



# Products for Installation and Testing of Fiber Optic Networks

PRODUCT PORTFOLIO



## Data networks are an important part of our modern communication

Without broadband access, no apps on smartphones would be able to push news in real time or streaming services would not be able to serve countless home cinemas. Fully automated production streets would not run and the logistics behind it would not work. That is why data networks have become irreplaceable for a modern society and crucial for the success of companies.

- No other technology achieves such high transmission rates as fiber optics.
- No other transmission medium can provide so much bandwidth and capacity for so many users.
- Fiber optics guarantees a very high level of interference safety and longevity.

With the construction of a fibre-optic network, municipalities and cities are enhancing the quality of life and the future of their region as a business location and securing jobs in the long term. Public bodies such as public authorities or schools benefit from the state-of-the-art technology as well as companies that depend on fast and stable Internet on a daily basis.

Despite the numerous advantages of the fiber optic network, certain requirements must not be ignored during installation. It requires increased care and cleanliness in the assembly of the connectors as well as a check after installation for errors or consistency.

NetPeppers provides suitable tools and measuring devices for installing and testing the components. Thanks to a perfectly coordinated product portfolio, you will have the right tools during installation to rule out errors.

Because well-functioning networks are our passion! With our portfolio and our expertise, we would like to welcome you to the modern and future-proof age of fiber optics.

Silvia Nebel & Korbinian Meier  
NetPeppers GmbH

Successfully install and test fiber optic networks



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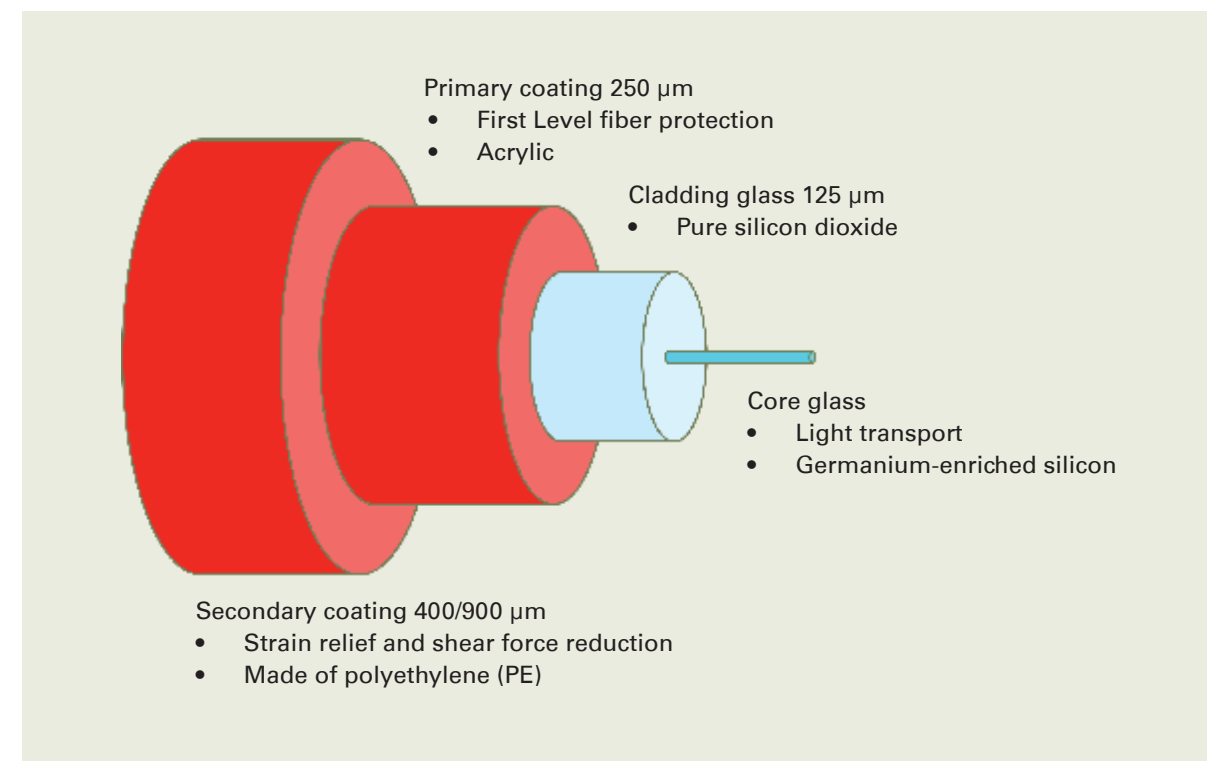
Good to know!

## Fiber Optic Basics

### Why Fiber Optic Installations?

Increasingly higher data rates over long distances and decreasing costs for fiber optic installations are **gradually** displacing copper cabling, for example in the form of coax or twisted-pair cables. The use of glass as a transmission medium also has physical advantages: the transmission is much less susceptible to interference that can hinder the transmission. In the case of copper cabling, for example, parameters such as NEXT, FEXT, ACRF and other electrical parameters must also be considered in measurement technology. None of this exists with fiber optics. Only two factors limit the range: the attenuation and the modal bandwidth. While the latter is determined only by the cable manufacturer, in field measurement technology the installer is left with only one factor that must be tested: the attenuation. Falling costs for tools and materials are also making installation increasingly economical. The following applies: the installation of fiber optics is not necessarily more difficult than laying and assembling copper cabling. It's just different. Therefore: no reservations!

### Fiber Optic in detail



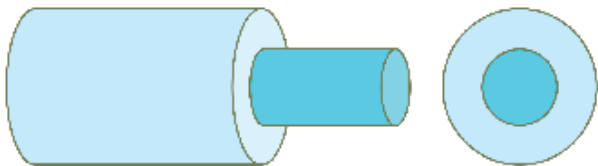
In the world of fiber, two types are distinguished: The so-called „multimode“ fibers transport several light modes in the core, the „singlemode“ fibers only one. The different structure of the two fiber types makes their deployment useful in different applications.



Good to know!

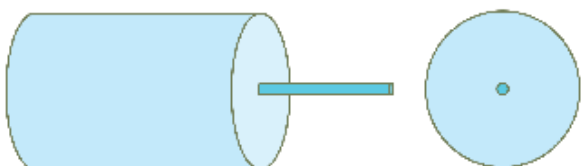
# Basic Fiber Optic

## Multimode



Cladding diameter 125 µm      Core diameter 50/62,5 µm

## Singlemode



Cladding diameter 125 µm      Core diameter 9 µm



Multimode	Singlemode
Suitable for short and medium connection lengths up to several hundred meters and average data rates	Suitable for long link lengths of up to several thousand km and high data rates
Launch via LED or VCSEL laser at 850 nm and 1300 nm wavelength	Launch by VCSEL laser at 1310 and 1550 nm wavelength
Inexpensive active components	Expensive active components
Expensive fiber (per meter)	Inexpensive fiber (per meter)
Used mainly in back-bone and FTTD- (Fiber To The Desk) applications in local networks	Used to be typical in the wide area network, today the standard in the entire FTTX range
Cost-effective for short links, expensive for long links	Cost-effective for long links, increasingly cheaper for short links
Increasingly irrelevant in the FTTX space	Also suitable for FTTX and in-house cabling due to the lower bending radii of current fibers

## Common single-mode fiber optic types in the FTTX range

### ITU-T G.652.D

- Minimal bending radius of 30 mm
- Standard fiber for access networks
- Now replaced by ITU-T G.657.A1

### ITU-T G.657.A1

- Minimal bending radius of 10 mm
- Splicing with G.652 fibers possible
- Optimized access installation regarding macro bending

### ITU-T G.657.A2 or G.657.B2

- Minimal bending radius of 7,5 mm
- Use in applications where the smallest bending radii are required

Test & Measurement



Visual Fault Locator for a quick test of fiber links for breaks and bends

# VLP50

The VLP50 is an essential tool for quick and easily testing and identifying problems in fiber cables. By revealing the exact location of fiber breaks and bends you can fast diagnose, troubleshoot, and fix faults on your fiber links.



## Troubleshooting in seconds

Find faults in your fiber optic installation quickly and reliably. Identify breaking points on 2.5 and 1.25 mm connectors and jacks.

## Strong endurance

Over fifty working hours with a set of common AA batteries and the robust aluminum housing make this laser source a long-term companion.

## Which fiber is it?

The integrated flashing mode makes it easy to find the right fiber end up to a distance of five kilometers.



Technical Data	Visual Fault Locator VLP50
Output power	1 mW
Range	5 km
Laser type	FP-LD
Wavelength	650 nm ± 10 nm
Operating mode	continuous or flashing
Output connector	2,5 mm universal adapter (SC/ST/FC/E2000), 1,25 mm adapter (LC/MU)
Modulation frequency	2 - 3 Hz
Order no.	NP-FIBER50

### Highly compatible

- The VLP50 is equipped with a 2.5 mm interface and is therefore compatible with SC, ST, FC and E2000 connectors.
- In addition, the kit includes a 1.25 mm adapter for LC and MU connectors.
- The robust aluminum housing protects against damage to the tester. The batteries of the device in the quick-access battery tray can be replaced at any time and guarantee an operation of more than 50 working hours.

## Features

EASY TO USE | FAST AND EASY LOCALIZATION OF ERRORS | DESIGNED TO OPERATE IN HARSH ENVIRONMENT | LONG BATTERY LIFE



## Good to know!

## TIER1 certification

Overview of measurement methods

Level 1 certification is a measurement of the total insertion loss of a link from its beginning to end using a laser light source and a power meter. The losses of all connectors, splices and the fiber itself contained in the link are included in this attenuation value. A statement as to whether the fiber optic installation is good or bad is made by comparison with a calculated attenuation budget.

## Attenuation Measurement

Maximum permissible attenuation for fiber optic components according to ISO/IEC 11801-1 and EN 50173-1:2018

Multimode	Fiber Category	Color codes
3.5 dB/km @ 850 nm	OM1 – OM4	
1.5 dB/km @ 1300 nm	OM1 – OM4	
3.0 dB/km @ 850 nm	OM5	
1,5 dB/km @ 1300	OM5	

Singlemode	Fiber Category	Color codes
1.0 dB/km @ 1310 and 1550 nm	OS1	
0.4 dB/km @ 1310 and 1550	OS2	

Connector loss (dB) = number of connector pairs \* loss per connector pair (dB)

Maximum permissible loss per connector according to ISO/IEC 11801 = 0.75 dB (singlemode/multimode)

Splice Loss (dB) = number of splices (S) \* loss of splice (dB)

Maximum permissible attenuation per splice according to ISO/IEC 1180 = 0.3 dB

Example calculation with 1 jumper - reference method

## Attenuation budget

Attenuation of the link = fiber cable loss + connector loss + splice loss		
0,1 km fiber length x 3.5 dB/km attenuation Coefficient at 850 nm and OM4	= 0,35 dB cable attenuation	
2 connectors x 0,75 dB loss per connector	= 1,5 dB connector loss	
2 splices x 0,3 dB loss per splice	= 0,6 dB splice loss	
Total attenuation:	= 2,45 dB	





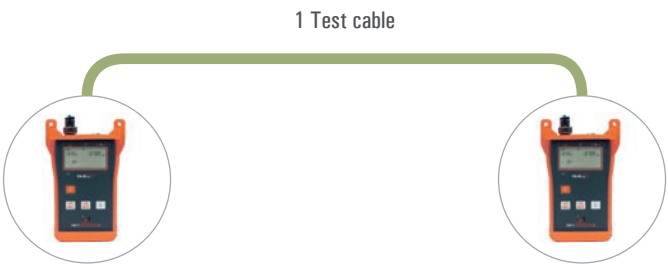
Good to know!

# Referencing methods

Overview the reference setting methods

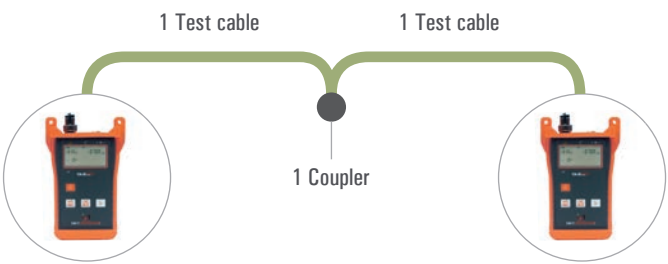
## „One Jumper“ Method

- One test cord for reference setting
- Disconnect after reference setting on power meter and insertion of a second test cable of known quality
- Preferred method for determining attenuation according to ISO/IEC 14763-3: 2019-05
- Measurement of both start and end connectors of the installation and cable attenuation



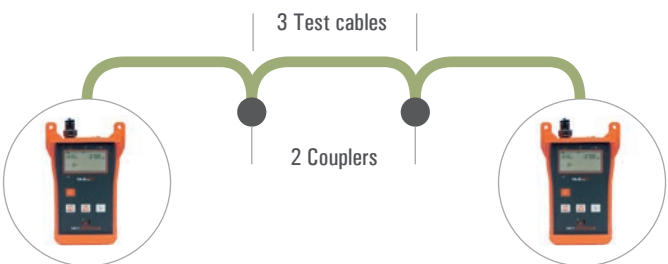
## „Two Jumper“ Method

- Two test cords and a coupler for setting reference.
- Simple application, but only measurement of one connector during measurement process.
- Disconnect after reference setting at coupler.



## „Three Jumper“ Methode

- Three test cords and two couplers for setting reference.
- Most complex method.
- Mainly used for special connector types such as MPO.



Optical Laser Source for Singlemode Optical Fiber

# OLS150SM

The OLS150SM laser light source guarantees fast measurement times without long warm-up for precise and reproducible results.

The OLS150SM supports 1310/1550nm wavelengths and indicates the quality of fiber optic links together with the power meter OPM100.

## High quality loss testing for everyone

Fiber optic measurement technology doesn't have to cost much. This singlemode light source generates stable, calibrated values immediately after switching on – without annoying waiting time.

## Flexible adaptation to SM cabling

Thanks to its two FP-LD 1310 and 1550 nm laser diodes, the light source is used together with the power meter OPM100 to measure the insertion loss. SC/ST and FC connectors can be connected directly via interchangeable adapters.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child's play.



Technical Data	Optical Light Source OLS150SM
Calibrated Wavelength	1310nm/1550nm
Display	LCD
Output Power	≥ -7 dBm
Output Mode	CW, 270Hz, 1KHz, 2KHz
Emitter Type	FP-LD
Connector Type	FC/PC (interchangeable SC/PC and SC/ST)
Spectrum variation	≤ 5nm
Stability	±0.05dB/15min, ±0.15dB/ 8hr@ 1310/1550nm
Battery life	≥ 13 hrs
Order no.	NP-FIBER150SM



## Features

EASY TO USE | SM FIBER OPTIC INSTALLATIONS | BROAD APPLICATION | STABLE LIGHT SIGNAL  
STURDY HOUSING



Optical Laser Source for Multimode Optical Fiber

# OLS150MM

The OLS150MM laser light source guarantees fast measurement times without long warm-up for precise and reproducible results.

The OLS150MM supports 850/1300nm wavelengths and indicates the quality of fiber optic links together with the power meter OPM100.

## High quality loss testing for everyone

Fiber optic measurement technology doesn't have to cost much. This multimode light source generates stable, calibrated values immediately after switching on – without annoying waiting time.

## Flexible adaptation to MM cabling

Thanks to its two FP-LD 850 and 1300 nm laser diodes, the light source is used together with the power meter OPM100 to measure the insertion loss. SC/ST and FC connectors can be connected directly via interchangeable adapters.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child's play.

Technical Data	Optical Light Source OLS150MM
Calibrated Wavelength	850nm/1300nm
Display	LCD
Output Power	≥ -7 dBm
Output Mode	CW, 270Hz, 1KHz, 2KHz
Emitter Type	FP-LD
Connector Type	FC/PC (interchangeable SC/PC and SC/ST)
Spectrum variation	≤ 5nm
Stability	±0.05dB/15min, ±0.15dB/ 8hr@ 1310/1550nm
Battery life	≥ 13 hrs
Order no.	NP-FIBER150MM

## Features

EASY TO USE | MM FIBER OPTIC INSTALLATIONS | BROAD APPLICATION | STABLE LIGHT SIGNAL  
STURDY HOUSING



Optical Power Meter for Fiber Optic Cables

# OPM100

The power meter is used to measure the optical power level (dBm) in telecommunications and CATV fiber optic networks. The power meter can also be used in conjunction with an optical laser source such as the OLS150MM or OLS150SM from NetPeppers to determine the insertion loss.

## Simple determination of the optical power level

The determination of the optical power level enables fast trouble-shooting with high demands on accuracy.

## All-in-One Power Meter

Thanks to its six supported wavelengths, the OPM100 is at home in any network.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child's play.

Technical Data	Power Meter OPM100
Calibrated Wavelength	850/1300/1310/1490/1550/1625 nm
Application Range	Single/Multimode fiber
Connector	FC (interchangeable SC, ST)
Battery life	≥ 25 hrs
Sensor type	InGaAs
Accuracy	(dB): ±5%±0.01nW(±0.5dB@850nm)
Order no.	NP-FIBER100

## Features

BEST PRICE TO PERFORMANCE RATIO | FAST AND ACCURATE | LARGE AREA OF APPLICATION  
ADAPTERS FOR SC/ST





Fiber Optical Test Kit

# OLT100SM-KIT

Measuring fiber optic connection must be done after installation, before going live, as well as during operation in order to function error free. So far, corresponding measuring devices have often been very expensive. NetPeppers’ new fiber optic loss test kit is a cost effective solution for standard-compliant, highly accurate measurement results.

## High quality loss testing

Fiber optic measurement technology doesn’t have to cost much. This singlemode light source generates stable, calibrated values immediately after switching on – without annoying waiting time.

## Flexible adaptation to SM cabling

Thanks to its two FP-LD 1310 and 1550 nm laser diodes, the light source is used together with the power meter OPM100 to measure insertion loss. SC/ST and FC connectors can be connected directly via interchangeable adapters.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child’s play.



Technical Data	Optical Light Source OLS150SM	Power Meter OPM100
Calibrated Wavelength	1310nm/1550nm	850/1300/1310/1490/1550/1625 nm
Application Range	1310nm/1550nm	
Connector	FC/PC (interchangeable SC/PC and SC/ST)	
Signal type	CW, 270 Hz, 1 kHz, 2 kHz	
Stability	± 0.05dB/15min, ± 0.15dB/ 8hr@ 1310/1550 nm	
Battery life	≥ 13 hrs continuous use	≥ 25 hrs continuous use
Auto Off	after 5 min. inactivity	
Order no.	NP-OLT100SM	

## Features

BEST PRICE TO PERFORMRANCE RATIO | FAST & ACCURATE | ADAPTERS FOR SC/ST



Fiber Optical Test Kit

# OLT100MM-KIT

Measuring fiber optic connection must be done after installation, before going live, as well as during operation in order to function error free. So far, corresponding measuring devices have often been very expensive. NetPeppers’ new fiber optic loss test kit is a cost effective solution for standard-compliant, highly accurate measurement results.

## High quality loss testing

Fiber optic measurement technology doesn’t have to cost much. This multimode light source generates stable, calibrated values immediately after switching on – without annoying waiting time.

## Flexible adaptation to MM cabling

Thanks to its two FP-LD 850 and 1300 nm laser diodes, the light source is used together with the power meter OPM100 to measure insertion loss. SC/ST and FC connectors can be connected directly via interchangeable adapters.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child’s play.



Technical Data	Optical Light Source OLS150MM	Power Meter OPM100
Calibrated Wavelength	850nm/1300nm	850/1300/1310/1490/1550/1625 nm
Application Range	850nm/1300nm	
Connector	FC/PC (Interchangeable SC/PC and SC/ST)	
Signal type	CW, 270 Hz, 1 kHz, 2 kHz	
Stability	± 0.05dB/15min, ± 0.15dB/ 8hr@ 850/1300 nm	
Battery life	≥ 13 hrs continuous use	≥ 25 hrs continuous use
Auto Off	after 5 min. inactivity	
Order no.	NP-OLT100MM	

## Features

BEST PRICE TO PERFORMRANCE RATIO | FAST & ACCURATE | ADAPTERS FOR SC/ST





Fiber Optical Test Kit

# OLT100 QUAD-KIT

Measuring fiber optic connection must be done after installation, before going live, as well as during operation in order to function error free. So far, corresponding measuring devices have often been very expensive. NetPeppers' new fiber optic loss test kit is a cost effective solution for standard-compliant, highly accurate measurement results.

## High quality loss testing

Don't worry about compatibility in attenuation measurement: This kit covers multimode as well as singlemode networks and various connectors.

## Measuring does not have to be cumbersome

The self-explanatory operation and the easy-to-read display make loss testing child's play.

## One Power Meter for everything

Thanks to the support of six common wavelengths (SM/MM), the power meter can be easily combined with the two high-performance light sources.



Technical Data	Optical Light Source OLS150SM	Optical Light Source OLS150MM	Power Meter OPM100
Calibrated Wavelength	1310nm/1550nm	850nm/1300nm	850/1300/1310/1490/1550/1625 nm
Application Range	1310/1550/850/1300 nm		
Connector	FC/PC (interchangeable SC/PC and ST/PC)		
Signal type	CW, 270 Hz, 1 kHz, 2 kHz		
Stability	±0.05dB/15min, ±0.15dB/ 8hr@ 850/1300/1310/1550 nm		
Battery life	≥ 13 hrs continuous use	≥ 13 hrs continuous use	≥ 25 hrs continuous use
Auto Off	after 5 min. inactivity		
Order no.	NP-OLT-QUAD		

## Features

BEST PRICE TO PERFORMRANCE RATIO | FAST & ACCURATE | ADAPTERS FOR SC/ST

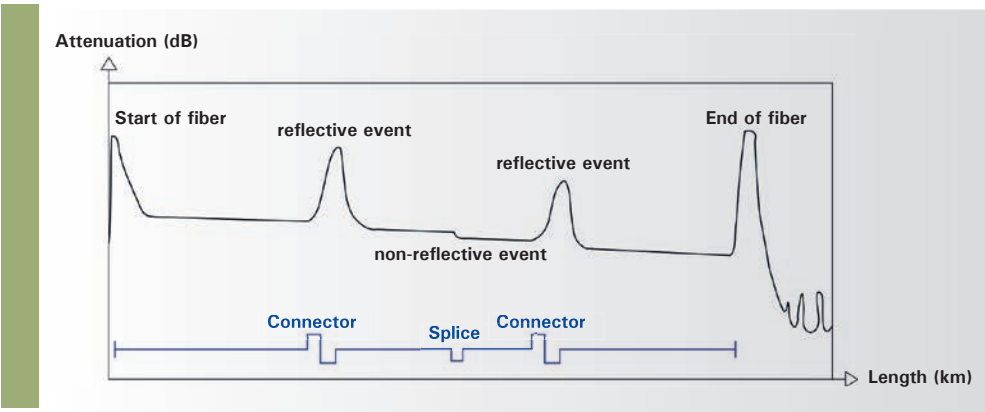


Good to know!

## TIER 2 certification

Overview of measurement methods

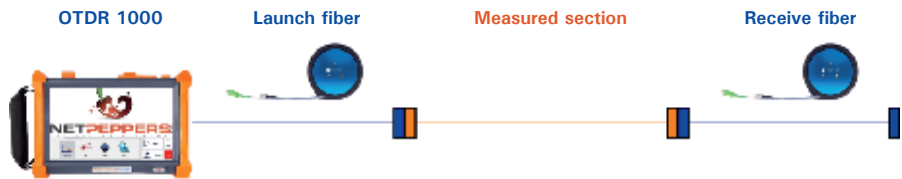
Level 2 certification measurements are complementary to Level 1 with the use of an optical time domain reflectometer, also called OTDR. In a graphical representation of the measurement section, individual connectors, splices, faults and the fibers themselves are shown with positional accuracy. The essential advantage compared to a measurement according to level 1 is that problem areas with high insertion or return loss can be localised this way. This means that the problem can be solved more quickly and efficiently.



An OTDR uses the principle of optical time domain reflectometry. A light pulse coupled into the fibre is either reflected or absorbed at various points in the fibre optic path. The backscattering of such „events“ is detected by the device and assigned a position in metres by the known transit time of the light.

Non-reflective event	Reflective event
APC-Connectors	UPC-Connectors
Fiber breakage on singlemode fiber (noise afterwards)	Open fiber end or last connector
Macrobend	Mechanical splice
Microbend	
Fusion splice	

## Measurement setup



The typical measurement setup consists of a launch fiber (to mask out the connector on the device side), the actual measured section and a receive fiber (to correctly observe the last connector of the measured section).



Optical fiber – OTDR

# OTDR1000

The OTDR1000 with its integrated Quad OTDR for fiber optic network certification, offers enough capabilities for applications in FTTX, LAN and WAN networks based on its high dynamic range (up to 38 dB single mode).

## Extremely user-friendly

Modern platform concept focused on the user experience – easy to use.

## Automatic Analysis

Analysis and interpretation of the measurement results as well as PASS/FAIL evaluation

## Easy use with Linkimage

Shows a simplified representation of the measured fiber trace

## User-friendly & modern platform

The OTDR 1000 concept is based on a powerful platform. Only 28 sec. start-up time and ultra fast response of the 8" capacitive touch display ensure frustration-free and time-saving operation, without getting noisy due to active cooling.

The simple layout of the user interface, where every function of the OTDR 1000 is only one click away ensures intuitive operation and dispenses with mechanical buttons altogether. The large battery guarantees a full day's runtime, and the memory for storing hundreds of measurement results avoids the constant transfer of reports due to space constraints.

## Integrated Quad OTDR

At the heart of the system is the integrated Quad OTDR. Its high dynamic range (up to 38 dB single mode) offers enough reserves for applications FTTX, LAN and WAN networks. No matter whether for the initial installation of fiber optic connections, campus cabling, in the backbone or for the maintenance of fiber optic networks, with the most common wavelengths for singlemode (1310/1550nm) and multimode (850/1300nm), the user is prepared for everything – even splitters up to a ratio of 1:16 can be measured.

Due to the low attenuation dead zone of only 4 m (SM) and an event dead zone of 1 m the OTDR 1000 is especially suitable for short fiber links in the in-house area.



Optical fiber – OTDR

# OTDR1000

Technical Data	OTDR1000
Display	8,0" (20,32 cm) color touch LCD (capacitive)
Resolution	800 x 480 Pixel
Connectivity	2 x USB 2.0 1 x RJ45 LAN (10/100 Mbit/s) 1 x VFL 2,5 mm Ferrule UPP (universal push pull), adapter available 1 x OPM SC (interchangeable) 1 x OTDR SM SC/PC (interchangeable FC, ST, LC) 1 x OTDR MM SC/PC (interchangeable FC, ST, LC) 1 x 16V DC Power
Memory	8 GB (6 GB free to store results)
Battery	Li-Ion 7,4 V DC, 37 Wh, 5000 mAh
Battery life	10 hours continuous operation, operation possible during charging
A/C Adapter	Input: AC 100 – 240 V, 50/60 Hz, max. 1,5 A Output: 16 V DC, max. 3,75 A
Dimensions	235 x 159 x 75 mm (L x W x H)
Weight	1,59 kg (incl. battery)
Manual	(EN, DE) enclosed
Supported languages	English, German
Data transfer	USB-Stick, FTP access
Boot-Time	appx. 28 s
Operating system	Linux
Remote control by PC	Yes (VNC)
Dynamic range	23 db (850nm) 28 db (1300nm) 38 db (1310nm) 36 db (1550nm)
EDZ (Event Dead Zone)	1 m
ADZ (Attenuation Dead Zone)	4,5 m (850/1300nm) 4 m (1310/1550nm)
Distance measure accuracy	±(1m + 10·5x distance + sample spacing)
Attenuation detect accuracy	±0.05 dB/dB
Reflex accuracy	±4 dB/dB
Distance measurement	Automatic or using two markers
Length units	Kilometers, feet and miles
Selectable range	SM: 1,3; 2,5; 5; 10; 20; 40; 80; 160; 240 km MM: 1,3; 2,5; 5; 10; 20; 40 km
Selectable pulse width	SM: 5ns, 10ns, 30ns, 100ns, 300ns, 1µs, 2,5µs, 10µs, 20µs MM: 5ns, 10ns, 30ns, 1µs, 2,5µs
Averaging time	Quick, 15s, 30s, 45s, 60s, 90s, 120s, 180s
Measurement methods	Automatic, manual, 2-point, 5-point, LSA
Laser class	1 M
Laser	LD-Laser
Order-No.	NP-FIBER1000

## Connectivity of the OTDR 1000

2 x USB 2.0  
1 x RJ45 LAN (10/100 Mbit/s)

1 x 16V DC Power

1 x OTDR SM SC/PC (exchangeable FC, ST, LC)

1 x OTDR MM SC/PC (exchangeable FC, ST, LC)

1 x OPM SC (exchangeable)

1 x VFL 2,5 mm Ferrule UPP (universal push pull), Adapter available



## Features

FOR UNIVERSAL USE | FOR ALL COMMON WAVELENGTHS | EASY OPERATION | FOR FTTX AND IN-HOUSE CABLING | REPORTING

Futura powered by NetPeppers

# Fiber Launch Leads for OTDR measurement

Fibernet’s Futura launch fiber is a special fiber that is placed at the start of a measurement section in an OTDR measurement. The fiber is essential for a standard-compliant measurement and eliminates unwanted effects of the device on the measurement section. Using launch and receive fiber ensures measuring the first and last connector of a link correctly.

## Customizable

Customer-configuration of different lengths and all common fiber optic connectors.

## Ready for immediate use

Unique opening mechanism ensures fast readiness.

## Armored patch cords

Special protection of the cable ends, to avoid high damping due to damage, is ensured.



Technical Data	Futura Launch Lead
Size	Ø = 110 mm X H 50 mm
Weight	0,4 kg
Operating temperature	-33 °C - +90 °C
Insertion loss	< 0,25 dB
Return loss	UPC < -50 dB / APC < -60 dB
Total length	Up to 1.000 m
Length of cable ends	approx. 1,20 m, strain-relieved
Material	ABS and aluminium
Fiber type	SM: G.652.D. – G.657A – G.655 MM: OM1 – OM2 – OM3 – OM4
Connector type	SC / LC / FC / ST / E2000
Connector finish	UPC / APC
Order No.	Configured depending on customer requirement



## Features

SAFELY PACKED | EASY TO USE | FLEXIBLE MOUNTING | PROOF OF QUALITY

Fusion Splicing





Good to know!

Professional solutions for the protection of fusion splices

Splice protection from NetPeppers

Crimp splice protectors for easy application and reliable splice protection

The crimp splice protection sleeves from NetPeppers are ideally suited for use with standard splice cassettes in 19" rack distribution panels, in-house connections and splice boxes and offer optimum protection of the splice site against external influences such as dirt, liquids or mechanical damage. During the crimping process with the original TELENT splice protection press, no unnecessary mechanical stress or insertion loss is applied to the fiber.

Shrink splice protection sleeves for inexpensive and optimum protection against all kinds of environmental influences

NetPepper's shrink splice protection sleeves offer the best protection against environmental influences, as the splice is completely encased in two layers of special plastic after thermal shrinking, making it impossible for dirt or liquids to penetrate. The NP-FS-PROTECT-S-12-30 micro-sleeves with a diameter of only 1.25 mm can be used with conventional splice protector holders for crimp splice protection and thus represent a cheaper and optimally protective alternative to crimp splice protection sleeves.

The splice protection press from TELENT for easy and controlled crimping of crimp splice protection sleeves

The splice protection press from TELENT has been the number 1 tool for pressing crimp splice protectors on the market for decades. This is not least due to its simple and safe application by thumb pressure without any external mechanical/electrical energy.

Decision guidance for splice protector types



Crimp splice protection	Shrink splice protection
+ very fast application	+ very good bend protection
+ press on after splicing process	+ cost effective
+ Telecom certified	+ can be used in integrated shrink oven of splicer, no additional equipment required
+ good protection against dirt/liquids and mechanical strain	+ optimal protection against dirt/liquids and mechanical strain
+ minimal stress on the splice during application	+ can be used with crimp splice protectors (V12-30-54 only)
+ no additional load on splicer battery life due to the use of an integrated shrinking oven	+ splice inspection possible with the help of a visible laser light source (VFL)
+ EN 50411-3-3 compliant	+ EN 50411-3-3 compliant
+ suitable for diameters up to 250 µm	+ suitable for diameters up to 900 µm

For protection against environmental influences

Shrink Splice Protection Sleeves

NetPepper's shrink splice protection sleeves offer the best protection against environmental influences, as the splice is completely enveloped by two layers of special filler plastic after thermal shrinkage. These shrink sleeves make it impossible for dirt or liquids to penetrate.



Safety

Protection against liquids, dirt, as well as mechanical stress

Compatible

To be used with fusion splicers (e.g. NetPeppers CFS-100) with integrated shrink oven

Flexible diameters

Can be used with fibers up to 900 µm secondary coating

Simple and Safe Application

Efficient and inexpensive bend protection

Technical Data	Shrink Splice Protection Sleeve
Suitable for	Bare fibre (125 µm) Primary coating (250 µm) Secondary coating (400 µm/900 µm)
Storage temp.	- 40 up to +60 °C
Operating temp.	- 55 up to +105 °C
Humidity	0 up to 95 % RH
Color	orange-transparent
Suitable for crimp splice holder	Yes (NP-FS-PROTECT-S-12-30)
Order No.	See catalogue page 26



Features

STURDY STEEL PIN AS ANTI-BEND PROTECTION | ORANGE FOR EASIER INSERTION OF THE FIBER  
TRANSPARENT FOR EASY CONTROL WITH VISIBLE LIGHT SOURCE | EN 50411-3-3 COMPLIANT





Protective sleeves for reliable splice protection

# Crimp Splice Protection Sleeves

Crimp splice protection sleeves offer good all-round protection and high compatibility with common standard splice protectors. The sturdy aluminum sleeves are Telecom certified.

## Good protection

Protection against liquids and dirt, as well as mechanical stress.

## Compatibility

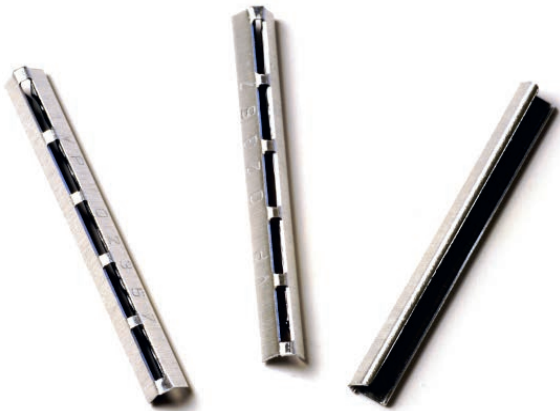
Use of crimp and shrink splice protection sleeves possible with the same splice holders.

## Protection of the fiber

Suitable for fiber diameters up to 250 µm (primary coating),  
No increase in insertion loss.

## Simple and safe application

Crimp splice protection sleeves have been designed for use with a splice protection press.



Technical Data	Crimp Splice Protection Sleeve
Suitable for	Bare fiber (125 µm) / Primary coating (250 µm)
Ø outside	1,2 (+/-0,1) mm, pressed
Height (H)	3,2 (+/-0,1) mm, pressed
Length (L)	30 (+/-0,5) mm, pressed
Storage temp.	- 40 up to +60 °C
Operating temp.	- 55 up to +105 °C
Humidity	0 up to 95 % RH
Color	metallic-silver
Suitable for crimp splice holder	Yes
Order No.	NP-FS-PROTECT-C-12-30 (150 pcs)



## Features

TS 0338/96 CONFORM | EN 50411-3-3 CONFORM | USABLE WITH ALL STANDARD



Controlled pressing of crimp splice protection sleeves

# TELENT Splice Protection Press

The splice protection press from TELENT has been the number 1 tool for pressing crimp splice protection on the market for decades. This is not least due to their simple and safe use by thumb pressure without any additional mechanical/ electrical energy.

## Simple operation

Insert, press, done!

## Proven Concept

Proven system for gentle crimping of metal splice protection sleeves

## Compatibility

Compatible to crimp splice protection sleeves up to 30 mm length.



Technical Data	Telent Splice Protection Press
Suitable for	30 mm crimp splice protection
Ø Fiber	max. 250 µm
Dimensions (hxxwxd)	54 x 22 x 83 mm
Weight	126 g
Material	Plastic and aluminium
TS 0338/96 conformity	Yes
Order no.	NP-FS-PROTECT-PTOOL



## Features

COMPATIBLE TO CURRENT FUSION SPLICERS | EASY TO USE  
FOR SPLICE PROTECTION SLEEVES UP TO 30 MM | GENTLE, UNIFORM CONTACT PRESSURE



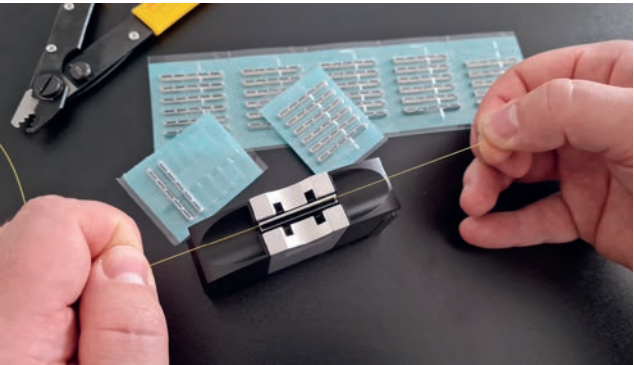
Technical Data | Order Informationen

# Shrink Splice Protection Sleeves and Crimp Splice Protection Sleeves

Order-No.	NP-FS-PROTECT-C-12-30	NP-FS-PROTECT-S-12-30	NP-FS-PROTECT-S-15-30	NP-FS-PROTECT-S-20-45	NP-FS-PROTECT-S-22-45	NP-FS-PROTECT-S-24-45	NP-FS-PROTECT-S-25-45
Type	Crimp	Shrink	Shrink	Shrink	Shrink	Shrink	Shrink
Quantity per Package	150 pcs	100 pcs	100 pcs	100 pcs	100 pcs	100 pcs	100 pcs
Bare fiber (125 µm)	●	●	●	●	●	●	●
Primary coating (250 µm)	●	●	●	●	●	●	●
Secondary coating (400 µm)	–	–	●	●	●	●	●
Secondary coating (900 µm)	–	–	–	●	●	●	●
Ø outside (D)* in mm	1,2 (+/-0,1) mm	1,2 (+/-0,5) mm	1,5 (+/-0,05) mm	2,0 (+/-0,2) mm	2,2 (+/-0,2) mm	2,4 (+/-0,2) mm	2,5 (+/-0,2) mm
Ø inside (d)* in mm	–	0,35 (+ 0,1 ) mm	0,5 (+ 0,1 ) mm	1,2 (+0,1) mm	1,2 (+0,1) mm	1,2 (+0,1) mm	1,2 (+0,1) mm
Height (H)* in mm	3,2 (+/-0,1) mm	1,25 (+/-0,05) mm	1,6 (+/-0,05) mm	2,75 mm	2,95 mm	3,4 mm	3,5 mm
Length (L)* in mm	30 (+/-0,5) mm	30 (+2/-1) mm	30 (+2/-1) mm	45 (+2/-1) mm	45 (+2/-1) mm	45 (+2/-1) mm	45 (+2/-1) mm
Max. shrink temp.	–	110 °C	110 °C	110 °C	110 °C	110 °C	110 °C
Storage temp.	-40 to +60 °C	-40 to +60 °C	-40 to +60 °C	-40 to +60 °C	-40 to +60 °C	-40 to +60 °C	-40 to +60 °C
Operating temp.	-55 to +105 °C	-55 to +105 °C	-55 to +105 °C	-55 to +105 °C	-55 to +105 °C	-55 to +105 °C	-55 to +105 °C
Humidity	0 to 95 % RH	0 to 95 % RH	0 to 95 % RH	0 to 95 % RH	0 to 95 % RH	0 to 95 % RH	0 to 95 % RH
Color	silver-metal	orange-transparent	orange-transparent	orange-transparent	orange-transparent	orange-transparent	orange-transparent
Suitable for crimp splice holder	Yes	Yes	No	No	No	No	No
EN 50411-3-3	F1-NA-30-P-00	S1-12-30-P-XX6	S1-16-40-PXX6	S1-20-45-A-XX6	S1-22-45-A-XX6	S1-24-45-A-XX6	–
TS 0338/96 conformity	Yes	–	–	–	–	–	–

\* Values apply to the pressed/shrunk state

Order No.	Description Splice Protectors	Quantity
NP-FS-PROTECT-S-12-30	Shrink splice protection, 1,2 mm Dm, 30 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-S-15-30	Shrink splice protection, 1,5 mm Dm, 30 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-S-20-45	Shrink splice protection, 2,0 mm Dm, 45 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-S-22-45	Shrink splice protection, 2,2 mm Dm, 45 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-S-24-45	Shrink splice protection, 2,4 mm Dm, 45 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-S-25-45	Shrink splice protection, 2,5 mm Dm, 45 mm length	1 Pckg = 100 pcs
NP-FS-PROTECT-C-12-30	Crimp splice to protect splice connections (Secure strain relief and protection of splice connection, installation with separately available crimp press).	1 Pckg = 150 pcs



Core Alignment Fusion Splicer for Professionals

# CFS-100

The core alignment, 3-axis controlled fusion splicer is the perfect companion for splicing small and large projects. The lightweight and flexible splicer allows splicing of all common fibers in average of 9 seconds splicing time.

## State-of-the-Art Splicing Technology

Thanks to the core centering and convenient automatic functions, the CFS-100 is extremely precise and very easy to use.

## Compatibility that is second to none

Whether multimode or singlemode fibers, pigtails, patch cables or SOC's: The CFS-100 splices all common fiber types

## Workflow at the Splice Station

Set up your splice station according to your likes. Thanks to the foldable display, you can operate the device from the front and back.



Technical Data	Fusion Splicer CFS100
Alignment	Core alignment (3-axis-controlled)
Supported fiber categories	Singlemode, multimode
Fiber types and loss values	ITU-T G.651 (MM) ≤ 0.01 dB (typical) ITU-T G.652 (SM) ≤ 0.02 dB (typical) ITU-T G.653 (SM DSF) ≤ 0.04 dB (typical) ITU-T G.655 (SM NZ-DSF) ≤ 0.04 dB (typical) ITU-T G.657 (SM BIF) ≤ 0.02 dB (typical) EDF ≤ 0.04 dB (typical)
Ø Cladding supported	~ 80 - 150 µm
Ø Coating supported	~ 100 - 1000 µm
Splice time	Ø ≤ 9 s (depending on mode and fiber orientation)
Splices per electrode	≥ 5000 splicing operations
Splice modes	Automatic or manual control
Heating time shrink oven	≤ 25 s, adjustable
Battery life	≥ 200 splice and shrink operations
Scope of delivery	1x Fusion Splicer, 1x Cleaver, pair of electrodes (pre-installed), pair of universal fiber retention clamps (4 in 1), SOC retention clamp, SOC shrink oven retention clamp, Li-Ion battery, cooling tray for shrink oven, power adapter + power cord, micro-USB cable (for data transfer), carrying case, carrying strap for carrying case, quick start guide, manual, calibration certificate, maintenance tools
Order no.	NP-CFS100



For professional splicing of all common fiber types

- The lightweight and flexible precision splicer allows splicing of G.651 fibers with a splice loss below 0.01 dB and of G.652 fibers below 0.02 dB (typical).
- Equipped with detachable universal retention clamps, SOC clamps and internal thermometer and barometer, the CFS-100 can be used anywhere.
- Fast five seconds start up time and an average of nine seconds per splice as well as the automatic heating furnace for shrink sleeves speed up the workflow and lead to more splices per time.

## Features

PRECISE SPLICING RESULTS | UNIVERSALLY APPLICABLE | 4 IN 1 FIBER RETENTION CLAMPS  
FULLY AUTOMATIC | AUTOMATIC SHRINK OVEN | LED LIGHTNING





Optical Fiber Cleaver

# OFC30

OFC30 Optical Fiber Cleaver is a high precision preparation tool in a ruggedized case ready for field use. Prepare fibers up to 125 μm diameter with the OFC30 for fusion or mechanical splicing.

## Precise tool

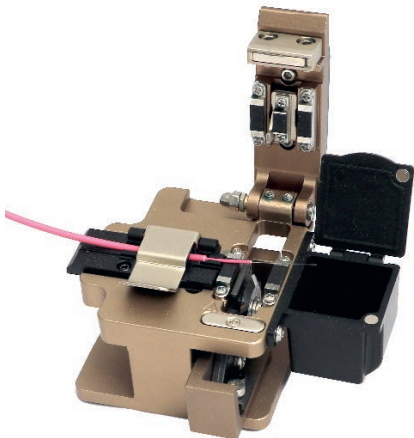
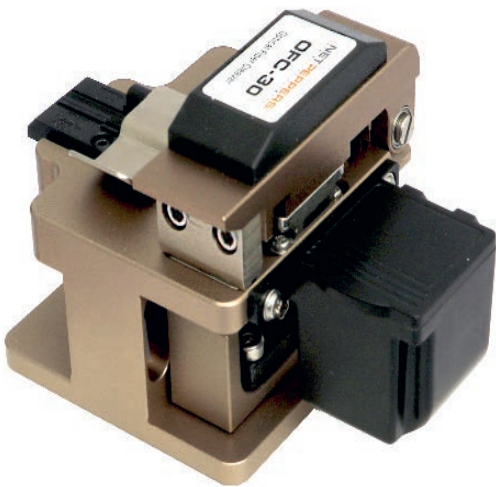
The OFC30 is a reliable companion at any splice place. The integrated scale makes it easier to find the right cutting length and the precision of +/-0.5° avoids tedious reworking.

## High-quality workmanship

CNC-machined carriage and the cover plate allow precise working and smooth sliding of the blade with the smallest tolerances.

## Exchangeable blades

Simply turn the blade one position if the cleaving quality decreases. An exchange of the blades is only necessary after 40,000 cleaves.



Technical Data	Optical Cleaver OFC30
Bare Fiber diameter	125 μm
Coating diameter	Ø 0.25 ~ 3 mm
Fiber type	Single Fiber
Cleave length	5 ~ 25 mm
Cleave angle	90° +/-0.5°
Blade Life	48.000 cleaves
Mode	Semi-automatic
Dimensions (hxwxh)	54 x 58 x 58 mm
Weight	280 g
Order no.	NP-FIBER30

## Features

EASY AND PRECISE PREPARATION | LONG LASTING | EASY TO CARRY | SUSTAINED PERFORMANCE



Fiber Tool Case for installing fiber connections

# NP-Fiber200

The NetPeppers fiber optic tool kit offers all the important tools for data network installation and for the implementation of FTTx connections. It supports field termination as well as the repairs and cleaning of fiber optic connectors.

## More than the sum of its parts

The toolbox includes tools for fiber preparation and cleaning before splicing, for cleaning connectors and for checking the finished fiber installation.

## Quality at a fair price

What's the point of a suitcase with 100 tools and you don't want to work with any? NetPeppers fiber tool case includes high-quality tools to make every application a pleasure.

## Everything has its place

To avoid the tools travelling around loosely, the sturdy case is equipped with a foam insert adapted to the tools. Find every part right away without having to spend time digging.



Order no.	Scope of Delivery Fiber Tool Case	Quantity
NP-FIBER200	VLP50 Visual Fault Locator	1 pc
	LC Cleaning pen	1 pc
	SC Cleaning pen	1 pc
	OFC30 Optical Fiber Cleaver	1 pc
	Miller Stripper® 3-Hole wire stripper	1 pc
	Klein Tools Kevlar cutting pliers	1 pc
	Chemtronics CP400 ChemPads	25 pcs
	Carrying Case	1 pc



## Features

FAST & RELIABLE | UNIVERSALLY USABLE FOR EVERY VENDOR | EASY PREPARATION OF THE FIBER  
FAST & EASY REPLACEMENT OF ACCESSORY

Workstation for mobile splicing

# QuickSplice splice station

QuickSplice is the practical solution for the fast assembly and disassembly of a splice workstation. The flexible, height-adjustable stand ensures ergonomic operation and the work platform ensures a high degree of compatibility with different splicers and tools.

## Full flexibility

The included stand is steplessly adjustable from only 57 cm up to 215 cm, allowing for seated splicing, splicing while standing or on a ladder or just above floor level. The legs can be lowered flush to the floor and do not pose a tripping hazard.

## Compact dimensions

The lightweight aluminum stand and the work platform made of durable synthetic weight only 2.8 kg and, with a maximum length of 59 cm, are easy to handle even in confined spaces.

## Maximum compatibility

Various fittings allow the splicer and other tools to be freely fixed to the work platform. Strong magnets hold pliers and stripping tools in place.



Technical Data	QuickSplice Working Station
Dimension working platform	365 x 260 cm
Transport length tripod	59 cm
Weight platform + tripod	2,8 kg
Height adjustment	87 to 215 cm with raised leg position 57 to 188 cm with lowered leg position
Max. stand width of legs	1,02 m
Mounting	4 magnets, 2 magnetic screw mounts, 1 Hanging bag with tool slots
Worktop modes	tripod or shoulder strap
Splicer mounting	3/8 and 1/4 inch threaded screw connection
Order no.	NP-FIBER-QUICKSPLICE

## Features

LIGHT AND COMPACT | UNIVERSAL AND MANUFACTURER-COMPATIBLE  
QUICK ASSEMBLY | DURABLE AND ERGONOMIC

Cleaning and  
Inspection





Video microscope for inspection and testing of fiber optic connections

# WFM-100

The NetPeppers WFM-100 is a portable video microscope with an integrated battery. It checks fiber optic lines and panels whether they are free of dirt or scratches or whether they are damaged. It is the ideal test instrument for technicians and installers who are involved in the installation of FTTX fiber optic networks and want to install them without any problems.



## Play it safe

Make sure your fiber optic installations are clean and no dirt or damage restricts the availability of IT systems.

## Everything according to standard

WFM-100 features automatic analysis for fiber end faces according to the latest standards.

## Wireless and flexible

Use any Android or Apple device\* to view the microscope image and report.

\*Operating System: Android 4.4 and higher, IOS 8.1 and higher

Technical Data	WFM-100 Fiber Microscope
Magnification	400 x
Resolution	< 1 μm
Light source	Blue LED
Field of view	X: 0,3487 mm · Y: 0,2632 mm
Power supply	Integrated battery, charging via Micro USB
Connection types	Wi-Fi 802.11 a/b/g/n und USB 2.0
Wifi frequency	2.4 GHz
Supported analysis standards	IEC 61300-3-35 and IPC-8497-1
Supported mobile operating systems	Android 4.4 and higher
Order no.	NP-FIBER40

## Features

EASY DOCUMENTATION | AUTOMATIC ANALYSIS | UNIVERSAL APPLICATION | FACILITATES MOBILE WORK  
FIBER EYE2 APP



Technical Data | Order information

# Fiber microscope interchangeable tips

Order No.	interchangeable tips
SINGLE FERRULE INTERCHANGEABLE TIPS	
NP-FIBER40_TIPSET1	WFM-100 Tip Set 1 (Single ferrules) Contains all the probes listed below for single fiber connectors in a sorting box
NP-FIBER40_1.25APC-M	WFM-100 tip 1.25 mm (APC) male
NP-FIBER40_2.5APC-M	WFM-100 tip 2.5 mm (APC) male
NP-FIBER40_E2000-PC-F	WFM-100 tip E2000 (PC) female
NP-FIBER40_FC-APC-F	WFM-100 tip FC (APC) female
NP-FIBER40_FC-PC-F	WFM-100 tip FC (PC) female
NP-FIBER40_LC-APC-F	WFM-100 tip LC (APC) female
NP-FIBER40_OLA-4C	WFM-100 adapter for tip LC (APC) female
NP-FIBER40_SC-APC-F	WFM-100 tip SC (APC) female
NP-FIBER40_ST-PC-F	WFM-100 tip ST (PC) female
INTERCHANGEABLE TIPS MPO	
NP-FIBER40_MPO-APC-F	WFM-100 tip MPO (APC) female
NP-FIBER40_MPO-PC-F	WFM-100 tip MPO (PC) female



Report

SN:FE2\_AA7E3F\_Creation date:2022-11-28 10:03:53

Company	Operator			
Notes				
DataOrder	FiberSN	53		
LocationA	LocationB			
FileName	BA01-1-053-221128-100345.PNG			
Mode	wireless connections			
Test date	2022-11-28 10:03:47			
Fiber type	MM-PC	Standard	IEC-61300-3-35Ed2	
Result	<div><div><div></div></div><div>FAIL</div></div>		ZoneA	<div><div></div></div>
			ZoneB	<div><div></div></div>
			ZoneC	<div><div></div></div>
			ZoneD	<div><div></div></div>

Original Image

Analysis Image

Zones	Defects	Thld   Cnt	Scratches	Thld   Cnt
A	0µm	4 12	3µm	0 0
A'	5µm	0 1		
B	5µm	5 11	5µm	0 0
B'	10µm	0 1		
C				
D	20µm	5 0		
D'	30µm	0 0		

## One-Click cleaning pens and wipes for cleaning fiber connections

## OCP 10, OCP 20 Cleaning pen and cleaning wipes ChemPads

The OCP series has been developed for the easy and reliable cleaning of fiber connectors. By extending the housing, exposed connectors as well as ports integrated in racks can be cleaned using the pressure principle. With the ChemPads you clean your stripped fibers reliably from particles and liquids.



## All common connector types in two cleaning pens

The OCP 10 cleans all SC/ST/FC connectors and 2.5 mm ferrules.

The OCP 20 covers LC/MU connectors and 1.25 mm ferrules.

## Reliable and safe cleaning

Clean grease, dust and other adhesions from any fiber end surface with the original NetPeppers cleaning pens without applying scratches or other damage on the surface.

## No drying out

The individually packed cleaning wipes guarantee a long storage life and are immediately available in action.



Technical Data	Cleaning Pen OCP 10	Cleaning Pen OCP 20
Cleaning cycles	> 800	> 800
Extendable	Yes	Yes
Connector type	SC / ST / FC / 2,5 mm Ferrule	LC / MU / 1,25 mm Ferrule
Order no.	NP-FIBER10	NP-FIBER20
Technical Data	Cleaning wipes Chemtronics CP 400	
Quantity	50 pcs	
Cleaning liquid	Isopropanol Alcohol	
Order no.	NP-FIBERPADS	

## Features

FAST CLEANING | PROTECTS FIBER OPTIC INSTALLATIONS | UNIVERSAL APPLICATION | LONG SERVICE LIFE

## NOTES

[illegible]

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