.) for flat cleaves	•		•

For other fibers please contact Vytran.

LDC-400

Key Features / Benefits

Internal Vacuum

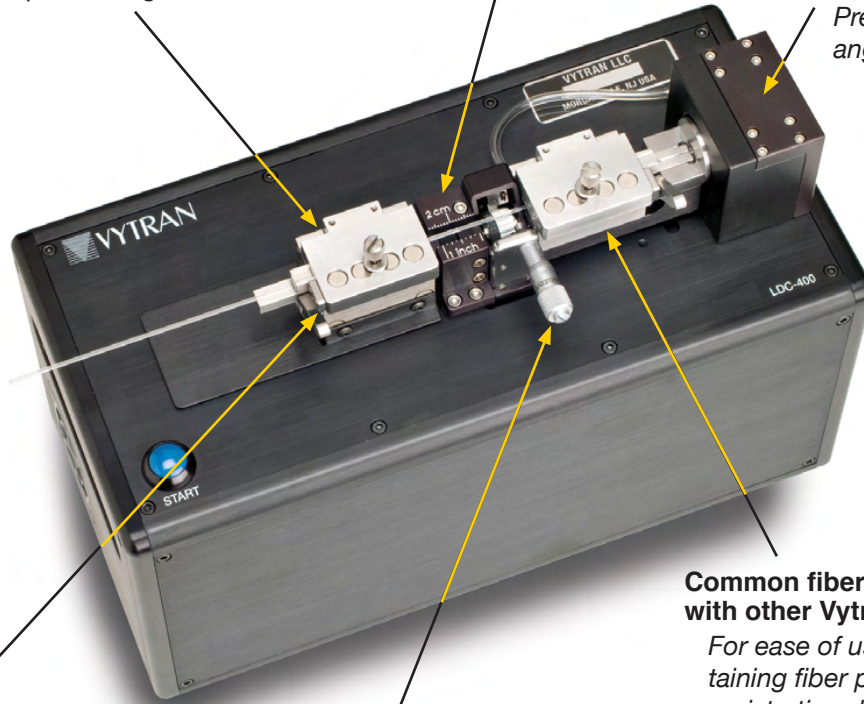
Ease of fiber loading and consistent fiber positioning

Adjustable mechanical slide

Enables precise control of cleave position

Angle cleave option

Precise and consistent angle cleaves



Fiber holding blocks for accurate fiber positioning and clamping

Results in highest fiber quality and process repeatability

Micrometer backstop option

Allows low-tension PCF cleaves and large diameter fiber cleaves

Common fiber holding blocks with other Vytran tools

For ease of use and maintaining fiber position registration during the cleaving and splicing processes

Tension-and-scribe method

Low-angle and flat cleaves -- critical for high performance splicing

Precision controlled scribing process

Repeatable, consistent and accurate cleaves

Unique "sub-critical" cleave process

Optimal technique for cleaving PCF and large diameter fibers



Programmable cleave parameters

Accommodates a wide range of fiber sizes (80µm to 1.25mm in diameter) and different types of conventional and specialty fibers, including circular, PM, non-circular fibers, PCF and capillary tubes

Remote controlled tension, velocity, oscillation, scribe delay

Handset controller gives user full control over the cleave process

Preliminary LDC-400 Specifications

Overall Size	H: 5.0" (127mm), W: 10.25" (260mm), D: 5.0" (127mm)
Weight	10.0 lbs (4.5 kg)
Power	12.5 VDC, 5A (provided by external power supply)
Ext. Supply	100-120 / 200-240 VAC, 4.5 / 2.2 A, 47-63 Hz
Services	Internal vacuum pump for fiber holding blocks
Cleave Method	Tension and scribe
Scribe	Diamond blade, stepper motor controlled
Loading	Linear tension, stepper motor controlled
Rotation (optional)	0.1 degree resolution, stepper motor controlled
Max. Tension	5.5 kg, programmable
Buffer Sizes	160 microns to 3.0 mm
Cladding Sizes	80 microns to 1.25 mm
Insert sizes	Individual inserts and full set available for fiber from 80 micron to 1.25 mm
Compliances	CE - RoHS

Related Products:

GPX-3000 Series

A multipurpose glass processing platform for creating splices, combiners, tapers, couplers and end-caps with optical fibers from 125 microns to 1.5 mm in diameter.

LFS-4000

A filament fusion splicer for standard, large-diameter and specialty fibers.

