PRODUCT CATALOGUE

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WELCOME TO OUR INNOVATIONS & TECHNOLOGIES

TO OUR INNOVATIONS & TECHNOLOGIES

NYFORS is an innovative supplier of advanced glass processing and optical fiber preparation equipment for high strength and specialty splicing operations.

All NYFORS products are developed with the user in mind for comfortable and easy operation in production and laboratory environments. A feature found in many products, is the automated fiber processing, intended to give consistent results and high production yield in volume production of optical fiber components.

The product portfolio is continuously expanded to cover wider and more challenging customer applications. It currently includes: CO₂ laser splicing and glass shaping equipment, automatic systems for fiber preparation and window stripping, high precision cleavers and optical fiber recoaters as well as proof testers and cleave check interferometers. NYFORS also provides custom solutions for production applications such as work cell automation and volume manufacturing of fiber optical gyroscopes.

36 YEARS OF FIBER OPTIC DEVELOPMENT

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YEARS OF SO FIBER OPTIC DEVELOPMENT FIBER OPTIC

36 YEARS IN BUSINESS

We are happy to celebrate 36 years in business. We are still in contact with "the veterans" from the early days, but many new interesting clients have joined us more recently. We are proud to work together with all of you, and we are very much looking forward to another 36 years of new exciting collaborations. To see more please visit us online: www.nyfors.com/about/timeline/





2003 - AUTOCLEAVER™

NYFORS launches the world's first fully automatic cleaver – the AUTOCLEAVER™. This product is still unique and has become the industry benchmark for high quality fiber cleaving in production environments. Cleave results and speed are unmatched. The AUTOCLEAVER™ offers true operator independence. This product is delivered to production and robot environments as well as laboratories globally. Still the only fully automated fiber cleaver available.



1990 - RECOATER 1

NYFORS launched the world's first product for recoating of optical fiber - the RECOATER 1[™]. It became the industry standard for high precision recoating with the highest demand on quality and accuracy. The RECOATER 1™ is still used for production around the world. NYFORS recoaters are unique through their mould technology that makes them unbeatable in flexibility and recoating quality.



1991 - INTERFEROMETER

NYFORS launched an interferometric micro-

scope to evaluate the cleaving process and

end-surfaces of fiber – the CLEAVEMETER™

is now born.

1999 - AUTOCOATER™

A fully automatic recoater - the AUTOCOATER[™] – is launched to meet the increased demand for rational and fast production. This system is also branded and sold under the Ericsson brand for example on the North American market. The system is sold under the name EFR 3000 by Ericsson. A unique and novel feature was the square recoating moulds for volume industrial manufacturing.

2010 - CLEAVEMETER™

NYFORS launches several CLEAVEMETER™ products adapted for different interferometric purposes, for example the CLEAVEMETER 3D[™] that can illustrate and analyze the end face of optical fibers in 3D. Automated test functions are later implemented as well as support for ferrule inspection and angled cleaving.

NYFORS NEWS - 1991

Here are two pages from the NYFORS newsletter back in the nineties. The newsletter was sent out to clients to inform and educate about what was in progress at NYFORS® in Stockholm, Sweden. In this issue we got to know the RECOATER 1[™] and it's special functions. The following year in 1992 NYFORS® also had the premiere launch of the CLEAVEMETER™, a portable Interferometer for the inspection of cleaved fiber ends.

2016 - SMARTSPLICER™

The SMARTSPLICER™ launches, developed in collaboration with Fraunhofer IOF in Jena, Germany. The SMARTSPLICER™ is an advanced glass processing and glass shaping workstation designed for the production of high power and sensitive photonic components of various kinds.



36 YEARS IN BUSINESS



2018 - MICROCOATER

NYFORS launched the extremely small and light weight MICROCOATER[™] which provides versatile recoating capability in situations where portability and flexibility is needed.



2018 - MINICLEAVER NYFORS launched the small and light weight MINICLEAVER[™] which is designed to provide versatile fiber cleaving capability in settings where portability and consistent cleaving results are required.



2019 - SMARTSPLICER 1.5

NYFORS launched The SMARTSPLICER™ 1.5, a more portable version of the industry leading SMARTSPLICER™, an advanced laser fusion splicing and glass processing system designed for the production of high power and sensitive photonics components of various kinds.



2022 - ROBOTCELL NYFORS launched The ROBOTCELL™. We design custom solutions for our customers in the fields of fiber lasers, medical devices, defense and aerospace applications, telecommunications devices, and sensing, by implementing individual modules into automated environments creating efficient work cells.

2019 - DISPENSER PEN

NYFORS launched The DISPENSING PEN™. A perfect tool for automatic and high precision resin dispensing of different kinds of materials has now seen the light of day. The clean design makes it easy to hold and control for operation.

2020 - AUTOSTRIPPER XL

NYFORS launched The AUTOSTRIPPER XL™ . It is designed for extralong fast, chemical-free window stripping of optical fibers, using heated air to accomplish the demanding task of window stripping acrylate-coated fibers with diameters up to 550 µm.





AUTOMATIC & PORTABLE FIBER CLEAVING

The AUTOCLEAVER series is a comprehensive product platform with various models for cleaving standard and LD optical fibers, all based on our proven and patented tension and scribe cleaving process.



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AUTOCLEAVER LDF-M[™]

- Fully automatic •
- Low cleaving angles < 0.3 degrees ٠
- Very flat end faces •
- Operator independent ٠
- Designed for production and laboratory environments ٠
- Automatic fiber waste collection ٠
- For cladding diameter 80-600µm ٠



AUTOCLEAVER™

- Operator independent
- Low cleave angles < 0.3 degrees
- Automatic fiber waste collection •
- Long-lasting diamond
- PC controllable
- For cladding diameter 80-230µm ٠



AUTOCLEAVER S1[™]

- Fully automatic
- Provides close control of bare fiber length • after cleaving
- Low cleave angles < 0.30 degrees ٠
- Long-lasting diamond blade ٠
- Operator skill independent and easy to use ٠
- For cladding diameters 80 and 125µm •



AUTOCLEAVER LDF™

- Fully automatic •
- Low cleaving angles < 0.5 degrees •
- Very flat end faces •
- Operator independent •
- Designed for production and laboratory environments ٠
- Large diameter fiber capability • (cladding diameter 230-1000µm)



AUTOCLEAVER LDA™

- Variable angle cleaving 0 to < 15 degrees ٠
- Large diameter fiber capability (230 to 800µm)
- Operator skill independent and easy to use ٠
- Automatic waste fiber collection •
- Long-lasting diamond blade



ANGLE CLEAVING UNIT™

- Adjustable clamping force ٠
- Designed for cleaving of sensitive specialty fibers in production and laboratory
- environments
- Standard and large diameter fiber capability ٠
- Automatic waste fiber collection •
- Long-lasting diamond blade



AUTOCLEAVER S2™

- Adjustable clamping force •
- Designed for cleaving of sensitive specialty fibers ٠ in production and laboratory environments
- Standard and large diameter fiber capability ٠
- Automatic waste fiber collection .
- Long-lasting diamond blade ٠
- For cladding diameters 80-1000µm •



MINICLEAVER™

- Portable with built in battery •
- Long lasting diamond blade •
- Low cleave angles <0.2 degrees •
- Compatible with common factory and field splicers •
- For cladding diameters 125 560µm •

AUTOCLEAVER LDF-M[™]

High precision mid-span optical fiber cleaver

- Fully automatic •
- Standard and large diameter capability (80 to 600µm)
- Low cleave angles < 0.30 degrees
- Designed for production and laboratory environments
- Operator skill independent and easy to use
- Automatic waste fiber collection
- Long-lasting diamond blade

This fully automatic optical fiber cleaver is designed for fast and flexible fiber processing in factory and laboratory environments. Easily interchangeable fiber handling parts enable high precision cleaving of different fibers in the range from 80µm up to 600µm cladding diameter with industry leading repeatability and consistency.

Loading and operating the cleaver is conveniently done in a few simple steps. The automated cleaving process gives a cycle time of less than ten seconds with full operator skill independence. The platform supports fiber holders from the leading splicer manufacturers and the cleaved fiber can directly be transferred to the splicer with no risk of accidentally touching or damaging the bare fiber.

This makes the AUTOCLEAVER LDF-M[™] ideally suited for demanding production applications where high quality cleaving of both standard and large diameter fibers is required.

It comes in a small ergonomic bench top design and the open interface facilitates integration into automated production systems.



TECHNICAL DATA

Cladding diameter	80-600µm
Coating diameter	160-1500µm
Cleave angle	Typical < 0.3 degrees
Fiber waste length	Typical < 20mm, automatic disposal
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 6-8 bar, 4 mm instant push-in fitting
PC Interface	RS-232
Dimensions	175 mm (W) x 138 mm (D) x 116 mm (H)
Weight	2.5 kg

NYFORS part number: 50100099

AUTOCLEAVERTM

Automatic fiber cleaver for production environments

- Fully automatic
- Low cleave angles < 0.30 degrees
- Designed for production and laboratory environments
- Operator skill independent and easy to use
- Automatic waste fiber collection
- Long-lasting diamond blade

The AUTOCLEAVER[™] is a fully automatic, ultra high precision cleaver for standard size optical fibers with cladding diameters between 80 and 230µm. It is designed for industrial production applications where consistency in results, high production yield and ease of maintenance are needed.

Loading and operating the AUTOCLEAVER[™] is conveniently done in a few simple steps. The automated cleaving process gives a cycle time of less than ten seconds with full operator skill independence. An open interface facilitates integration into automated fiber processing and splicing systems for volume processing of optical fibers.

The stable process and consistent cleaving results makes the AUTOCLEAVER[™] a useful tool also in laboratory environments where standard size fibers need to be cleaved with ultra high precision.

The platform supports fiber holders from the leading splicer manufacturers and the cleaved fiber can directly be transferred to the splicer with no risk of accidentally touching or damaging the bare fiber. The cleave length is easily adjusted by moving the adaptor plate along the cleaver rail before fine tuning with software.

AUTOMATIC & PORTABLE FIBER CLEAVING







TECHNICAL DATA

Cladding diameter	80-230µm
Coating diameter	160-900µm
Cleave angle	Typical < 0.3 degrees
No of cleaves/blade	> 30,000
Fiber waste length	Typical < 20mm, automatic disposal
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 6 Bar, 4 mm instant push-in fitting
PC Interface	RS-232
Dimensions	175 mm (W) x 138 mm (D) x 104 mm (H)
Weight	1.4 kg

NYFORS part number: 50100015

AUTOCLEAVER

High precision large diameter fiber cleaver

- Fully automatic •
- Large diameter fiber capability (230 to 1000µm)
- Low cleave angles < 0.5 degrees
- Designed for production and laboratory environments
- Operator skill independent and easy to use
- Automatic waste fiber collection
- Long-lasting diamond blade

This fully automated optical fiber cleaver is designed for fast and flexible large diameter fiber processing in factory and laboratory environments. Easily interchangeable fiber handling parts enable high precision cleaving of different circular fibers in the range from 230 µm up to 1000 µm cladding diameter with industry leading repeatability and consistency.

Loading and operating the AUTOCLEAVER LDF[™] is conveniently done in a few simple steps. The automated cleaving process gives a cycle time of less than ten seconds with full operator skill independence. The platform supports fiber holders from the leading splicer manufacturers so that the cleaved fiber can directly be transferred to the splicer with no risk of accidentally touching or damaging the bare fiber.

This makes the AUTOCLEAVER LDF[™] ideally suited for demanding production applications where high precision cleaving of the largest fiber diameters is required. It comes in a small ergonomic bench top design and the open interface facilitates integration into automated production systems.

The cleaver is designed to generate a minimum amount of fiber waste, typically less than 20 mm. An automatic waste disposal system removes any hazardous fiber scraps. The cleaver can be connected to an external PC that gives access to all programmable parameters and settings.



230-1000µm
250-1500µm
Typical < 0.5 degrees
Typical < 20mm, automatic disposal
External 12 V DC, 15 W
External compressor, 6-8 bar, 4 mm instant push-in fitting
RS-232
175 mm (W) x 138 mm (D) x 104 mm (H)
2.5 kg

NYFORS part number: 50100021



Large diameter variable angle cleaver

- Variable angle cleaving 0 to < 15 degrees
- Large diameter fiber capability (230 to 800 µm) •
- Designed for production and laboratory environments
- Operator skill independent and easy to use
- Automatic waste fiber collection
- Long-lasting diamond blade

The AUTOCLEAVER LDA™ is an automatic system for precision cleaving of circular large diameter fibers (LDF). It is designed to provide both perpendicular and angled cleaving capability on fibers ranging from 230 up to more than 800µm in diameter.

The cleave angle is set using a micrometer screw positioner allowing the operator to quickly adjust the cleaver for different cleave angles. The patent pending cleaving process and close control of sensitive cleaving parameters, such as tension and the exact position and speed of the diamond blade, ensures consistent high quality cleaving results with <0.5 degree precision.

When used for non-perpendicular cleaving, the system can be set to produce variable 0 to < 9 degree (for 250µm cladded fibers) and up to more than 15 degree (for cladding diameters above 450-500µm) cleave angles with industry leading consistency and repeatability.

The cleaver is designed to generate a minimum amount of fiber waste, typically less than 20 mm. An automatic waste disposal system removes any hazardous fiber scraps. It comes in a small ergonomic bench top design for use on a production or laboratory work bench.

AUTOMATIC & PORTABLE FIBER CLEAVING





TECHNICAL DATA

Cladding diameter	230-800+µm
Coating diameter	250-1000µm
Cleave angle	0 to >15 degrees
Fiber waste length	Typical < 20mm, automatic disposal
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 6-8 bar, 4 mm instant push-in fitting
PC Interface	RS-232
Dimensions	175 mm (W) x 138 mm (D) x 104 mm (H)
Weight	2.5 kg

NYFORS part number: 50100017

AUTOCLEAVER S1[™]

Automatic cleaver for precise bare fiber length control

- Fully automatic
- Provides close control of bare fiber length after cleaving
- Low cleave angles < 0.30 degrees
- Designed for production and laboratory environments
- Operator skill independent and easy to use
- Automatic waste fiber collection
- Long-lasting diamond blade

This ultra high precision cleaver is specially designed for production applications where close control of bare fiber length after cleaving is required. It senses the edge of the coating and automatically adjusts the cleave point to meet a specific bare fiber length with high precision. This length is specified by the customer at order and can be fine tune by software between 0 and 500µm.

A close control of sensitive cleaving parameters such as tension and exact speed and position of the diamond blade ensures consistent cleaving results with cleave angles typically below 0.3 degrees.

Regarding cleave length, our tests indicate that a standard deviation of less than 0.01 mm can be accomplished when cleaving 125µm cladded fiber to 3.4 mm bare fiber length, provided that the stripping interfaces have sufficient quality.

The AUTOCLEAVER S1[™] comes in an ergonomic bench top design and is available in different versions for 80µm and 125µm fibers. For more information about available configurations, please contact us with details about your application and requirements.



TECHNICAL DATA	1
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Cladding diameter	80 and 125µm
Coating diameter	160-400µm
Cleave Angle	Typical < 0.3 degrees
No of cleaves/blade	>30,000
Fiber waste length	Typical < 20mm, automatic disposal
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 6 Bar, 4 mm instant push-in fitting
PC Interface	RS-232
Dimensions	175 mm (W) x 138 mm (D) x 104 mm (H)
Weight	1.4 kg

NYFORS part numbers: 125µm version: 50100028, 80µm: 50100029

AUTOCLEAVER S2[™]

Speciality fiber cleaver

- Adjustable clamping force
- Designed for cleaving of sensitive specialty fibers in production and laboratory environments
- Standard and large diameter fiber capability
- Automatic waste fiber collection
- Long-lasting diamond blade

The AUTOCLEAVER S2[™] is an automatic system for precision cleaving of sensitive air-clad and microstructured fiber. It has a specially designed clamping system with air pressure controlled force regulation that enables it to clamp and hold also brittle specialty fibers that might otherwise be damaged during cleaving.

It is available with two different sizes of clamping cylinders for standard and medium sized fibers (80-600µm) and large diameter fibers (230-1000) µm respectively. The clamping pressure can be set by changing the air pressure with built in regulators.

This, in combination with close control of sensitive cleaving parameters, such as tension and the exact position and speed of the diamond blade, ensures consistent high quality results also on difficult to cleave specialty fibers. The AUTOCLEAVER S2[™] is therefore ideally suited for demanding production applications where sensitive handling of various specialty fibers is required.

It comes in a small ergonomic bench top design for comfortable use on a production or laboratory work bench.





TECHNICAL DATA

Cladding diameter	80-600/230-1000µm
Coating diameter	165-1500µm
Cleave angle	Typical < 0.5 degrees
Fiber waste length	Typical < 20mm, automatic disposal
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 6-8 bar, 4 mm instant push-in fitting
PC Interface	RS-232
Dimensions	175 mm (W) x 138 mm (D) x 104 mm (H)
Weight	2.5 kg

NYFORS part number: 50100030-31 (with small cylinder) and 50100092-93 (with large cylinder).

ANGLE CLEAVING UNIT™

Angle cleaving for large diameter fiber

- Variable angle cleaving up to 15° •
- Avaliable as add on to LD fiber cleavers



The cleave angle is set using a micrometer screw positioner allowing the operator to quickly adjust the cleaver for different cleave angles. Meanwhile the patent pending tension and scribe cleaving process used in NYFORS large diameter cleavers ensures consistent high quality cleaving results with < 0.5 degree precision. In this way variable cleave angles from 0 to < 9 degrees (for fibers with cladding diameters of about 250µm) and up to more than 15 degrees (for cladding diameters above 450-500µm) can be created with the highest degree of repeatability and accuracy.

Note that the ANGLE CLEAVING UNIT™ cannot be used independently and that it needs a NYFORS large diameter fiber cleaver to be operated. For further information about usage and installation, please contact NYFORS or your local distributor.





MINICLEAVER[™]

Portable optical fiber cleaver

- Portable with built in battery
- Long lasting diamond blade
- Low cleave angles <0.2 degrees
- Compatible with common factory and field splicers

The small and light weight MINICLEAVER™ is designed to provide versatile fiber cleaving capability in settings where portability and consistent cleaving results are required. It features a built-in battery and is well suited for use both in field splicing and in laboratory or production environments where available space is limited.

The proven ultrasonic tension and scribe cleaving process ensures high quality cleaving results with end face angles of less than 0.2 degrees. The MINICLEAVER™ can be set up to accommodate fiber holders from the leading splicer manufacturers to facilitate easy transfer of the fiber directly from cleaver to splicer with no risk of accidentally touching or damaging the fiber end. Changeable Pre-set or variable tension cartridges are provided with the machine and are changed together with the right hand side fiber clamp when the cleaver is set up for a different fiber dimension.

The MINICLEAVER™ supports most of the common fiber holders on the market such as Fujikura FH-100, FH-60, Fitel S712, Fitel LDF, as well as the NYFORS standard fiber holder platform (AUTOCLEAVER) and the NYFORS MINICOATER 2 fiber holder platform.

AUTOMATIC & PORTABLE FIBER CLEAVING





TECHNICAL DATA

Cladding diameter

Coating diameter

Cleave angle

Power supply

Dimensions

Weight

NYFORS part number: 50100103

125 - 560 µm*
250-640µm
Typical < 0.2 degrees (125µm)
Typical < 0.3 degrees (400µm)
Battery or external power supply
150 mm (W) x 80 mm (D) x 70 mm (H)
0.8 kg

AUTOMATIC & PORTABLE FIBER CLEAVING

ACCESSORIES FOR AUTOCLEAVER				STD*	Σ	SP)	(H				
V-groove	Cladding diameter	Article No.	Article description	Label	ACL S LDF-I		LDF (LDF (S1	S2	LDA
	80µm	50100089	V-groove, 80µm cladding	Blue	•	•			•	•	
	125-199µm	50100085	V-groove, 125-199µm cladding	Yellow	•	•			•	•	
	200-349µm	50100086	V-groove, 200-349µm cladding	Orange	•	•	•	•			•
	350-699µm	50100087	V-groove, 350-699µm cladding	Green		•	•	•		•	•
	700-1000µm	50100088	V-groove, 700-1000µm cladding	Red			•	•		•	•
	Customer Specified	50100090	V-groove, Generic	-	•	•	•	•	•	•	•
	Туре	Article No.	Article description	Label							
	Backstop v-groove	50100040	Fiber backstop for v-groove	-	•	•	•	•		•	•

Height adjuster	Cladding diameter	Article No.	Article description	Label							
	80µm	50100052	Height adjuster, 80µm cladding	Blue	•	•			•	•	
	125-159µm	50100046	Height adjuster, 125-159µm cladding	Yellow	•	•			•	•	
<u>^</u>	160-199µm	50100047	Height adjuster, 160-199µm cladding	Blank/Grey	•	•				•	
	200-349µm	50100048	Height adjuster, 200-349µm cladding	Orange		•	•	•		•	•
	350-529µm	50100049	Height adjuster, 350-529µm cladding	White		•	•	•		•	•
Ro	530-699µm	50100050	Height adjuster, 530-699µm cladding	Black			•	•		•	•
~	700-1000µm	50100051	Height adjuster, 700-1000µm cladding	Red			•	•		•	•
	Customer Specified	50100053	Height adjuster, Generic	-	•	•	•	•	•	•	•

Adaptor plate	Туре	Article No.	Article description							
	Fujikura (FH-100)	50100010	Adaptor plate, FJK (FH-100)	•		•		•	•	
	Fujikura (FH-60)	50100161	Adaptor plate, FJK (FH-60)	•		•		•	•	
	Fujikura (FH-70)	50100102	Adaptor plate, FJK (FH-70)	•				•	•	
	Fujikura Dual (FH-100)	50100112	Adaptor plate, Dual FJK (FH-100)		•		•			
1. 104	FITEL (S710S-LDF)	50100113	Adaptor plate, FITEL (S710S-LDF)	•		•		•	•	
	NYFORS/Ericsson	50100011	Adaptor plate, NYF/ECA	•				•		
1	FITEL (S710S)	50100041	Adaptor plate, FITEL (S710S)	•		•		•		
	FITEL (S712S)	***	Adaptor plate, FITEL (S712S)	•		•		•		
	Vytran VHM-series	***	Adaptor plate, Vytran (VHM-series)	•		•		•		
	MINICOATER 2	***	Adaptor plate, MINICOATER 2	•		•		•		

Fiber holder	Coating diameter	Article No.	Article description				
P	160-250µm	50100038	NYF/ECA Fiber holder, 160-250um coating, Left	•		•	
C.R.S	160-250µm	50100039	NYF/ECA Fiber holder, 160-250um coating, Right	•		•	
12955	900µm	50100157	NYF/ECA Fiber holder, 900um coating, Left	•		•	
1	900µm	50100158	NYF/ECA Fiber holder, 900um coating, Right	•		•	

Power supply & adaptors	Туре	Article No.	Article description							
	Power supply, ACL	50100075	Power supply, 100-240V, 15W	•	•	•	•	•	•	•
	Adaptor for AU	50100006	Adaptor, Power supply (AU)	•	•	•	•	•	•	•
ц <u>ф</u>	Adaptor for EU	50100007	Adaptor, Power supply (EU)	•	•	•	•	•	•	•
رك ت	Adaptor for UK	50100008	Adaptor, Power supply (UK)	•	•	•	•	•	•	•
	Adaptor for US	50100009	Adaptor, Power supply (US)	•	•	•	•	•	•	•

Linear insert Coating diameter Article No. Article description Label									
~	210-699µm	50100070	Linear insert, 210-699µm coating	210-699µm	•	•	•	•	
	700-1000µm	50100071	Linear insert, 700-1000µm coating	700-1000µm	•	•	•	•	
- De-	Customer Specified	50100072	Linear insert, Generic	-	•	•	•	•	

Accessories for AUTOCLEAVER							(SP)	(LP)			
Holder, LD	Coating diameter	Article No.	Article description	Label	ACL 8	LDF-	LDF	LDF (S1	S2	LDA
	200-299µm	50100059	Holder, LD, 200-299µm coating	250µm		•	•	•		•	
	300-399µm	50100060	Holder, LD, 300-399µm coating	350µm		•	•	•		•	
	400-499µm	50100061	Holder, LD, 400-499µm coating	450µm		•	•	•		•	
	500-599µm	50100062	Holder, LD, 500-599µm coating	550µm		•	•	•		•	
	600-699µm	50100063	Holder, LD, 600-699µm coating	650µm		•	•	•		•	
	700-799µm	50100064	Holder, LD, 700-799µm coating	750µm		•	•	•		•	
	800-899µm	50100065	Holder, LD, 800-899µm coating	850µm		•	•	•		•	
0650	900-999µm	50100066	Holder, LD, 900-999µm coating	950µm		•	•	•		•	
11	1000-1099µm	50100054	Holder, LD, 1000-1099µm coating	1050µm		•	•	•		•	
e la construction de la construc	1000-1199µm	50100055	Holder, LD, 1100-1199µm coating	1150µm		•	•	•		•	
	1200-1299µm	50100056	Holder, LD, 1200-1299µm coating	1250µm		•	•	•		•	
	1300-1399µm	50100057	Holder, LD, 1300-1399µm coating	1350µm		•	•	•		•	
	1400-1499µm	50100058	Holder, LD, 1400-1499µm coating	1450µm		•	•	•		•	
	Customer Specified	50100067	Holder, LD, Generic	-		•	•	•		•	

Distance plate, LD Cladding diameter		Article No.	Article description	Label						
	200-349µm	50100034	Distance pl., LD, 200-349µm cladding	Orange		•	•	•	•	
00	350-699µm 50100035 Distance pl., LD, 350-699µm cladding	Green		٠	٠	•	•			
0	700-1000µm	50100036	Distance pl., LD, 700-1000µm cladding	Red		٠	•	•	•	
	Customer Specified	50100037	Distance pl., LD, Generic	-		•	•	•	•	

:	Spare-/Repla	acement parts for AUTOCLEAVER									
Туре	Article No.	Article description									
Diamond blade	50100091	Diamond blade, AUTOCLEAVER	•	•	•	•	•	•	•		
Blade replacement tool	50100032	Diamond blade replacement tool	•	٠	•	•	•	•	٠		
Fixed clamp block	50100042	Fixed clamp block, AUTOCLEAVER	•	•	•	•	•	•	٠		
Front cover, STD	50100096	Front cover, STD/LDF-M	•	•			•	•			
Front cover, LDF	50100162	Front cover, LDF (SP/LP)			•	•		•	•		
Fiber waste collector	50100098	Fiber waste collector	•	•	•	•					

Options (ordered separately) for AUTOCLEAVER										
Type Article No. Article description										
	S1-kit	50100160	Coating sensing for cleave length control	•	•	•	•			
	S2-kit	50100159	Extended v-groove clamping control	•	•	•	•			
	LDA-unit	50100012	Angle cleaving		•		•			

* AUTOCLEAVER STANDARD, for 80-230 μm Cladding diameter

Make sure that the accessory/spare part is compliant with your unit by comparing the checkboxes. Please contact us if you have any questions.

AUTOMATIC & PORTABLE FIBER CLEAVING

AUTOMATIC & PORTABLE FIBER CLEAVING

Accessories for MINICLEAVER							
V-groove	Cladding diameter	Article number	Article description				
	125-199µm	50100166	V-groove, Cladding 125-199µm				
	200-349µm	50100167	V-groove, Cladding 200-349µm				
	350-699µm	50100168	V-groove, Cladding 350-699µm				

Cladding Holder	Cladding diameter	Article number	Article description
	125µm	50100119	Cladding Holder, 125µm cladding
<u> </u>	240-270µm	50100120	Cladding Holder, 240-270µm cladding
Car	360-400µm	50100121	Cladding Holder, 360-400µm cladding

Tension Cartridge	Cladding diameter	Article number	Article description
	125µm	50100115	Fixed Tension Cartridge, 125µm
	240-270µm	50100116	Fixed Tension Cartridge, 240-270µm
	360-400µm	50100117	Fixed Tension Cartridge, 360-400µm
	Variable adjustment	50100118	Variable Tension Cartridge (125-400µm)

Adaptor Plate	Туре	Article number	Article description
	Fitel (S710S-LDF)	50100123	Adaptor plate, FITEL (S710S-LDF) 1-clamp
	Fitel (S712S)	50100124	Adaptor plate, FITEL (S712S) 1-clamp
	Fitel (S712S)	50100125	Adaptor plate, FITEL (S712S)
	Fujikura FH-100	50100126	Adaptor plate, FJK
- A	Fujikura Dual FH-100	50100127	Adaptor plate, Dual FJK, 1-clamp
E China	Fujikura Dual FH-100	50100128	Adaptor plate, Dual FJK, 2-clamp
	Fiber insert	50100129	Adaptor plate, Fiber insert
	Insert for fibers	50100122	Inserts for fibers, 250/640µm
	MINICOATER 2	50100130	Adaptor plate, MINICOATER 2
	NYFORS/Ericsson	50100132	Adaptorplate, Dual NYF/ECA

Spare-/Replacement parts for MINICLEAVER						
Type Article number Article description						
	Thread for lid	50100146	Cladding Holder Thread (Short)			
	Thread for holder	50100147	Cladding Holder Thread (Long)			
	Screw and Spring	50100148	Cladding Holder Screw and Spring			
	Heli Coil	50100149	Adaptor plate Heli Coil			
	Rubber	50100150	Adaptor plate Rubber			

Please contact us if you have any questions.



OPTICAL FIBER RECOATING

NYFORS produces fast and advanced recoaters for different high and low index recoating applications. A common feature of all models is the flexibility with easy change of recoating material and fiber coating dimension.





MINICOATER 2[™] / MINICOATER 2S[™]

- Compact design with built in rechargeable battery
- Easy to switch between different fiber coating diameters and recoating materials
- High and low index recoating capability
- Short curing times
- Affordable silicone square moulds



AUTOCOATER 2™

- Automatic and operator skill independent with short cycle time
- Consistent, high quality results
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- Linear and mandrel proof testing



RECOATER 2 XL™ AUTOCOATER 2 XL™

- Extended length recoating up to 100 mm
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- No need for compressed air or vacuum



RECOATER 2™

- Consistent, high quality results
- Short cycle time
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- Linear and mandrel proof testing
- Manual injection of recoat material



RECOATER 2 SC™

- Special fiber clamps for recoating with short fiber lengths
- Automatic and operator skill independent
- Short cycle time
- Easy mould exchange and replacement
- Handles most fiber dimensions with custom moulds available
- Manual injection of recoat material



DISPENSING PEN™

- High precision dispensing
- Compact design
- USB-C power supply
- Controllable dispensing speed
- Changeable and refillable resin cartridges



AUTOCOATER 2 SC™

- Automatic and operator skill independent
- Short cycle time
- Special fiber clamps for recoating with short fiber lengths
- Easy mould exchange and replacement
- Handles most fiber dimensions with custom moulds available



MICROCOATER™

- Very compact design with built in rechargeable battery
- Affordable silicone square moulds
- Easy to switch between different fiber coating diameters and recoating materials
- High and low index recoating capability
- Short curing times

MINICOATER 2TM

Portable recoater with built-in battery

- Compact design with built in rechargeable battery
- Easy to switch between different fiber coating diameters and recoating materials
- High and low index recoating capability
- Short curing times

The small and light weight MINICOATER 2[™] provides versatile recoating capability in situations where portability and flexibility is needed. Silicone moulds are available in different sizes to cover a wide range of coating diameters and shapes and can easily be exchanged by the operator in a few seconds with no realignment of the system being required.

Short curing times are achieved through the highly efficient UV LED light source which enables fast processing of both standard high index recoating materials and more specialized low index compounds that are used in various high power applications.

These features makes the MINICOATER 2[™] well suited for research and development operations and small scale production where square shaped recoatings are accepted where the fiber type and dimension as well as the recoating material need to be changed frequently. It can also, thanks to the small size and built in re-chargeable battery, be used for recoating in a remote field environment such as an oil drilling platform and in other situations where a high degree of portability is required.

The MINICOATER 2[™] has a simple two button control with a three digit display and comes in a small bench-top design.



TECHNICAL DATA

Curing time	Programmable, 3 s typical
Light source	UV LED
Wavelength	380-385 nm
Mould material	Silicone
Mould length	34 mm & 55 mm
Recoating diameter	165, 250, 300, 400, 550, 730 & 900 µm*
Power supply	Battery or external 12 V DC, 40 W
Dimensions	150 mm (W) x 77 mm (D) x 60 mm (H)
Weight	0.7 kg

NYFORS part number: 10100033 * Custom moulds available.

MINICOATER 25[™]

Compact fiber recoater

- Compact design with built in rechargeable battery
- Affordable silicone square moulds
- Easy to switch between different fiber coating diameters ٠
- and recoating materials
- High and low index recoating capability
- Short curing times
- Based on NYFORS proven MINICOATER 2 platform

The small and light weight MINICOATER 2S™ provides versatile recoating capability in situations where portability and flexibility is needed. Square silicone moulds are available in different sizes to cover a wide range of coating diameters and shapes and can easily be exchanged by the operator in a few seconds with no realignment of the system being required.

Short curing times are achieved through the highly efficient UV LED light source which enables fast processing of both standard high index recoating materials and more specialized low index compounds that are used in various high power applications.

These features makes the MINICOATER 2S[™] well suited for research and development operations and small scale production where the fiber type and dimension as well as the recoating material need to be changed frequently. It can also, thanks to the small size and built in re-chargeable battery, be used for recoating in a remote field environment such as an oil drilling platform and in other situations where a high degree of portability is required.

The MINICOATER 2S[™] has a simple two button control with a three digit display and comes in a small bench-top design. The curing time and several other parameters such as a mould exchange alarm are programmable stand-alone and do not require a PC to be connected.





TECHNICAL DATA

Curing time	Programmable, 3 s typical						
Light source	UV LED						
Wavelength	380-385 nm						
Mould material	Silicone						
Mould length	34 mm						
Recoating diameter	165, 250, 300, 400 & 900µm*						
Power supply	Battery or external 12 V DC, 40 W						
Dimensions	150 mm (W) x 77 mm (D) x 60 mm (H)						
Weight	0.70 kg						

NYFORS part number: 10100115 * Custom moulds available.

AUTOCOATER 2[™]

Flexible recoater for production enviroments

- Automatic and operator skill independent with short cycle time
- Consistent, high quality results
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- Linear and mandrel proof testing
- No need for compressed air or vacuum

Designed for high strength applications, this advanced and flexible recoating system restores the protective acrylate coating on spliced and stripped optical fibers. It is fully automatic, allowing for operator skill independent operation in factory environments with high productivity and cost advantages.

Recoating material is automatically injected into silicone moulds identical to those used in NYFORS' manual recoaters. They are available in different sizes and shapes to cover a wide range of coating diameters and can easily be exchanged by the operator in a few seconds with no realignment of the system being required.

Short curing times are achieved through the highly efficient UV LED light source which enables fast processing of both standard high index recoating materials and more specialized low index compounds used in various high power applications. The customer selected recoating material is automatically injected from an easily attached 1 oz. Nalgene bottle, functioning as the recoater reservoir tank. This bottle as well as the entire injection system (including pump, supply lines and injection needle) may be removed and exchanged as a single unit.

This provides a convenient way to switch between different types of optical fibers and also makes the system easy to set up, optimize and rapidly reconfigure for different recoating applications and requirements. The AUTOCOATER 2[™] is therefore an ideal choice for fully automatic operator skill independent recoating where flexibility is required to meet many different needs and specifications.

Linear tensile tests can be preformed with forces up to 20 N with programmable levels of force. Mandrels for high strength testing up to 100 N are available as an option and can be purchased separately.

Program parameters are conveniently accessible through the built-in LCD touch screen control. The system can also be accessed via the USB port or Ethernet interface.



TECHNICAL DATA

Curing time	Programmable, 3 s typical
Cycle time	15 s typical
Light source	UV LED
Wavelength	380-385 nm
Injection	Automatic from 1 oz bottle
Mould material	Silicone
Mould mounting	Exchangeable
Mould length	34 mm & 55 mm
Tensile test	0-20 N/0-100 N
Recoating diameter	165, 250, 300, 400, 550, 730 & 900 µm*
PC connection	Ethernet and USB flash drive connection
Power supply	External 12 V DC, 60 W
Compressed air	Not needed
Dimensions	270 mm (W) x 210 mm (D) x 100 mm (H)
Weight	4.5 kg

NYFORS part number: 50100103 * Custom moulds available.

RECOATER 2[™]

Flexbile recoater and tensile tester

- · Consistent, high quality results
- Short cycle time
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- Linear and mandrel proof testing
- No need for compressed air or vacuum

The RECOATER 2[™] is used to restore the protective coating on acrylate coated optical fibers in high strength applications. It provides versatile high quality recoating and proof testing capability and is well suited for use in a production or laboratory environment.

Silicone recoating moulds are available in different sizes to cover a wide range of coating diameters and can easily be exchanged by the operator in a few seconds with no realignment of the system being required. The highly efficient UV LED curing system enables fast processing of both standard high index and specialized low index materials used in various high power applications.

Injection of recoating material is performed manually with a syringe. While this does require a manual user operation, it also ensures flexibility because the user can immediately switch from one type of recoating compound to another (e.g. from a high index material to a low index material) without any need to flush out a recoater reservoir and injection pumping system. An optional dispenser robot can be added onto the system to handle the injection of recoating material if the syringe method is not desired.

This makes the RECOATER 2[™] easy to set up and optimize for such different applications as undersea optical fiber cable manufacturing and high power fiber laser production.

Linear tensile tests can be performed with forces up to 20



N with programmable levels of force, pulling rates and hold time at maximum force. Mandrels for high strength testing up to 100 N are available as an option and can be purchased separately. Program parameters are conveniently accessible through the built-in LCD touch screen control. The system can also be accessed via the USB port or Ethernet interface.



TECHNICAL DATA

Curing time	Programmable, 3 s typical
Light source	UV LED
Wavelength	380-385 nm
Mould material	Silicone
Mould mounting	Exchangeable
Mould length	34 mm, 55 mm
Recoating diameter	165, 250, 300, 400, 550, 730 & 900 µm*
Tensile testing	0-20 N/0-100 N
PC connection	Ethernet and USB flash drive connection
Power supply	External 12 V DC, 60 W
Compressed air	Not needed
Dimensions	270 mm (W) x 170 mm (D) x 98 mm (H)
Weight	3.9 kg

NYFORS part number: 10100068 * Custom moulds available.

RECOATER 2 SC[™]

Flexible recoater with special short fiber length clamps

- Consistent, high quality results
- Special fiber clamps for recoating short lengths of fiber
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- No need for compressed air or vacuum

This modified version of the manual RECOATER 2[™] is equipped with special clamps for recoating applications where only short lengths of fiber are available. A narrower positioning and shorter distance between the fiber clamps than in the standard version enables clamping and recoating of fibers as short as 124 mm without reducing the recoat length itself.

Silicone recoating moulds are available in different sizes to cover a wide range of coating diameters and can easily be exchanged by the operator in a few seconds with no realignment of the system being required. The highly efficient UV LED curing system enables fast processing of both standard high index and specialized low index materials used in various high power applications.

Injection of recoating material is performed manually with a syringe. While this does require a manual user operation, it also ensures flexibility because the user can immediately switch from one type of recoating compound to another (e.g. from a high index material to a low index material) without any need to flush out a recoater reservoir and injection pumping system. An optional dispenser robot can be added onto the system to handle the injection of recoating material if the syringe method is not desired.

This makes the RECOATER 2 SC[™] easy to set up and optimize for such different applications as undersea optical fiber cable manufacturing and high power fiber laser production.

Program parameters are conveniently accessible through the built-in LCD touch screen control. The system can also be accessed via the USB port or Ethernet interface.



Curing time	Programmable, 3 s typical
Light source	UV LED
Wavelength	380-385 nm
Mould material	Silicone
Mould mounting	Exchangeable
Mould length	34 mm & 55 mm
Required fiber length	124 mm
Recoating diameter	165, 250, 300, 400, 550, 730 & 900 $\mu\text{m}\star$
PC connection	Ethernet and USB flash drive connection
Power supply	External 12 V DC, 60 W
Compressed air	Not needed
Dimensions	270 mm (W) x 170 mm (D) x 98 mm (H)
Weight	3.9 kg

NYFORS part number: 10100082 * Custom moulds available.

RECOATER 2 χι ™

Extended length recoater for stripped fiber lengths up to more than 100 mm

- Extended length recoating up to 100 mm
- Easy to set up for different optical fiber dimensions and recoating materials
- High and low index recoating
- No need for compressed air or vacuum

The RECOATER 2 XL[™] is designed for recoating applications where the protective acrylate coating needs to be restored on long lengths of stripped fiber. It accommodates special silicone moulds that enable recoating of fiber sections up to 100 mm long.

Like the standard length moulds, they are available in different sizes to cover a wide range of coating diameters. They can also easily be exchanged by the operator with no realignment of the system being required. The highly efficient UV LED curing system enables fast processing of both standard high index and specialized low index materials used in various high power applications.

Injection of recoating material is performed manually with a syringe. While this does require a manual user operation, it also ensures flexibility because the user can immediately switch from one type of recoating compound to another (e.g. from a high index material to a low index material) without any need to flush out a recoater reservoir and injection pumping system. An optional dispenser robot can be added onto the system to handle the injection of recoating material if the syringe method is not desired.

These features make the RECOATER 2 XL[™] ideal for production and research applications where long sections of stripped optical fiber of different diameters and with different coating materials needs to be recoated in a highly flexible way.





Program parameters are conveniently accessible through the built-in LCD touch screen control. The system can also be accessed via the USB port or Ethernet interface.



TECHNICAL DATA

mm
50, 730 & 900 µm*
n drive connection
N
n (D) x 98 mm (H)

NYFORS part number: 10100068 * Custom moulds available.

OPTICAL FIBER RECOATING

DISPENSING PEN[™]

Automatic resin dispensing pen.

- High precision dispensing
- Compact design
- Battery driven
- Controllable dispensing speed
- Changeable and refillable resin cartridges

The DISPENSING PEN[™] is perfect for automatic and high precision resin dispensing of different kinds of materials. The clean design makes it easy to hold and control for operation. The dispensing speed is easily controlled. The size of the needle and the easily controlled dispensing speed makes it suitable for high precision fiber recoating and dispensing activities. The DISPENSING PEN[™] is ideal for recoating application in conjunction with a manual RECOATER such as the NYFORS MICROCOATER, MINICOATER or RECOATER platforms.

The DISPENSING PEN[™] is also useful for other applications where glue or other kinds of acrylate needs dispensing. Different types of resin are loaded in the DISPENSING PEN[™] by changeable resin cartridges. The DISPENSING PEN[™] is controlled with a push button on the pen or could also be controlled with a button on the control box/pen-stand on the side.



TECHNICAL DATA

1 cartridge	500 recoatings (250um / 25 mm)
Power supply	USB-C
Dimensions	Ø19,5 mm x 160 mm (pen)
	+ 100 mm (W) x 82 mm (D) x 27 mm (H)
	(pen stand/control box)
Weight	0.1 kg (pen) + 0.2 kg (stand),
	total weight 0.3 kg.

NYFORS part number: 10100118

MICROCOATER

Very compact fiber recoater

- · Very compact design with built in rechargeable battery
- Affordable silicone square moulds
- Easy to switch between different fiber coating diameters and recoating materials
- · High and low index recoating capability
- Short curing times

The extremely small and light weight MICROCOATER[™] provides versatile recoating capability in situations where portability and flexibility is needed. Square silicone moulds are available in different sizes to cover a wide range of optical fibers and can easily be exchanged by the operator in a few seconds with no realignment of the system being required.

Short curing times are achieved through the highly efficient UV LED light source which enables fast processing of both standard high index recoating materials and more specialized low index compounds that are used in various high power applications.

The MICROCOATER[™] is well suited for research and development operations and small scale pro¬duction where square shaped recoatings are accepted and the fiber type and dimension as well as the recoating material need to be changed frequently. It can also, thanks to the small size and built in re-chargeable battery, be used for recoating in a remote field environment such as an oil drilling platform, field service of fiber lasers and other fiber devices, and in other situations where a high degree of portability is required. The curing time is programmable. The MICROCOATER[™] has a simple two button control and a clean and robust design.





TECHNICAL DATA

Curing time	Programmable, 3 s typical						
Light source	UV LED						
Wavelength	380-385 nm						
Mould material	Silicone						
Mould length	34 mm						
Recoating diameter	165, 250, 300, 400 & 900µm*						
Power supply	Battery or external 12 V DC, 40 W						
Dimensions	134 mm (W) x 60 mm (D) x 63 mm (H)						
Weight	0.46 kg						

NYFORS part number: 10100116 * Custom moulds available.

Accessories available Mould 3/mm Coating diameter Article number Mould Length Article description							AINICOATER 2	AINICOATER 2S	RECOATER 2 XL AIGROCOATER
		10100026	2/mm	Mould Doo 2 parise 165um 2/mm			2	2	
	Πάρμη	10100036	34mm	Mould, Rec 2-series, 165µm, 34mm	$ \cdot $	•	•	-	
	250(-) µm*	10100094	34mm	Mould, Rec 2-series, 250(-)µm, 34mm	•	•	•		
	250µm	10100037	34mm	Mould, Rec 2-series, 250µm, 34mm	•	•	•		
	300µm	10100038	34mm	Mould, Rec 2-series, 300µm, 34mm	•	•	•		
	400µm	10100039	34mm	Mould, Rec 2-series, 400µm, 34mm	•	•	•		
-	550µm	10100040	34mm	Mould, Rec 2-series, 550µm, 34mm	•	•	•		
	730µm	10100078	34mm	Mould, Rec 2-series, 730µm, 34mm	•	•	•		
	750µm	10100109	34mm	Mould, Rec 2-series, 750µm, 34mm	•	•	•		
	900µm	10100041	34mm	Mould, Rec 2-series, 900µm, 34mm	•	•	•		
	1500µm	10100081	34mm	Mould, Rec 2-series, 1500µm, 34mm	•	•	•		
24mm	250µm	10100106	20mm	Mould, Rec 2-series, 250µm, 20mm	•	•	•		
34MM	Custom	10100095	34mm	Mould, Rec 2-series, cust µm, 34mm	•	•	•		

Mould, 55mm	Coating diameter	Article number	Mould Length	Article description						
	165µm	10100042	55mm	Mould, Rec 2-series, 165µm, 55mm	•	•	•			
	250µm	10100043	55mm	Mould, Rec 2-series, 250µm, 55mm	•	•	•			
	300µm	10100044	55mm	Mould, Rec 2-series, 300µm, 55mm	•	•	•			
	400µm	10100045	55mm	Mould, Rec 2-series, 400µm, 55mm	•	•	•			
0 kg	550µm	10100046	55mm	Mould, Rec 2-series, 550µm, 55mm	•	•	•			
	730µm	10100079	55mm	Mould, Rec 2-series, 730µm, 55mm	•	•	•			
55	900µm	10100047	55mm	Mould, Rec 2-series, 900µm, 55mm	•	•	•			
mmcc	Custom	10100092	55mm	Mould, Rec 2-series, cust µm, 55mm	•	•	•			

	Mould, 110mm	Coating diameter	Article number	Mould Length	Article description				
	~	165µm	10100048	110mm	Mould, Rec 2-series, 165µm, 110mm	\square	\square	•	
		250µm	10100049	110mm	Mould, Rec 2-series, 250µm, 110mm			•	
		300µm	10100050	110mm	Mould, Rec 2-series, 300µm, 110mm			•	
		400µm	10100051	110mm	Mould, Rec 2-series, 400µm, 110mm			•	
2		550µm	10100052	110mm	Mould, Rec 2-series, 550µm, 110mm			•	
	110mm	730µm	10100080	110mm	Mould, Rec 2-series, 730µm, 110mm			•	
	riumm	900µm	10100053	110mm	Mould, Rec 2-series, 900µm, 110mm		\square	•	

Mould Square, 34mm	Coating diameter	Article number	Mould Length	Article description			
	250µm	10100013	34mm	Mould, Square, 250µm, 34mm		•	•
	300µm	10100014	34mm	Mould, Square, 300µm, 34mm		•	•

					_	_			
Power supply & adaptors	Туре	Article number	Mould Length Article description						
	Power Supply	10100156	Power Supply	•	•	•	•	•	
	Adaptor, EU	10100157	Adaptor for power supply (10100156), EU	•	•	•	•	•	
	Adaptor, UK	10100159	Adaptor for power supply (10100156), UK	•	•	•	•	•	
	Adaptor, US	10100158	Adaptor for power supply (10100156), US	•	•	•	•	•	
	Power supply	10100164	Power supply for MICROCOATER, EU						•

* Undercoating

			rer 2	32	ER 2	ER 2S	3 2 XL	ATER
Spa	re-/Replacement	parts	DCOAT	OATEF	ICOAT	ICOAT	OATEF	ROCO.
Туре	Article number	Article description	• •	MIN	REC	MIC		
Mould pins	10100070	Mould pins	•	•	•			
Mould pins extended	10100071	Mould pins extended					•	
Mould insertion tool	10100104	Mould insertion/extraction tool	•	•	•			
Fiber tensioners, STD	10100066	Fiber tensioners, AUTO-/RECOATER 2, Standard	•	•				
Fiber tensioners, 900µm	10100061	Fiber tensioners, AUTO-/RECOATER 2, 900µm	•	•				
Mandrels	10100056	Mandrels, AUTO-/RECOATER 2	•	•				
Fiber clamps, 165-330µm	10100074	Fiber clamps, MC2, 165-330µm			•	•		•
Fiber clamps, 250-500µm	10100093	Fiber clamps, MC2, 250-500µm			•	•		•
Fiber clamps, 330-900µm	10100058	Fiber clamps, MC2, 330-900µm			•	•		•

	Options (ordered separately)									
Type Article number Article description										
	Fiber tensionsers (SC)	10100123	Short clamps option	•	•					
	Fiber tensionsers (MC)	10100122	Motor clamps option	•	•					
	CV-kit for RC2/AC2	10100121	UV-led cooling option	•	•					
	Dispenser robot	10100069	Automatic dispenser robot	•	•			•		
	Dispenser robot XL	10100162	Automatic dispenser robot for RECOATER XL					•		

Accessories for DISPENSING PEN								
Cartridge	Туре	Article number	Article description					
	Empty	10100119	Resin cartridge, Empty					
	Filled	10100120	Resin cartridge, Full (DSM950-200)					

Spare parts for DISPENSING PEN							
Туре	Article number	Article description					
Dispensing tip	10100160	Replacement tip for Dispensing pen					

Please contact us if you have any questions.



AUTOMATIC FIBER PREPARATION

Stripping and fiber preparation systems that remove acrylate coatings and eliminates fiber residue while preserving fiber strength and integrity through a completely automatic process.





AUTOPREP 3™

- Fast cycle time
- 100% clean fiber
- High strength
- Low cleave angles < 0.5 degrees
- Fully automated

AUTOSTRIPPER 3™

- Chemical free stripping
- High strength
- Fully automatic
- Operator independent
- Fast cycle time



AUTOSTRIPPER XL[™]

- Chemical free stripping
- High strength
- Fully automatic
- Operator independent
- Fast cycle time
- Programmable strip lengths
- Multiple window stripping
- High force tensile strength tester



ULTRA SONIC FC™

- Programmable cycle time
- Non-contact
- Supports most common fiber holders
- Large 0,7L fluid tank

AUTOPREP 3[™]

High speed fiber preparation system for production environments

- Fast cycle time
- 100% clean fiber
- High strength
- Low cleave angles < 0.5 degrees
- Fully automated
- Operator independent
- Automatic fiber waste collection

The fully automated, high-speed fiber preparation unit AUTOPREP3[™] strips, cleans and cleaves a fiber in less than 15 seconds. It is designed primarily for industrial applications, where accuracy, reliability and a high production yield are required.

The AUTOPREP 3[™] is used for fast and chemical free stripping of acrylate-based fiber coatings. It meets the highest industrial requirements of fast and consistent fiber preparation with extreme cleanliness and high fiber strength. Optimal cleaves are generated by a highly advanced and patent pending cleaving process.

It has a user friendly design. Guided fiber holders easily place the fibers in the correct position and a "One Touch" go button starts the automatic preparation process.

A controlled hot air flow instantly vaporizes the stripping. The result is a perfectly stripped and clean fiber. The stripped area is free of debris when viewed at 400x magnification and the strength is typically >30 N (355 kpsi)*. The cleaver produces typical cleave angles of less than 0.5 degrees.

To ensure high quality and repeatability, all processes of stripping, cleaning and cleaving are controlled by the builtin microprocessor. The AUTOPREP 3[™] is adapted for standalone use and is compatible with all leading fusion splicers, using optional adaptors.



Coating diameter	160-400µm
Fiber strength	Typical > 30 N on 125 μ m fiber (355 kpsi)*
Fiber cleanliness	Free of debris at 400x magnification
Cleaving angle	Typical < 0.5 degrees
Cycle time	Typical < 15 seconds
Power supply	115 or 230 V AC (50/60 Hz)
Compressed air supply	External compressor, 6 Bar, 8 mm instant push-in fitting
PC Interface	RS-232
Dimensions	320 mm (W) x 310 mm (D) x 200 mm (H)
Weight	12 kg

NYFORS part number: 70100009

Included in delivery: AUTOPREP 3[™] unit, PC Software, RS-232-cable, Manual and Tools.

* Typical, depending on set up, HS splicing is necessary.

AUTOSTRIPPER 3[™]

Automated midspan window stripping system

- Chemical free stripping •
- High strength •
- Fully automatic •
- Operator independent ٠
- Fast cycle time ٠
- Programmable strip lengths
- Multiple window stripping ٠
- High force tensile strength tester •





The AUTOSTRIPPER 3[™] meets the need for variable and multiple window strip lengths at high strength and ultra cleanliness. A controlled hot air flow instantly vaporizes the fiber coating. The result is a stripped fiber, perfectly cleaned with a substantially higher strength than any mechanical stripping method. The fiber is free of debris at 400x magnification.

The AUTOSTRIPPER 3™ is equipped with a built-in, high force tensile strength tester, which can pull the fiber up to 20 N.

To ensure high quality, repeatability and high production yield, all critical processes and parameters such as stripping length, burst time and strength test are controlled by a built-in microprocessor.

The AUTOSTRIPPER 3[™] can be used as a stand-alone unit or offered for integratation into different subsystems.



ECHNICAL	DATA	

Coating diameter	250-550µm
Fiber strength	Typical strength > 30 N (125µm fiber)
Fiber cleanliness	Free of debris at 400x magnification
Strip length	2.5-160 mm
Tensile strength tester	0-20 N
Pulling speed	10-100 mm/min
Hold time	0-10 s
Power supply	115 or 230 V AC (50/60 Hz)
Compressed air supply	External compressor, 6 bar, 8 mm instant push-in fitting
PC Interface	RS-232
Dimensions	470 mm (W) x 315 mm (D) x 200 mm (H)
Weight	15 kg

NYFORS part number: 7010008

				PPER 3	33	
Accessories for AUTOSTRIPPER 3/AUTOPREP 3						
	Туре	Article number	Article description	AUTC	AUTC	
	Compressor	70100027	Compressor for AUTOSTRIPPER 3/AUTOPREP 3	•	•	

Adaptor plate	Туре	Article number	Article description	
	Fujikura FH-100	70100021	Adaptor plate, FJK (FH-100)	•
	Fitel (S712S)	70100022	Adaptor plate, FITEL (S712S)	•
	NYFORS/Ericsson	70100023	Adaptor plate, NYFORS/Ericsson	•

Spare parts for AUTOSTRIPPER 3/AUTOPREP 3										
	Туре	Article number	Article description							
	Fiber clamps	70100020	Fiber clamps (pair)	•						
	Filter	70100004	Exhaust filter	•	•					
	Diamond blade	50100091	Diamond blade, Cleaver		•					
	Height adjuster	70100026	Height adjuster (variable)		•					
	Fiber waste collector	50100098	Fiber waste collector		•					

V-groove	Cladding diameter	Article number	Article description	
	80µm	70100024	V-groove, 80µm cladding	•
	125µm	70100025	V-groove, 125µm cladding	•

Make sure that the accessory/spare part is compliant with your unit by comparing the checkboxes. Please contact us if you have any questions.

AUTOMATIC FIBER PREPARATION

AUTOSTRIPPER XL^{TM}

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Automated midspan window stripping system for extended fiber lengths

- Chemical free stripping
- High strength
- Fully automatic
- Operator independent
- Fast cycle time
- Programmable strip lengths
- Multiple window stripping
- High force tensile strength tester

The AUTOSTRIPPER XLTM is designed for fast, chemical-free window stripping of optical fibers, using heated air to accomplish the demanding task of window stripping acrylate-coated fibers with diameters up to 550 μ m. The AUTOSTRIPPER XLTM is an extended version of the AUTOSTRIPPER 2TM and features longer strip lengths up to 500 mm.

The AUTOSTRIPPER XL[™] meets the need for variable and multiple window strip lengths with high strength and ultracleanliness.

A controlled hot air flow instantly vaporizes the fiber coating. The result is a stripped fiber, perfectly cleaned with a substantially higher strength than any mechanical stripping method. The fiber is free of debris at 400x magnification. The AUTOSTRIPPER XL[™] is equipped with a built-in, high tension pull tester, which can proof test the fiber up to 20 N. To ensure high quality, repeatability and high production yield, all critical processes and parameters such as stripping length, burst time and strength test are controlled by a builtin microprocessor.

The AUTOSTRIPPER XL[™] can be used as a stand-alone unit or offered for integration into different subsystems.



TECHNICAL DATA

Cladding diameter	125-300 µm
Coating diameter	250-550 µm
-iber strength	Typical strength > 30 N on 125 µm fiber
-iber cleanliness	Free of debris at 400x magnifica- tion
Strip length	2.5-500 mm
Tensile strength tester	0-20 N
Pulling speed	10-100 mm/min
Hold time	0-10 s
Power supply	115 or 230 V AC (50/60 Hz)
Compressed air supply	External compressor*, 6 bar, 8 mm instant push-in fitting
PC Interface	RS-232
Dimensions	825 mm (W) x 315 mm (D) x 200 mm (H)
Neight	25 kg
Z Travel resolution	0.4 μm (optional 0,025 μm)
Maximum Taper Ratio	1:10
laper speed	Typically 2 mm/sec

Included in delivery: AUTOSTRIPPER XL[™] unit, PC Software, RS-232 cable, Manual and Tools. *Not included in the delivery

ULTRASONIC FC

Ultrasonic fiber cleaner features dual cleaning positions

- Programmable cycle time
- Non-contact
- Supports most common fiber holders
- Large 0,7L fluid tank

The ULTRASONIC FC features dual cleaning positions and a large 0,7L solvent tank with programmable cleaning duration. It supports most of the common fiber holders on the market such as Fujikura FH-100, FH-60, Fitel S712, Fitel LDF, as well as the NYFORS standard fiber holder platform (AUTOCLEAV-ER) and the NYFORS MINICOATER 2 fiber holder platform.





TECHNICAL DATA

Maximum fiber length	40 mm
Input voltage	230V
Sonic Frequency	40kHz
Heating Power	60 W
Compatible solvents	Acetone or Isopropanol
Dimensions	180 mm (W) x 114 mm (D) x 240 mm (H)
Weight	1.90 kg





Automatic equipment for production verification and breaking strength testing of optical fibers. Linear and mandrel strength testing functionality.





PROOFTESTER™

- Fully automatic, easy to operate
- High pulling force (1–30 N)
- Logging of test data
- Compact design
- PC controlled

PROOFTESTER 2[™]

- Fully automatic, easy to operate
- Two basic configurations linear or rotary tensile testing
- High pulling force (0-100 N)
- Adjustable clamp positioning
- No need for external air supply or vacuum
- Built-in LCD touch screen control

PROOFTESTER[™]

Automatic optical fiber tensile testing system

- Fully automatic, easy to operate
- High pulling force
- Logging of test data
- Compact design
- PC controlled

The PROOFTESTER^m is a compact and light weight instrument ideal for testing the strength of optical fibers up to 30 N. It is developed to meet all applications where a strength tests has to be performed and has a user friendly design.

The fiber is easily placed in the guided linear clamps and the testing starts automatically with a "One Touch" go button. The built in microprocessor controls all important parameters such as pulling force, pulling speed and hold time. This allows for a completely controlled test every time.

The PROOFTESTER™ can be connected to an external PC for access to all programmable parameters and settings. It has an extensive capability of logging and saving information such as pulling force, pulling speed, fiber diameters and other parameters. It comes in small benchtop design and can be adapted to stand alone use or integration into different manufacturing systems.



TECHNICAL DATA

Fiber buffers	160–900µm
Tensile test	1–30 N
Resolution	0.1 N
Pulling speed	20-100 mm/min
Hold time	0–10 s
Power supply	External 12 V DC, 15 W
Compressed air supply	External compressor, 5-7 bar 4 mm tube instant push-in fitting
Dimensions	210 (W) x 138 (D) x 110 mm (H)
Weight	2.3 kg

NYFORS part number: 10100027

PROOFTESTER 2[™]

Automatic optical fiber tensile testing system

- Fully automatic, easy to operate
- Two basic configurations linear or rotary tensile testing
- Adjustable clamp positioning
- No need for external air supply or vacuum
- Built-in LCD touch screen control

This automatic optical fiber tensile testing system is designed for operator skill independent use in production and laboratory settings. Two basic model configurations allow the user to choose between a set up for standard linear proof testing and with additional mandrels for rotary high strength testing.

The linear version is designed for production proof testing with forces up to 20 N. Motorized clamps with carefully designed rubber inserts ensure that the fiber coating is not damaged in the testing process while at the same time eliminating the need for an external air supply. Levels of pulling force, pulling speed and hold time are programmable and conveniently accessible to the operator through the built-in LCD touch screen control. Data from tests can be saved and accessed via the USB port or Ethernet interface.

Mandrels of the same design as in NYFORS' optical fiber recoaters can easily be mounted on the proof tester in the rotary high strength configuration. The fiber is wrapped around the two mandrels which support it with a special clamping mechanism. This way much higher loads can be applied onto the fiber, enabling breaking strength tests under controlled circumstances.

Adjustable clamp positioning facilitates testing with the highest force levels as well as testing of short fiber lengths.



The compact and light weight design makes the instrument easy to move around in a laboratory environment and to integrate in a production work bench where space is at a premium.

TECHNICAL DATA		
Fiber cladding	165-900 μm	
Linear proof test	Programmable 0-20 N	
Mandrel proof test	Programmable 0-100 N	
Hold time	Programmable	
Pull rate	0.5-20 N/s	
Power supply	External 12 V DC, 60 W	
PC connection	Ethernet & USB Flash drive	
Dimensions	270 mm (W) x 170 mm (D) x 105 mm (H)	
Weight	3.8 kg	

NYFORS part number: 10100067

Accessories for PROOFTESTER						
Linear insert	Coating diameter Article number Article description Label					
	210-699µm	50100070	Linear insert, 210-699µm coating	210-699µm		
	700-1000µm	50100071	Linear insert, 700-1000µm coating	700-1000µm		
	Customer Specified	50100072	Linear insert, Generic			

Power supply & adaptors	Туре	Article number	Article description
	Power supply, 100-240V, 15W	50100070	Power supply, 100-240V, 15W
	Adaptor for AU	50100006	Adaptor, Power supply (AU)
	Adaptor for EU	50100007	Adaptor, Power supply (EU)
	Adaptor for UK	50100008	Adaptor, Power supply (UK)
	Adaptor for US	50100009	Adaptor, Power supply (US)

Please contact us if you have any questions.

Accessories available for PROOFTESTER 2				
	Туре	Article number	Article description	
	Safety cover	10100085	Safety cover	
	Power cable extension	10100090	Extension for power cable, 3m	
	Mandrels	10100056	Mandrels for high strength prooftesting	
	Back stand	10100101	Back stand for RC2/AC2/PT2	
Spare parts available for PROOFTESTER 2				
	Туре	Article number	Article description	
	Fiber tensioners (MC)	10100122	Fiber tensioners, Motor Clamps (pair)	
	Power supply	10100156	Power Supply	

Accessories available for PROOFTESTER 2				
	Туре	Article number	Article description	
\frown	Safety cover	10100085	Safety cover	
E to	Power cable extension	10100090	Extension for power cable, 3m	
0.	Mandrels	10100056	Mandrels for high strength prooftesting	
	Back stand	10100101	Back stand for RC2/AC2/PT2	
	S	pare parts availab	le for PROOFTESTER 2	
	Туре	Article number	Article description	
	Fiber tensioners (MC)	10100122	Fiber tensioners, Motor Clamps (pair)	
	Power supply	10100156	Power Suppl y	
	Adaptor, EU	10100157	Adaptor for 10100156, EU	
	Adaptor, UK	10100159	Adaptor for 10100156, UK	
	Adaptor, US	10100158	Adaptor for 10100156, US	

Please contact us if you have any questions.

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CLEAVE QUALITY INSPECTION

High precision interferometers for checking the end face quality of cleaved optical fibers and for cleave process optimization. Crisp and clear fringe patterns and software with advanced measurement functionality.





CLEAVEMETER 2™

- Sharp fringe patterns
- Flat and angled cleave measurements
- Operator skill independent for fast operation
- Documents images from critical end-faces in production and laboratory environments
- Accepts fibers with cladding diameters from 125µm to 1200µm

CLEAVEMETER 3D™

- Full resolution surface topography reconstruction
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control
- Extremely accurate, operator independent measurements of cleave angle and surface flatness over arbitrary diameters
- Optional pass/fail indication of cleave angle for fast operation in production environments



CLEAVEMETER 3D+™

- Class-leading accuracy 0.005°
- Full resolution surface topography reconstruction
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control
- Extremely accurate, operator-independent measurements of cleave angle and surface flatness over arbitrary diameters



CLEAVEMETER LIGHT™

- Full resolution surface topography reconstruction
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control
- Extremely accurate, operator-independent measurements of cleave angle
- and surface flatness over arbitrary diameters
- Optional pass/fail indication of cleave angle for fast operation in production environments

CLEAVEMETER 2[™]

Optical fiber end-face interferometer

- Sharp fringe patterns
- Flat and angled cleave measurements
- Operator skill independent for fast operation
- Documents images from critical end-faces in production and laboratory environments
- Accepts fibers with cladding diameters from 125µm to 1200µm
- Accepts fiber holders of major splicer manufacturers
- Adaptor plate angle error measurement and compensation (premium software)
- Plane angle and three-point fiber diameter measurement (premium software)

The CLEAVEMETER 2[™] is a non-contact interferometer designed for inspecting the end-faces of cleaved or polished optical fibers with cladding diameters of 125µm to 1200µm. It gives immediate information on important end-face properties such as flatness, perpendicularity, hackles and dust. Sampling tests as well as continuous process documentation can be carried out both easily and quickly, making this an ideal instrument for cleaver inspection and optimisation.

The optical system is based on a high-end camera with true megapixel resolution and very high sensitivity, yielding excellent image quality at high frame rates and high magnification. Switching between low and high magnification is softwarecontrolled. High-precision optics guarantees sharp and clear images and fringe patterns with very little aberration.

The CLEAVEMETER 2[™] comes with user friendly and efficient software available in two different versions - standard and premium. Standard software features include cleave angle measurements with in-picture presentation of results, user-defined markers at points of interest, pseudo-colour mode for better constrast and the ability to log information, save and load images to and from files. The premium package includes support for measurement of plane angles and fiber diameters as well as compensation for adaptor plate angle error for increased accuracy.



Adaptor plates are available for both perpendicular and angled cleave measurements. The mechanical design is compatible with all NYFORS automatic fiber cleavers and accepts the fiber holders used with those machines as well as those of major splicer manufacturers. Customised adaptor plates are available upon request.

The CLEAVEMETER 2[™] comes in a small ergonomic, benchtop design and connects to the USB port of a PC running the host application.

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TECHNICAL DATA

Fiber cladding	125-1200µm
Fiber coating	250-1500µm
Camera resolution	1280×1024 pixels
Image scale	1.25 µm per pixel
Image file format	8-bit JPEG, PNG, TIFF, BMP
PC connection	USB 2.0 port
Power supply	Through USB port
Dimensions	97 mm (W) x 179 mm (D) x 142 mm (H)
Weight	1.6 kg

NYFORS part number: 30100012

CLEAVEMETER 2[™]



Selection Guide

Fiber-specific adaptor plates are required in order to properly align different fiber sizes to the center of the CLEAVEMETER™ optical system field of view. They are not included in delivery and should be ordered separately. Adaptor plates are available for use with NYFORS automatic fiber cleavers and fiber holders of major splicer manufacturers such as Ericsson and Fujikura. Below you find a selection of the most common types and dimensions. NYFORS adaptor plates are sized according to the cladding size required by the customer and are compatible with NYFORS LD fiber clamps and Ericsson FSU-clamps. Please select adaptor plate to match fiber cladding diameter and angle adaptor plate (optional) to match fiber tilt angle.

For more information about available adaptor plates and custom sizes, please contact us at info@nyfors.com.

A Shutter option is also available for this system. This option allows the user to temporarily eliminate the interference patterns for a more detailed view of the end face.

CLEAVE ANGLE ACCURACY

bsolute accuracy	0.15/0.03 degrees*
elative accuracy	20 % of measured cleave angle (125-199 $\mu m)$
	10 % of measured cleave angle (200-529 $\mu m)$
	5 % of measured cleave angle (530-1200 $\mu m)$

* Measurement accuracy without/with adaptor plate angle error compensation. The latter level of accuracy requires adaptor plate angular errors to be measured/ compensated for on the individual CleaveMeter™ the holder is used with. For more information about system accuracy, please contact us at info@nyfors.com.



CLEAVEMETER 3D[™]

Optical fiber end-face interferometer with three-dimensional surface topography reconstruction

- Full resolution surface topography reconstruction
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control
- Extremely accurate, operator independent measurements of cleave angle and surface flatness over arbitrary diameters
- Optional pass/fail indication of cleave angle for fast operation in production environments

THE CLEAVEMETER 3D[™] is a non-contact interferometer designed for inspecting the end-faces of cleaved or polished optical fibers with cladding diameters of 125µm to 1200µm. It gives immediate and precise information on important endface properties such as flatness, perpendicularity, hackles and dust. Based on the NYFORS CLEAVEMETER 2[™] design, in addition to producing sharp fringe patterns it also generates three-dimensional images of the cleaved fiber end.

When used in this mode, the surface topography is reconstructed from the fringe pattern and presented graphically as a three-dimensional image of the fiber end. By rotating the image and adjusting the scale and contrast, the surface quality and cleave angle at different points can be analyzed in close detail, allowing for a more comprehensive understanding and accurate interpretation of the data and the cleaving process.

While this capability is always important to cleave quality analysis, it can be even especially helpful when analyzing cleaving of fibers with complicated structures such as polarization maintaining fibers, or micro-structured fibers. Information on surface topography can also be saved to a file for further analysis using third party software.

Extremely accurate measurements of both cleave angle and surface flatness over arbitrary diameters can be performed on the reconstructed end-face surface. These measurements g control ents of ters peration



- are carried out automatically, with full operator independence. This makes the system well suited not only for detailed cleave quality analysis in laboratory environments, but also for close production monitoring.
- In addition to cleave angles, the system can also be used to measure a number of other properties such as plane angles, fiber diameters and the distance between points. The software allows the user to view the pointwise slope across the whole fiber end-face, a very useful tool for spotting small scale irregularities and crack propagation behaviour.
- Adaptor plates are available for both perpendicular and angled cleave measurements. The mechanical design is compatible with all NYFORS automatic fiber cleavers and accepts the fiber holders used with those machines as well as those of major splicer manufacturers. Custom made adaptor plates are available upon request.
- THE CLEAVEMETER 3D[™] comes in a small, ergonomic benchtop design and connects to the USB port of a PC running the host application. Additional options are available including Autofocus for fast and automated focusing of the camera, and a Shutter Option. This option allows the user to temporarily eliminate the interference patterns for a more detailed view of the end face.



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3D	3D HD	
125-1200µm	125-2000µm	
1280x1024 pixels	2592x1944 pixels	
1.25µm per pixel	1.07µm per pixel	
8-bit JPEG, PNG, TIFF, BMP/24-bit BMF for surface topography		
USB 2.0 port	USB 2.0 port	
Through USB port	Through USB port	
97 mm (W) x 179 m	ım (D) x 142 mm (H)	
1.6 kg	1.6 kg	
	3D 125-1200µm 1280x1024 pixels 1.25µm per pixel 8-bit JPEG, PNG, TH for surface topogra USB 2.0 port USB 2.0 port 97 mm (W) x 179 m 1.6 kg	

NYFORS part number CLEAVEMETER 3D: 30100013 NYFORS part number CLEAVEMETER 3D HD OPTION: 30100035 NYFORS part number CLEAVEMETER SHUTTER OPTION: 30100036 NYFORS part number CLEAVEMETER AUTOFOCUS OPTION: 30100037

CLEAVE ANGLE ACCURACY

Absolute accuracy	0.01 degrees standard deviation*
Relative accuracy	5 %

* This level of accuracy requires the adaptor plate angle error to be measured/ compensated for on each individual CLEAVEMETER™ the holder is used with. For more information about system accuracy, please contact us at info@nyfors.com.

Selection Guide

Fiber-specific adaptor plates are required in order to properly align different fiber sizes to the center of the CLEAVE-METER™ optical system field of view. They are not included in delivery and should be ordered separately. Adaptor plates are available for use with NYFORS automatic fiber cleavers and

fiber holders of major splicer manufacturers such as Ericsson and Fujikura. Below you find a selection of the most common types and dimensions. NYFORS generic adaptor plates are compatible with NYFORS LD fiber clamps and Ericsson FSU-clamps. Please select adaptor plate to match fiber cladding diameter and angle adaptor plate (optional) to match fiber tilt angle.

For more information about available adaptor plates and custom sizes, please contact us at info@nyfors.com.

CLEAVEMETER 3D+[™]

Extremely accurate Optical fiber end-face interferometer with three-dimensional surface topography reconstruction

- Class leading accuracy 0.005°
- Full resolution surface topography reconstruction •
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control ٠
- Extremely accurate, operator independent measurements of cleave angle and surface flatness over arbitrary diameters
- Optional pass/fail indication of cleave angle for fast operation in production environments

The CLEAVEMETER 3D+™ is a non-contact interferometer designed for high accuracy inspecting of end-faces for cleaved or polished optical fibers with cladding diameters of 125µm to 1200µm. The CLEAVEMETER 3D+™ gives immediate and precise information on important end face properties such as flatness, perpendicularity, hackles and dust. Extremely accurate measurements of both cleave angle and surface flatness over arbitrary diameters can be performed on the reconstructed end-face surface. These measurements are carried out automatically, with full operator independence.

This makes the system well suited not only for detailed cleave quality analysis in laboratory environments, but also for close production monitoring. In addition to cleave angles, the system can also be used to measure a number of other properties such as plane angles, fiber diameters and the distance between points.

The software allows the user to view the pointwise slope across the whole fiber end-face, a very useful tool for spotting small scale irregularities and crack propagation behavior. The CLEAVEMETER 3D+™ comes in a small, ergonomic benchtop design and connects to the USB port of a PC running the host application. A Shutter option is also available for this system. This option allows the user to temporarily eliminate the interference patterns for a more detailed view of the end face.



	TECHNICAL DATA
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Fiber cladding	125-1200µm*
Camera resolution	1280×1024 pixels
Image scale	1.25µm per pixel
Image file format	8-bit JPEG, PNG, TIFF, BMP/24-bit BMP
PC connection	USB 2.0 port
Power supply	Through USB port
Dimensions	97 mm (W) x 179 mm (D) x 142 mm (H)
Weight	1.6 kg

NYFORS part number: 30100032

CLEAVE ANGLE ACCURACY Absolute accuracy 0.005° degrees standard deviation *CLEAVEMETER 3D+ unit calibrated by NYFORS for specific fiber cladding

For more information about system accuracy, please contact us at: info@nyfors.com.

ACCESSORIES FOR CLEAVEMETER							
Adaptor plate	Туре	Cladding diameter	Article number	Article description	CM 2	CM 3	с М
	FJK	115-210µm	30100001	Adaptor plate, FJK, 115-210µm	•	•	
	FJK	200-529µm	30100002	Adaptor plate, FJK, 200-529µm	•	•	
	FJK	510-800µm	30100003	Adaptor plate, FJK, 510-800µm	•	•	
	FJK	800-1200µm	30100004	Adaptor plate, FJK, 800-1200µm	•	•	
	NYFORS	Customer Specified	30100007	Adaptor plate, NYFORS, Generic	•	•	
	Ferrule	Customer Specified	30100020	Adaptor plate, Ferrule, Generic	•	•	
	FSMA	-	30100024	Adaptor plate, FSMA	•	•	
	SMA	-	30100027	Adaptor plate, SMA	•	•	
6	FITEL	115-210µm	30100022	Adaptor plate, FITEL, 115-210µm	•	•	
	FITEL	200-529µm	30100023	Adaptor plate, FITEL, 115-210µm	•	•	

	Angle adaptor plate	Angle	Article number	Article description			
200	4°	30100021	Angle adaptor plate, 4deg	•	•		
	8°	30100009	Angle adaptor plate, 8deg	•	•		
	15°	30100008	Angle adaptor plate, 15deg	•	•		
	Customer Specified	30100010	Angle adaptor plate, Generic	•	•		

Options	Туре	Article number	Article description			
	Premium license	30100014	Premium SW License	•		
	Shutter Option	30100036	CLEAVEMETER Shutter Option	•	•	•
	Autofocus Option	30100037	CLEAVEMETER Autofocus Option		•	\square

CLEAVEMETER LIGHT[™]

Optical fiber end-face interferometer with three-dimensional

- Full resolution surface topography reconstruction
- 2D view of surface topography and pointwise slope
- 3D view of surface topography with camera and lighting control
- Extremely accurate, operator-independent measurements of cleave ar and surface flatness over arbitrary diameters
- Optional pass/fail indication of cleave angle for fast operation in production environments

The CLEAVEMETER LIGHT[™] is a non-contact interferometer designed for inspecting the end-faces of cleaved or polished optical fibers with cladding diameters of 125 µm to 800 µm. It gives immediate and precise information on important end-face properties such as flatness, perpendicularity, hackles and dust. Based on the NYFORS CLEAVEMETER 3D[™] design, in addition to displaying sharp fringe patterns it also generates three-dimensional images of the cleaved fiber end.

When used in this mode, the surface topography is reconstructed from the fringe pattern and presented graphically as a three-dimensional image of the fiber end. By rotating the image and adjusting the scale and contrast, the surface quality and cleave angle at different points can be analyzed in close detail, allowing for a more comprehensive understanding and accurate interpretation of the data and the cleaving process. While this capability is always important to cleave quality analysis, it is especially helpful when analyzing cleaving results of fibers with complicated structures such as polarization-maintaining fibers, or micro-structured fibers. Information on surface topography can also be saved to a file for further analysis using third-party software.

Extremely accurate measurements of both cleave angle and surface flatness over arbitrary diameters can be performed on the reconstructed end-face surface. These measurements are carried out automatically, with full operator independence. This makes the system well-suited not only for detailed cleave quality analysis in laboratory environments but also for close production monitoring where software features such as optional pass/fail indication of cleave angle help ensure that consistent cleave quality is maintained over long periods of continuous cleaving operation.

In addition to cleave angle measurements, the system can also be used to measure a number of other properties such as plane angles, fiber diameters and distance measurements. The software allows the user to view the pointwise slope across the whole fiber end-face, a very useful tool for spotting small scale irregularities and crack propagation behaviour.



Adaptor plates are available for both perpendicular and angled cleave measurements. The mechanical design is compatible with all NYFORS automatic fiber cleavers and accepts the fiber holders used with these tools, as well as those of major splicer manufacturers. Custom-made adaptor plates are available upon request. The CLEAVEMETER LIGHT[™] comes in a small, ergonomic benchtop design and connects to the USB port of a PC running the host application.

	TECHNICAL DATA
Fiber cladding	125-800 µm
Fiber coating	250-1500 μm
Camera resolution	1280×1024 pixels
Image scale	1.25 µm per pixel
Image file format	8-bit JPEG, PNG, TIFF, BMP/24- bit BMP for surface topography
PC connection	USB 2.0 port
Power supply	Through USB port
Dimensions	97 mm (W) x 179 mm (D) x 142 mm (H)
Weight	1.6 kg
Absolute accuracy	0.01 degrees standard deviation* Relative accuracy
Relative accuracy	5 %

* This level of accuracy requires the adaptor plate angle error to be measured/compensated for on each individual CLEAVEMETER LIGHT[™] the holder is used with. For more information about system accuracy, please contact us at info@nyfors.com.

GLASS PROCESSING AND TAPERING/END CAP SPLICING/FIBER TO FIBER SPLICING





UPDATEL

NYFORS offers fusion splicing and glass processing solutions utilizing clean and contamination free CO_2 laser heating. The SMARTSPLICER is a versatile product platform designed for the manufacturing of high power and sensitive photonics components.





The Eurostars Programme is powered by EUREKA and the European Community

SMARTSPLICER™

- Contamination free heating with CO₂ laser
- Patented Axicon Splicing[™] optical beam shaping technology for uniform and highly precise annular laser power distribution
- No consumables such as process gas, filaments or electrodes needed
- Horizontal or vertical operation Gravity Splicing™
- User friendly design with intelligent tool holders

E!7422 Smart Splice.

GLASS PROCESSING AND TAPERING/END CAP SPLICING/FIBER TO FIBER SPLICING

SMARTSPLICERTM UPDATED



CO₂ laser system for fiber splicing and glass processing

- For cladding diameters up to 2.5 mm
- User friendly design with intelligent tool holders
- New viewing window to watch during processing
- Autofocus cameras reduces operator involvement
- Patent pending Axicon Splicing[™] optical beam shaping technology for uniform and highly precise annular laser power distribution
- Vertical operation for Gravity Splicing™
- No consumables such as process gas, filaments or electrodes needed
- Run camera views separately allowing one monitor to control process and the other to watch the process
- Contamination-free and reliable splicing
- High process reproducibility, real-time process control
- High mechanical strength of splice connections
- No maintenance and calibration of heat source (advantage against electrodes and filaments)

SPECIFIC AREAS OF USAGE:

• No gases or compressed air needed

• Splicing single or multiple fiber to end caps up to 60+ mm diameter

- End cap splice of a large variety of diameters (1-60+ mm)
- · For fiber to fiber splicing cladding diameters from
- 125µm to 2.5 mm
- Splicing of fiber arrays
- · End caps for beam delivery
- Manufacturing of ball lenses
- Splicing of thin fibers with large end caps
- Splicing of AR-coated end caps
- PC-based real-time controller with windows interface
- · Recording and control of process data
- · Easy export and evaluation of process data, pictures and videos



SPECIFICATIONS FOR SMARTSPLICER

Heating Source

Laser Safety

Laser Beam Shaping

Laser Beam Control

Applicable Fiber Diameter

Typical Splice Loss

Typical Splice Strength

Applicable End Cap Diameter

Cameras

Measurement capabilities

Tool Holders

- X/Y stage resolution
- Maximum Z travel Length
- Z Travel resolution
- Maximum Taper Ratio
- Taper speed
- **Device Control**









(\bullet \bullet









PCF / END CAP SPLICING



END CAP SPLICING



END CAP SPLICING



MULTI FIRER END CAL to end caps for Directed Energy & Fiber Array splicing

Ring formed CO, laser beam

Emergency laser cut off Class 1 laser system Optional configured to Class 4

Laser ring focus and diameter directly controllable by operator

High power stability Optional feedback system can be equipped 80 µm to 2500µm

<0.1 dB

Same as original material

1 to 60+mm

Two side view cameras for aligning processes Field of view: 2.68 mm horizontal & 3.56 mm vertical Optional bottom view camera for end cap alignment Optional end view camera for PM and PCF fiber alignment

Measurement of processes and final component with cameras Force sensors for process control

Optional additional measurement equipment

NYFORS fiber holders (optional) End cap holders (optional) Rotators for PM or PCF fibers (optional)

0,02 µm

180+ mm

0,4 µm (optional 0,025µm)

1:10

Typically 2 mm/sec

Complete control with built in computer and specialized software USB connection **Optional Network capabilities** Optional PCI-express cards

100 - 240 VAC



GLASS PROCESSING AND TAPERING/END CAP SPLICING/ **FIBER TO FIBER SPLICING**

NYFORS offers fusion splicing and glass processing solutions utilizing clean and contamination free CO₂ laser heating. The SMARTSPLICER is a versatile product platform designed for the manufacturing of high power and sensitive photonics components.



GLASS PROCESSING AND TAPERING/END CAP SPLICING/FIBER TO FIBER SPLICING







The Eurostars Programme is powered by EUREKA and the European Community

SMARTSPLICER 1.5 [™]

- Fittings mount onto an optical table or sits on a work table ٠
- Better portability than original SMARTSPLICER™
- New viewing window to watch during processing
- Autofocus camera reduces operator involvement
- Camera detach runs camera views separately allowing
- one monitor to control process and the other to watch the process
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- For fiber to fiber splicing cladding diameters up to 2.5 mm
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E!7422 Smart Splice.

GLASS PROCESSING AND TAPERING/END CAP SPLICING/FIBER TO FIBER SPLICING

SMARTSPLICER 1.5



CO₂ laser system for fiber splicing and glass processing

- Fittings mount onto an optical table or sits on a work table
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MF HOLLOW CO







PCF / END CAP SPLICING



END CAP SPLICING



END CAP SPLICING



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		Accessories	for SMARTSPLICE	R	RTSPLICER	XTSPLICER1.5
Fiber holder	Туре	Cladding diameter	Article number	Article description	SMAF	SMAF
	Mini-holder	80µm		Fiber holder, 80µm	•	•
	Mini-holder	125µm		Fiber holder, 125µm	$ \cdot $	•
	Mini-holder	155µm		Fiber holder, 155µm	\cdot	•
	Mini-holder	180µm		Fiber holder, 180µm	•	•
	LD-holder	250µm		Fiber holder, 250µm, LD	•	•
	LD-holder	300µm		Fiber holder, 300µm, LD	•	•
	LD-holder	350µm		Fiber holder, 350µm, LD	•	•
	LD-holder	400µm		Fiber holder, 400µm, LD	•	•
	LD-holder	480µm		Fiber holder, 480µm, LD	$ \cdot $	·
	LD-holder	550µm		Fiber holder, 550µm, LD	•	•
	LD-holder	660µm		Fiber holder, 660µm, LD	•	•
	LD-holder	770µm		Fiber holder, 770µm, LD	•	•
	LD-holder	800µm		Fiber holder, 800µm, LD	•	•
	LD-holder	850µm		Fiber holder, 850µm, LD	•	•
	LD-holder	900µm		Fiber holder, 900µm, LD	•	•
	LD-holder	1000µm		Fiber holder, 1000µm, LD	$ \cdot $	•
	LD-holder	1100µm		Fiber holder, 1100µm, LD	$ \cdot $	•
	LD-holder	1200µm		Fiber holder, 1200µm, LD	•	•
	LD-holder	1550µm		Fiber holder, 1550µm, LD	•	•
	LD-holder	1850µm		Fiber holder, 1850µm, LD	 •	·
	LD-holder	2100µm		Fiber holder, 2100µm, LD	 •	•
	LD-holder	2500µm		Fiber holder, 2500µm, LD	 •	•

Endcap holder Type		Endcap diameter	Article number	Article description		
	Endcap	1mm		Endcap holder, 1mm	•	$\overline{\cdot}$
	Endcap	1,8mm		Endcap holder, 1,8mm	•	•
	Endcap	2mm		Endcap holder, 2mm	•	•
	Endcap	3mm		Endcap holder, 3mm	•	•
	Endcap	4mm		Endcap holder, 4mm	•	•
	Endcap	5mm		Endcap holder, 5mm	•	•
	Endcap	6mm		Endcap holder, 6mm	•	•
	Endcap	8mm		Endcap holder, 8mm	•	•
	Endcap	10mm		Endcap holder, 10mm	•	•
	Endcap	12mm		Endcap holder, 12mm	•	$ \cdot $
	Endcap	15mm		Endcap holder, 15mm	•	•
	Endcap	16mm		Endcap holder, 16mm	•	•
	Endcap	20mm		Endcap holder, 20mm	•	$ \cdot $
	Endcap	0,25in		Endcap holder, 0,25in	•	•
	Endcap	0,5in		Endcap holder, 0,5in	•	•
	Endcap	1,8-65mm		Chuck 1,8-65mm	•	•
	Endcap	1in		Special Endcap holder, 1in	•	•
	Endcap	2in		Special Endcap holder, 2in	•	•

Fiber end-face alignment	Туре	Article number	Article description		
	Rotational unit top		Fiber rotator for the top holder	•	•
Rotational unit bottom			Fiber rotator for the bottom holder	•	•
	Extendable end-face mirror arm		Mirror arm for fiber end-face inspection	•	•
	Prealignment rotator		External pre-alignment unit for fiber rotational alignment	•	•

Accessories	Туре	Article number	Article description		
	Water chiller (EU)		Recirculating water chiller for cooling the laser, for EU	•	•
	Water chiller (US)		Recirculating water chiller for cooling the laser, for USA	•	•
	End view camera		Camera for bottom view (view through Endcap)	•	•
	Endcap tool holder		For holding the Endcap stages and the Chuck	•	•
	Top tool holder		For holding the top fiber holder	•	•
	Bottom fiber holder		Fiber holder stage bottom	•	•
	Small Endcap stage		Stage for Endcap holders between 1-12mm	•	•
	Large Endcap stage		Stage for Endcap holders between 12-20mm	•	•
	Multi fiber endcap stage		Endcap holder for multi-fiber splicing	•	•
	Combiner speed loader		For preparing combiners / fiber bundles	•	•
	Absolute positioning mirror mounts		Stable mirror positions for laser beam alignment	•	•
	Fiber cleaving unit		Integrated fiber cleaving	•	•



splice done with Axicon Splicing™ technology. To the left is a End-cap splicing The SMARTSPLICER ${\tt M}$ 1.5 is a versatile tool for end-cap microscopic view of a fiber to end-cap splice. The closed dousplicing. The picture to the right above shows a high resoluble ring shows a closed fillet weld implying a high mechanical tion photograph showing a typical multimode fiber to end-cap strength. Photo courtesy of Fraunhofer IOF.



Tapering, glass processing

 $The {\it photograph shows a tapered capillary with collapsed center}.$ Tapering of capillaries is important for making fiber bundles and different fiber combiners. Photo courtesy of Fraunhofer IOF.





CUSTOM ENGINEERING

Besides producing standard products, we can also assist with developing customised fiber processing systems. Custom solutions for applications such as volume fiber optic gyroscope manufacturing.



CUSTOM ENGINEERING



OPTICAL FIBER PROCESSING AUTOMATION INTEGRATION

HIGH QUALITY FIBER PROCESSING TOOLS

NYFORS is your leading partner in highly automated optical fiber processing devices. Our Optical Fiber Processing Automation Integration custom solutions are the next step to both lower cost and improve the quality of high-volume optical fiber processes.

AUTOMATION AT THEIR CORE

Our tools are built with automation at their core, with all steps from alignment to processing being taken care of by the tools. Each of our stand-alone models handles 1 or 2 functional steps, including Fiber Stripping, Cleaning, Cleaving, Fusion Splicing (or other glass processing such tapering, shaping, lensing, etc.), Recoating, Test, and Inspection. But NYFORS offers solutions to take the automation one step further.

CUSTOM SOLUTIONS FOR AUTOMATED PRODUCTION ENVIRONMENTS

We design custom solutions for our customers in the fields of fiber lasers, medical devices, defense and aerospace applications, telecommunications devices, and sensing, by implementing individual modules into their existing automated environment. This further lowers the cost and improves the quality and consistency of splices in medium to high volume production environments.

FLEXIBLE AND OPEN

NYFORS is the only supplier of Fiber Processing equipment to offer this flexibility for modular automation capability to its customers, thanks to the open mechanical and software interfaces of our products, which enable the use of different types of fiber holders and remote process control.



CONSULTING

During our more than thirty years in business, we have accumulated technical knowledge covering most aspects of fiber handling and preparation. Specific areas of expertise include system automation, manufacturing, process development, specialty fiber processing and software development. We also design add-ons and make modifications to standard manufacturing equipment.

GET IN TOUCH

If you would like more information about our products, applications and services, please contact our headquarters in Stockholm, Sweden. All our products are designed and manufactured in Sweden.





