

Fiber Optics

Light switching, Light transportation, Light distribution



The Quality Connection

kabeltec

PCF

Polymer cladded fibers



Polymer cladded fibers (PCF) have been on the market for many years, standing out by being very robust and easy to assemble.

PCF consists of a glass core with polymer cladding. What is especially important here is good adhesion of the cladding material to the glass core, which does not go without saying because of the different expansion coefficients especially at high temperatures. That is where many products on the market differ most.

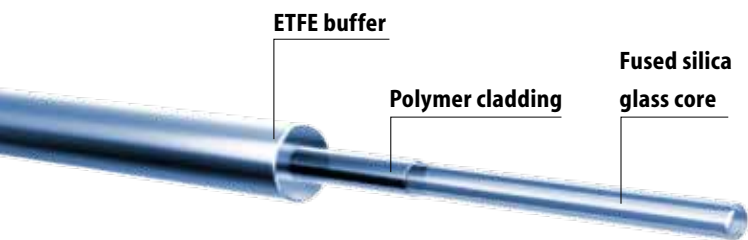
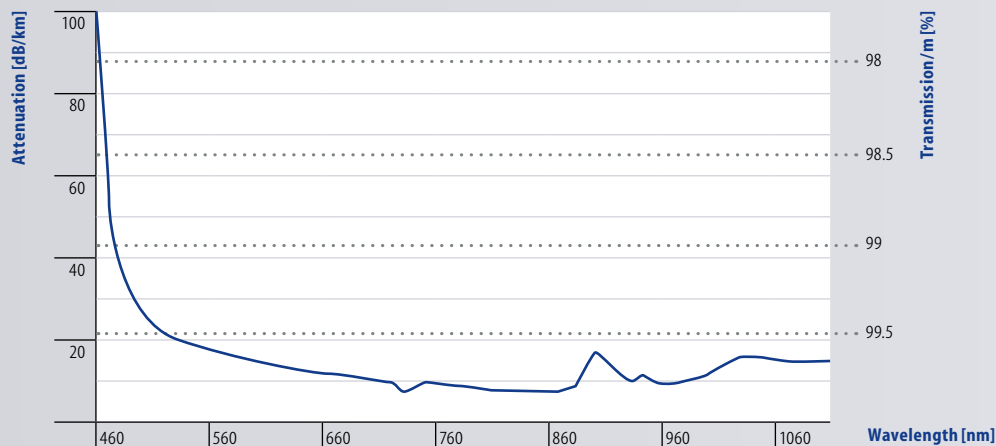
It is also why there are a vast number of different abbreviations for PCF such as PCS, HCS and HPCF. LEONI uses a fiber with $NA = 0.37$, which shows especially low attenuation at 650 and 850 nm, as its standard PCF. The low attenuation makes it possible to bridge distances of up to 500 m in systems designed for POF with 650 nm and distances of up to 4 km in systems with 850 nm.

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PCF fiber specifications

Fiber type
Standard



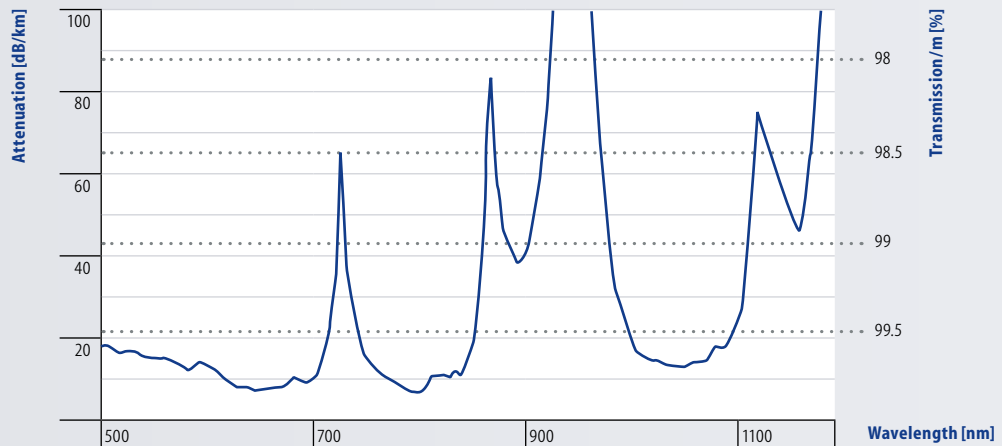
The combination of the PCF consisting of a fused silica glass core and a polymer cladding offers the optimum blend of advantages of POF and glass fibers.

A Tefzel® layer is additionally applied as a buffer to improve the mechanical and thermal properties. The same transmitter and receiver components are used for PCF as for POF (650 nm).

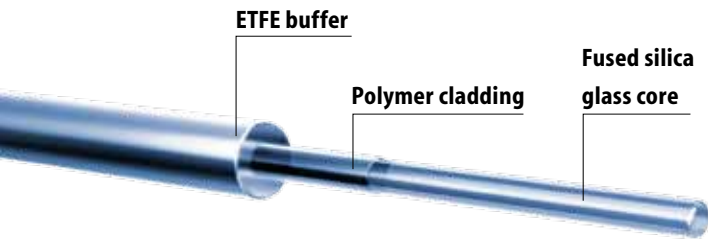
| Polymer clad fiber (PCF) K200/230 | | | | | | | | |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Order no. | 84850001T | 84850002T | 84850003T | 84850004T | 84850005T | 84850006T | 84850007T | 84850008T |
| Transmission properties | | | | | | | | |
| Core [µm] (±2%) | 125 | 200 | 300 | 400 | 600 | 800 | 1000 | 1500 |
| Cladding [µm] (±2%) | 140 | 230 | 330 | 430 | 630 | 830 | 1035 | 1535 |
| Attenuation at 850 nm | 12 | 6 | 8 | 8 | 8 | 8 | 8 | 15 |
| Bandwidth [MHz×km] at 850 nm | 20 | 20 | 15 | 13 | 9 | 7 | 5 | N/A |
| NA | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 |
| Mechanical properties | | | | | | | | |
| Short-term bending radius [mm] | 9 | 10 | 15 | 29 | 58 | 73 | 73 | 182 |
| Long-term bending radius [nm] | 15 | 16 | 24 | 47 | 94 | 94 | 118 | 295 |

Gradient index PCF

Fiber type
Special



PCF



Standard PCF with 200 µm core diameter and 230 µm cladding is mainly used in industrial automation as well as in the cabling for wind-power and solar-power systems. It offers high mechanical resistance as well as cost-effective and direct connector assembly.

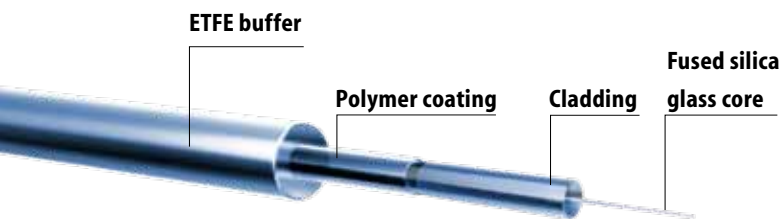
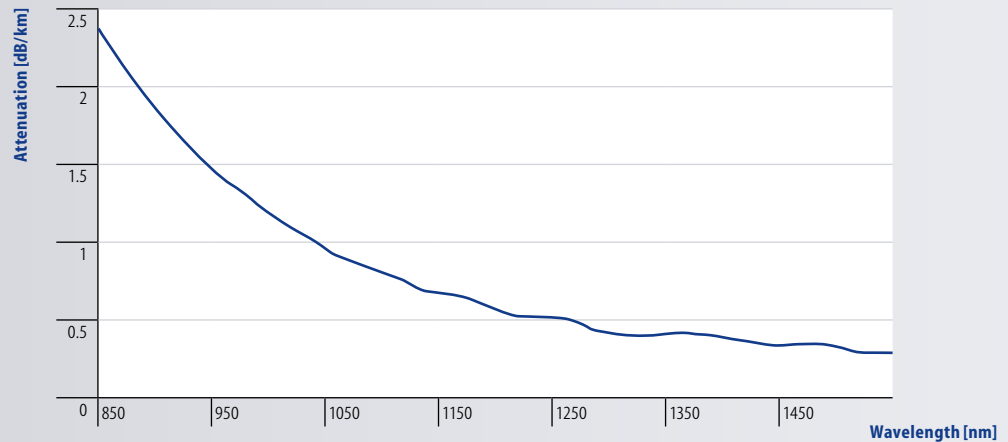
Transmission rates are constantly increasing in industrial settings (up to 10 Gigabit Ethernet), which means that the bandwidth of the standard PCF is no longer sufficient at 15 MHz x km.

The bandwidth of optical fibers with step-index profile such as standard PCF is drastically restricted by the modal dispersion. The use of gradient-index fibers is the best solution to this problem.

Please inform us of your special requirements.

GK 200/230

| Transmission properties | |
|-------------------------------|-----|
| Core [µm] (±2%) | 200 |
| Cladding [µm] (±2%) | 230 |
| Buffer [µm] (±5%) | 500 |
| Attenuation at 850 nm [dB/km] | <12 |
| Bandwidth [MHz×km] at 850 nm | >20 |
| NA | 0.4 |



The cleavable multimode fiber with polymer cladding, ETFE buffer and gradient-index core is the ideal solution for communication applications that require high bandwidths in harsh industrial environments. The adapted PCF fiber design has a positive influence on the fiber properties in terms of service life, mechanical resilience as well as higher moisture and temperature resistance in comparison with standard multimode glass fibers with 62.5 μm core.

The use of a polymer coating also enables connectors to be crimped or clamped directly to the fibers for quick and efficient assembly in the field.

GK 62.5/200/230
Order no. 84850043F
Transmission properties

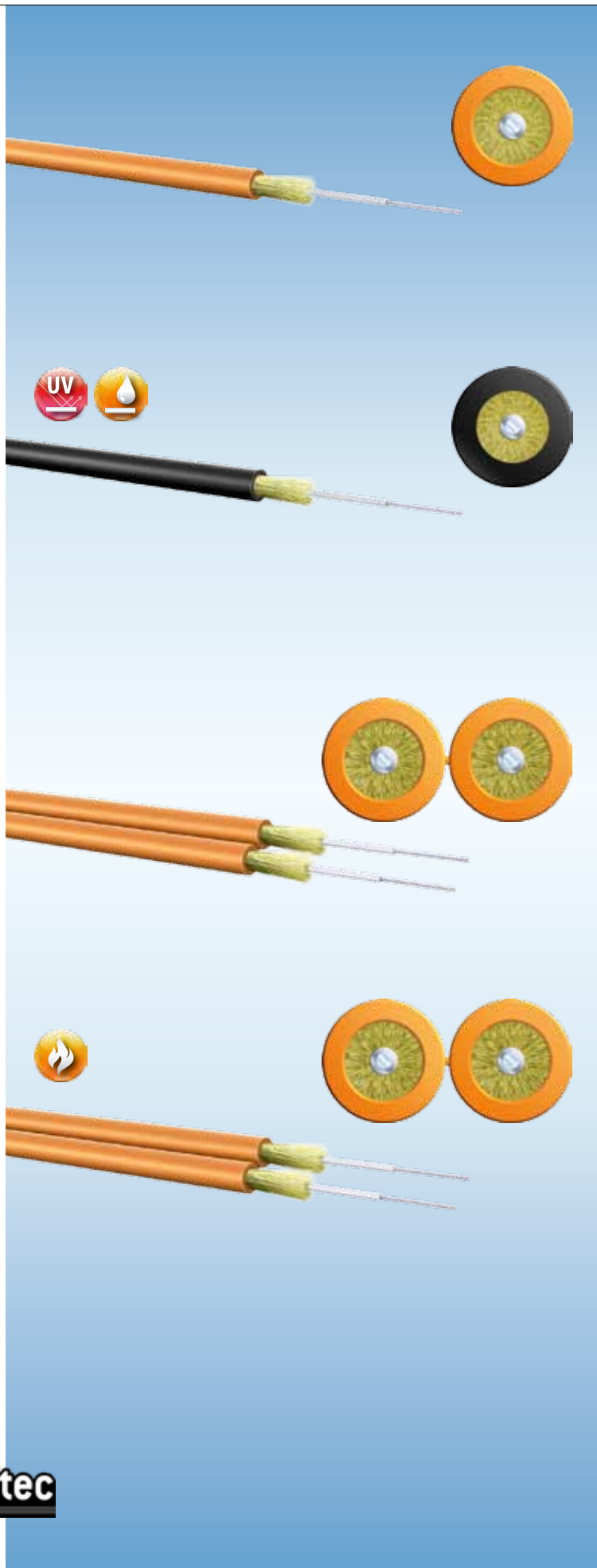
| | |
|------------------------------------------|-------|
| Core [μm] ($\pm 2\%$) | 62.5 |
| Cladding [μm] ($\pm 2\%$) | 200 |
| Coating [μm] ($\pm 2\%$) | 230 |
| Buffer (μm) (+/-5%) | 500 |
| Attenuation at 850 nm | 3.2 |
| Attenuation at 1300 nm | 0.9 |
| Bandwidth [MHz \times km] at 850 nm | 200 |
| Bandwidth [MHz \times km] at 1300 nm | 500 |
| NA | 0.275 |

Mechanical properties

| | |
|--------------------------------|----|
| Short-term bending radius [mm] | 10 |
| Long-term bending radius [mm] | 30 |

- High bandwidth
- Faster, more efficient assembly technology in comparison with SM or MM glass fibers
- Compatibility with PCF cleaving technique and thus reduced overall costs during installation
- High resilience: flexible, resistant to aging, low susceptibility to temperature and humidity
- Compatible transmitter elements: LEDs, laser diodes, VCSELs, RCLEDs

PCF cables



I-V(ZN)Y 1K200/230

| | |
|-------------|--------------------------------------------------|
| Order no. | 84P00300T222 |
| Code no. | 72 |
| Application | Flexible applications with low dynamic stress |
| Assembly | Direct connector assembly |
| Length | 2000 m |

A-V(ZN)11Y 1K200/230

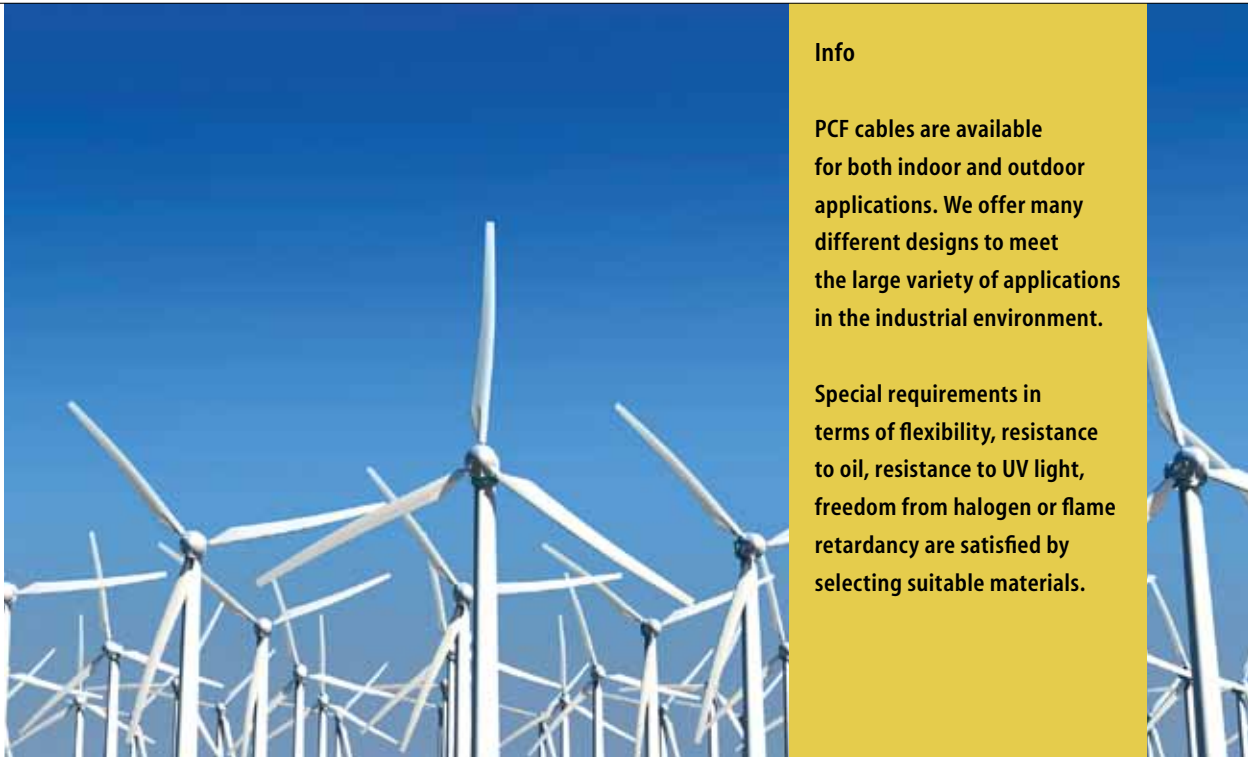
| | |
|-------------|----------------------------------------------------------------------------------------|
| Order no. | 84P00600T000 |
| Code no. | 74 |
| Application | in harsh industrial environments, for flexible installation indoors and outdoors |
| Assembly | Direct connector assembly |
| Length | 2000 m |

I-V(ZN)Y 2X 1K200/230

| | |
|-------------|--------------------------------------------------|
| Order no. | 84Q00300T222 |
| Code no. | 61 |
| Application | Flexible applications with low dynamic stress |
| Assembly | Direct connector assembly |
| Length | 2100 m |

I-V(ZN)H 2X 1K200/230

| | |
|-------------|--------------------------------------------------|
| Order no. | 84Q01000T222 |
| Code no. | 66 |
| Application | Flexible applications with low dynamic stress |
| Assembly | Direct connector assembly |
| Length | 2100 m |



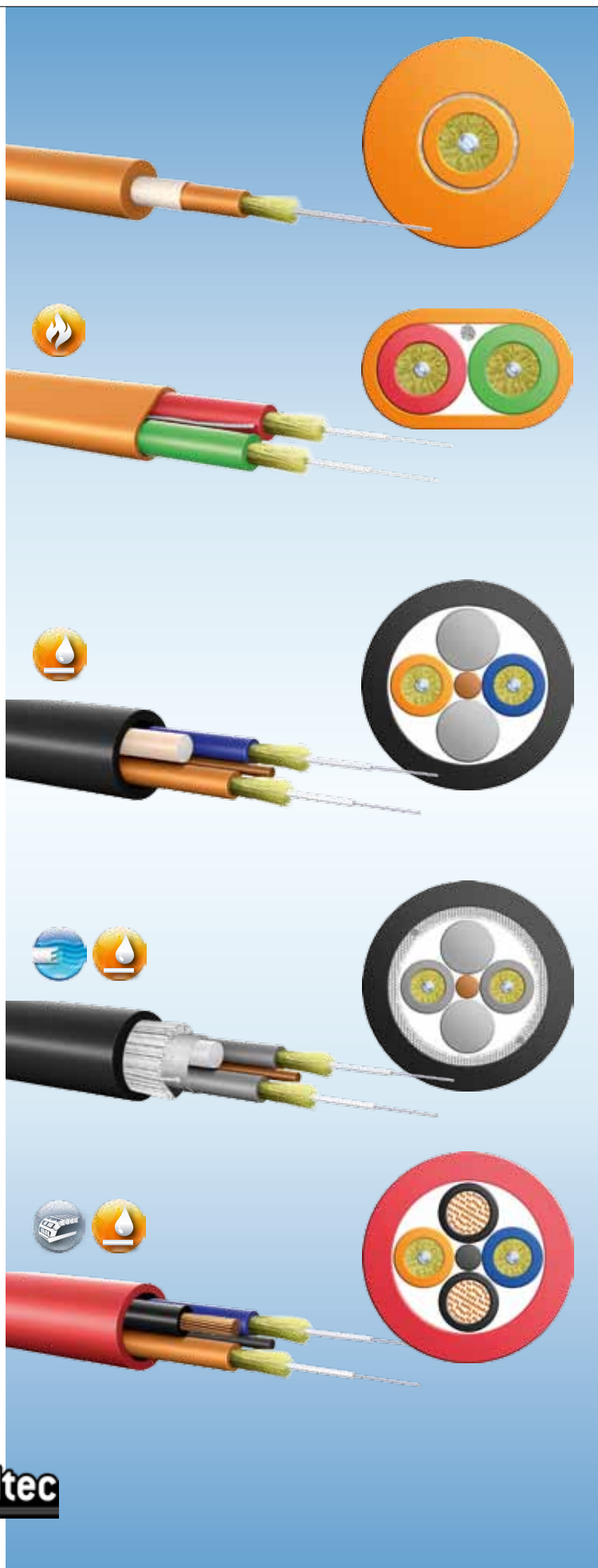
Info

PCF cables are available for both indoor and outdoor applications. We offer many different designs to meet the large variety of applications in the industrial environment.

Special requirements in terms of flexibility, resistance to oil, resistance to UV light, freedom from halogen or flame retardancy are satisfied by selecting suitable materials.

| PCF cable specifications | I-V(ZN)Y 1K200/230 | A-V(ZN)11Y 1K200/230 | I-V(ZN)Y 2X 1K200/230 | I-V(ZN)H 2X 1K200/230 | | |
|------------------------------|-------------------------------|-------------------------|--------------------------|--------------------------|------------|-----|
| Order no. | 84P00300T222 | 84P00600T000 | 84Q00300T222 | 84Q01000T222 | | |
| Composition | Inner jacket material | – | – | – | | |
| | Outer jacket material | PVC | PUR | PVC | FRNC | |
| | No. of PCF elements (200/230) | 1 | 1 | 2 | 2 | |
| | Buffered fiber Ø [mm] | – | – | – | – | |
| | Outer Ø [mm] | 2.2 | 3.0 | 2.2 x 4.5 | 2.2 x 4.5 | |
| Mechanical properties | min. bending radius [mm] | during installation | 60 | 60 | 60* | 60* |
| | | long-term | 30 | 30 | 30 | 30 |
| | max. pull force [N] | short-term | 300 | 800 | 300 | 300 |
| | | long-term | 100 | 400 | 100 | 100 |
| Approx. cable weight [kg/km] | 5 | 6.5 | 10 | 11 | | |
| Thermal properties | Operating temperature [°C] | –20 to +70 | –20 to +70 | –20 to +70 | –20 to +70 | |
| Attenuation | [dB/km] at 650 nm (laser) | <10 | <10 | <10 | <10 | |
| | [dB/km] at 850 nm (LED) | <8 | <8 | <8 | <8 | |

* over flat side

**I-V(ZN)YY 1K200/230**

| | |
|--------------------|--------------------------------------------------|
| Order no. | 84P00900T333 |
| Code no. | 71 |
| Application | Flexible applications with low dynamic stress |
| Assembly | Direct connector assembly |
| Length | 2000 m |

I-V(ZN)HH 2X 1K200/230

| | |
|--------------------|--------------------------------------------------|
| Order no. | 84Q00700T222 |
| Code no. | 64 |
| Application | Flexible applications with low dynamic stress |
| Assembly | Direct connector assembly |
| Length | 2000 m |

I-V(ZN)H2Y 2K200/230

| | |
|--------------------|---------------------------------------------------------------|
| Order no. | 84Q00400T000 |
| Code no. | 63 |
| Application | Splittable cable for fixed indoor and outdoor installation |
| Assembly | Direct connector assembly |
| Length | 2000 m |

AT-VQ(ZN)HB2Y 2K200/230

| | |
|--------------------|-------------------------------------------------------------------------|
| Order no. | 84Q00200T000 |
| Code no. | 75 |
| Application | Splittable cable for fixed installa- tion, longitudinally waterproof |
| Assembly | Direct connector assembly |
| Length | 2000 m |

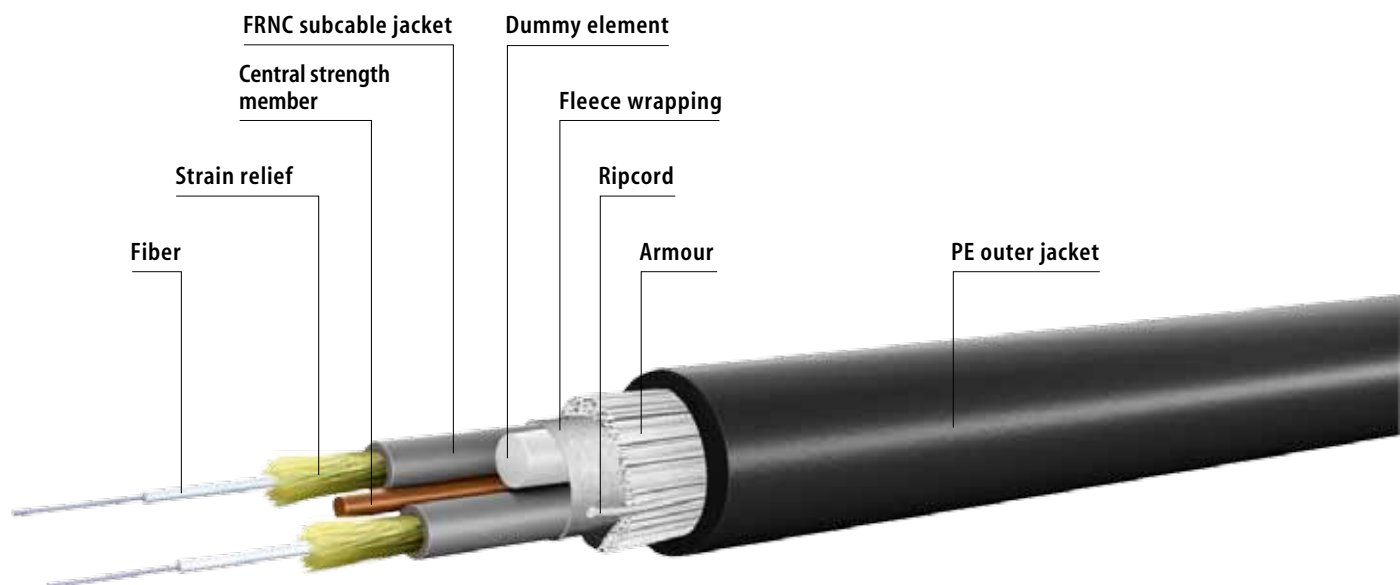
I-V(ZN)Y11Y 2K200/230+2x1qmm

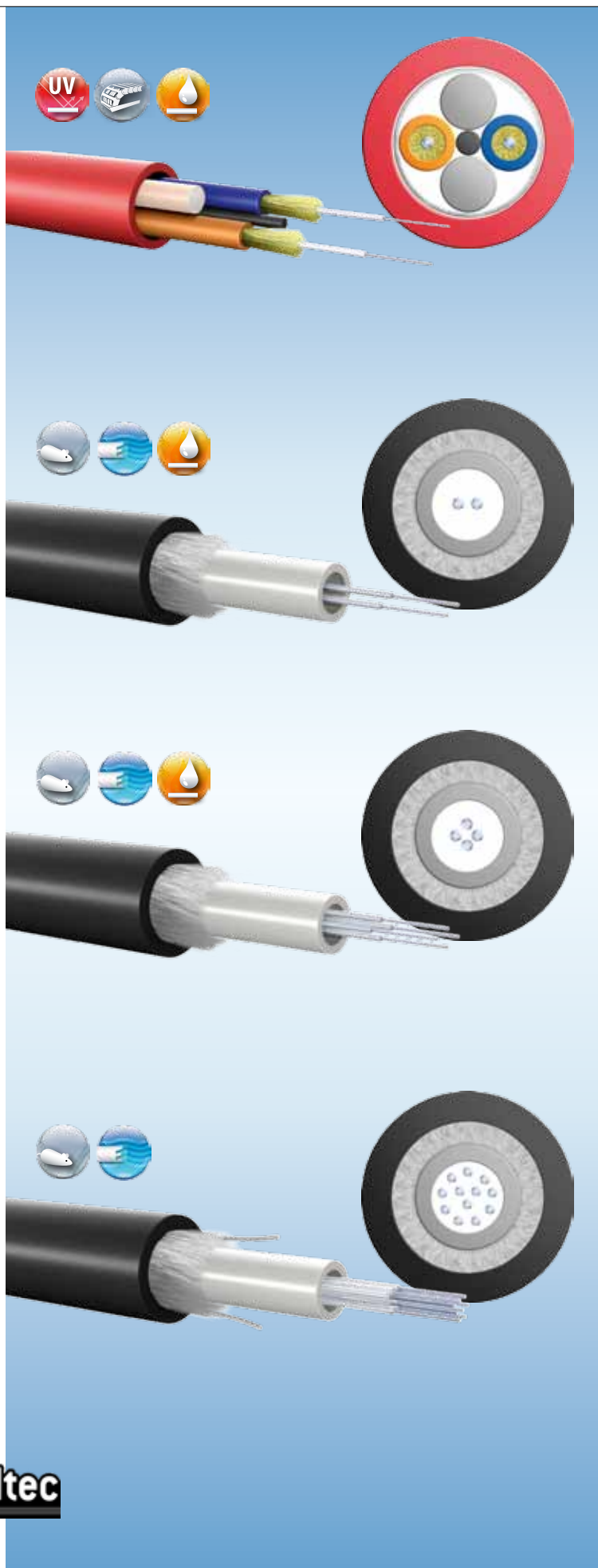
| | |
|--------------------|-------------------------------------------------------------------------------------------------------------------|
| Order no. | 84Q03000T333 |
| Code no. | 62 |
| Application | Splittable indoor cable for harsh industrial environments, for fixed installation, suitable for drag chains |
| Assembly | Direct connector assembly |
| Length | 2000 m |

| PCF cable specifications | | I-V(ZN)YY 1K200/230 | I-V(ZN)HH 2X 1K200/230 | I-V(ZN)H2Y 2K200/230 | AT-VQ(ZN)HB2Y 2K200/230 | I-V(ZN)Y11Y 2K200/230 2x1qmm | |
|------------------------------|-------------------------------|------------------------|---------------------------|-------------------------|----------------------------|------------------------------------|-----|
| Order no. | | 84P00900T333 | 84Q00700T222 | 84Q00400T000 | 84Q00200T000 | 84Q03000T333 | |
| Composition | Inner jacket material | PVC | FRNC | FRNC | FRNC | PVC | |
| | Outer jacket material | PVC | FRNC | PE | PE | PUR | |
| | No. of PCF elements (200/230) | 1 | 2 | 2 | 2 | 2 | |
| | No. of copper elements | – | – | – | – | 2 | |
| | Buffered fiber Ø [mm] | 2.2 | 2.9 | 2.2 | 2.9** | 2.2 | |
| | Outer Ø [mm] | 5.0 | 3.9 x 6.8 | 7.0 | 10.5 | 7.6 | |
| Mechanical properties | min. bending radius [mm] | during installation | 60 | 50* | 70 | 150 | 70 |
| | | long-term | 40 | 30 | 50 | 200 | 50 |
| | max. pull force [N] | short-term | 300 | 800 | 800 | 1500 | 800 |
| | | long-term | 100 | 200 | 200 | 500 | 200 |
| | Approx. cable weight [kg/km] | 28 | 31 | 38 | 90 | 65 | |
| Thermal properties | Operating temperature [°C] | -20 to +70 | -20 to +70 | -20 to +70 | -20 to +70 | -20 to +70 | |
| Attenuation | [dB/km] at 650 nm (laser) | <10 | <10 | <10 | <10 | <10 | |
| | [dB/km] at 850 nm (LED) | <8 | <8 | <8 | <8 | <8 | |

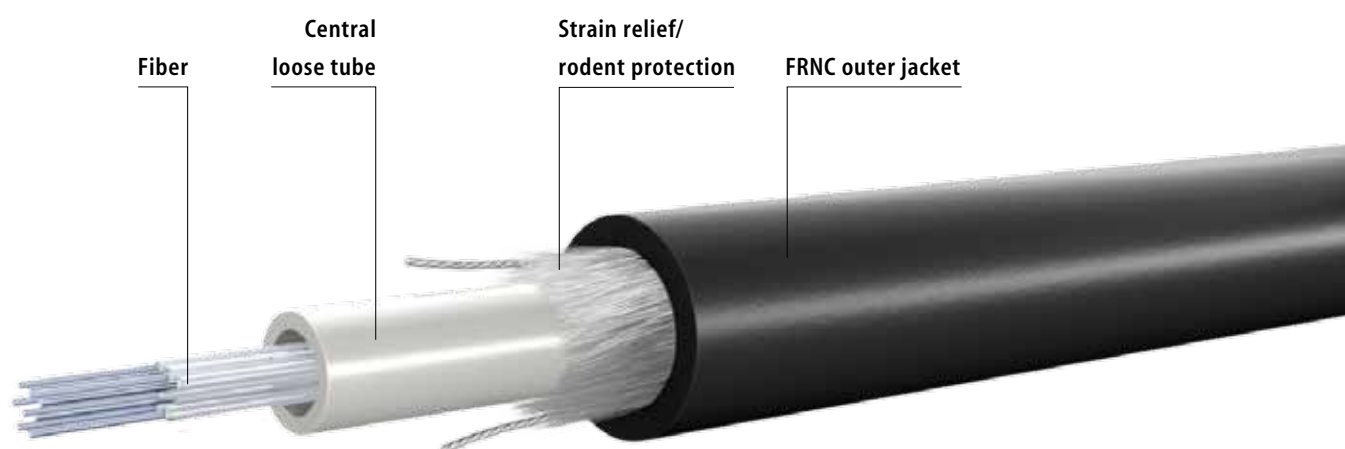
* over flat side

** also special size with Ø 2.2 mm



**AT-V(ZN)Y11Y 2K200/230****Order no.** 84Q04700T333**Code no.** D6**Application** Abrasion-resistant PU jacket, suitable for drag chains, for fixed indoor and outdoor installation**Assembly** Direct connector assembly**Length** 2000 m**A-DQ(ZN)B2Y 2K200/230****Order no.** 84500400T000**Code no.** 76**Application** Longitudinally waterproof cable with non-metallic rodent protection, for fixed installation outdoors, for running directly in the ground**Length** 2000 m**A-DQ(ZN)B2Y 4K200/230****Order no.** 84500800T000**Code no.** D7**Application** Longitudinally waterproof cable with non-metallic rodent protection, for fixed installation outdoors, for running directly in the ground**Assembly** Direct connector assembly**Length** 2000 m**A-DQ(ZN)BH 12K200/230****Order no.** 84500200T000**Code no.** 79**Application** Longitudinally waterproof cable with non-metallic rodent protection, for fixed installation indoors and outdoors**Length** 2000 m

| PCF cable specifications | | AT-V(ZN)Y11Y 2K200/230 | A-DQ(ZN)B2Y 2K200/230 | A-DQ(ZN)B2Y 4K200/230 | A-DQ(ZN)BH 12K200/230 | |
|------------------------------|-------------------------------|---------------------------|--------------------------|--------------------------|--------------------------|------|
| Order no. | | 84Q04700T333 | 84S00400T000 | 84S00800T000 | 84S00200T000 | |
| Composition | Inner jacket material | PVC | – | – | – | |
| | Outer jacket material | PUR | PE | PE | FRNC | |
| | No. of PCF elements (200/230) | 2 | 2 | 4 | 12 | |
| | Buffered fiber Ø [mm] | 2.2 | 3.5 | 4.5 | 4.5 | |
| | Outer Ø [mm] | 7.4 | 7.5 | 8.5 | 8.5 | |
| Mechanical properties | min. bending radius [mm] | during installation | 110 | 150 | 170 | 170 |
| | | long-term | 70 | 110 | 130 | 130 |
| | max. pull force [N] | short-term | 800 | 1500 | 1500 | 1500 |
| | | long-term | 200 | 1200 | 1200 | 1200 |
| | Approx. cable weight [kg/km] | 45 | 47 | 76 | 82 | |
| Thermal properties | Operating temperature [°C] | –40 to +85 | –20 to +70 | –20 to +70 | –20 to +70 | |
| Attenuation | [dB/km] at 650 nm (laser) | <10 | <10 | <10 | <10 | |
| | [dB/km] at 850 nm (LED) | <8 | <8 | <8 | <8 | |



PCF connectors

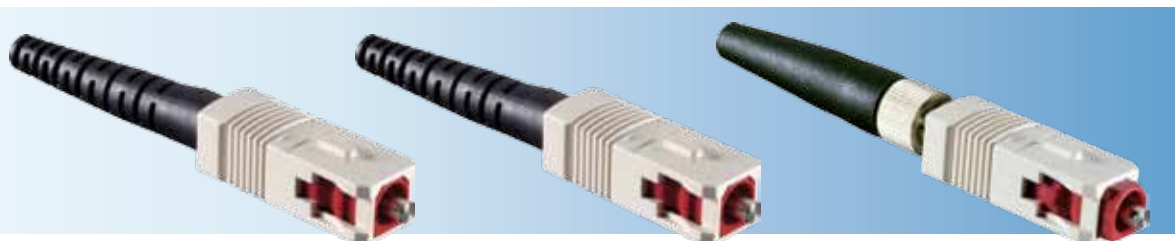


| | F05 connector PCF | F07 connector PCF | FCPC connector PCF |
|-----------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SF05-SC0-08-0010 | SF07-DC0-08-0010 | SFCP-SK0-04-0030 |
| Compatibility | TOCP101Q, TOCP151Q, CF-1571 | TOCP201Q, CF-2071 | – |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Cable Ø | 2.2 mm | 2.2 mm | 2.2 mm |
| Assembly | Crimping/cleaving | Crimping/cleaving | Crimping/gluing/polishing |
| Ferrule | Metal | Metal | Ceramic |
| Reference cable | KF05-F05 72050cm for attenuation measurement 0.5 m | KF07-F07 61050cm for attenuation measurement 0.5 m | KFCP-FCP 72050cm for attenuation measurement 0.5 m |
| Features | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap |
| Assembly | K4 | K4 | On request |



| | HP connector PCF | HP connector PCF | HP connector housing PCF |
|-----------------|-------------------------------------------------------|-------------------------------------------------------|--------------------------|
| Order no. | SXHP-SC0-32-0010 | SXHP-SC0-32-0020 | SGEH-DC0-10-0010 |
| Compatibility | HFBR 4521, V-PIN 2005 | HFBR 4521, V-PIN 2005 | BP 04703 |
| Fiber Ø | 230 µm | 230 µm | – |
| Cable Ø | 2.2 mm | 2.2 mm | 2.2 mm |
| Assembly | Crimping/cleaving | Crimping/cleaving | |
| Ferrule | Plastic | Plastic | |
| Reference cable | KHPS-HPS 72050cm for attenuation measurement 0.5 m | KHPS-HPS 72050cm for attenuation measurement 0.5 m | |
| Features | Incl. crimping sleeve and dust cap | Incl. crimping sleeve and dust cap | |
| Assembly | K5 | On request | |

Special note:
The HP connectors (see left) with the order no. SXHP-SC0-32-0010 must be ordered separately.



SC connector PCF

| | SC connector PCF | | |
|------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SXSC-SK0-02-0010 | SXSC-SK0-02-0020 | SXSC-SW0-02-0010 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Cable Ø | 3.0 mm | 2.2 mm | 2.2 mm |
| Assembly | Crimping/gluing/polishing | Crimping/gluing/polishing | Clamping/cleaving |
| Ferrule | Metal | Metal | Metal |
| Reference cable | KXSC-XSC 72050cm for attenuation measurement 0.5 m | KXSC-XSC 72050cm for attenuation measurement 0.5 m | KXSC-XSC 72050cm for attenuation measurement 0.5 m |
| Features | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap | Incl. black boot and dust cap |
| Assembly | On request | On request | On request |

Connectors for PCF differ not only in terms of their construction, but also in the technology used to attach to the cable (crimping, gluing or clamping) and in the technology used to process the end face. The focus here is on cleaving and grinding or polishing.

PCF connectors



| | LC connector PCF | LC duplex clamp PCF |
|-----------------|-------------------------------------------------------|---------------------|
| Order no. | SXLC-SK0-01-0030 | SKLA-DU0-01-0010 |
| Fiber Ø | 230 µm | – |
| Cable Ø | 3.0 mm | – |
| Assembly | Crimping/gluing/polishing | Clipping |
| Ferrule | Metal | |
| Reference cable | KXLC-XLC 72050cm for attenuation measurement 0.5 m | |
| Features | Incl. crimping sleeve, white boot and dust cap | |
| Assembly | On request | |



| | SCRJ connector duplex IP20 | SCRJ connector duplex IP67 |
|-----------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SSCR-DK0-02-0030 | SSCR-DW0-02-0010 |
| Fiber Ø | 230 µm | 230 µm |
| Cable Ø | 2.2 mm | 2.2 mm |
| Assembly | Crimping/gluing/polishing | Clamping/cleaving |
| Ferrule | Metal | Metal |
| Reference cable | KSCR-SCR 61050cm for attenuation measurement 0.5 m | KSCR-SCR 61050cm for attenuation measurement 0.5 m |
| Features | Incl. black boot and dust cap | Incl. black boot and dust cap |
| Assembly | On request | On request |



FSMA connector PCF

| | | | |
|------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SSMA-SK0-01-0010 | SSMA-SK0-01-0020 | SSMA-SW0-02-0010 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Cable Ø | 2.2 mm | 3.0 mm | 2.2 mm |
| Assembly | Crimping/gluing/polishing | Crimping/gluing/polishing | Clamping/cleaving |
| Ferrule | Metal | Metal | Metal |
| Reference cable | KSMA-SMA 72050cm for attenuation measurement 0.5 m | KSMA-SMA 72050cm for attenuation measurement 0.5 m | KSMA-SMA 72050cm for attenuation measurement 0.5 m |
| Features | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap |
| Assembly | On request | On request | K1 |



FSMA connector PCF

| | | | |
|------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SSMA-SW0-02-0020 | SSMA-SK0-04-0020 | SSMA-SK0-04-0030 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Cable Ø | 3.0 mm | 3.0 mm | 2.2 mm |
| Assembly | Clamping/cleaving | Crimping/gluing/polishing | Crimping/gluing/polishing |
| Ferrule | Metal | Ceramic | Ceramic |
| Reference cable | KSMA-SMA 72050cm for attenuation measurement 0.5 m | KSMA-SMA 72050cm for attenuation measurement 0.5 m | KSMA-SMA 72050cm for attenuation measurement 0.5 m |
| Features | Incl. black boot and dust cap | Incl. black boot and dust cap | Incl. black boot and dust cap |
| Assembly | K1 | On request | On request |

PCF connectors



| ST connector (BFOC) PCF | | | |
|-------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Order no. | SXST-SK0-01-0020 | SXST-SK0-01-0030 | SXST-SK0-04-0030 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Cable Ø | 2.2 mm | 3.0 mm | 3.0 mm |
| Assembly | Crimping/gluing/polishing | Crimping/gluing/polishing | Crimping/gluing/polishing |
| Ferrule | Metal | Metal | Ceramic |
| Reference cable | KXST-XST 72050cm for attenuation measurement 0.5 m | KXST-XST 72050cm for attenuation measurement 0.5 m | KXST-XST 72050cm for attenuation measurement 0.5 m |
| Features | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap | Incl. crimping sleeve, black boot and dust cap |
| Assembly | On request | On request | On request |

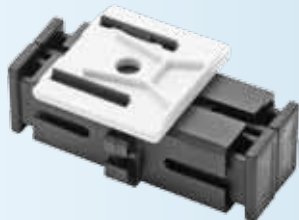


| ST connector (BFOC) PCF | | | E2000 connector PCF | |
|-------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|
| Order no. | SXST-SW0-02-0010 | SXST-SW0-02-0020 | SXST-SW0-02-0030 | SE2K-SC0-45-0010 |
| Fiber Ø | 230 µm | 230 µm | 230 µm | 230 µm |
| Cable Ø | 2.2 mm | 2.5 mm | 3.0 mm | 2.2 – 3.0 mm |
| Assembly | Clamping/cleaving | Clamping/cleaving | Clamping/cleaving | Crimping/cleaving |
| Ferrule | Metal | Metal | Metal | Metal/ceramic |
| Reference cable | KXST-XST 72050cm for attenuation measurement 0.5 m | KXST-XST 72050cm for attenuation measurement 0.5 m | KXST-XST 72050cm for attenuation measurement 0.5 m | KE2K-E2K72050cm for attenuation measurement 0.5 m |
| Features | Incl. black boot and dust cap | Incl. black boot and dust cap | Incl. black boot and dust cap | Incl. boot and dust cap |
| Assembly | K2 | K2 | K2 | On request |

PCF couplings



| | Coupling for LC duplex PCF | Coupling for SC duplex PCF | Coupling for HP PCF |
|----------------------|-----------------------------|----------------------------|---------------------------|
| Order no. | NSKUP-2XXLC-0010 | NSKUP-2XXSC-0010 | SKUP-2XHPS-0010 |
| Compatibility | – | – | AP 04707 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Housing | Plastic with ceramic insert | Metal with ceramic insert | Plastic with metal insert |



| | Coupling for SCRJ PCF | Coupling for FCPC PCF | Coupling for FCPC PCF |
|------------------|-----------------------------|-------------------------|---------------------------|
| Order no. | SKUP-2XSCR-0010 | SKUP-2XFCP-0010 | SKUP-2XFCP-0020 |
| Fiber Ø | 230 µm | 230 µm | 230 µm |
| Housing | Plastic with ceramic insert | Metal with metal insert | Metal with ceramic insert |

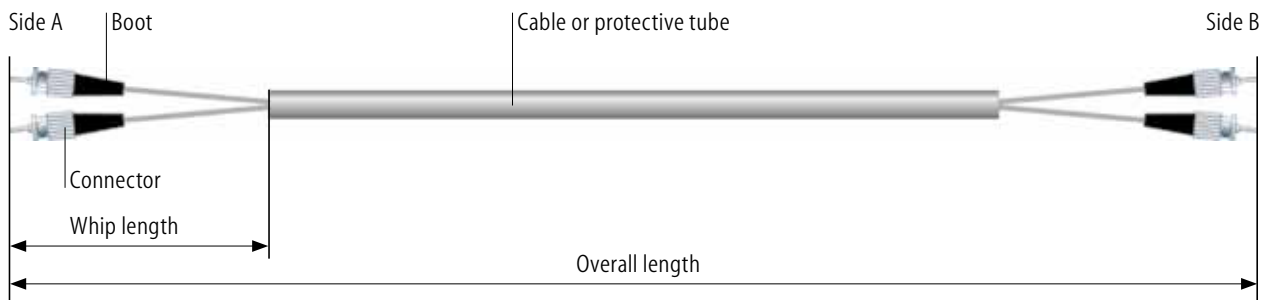


| | Coupling for FSMA PCF | Coupling for ST PCF |
|------------------|-------------------------------|-------------------------------|
| Order no. | SKUP-2XSMA-0010 | SKUP-2XXST-0010 |
| Fiber Ø | 230 µm | 230 µm |
| Housing | Metal without separate insert | Metal without separate insert |

Pre-assembled PCF cables

Description of the structure of pre-assembled PCF indoor cables

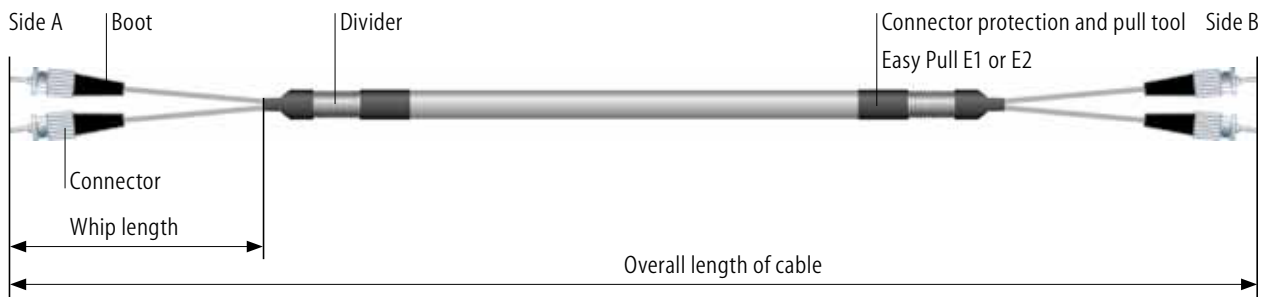
- Standard whip lengths 20 ± 4 cm
- Overall length tolerances $\pm 2\%$



Description of the structure of pre-assembled PCF outdoor cables

- Whip lengths according to customer's wishes
- Overall length tolerances $\pm 2\%$

Direct connector assembly in the field is much more complex with gel-filled outdoor cables than with indoor cables. Our Easy Pull cabling system therefore includes as standard fully tested cable ends with pre-assembled connectors for multi-fiber loose tubes with up to 32 fibers.



The production of fibers and cables in LEONI's own facilities and their careful assembly under laboratory conditions ensure superior properties and maximum reliability.

In addition to standard products, we offer a range of special product functionalities and customer-specific assembly as well as engineering and consulting.

Service features

- All fiber and cable types (including hybrid cables)
- All connector types
- Every attenuation grade for different customer requirements
- Every length, even for small order sizes
- Delivery possible within 24 hours
- Customer-specific assembly
- Customer-specific cable printing
- Additional selective printing of the cable jacket during the process of cutting to length

Quality assurance

The optical attenuation is defined according to IEC60793-1-40 B for POF. The result is shown on the label.

Order number scheme for PCF cable assembly

| Cable assembly | K |
|------------------------------------------|----------|
| Connector type Side A | |
| BFOC (ST®) | XST |
| FSMA | SMA |
| HP simplex | HPS |
| HP duplex | HPD |
| F05, TOSLINK-compatible | F05 |
| F07, TOSLINK-compatible | F07 |
| SC | XSC |
| SCRJ | SCR |
| E2000 | E2K |
| LC | XLC |
| FC/PC | FCP |
| Connector type Side B (see above) | E.g. XST |
| PCF cable code no. | |
| z. B. I-V(ZN)HH 2X1K200/230 | 64 |
| A-V(ZN)11Y 1K200/230 | 74 |
| Length | |
| 128, 010, etc. | E.g. 325 |
| Unit | |
| mm, cm, m, etc. | E.g. cm |
| Variants | |
| E.g. EZH E1 | |

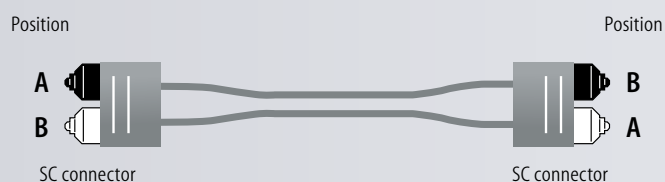
K XST-XST 64 325 cm (example)

Order example:

K XST-XST 64 325 cm

3.25 m, duplex connection cable
(cable type: I-V(ZN)HH 2X 1K200/230, PCF fiber
with FRNC inner jacket and FRNC outer jacket)
assembled with ST connectors

Assembly with logical crossing (= no physical crossing)



Note on polarity

Please note that our products
for standard and special assembly
are produced acc. to ANSI/TIA/EIA-568-B.1
with logical crossing.

The products can also be assembled
with physical crossing on request
(please specify when ordering).

Easy Pull cabling system



Easy Pull E1

The pull tool system can be used for assemblies with up to 4 single fibers. The connectors are optimally protected against damage during installation (in accordance with protection class IP20) and pulling in the cables is made much easier.

Once the cables have been pulled in, the pull tool can be easily removed and the connectors can be joined to the couplings or transceivers as usual at the destination. Gauging the assembly in the plant is an integral part of the delivery package.

Easy Pull 1 – no. of fibers n

| | 2 | 4 |
|----------------------------------------------------------|--------------------------|-------|
| min. bending radius of cable | Acc. to cable data sheet | |
| min. bending radius of buffered fiber/whip | 30 mm | 30 mm |
| Minimum hole Ø for through-feeds with cabinets and walls | 30 mm | 30 mm |
| max. pull force on pull tool | 500 N | 600 N |

You will find the corresponding cables in the chapters on glass fiber cables and PCF cables.

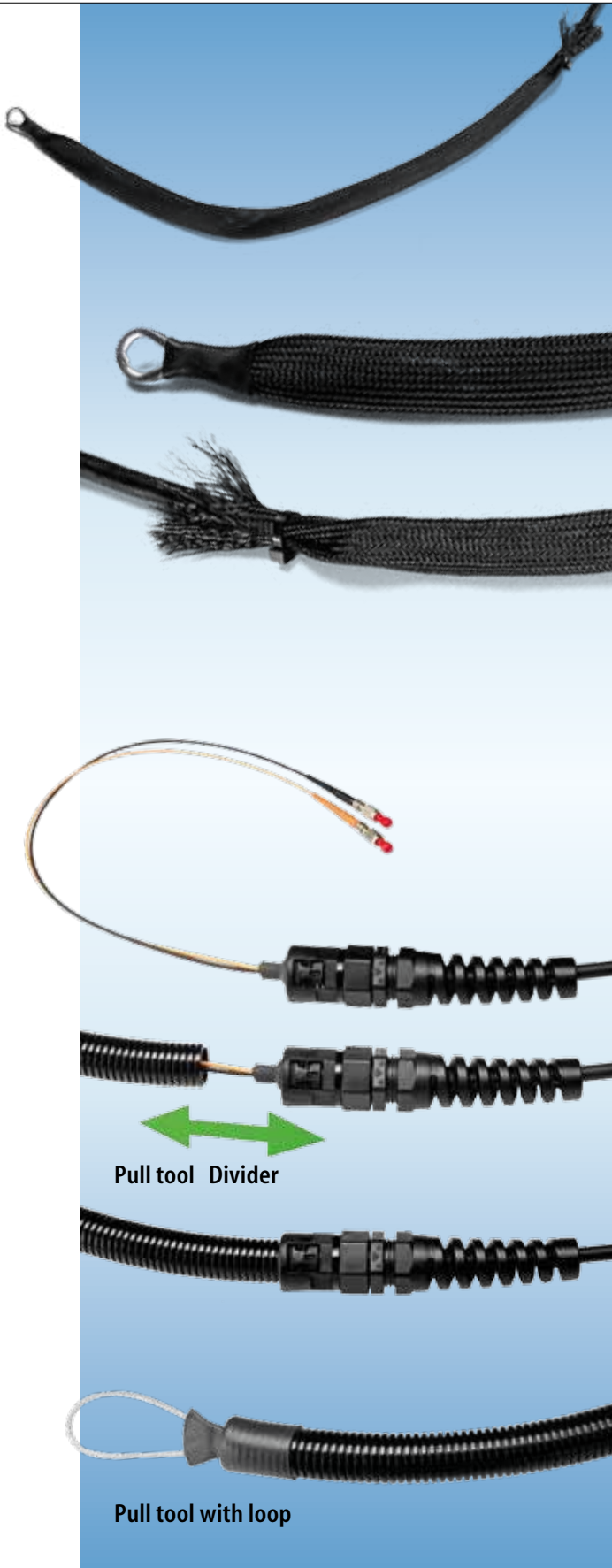
Easy Pull E2

This pull tool system can be used to protect assemblies with up to 32 single fibers (with IP54 protection).

The protective conduit can be easily unlatched and removed after pulling in. The connectors can be joined to couplings or transceivers as normal. Gauging the assembly in the plant is an integral part of the delivery package.

Easy Pull 2 – no. of fibers n

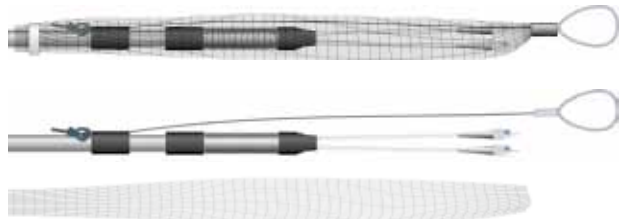
| | 2 | 4 | 5 to 12 | 13 to 32 |
|----------------------------------------------------------|-----------------------------------------------|------------|------------|------------|
| min. bending radius of cable | Acc. to cable data sheet | | | |
| min. bending radius of buffered fiber/whip | 30 mm | 30 mm | 30 mm | 30 mm |
| Outer Ø of divider element | 14 mm | 14 mm | 21 mm | 30 mm |
| Resistance to apex pressure (protective conduit) | 350 N | 350 N | 350 N | 350 N |
| max. pull force on pull tool | 500 N | 500 N | 600 N | 600 N |
| PG cable gland | M20 (PG13.5) | M25 (PG21) | M25 (PG21) | M50 (PG36) |
| Outer Ø of protective conduit | 20 mm | 30 mm | 30 mm | 55 mm |
| Minimum hole Ø for through-feeds with cabinets and walls | 35 mm | 40 mm | 45 mm | 60 mm |
| Material (protective conduit) | PA 6 (flame-retardant/halogen-free/UV-stable) | | | |



Divider for Easy Pull E1

The divider specially developed for the Easy Pull E2 system contains no metal and is especially sturdy despite its low weight.

Its design means that the wall bushings needed during installation are only marginally larger than the divider itself. All that is needed to remove the pull tool is a sharp knife and a cutting pliers.



Divider for Easy Pull E2

The divider specially developed for the Easy Pull E2 system contains no metal and is especially sturdy despite its low weight.

The divider is splashproof and offers good protection against mechanical damage. The high flexibility permits trouble-free installation, even under difficult conditions. The pull tool can be removed without any tools.

- Sturdy, watertight, flexible and UV-resistant protective conduit made from PA 6, with pull tool
- Cable gland can be used for quick and secure fixing in control cabinets and boxes
- Torsion-free removal of the protective conduit for protecting the connector
- With more than two fibers, the individual whips are graduated in accordance with the customer's requirements

Properties

