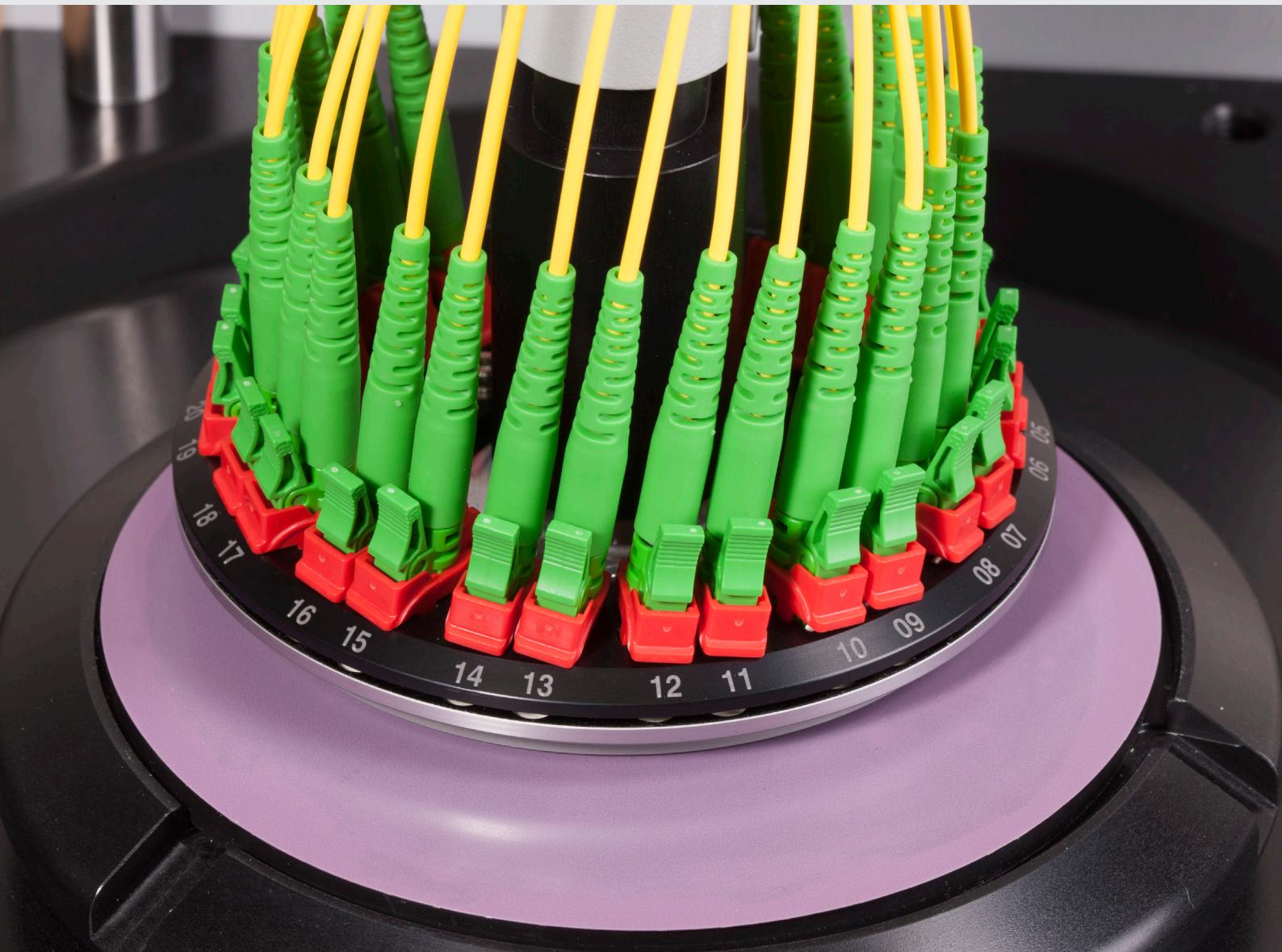


Fiber Optics

Equipment and products for LAS

Edition 2018/05



LAS partnership with HUBER+SUHNER





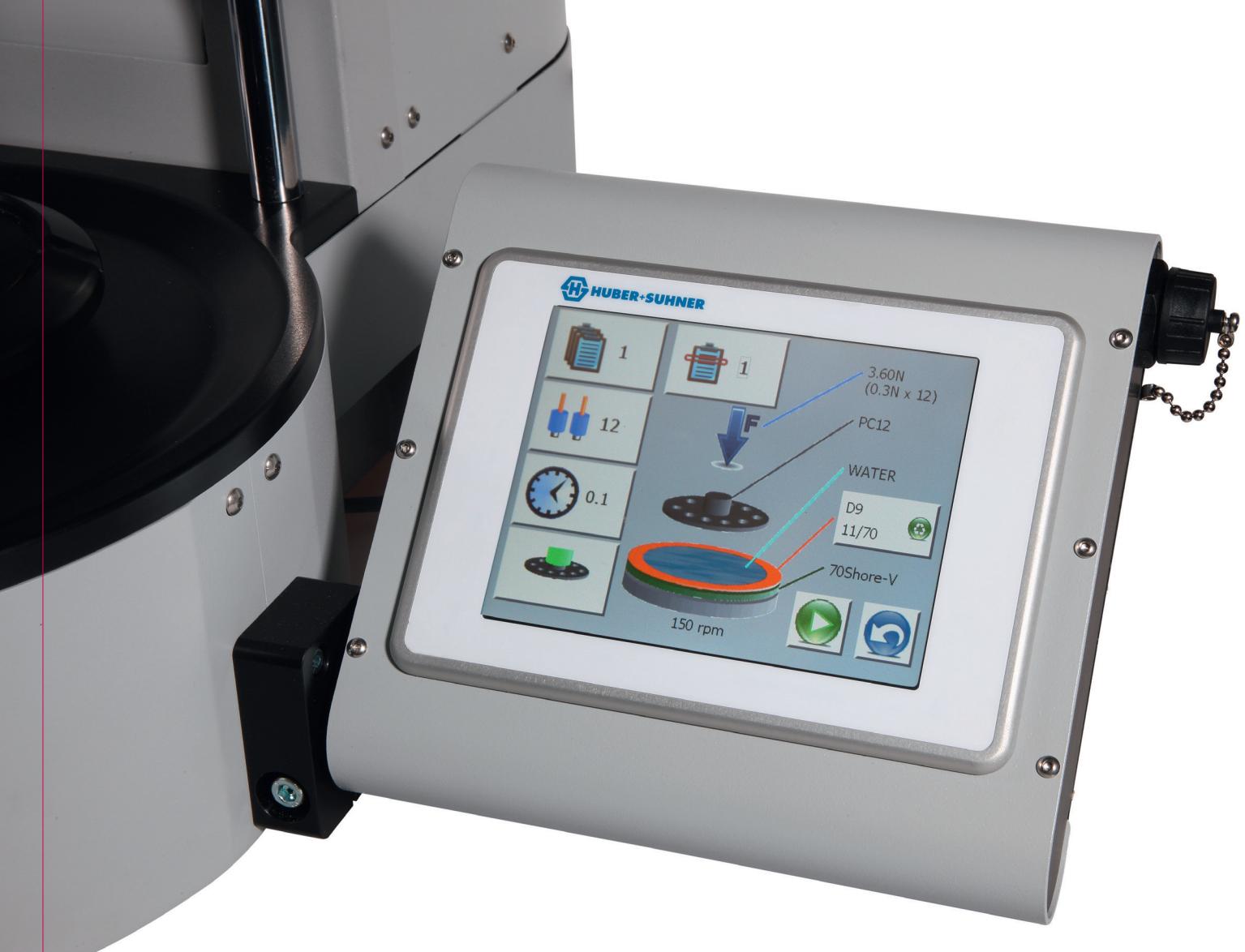
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Your partner for complete solutions for local assembly shops (LAS)

HUBER+SUHNER Fiber Optics is specialised in planning, installing, training and maintaining local assembly shops all over the world. Through the continuous transfer of technology and know-how to our local assembly partners, we ensure a consistently high quality of our H+S products worldwide. In addition, we offer an e-commerce platform which makes it very easy to deal with us.

Partner benefits

- Long term partnership with HUBER+SUHNER
- High availability of components and consumables
- Support in planning and set up of a Local Assembly Shop
- Qualified support in equipment evaluation and production layout
- Efficient FO assembly termination processes by HUBER+SUHNER
- Yearly LAS certification of process quality and process supervision
- External and internal assembly shop training available on request at any time
- Complete and comprehensive product range
- HUBER+SUHNER back-up for larger projects
- Rental equipment, flexibility



Tools and equipment

Over the last 25 years, HUBER+SUHNER Fiber Optics has developed into a leading manufacturer of fiber optic assemblies. Together with our worldwide production locations, the manufacturing process is continuously adapted to the latest standards and improved through innovation and know-how. Furthermore, our local assembly partners benefit from our worldwide network with leading suppliers. Thanks to extensive internal tests, we are committed to the highest productivity and quality standards of all the tools and equipment published in this catalogue. Every day, these products are reliably used in production lines around the world to manufacture products of outstanding quality. In order to meet the highest demands of our customers, we offer them a comprehensive product range that is constantly being expanded and improved.

Cable cutting

Manual cable cutting	Item no.	Item description	Description
	23219677	TOOL-CUT-PLIERS	Side-cutting pliers
	23020096	TOOL-CUT-SCISS	Aramid scissors
	84030148	TOOL-CUT-CUTTER	Aramid cutter
	23221091	TOOL-CUT-KNIFE	Universal knife

Stripping tools

Manual stripping	Item no.	Item description	Description
	23220730	TOOL-STRP-T-SM	T-stripper small, 26 AWG to 16 AWG (Ø 0.4 to 1.3 mm)
	23219335	TOOL-STRP-T-MED	T-stripper large, 20 AWG to 10 AWG (Ø 0.8 to 2.6 mm)

Stripping tools

Manual stripping	Item no.	Item description	Description
	23227574	TOOL-STRP-COAT-125	Coating stripper 125 µm
	84118088	TOOL-STRP-DUAL-250-125	"Dual-hole" FO stripper 250 µm/125 µm
	23017370	TOOL-STRP-TUBE-CUT-280	Tube cutter 280 µm
	23220110	TOOL-STRP-RULER	Metal ruler 200 mm

Termination

Performus™ III dispenser



EFD's performus dispenser increase throughput, improve yields, and reduce production costs through controlled application of adhesives, lubricants and other assembly fluids. Eight different dispenser configurations provide a cost-effective way to select the exact features needed to improve your specific fluid application process.

Specifications

Cabinet dimensions (L × W × H)	183 × 86 × 51 mm (7.22 × 3.38 × 2")
Weight	1 kg (2.2 lb)
Input AC (to power supply)	universal multi voltage 100 to 240 VAC~ -50 to +60 Hz
Output DC (from power supply)	24 VDC - 0.83 Amp maximum
Power requirements	24 VDC - 0.83 Amp maximum
DC input power required	8 - 20 W
Internal voltage	24 VDC
Voltage (footswitch)	24 VDC
Current (footswitch)	20 mA
Cycle initiate	foot pedal, finger switch
Maximum cycle rate	600 cycles per minute
Air input requirements	100 psi (7 bar) maximum
Air output	0 to 100 psi (0 to 7 bar)
Ambient operating conditions	
Temperature	5 to 45 °C (41 to 113 °F)
Humidity	85 % RH at 30 °C (86 °F) non-condensing
Height above sea level	2000 m maximum (6562 ft)
Approvals	CE, CSA, RoHS, WEEE and China RoHS compliant

Termination

Glue dispenser	Item no.	Item description	Description
	84094413	TOOL-GLUE-DISPENSER	Glue dispenser EFD Performus III, optimised glueing
	84095991	TOOL-GLUE-DISP-STAND	3cc cartridge stand
	84056947	TOOL-GLUE-CART-CONN	3cc cartridge connection for glue dispenser (spare part)

Consumables	Item no.	Item description	Description
	85064922	TOOL-GLUE-EPO-TEK323LP-25P	Epotek 323LP for fiber glueing (4 g) Minimum order quantity: 25 pcs. Packing unit: 25 pcs.
	84035567	TOOL-GLUE-3CC-CART	3cc cartridge for glue dispenser Minimum order quantity: 100 pcs.
	23212584	TOOL-GLUE-NEEDLE-25x0.6-100P	Adapter needle for 3cc cartridge Minimum order quantity: 100 pcs. Packing unit: 100 pcs.
	23038416	TOOL-GLUE-ADAPTER	Universal teflon glue adapter Minimum order quantity: 10 pcs.

Termination

Glue curing	Item no.	Item description	Description
	85008170	TOOL-CURE-BOX-COMPACT	Heating box 40-holes, 220/230 V
	84035308	TOOL-CURE-SLVE-BFF	Curing adapter for 2.5 mm ferrules Minimum order quantity: 10 pcs.
	84103761	TOOL-CURE-SLVE-SFF	Curing adapter for 1.25 mm ferrules Minimum order quantity: 10 pcs.
	23011620	TOOL-CURE-BOX-ROUND	Heating box 24-holes, 220/230 V
	84111692	TOOL-CURE-ADA-PIN	Heating box adapter for curing adapter
	84038439	TOOL-CURE-CABLE-CLIP	Cable fixing clip Minimum order quantity: 50 pcs.
	84081588	TOOL-CURE-TUBE-CLAMP	Tube clamp for 0.9 mm assemblies Minimum order quantity: 50 pcs.

SafeCrimp 15



Features

- Can easily be adapted to accommodate a variety of tools and dies.
- Patented mechanical safety system with the following advantages:
 - no conventional safety shield required
 - safety system fully functional in case of power failure
 - initiation of crimp- or press process with foot pedal
- Cost-effective solution as no expensive sensors are needed
- Adjustable crimp range from 1 to 4 mm (0.039 to 0.15")
- Working cycle is the same as for conventional presses
- Significant crimping force

Concept

The pneumatic SafeCrimp 10/15/25 and 40 crimping machines are extremely rugged with high press capacity, featuring a completely new mechanical safety system. The units can be equipped with a wide range of adapters and die sets, making them extremely flexible for a variety of crimping and pressing processes.

Due to the completely new and patented design of the safety press, it is now possible to position the assembly components with both hands close to the dies before and during the pressing cycle. These are the only presses on the market which have this impressive safety feature.

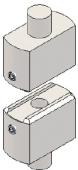
Function

Due to the design of the safety system, the full pressing force is only released when the distance between the inserts or tools and the foreign body (e. g. finger) is smaller than the predefined range (see * under "Specifications"), i. e. the foreign body must first be removed. The SafeCrimp machines are designed in such a way that disturbing safety casings or expensive electronic monitoring systems are superfluous and thus easy handling is possible. The exact crimp height must be set before starting work.

Specifications

Press capacity (at 6.5 bar (97.5 psi)	15 kN
Crimp dimension	-6.0 mm ²
Cable diameter	(10 AWG)
Safety distance*	1 to 5 mm (0.039 to 0.2")
Crimp distance	0 to 4 mm (0 to 0.15")
Power supply	230 V; 50 Hz; 10 VA
Operational pressure	6 to 7 bar (90 to 105 psi)
Noise level	< 70 dB
Net weight	ca. 38 kg (83.7 lb.)
Dimensions (L × W × H)	600 × 200 × 260 mm (23.6 × 7.8 × 10.2")
CE-conformity	SafeCrimp 15 fully complies with all CE-guidelines

Termination

Automatic crimping	Item no.	Item description	Description
	84125182	TOOL-CRMP-SAFECRIMP15-W/O-HLD	Automatic crimping machine SafeCrimp 15
	84098919	TOOL-CRMP-Holder-H+S	Automatic crimping machine holder SafeCrimp 15
	84044373	TOOL-CRMP-MACH	Automatic crimping machine ECP 1500
	84139941	TOOL-CRMP-MACH-INS-SFF/BFF	Crimp insert for crimping machine SFF Ø 3.30 mm 6 sided (standard) SFF Ø 3.44 mm 12 sided (used for the termination of the 1.4 mm cable and LC-XD/HQ uniboot) BFF Ø 4.95 mm 6 sided (standard)
	23024344	TOOL-CRMP-MACH-INS	Crimp insert for crimping machine SFF Ø 3.30 mm 6 sided (standard) BFF Ø 4.95 mm 6 sided (standard) Ø 2.0 mm 6 sided (termini)
	85004445	TOOL-CRMP-MACH-INS-SFF12/BFF18	Crimp insert for crimping machine SFF Ø 3.44 mm 12 sided (used for the termination of the 1.4 mm cable and LC-XD/HQ uniboot) BFF Ø 5.01 mm 18 sided (used for termination of the 1.4 mm cable)

Termination

Automatic cleaver HSC08



Features

- No pneumatic required
- Diamond wheel with long service life (up to 25 000 cleaves)
- User-friendly and easy to adjust
- Suitable for all standard FO connectors (BFF/SFF)
- High reliability
- Consistent cleave quality
- Consistent cleave heights
- Vacuum cleaning unit for fiber splits

Economical criteria

- Low maintenance
- Short cleave times
- Higher throughput
- High production yield
- Cost saving
- High repeat accuracy

The HSC08 is a bench-top module to cleave optical fiber on fiber optic connectors. This user-friendly automatic cleaver is designed for mass production shops where accuracy, reliability and high production yield is required.

The machine is equipped with a diamond wheel which can be used for up to 25 000 cuts thanks to its long service life. Due to the changeable and flexible adapters and the adjustable sliding bed the desired cleaving length can be reached easily.

All standard 2.5 mm (BFF) and 1.25 mm (SFF) connectors can be cleaved such as LX.5, LC, LC Duplex, FC, LSH, SC, ST, MU, FSMA, LSA.

Termination

Automatic cleaver HSC08

Technical Data

Power supply	230 V AC 50 Hz 1.1 A
Power supply cleaver	24 V DC 3.2 A
Power supply airmover	24 V DC 4.5 W
Fuse	SPT 2. A L 25 V
Weight cleaver	10.8 kg
Total weight cleaver package (cleaver, box, cleaner)	27.0 kg
Dimensions (L × W × H)	cleaver 270 × 220 × 160 mm cleaner 400 × 300 × 200 mm box 470 × 440 × 440 mm
Rotation diamond wheel	5 m/s
Number of connectors	1 per cleave
Cleaving time per connector	approx. 6 to 8 seconds
Applicable fibers	SM, MM, H200, Q200
Diamond wheel life	up to 25 000 cleaves



Further features

- Vacuum cleaning unit for fiber splits
- Easy to clean



- 2.5 mm and 1.25 mm calliper for fiber height control



- HSC08 adapters for:
LX.5, LC, LC Duplex, FC, LSH, SC, ST, MU, FSMA, LSA

Termination

Automatic cleaver	Item description	Item no.
Automatic cleaver starter kit	TOOL-CLVE-HSC08-KIT	84044352
Automatic cleaver HSC08	TOOL-CLVE-HSC08	84047027
Reference adapter	TOOL-CLVE-HSC08-REF	84047004
Vacuum cleaning unit	TOOL-CLVE-HSC08-VCU	84044927

Automatic cleaver adapters	Item description	Item no.
SC (UPC/APC)	TOOL-CLVE-HSC08-SC	84047635
FC (UPC/APC)	TOOL-CLVE-HSC08-FC	84047637
LC/LX.5 (UPC/APC) ¹⁾	TOOL-CLVE-HSC08-LC/LX5	84047638
LC Duplex	TOOL-CLVE-HSC08-LC-DPLX	84117721
ST	TOOL-CLVE-HSC08-ST	84047648
LSH-UPC	TOOL-CLVE-HSC08-FLSH-UPC	85082911
LSH-APC	TOOL-CLVE-HSC08-FLSH-APC	85089366
FSMA	TOOL-CLVE-HSC08-FSMA	84047652
MU	TOOL-CLVE-HSC08-MU	84047653

Automatic cleaver accessories	Item description	Item no.
SFF (2.5 mm) cleave height measurement gauge	TOOL-CLVE-HSC08-CA-2.5	84047629
Adapter for BFF (2.5 mm) cleave height measurement gauge (E-2000 compatible)	TOOL-CLVE-HSC08-CA-2.5-ADAP	84098359
SFF (1.25 mm) cleave height measurement gauge	TOOL-CLVE-HSC08-CA-1.25	84047631
Diamond cutting wheel	TOOL-CLVE-HSC08-DCW	84047633
SFF (1.25 mm) gauge calibration pin	TOOL-CLVE-HSC08-CP	84080734

Hand cleaving	Item no.	Item description	Description
	84112969	TOOL-CLVE-BOX	Cleaving box, manual fiber cleaving incl. 1 ceramic blade
	23228428	TOOL-CLVE-PAPR-P1200	Polishing paper P1200 for glue removal, Minimum order quantity: 10 pcs.
	23011778	TOOL-CLVE-BLADE	Replacement ceramic blade for cleaving box

¹⁾ SFF (1.25 mm) gauge calibration pin

Polishing

HSP11 polishing machine



Highest performance, precision and flexibility
HSP11 is the forth generation of polishing machines developed by HUBER+SUHNER. Today, already more than 100 machines of the new type are in use.

The machine has been developed for mass production and is designed for the simultaneous polishing of up to 24 ferrules, which guarantees optimum production throughput. The user-friendly software can be operated by means of a 5.7" colour touch screen.

With the new solid construction of the polishing arm and the permanent regulation of the arm pressure during the polishing process, excellent geometry characteristics can be achieved. Beside the existing polishing programs for the standard connectors, there are 100 program positions for free programming. Data will be transferred to the HSP11 with an USB interface.

All standard connectors of 2.5 mm (BFF) and 1.25 mm (SFF) can be polished.

Technical data HSP11

Power supply	115 VAC/60 Hz 230 VAC/50 Hz
Weight	29 kg
Dimensions (L × W × H)	600 × 520 (incl. display) × 360 mm
Number of programs	200/110
Number of program steps	10
Interface	USB stick
Rotation	50 to 150 per min.
Feed	0.7 to 1.0 per min. (depending on rotation)
Number of connectors	max. 24
Base diameter	10.7 cm (5")

Polishing



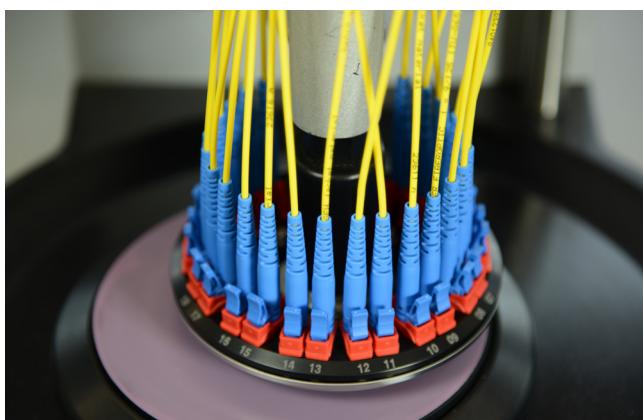
Easy handling

- 5.7" colour touch screen for easy programming and process management
- User-friendly handling
- Pivoting arm for easy cleaning and foil-change
- Up to 100 process programmes for individual use
- USB interface/easy data transfer with USB stick
- Easy to adjust



Economical criteria

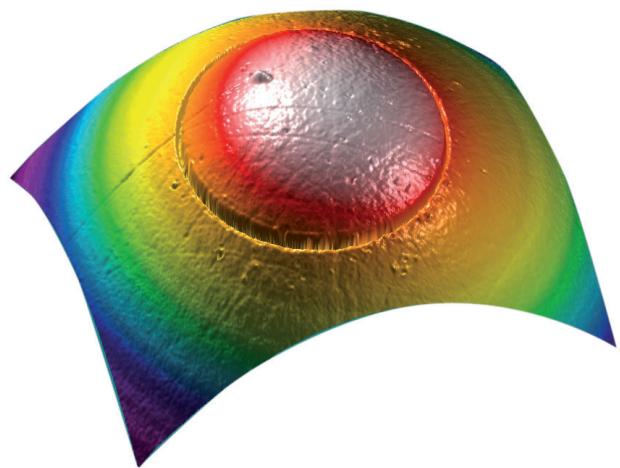
- Maintenance-free
- Short polishing times
- Up to 24 ferrules can be polished at the same time
- Automatic and precise polishing
- High efficiency with high quality at the ferrule endface



Features

- Polishing pressure is permanently regulated
- Solid body
- Polishing force up to 80 N programmable
- No pneumatic needed
- Suitable for ceramic, metal, glass and plastic ferrules
- Wet and dry polishing
- 200 programs with up to 10 steps/program
- Two cable holders
- Mounting possibilities at the polishing arm
- Polishing plate with drain channels

Polishing



Polishing process performance

Fiber height, radius as well as apex offset are the most important parameters of a fiber optic connector endface geometry. The quality characteristics of the HUBER+SUHNER polishing machine HSP11 are low apex offsets and stable radii together with constant fiber heights. Our polishing processes are in accordance with the continuously increasing requirements. International standards such as IEC or Telcordia are efficiently reached.

Polishing machine	Item no.	Item description	Description
	84005800	TOOL-POL-HSP11	HSP11, automatic polishing machine

Polishing accessories	Item no.	Item description	Description
	23027549	TOOL-POL-ACC-JIG-HOLD	Polishing jig and cable holder
	85010498	TOOL-CABLE-HOLDER-HSP11	Cable holder HSP11

Polishing

Polishing jigs for HSP11/HSP03

	Item no.	Item description	Description
	84117750	TOOL-POL-JIG-FLC-DUP-24-UPC	LC-UPC duplex polishing jig 24 (single/duplex/uniboot)
	84108167	TOOL-POL-JIG-FLC-24-APC	LC-APC polishing jig 24
	84010706	TOOL-POL-JIG-FMU-UPC	MU-UPC polishing jig
	84108162	TOOL-POL-JIG-FSC-24-UPC	SC-UPC polishing jig 24
	84108166	TOOL-POL-JIG-FSC-24-APC	SC-APC polishing jig 24
	84010714	TOOL-POL-JIG-FC-APC-S	FC-APC polishing jig (small key standard)
	84010646	TOOL-POL-JIG-FST-UPC	ST-UPC polishing jig
	85080023	TOOL-POL-JIG-FLSH-24-UPC	LSH-UPC polishing jig 24 (E-2000)
	85080024	TOOL-POL-JIG-FLSH-24-APC	LSH-APC polishing jig 24 (E-2000)
	84010680	TOOL-POL-JIG-FLX5-UPC	LX.5-UPC polishing jig
	84010725	TOOL-POL-JIG-FLX5-APC	LX.5-APC polishing jig
	85015633	TOOL-POL-JIG-FC-24-UPC	FC polishing jig 24

Jig repairing parts	Item no.	Item description	Description
	63127200	TOOL-POL-REP-FSC-SNAP	SC/LSH replacement plastic part (UPC/APC) Minimum order quantity: 100 pcs.
	23233076	RETAINER REP-FSC-BLANK_HOLD	SC blank holder

Polishing

Seikoh Giken SFP-550C



The SFP-550C series of polishing machines is Seikoh Giken's entry-level model for mass production.

The addition of the high speed turntable technology allows the SFP-550C model to increase productivity by more than 20 % (according to internal tests) over previous entry level polishers.

The features improve mechanical durability and achieve reduction of maintenance cost by 1/10 compared to SFP-550B.

Features

- Compatible with existing SFP-550 holders
- Exceeds requirements for GR-326 endface geometry
- Uses the Seikoh Giken patented rotation and revolution method
- I.P.C. holder technology yields the best results in the industry
- Polishes up to 48 connectors (40 for LC, 32 for SC and 24 for E-2000)
- No variability in result when polishing 1 or up to 48 connectors
- Reduced polishing time in 2/3 compared to SFP-550B
- Increased production capacity (up to 13 %)

Specifications

Applicable connectors	FC, SC, ST, LC, MU, E-2000 for UPC and APC
Polishing time	2.0 min for D2.5 UPC and 3.7 min for D2.5 mm APC
Weight	18 kg
Dimensions (L × W × H)	305 × 250 × 240 mm
Power	100 to 120 VAC, 50/60 Hz or 220 to 240 VAC
Motor speed	100 rpm revolution, 1.8 rpm rotation
Film size	5"
Polishing method	rotation and revolution (patent # 4979334)
Timer	manual or digital (selectable)

Polishing

Seikoh Giken SFP-550C

Polishing accessories

	Item no.	Item description	Description
	85026478	TOOL-POL-SG-SFP-550C	Seikoh Giken SFP-550, half automatic polishing machine
	85026491	TOOL-POLJIG-SG-FC/UPC-24	FC-UPC-24 way polishing tool
	85026492	TOOL-POLJIG-SG-FC/APC-18	FC-APC-18 way polishing tool
	85026494	TOOL-POLJIG-SG-SC/UPC-24	SC-UPC-24 way polishing tool
	85026497	TOOL-POLJIG-SG-ST/UPC-24	ST-UPC-24 way polishing tool
	85026500	TOOL-POLJIG-SG-SMA/UPC-18	SMA-UPC-18 way polishing tool
	85026503	TOOL-POLJIG-SG-LC/UPC-40HP	LC-UPC-40 way HP polishing tool
	85026505	TOOL-POLJIG-SG-LC/APC-40HP	LC-APC-40 way HP polishing tool
	85026507	TOOL-POLJIG-SG-SC/UPC-32	SC-UPC-32 way polishing tool
	85026508	TOOL-POLJIG-SG-SC/APC-32	SC-APC-32 way polishing tool
	85095710	TOOL-POLJIG-SG-LSH/UPC-24	LSH-UPC-24 way polishing tool (new E-2000)
	85095711	TOOL-POLJIG-SG-LSH/APC-24	LSH-APC-24 way polishing tool (new E-2000)
	85026555	TOOL-POLJIG-SEIKOH-GIKEN-ADAP	SEIKOH-GIKEN-ADAP-HSP

Polishing

Polishing paper	Item no.	Item description	Description
	84042025	TOOL-POL-PAPR-D9-25P	D9, diamond 9 µm polishing paper (Ø 125 mm/5") MOQ and PU: 25 pcs. ¹⁾
	23225398	TOOL-POL-PAPR-D1-25P	D1, diamond 1 µm polishing paper (Ø 125 mm/5") MOQ and PU: 25 pcs. ¹⁾
	84077270	TOOL-POL-PAPR-XF5D-100P	XF5D, finishing polishing paper (Ø 125 mm/5") MOQ and PU: 100 pcs. ¹⁾

Rubber pads	Item no.	Item description	Description
	84006587	TOOL-POL-RUBP-70-SHORE	Rubber pad 70 shore (Ø 125 mm/5")
	84077272	TOOL-POL-RUBP-40-SHORE	Rubber pad 40 shore (Ø 125 mm/5")
	23233400	TOOL-POL-RUBP-80-SHORE	Rubber pad 80 shore (Ø 125 mm/5")
	85027323 ²⁾	TOOL-POL-RUBP-85-SHORE	Rubber pad 8.5 shore (Ø 125 mm/5")
	23229296 ²⁾	TOOL-POL-RUBP-90-SHORE	Rubber pad 90 shore (Ø 125 mm/5")

Ferrule protective caps 1.25 (process step identification)	Item no.	Item description	Description
	84118568	CAP-SFF-TR	Protective cap for 1.25 mm ferrules, transparent ³⁾
	84023268	TOOL-POL-CAP SFF-RD	Protective cap for 1.25 mm ferrules, red ³⁾
	84023272	TOOL-POL-CAP SFF-VT	Protective cap for 1.25 mm ferrules, violet ³⁾
	84023271	TOOL-POL-CAP SFF-YE	Protective cap for 1.25 mm ferrules, yellow ³⁾
	84023270	TOOL-POL-CAP SFF-BU	Protective cap for 1.25 mm ferrules, blue ³⁾
	84023269	TOOL-POL-CAP SFF-GN	Protective cap for 1.25 mm ferrules, green ³⁾
	84118539	TOOL-POL-CAP SFF-WH	Protective cap for 2.5 mm ferrules, white ³⁾

Ferrule protective caps 2.5 (process step identification)	Item no.	Item description	Description
	84118550	CAP-BFF-TR	Protective cap for 2.5 mm ferrules, transparent ³⁾
	85092124	TOOL-POL-CAP BFF-RD	Protective cap for 2.5 mm ferrules, red ³⁾
	85092125	TOOL-POL-CAP BFF-VT	Protective cap for 2.5 mm ferrules, violet ³⁾
	85092126	TOOL-POL-CAP BFF-YE	Protective cap for 2.5 mm ferrules, yellow ³⁾
	85092127	TOOL-POL-CAP BFF-BU	Protective cap for 2.5 mm ferrules, blue ³⁾
	85092128	TOOL-POL-CAP BFF-GN	Protective cap for 2.5 mm ferrules, green ³⁾
	85092130	TOOL-POL-CAP BFF-WH	Protective cap for 2.5 mm ferrules, white ³⁾

1) MOQ - minimum order quantity, PU - packing unit

2) Seikoh Giken optional

3) minimum order quantity: 100 pcs.

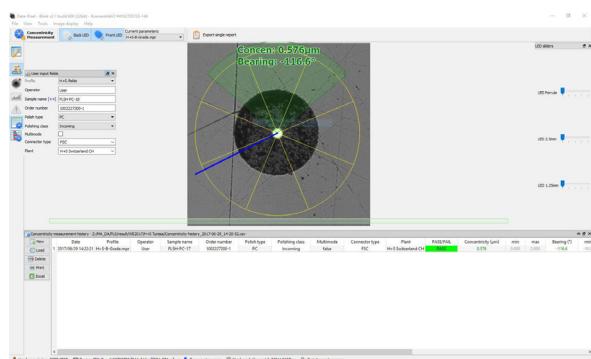
Cleaning

Cleaning articles	Item no.	Item description	Description
	23017493	TOOL-CLN-STAND	Floor stand for cleaning tissue reel
	23017494	TOOL-CLN-WALLHOLD	Wall holder for cleaning tissue reel
	23017492	TOOL-CLN-TISSUE-REEL	Cleaning tissue reel (340 m per roll/270 mm wide)
	23029882	TOOL-CLN-BOTTLE-BL	Bottle for distilled water, blue (empty)
	23029883	TOOL-CLN-BOTTLE-GN	Bottle for spirit, green (empty)
	23030429	TOOL-CLN-BOTTLE-ISO	Bottle for isopropyl alcohol, with dosing cap (empty)
	84114592	TOOL-CLN-BOX-4x4"	Box for cleaning tissues 4 x 4"

Cleaning articles	Item no.	Item description	Description
	84118177	TOOL-CLN-TISSUES-4X4-1200P	Cleaning tissues 4 × 4", ferrule endface cleaning Minimum order quantity: 1200 pcs. Packing unit: 1200 pcs.
	22644173	TOOL-CLN-TISSUES-6X6-600P	Cleaning tissues 6 × 6", ferrule endface cleaning Minimum order quantity: 600 pcs. Packing unit: 600 pcs.
	84026866	TOOL-CLN-BRUSH-2.5-8P	Cleaning brush (for 2.5 mm bores, for polishing jigs) Minimum order quantity: 8 pcs. Packing unit: 8 pcs.
	84026867	TOOL-CLN-BRUSH-1.25-8P	Cleaning brush (for 1.25 mm bores, for polishing jigs) Minimum order quantity: 8 pcs. Packing unit: 8 pcs.
	84057238	TOOL-CLN-PAPR-IFF500-5N-50P	Cleaning paper (Ø 125 mm/5") Minimum order quantity: 10 pcs.
	84095170	Cleaner, IBC, 2.5 mm	IBC cleaner BFF
	84108852	Cleaner, IBC, ODC, 1.25 mm	IBC cleaner SFF

Tuning

Koncentrik-V2



The Koncentrik-V2 is a multifunctional system for eccentricity and indexing measurements on fiber optic cable assemblies.

Key features

- Measures UPC type connectors with a diameter of 2.5 mm and 1.25 mm
- Ferrule endface visual inspection at $\times 400$ magnification
- Accurate and repeatable measurements
- User-adjustable quality level for high-speed measurements
- User-friendly software with step-by-step guide
- Measurement data exported in standard CSV format
- Statistics on measurements available

Delivery content

- Koncentrik-V2
- V-Groove adapter 1.25 mm
- V-Groove adapter 2.50 mm
- Data-Pixel Blink software (various languages)

Specifications

Measured parameter	Range	Reproducibility
Eccentricity measurement (μm)	0 to 100 μm	$\pm 0.15 \mu\text{m}$
Indexing measurement	0 to 360 °C	up to 1 °C
Measurement speed (seconds)	10+ (user variable)	–
Magnification	400 \times	–
Wavelength (nm)	450 nm	–
Power requirements	12 V external supply	–
Computer interface	USB 2.0, no card required	–

Tuning device	Item no.	Item description	Description
	84044376	TOOL-TUN-ACC-KONCENTRIK-V2	Koncentrik-V2, visual tuning device Compatible with the E-2000 connector as from November 2017
	85093539	TOOL-TUN-VGROOVE-ADA-2.5	V-Groove adapter 2.5 mm for Koncentrik V2 (E-2000 compatible)
	85094879	TOOL-TUN-VGROOVE-ADA-1.25	V-Groove adapter 1.25 mm for Koncentrik V2

Tuning tools	Item no.	Item description	Description
	23014019	TOOL-TUN-ACC-2.5	Tuning tool for 2.5 mm ferrules
	23012946	TOOL-TUN-ACC-1.25	Tuning tool for 1.25 mm ferrules

Tuning cable	Item no.	Item description	Description
	22653078	TT01_FCUS_FCUS_SM24E_03.0	Universal tuning cable FC for 2.5 mm ferrules
	23011582	TT01_LCUS_FCUS_SM24E_03.0	Universal tuning cable LC for 1.25 mm ferrules

Tuning adapter	Item no.	Item description	Description
	22659201	TOOL-TUN-ADA-2.5	Tuning adapter for 2.5 mm ferrules
	23014668	TOOL-TUN-ADA-1.25	Tuning adapter for 1.25 mm ferrules

Tuning

Repolishing	Item no.	Item description	Description
	22644172	TOOL-POL-REP-GLASS-PLATE	Glass plate for repolishing tuning cables
	84065703	TOOL-TUN-REP-DIAM-SUSP	Diamond-suspension for repolishing tuning cable
	85066537	TOOL-TUN-REP-DP-NAP-6P	DP-nap paper (\varnothing 200 mm), dark violet
	23231318	TOOL-POL-HJIG-2.5	Universal hand polishing tool for 2.5 mm ferrule Connectors (plastic disc)
	84013156	TOOL-POL-HJIG-1.25	Universal hand polishing tool for 1.25 mm ferrule Connectors (metal disc)

Performance measurement

OP940 (single-mode/multimode) HUBER+SUHNER edition



The OP940 system is an insertion loss (IL) and return loss (RL) meter that features a colour LCD screen, an optical reflectance scan mode, programmable pass/fail for editable test criteria and "on screen" context help. Additionally, the OP940 can measure return loss (RL) at two positions simultaneously through the front panel and it offers expandable functionality. As with our other IL/RL systems, the OP940 measures RL quickly and accurately without the need for mandrel wrapping or the use of index matching gel, and is available in single-mode, multimode and FTTX variants.

Features

- Fully automated, concurrent IL and RL displayed simultaneously
- Front panel optical reflectance trace
- Manually adjust RL reference position and value
- Measures RL at multiple connection points through the front panel
- Programmable pass/fail for multiple test criteria
- Various detector options for measuring simplex to multifiber connectors
- On-screen help
- Configurable timer settings, such as dwell times
- User accessible source connector
- Colour display
- Intuitive operation
- Can be controlled remotely via USB
- Integrated temperature monitoring
- Wide dynamic range for RL measurements: SM, FTTX: 10 to 80 dB

Specifications

Measurement range	+10 to -80 dBm
Wavelength range	830 to 1700 nm (InGaAs detector)
Selectable wavelength	1310/1550 nm
Measurement resolution	0.01 dBm (absolute) 0.001 dB (relative)
Measurement resolution (display)	0.001 dBm/dB
Measurement linearity, relative accuracy	0.05 dB

Return loss

Source wavelength	1310 nm, 1550 nm
Measurement range	10 to 80 dB
Absolute accuracy	0.5 < 45 dB
Resolution	0.1 dB
Distance range	2.5 to 2500 m/8 to 10 000 ft

Source for insertion loss

Source wavelength	1310 ± 20 nm, 1550 ± 20 nm
Optical interface	LSH-APC
Output power	-3 dBm (into SM)
Power stability	± 0.05 dB (12 hours)

Performance measurement

OP250 - MM LED source



Specifications

Source wavelength	850 nm, 1300 nm
Output power	typ. -13 dBm (850 nm); typ. -15 dBm (1300 nm)
Launch condition	CPR > 21 dB, encircled flux per IEC
Stability	± 0.02 dB (1 hour)
Optical interface	2 × SC
Power	USB, internal Li-Ion

Measurement tools	Item no.	Item description	Description
A photograph of a measurement device with a digital display showing '-48.47' and various control knobs and ports.	84057272	TOOL-MEAS-OP940-SMMM	Combination of OP940 ¹⁾ and OP250 for SM and MM measurements (H+S edition)
A screenshot of the SF.COM HUBER+SUHNER measurement software interface, showing various graphs and data plots.	23024117	TOOL-MEAS-SF-COM	SF.COM HUBER+SUHNER measurement software
A photograph of an orange fiber optic jumper cable with LSH-APC/LC-APC connectors.	85026177	TJ01_LHAS_LCAS_SM24E_03.0_SS	SM jumper cable (3 m) 9 µm, to protect the OP930 equipment interface LSH-APC/LC-APC
A photograph of an orange fiber optic jumper cable with SC-UPC/LC-APC connectors.	85026179	TJ01_SCUS_LCAS_O127E_01.0_MM	MM jumper cable (1 m) 62.5 µm, to protect the OP250 equipment interface SC-UPC/LC-APC

1) New generation OP 930

Performance measurement

Measurement tools	Item no.	Item description	Description
	84044358	TOOL-MEAS-MANDRELKIT	Mandrel kit 50 µm/62.5 µm Mandatory required for MM measurements
	84065670	TR01_SCAS_FCUS_SM24E_00.1_SS	RL reference assembly SC-APC 8°
	84065671	TR01_LCAS_FCUS_SM24E_00.1_SS	RL reference assembly LC-APC
	84031551	TOOL-MEAS-IND-MATCH-BLOCK	Index matching block for RL measurements on APC assemblies < 2 m
	84116099	TOOL-MEAS-UNIBOOT-ADA	Duplex adapter SFF (Ø 1.25 mm) universal adapter for OP930/OP940 receiver
	84126071	TOOL-MEAS-ADA-1.25	SFF (Ø 1.25 mm) universal adapter for OP930/OP940 receiver
	84126072	TOOL-MEAS-ADA-2.5	BFF (Ø 2.5 mm) universal adapter for OP930/OP940 receiver
	84058882	TOOL-MEAS-SWITCH-ADA	Switch adapter for OP930/OP940 receiver (SFF/BFF)
	85029624	SLEEVE_ZR_BFF_5mm_TOOL	BFF replacement sleeve for tuning and switch adapter (Optotest)
	85029622	SLEEVE_ZR_SFF_3mm TOOL	SFF replacement sleeve for tuning and switch adapter (Optotest)

Performance measurement

Fiber optic master cables



Master cables are selected assemblies with reference connectors on each side. They are used for repeatable IL/RL measurements of assemblies and links. The reference cables are defined in the following standards:

Measurement method
IEC 61300-3-4

Application of reference cables
IEC 61280-4-1/IEC 61280-4-2/IS 14763-3

Specifications of reference connectors and adapters
IEC 60874-14 series/IEC 60874-19 series/EN 50377 series

Items included

- Master cable, length 3 m
- Label with serial number guarantees traceability
- Test certificate

HUBER+SUHNER offers a master cable maintenance service. In order to keep the measurement results stable, the ferrules are repolished and the new parameters can be traced back to each master cable. However, master connectors can only be repolished as long as the ferrule length does not fall below the minimum length indicated in the appropriate connector standard.

Specifications

Dome offset of spherically polished ferrule endface	for all reference connectors	$\leq 30 \mu\text{m}$
Undercut/protrusion	for all reference connectors	$\pm 50 \mu\text{m}$
Eccentricity of fiber core center to ferrule center		$\leq 0.4 \mu\text{m}$ ¹⁾
Deviation of the fiber axis to the ferrule axis		$< 0.2^\circ$
Attenuation between two reference connectors at 1310 nm		$\leq 0.1 \text{ dB}$
Return loss between two reference connectors at 1310 nm	UPC	$> 55 \text{ dB}$
	APC	$> 72 \text{ dB}$ ²⁾
Visual examination		every 50 mating cycles

1) If the eccentricity is below 0.3 μm , no tuning is needed.

2) IEC 61300-3-6, method 3 (OLCR), randomly verified to a limit of $\geq 85 \text{ dB}$ on an OBR (Optical backscatter reflectometer)

Performance measurement

Fiber optic master cables

Single-mode

Item no.	Item description	Description
85024462	TM01_SCUS_ICAS_SM24E_03.0_AS	Certified mastercable SC-UPC/LC-APC
85024463	TM01_SCAS_ICAS_SM24E_03.0_AS	Certified mastercable SC-APC/LC-APC
85024465	TM01_ICUS_ICAS_SM24E_03.0_AS	Certified mastercable LC-UPC/LC-APC
85024466	TM01_ICAS_ICAS_SM24E_03.0_AS	Certified mastercable LC-APC/LC-APC
85024461	TM01_IHAS_ICAS_SM24E_03.0_AS	Certified mastercable LSH-APC/LC-APC

Multimode

Item no.	Item description	Description
85024641	TM01_SCUS_ICAS_O224E_03.0_MM	Measurement cable MM SC-UPC/LC-APC (50 µm)
85024642	TM01_ICUS_ICAS_O224E_03.0_MM	Measurement cable MM LC-UPC/LC-APC (50 µm)
85024645	TM01_SCUS_ICAS_O127E_03.0_MM	Measurement cable MM SC-UPC/LC-APC (62.5 µm)
85024654	TM01_ICUS_ICAS_O127E_03.0_MM	Measurement cable MM LC-UPC/LC-APC (62.5 µm)

Performance measurement

Video fiber microscope EC400KD



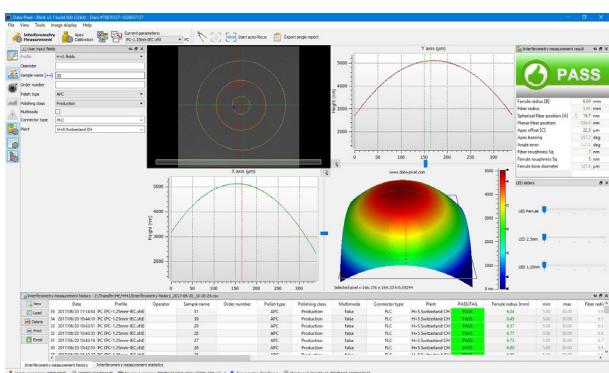
Optical specifications table

Magnification	Camera type	Screen size	Resolution	Range of sight on 8" TFT screen
400 ×	PAL	8" TFT 800x600	0.7 µm	180 - 250 µm

Endface inspection	Item no.	Item description	Description
The microscope unit with two small sleeves.	85024012	TOOL-ENDF-EC400KD	Endface microscope EC400KD incl. 1.25 mm and 2.5 mm adapter replacement sleeves for adapter: 85100332 TOOL-ENDF-EASYCHECK-SLEEVE-SFF 85100333 TOOL-ENDF-EASYCHECK-SLEEVE-BFF
An LC duplex adapter with a textured surface.	84112084	TOOL-MEAS-ENDF-ADA-1.25-DUP	LC duplex adapter for table microscope
A large, metallic, flanged adapter ring.	85029179	TOOL-ENDF-JDSU-Adapterrинг	Adapter ring for EC-400KD (for old table microscope adapters)
A compact table microscope with a lens and eyepiece.	84042540	TOOL-MEAS-ENDF-TABL-MICROSCOPE	Table microscope WOS-FV-410P incl. BFF (\varnothing 2.5 mm) adapter

Performance measurement

Interferometer DAISI



Performance measurement

Light source Intralux® 4100

The Intralux 4100 is a functional 100 W halogen cold light source for fiber optic light guides with high light intensity and long-life bulb. The device is suitable for convenient control of light transmission.



Features

- Ergonomic design with small footprint
- Reduced downtimes due to quick bulb replacement
- Solid metal housing designed for industrial use
- Certified for electronic and mechanical safety

Specifications

Illumination intensity at 100 % voltage at light guide input	6.8 M Lux
Colour temperature	3159 K
Max. illuminated light guide diameter	10 mm
Mechanical light guide connector diameter	15 mm
Electrical light adjustment	60 to 100 %
Mechanical light adjustment (crescent shaped diaphragm)	0 to 100 (constant colour temperature)
Halogen reflector lamp	12 V/100 W
Average lamp life (230 V)	12 000 h (80 % intensity)
Line voltage/power consumption	230 V/110 W
Max. enclosure temperature	ambient temperature +20 °C
Degree of protection	protection class 1
Weight	3 kg
Enclosure	metal, powder-coated RAL 9002
Approvals	CE/product safety IEC/EN 61010-1: 2001 EMC: emission IEC/CISPR 11, class B immunity: IEC 61000-4-2 to 6 and 11

Performance measurement

Interferometer	Item no.	Item description	Description
	84044377	TOOL-GEOM-INTERFEROMETER-DAISI	Interferometer DPLC-DAISI for endface geometry inspection
	upon request	3D INTERFEROMETER	3DScope-v2 interferometer
	85024431	TOOL-MEAS-DPLC-REF-LENS	Reference lens
	85005408	DPLC-REF-APC- SC-TRACE	Reference angle SC-APC

Light transmission	Item no.	Item description	Description
	84118004	TOOL-MEAS-LIGT-TRANS	Cold light source Intralux 4100, for light transmission check (multimode)
	23033420	TOOL-CHECK-FIBER-FAULT-LOCATOR	Laser fiber check tool, for BFF connectors (\varnothing 2.5 mm) incl. SFF patch cord

Specific equipment

LSH	Item no.	Item description	Description
	85080028	TOOL-FLSH-HOLDING CLIP	Clip for new E-2000 polishing
	84024516	TOOL-SPEC-FLSH-SERV-ADA	Service adapter LSH, to open the shutter
	85086412	TOOL-GLUE NOZZLE-FLSH	LSH teflon glue adapter
	84098359	TOOL-CLVE-HSC08-CA-2.5-ADAP	Adapter for HSC08 calliper 2.5 mm (cleave height measurement for all BFF connector types) Note: For new E-2000 connectors it is necessary to upgrade the 2.5 mm gauge with this adapter.

All tools implemented for the new E-2000 are subject to the standard product group such as jigs, cleaving adapters etc.



Connectors and adapters

HUBER+SUHNER offers a wide range of fiber optic connectors optimised for both indoor and outdoor applications. Customer-specific connectors are also available in addition to a comprehensive standard product portfolio. In response to the rapidly increasing requirements in different markets, HUBER+SUHNER develops innovative products tested according to international standards.

All fiber optic connectors meet the highest mechanical and thermal specifications.

Connector overview



Connector type	E-2000 (LSH)	LC	SC	LX.5	FC
Compliance	IEC 61754-15 TIA 604-16	IEC 61754-20 TIA 604-10-A	IEC 61754-4 TIA 604-3	IEC 61754-23 TIA 604-13	IEC 61754-13 TIA 604-4-A
Tuning					
In steps of	45°	45°	45°	45°	APC 60° / UPC infinitely
Mech./therm. perform.					
Tensile load (N)	100	100	100	100	100
Mating durability (cycles)	1000	1000	1000	1000	1000
Operating temperature (°C)	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Flammability					
UL 94 V-0	•	•	•	•	•
Colour of housing					
SM UPC	blue	blue	blue	blue	
SM APC	green	green	green	green	
MM	beige	black	beige	beige	
OM3	beige	black	aqua	beige	
OM4	beige	black	beige/blue	beige	
Brass nickel-plated					•
Fiber type					
E9/125	•	•	•	•	•
G50/125/OM3	•	•	•	•	•
G62.5/125	•	•	•	•	•
HCS200/230	•	-	•	-	•
Features					
One-piece design	•	•	•	•	•
Automatic metal shutter	•	-	-	•	-
SFF connector	-	•	-	•	-
Colour coding	•	•	-	•	-
For high power applications	•	•	•	•	-
Cable diameter (mm)	0.6 up to 3.5	0.6 up to 2.8	0.6 up to 3.5	0.6 up to 2.8	0.6 up to 3.5
Insertion loss (dB) ¹⁾					
MM/OM3/OM4 typ. ≤	0.20	0.20	0.20	0.20	0.20
97 % ≤	0.50	0.50	0.50	0.50	0.50
SM 0.1dB typ. ≤	0.06	0.06	0.06	0.06	0.06
97 % ≤	0.15	0.15	0.15	0.15	0.15
SM High-End typ. ≤	0.12	0.12	0.12	0.12	0.12
97 % ≤	0.25	0.25	0.25	0.25	0.25
SM LAN-Eco typ. ≤	0.20	0.20	0.20	0.20	0.20
97 % ≤	0.45	0.45	0.45	0.45	0.45
Return loss (dB)					
UPC >	50	50	50	50	50
APC >	85 ²⁾	65	65	65	65

Connector overview



ST-LEAN	ST- HQ	ST-SEC	LSA (DIN)	FSMA	Blink	Clik
IEC 61754-2 TIA 604-2	IEC 61754-2 TIA 604-2	IEC 61754-2 TIA 604-2	IEC 61754-3 DIN 47256	IEC 61754-22	IEC 61754-29	IEC 61754-30

			60°		45°	
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100	100	100	100	100	100	100
1000	1000	1000	1000	1000	1000	1000
-40 to +85						

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					white	
					white	

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•	•	•	•	•	-	
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-	-	-	-	-	•	-
-	-	-	-	-	•	•
-	-	-	-	-	-	-
-	-	-	-	-	-	-
0.6 up to 3.5	0.6 up to 4.5	0.6 up to 2.8	0.6 up to 2.8			

0.25	0.20	0.20	0.20	1.00	-	
0.70	0.50	0.50	0.50	1.50	-	
n/a	n/a	n/a	n/a	n/a	0.06	0.06
n/a	n/a	n/a	n/a	n/a	0.15	0.15
n/a	n/a	n/a	0.12	n/a	0.12	0.12
n/a	n/a	n/a	0.25	n/a	0.25	0.25
n/a	0.20	0.20	0.20	n/a	0.20	0.20
n/a	0.45	0.45	0.45	n/a	0.45	0.45

-	50	50	50	-	50	50
-	-	-	65	-	65	65

E-2000™ (LSH) portfolio

High performance

The E-2000 has proven its performance worldwide in CATV and telecommunication networks. Due to its high precision zirconia full ceramic ferrule it achieves an insertion loss of 0.1 dB and a return loss of more than 85 dB at APC connectors. These outstanding quality and performance features make E-2000 especially suitable for installation in global high performance networks.

High reliability

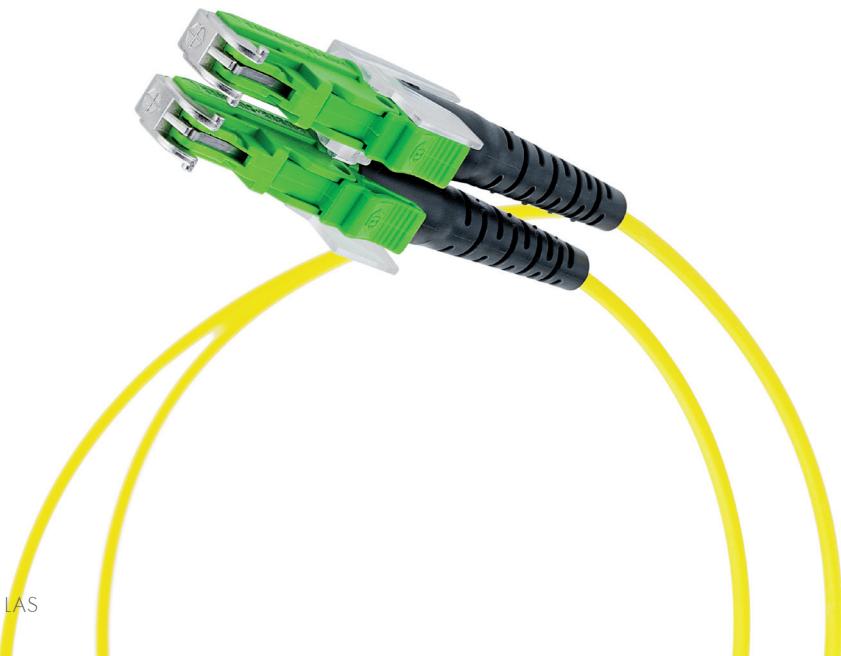
E-2000 is a high-performance connector that meets the highest demands with its excellent design and high-quality manufacturing processes. Due to the fact that all partner assembly sites are regularly certified, it is ensured that all assemblies are manufactured according to the applicable standards.

High safety

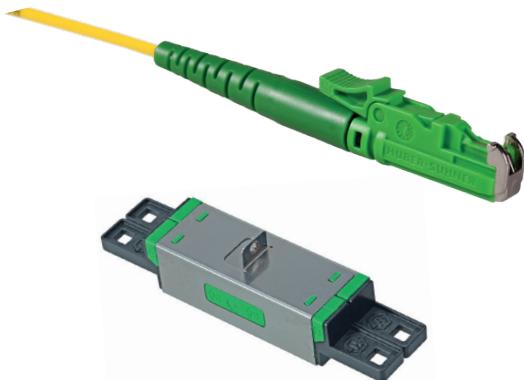
In addition to high performance, E-2000 offers safety and time savings. With its automatic full metal shutters, E-2000 meets the highest safety requirements in all current laser classes. Full metal shutters are essential in high power applications. All optical functional parts are protected against mechanical damage and dust. Permanent connections can be easily established by simply removing the lock-up-lever. This prevents any accidental disconnecting and allows easy and safe handling.

High flexibility

HUBER+SUHNER offers a complete range of E-2000 products suitable for any application. The mechanical and colour coding system can be changed both at the connector and at the adapter. This system prevents interconnection errors and saves time during installation and maintenance. The E-2000 duplex clip in combination with the duplex adapter enables a time and space saving installation.



E-2000 (LSH)



Features

- Automatic metal shutter in connector and adapter for dust protection and laser safety
- One-piece design for easy termination
- Colour coding of connector and adapter
- Mechanical coding of connector and adapter
- Ideal for high power applications
- Switchable duplex clips

Specifications

Interface	IEC 61754-15
Technology	full ceramic ferrule
Tensile strength	> 100N
Operating temperature	-40 up to +85 °C
Low smoke	halogen-free
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
RoHS and REACH	conform

E-2000 (LSH)

LSH connectors for cable diameter ≤ 3.5 mm



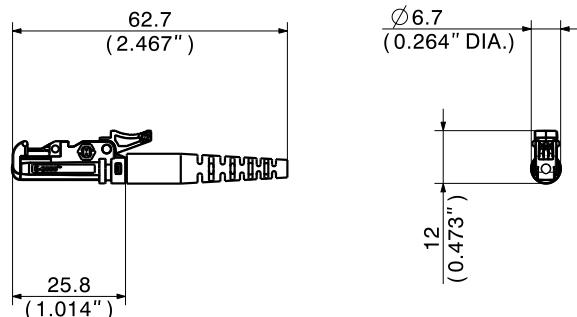
Connector Type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
SM	APC	0.12/0.25	100	85081667	FLSH-2000-A650_100-P	green	100
SM premium		0.06/0.15		85081668	FLSH-2000-H650_100-P		



Connector Type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
SM	UPC	0.12/0.25	100	85081669	FLSH-2000-A150_100-P	blue	100
SM premium		0.06/0.15		85081670	FLSH-2000-H150_100-P		

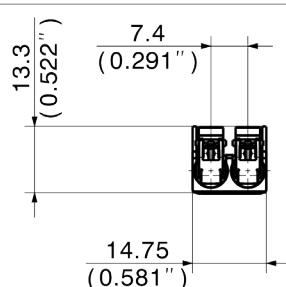


Connector Type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
G50/125 G62.5/125	UPC	0.20/0.50	100	85081671	FLSH-2000-B150_100-P	beige	100
HCS200/230		0.30/0.75		85081672	FLSH-2000-D150_100-P		



E-2000 duplex clip

Clip type	Item no.	Description	Colour	Packing unit
Duplex	85090130	FLSH-CLIP-DUP_100-P	transparent	100

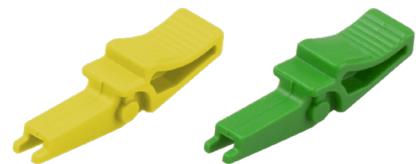


E-2000 (LSH)

Mechanical and colour coding system for connector

The mechanical and colour coding system allows fast and secure installation of connectors and adapters, ensuring mating without risk of confusion. Each connector is delivered with the lever in the corresponding colour. If a coding is requested, an additional lever has to be ordered separately.

Coding	Item No.	Description	Colour	Packing unit
Colour coding	23011711	LEVER_FLSH_BK_COL	black	1
	23013694	LEVER_FLSH_RD_COL	red	
	23013695	LEVER_FLSH_BN_COL	brown	
	23013696	LEVER_FLSH_YE_COL	yellow	
	23013697	LEVER_FLSH_OG_COL	orange	
	23013698	LEVER_FLSH_VT_COL	violet	
	63128372	LEVER_FLSH_WH_COL	white	
	23013700	LEVER_FLSH_GY_COL	grey	
	23013701	LEVER_FLSH_PK_COL	pink	
	23013702	LEVER_FLSH_TQ_COL	turquoise	
	63128370	LEVER_FLSH_BU_COL	blue	
	63128371	LEVER_FLSH_GN_COL	green	
Mechanical coding	63128373	LEVER_FLSH_RD_MEC	red	1
	63128374	LEVER_FLSH_BN_MEC	brown	
	63128375	LEVER_FLSH_YE_MEC	yellow	
	63128376	LEVER_FLSH_OG_MEC	orange	
	63128377	LEVER_FLSH_VT_MEC	violet	
	63128378	LEVER_FLSH_WH_MEC	white	



E-2000 (LSH)

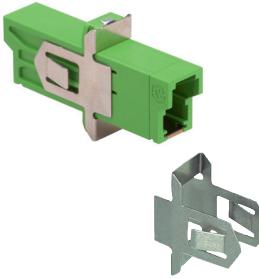
Simplex, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	85026792	FLSH-FLSH-A150_100-P	100
	APC	green	85026793	FLSH-FLSH-A650_100-P	
	SM APC high power 0.1 dB	green	85026798	FLSH-FLSH-A680_100-P	
	MM	beige	85026795	FLSH-FLSH-A250_100-P	

Simplex, 2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	85026799	FLSH-FLSH-D150_100-P	100
	APC	green	85026800	FLSH-FLSH-D650_100-P	
	SM APC high power 0.1 dB	green	85026805	FLSH-FLSH-D680_100-P	
	MM	beige	85026801	FLSH-FLSH-D250_100-P	

Accessories

	Spring type	Material	Item no.	Description	Packing unit
	Quick-mounting spring	Stainless steel	22646246	ACC-FIX-001_100-P	100

E-2000 (LSH)

Duplex, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	84072377	FLSH-FLSH-A100-02_100-P	100
	SM APC	green	84072381	FLSH-FLSH-A600-02_100-P	
	SM high power 0.1 dB	blue	84077363	FLSH-FLSH-A110-02_100-P	
	SM APC high power 0.1 dB	green	84072383	FLSH-FLSH-A610-02_100-P	
	MM	beige	84072379	FLSH-FLSH-A101-02_100-P	

Duplex, 2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	84098379	FLSH-FLSH-D100-02_100-P	100
	SM APC	green	84098387	FLSH-FLSH-D600-02_100-P	
	SM high power 0.1 dB	blue	84098385	FLSH-FLSH-D110-02_100-P	
	SM APC high power 0.1 dB	green	84098389	FLSH-FLSH-D610-02_100-P	
	MM	beige	84098382	FLSH-FLSH-D101-02_100-P	

E-2000 (LSH)

Order information for mechanical and colour coded adapters

The coding is provided by the modular adapters. These are fully compatible with the standard adapters which are no longer codable. The order code consists of different parts such as standard description, adapter type, coding (mechanical and colour coding with shutter), and flange type.

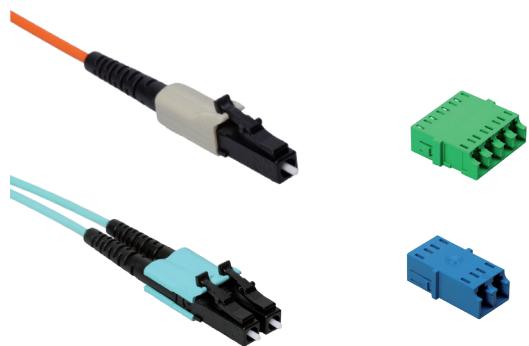
Example: FLSH-FLSH-H650-AND-A



Standard description FLSH-FLSH-	Adapter type H ... -		Coding A ... -	Flange type ...	
	150	blue housing		A	Flange screwed
	180	blue housing/0.1 dB		B	Flange snap-in
	250	pearl white housing		C	Flange 2-hole
	260	black housing		D	Flange 2-hole excentric
	650	green housing		N	without flange
	680	green housing/0.1 dB			

LC portfolio

The LC connector has established itself due to its small size and very reliable connecting quality. In the last few years, it has become the most popular connector in the world. HUBER+SUHNER has consistently expanded its portfolio in order to meet the different customer needs. The HUBER+SUHNER LC-XD is taking the LC to a completely new level in packing density and handling.



Features

- Push-pull mechanism for best handling and high packing density
- Patented (US 8.221.007)
- Two connections in one SC-shaped adapter
- One-piece design for easy termination
- Short rigid length
- Switchable duplex connectors

Specifications

Compliance	IEC 61754-20, TIA 604-10-A
Technology	full ceramic ferrule (1.25 mm)
Tuning	in 45° steps
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Connector types	single-mode UPC single-mode APC multimode/OM3/OM4

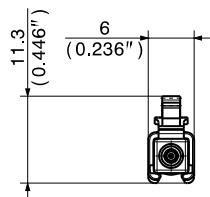
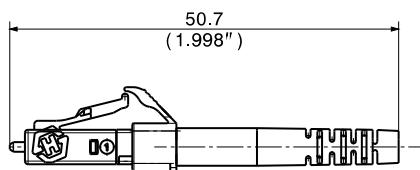
HUBER+SUHNER LC connectors are combinable with different clips. In order to meet all customer requirements, classic clips, push-pull clips and clips with lever are available for highest packing density.

LC connector for cable diameter ≤ 2.8 mm

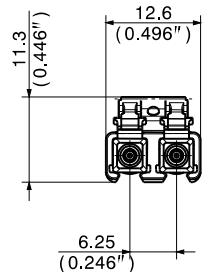
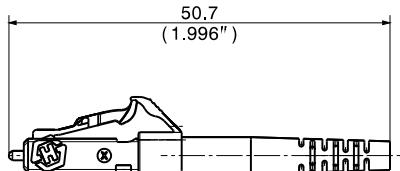
Connector								Assembly
Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Colour	Clip colour
SM	UPC	0.12/0.25	100	84091832	FLC-Z/K-A007_100-P	100	blue	blue
	APC			84091833	FLC-Z/K-A607_100-P		green	green
SM premium	UPC	0.06/0.15		84095286	FLC-Z/K-H007_100-P		blue	blue
	APC			84095287	FLC-Z/K-H607_100-P		green	green
MM	UPC	0.20/0.50		84091834	FLC-Z/K-B007_100-P		black	beige
OM3								aqua
OM4		0.15/0.30		84127745	FLC-Z/K-A008_100-P			heather violet

LC clips

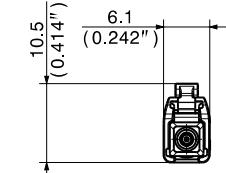
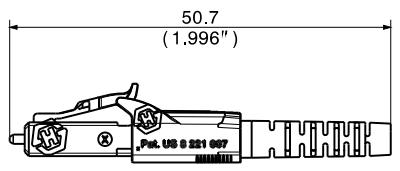
LC with classic clip simplex



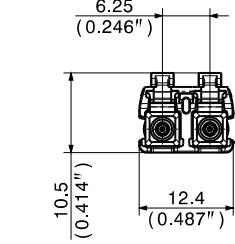
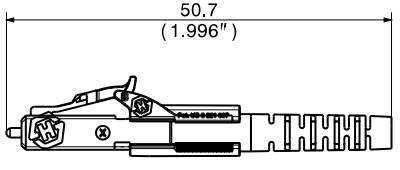
LC with classic clip duplex



LC with push-pull clip simplex



LC with push-pull clip duplex



Clip					
Connection	Colour	Item no.	Description	Packing unit	
Simplex	blue	23028176	FLC-CLIP-CLA-SIM-BU_100-P	100	
	green	23028180	FLC-CLIP-CLA-SIM-GN_100-P		
	beige	23028172	FLC-CLIP-CLA-SIM-BG_100-P		
	black	23028174	FLC-CLIP-CLA-SIM-BK_100-P		
	aqua	23034783	FLC-CLIP-CLA-SIM-TQ_100-P		
	heather violet	84125773	FLC-CLIP-CLA-SIM-HV_100-P		

Clip					
Connection	Colour	Item no.	Description	Packing unit	
Duplex	blue	23028166	FLC-CLIP-CLA-DUP-BU_100-P	100	
	green	23028168	FLC-CLIP-CLA-DUP-GN_100-P		
	beige	23028164	FLC-CLIP-CLA-DUP-BG_100-P		
	black	84027096	FLC-CLIP-CLA-DUP-BK_100-P		
	aqua	84086257	FLC-CLIP-CLA-DUP-TQ_100-P		
	heather violet	84125775	FLC-CLIP-CLA-DUP-HV_100-P		

Clip					
Connection	Colour	Item no.	Description	Packing unit	
Simplex	blue	84091875	FLC-CLIP-PP-SIM-BU_100-P	100	
	green	84091876	FLC-CLIP-PP-SIM-GN_100-P		
	beige	84091877	FLC-CLIP-PP-SIM-BG_100-P		
	black	84091878	FLC-CLIP-PP-SIM-BK_100-P		
	aqua	84091879	FLC-CLIP-PP-SIM-TQ_100-P		
	heather violet	84125777	FLC-CLIP-PP-SIM-HV_100-P		

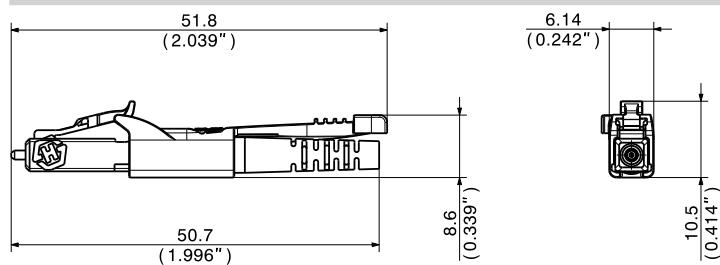
Clip					
Connection	Colour	Item no.	Description	Packing unit	
Duplex	blue	84091870	FLC-CLIP-PP-DUP-BU_100-P	100	
	green	84091871	FLC-CLIP-PP-DUP-GN_100-P		
	beige	84091872	FLC-CLIP-PP-DUP-BG_100-P		
	black	84091873	FLC-CLIP-PP-DUP-BK_100-P		
	aqua	84091874	FLC-CLIP-PP-DUP-TQ_100-P		
	heather violet	84125785	FLC-CLIP-PP-DUP-HV_100-P		

LC clips

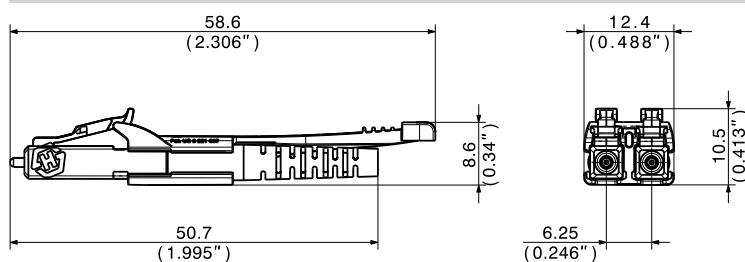
Clips with extended lever for highest packing density

The latest innovations increase the packing density to the maximum. Thanks to the extended push-pull levers, handling in fully loaded racks remains clear and easy.

LC with HD clip simplex



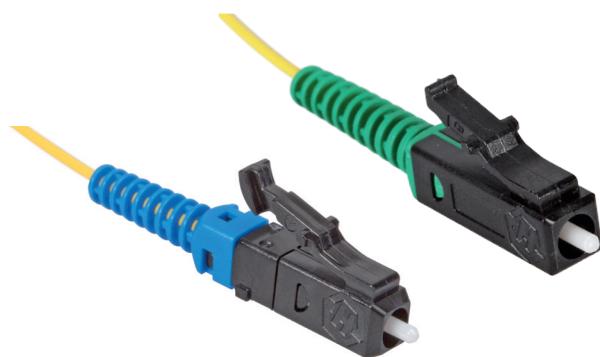
LC with HD clip duplex



Simplex clip					
Connection	Colour	Item no.	Description	Packing unit	
Simplex	blue	85006324	FLC-CLIP-HD-SIM-BU_100-P	100	
Simplex	green	85006325	FLC-CLIP-HD-SIM-GN_100-P		
Simplex	beige	85006326	FLC-CLIP-HD-SIM-BG_100-P		
Simplex	black	85006330	FLC-CLIP-HD-SIM-BK_100-P		
Simplex	aqua	85006328	FLC-CLIP-HD-SIM-TQ_100-P		
Simplex	heather violet	85006329	FLC-CLIP-HD-SIM-HV_100-P		

Duplex clip					
Connection	Colour	Item no.	Description	Packing unit	
Duplex	black	85063911	FLC-CLIP-HD-DUP-BK_100-P	100	

LC pigtail

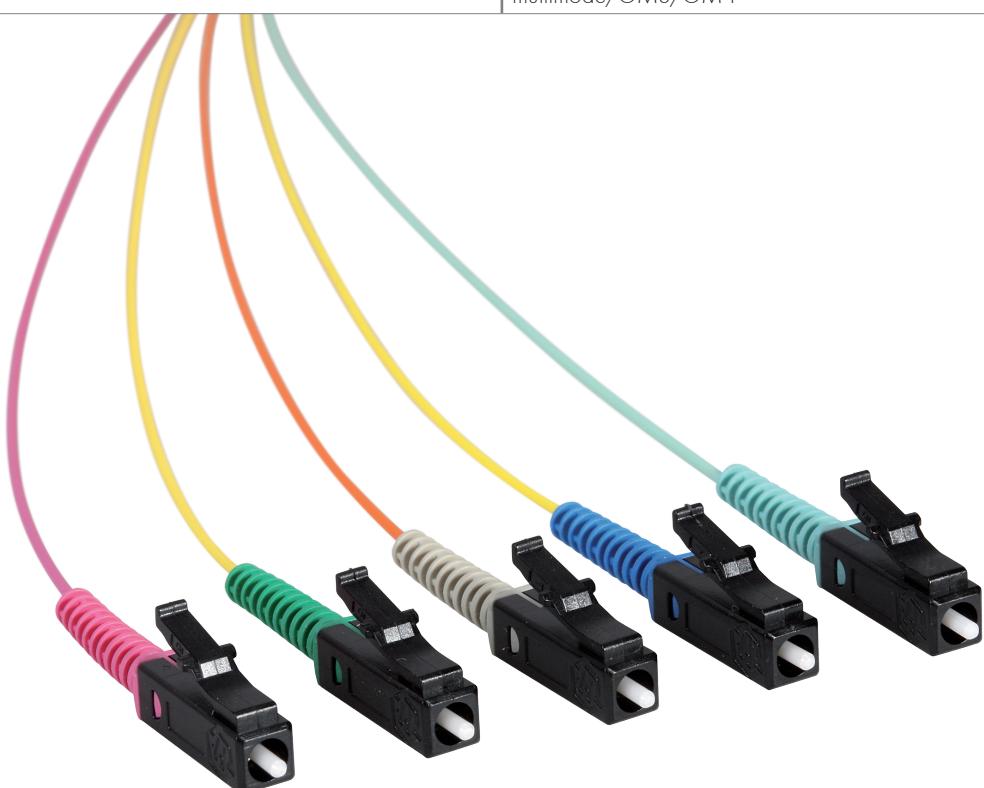


Features

- High mechanical stability
- Colour-coded boot for good visibility, even in mated condition

Specifications

Compliance	IEC 61754-20, TIA 604-10-A
Technology	full ceramic ferrule (1.25 mm)
Tuning	in 45° steps
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Connector types	single-mode UPC single-mode APC multimode/OM3/OM4



LC-XD uniboot and LC classic uniboot



Features

- Push-pull mechanism for best handling and highest packing density
- Patented (US 8.221.007)
- Sophisticated design for easy termination
- Short rigid length
- Polarity flipping without tool
- Compatible with standard and mini LC adapters and transceivers

Specifications

Compliance	IEC 61754-20, TIA 604-10-A
Technology	full ceramic ferrule (1.25 mm)
Tuning	in 45° steps
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Connector types	single-mode UPC single-mode APC multimode/OM3/OM4

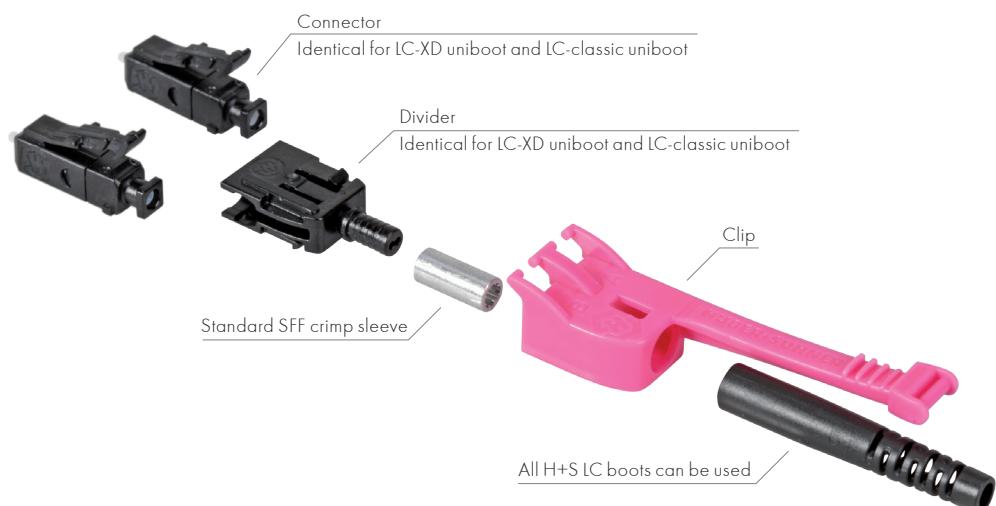
The LC-XD uniboot offers the highest possible packing density. The connector has an extended, rigid lever and an innovative push-pull mechanism. Polarity flipping is possible without any tools.

LC-XD uniboot

Connector								Assembly
Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Colour	Clip colour
SM	UPC	0.12/0.25	70	85001933	FLC-Z/K-A010_100-P	100	black	blue
	APC							green
G50/125	UPC	0.20/0.50		85005568	FLC-Z/K-B010_100-P			beige
OM3								aqua
OM4		0.15/0.30		85001933	FLC-Z/K-A010_100-P			heather violet

Divider				
Connection	Colour	Item no.	Description	Packing unit
Duplex uniboot	black	85001936	FLC-DIV-XD_100-P	100

Clip				
Connection	Colour	Item no.	Description	Packing unit
Duplex uniboot	blue	85001937	FLC-CLIP-XD-UNI-BU_100-P	100
	green	85001938	FLC-CLIP-XD-UNI-GN_100-P	
	beige	85001939	FLC-CLIP-XD-UNI-BG_100-P	
	black	85001942	FLC-CLIP-XD-UNI-BK_100-P	
	aqua	85001940	FLC-CLIP-XD-UNI-TQ_100-P	
	heather violet	85001941	FLC-CLIP-XD-UNI-HV_100-P	

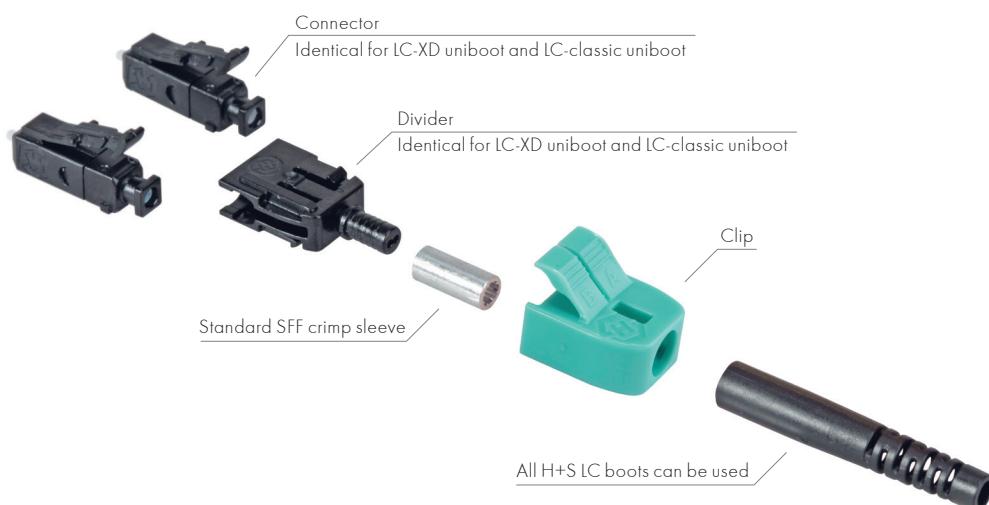


LC classic uniboot

Connector								Assembly
Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Colour	Clip colour
SM	UPC	0.12/0.25	70	85001933	FLC-Z/K-A010_100-P	100	black	blue
	APC			85005568	FLC-Z/K-B010_100-P			green
G50/125	UPC	0.20/0.50		85001933	FLC-Z/K-A010_100-P			beige
OM3				85001933	FLC-Z/K-A010_100-P			aqua
OM4		0.15/0.30						heather violet

Divider				
Connection	Colour	Item no.	Description	Packing unit
Duplex uniboot	black	85001936	FLC-DIV-XD_100-P	100

Clip				
Connection	Colour	Item no.	Description	Packing unit
Duplex uniboot	blue	85008310	FLC-CLIP-CLA-DUP-UNI-BU_100-P	100
	green	85008311	FLC-CLIP-CLA-DUP-UNI-GN_100-P	
	beige	85008312	FLC-CLIP-CLA-DUP-UNI-BG_100-P	
	black	85008317	FLC-CLIP-CLA-DUP-UNI-BK_100-P	
	aqua	85008313	FLC-CLIP-CLA-DUP-UNI-TQ_100-P	
	heather violet	85008314	FLC-CLIP-CLA-DUP-UNI-HV_100-P	



LC adapters



Features

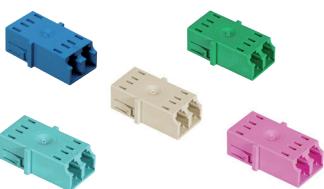
- Two connections in one SC-shaped adapter
- One-piece design for highest precision
- Ceramic sleeves

Specifications

Compliance	IEC 61754-20, TIA 604-10-A
Technology	full ceramic sleeve
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Connector types	single-mode UPC single-mode APC multimode/OM3/OM4

LC-HQ adapters

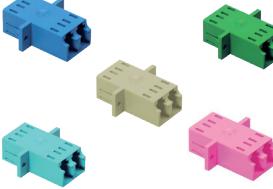
Duplex, SC footprint, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	84083886	FLC-FLC-A102-02_100-P	100
	SM APC	green	84090249	FLC-FLC-A602-02_100-P	
	MM	beige	84090245	FLC-FLC-A202-02_100-P	
	OM3	aqua	84090247	FLC-FLC-A302-02_100-P	
	OM4	heather violet	84125797	FLC-FLC-A402-02_100-P	

Duplex, SC footprint, integrated fixing spring, internal shutter

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	85002198	FLC-FLC-A104-02_100-P	100
	SM APC	green	85002200	FLC-FLC-A604-02_100-P	

Duplex, SC footprint, 2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	84097756	FLC-FLC-D101-02_100-P	100
	SM APC	green	84097822	FLC-FLC-D601-02_100-P	
	MM	beige	84097813	FLC-FLC-D201-02_100-P	
	OM3	aqua	84097814	FLC-FLC-D301-02_100-P	
	OM4	heather violet	84125808	FLC-FLC-D401-02_100-P	

Duplex, SC footprint, 2-hole flange, internal shutter

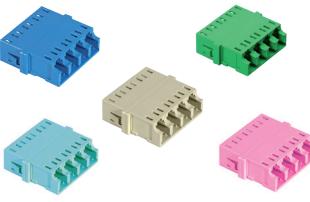
	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	85002201	FLC-FLC-D104-02_100-P	100
	SM APC	green	85002203	FLC-FLC-D604-02_100-P	

LC-HQ adapters

Simplex, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	23038611	FLC-FLC-A100_UP	n.a.
	SM APC	green	23038613	FLC-FLC-A600_UP	
	MM	beige	23038612	FLC-FLC-A200_UP	
	OM3				
	OM4				

Quad, integrated fixing spring

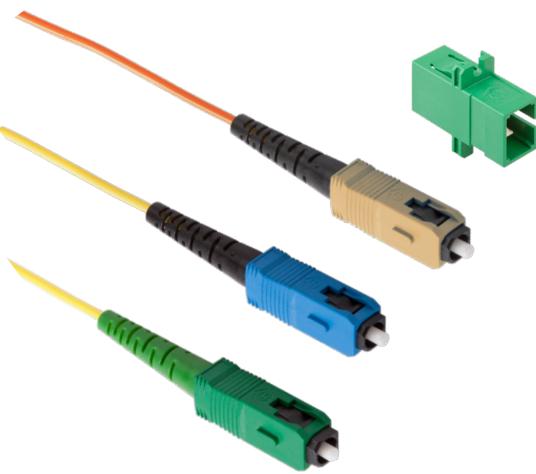
	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	84065578	FLC-FLC-A100-04_UP	n.a.
	SM APC	green	84076447	FLC-FLC-A600-04_UP	
	MM	beige	84076440	FLC-FLC-A200-04_UP	
	OM3	aqua	84076446	FLC-FLC-A300-04_UP	
	OM4	heather violet	84149087	FLC-FLC-A400-04_UP	

Duplex, RJ-45 shape, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	23028097	FLC-FLC-A100-02_100-P	100
	SM APC	green	23028099	FLC-FLC-A600-02_100-P	
	MM	beige	23028102	FLC-FLC-A200-02_100-P	
	OM3				
	OM4				

SC

The SC connector is one of the most common solutions for reliable networks. With its one-piece design, it also provides an easy termination.



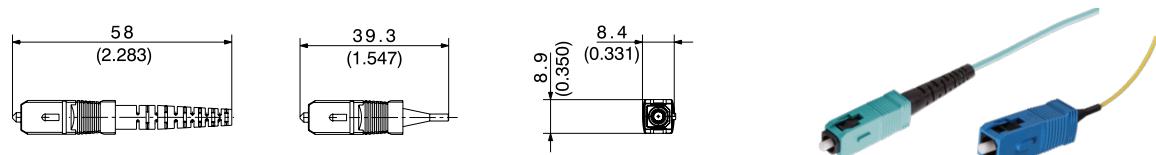
Features

- Push-pull connector
- One-piece design for easy and quick termination
- High mechanical and thermal resistance according to Telcordia GR-326-CORE

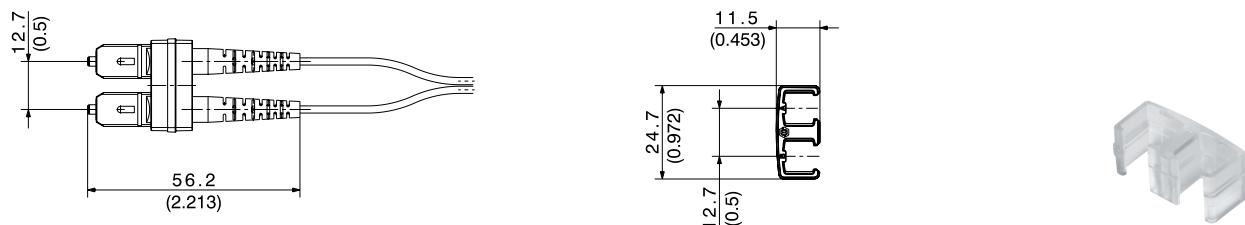
Specifications

Compliance	IEC 61754-4, TIA 604-3		
Technology	full ceramic ferrule (2.5 mm) and sleeve (SM)		
Tuning	in 45° steps		
Mechanical resistance	100 N tensile load		
Operating temperature	-40 to +85 °C		
Flammability	UL 94 V-0		
Durability	min. 1000 mating cycles		
Colour of housing	single-mode	UPC	blue
	single-mode	(APC 8°/9°)	green
	multimode		beige
	OM3		aqua
	OM4		heather violet (adapter only)

SC connector for cable diameter ≤ 3.5 mm

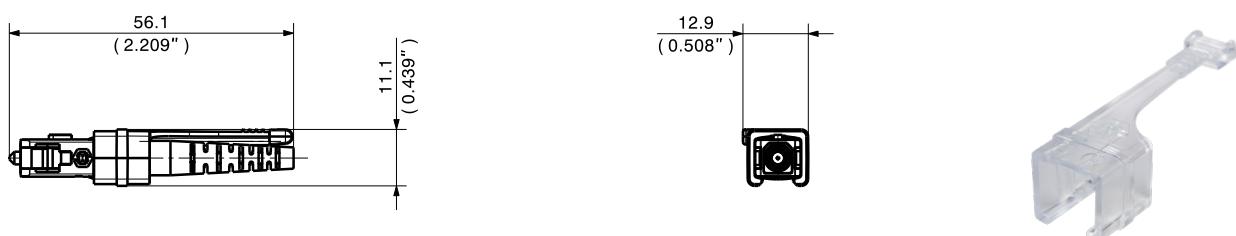


Connector type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
SM high-end	UPC	0.12/0.25	100	84003876	FSC-CMAX-A101_100-P	blue	100
	APC 8°			22650950	FSC-CMAX-A600_100-P	green	
	APC 9°						
SM premium	UPC	0.06/0.15		84003886	FSC-CMAX-H101_100-P	blue	
	APC 8°			23026990	FSC-CMAX-H600_100-P	green	
	APC 9°						
G50/125, G62.5/125	UPC	0.20/0.50		84003879	FSC-CMAX-B101_100-P	beige	
OM3				84085618	FSC-CMAX-L100_100-P	aqua	
HCS 200/230		0.30/0.75		84059511	FSC-CMAX-D101_100-P	beige	



SC duplex clip

Clip type	Item no.	Description	Colour	Packing unit
Duplex	84031089	FSC-DUP-CLIP_100-P	transparent	100

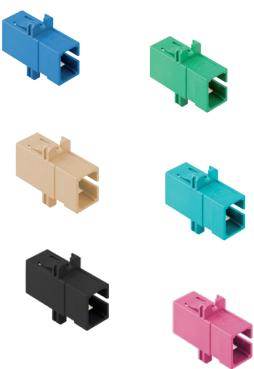


SC high-density clip

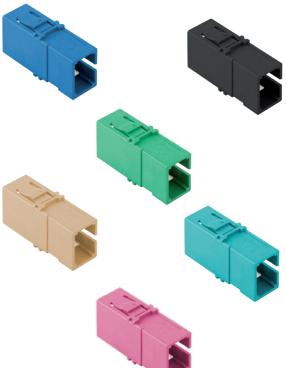
Clip type	Item no.	Description	Colour	Packing unit
Simplex	85079351	FSC-CLIP-HD-SIM-TR_100-P	transparent	100

SC

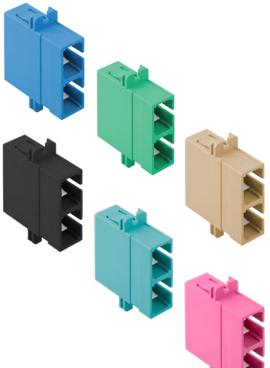
Simplex, 2-hole flange

	Adapter type	Colour	Sleeve material	Item no.	Description	Packing unit
	SM	blue	zirconia ceramic	22659182	FSC-FSC-D100_100-P	100
	SM	black		23004791	FSC-FSC-D103_100-P	
	SM APC	green		22652270	FSC-FSC-D600_100-P	
	MM	beige		23018220	FSC-FSC-D200_100-P	
	OM3	aqua		84124847	FSC-FSC-D300_100-P	
	OM4	heather violet		85031828	FSC-FSC-D400_100-P	

Simplex, integrated fixing spring

	Adapter type	Colour	Sleeve material	Item no.	Description	Packing unit
	SM	blue	zirconia ceramic	84014382	FSC-FSC-A100_100-P	100
	SM	black		23008965	FSC-FSC-A101_100-P	
	SM APC	green		84068913	FSC-FSC-A600_100-P	
	MM	beige		84089820	FSC-FSC-A200_100-P	
	OM3	aqua		84085617	FSC-FSC-A300_100-P	
	OM4	heather violet		85031827	FSC-FSC-A400_100-P	

Duplex, 2-hole flange

	Adapter type	Colour	Sleeve material	Item no.	Description	Packing unit
	SM	blue	zirconia ceramic	84014387	FSC-FSC-D100-02_100-P	100
	SM	black		85031830	FSC-FSC-D102-02_100-P	
	SM APC	green		23037925	FSC-FSC-D600-02_100-P	
	MM	beige		22659192	FSC-FSC-D200-02_100-P	
	OM3	aqua		85031831	FSC-FSC-D300-02_100-P	
	OM4	heather violet		85031832	FSC-FSC-D400-02_100-P	

LX.5

Packaging density is more important today than ever before. The LX.5 connector is based on the proven 1.25 mm ferrule technology. It is the only standardised small form factor connector combining high packing density, reliability, high performance and safety due to its automatic metal shutter.



High packing density

Patch fields with high packing densities do not only require a compact design of single components, but also a stable optical performance. The LX.5 connector fills the gap between small size and safe handling. Two LX.5 connections use the same space as one SC connection.

High performance

Even though being small sized, LX.5 is a big leap in quality and performance. CATV and Telco network operators around the world rely on the proven performance of the LX.5. With a high precision Zirconia full ceramic ferrule, an insertion loss of 0.1 dB and an APC return loss of more than 85 dB, LX.5 is especially suited for installation in global high performance networks.

High reliability

LX.5 is a high-performance connector that meets the highest demands with its excellent design and high-quality manufacturing processes. Due to the fact that all partner assembly sites are regularly certified, it is ensured that all assemblies are manufactured according to the applicable standards.

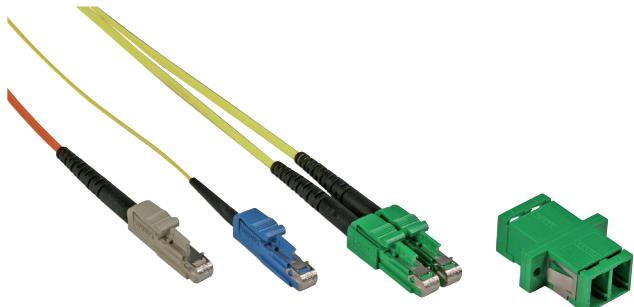
High safety

In addition to its high performance, LX.5 offers safety and time savings. With its automatic full metal shutter, it meets the highest safety requirements in all current laser classes. Full metal shutters are essential in high power applications. All optical functional parts are protected against mechanical damage and dust. With our special tool to engage the safety lock, you easily establish permanent connection and prevent accidental disconnection.

High flexibility

HUBER+SUHNER offers a wide range of LX.5 products to match every application. The colour coding system can be changed both at the connector and the adapter. It prevents interconnection errors and saves time during installation and maintenance.

LX.5

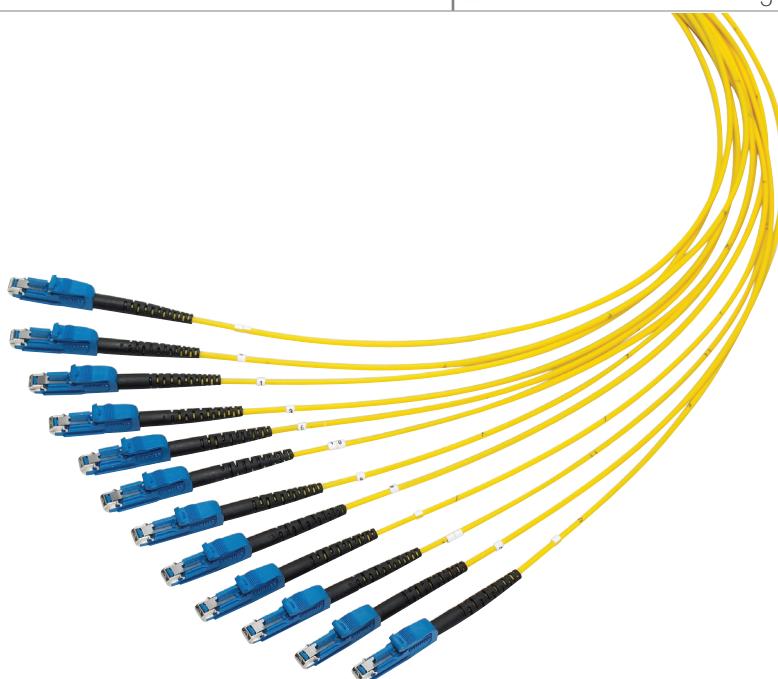


Features

- Small form factor connector for high packing density
- Two connections in one SC-shaped adapter
- Latched push-pull connector
- Automatic metal shutter in connector and adapter for dust protection and laser safety
- One-piece design for easy termination
- Short rigid length of pigtail connector
- Colour coding of connector and adapter
- High power type with integrated locking mechanism
- High mechanical and thermal resistance according to Telcordia GR-326-CORE
- Easy duplexing of simplex connectors

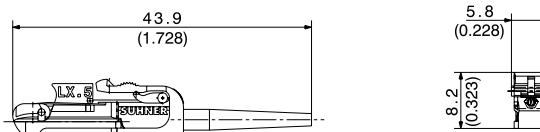
Specifications

Compliance	IEC 61754-23, TIA 604-13		
Technology	full ceramic ferrule (1.25 mm) and sleeve		
Tuning	in 45° steps		
Mechanical resistance	100 N tensile load		
Operating temperature	-40 to +85 °C		
Flammability	UL 94 V-0		
Durability	min. 1000 mating cycles		
Colour of housing	single-mode	UPC	blue
	single-mode	APC	green
	multimode	UPC	beige



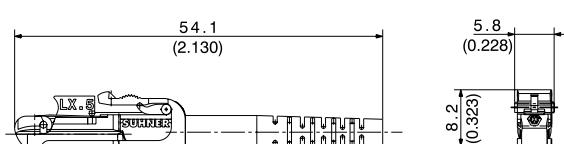
LX.5

LX.5 connectors for cable diameter $\leq 1.0 \text{ mm}$



Connector type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
SM	UPC	0.12/0.25	5	23034484	FLX5-Z/K-A002_100-P	blue	100
	APC			23034488	FLX5-Z/K-A601_100-P	green	
SM premium	UPC	0.06/0.15	5	23034499	FLX5-Z/K-H002_100-P	blue	100
	APC			23034503	FLX5-Z/K-H601_100-P	green	
G50/125 G62.5/125	UPC	0.20/0.50		23034492	FLX5-Z/K-B002_100-P	beige	

LX.5 connectors for cable diameter $\leq 2.8 \text{ mm}$



Connector type	Polishing	IL (db) mean/97 %	Tensile load (N)	Item no.	Description	Colour	Packing unit
SM	UPC	0.12/0.25	100	23034486	FLX5-Z/K-A003_100-P	blue	100
	APC			23034490	FLX5-Z/K-A602_100-P	green	
SM premium	UPC	0.06/0.15	100	23034501	FLX5-Z/K-H003_100-P	blue	100
	APC			23034505	FLX5-Z/K-H602_100-P	green	
G50/125 G62.5/125	UPC	0.20/0.50		23034495	FLX5-Z/K-B003_100-P	beige	

LX.5 adapter

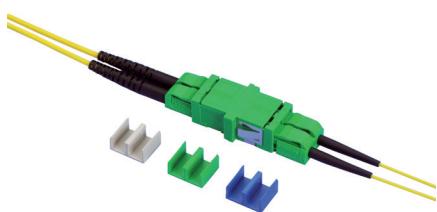
Duplex, integrated fixing spring

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	23039760	FLX5-FLX5-A101-02_100-P	100
	SM high power	blue	23039761	FLX5-FLX5-A102-02	1
	SM APC	green	23039766	FLX5-FLX5-A601-02_100-P	100
	SM APC high power	green	23039767	FLX5-FLX5-A602-02	1
	MM	beige	23039764	FLX5-FLX5-A201-02_100-P	100

Duplex, 2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	SM	blue	23039770	FLX5-FLX5-D101-02_100-P	100
	SM high power	blue	23039771	FLX5-FLX5-D102-02	1
	SM APC	green	23039776	FLX5-FLX5-D601-02_100-P	100
	SM APC high power	green	23039777	FLX5-FLX5-D602-02	1
	MM	beige	23039774	FLX5-FLX5-D201-02_100-P	100

LX.5 colour coding



The colour coding system allows fast and secure installation of the connector and the adapter. It ensures mating without risk of confusion. Clips can be used to mark connectors and labels to mark adapters.

Clip	Connection	Colour	Item no.	Description	Packing unit
Duplex		blue	23035585	FLX5-DUP-BL2_100-P	100
		green	23035587	FLX5-DUP-GN2_100-P	
		beige	23035583	FLX5-DUP-BG2_100-P	
		transparent	84087695	FLX5-DUP-TP2_100-P	

FC portfolio



Features

- Threaded nut connector
- One-piece design for easy and quick termination
- Very short rigid length
- High mechanical and thermal resistance according to Telcordia GR-326-CORE

Specifications

Compliance	IEC 61754-13, TIA 604-4-A
Technology	full ceramic ferrule (2.5 mm) and sleeve
Tuning	UPC continuously APC in 60° steps
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Material	brass nickel plated
Connector types	single-mode UPC single-mode APC multimode

FC connector for cable diameter ≤ 3.5 mm

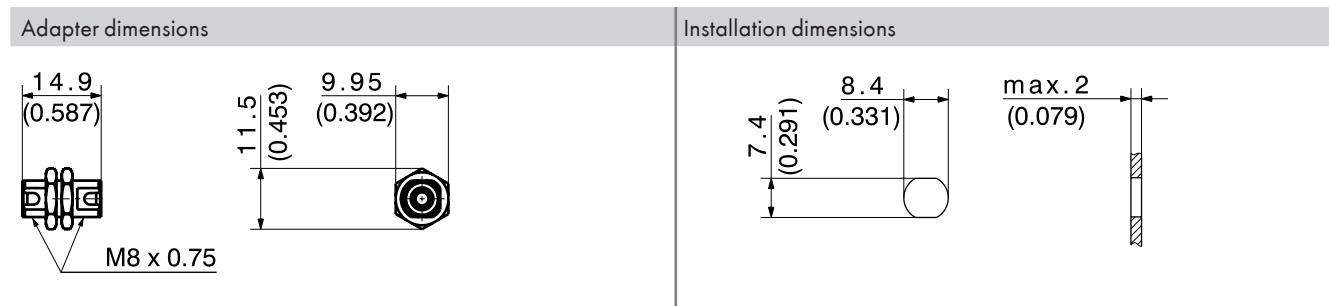


Type	Polishing	IL (dB) mean/97%	Tensile load (N)	Item no.	Description	Packing unit
SM small key	APC	0.12/0.25	100	84036744	FCPC-Z/M-A601_100-P	100
SM small key premium		0.06/0.15		84059513	FCPC-Z/M-H601_100-P	
SM wide key	UPC	0.12/0.25	100	84003845	FCPC-Z/M-A101_100-P	100
SM wide key premium		0.06/0.15		84059512	FCPC-Z/M-H101_100-P	
G50/125, G62.5/ 125 wide key	UPC	0.20/0.50	100	84010569	FCPC-Z/M-B101_100-P	100
HCS200/230		0.30/0.75		84059515	FCPC-Z/M-D101_100-P	

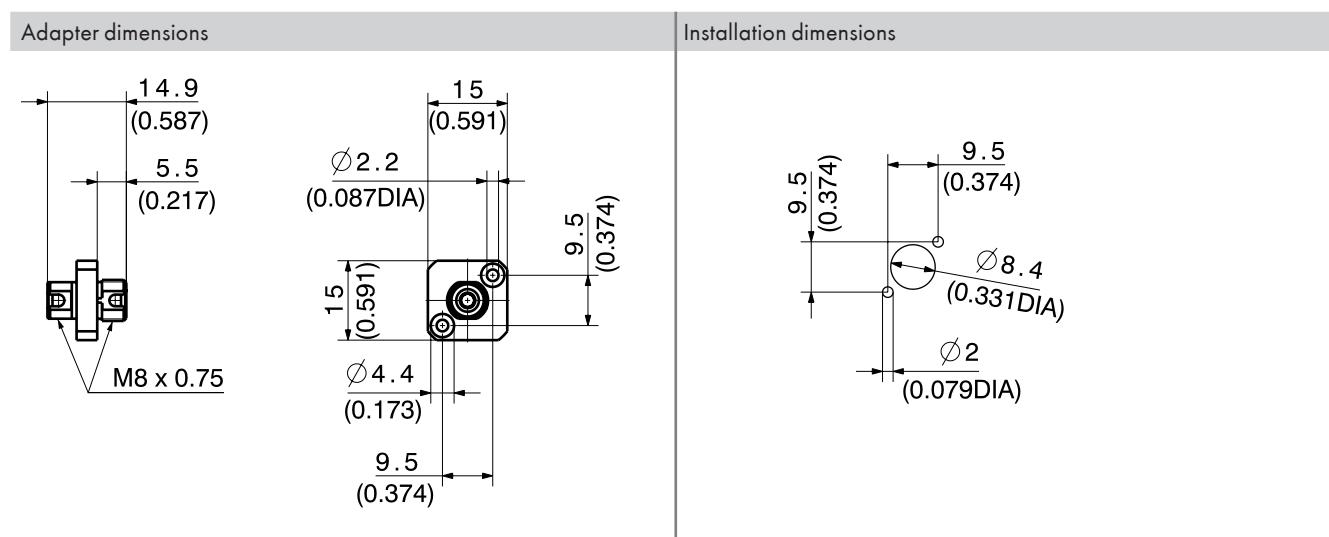
FC

Adapters and dimensions

	Type	Mounting	Item no.	Description	Packing unit
	UPC (wide key)	with loose and fixed nut for D-hole mounting key width: 2.2 mm	22659263	FCPC-FCPC-C100_100-P	100
	APC (small key)	with loose and fixed nut for D-hole mounting key width: 2.05 mm	22659162	FCPC-FCPC-C600	1



	Type	Mounting	Item no.	Description	Packing unit
	UPC (wide key)	with 2-hole flange, 4 mm thick key width: 2.2 mm	22659252	FCPC-FCPC-D100_100-P	100
	APC (small key)	with 2-hole flange, 4 mm thick key width: 2.05 mm	22659163	FCPC-FCPC-D600	1



ST portfolio

The ST (Straight Tip) is a fiber optic connector equipped with a plug and a socket which are locked with a bayonet lock with half twist. Thus, it keeps the connection secure. The ST connector was the first de facto standard for fiber optic cabling.



Features

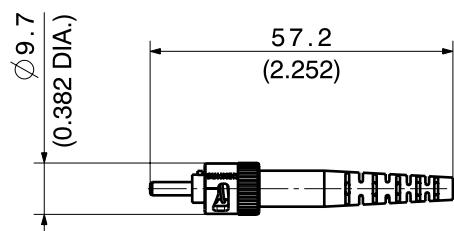
- Bayonet nut connector
- One-piece design
- ST security with integrated strain relief

Specifications

Compliance	IEC 61754-2, TIA 604-2
Technology	full ceramic ferrule (2.5 mm)
Strain relief	100 N
Operating temperature	-40 to +85 °C
Durability	min. 1000 mating cycles
Material	brass nickel plated

ST connector for cable diameter \leq 3.5 mm

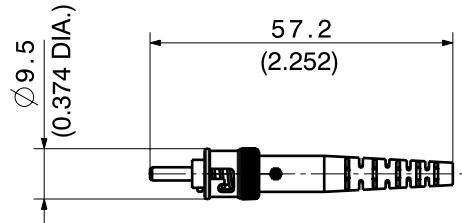
ST-LEAN



Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Bayonet
G50/125, G62.5/125	UPC	0.25/0.70	100	84003889	FST-LEAN-B103_100-P	100	plastic, black
				84003891	FST-LEAN-B106_100-P		metal

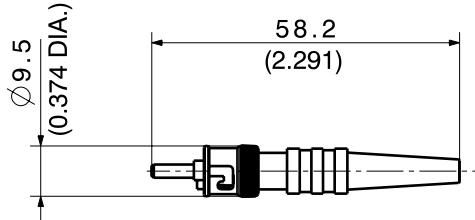
ST

ST-HQ



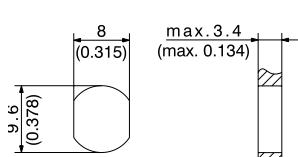
Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Bayonet
SM	UPC	0.20/0.45	100	84003900	FST-Z/M-A101_100-P	100	metal
G50/125, G62.5/125	UPC	0.20/0.50		84003903	FST-Z/M-B101_100-P		
HCS200/230	UPC	0.40/0.75		84059516	FST-Z/M-D101_100-P		

ST-SECURITY



Type	Polishing	IL (dB) mean/97 %	Tensile load (N)	Item no.	Description	Packing unit	Bayonet
SM	UPC	0.20/0.45	100	84003894	FST-SEC-A101_100-P	100	metal
G50/125, G62.5/125	UPC	0.20/0.50		84003896	FST-SEC-B101_100-P		

ST adapter



Type	Mounting	Item no.	Description	Packing unit
SM	With loose and fixed nut, washer for D-hole mounting	22650886	FST-FST-C100_100-P	100
MM				

FSMA portfolio

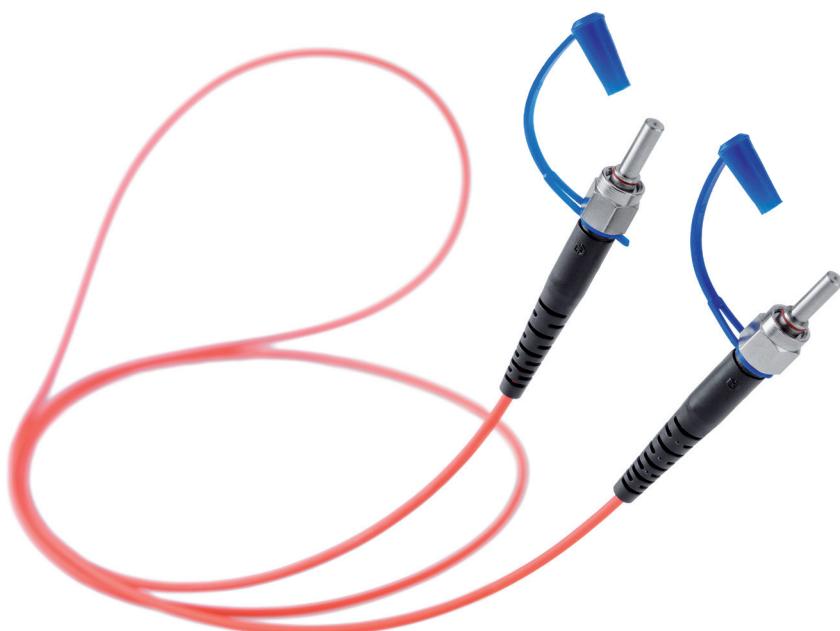


Features

- Threaded nut connector
- One-piece design
- O-ring washer
- Connector without physical contact

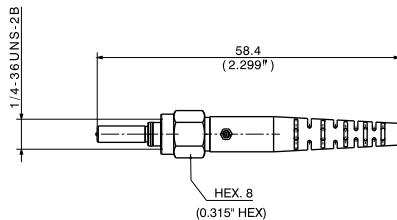
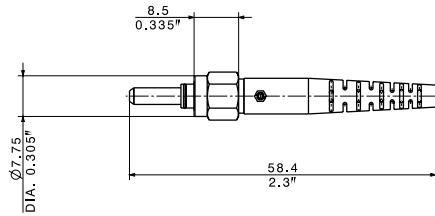
Specifications

Compliance	IEC 61754-22
Technology	metal or zirconia ferrule and sleeve
Strain relief	100 N
Operating temperature	-40 to +85 °C
Durability	min. 1000 mating cycles
Material	brass nickel plated



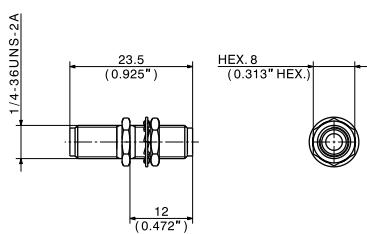
FSMA connectors

FSMA connector for cable diameter ≤ 4.5 mm

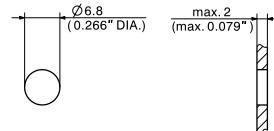


Type	Ferrule material	Tensile load (N)	Item no.	Description	Packing unit
G50/125, G62.5/125	zirconia	100	84101369	FSMA-Z/M-B001_100-P	100
HCS200/230	metal		84034751	FSMA-M/M-D001_100-P	

FSMA



Installation dimensions



Type	Mounting	Item no.	Description	Packing unit
MM	continuous thread with 2 loose nuts and washer	22650883	FSMA-FSMA-B001	1
	with loose and fixed nut, washer	22650884	FSMA-FSMA-C001	

Blink portfolio

Blink is the new standard connector that has been specially designed for the new challenges arising with FITH. Based on its extensive experience in the field of fiber optics, HUBER+SUHNER has developed the Blink connector to meet the special requirements of this demanding environment. With its outstanding features, such as dust-proof shutters, laser-protection and a revolutionary release mechanism, it is the solution for a safe FITH application. It is not only safe for the users, but also protects the permanently installed fibers and reduces interventions by installers. Blink is not only standardised according to IEC 61754-29, but it also sets a standard within FITH environment.

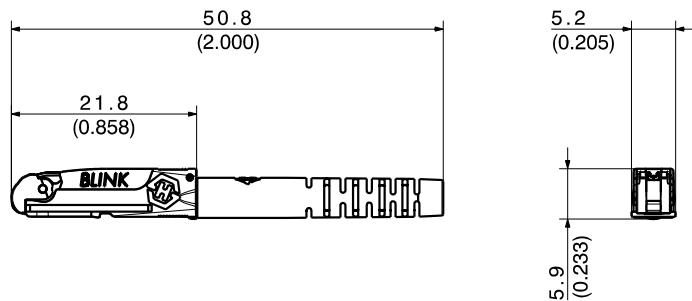


Features

- Standardised (IEC 61754-29)
- Safe
- Dust-proof
- Laser-protection

Specifications

Characteristics	Values
Compliance	IEC 61754-29
Technology	full ceramic ferrule (1.25 mm) and sleeve
Tuning	in 45° steps
Mechanical resistance	100 N tensile load
Operating temperature	-40 to +85 °C
Flammability	UL 94 V-0
Durability	min. 1000 mating cycles
Weight	0.0012 g
RoHS requirements	fully compliant



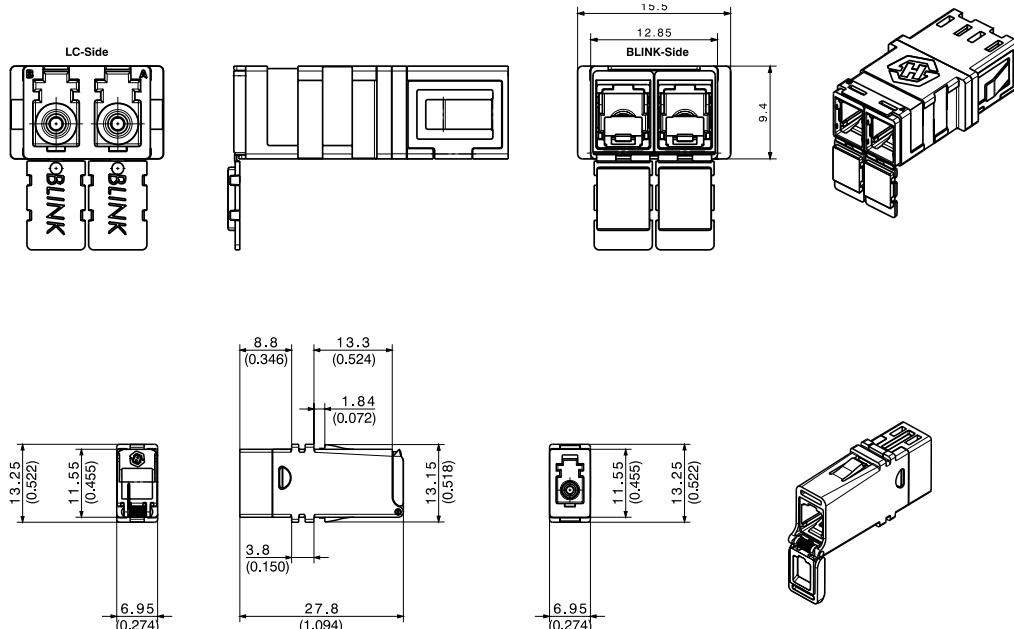
Blink - triple-play connector

Connector

Connector type	Colour	Item no.	Description	Packing unit
UPC/APC	beige	84122577	BLINK-Z/K-A001_100-P	100

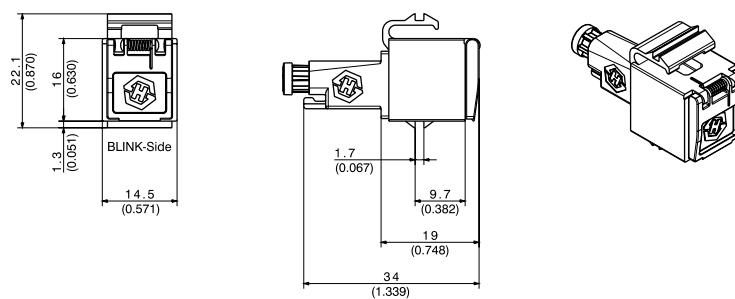
Adapter Blink-LC

Adapter type	Colour	Item no.	Description	Packing unit
Duplex, SM UPC	beige	84122578	BLINK-FLC-A100-02_100-P	100
Simplex, SM UPC	beige	85006836	BLINK-FLC-A100_100-P	
Simplex, SM APC	beige	85006837	BLINK-FLC-A600_100-P	



Adapter Blink-Clik

Adapter type	Colour	Item no.	Description	Packing unit
Simplex, SM UPC	beige	85008219	BLINK-CLIK-G100	100
Simplex, SM APC	beige	84140322	BLINK-CLIK-G600	





Connector accessories

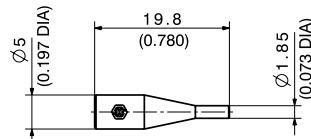
The best plug and cable cannot be used without accessories. Therefore, HUBER+SUHNER offers crimp sleeves and boots in a big variety and reliable quality.

Boots and crimp sleeves

For cable diameter < 1.0 mm

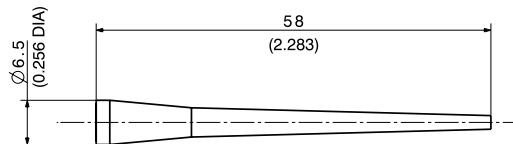
LSH, FC, SC, LSA, FSMA, ST (big form factor)

- Halogen-free and flame retardant material according to UL 94 V-0



Cable diameter	Boot colour							Packing unit
	Black	Green	Red	Yellow	Blue	Beige	Aqua	
< 1.0 mm	23003203	23017894	84005612	84005611	84005610	84132194	85002463	1000

- Halogen-free and flame retardant material according to UL 94 HB



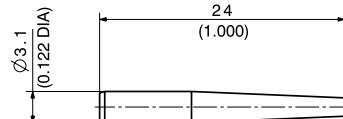
Cable diameter	Boot colour					Packing unit
	Black	Green	Red	Blue		
< 1.0 mm	84057551	84057595	84057596	84057599		1000

Boots and crimp sleeves

For cable diameter < 1.0 mm

LX.5 (small form factor)

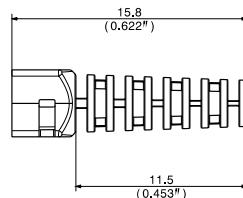
- Halogen-free and flame retardant material according to UL 94 V-0



Cable diameter	Boot colour			Packing unit
	Black	Green	Blue	
< 1.0 mm	23034533	23034534	84005613	1000

LC (small form factor)

- Halogen-free and flame retardant material according to UL 94 V-0
- Boot marker available



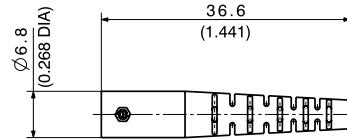
Cable diameter	Boot colour										Packing unit
	Black	Green	Red	Yellow	Blue	Beige	Aqua	Heather-violet	White		
0.6 to 0.9 mm	85015765	85015761	85015767	85015768	85015760	85015762	85015764	85015763	85015766	1000	

Boots and crimp sleeves

For cable diameter > 1.4 mm

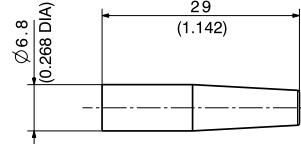
LSH, FC, SC, LSA, FSMA, ST except ST security (big form factor)

- Halogen-free and flame retardant material according to UL 94 HB



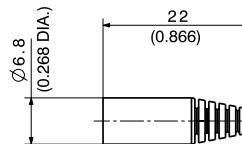
Cable diameter	Crimp sleeve Item no.	Boot colour						Packing unit
		Black	Green	Red	Yellow	Blue	White	
1.4 to 1.9 mm	84035930	84005334	84005336	84005337	84005341	84005390	84072437	1000
2.0 mm	23016741							
2.1 to 2.3 mm	84035915							
2.4 to 2.6 mm	84035913							
2.7 to 2.9 mm	84035912		23014820	84005353	23022846	84005354	84005355	
3.0 to 3.2 mm	84035927							

- Halogen-free and flame retardant material according to UL 94 HB



Cable diameter	Crimp sleeve Item no.	Packing unit crimp sleeves	Boot colour		Packing unit boots
			Black	Green	
3.3 to 3.5 mm	84035709	1000	84057623	84057625	100

- Halogen-free and flame retardant material according to UL 94 HB

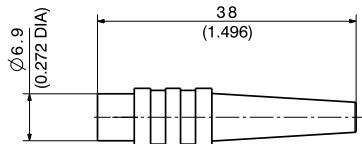


Cable diameter	Crimp sleeve Item no.	Boot colour					Packing unit
		Black	Green	Red	Blue	White	
1.4 to 1.9 mm	84035930	23030670	23026987	84089698	23026986	84089697	1000
2.0 mm	23016741						
2.1 to 2.2 mm	84035915						

Boots and crimp sleeves

ST security (big form factor)

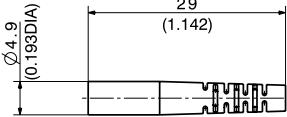
- Halogen-free and flame retardant material according to UL 94 HB
- For ST-SEC connectors



Cable diameter	Crimp sleeve item no.	Boot black item no.	Packing unit
< 1.0 mm	-	84057551	100
2.0 to 2.3 mm	84035924	84057626	
2.7 to 2.8 mm	84035682		
2.9 mm	84035682	84057627	
3.5 mm	84035685	84057627	
3.6 to 3.7 mm	84035685	84057629	
4.5 mm	84035693	84057629	

LX.5, LC (small form factor)

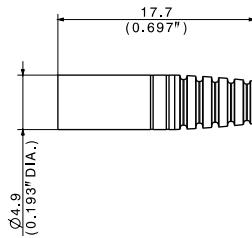
- Halogen-free and flame retardant material according to UL 94 HB



Cable diameter	Crimp sleeve Item no.	Boot colour						Packing unit
		Black	Green	Red	Yellow	Blue	White	
1.4 to 1.7 mm	84035633	23026769	84005356	84005357	84005358	84005359	84089607	1000
1.8 to 1.9 mm	84038483							
2.0 mm	84035661							
2.1 to 2.2 mm	84035636							
2.3 to 2.5 mm	84035654							
2.6 to 2.8 mm	84035662	84013101	84042732	84042730	84042728	84042726	84091282	

LC, LX.5, Blink, Clik (small form factor)

- Halogen-free and flame retardant material according to UL 94 HB



Cable diameter	Boot colour									Packing unit
	Black	Green	Red	Yellow	Blue	Beige	Aqua	Heather-violet	White	
1.4 to 2.7 mm	85015720	85015716	85015745	85015746	85015715	85015719	85015717	85015718	85015747	1000

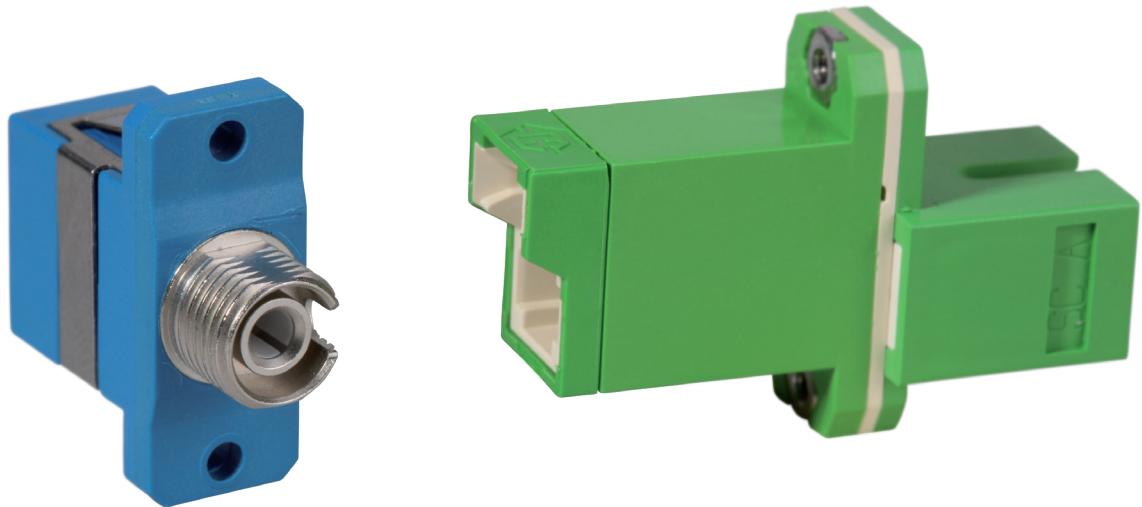
Boot marker

LC TB BTW/LC BTW/SC BTW

- Halogen-free and flame retardant material according to UL 94 V-O



Boot marker colour			Packing unit
White 85017531	Yellow 85017530	Red 85017529	



Hybrid adapters

HUBER+SUHNER supports the markets with various combinations of hybrid adapters.

Hybrid adapters

LSH-FCPC/2-hole flange

	Adapter type	Colour	Features	Item no.	Description	Packing unit
	UPC	blue	wide key	22664001	FLSH-FCPC-D101	1
	APC	green	wide key	22664002	FLSH-FCPC-D601	
	APC	green	small key	22664020	FLSH-FCPC-D602	

LSH-SC/2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	UPC	blue	22664005	FLSH-FSC-D101	1
	APC	green	22664006	FLSH-FSC-D601	

SC-FCPC/2-hole flange

	Adapter type	Colour	Features	Item no.	Description	Packing unit
	UPC	blue	wide key	22651707	FSC-FCPC-D101	1
				84030646	FSC-FCPC-D101_100-P	100
	APC	green	small key	84082573	FSC-FCPC-D600	1
				84030205	FSC-FCPC-D600_100-P	100

SC-FCPC/snap-in flange

	Adapter type	Colour	Features	Item no.	Description	Packing unit
	UPC	blue	wide key	23010314	FSC-FCPC-A100	1
				23010315	FSC-FCPC-A101	
	APC	green	small key	84030224	FSC-FCPC-A600_100-P	100

ST-FCPC

	Adapter type	Features	Item no.	Description	Packing unit
	UPC/APC	wide key	22649103	FST-FCPC-C100	1

Hybrid adapters

SC-ST/2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	UPC	blue	22651708	FSC-FST-D100	1
	UPC	black	23004792	FSC-FST-D101_100-P	100

SC-ST/snap-in flange

	Adapter type	Colour	Item no.	Description	Packing unit
	UPC	blue	23010316	FSC-FST-A100	1

SC-ST duplex/2-hole flange

	Adapter type	Colour	Item no.	Description	Packing unit
	UPC	beige	22659199	FSC-FST-D100-02_100-P	100

SC-LC/snap-in flange

	Adapter type	Colour	Item no.	Description	Packing unit
	UPC	blue	23029196	FSC-FLC-A100	1

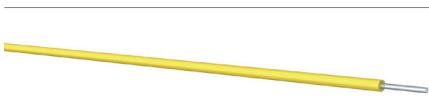
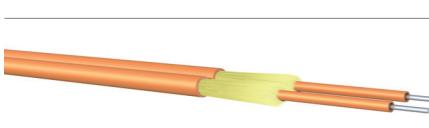
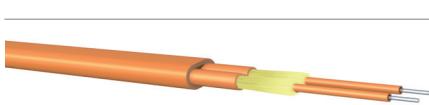
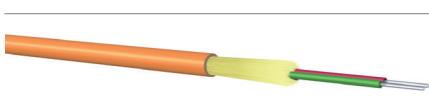
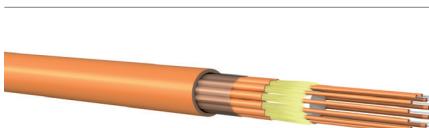


Indoor cables

HUBER+SUHNER offers a broad selection of different fiber optic cables used in a wide range of indoor and outdoor applications and optimised for stationary and mobile use. All cable types are designed for maximum capacity and have been extensively tested according to international standards.

The cables are suitable for use in telecommunications, building cabling and industrial applications.

Indoor cables

Cable type	Page	Ordering key	Weight kg/km	Number of fibers
 Semi-tight tubes 0.9 mm	88	01.../CH...9	0.8	1
 Tight tubes 0.9 mm	90	01.../F...9	0.8	1
 Tight tubes 0.6 mm	92	01.../V-T6....	0.3	1
 Simplex	93	01.../VJH...14 01.../CWJH...17 01.../CWJH...20 01.../CWJH...24 01.../CWJH...27	2.0 3.0 4.0 5.3 7.0	1 1 1 1 1
 Duplex figure 8 (Zip cord)	96	02.../VJH...14 02.../FJH...17 02.../CWJH...17 02.../CWJH...20 02.../CWJH...27	4.4 6.5 6.6 9.0 14.3	2 2 2 2 2
 Duplex figure 0	100	02.../VJH-A...14 02.../CWJH-A...20 02.../CWJH-A...27	9.4 19 24	2 2 2
 Duplex round	103	02.../V(ZN)H...21	4.3	2
 Breakout 1.4 mm	105	12.../VJSNH...14 16.../VJSNH...14 24.../VJSNH...14	83 76 105	12 16 24
 Breakout 2.0 mm	107	04.../CWJSNH...20 08.../CWJSNH...20 12.../CWJSNH...20 24.../CWJSNH...20	48 77 146 190	4 8 12 24
 OptiPack	110	12.../[ZN]H...20 12.../[ZN]H...30 24.../[ZN]H...30 24.../[ZN]H...36	3.6 8.0 8.3 11.0	8 or 12 8 or 12 24 24
 OptiPack breakout - 12	113	24/48.../[ZN]SNH...20 72.../[ZN]SNH...20 96.../[ZN]SNH...20 144.../[ZN]SNH...20	44 58 80 93	24/48 72 96 144
 OptiPack breakout - 24	116	48/96.../[ZN]SNH...30 144.../[ZN]SNH...30 288.../[ZN]SNH...30	76.5 110.5 143	48/96 144 288

p = passed

Tube Ø mm	Ø Single fiber cable mm	Jacket Ø mm	Jacket material	Direct connector assembly	Tensile strength N	Crush resistance N/dm	Temperature range in service °C	Fire propagation IEC 60332-1-2	Fire propagation IEC 60332-3	CPR 2011/305/EU	
0.9		0.9	LSFH™	•	20	1000	-25 to +75				
0.9		0.9	TPE	•	20	1000	-40 to +80				
0.6		0.6	acrylate	•	20	500	-40 to +85				
0.6 0.9 0.9 0.9 0.9	1.4 1.7 2.0 2.4 2.7	LSFH™ LSFH™ LSFH™ LSFH™ LSFH™	• • • • •	150 150 400 400 400	2000 3000 3000 5000 5000	-25 to +70 -25 to +70 -25 to +70 -25 to +70 -10 to +70	p p p p p	p p p p p	Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1		
0.6 0.9 0.9 0.9 0.9	1.4 1.7 1.7 x 3.5 1.7 x 3.5 2.0 2.7	1.4 x 3.0 1.7 x 3.5 1.7 x 3.5 2.0 x 4.1 2.7 x 5.5	LSFH™ LSFH™ LSFH™ LSFH™ LSFH™	• • • • •	300 300 300 800 800	7500 10 000 4000 6000 10 000	-25 to +70 -40 to +70 -25 to +70 -25 to +70 -25 to +70	p p p p p	p p p p p	Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1	
0.6 0.9 0.9	1.4 2.0 2.7	2.3 x 3.7 3.1 x 5.2 3.5 x 6.2	LSFH™ LSFH™ LSFH™	• • •	300 800 800	9000 7000 10 000	-25 to +70 -25 to +70 -25 to +70	p p p	p p p	Dca-s1a, d0, a1 Dca-s1a, d0, a1	
0.6		2.1	LSFH™	•	200	5000	-25 to +70	p	p	Dca-s1a, d0, a1	
0.6 0.6 0.6	1.4 1.4 1.4	9.0 9.0 10.6	LSFH™ LSFH™ LSFH™	• • •	3000 4000 5000	12 000 12 000 9000	-25 to +70 -25 to +70 -25 to +70	p p p	p p p	Dca-s2, d2, a1 Dca-s1a, d2, a1 Cca-s1a, d1, a1	
0.9 0.9 0.9 0.9	2.0 2.0 2.0 2.0	7 9 12 14	LSFH™ LSFH™ LSFH™ LSFH™	• • • •	1200 2400 4000 7200	7500 7500 7500 4000	-25 to +70 -25 to +70 -25 to +70 -25 to +70	p p p p	p p p p	Dca-s1a, d0, a1 Cca-s1a, d2, a1 Cca-s1a, d2, a1 Cca-s1a, d1, a1	
		2.0 3.0 3.0 3.6"	LSFH™ LSFH™ LSFH™ LSFH™	• • • •	200 200 500 500	1000 1000 5000 5000	-10 to +60 -10 to +60 -20 to +70 -20 to +70	p p p p	p p p p	Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1 Dca-s1a, d0, a1	
		2.0 2.0 2.0 2.0	LSFH™ LSFH™ LSFH™ LSFH™	• • • •	600 800 1000 1400	5000 5000 5000 5000	-10 to +60 -10 to +60 -10 to +60 -10 to +60	p p p p	p p p p		
		3.0 3.0 3.0	LSFH™ LSFH™ LSFH™	• • •	600 800 1400	5000 5000 5000	-10 to +60 -10 to +60 -10 to +60	p p p	p p p		

Semi-tight tubes 0.9 mm



Properties

- Metal-free indoor cable
- For direct connector assembly
- Tube can be stripped up to 2 m in one piece
- Tight bending radii
- High flexibility
- Halogen-free and non-corrosive fire gases
- Jacket material according to UL 94V-0
- Jelly-free, dry

Applications

- Pigtail assemblies for fusion or mechanical splicing within distribution frames and termination boxes
- Mini patch cables within protected enclosures
- Termination with passive optical components such as connectors

Design

Tube	coloured fiber in dry tube (jelly-free)	
Tube material	halogen-free (LSFH)	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	blue
other colours on request		

According to IEC 60794-1-2

Ordering information

01.../CH...9

Semi-tight tubes 0.9 mm

Specification		Semi-tight tube dry	
Tube Ø	mm	0.9	
Approx. weight	kg/km	0.8	

Mechanical properties			
Tensile strength	during installation	N	20
	in service	N	10
Min. bend radius ¹⁾	during installation	mm	25
	in service	mm	25
Crush resistance	short-term	N/dm	1000
	long-term	N/dm	500
Impact resistance	W _p = 0.74 J	impacts	3
Kink resistance	r = 5 mm		passed
Torsion	± 360°, length = 1000 mm, F = 5N	cycles	3

Thermal properties			
Temperature range	during installation	°C	-10 to +50
	in service	°C	-25 to +75
	in storage	°C	-40 to +75

Combustion properties			
Fire load	MJ/m	0.02	
2011/65/EC (RoHS)		compliant	

Order information for indoor cables

Semi-tight tubes 0.9 mm

Available as standard only: 2000 m



Item no.	Cable type	Description
22521983	01-E9/CH-E9-FE	Semi-tight tube Ø 0.9 mm, 1 x 9/125 µm G.652.D, tube and fiber colour yellow
84065234	01-E9A2/CH-E9-FG	Semi-tight tube Ø 0.9 mm, 1 x 9/125 µm G.657.A2, tube yellow and fiber colour black
22520626	01-G50/CH-D9-FD	Semi-tight tube Ø 0.9 mm, 1 x 50/125 µm OM2, tube orange and fiber colour orange
84005132	01-G50/CH-M9-F-FM	Semi-tight tube Ø 0.9 mm, 1 x 50/125 µm OM3, tube and fiber colour turquoise
84121373	01-G50/CH-I9-G-FL	Semi-tight tube Ø 0.9 mm, 1 x 50/125 µm OM4, tube and fiber colour pink
22520967	01-G62/CH-C9-FC	Semi-tight tube Ø 0.9 mm, 1 x 62.5/125 µm OM1, tube blue and fiber colour blue

On request: up to 12 different colours for all different fiber types available; up to 24 different colours with ring marking for all different fiber types available

1) Smaller bending radii are possible with E9/125 low-bend (ITU G.657) and G50/125-OM3/OM4 bend-optimised.

Tight tubes 0.9 mm



Properties

- Metal-free indoor cable
- For direct connector assembly
- Tube can be stripped up to 30 mm in one piece
- Tight bending radii
- High mechanical and thermal stability
- Halogen-free and non-corrosive fire gases
- Improved crush resistance

Applications

- Patch cable within distribution frames and termination boxes
- Thermally and mechanically critical environments
- Mobile or flexible systems

Design

Tube	buffer layer on fiber	
Tube material	halogen-free (TPE)	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	blue
	other colours on request	

According to IEC 60794-1-2

Ordering information

01-.../F-...9

Order information for indoor cables

Tight tubes 0.9 mm

Available as standard only: 2000 m



Item no.	Cable type	Description
22521478	01-E9/F-E9	Tight tube Ø 0.9 mm, 1 x 9/125 µm G.652.D, yellow
23012983	01-E9/F-F9	Tight tube Ø 0.9 mm, 1 x 9/125 µm G.652.D, white
84145050	01-E9A2/F-E9-FG	Tight tube Ø 0.6 mm, 1 x 9/125 µm G.657.A2, yellow
85001241	01-E9A2/F-F9	Tight tube Ø 0.9 mm, 1 x 9/125 µm G.657.A2, white
22521479	01-G50/F-D9	Tight tube Ø 0.9 mm, 1 x 50/125 µm OM2, orange
22523050	01-G62/F-C9	Tight tube Ø 0.9 mm, 1 x 62.5/125 µm OM1, blue

Tight tubes 0.9 mm

Specification		Tight tube	
Tube Ø	mm	0.9	
Approx. weight	kg/km	0.8	

Mechanical properties			
Tensile strength	during installation ($r \geq 25$ mm)	N	20
	in service ($r \geq 25$ mm)	N	10
Min. bend radius ¹⁾	during installation	mm	25
	in service	mm	25
Crush resistance	short-term	N/dm	1000
	long-term	N/dm	500
Impact resistance	$W_p = 0.74$ J, $r = 25$ mm	impacts	100
Torsion	$\pm 7200^\circ$, length = 1000 mm, $F = 5$ N	cycles	3

Thermal properties			
Temperature range	during installation	°C	-10 to +60
	in service	°C	-40 to +85
	in storage	°C	-40 to +60

Combustion properties			
Fire load	MJ/m	0.02	
2011/65/EC (RoHS)		compliant	

1) Smaller bending radii are possible with E9/125 low-bend (ITU G.657) and G50/125-OM3/OM4 bend-optimised.

Tight tubes 0.6 mm



Properties

- Metal-free indoor cable
- For direct connector assembly
- Tube can be stripped up to 30 mm in one piece
- Tight bending radii
- High thermal stability
- Halogen-free and non-corrosive fire gases

Applications

- Data cable in distribution network – FTTH
- Installation in indoor area

Design

Tube	coloured fiber with a transparent buffer layer	
Tube material	acrylat	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	blue
	other colours on request	

According to IEC 60794-1-2

Ordering information

01-.../V-T6-...

Tight tubes 0.6 mm

Specification		Tight tube	
Tube Ø	mm	0.6	
Approx. weight	kg/km	0.3	

Mechanical properties				
Tensile strength	during installation	N	20	IEC 60794-1-2 E1
	in service	N	10	
Min. bend radius ¹⁾	during installation	mm	25	IEC 60794-1-2 E11
	in service	mm	25	
Crush resistance	short-term	N/dm	500	IEC 60794-1-2 E3
	long-term	N/dm	250	

Thermal properties				
Temperature range	during installation	°C	-10 to +60	IEC 60794-1-22 F12
	in service	°C	-40 to +85	
	in storage	°C	-40 to +60	

Combustion properties				
Fire load	MJ/m	0.007		
2011/65/EC (RoHS)		compliant		

Order information for indoor cables

Tight tubes 0.6 mm

Available as standard only: 2000 m



Item no.	Cable type	Description
84077172	01-E9A2/V-T6-FA	Tight tube Ø 0.6 mm, 1 x 9/125 µm G.657.A2, red
84077173	01-E9A2/V-T6-FB	Tight tube Ø 0.6 mm, 1 x 9/125 µm G.657.A2, green
84077174	01-E9A2/V-T6-FE	Tight tube Ø 0.6 mm, 1 x 9/125 µm G.657.A2, yellow
84077175	01-E9A2/V-T6-FC	Tight tube Ø 0.6 mm, 1 x 9/125 µm G.657.A2, blue

1) Smaller bending radii are possible with E9/125 low-bend [ITU G.657] and G50/125-OM3/OM4 bend-optimised.

Simplex cables



Properties

- Metal-free indoor cable
- Each fiber strain-relieved
- For direct connector assembly with strain relief
- Tight bending radii
- High flexibility
- Halogen-free and non-corrosive fire gases
- Jacket material according to UL 94V-0
- Low fire load for high safety requirements



Applications

- Patch cables for data centers
- Installation in indoor area
- Measurement cable withstanding mechanical loading
- Data cable in distribution centers
- Strain-relieved pigtail
- Applications involving safety requirements in case of fire

Design

Tube	tight buffered tube 0.6 mm, stripped up to 30 mm semi-tight tubes 0.9 mm, stripped up to 1 m	
Strain relief	aramide yarn	
Jacket material	LSFH™	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	orange

According to IEC 60794-1-2

Ordering information

01.../VJH...14

01.../CWJH...17

01.../CWJH...20

01.../CWJH...24

01.../CWJH...27

Simplex cables

Specification							
Jacket Ø	mm	1.4	1.7	2.0	2.4	2.7	
Tube Ø	mm	0.6	0.9	0.9	0.9	0.9	
Approx. weight	kg/km	2.0	3.0	4.0	5.3	7.0	

Mechanical properties							
Tensile strength	during installation	N	150	150	400	400	IEC 60794-1-2 E1
	in service	N	100	100	200	200	
Min. bend radius ¹⁾	during installation	mm	25	50	50	50	IEC 60794-1-2 E11
	in service	mm	25	25	25	25	
Crush resistance	short-term	N/dm	2000	3000	3000	5000	IEC 60794-1-2 E3
	long-term	N/dm	500	1000	1000	1000	
Impact resistance	W _p = 0.5 J	impacts	10	3	3	10	IEC 60794-1-2 E4
	W _p = 0.74 J					20	
Repeated bending	W _p = 1.0 J						IEC 60794-1-2 E6
	r = 25 mm	cycles	1000	5000	5000	1000	

Thermal properties							
Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50	-10 to +50	IEC 60794-1-22 F12
	in service	°C	-25 to +70	-25 to +70	-25 to +70	-25 to +70	
	in storage	°C	-40 to +70	-40 to +70	-40 to +70	-40 to +70	

Combustion properties							
Fire load		MJ/m	0.05	0.08	0.10	0.15	0.17
Fire propagation	on vertical single cable		p	p	p	p	IEC 60332-1-2
	on vertical cable bundle				p	p	
Smoke density			p	p	p	p	IEC 61034-2
Halogen acid gas	jacket material		p	p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant				
(EU) No 305/2011 (CPR)			Dca-s1a, d0, a1				
EN 50575							

p = passed

1) Smaller bending radii are possible with E9/125 low-bend (ITU G.657) and G50/125-OM3/OM4 bend-optimised.

Order information for indoor cables

Simplex cables 1.4 mm
LSFH™ jacket with tight tube 0.6 mm



Item no.	Cable type	Description
84099204	01-E9A2/VJH-E14-FG	Simplex cable Ø 1.4 mm, 1 x 9/125 µm G.657.A2, tight tube 0.6 mm, LSFH yellow
84093690	01-G50/VJH-M14-F	Simplex cable Ø 1.4 mm, 1 x 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84093690	01-G50/VJH-M14-F	Simplex cable Ø 1.4 mm, 1 x 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise

Simplex cables 1.7 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
85020782	01-E9/CWJH-E17#D	Simplex cable Ø 1.7 mm, 1 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84078975	01-E9A2/CWJH-E17-FG#D	Simplex cable Ø 1.7 mm, 1 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow

Simplex cables 2.0 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
84012397	01-E9/CWJH-E20#D	Simplex cable Ø 2.0 mm, 1 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84044941	01-E9/CWJH-C20#D	Simplex cable Ø 2.0 mm, 1 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH blue
84065255	01-E9A2/CWJH-E20-FG#D	Simplex cable Ø 2.0 mm, 1 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
84000564	01-G50/CWJH-D20#D	Simplex cable Ø 2.0 mm, 1 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84033249	01-G50/CWJH-M20-F#D	Simplex cable Ø 2.0 mm, 1 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121677	01-G50/CWJH-L20-G#D	Simplex cable Ø 2.0 mm, 1 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84000565	01-G62/CWJH-D20#D	Simplex cable Ø 2.0 mm, 1 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Simplex cables 2.4 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
85020593	01-E9/CWJH-E24#D	Simplex cable Ø 2.4 mm, 1 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow

Simplex cables 2.7 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
22523125	01-E9/CWJH-E27#D	Simplex cable Ø 2.7 mm, 1 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84086802	01-E9A2/CWJH-E27-FG#D	Simplex cable Ø 2.7 mm, 1 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
22523126	01-G50/CWJH-D27#D	Simplex cable Ø 2.7 mm, 1 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
22523127	01-G62/CWJH-D27#D	Simplex cable Ø 2.7 mm, 1 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Duplex figure 8 (zip cord)



Properties

- Metal-free indoor cable
- Each fiber strain-relieved
- For direct connector assembly with strain relief
- Tight bending radii
- High thermal stability
- Halogen-free and non-corrosive fire gases
- Jacket material according to UL 94V-0
- Low fire load for high safety requirements

Applications

- Installation in indoor area
- Patch cable in distribution centers
- Data cable in distribution networks
- Applications involving safety requirements in case of fire



Design

Tube	2 semi-tight tubes 0.9 mm 2 tight tubes 0.6 mm/0.9 mm	
Strain relief	aramide yarn	
Jacket material	LSFH™	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	orange

According to IEC 60794-1-2

Ordering information

02.../VJH-...14
02.../FJH-...17
02.../CWJH-...17
02.../CWJH-...20
02.../CWJH-...27

Duplex figure 8 (zip cord)

Specification							
Jacket Ø	mm	1.4 x 3.0	1.7 x 3.5	1.7 x 3.5	2.0 x 4.1	2.7 x 5.5	
Single fiber cable Ø	mm	1.4	1.7	1.7	2.0	2.7	
Tube Ø	mm	0.6 tight	0.9 tight	0.9 semi-tight	0.9 semi-tight	0.9 semi-tight	
Channel marking on single fiber							inscription on one side
Approx. weight	kg/km	4.4	6.5	6.6	9.0	14.3	

Mechanical properties							
Tensile strength	during installation	N	300	300	300	800	800
	in service	N	2 x 100	2 x 100	2 x 100	2 x 200	2 x 200
Min. bend radius ¹⁾	during installation	mm	25	50	50	50	50
	in service	mm	25	25	25	25	25
Crush resistance	short-term	N/dm	7500	10 000	10 000	10 000	10 000
	long-term	N/dm	2500	4000	4000	5000	5000
Impact resistance	W _p = 0.74 J W _p = 1.0 J	impacts	10	40	40	20	20
Repeated bending	r = 25 mm, weight = 0.5 kg	cycles	1000	5000	5000	5000	10 000

Thermal properties							
Temperature range	during installation	°C	-10 to +50				
	in service	°C	-25 to +70	-40 to +70	-25 to +70	-25 to +70	-10 to +70
	in storage	°C	-40 to +70	-40 to +70	-40 to +70	-40 to +70	-25 to +70

Combustion properties							
Fire load		MJ/m	0.10	0.13	0.13	0.22	0.34
Fire propagation	on a vertical single cable			p	p	p	p
	on a vertical cable bundle			p	p	p	p
Halogen acid gas	jacket material		p	p	p	p	p
Degree of acidity	jacket material		p	p	p	p	p
2011/65/EC (RoHS)			compliant				
(EU) No 305/2011 (CPR)			Dca-s1a, d0, a1				
EN 50575							

p = passed

1) Smaller bending radii are possible with E9/125 low-bend (ITU G.657) and G50/125-OM3/OM4 bend-optimised.

Order information for indoor cables

Duplex cables figure 8 – 1.4 mm
LSFH™ jacket with tight tube 0.6 mm



Item no.	Cable type	Description
84065738	02-E9/VJH-E14	Duplex cable figure 8 Ø 1.4 x 3.0 mm, 2 x 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84126462	02-E9A2/VJH-E14-FG	Duplex cable figure 8 Ø 1.4 x 3.0 mm, 2 x 9/125 µm G.657.A2, tight tube 0.6 mm, LSFH yellow
84145087	02-G50/VJH-M14-F	Duplex cable figure 8 Ø 1.4 x 3.0 mm, 2 x 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84146528	02-G50/VJH-L14-G	Duplex cable figure 8 Ø 1.4 x 3.0 mm, 2 x 50/125 µm OM4, tight tube 0.6 mm, LSFH heather violet

Duplex cables figure 8 – 1.7 mm
LSFH™ jacket with tight tube 0.9 mm



Item no.	Cable type	Description
23040758	02-E9/FJH-E17	Duplex cable figure 8 Ø 1.7 x 3.4 mm, 2 x 9/125 µm G.652.D/G.657.A1, tight tube 0.9 mm, LSFH yellow
84127588	02-E9A2/FJH-E17-FG	Duplex cable figure 8 Ø 1.7 x 3.5 mm, 2 x 9/125 µm G.657.A2, tight tube 0.9 mm, LSFH yellow
23040759	02-G50/FJH-D17	Duplex cable figure 8 Ø 1.7 x 3.5 mm, 2 x 50/125 µm OM2, tight tube 0.9 mm, LSFH orange
84005418	02-G50/FJH-M17-F	Duplex cable figure 8 Ø 1.7 x 3.5 mm, 2 x 50/125 µm OM3, tight tube 0.9 mm LSFH turquoise
84121679	02-G50/FJH-L17-G	Duplex cable figure 8 Ø 1.7 x 3.4 mm, 2 x 50/125 µm OM4, tight tube 0.9 mm, LSFH heather violet
23040760	02-G62/FJH-D17	Duplex cable figure 8 Ø 1.7 x 3.4 mm, 2 x 62.5/125 µm OM1, tight tube 0.9 mm, LSFH orange

Duplex cables figure 8 – 1.7 mm
LSFH™ jacket with semi-tight tubes 0.9 mm



Item no.	Cable type	Description
85024637	02-E9/CWJH-E17#D	Duplex cable figure 8 Ø 1.7 x 3.4 mm, 2 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
85029964	02-E9A2/CWJH-E17-FG#D	Duplex cable figure 8 Ø 1.7 x 3.5 mm, 2 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
85030614	02-G50/CWJH-M17-F#D	Duplex cable figure 8 Ø 1.7 x 3.4 mm, 2 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise

Duplex cables figure 8 – 2.0 mm
LSFH™ jacket with semi-tight tube 0.9 mm



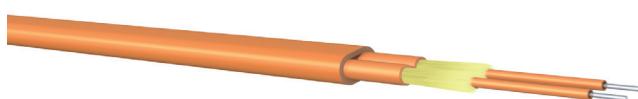
Item no.	Cable type	Description
84008151	02-E9/CWJH-E20#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84065256	02-E9A2/CWJH-E20-FG#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
84008152	02-G50/CWJH-D20#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84008169	02-G50/CWJH-M20-F#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121856	02-G50/CWJH-L20-G#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84008153	02-G62/CWJH-D20#D	Duplex cable figure 8 Ø 2.0 x 4.1 mm, 2 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Duplex cables figure 8 – 2.7 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
22523202	02-E9/CWJH-E27#D	Duplex cable figure 8 Ø 2.7 x 5.4 mm, 2 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
22523203	02-G50/CWJH-D27#D	Duplex cable figure 8 Ø 2.7 x 5.4 mm, 2 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84005133	02-G50/CWJH-M27-F#D	Duplex cable figure 8 Ø 2.7 x 5.4 mm, 2 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
22523204	02-G62/CWJH-D27#D	Duplex cable figure 8 Ø 2.7 x 5.4 mm, 2 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Duplex cables figure 0



Properties

- Metal-free indoor cable
- Each fiber strain-relieved
- For direct connector assembly with strain relief
- Tight bending radii
- Low fire load for high safety requirements
- Jacket material according to UL 94V-0
- Halogen-free and non-corrosive fire gases

Applications

- Installation in indoor area
- Patch cable in distribution centers
- Data cable in distribution networks
- Applications involving safety requirements in case of fire

Design

Tube	2 simplex cables with semi-tight tubes 0.9 mm 2 simplex cables with tight tubes 0.6 mm	
Strain relief	aramide yarn	
Jacket material	LSFH™	
Tube colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	orange

According to IEC 60794-1-2

Ordering information

02.../VJH-A...14

02.../CWJH-A...20

02.../CWJH-A...27

Duplex cables figure 0

Specification					
Jacket Ø	mm	2.3 × 3.7	3.1 × 5.2	3.5 × 6.2	
Single fiber cable Ø	mm	1.4	2.0	2.7	
Tube Ø	mm	0.6 tight	0.9 semi-tight	0.9 semi-tight	
Channel marking on single cable		numbered	numbered	coloured	
Approx. weight	kg/km	9.4	13.7	24	

Mechanical properties						
Tensile strength	during installation	N	300	800	800	IEC 60794-1-2 E1
	in service	N	2 × 100	2 × 200	2 × 200	
Min. bend radius ¹⁾	during installation	mm	25	50	50	IEC 60794-1-2 E11
	in service	mm	25	25	25	
Crush resistance	short-term	N/dm	9000	7000	10 000	IEC 60794-1-2 E3
	long-term	N/dm	4000	5000	5000	
Impact resistance	Wp = 1.0 J	impacts	50	20	20	IEC 60794-1-2 E4
Repeated bending	r = 25 mm, weight = 0.5 kg	cycles	10 000	10 000	10 000	IEC 60794-1-2 E6

Thermal properties						
Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50	IEC 60794-1-22 F12
	in service	°C	-25 to +70	-10 to +70	-10 to +70	
	in storage	°C	-25 to +70	-25 to +70	-25 to +70	

Combustion properties						
Fire load		MJ/m	0.22	0.33	0.45	
Fire propagation	on a vertical single cable		p	p	p	IEC 60332-1-2
	on a vertical cable bundle		p	p	p	
Halogen acid gas	jacket material		p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant			
(EU) No 305/2011 (CPR)				Dca-s1a, d0, a1		EN 50575

p = passed

1) Smaller bending radii are possible with E9/125 low-bend (ITU G.657) and G50/125-OM3/OM4 bend-optimised.

Order information for indoor cables

Duplex cable figure 0 – 1.4 mm
LSFH™ jacket with tight tube 0.6 mm



Item no.	Cable type	Description
84149009	02-E9/VJH-AE14	Duplex cable figure 0 Ø 2.3 x 3.7 mm, 2 x 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84148983	02-E9A2/VJH-AE14-FG	Duplex cable figure 0 Ø 2.3 x 3.7 mm, 2 x 9/125 µm G.657.A2, tight tube 0.6 mm, LSFH yellow
84153026	02-G50/VJH-AM14-F	Duplex cable figure 0 Ø 2.3 x 3.7 mm, 2 x 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84153207	02-G50/VJH-AL14-G	Duplex cable figure 0 Ø 2.3 x 3.7mm, 2 x 50/125µm OM4, tight tube 0.6mm, LSFH heather violet

Duplex cables figure 0 – 2.0 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
23039888	02-E9/CWJH-AE20#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84073839	02-E9A2/CWJH-AE20-FG#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
23039889	02-G50/CWJH-AD20#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84005553	02-G50/CWJH-AM20-F#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121859	02-G50/CWJH-AL20-G#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
23039891	02-G62/CWJH-AD20#D	Duplex cable figure 0 Ø 3.1 x 5.2 mm, 2 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Duplex cables figure 0 – 2.7 mm
LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
22523252	02-E9/CWJH-AE27#D	Duplex cable figure 0 Ø 3.5 x 6.2 mm, 2 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, 2.7 mm red/green, LSFH yellow
22523253	02-G50/CWJH-AD27#D	Duplex cable figure 0 Ø 3.5 x 6.2 mm, 2 x 50/125 µm OM2, semi tight tube 0.9 mm, 2.7 mm red/green, LSFH orange
84005135	02-G50/CWJH-AM27-F#D	Duplex cable figure 0 Ø 3.5 x 6.2 mm, 2 x 50/125 µm OM3, semi tight tube 0.9 mm, 2.7 mm turquoise/turquoise, LSFH turquoise
22523254	02-G62/CWJH-AD27#D	Duplex cable figure 0 Ø 3.5 x 6.2 mm, 2 x 62.5/125 µm OM1, semi tight tube 0.9 mm, 2.7 mm red/green, LSFH orange

Duplex round cables (LC uniboot compatible)



Properties

- Metal-free indoor cable
- Strain-relieved with aramide yarn
- For direct connector assembly
- Tight bending radii
- High flexibility
- Low smoke, halogen-free and self-extinguishing
- Jacket material according to UL 94V-0
- LC uniboot compatible

Applications

- Patch cables for data centers
- Duplex cable for LC uniboot

Design

Tube	2 tight buffered tubes 0.6 mm	
Strain relief	aramide yarn	
Jacket material	LSFH™	
Tube colour	E9 low bend	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green

According to IEC 60794-1-2

Ordering information

02-.../V(ZN)H-...21

Duplex round cables (LC uniboot compatible)

Specification

Jacket Ø	mm	2.1	
Tube Ø	mm	0.6 tight	
Approx. weight	kg/km	4.3	

Mechanical properties

Tensile strength	during installation	N	200	IEC 60794-1-2 E1
	in service	N	100	
Min. bend radius	during installation	mm	15	IEC 60794-1-2 E11
	in service	mm	10	
Crush resistance	short-term	N/dm	5000	IEC 60794-1-2 E3
	long-term	N/dm	900	
Kink resistance	radius 3 mm	p		IEC 60794-1-2 E10

Thermal properties

Temperature range	during installation	°C	-10 to +50	IEC 60794-1-22-F1
	in service	°C	-25 to +70	
	in storage	°C	-25 to +70	

Combustion properties

Fire load		MJ/m	0.11	
Fire propagation	on a vertical single cable		p	IEC 60332-1-2
	on a vertical cable bundle		p	
Halogen acid gas	jacket material		p	IEC 60754-1
Degree of acidity	jacket material		p	IEC 60754-2
2011/65/EC (RoHS)			compliant	
(EU) No 305/2011 (CPR)			Dca-s1a, d0, a1	EN 50575

p = passed

Order information for indoor cables

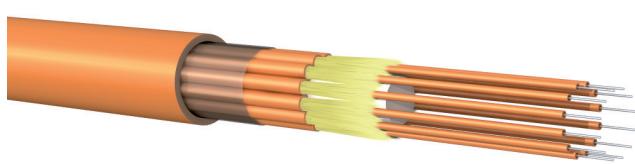


Duplex cables round 2.1 mm

LSFH™ jacket with tight tube 0.6 mm for LC uniboot

Item no.	Cable type	Description
84107633	02-E9A2/V(ZN)H-E21#D	Duplex round cable Ø 2.1 mm, 2 x 9/125 µm G.657.A2, tight tube 0.6 mm, LSFH yellow
84107634	02-G50/V(ZN)H-M21-F#D	Duplex round cable Ø 2.1 mm, 2 x 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84124505	02-G50/V(ZN)H-L21-G#D	Duplex round cable Ø 2.1 mm, 2 x 50/125 µm OM4, tight tube 0.6 mm, LSFH heather violet

Breakout cables 1.4 mm



Properties

- Metal-free indoor cable
- Each fiber strain-relieved
- For direct connector assembly with strain relief
- Ripcord for easy jacket removal
- Low smoke, halogen-free and self-extinguishing
- Optimised outer-diameter construction



Applications

- Installation in indoor areas
- Data cable in distribution networks
- Installation in cable ducts
- Horizontal and collapsed backbone cabling
- Terminations possible for SFF connectors only

Design

Cable design	central strength member, non-metallic 12 to 24 single fiber cables with tight buffered tube 0.6 mm strain relief (aramide yarn) separating tape and 1 ripcord	
Channel marketing	single fiber cable numbered	
Jacket material	LSFH™	
Tube/jacket colour	E9	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	orange

According to IEC 60794-1-2

Ordering information

12.../VJSNH-...14

16.../VJSNH-...14

24.../VJSNH-...14

Breakout cables 1.4 mm

Specification		12	16	24	
Jacket Ø	mm	9.0	9.0	10.6	
Single fiber cable Ø	mm	1.4	1.4	1.4	numbered
Tube Ø	mm	0.6	0.6	0.6	
Approx. weight	kg/km	83	76	105	

Mechanical properties

Tensile strength	during installation	N	3000	4000	5000	IEC 60794-1-2 E1
	in service	N	12 × 70	16 × 70	24 × 70	
Min. bend radius	during installation	mm	130	130	160	IEC 60794-1-2 E11
	in service	mm	90	90	100	
Crush resistance	short-term	N/dm	12 000	12 000	9000	IEC 60794-1-2 E3
	long-term	N/dm	3000	3000	3000	
Impact resistance	Wp = 2.21 J	impacts	100	100	100	IEC 60794-1-2 E4
Repeated bending	r = 100 mm r = 200 mm	cycles	2000	2000	2000	IEC 60794-1-2 E6

Thermal properties

Temperature range	during installation	°C	-10 to +60		IEC 60794-1-22 F1
	in service	°C	-25 to +70		
	in storage	°C	-25 to +70		

Combustion properties

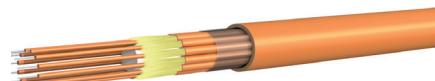
Fire load		MJ/m	2.2	2.3	3.1	
Fire propagation	on a vertical single cable		p	p	p	IEC 60332-1-2
	on a vertical cable bundle		p	p	p	IEC 60332-3-25
Smoke density			p	p	p	IEC 61034-2
Halogen acid gas	jacket material		p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant	compliant	compliant	
(EU) No 305/2011 (CPR)			Dca-s2, d2, a1	Dca-s1a, d2, a1	Cca-s1a, d0, a1	EN 50575

p = passed

Order information for indoor cables

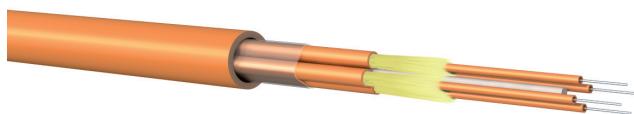
Breakout cable, 1.4 mm

LSFH jacket with tight tube 0.6 mm



Item no.	Cable type	Description
84127584	12-E9/VJSNH-E14#D	Breakout cable 1.4 mm / Ø 9.0 mm, 12 × 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84150017	12-G50/VJSNH-M14-F#D	Breakout cable 1.4 mm / Ø 9.0 mm, 12 × 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84150018	12-G50/VJSNH-L14-G#D	Breakout cable 1.4 mm / Ø 9.0 mm, 12 × 50/125 µm OM4, tight tube 0.6 mm, LSFH heather violet
84127585	16-E9/VJSNH-E14#D	Breakout cable 1.4 mm / Ø 9.0 mm, 16 × 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84137530	18-E9/VJSNH-E14#D	Breakout cable 1.4 mm / Ø 9.5 mm, 18 × 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84127586	24-E9/VJSNH-E14#C	Breakout cable 1.4 mm / Ø 10.6 mm, 24 × 9/125 µm G.652.D/G.657.A1, tight tube 0.6 mm, LSFH yellow
84144533	24-E9A2/VJSNH-E14-FG#C	Breakout cable 1.4 mm / Ø 10.6 mm, 24 × 9/125 µm G.657.A2, tight tube 0.6 mm, LSFH yellow
84138289	24-G50/VJSNH-M14-F#C	Breakout cable 1.4 mm / Ø 10.6 mm, 24 × 50/125 µm OM3, tight tube 0.6 mm, LSFH turquoise
84135616	24-G50/VJSNH-L14-G#C	Breakout cable 1.4 mm / Ø 10.6 mm, 24 × 50/125 µm OM4, tight tube 0.6 mm, LSFH heather violet

Breakout cables 2.0 mm



Properties

- Metal-free indoor cable
- Each fiber strain-relieved
- For direct connector assembly with strain relief
- Ripcord for easy jacket removal
- Low smoke, halogen-free and self-extinguishing
- Cable with improved fire performance

Applications

- Installation in indoor areas
- Data cable in distribution networks
- Installation in cable ducts
- Applications involving safety requirements in case of fire
- Horizontal and collapsed backbone cabling

Design

Cable design	central strength member, non-metallic 4 to 24 single fiber cables with semi-tight tubes strain relief (aramide yarn) separating tape and 1 ripcord	
Channel marketing	single fiber cable numbered	
Jacket material	LSFH™	
Tube/jacket colour	E9	yellow
	G50 - OM2	orange
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green
	G62.5 - OM1	orange

According to IEC 60794-1-2

Ordering information

- 04.../CWJSNH-...20
- 08.../CWJSNH-...20
- 12.../CWJSNH-...20
- 24.../CWJSNH-...20

Approvals

DNV GL Type approved
Certificate No. TAE 000010R

Breakout cables 2.0 mm

Specification		4	8	12	24	
Jacket Ø	mm	7.0	9.0	12.0	14.0	
Single fiber cable Ø	mm	2.0	2.0	2.0	2.0	numbered
Tube Ø	mm	0.9	0.9	0.9	0.9	
Approx. weight	kg/km	48	77	146	190	

Mechanical properties						
Tensile strength	during installation	N	1200	2400	4000	7200
	in service	N	4 × 100	8 × 100	12 × 100	24 × 100
Min. bend radius	during installation	mm	100	120	180	240
	in service	mm	70	80	120	140
Crush resistance	short-term	N/dm	7500	7500	7500	4000
	long-term	N/dm	2000	2000	2000	2000
Impact resistance	Wp = 2.21 J, r = 25 mm	impacts	50	50	50	IEC 60794-1-2 E4
Torsion	± 360°, l = 1000 mm m = 2 kg	cycles	25 000	25 000	25 000	IEC 60794-1-2 E7

Thermal properties							
Temperature range	during installation	°C	-10 to +60			IEC 60794-1-22 F12	
	in service	°C	-25 to +70				
	in storage	°C	-40 to +70				

Combustion properties						
Fire load		MJ/m	1.09	1.72	3.40	4.1
Fire propagation	on a vertical single cable		p	p	p	p
	on a vertical cable bundle		p	p	p	p
Smoke density			p	p	p	p
Halogen acid gas	jacket material		p	p	p	p
Degree of acidity	jacket material		p	p	p	p
2011/65/EC (RoHS)			compliant			
(EU) No 305/2011 (CPR)			*	**	**	***
EN 50575						

p = passed

* Dca-s1a, d0, a1

** Dca-s1a, d2, a1

*** Cca-s1a, d1, a1

Order information for indoor cables

Breakout cables – 2.0 mm

LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
84008843	04-E9/CWJSNH-E20#D	Breakout cable 2.0 mm / Ø 7.0 mm, 4 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84008846	04-G50/CWJSNH-D20#D	Breakout cable 2.0 mm / Ø 7.0 mm, 4 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84033250	04-G50/CWJSNH-M20-F#D	Breakout cable 2.0 mm / Ø 7.0 mm, 4 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121850	04-G50/CWJSNH-L20-G#D	Breakout cable 2.0 mm / Ø 7.0 mm, 4 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84008847	04-G62/CWJSNH-D20#D	Breakout cable 2.0 mm / Ø 7.0 mm, 4 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange
84009199	08-E9/CWJSNH-E20#C	Breakout cable 2.0 mm / Ø 9.0 mm, 8 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84009200	08-G50/CWJSNH-D20#C	Breakout cable 2.0 mm / Ø 9.0 mm, 8 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84033251	08-G50/CWJSNH-M20-F#C	Breakout cable 2.0 mm / Ø 9.0 mm, 8 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121854	08-G50/CWJSNH-L20-G#C	Breakout cable 2.0 mm / Ø 9.0 mm, 8 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84009201	08-G62/CWJSNH-D20#C	Breakout cable 2.0 mm / Ø 9.0 mm, 8 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange
84009443	12-E9/CWJSNH-E20#C	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84073652	12-E9A2/CWJSNH-E20-FG	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 9/125 µm G.657.A2, semi tight tube 0.9 mm, LSFH yellow
84009444	12-G50/CWJSNH-D20#C	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84033252	12-G50/CWJSNH-M20-F#C	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 50/125 µm OM3, semi tight tube 0.9 mm, LSFH turquoise
84121855	12-G50/CWJSNH-L20-G#C	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84009445	12-G62/CWJSNH-D20#C	Breakout cable 2.0 mm / Ø 12.0 mm, 12 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange
85063202	24-E9/CWJSNH-E20#C	Breakout cable 2.0 mm / Ø 14.0 mm, 24 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow

Breakout cables – fire resistance – 2.0 mm

LSFH™ jacket with semi-tight tube 0.9 mm



Item no.	Cable type	Description
84018102	04-E9/CWJSNHIH-E20	Fire resistant breakout cable 2.0 mm / Ø 10.0 mm, 4 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84018103	04-G50/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 10.0 mm, 4 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84150417	04-G50/CWJSNHIH-L20-G	Fire resistant breakout cable 2.0 mm / Ø 10.0 mm, 4 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84018104	04-G62/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 10.0 mm, 4 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange
84018106	08-E9/CWJSNHIH-E20	Fire resistant breakout cable 2.0 mm / Ø 12.0 mm, 8 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84018107	08-G50/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 12.0 mm, 8 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
85001062	08-G50/CWJSNHIH-L20-G	Fire resistant breakout cable 2.0 mm / Ø 12.0 mm, 8 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84018108	08-G62/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 12.0 mm, 8 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange
84018109	12-E9/CWJSNHIH-E20	Fire resistant breakout cable 2.0 mm / Ø 15.0 mm, 12 x 9/125 µm G.652.D/G.657.A1, semi tight tube 0.9 mm, LSFH yellow
84018110	12-G50/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 15.0 mm, 12 x 50/125 µm OM2, semi tight tube 0.9 mm, LSFH orange
84150427	12-G50/CWJSNHIH-L20-G	Fire resistant breakout cable 2.0 mm / Ø 15.0 mm, 12 x 50/125 µm OM4, semi tight tube 0.9 mm, LSFH heather violet
84018111	12-G62/CWJSNHIH-D20	Fire resistant breakout cable 2.0 mm / Ø 15.0 mm, 12 x 62.5/125 µm OM1, semi tight tube 0.9 mm, LSFH orange

Optipack cable with 8, 12 and 24 fibers



Properties

- Metal-free indoor cable
- Strain-relieved with aramide yarn
- For direct connector assembly with strain relief
- Tight bending radii
- Low smoke, halogen-free and self-extinguishing
- Optimised outer-diameter construction
- Ruggedized and non-ruggedized cable construction



Applications

- Data center
- Suitable for multi-fiber connectors (such as MPO/MTP®)

Design

Strain relief	aramide yarn	
Jacket material	LSFH™	
Tube colour	E9 low bend	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green

According to IEC 60794-1-2

Ordering information

08-.../[ZN]H-...20

12-.../[ZN]H-...20

24-.../[ZN]H-...30

08-.../[ZN]H-...30

12-.../[ZN]H-...30

24-.../[ZN]H-...36

Optipack cable with 8, 12 and 24 fibers

Specification

Type		Non-ruggedized		Ruggedized		
No. of fibers	fibers	8 and 12	24	8 and 12	24	
Jacket Ø	mm	2.0	3.0	3.0	3.6	
Approx. weight	kg/km	3.6	8.0	8.3	11.0	

Mechanical properties

Tensile strength	during installation	N	200	200	500	500	IEC 60794-1-21 E1
	in service	N	100	100	200	200	
Min. bend radius	during installation	mm	20	20	20	20	IEC 60794-1-21 E11
	in service	mm	10	10	10	10	
Crush resistance	during installation	N/dm	1000	1000	5000	5000	IEC 60794-1-21 E3
	in service	N/dm	100	100	1000	1000	
Impact resistance	W _p = 0.5 J		50	50			IEC 60794-1-21 E4
	W _p = 1.0 J	impacts			50	50	
Kink resistance	r = 5 mm		p	p	p	p	IEC 60794-1-21 E10

Thermal properties

Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50	-10 to +50	IEC 60794-1-22 F12
	in service	°C	-10 to +60	-10 to +60	-20 to +70	-20 to +70	
	in storage	°C	-20 to +70	-20 to +70	-20 to +70	-20 to +70	

Combustion properties

Fire load		MJ/m	0.07	0.17	0.18	0.24	
Fire propagation	on a vertical single cable		p	p	p	p	IEC 60332-1-2
	on a vertical cable bundle		p	p	p	p	IEC 60332-3-25
Smoke density			p	p	p	p	IEC 61034-2
Halogen acid gas	jacket material		p	p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant				
(EU) No 305/2011 (CPR)			Dca-s1a, d0, a1				EN 50575

p = passed

Order information for indoor cables

Optipack 12 – 3.0 mm

Multi-fiber patch cable

LSFH™ jacket with 12 fibers for MTP®/MPO



Item no.	Cable type	Description
84138650	12-E9A2/[ZN]H-E30#D	OptiPack cable Ø 3.0 mm, 12 x 9/125 µm G.657.A2, LSFH yellow
84150817	12-G50/[ZN]H-M30-F#D	OptiPack cable Ø 3.0 mm, 12 x 50/125 µm OM3, LSFH turquoise
84144927	12-G50/[ZN]H-L30-G#D	OptiPack cable Ø 3.0 mm, 12 x 50/125 µm OM4, LSFH heather violet

Optipack 24 – 3.6 mm

Multi-fiber patch cable

LSFH™ jacket with 24 fibers for MTP®/MPO



Item no.	Cable type	Description
85001254	24-E9A2/[ZN]H-E36#D	OptiPack cable Ø 3.6 mm, 24 x 9/125 µm G.657.A2, LSFH yellow
85001255	24-G50/[ZN]H-M36-F#D	OptiPack cable Ø 3.6 mm, 24 x 50/125 µm OM3, LSFH turquoise
85001256	24-G50/[ZN]H-L36-G#D	OptiPack cable Ø 3.6 mm, 24 x 50/125 µm OM4, LSFH heather violet

Optipack breakout cables with 16 to 144 fibers



Properties

- Single tubes with 8 or 12 fibers
- Metal-free indoor cable
- Strain-relieved with aramide yarn
- Ripcord for easy jacket removal
- Low smoke, halogen-free and self-extinguishing
- Cable with improved fire performance

Applications

- Installation in indoor areas
- Data center in distribution networks
- Applications involving high safety requirements in case of fire
- Horizontal and collapsed backbone cabling
- Suitable for multi-fiber connectors (such as MPO/MTP®)

Design

Cable design	central strength member, non-metallic 16 to 144 optical fibers strain relief (aramide yarn) separating tape and 1 ripcord	
Jacket material	LSFH™	
Channel marketing	single fiber cable numbered	
Tube/jacket colour	E9 low bend	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green

According to IEC 60794-1-2

Ordering information

16-8.../[ZN]SNH-...20	24-12.../[ZN]SNH-...20
32-8.../[ZN]SNH-...20	48-12.../[ZN]SNH-...20
48-8.../[ZN]SNH-...20	72-12.../[ZN]SNH-...20
64-8.../[ZN]SNH-...20	96-12.../[ZN]SNH-...20
96-8.../[ZN]SNH-...20	144-12.../[ZN]SNH-...20

Optipack breakout cables with 16 to 144 fibers

Specification						
Single cable fiber count	8 fiber	16/32	48	64	96	
	12 fiber	24/48	72	96	144	
Jacket Ø	mm	6.6	7.6	9.2	10.3	
Single cable Ø	mm	2.0	2.0	2.0	2.0	numbered
Approx. weight	kg/km	44	58	80	93	

Mechanical properties						
Tensile strength	during installation	N	600	800	1000	1400
	in service	N	4 x 100	6 x 100	8 x 100	12 x 100
Min. bend radius	during installation	mm	90	110	130	150
	in service	mm	60	70	90	100
Crush resistance	during installation	N/dm	5000	5000	5000	5000
	in service	N/dm	1000	1000	1000	1000
Impact resistance	Wp = 1.0 J	impacts	50	50	50	50
Kink resistance	r = 20 mm r = 30 mm	p	p	p	p	IEC 60794-1-21 E10

Thermal properties						
Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50	-10 to +50
	in service	°C	-10 to +70	-10 to +70	-10 to +70	-10 to +70
	in storage	°C	-20 to +70	-20 to +70	-20 to +70	-20 to +70

Combustion properties						
Fire load		MJ/m	0.97	1.2	1.75	2.07
Fire propagation	on a vertical single cable on a vertical cable bundle		p p	p p	p p	IEC 60332-1-2 IEC 60332-3-25
Smoke density			p	p	p	IEC 61034-2
Halogen acid gas	jacket material		p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant			
(EU) No 305/2011 (CPR)			classes on request			EN 50575

p = passed

Optipack breakout cables with 16 to 144 fibers

Optipack 8 - breakout - 2.0 mm up to 96 fibers

Multi-fiber breakout cable

LSFH™ jacket with 8 fibers for MTP®/MPO



Item no.	Cable type	Description
85080335	24-8G50/[ZN]SNH-M20-F_TIA	Optipack breakout cable 2.0 mm / Ø 6.6 mm, 24 x 9/125 µm G.657.A2, LSFH yellow, TIA fiber code
85080309	24-8G50/[ZN]SNH-L20-G_TIA	Optipack breakout cable 2.0 mm / Ø 6.6 mm, 24 x 50/125 µm OM4, LSFH heather violet, TIA fiber code
85080338	48-8E9A2/[ZN]SNH-E20_TIA	Optipack breakout cable 2.0 mm / Ø 7.6 mm, 48 x 9/125 µm G.657.A2, LSFH yellow, TIA fiber code
85080353	48-8G50/[ZN]SNH-M20-F_TIA	Optipack breakout cable 2.0 mm / Ø 7.6 mm, 48 x 50/125 µm OM3, LSFH turquoise, TIA fiber code
85080348	48-8G50/[ZN]SNH-L20-G_TIA	Optipack breakout cable 2.0 mm / Ø 7.6 mm, 48 x 50/125 µm OM4, LSFH heather violet, TIA fiber code
85080343	96-8E9A2/[ZN]SNH-E20_TIA	Optipack breakout cable 2.0 mm / Ø 10.3 mm, 96 x 9/125 µm G.657.A2, LSFH yellow, TIA fiber code
85080356	96-8G50/[ZN]SNH-M20-F_TIA	Optipack breakout cable 2.0 mm / Ø 10.3 mm, 96 x 50/125 µm OM3, LSFH turquoise, TIA fiber code
85080354	96-8G50/[ZN]SNH-L20-G_TIA	Optipack breakout cable 2.0 mm / Ø 10.3 mm, 96 x 50/125 µm OM4, LSFH heather violet, TIA fiber code

Optipack 12 – breakout – 2.0 mm up to 144 fibers

Multi-fiber breakout cable

LSFH™ jacket with 12 fibers for MTP®/MPO



Item no.	Cable type	Description
85078582	24-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 24 x 9/125 µm G.657.A2, LSFH yellow
85070323	48-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 9/125 µm G.657.A2, LSFH yellow
85080362	48-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 50/125 µm OM3, LSFH turquoise
85075764	48-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 50/125 µm OM4, LSFH heather violet
85070324	72-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 9/125 µm G.657.A2, LSFH yellow
85080365	72-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 50/125 µm OM3, LSFH turquoise
85075765	72-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 50/125 µm OM4, LSFH heather violet
85070335	96-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 9.2 mm, 96 x 9/125 µm G.657.A2, LSFH yellow
85075766	96-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 9.2 mm, 96 x 50/125 µm OM4, LSFH heather violet
85070334	144-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 9/125 µm G.657.A2, LSFH yellow
85080366	144-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 50/125 µm OM3, LSFH turquoise
85075767	144-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 50/125 µm OM4, LSFH heather violet

Optipack breakout cables with 16 to 144 fibers

Optipack 24 – breakout – 3.0 mm up to 288 fibers

Multi-fiber breakout cable

LSFH™ jacket with 24 fibers for MTP®/MPO



Item no.	Cable type	Description
85082337	48-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 9.2 mm, 48 x 9/125 µm G.657.A2, LSFH yellow
85082338	48-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 9.2 mm, 48 x 50/125 µm OM4, LSFH heather violet
85070350	96-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 9.3 mm, 96 x 9/125 µm G.657.A2, LSFH yellow
85076399	96-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 9.3 mm, 96 x 50/125 µm OM4, LSFH heather violet
85070351	144-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 11.0 mm, 144 x 9/125 µm G.657.A2, LSFH yellow
85076405	144-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 11.0 mm, 144 x 50/125 µm OM4, LSFH heather violet

Optipack breakout cables 24 to 144 fibers



Properties

- Single tubes with 12 fibers
- Metal-free indoor cable
- Strain-relieved with aramide yarn
- Ripcord for easy jacket removal
- Low smoke, halogen-free and self-extinguishing
- Cable with improved fire performance

Applications

- Installation in indoor areas
- Data cable in distribution networks
- Applications involving high safety requirements in case of fire
- Horizontal and collapsed backbone cabling
- Suitable for multi-fiber connectors (such as MPO/MTP®)

Design

Cable design	central strength member, non-metallic 24 to 144 optical fibers strain relief (aramide yarn) separating tape and 1 ripcord	
Jacket material	LSFH	
Channel marketing	single fiber cable numbered	
Tube/jacket colour	E9 low bend	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet

According to IEC 60794-1-2

Ordering information

24-12.../[ZN]SNH...30

48-12.../[ZN]SNH...30

72-12.../[ZN]SNH...30

144-12.../[ZN]SNH...30

Optipack breakout cables 24 to 144 fibers

Specification		24/48 fibers	72 fibers	144 fibers	
Jacket Ø	mm	8.5	10.4	13.5	
Single cable Ø	mm	3.0	3.0	3.0	numbered
Approx. weight	kg/km	58	92	145	

Mechanical properties						
Tensile strength	during installation	N	800	1000	1200	IEC 60794-1-2 E1
	in service	N	400	500	600	
Min. bend radius	during installation	mm	90	100	190	IEC 60794-1-2 E11
	in service	mm	130	150	200	
Crush resistance	short-term	N/dm	15 000	15 000	15 000	IEC 60794-1-2 E3
	long-term	N/dm	2000	2000	2000	
Impact resistance	W _p = 2.21 J	impacts	3	3	3	IEC 60794-1-2 E4
Kink resistance	r = 20 mm r = 30 mm	p	p		p	IEC 60794-1-2 E10

Thermal properties						
Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50	IEC 60794-1-22 F12
	in service	°C	-10 to +70	-10 to +70	-10 to +70	
	in storage	°C	-20 to +70	-20 to +70	-20 to +70	

Combustion properties						
Fire load		MJ/m	1.4	2.2	3.3	
Fire propagation	on a vertical single cable		p	p	p	IEC 60332-1-2
	on a vertical cable bundle		p	p	p	IEC 60332-3-25
Smoke density			p	p	p	IEC 61034-2
Halogen acid gas	jacket material		p	p	p	IEC 60754-1
Degree of acidity	jacket material		p	p	p	IEC 60754-2
2011/65/EC (RoHS)			compliant	compliant	compliant	

p = passed

Order information for indoor cables

Optipack 12 – breakout – 2.0 mm up to 144 fibers

Multi-fiber breakout cable

LSFH™ jacket with 12 fibers for MTP®/MPO



Item no.	Cable type	Description
85078582	24-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 24 x 9/125 µm G.657.A2, LSFH yellow
85070323	48-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 9/125 µm G.657.A2, LSFH yellow
85080362	48-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 50/125 µm OM3, LSFH turquoise
85075764	48-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 6.6 mm, 48 x 50/125 µm OM4, LSFH heather violet
85070324	72-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 9/125 µm G.657.A2, LSFH yellow
85080365	72-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 50/125 µm OM3, LSFH turquoise
85075765	72-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 7.6 mm, 72 x 50/125 µm OM4, LSFH heather violet
85070335	96-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 9.2 mm, 96 x 9/125 µm G.657.A2, LSFH yellow
85075766	96-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 9.2 mm, 96 x 50/125 µm OM4, LSFH heather violet
85070334	144-12E9A2/[ZN]SNH-E20	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 9/125 µm G.657.A2, LSFH yellow
85080366	144-12G50/[ZN]SNH-M20-F	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 50/125 µm OM3, LSFH turquoise
85075767	144-12G50/[ZN]SNH-L20-G	OptiPack breakout cable 2.0 mm / Ø 10.3 mm, 144 x 50/125 µm OM4, LSFH heather violet

Optipack breakout cables with 48 to 288 fibers



Properties

- Single tubes with 24 fibers
- Metal-free indoor cable
- Strain-relieved with aramide yarn
- Ripcord for easy jacket removal
- Low smoke, halogen-free and self-extinguishing
- Cable with improved fire performance



Applications

- Installation in indoor areas
- Data cable in distribution networks
- Applications involving high safety requirements in case of fire
- Horizontal and collapsed backbone cabling
- Suitable for multi-fiber connectors (such as (MPO/MTP®))

Design

Cable design	central strength member, non-metallic 48 to 288 optical fibers strain relief (aramide yarn) separating tape and 1 ripcord	
Jacket material	LSFH™	
Channel marketing	single fiber cable numbered	
Tube/jacket colour	E9 low bend	yellow
	G50 - OM3	turquoise
	G50 - OM4	heather violet
	G50 - OM5	lime green

According to IEC 60794-1-2

Ordering information

96-24.../[ZN]SNH-...30

144-24.../[ZN]SNH-...30

288-24.../[ZN]SNH-...30

Optipack breakout cables with 48 to 288 fibers

Specification					
Single cable fiber count	24 fiber	96	144	288	
Jacket Ø	mm	9.3	11	13.5	
Single cable Ø	mm	3.0	3.0	3.0	numbered
Approx. weight	kg/km	76.5	110.5	143	

Mechanical properties					
Tensile strength	during installation	N	600	800	1400
	in service	N	4 x 100	6 x 100	12 x 100
Min. bend radius	during installation	mm	130	160	200
	in service	mm	90	110	135
Crush resistance	during installation	N/dm	5000	5000	5000
	in service	N/dm	1000	1000	1000
Impact resistance	Wp=1.0J	impacts	50	50	50
Kink resistance	r=25mm		p	p	p

Thermal properties					
Temperature range	during installation	°C	-10 to +50	-10 to +50	-10 to +50
	in service	°C	-10 to +70	-10 to +70	-10 to +70
	in storage	°C	-20 to +70	-20 to +70	-20 to +70

Combustion properties					
Fire load		MJ/m	1.7	2.5	3.3
Fire propagation	on a vertical single cable		p	p	p
	on a vertical cable bundle		p	p	p
Smoke density			p	p	p
Halogen acid gas	jacket material		p	p	p
Degree of acidity	jacket material		p	p	p
2011/65/EC (RoHS)			compliant		
(EU) No 305/2011 (CPR)			classes on request		
EN 50575					

p = passed

Order information for indoor cables

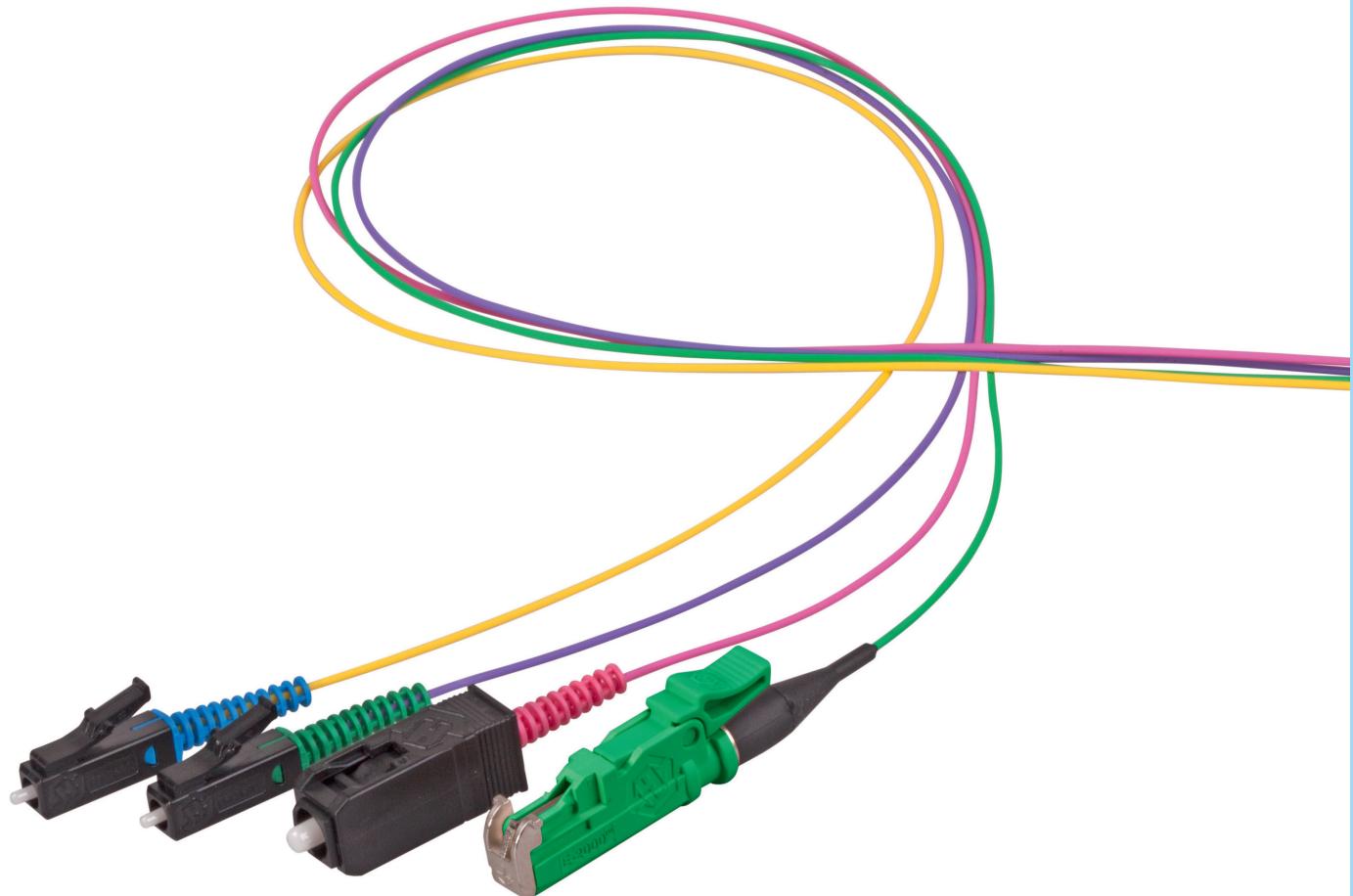
Optipack 24 – breakout – 3.0 mm up to 288 fibers

Multi-fiber breakout cable

LSFH™ jacket with 24 fibers for MTP®/MPO



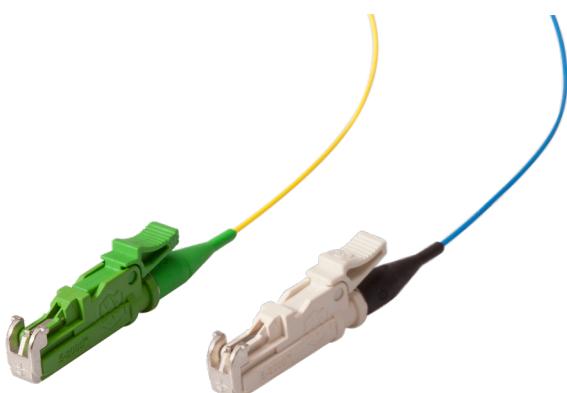
Item no.	Cable type	Description
85082337	48-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 9.2 mm, 48 x 9/125 µm G.657.A2, LSFH yellow
85082338	48-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 9.2 mm, 48 x 50/125 µm OM4, LSFH heather violet
85070350	96-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 9.3 mm, 96 x 9/125 µm G.657.A2, LSFH yellow
85076399	96-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 9.3 mm, 96 x 50/125 µm OM4, LSFH heather violet
85070351	144-24E9A2/[ZN]SNH-E30	OptiPack breakout cable 3.0 mm / Ø 11.0 mm, 144 x 9/125 µm G.657.A2, LSFH yellow
85076405	144-24G50/[ZN]SNH-L30-G	OptiPack breakout cable 3.0 mm / Ø 11.0 mm, 144 x 50/125 µm OM4, LSFH heather violet



BTW pigtail portfolio

BTW pigtails offer outstanding mechanical and thermal characteristics. BTW stands for "behind the wall" which is an international expression and reflects the application behind the patch panel.

E-2000™ BTW pigtail



Features

- Latched push-pull connector
- Automatic metal shutter for dust protection and laser safety
- All optical functional parts are protected
- High performance connector
- One-piece design for easy termination
- Cable easy-strip
- Trademark E-2000

Identification by colours

E-2000 BTW bodies are coloured as follows:

- | | |
|----------------|-------|
| • SM UPC | blue |
| • SM APC | green |
| • MM OM1 - OM4 | beige |

Technical characteristics

The E-2000 BTW products are free of halogen and fulfill the RoHS guidelines 2011/65/EU as well as the thermal and mechanical tests according to IEC 61753-1 cat. U.

Optical attenuation values

Type	Measurement method (IL/RL)	IL (dB)	RL (dB)	Temperature range
SM UPC	IEC 61300-3-4 method B	≤ 0.25	≥ 50	-40 to +85 °C
SM APC	IEC 61300-3-6	≤ 0.25	≥ 65	
MM OM1/OM2/OM3/OM4	IEC 61300-3-34 method B IEC 61300-3-6	≤ 0.25	≥ 35	

E-2000 BTW pigtail

Single pigtail standard items

Item	Description	Fiber type	Colours		
			Fiber ¹⁾	Housing	Boot
84151988	PT01_LHUS_0000_SM09E_02.0_BO	SM E9 (G.652D)	yellow	blue	black
84005005	PT01_LHAS_0000_SM09E_02.0_BO	SM E9 (G.652D)	yellow	green	green
85010315	PT01_LHMS_0000_O209E_02.0_M0	MM G50 (OM2)	orange	beige	black
85015555	PT01_LHMS_0000_O409E_02.0_M0	MM G50 (OM4)	heather violet	beige	black

Pigtail set standard items

Item	Description	Fiber type	Colours		
			Fiber ¹⁾	Housing	Boot
84119902	PS12_LHUS_0000_SM09E_02.0_BO	SM E9 (G.652D)	12 colours	blue	black
84100336	PS12_LHAS_0000_SM09E_02.0_BO	SM E9 (G.652D)		green	green
85010316	PS12_LHMS_0000_O209E_02.0_M0	MM G50 (OM2)		beige	black
84103380	PS12_LHMS_0000_O309E_02.0_M0	MM G50 (OM3)		beige	black

1) The tubes and fibers come in the same colours

LC-HQ BTW pigtail



Features

- Shortest installation length
- New design with outstanding mechanical and thermal stability
- Boots with ideal bending properties
- Endface polishing is better visible with coloured boots
- Patented (US 8.931.963)
- Only available as assembled pigtail, either as single item or set
- Packing is optimised for logistical aspects
- Cable easy-strip

Identification by colours

LC-HQ BTW bodies are black and the boots are coloured as follows:

- | | |
|--------------|------------------|
| • SM UPC | blue |
| • SM APC | green |
| • MM OM1/OM2 | grey |
| • MM OM3 | aqua (turquoise) |
| • MM OM4 | heather-violet |

The connector body of the LC-HQ BTW pigtails and pigtail sets is black and its coloured boots indicate the fiber type respectively the end-face polishing. The colour-coded boot allows identification even when plugged in.

Technical characteristics

The LC-HQ BTW products are free of halogen, fulfill the RoHS guidelines 2011/65/EU as well as the thermal and mechanical tests according to IEC 61753-1 cat. U.

Optical attenuation values

Type	Measurement method (IL/RL)	IL (dB)	RL (dB)	Temperature range
SM UPC	IEC 61300-3-4 method B/ IEC 61300-3-6	≤ 0.30	≥ 50	-40 to +85 °C
SM APC		≤ 0.30	≥ 65	
MM OM1/OM2/OM3	IEC 61300-3-4 method B/ IEC 61300-3-6	≤ 0.25	≥ 35	
MM OM4		≤ 0.15	≥ 35	

LC-HQ BTW pigtail

Order information

Single pigtail standard items

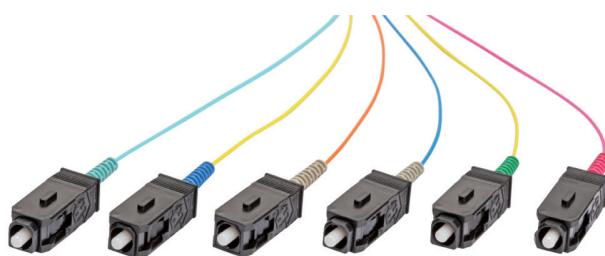
Item	Description	Fiber type	Colours	
			Tube/fiber	Boot
84130960	PT01_LCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	yellow	blue
84130959	PT01_ICAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	yellow	green
84151042	PT01_LCMS_0000_O109E_02.0_M0	MM G62 (OM1)	blue	beige
84151043	PT01_LCMS_0000_O209E_02.0_M0	MM G50 (OM2)	orange	beige
84151044	PT01_LCMS_0000_O309E_02.0_M0	MM G50 (OM3)	aqua	aqua
84151045	PT01_LCMS_0000_O409E_02.0_L0	MM G50 (OM4)	heather violet	heather violet

Pigtail set standard items

Item	Description	Fiber type	Colours	
			Tubes/fibers	Boot
84148655	PS12_LCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	12 colours	blue
84148656	PS12_ICAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	12 colours	green
84150493	PS24_LCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	2 × 12 colours ¹⁾	blue
84150494	PS24_ICAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	2 × 12 colours ¹⁾	green
85010341	PS12_LCMS_0000_O109E_02.0_M0	MM G62 (OM1)	12 colours	beige
84151046	PS12_LCMS_0000_O209E_02.0_M0	MM G50 (OM2)	12 colours	beige
84151047	PS12_LCMS_0000_O309E_02.0_M0	MM G50 (OM3)	12 colours	aqua
84151048	PS12_LCMS_0000_O409E_02.0_L0	MM G50 (OM4)	12 colours	heather violet

1) The tubes and fibers 13-24 come with additional stripes

SC-HQ BTW pigtail



Features

- Shortest installation length
- New design with outstanding mechanical and thermal stability
- Boots with ideal bending properties
- Endface polishing is better visible with coloured boots
- Patented (US 8.931.963)
- Only available as assembled pigtail, either as single item or set
- Available with APC 8° and 9°
- Packing is optimised for logistical aspects
- Cable easy-strip

Identification by colours

SC-HQ BTW bodies are black and the boots are coloured as follows:

• SM UPC	blue
• SM APC	green
• MM OM1/OM2	grey
• MM OM3	aqua (turquoise)
• MM OM4	heather-violet

The connector body of the SC-HQ BTW pigtails and pigtail sets is black and its coloured boots indicate the fiber type respectively the end-face polishing. The colour-coded boot allows identification even when plugged in.

Technical characteristics

The SC-HQ BTW products are free of halogen, fulfill the RoHS guidelines 2011/65/EU, as well as the thermal and mechanical tests according to IEC 61753-1 cat. U.

Optical attenuation values

Type	Measurement method (IL/RL)	IL (dB)	RL (dB)	Temperature range
SM UPC	IEC 61300-3-4 method B/ IEC 61300-3-6	≤ 0.30	≥ 50	-40 to +85 °C
SM APC		≤ 0.30	≥ 65	
MM OM1/OM2/OM3	IEC 61300-3-4 method B/ IEC 61300-3-6	≤ 0.25	≥ 35	
MM OM4		≤ 0.15	≥ 35	

SC-HQ BTW pigtail

Single pigtail standard items

Item	Description	Fiber type	Colours	
			Tube/fiber	Boot
85004546	PT01_SCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	yellow	blue
85004547	PT01_SCAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	yellow	green
85019809	PT01_SCMS_0000_O109E_02.0_M0	MM G62 (OM1)	blue	beige
85019810	PT01_SCMS_0000_O209E_02.0_M0	MM G50 (OM2)	orange	beige
85018214	PT01_SCMS_0000_O309E_02.0_M0	MM G50 (OM3)	aqua	aqua
85012804	PT01_SCMS_0000_O409E_02.0_I0	MM G50 (OM4)	heather violet	heather violet

Pigtail set standard items

Item	Description	Fiber type	Colours	
			Tubes/fibers	Boot
85010938	PS12_SCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	12 colours	blue
85019806	PS12_SCAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	12 colours	green
85019807	PS24_SCUS_0000_SM09E_02.0_SO	SM E9 (G.652D)	2 × 12 colours ¹⁾	blue
85019808	PS24_SCAS_0000_SM09E_02.0_SO	SM E9 (G.652D)	2 × 12 colours ¹⁾	green
85019811	PS12_SCMS_0000_O109E_02.0_M0	MM G62 (OM1)	12 colours	beige
85019812	PS12_SCMS_0000_O209E_02.0_M0	MM G50 (OM2)	12 colours	beige
85019813	PS12_SCMS_0000_O309E_02.0_M0	MM G50 (OM3)	12 colours	aqua
85015782	PS12_SCMS_0000_O409E_02.0_I0	MM G50 (OM4)	12 colours	heather violet

1) The tubes and fibers 13–24 are provided with additional stripes

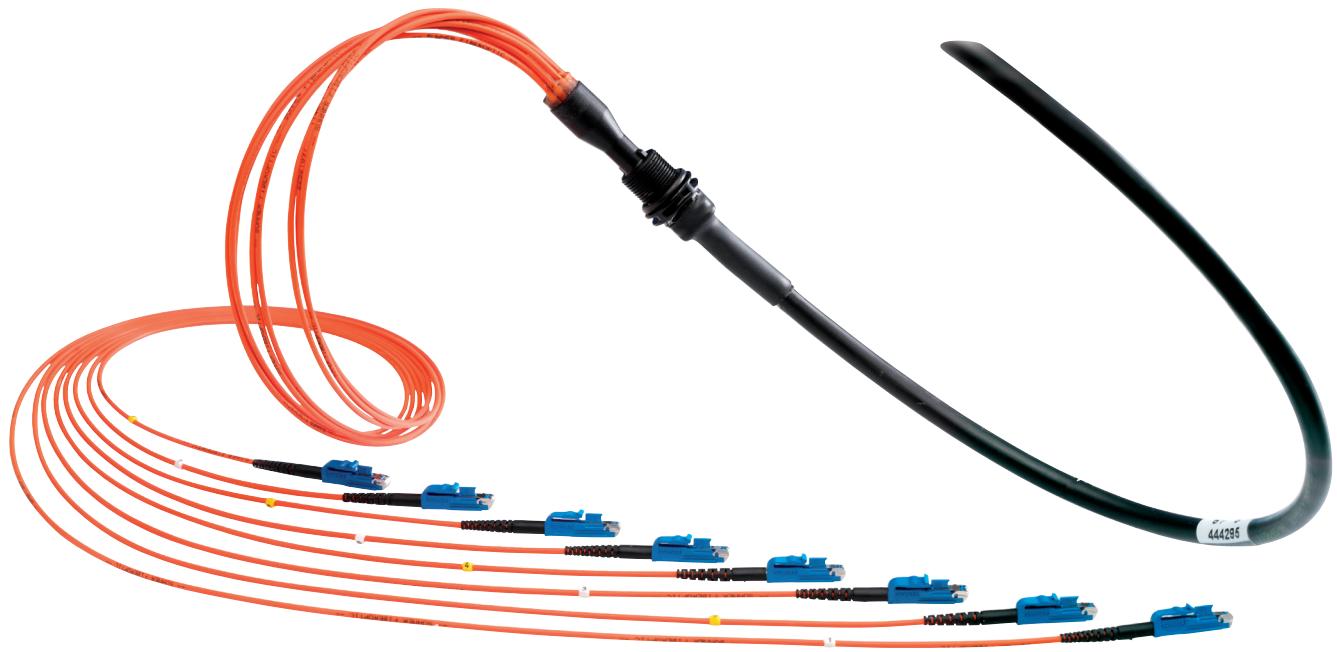


Blink assembly portfolio

The newly designed Blink (Broadband LINK) connector combines all the functions required for a simple installation of fiber optic cables in the living area: Increased protection against soiling of the connector end surfaces, integrated laser protection in connectors and adapters as well as an automatic self-release mechanism which is activated when the permissible release force at the OTO junction box is exceeded.

Blink assembly

Connector	Item no.	Description	Length (m)
Blink PC-SC PC	85028936	PC01_BKUS_SCUS_A227T_00.5_SS	0.5
	85028993	PC01_BKUS_SCUS_A227T_01.0_SS	1
	85029007	PC01_BKUS_SCUS_A227T_02.0_SS	2
	85029022	PC01_BKUS_SCUS_A227T_03.0_SS	3
Blink PC-SC APC	85028937	PC01_BKUS_SCAS_A227T_00.5_SS	0.5
	85028994	PC01_BKUS_SCAS_A227T_01.0_SS	1
	85019749	PC01_BKUS_SCAS_A227T_02.0_SS	2
	85029023	PC01_BKUS_SCAS_A227T_03.0_SS	3
Blink APC-SC PC	85020638	PC01_BKAS_SCUS_A227T_00.5_SS	0.5
	85028995	PC01_BKAS_SCUS_A227T_01.0_SS	1
	85005803	PC01_BKAS_SCUS_A227T_02.0_SS	2
	85029024	PC01_BKAS_SCUS_A227T_03.0_SS	3
Blink APC-SC APC	85028939	PC01_BKAS_SCAS_A227T_00.5_SS	0.5
	85028996	PC01_BKAS_SCAS_A227T_01.0_SS	1
	85029008	PC01_BKAS_SCAS_A227T_02.0_SS	2
	85029025	PC01_BKAS_SCAS_A227T_03.0_SS	3
Blink PC-LC PC	85028962	PC01_BKUS_ICUE_A227T_00.5_SS	0.5
	85028998	PC01_BKUS_ICUE_A227T_01.0_SS	1
	85029009	PC01_BKUS_ICUE_A227T_02.0_SS	2
	85029026	PC01_BKUS_ICUE_A227T_03.0_SS	3
Blink PC-LC APC	85028963	PC01_BKUS_LCAE_A227T_00.5_SS	0.5
	85028999	PC01_BKUS_LCAE_A227T_01.0_SS	1
	85029010	PC01_BKUS_LCAE_A227T_02.0_SS	2
	85029027	PC01_BKUS_LCAE_A227T_03.0_SS	3
Blink APC-LC PC	85028965	PC01_BKAS_ICUE_A227T_00.5_SS	0.5
	85029000	PC01_BKAS_ICUE_A227T_01.0_SS	1
	85029011	PC01_BKAS_ICUE_A227T_02.0_SS	2
	85029028	PC01_BKAS_ICUE_A227T_03.0_SS	3
Blink APC-LC APC	85028968	PC01_BKAS_LCAE_A227T_00.5_SS	0.5
	85029001	PC01_BKAS_LCAE_A227T_01.0_SS	1
	85029012	PC01_BKAS_LCAE_A227T_02.0_SS	2
	85029029	PC01_BKAS_LCAE_A227T_03.0_SS	3
Blink PC-Blink PC	85028971	PC01_BKUS_BKUS_A227T_00.5_SS	0.5
	85029002	PC01_BKUS_BKUS_A227T_01.0_SS	1
	85029013	PC01_BKUS_BKUS_A227T_02.0_SS	2
	85029030	PC01_BKUS_BKUS_A227T_03.0_SS	3
Blink APC-Blink APC	85028972	PC01_BKAS_BKAS_A227T_00.5_SS	0.5
	84148751	PC01_BKAS_BKAS_A227T_01.0_SS	1
	85029014	PC01_BKAS_BKAS_A227T_02.0_SS	2
	84132679	PC01_BKAS_BKAS_A227T_03.0_SS	3



MASTERLINE

Pre-assembled and ready to connect: Fiber optic cable systems from HUBER+SUHNER guarantee fast and safe installation of reliable connections - even in the field. These solutions are used for a wide variety of indoor and outdoor applications.

MASTERLINE Classic

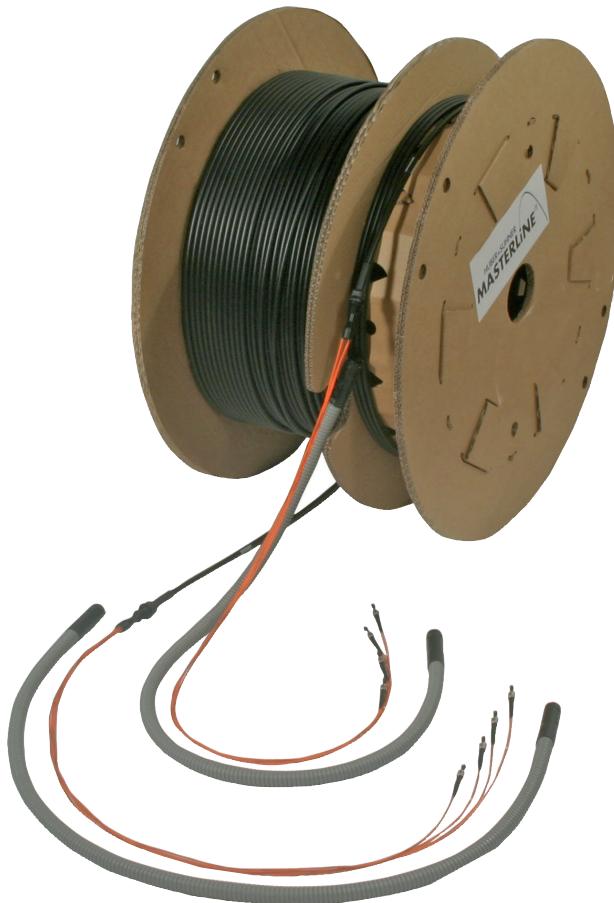
The Masterline Classic product portfolio offers a universal solution which allows a comprehensive configuration of 2 to 144 fibers. The product is rounded off by the practical pulling tubes, which meet IP67 and are also equipped with a draw-in eye for easy installation.

Features

- Ready to use, plug-and-play system
- Fast and simple installation
- No splicing or connector assembly required
- Single-sided or double-sided equipment versions available
- Treadproof waterproof pulling tube with high tensile strength (IP67)
- Robust divider with screw-on mounting
- Cable for indoor and outdoor use, with or without rodent protection
- Can be assembled with all standard connector types
- Reusable, highly robust pulling tube
- Can be supplied as a cable coil, on cardboard or wooden reel

Applications

- Building backbone (horizontal wiring) or campus backbone (exterior wiring)
- Wiring in MAN, WAN, SAN and private networks and computer centers
- Wiring in industrial environments



MASTERLINE Classic with 2.1 mm tube

MASTERLINE Classic was developed primarily for outdoor use at extreme temperatures.

Specifications

	MASTERLINE Classic		Upon request	
Number of fibers	up to 12	up to 24	up to 48	
Divider	small	medium	large	
Outer diameter	22 mm	31 mm	45 mm	
Installed length	48 mm	58 mm	48 mm	
Bore diameter for mounting	15.6 to 16.4 mm	25.5 to 26.5 mm	37.0 to 39.0 mm	
Maximum tensile load on divider	1000 N	1000 N	1200 N	
Fanout	Standard fiber density			
Diameter of single fiber cable	2.1 mm	2.1 mm	2.1 mm	
Standard fanout staggered ¹⁾	longest length shortest length	1165 mm ±50 450 mm ±50	1045 mm ±50 520 mm ±50	1045 mm ±50 520 mm ±50
Identification	coded numbers			
Jacket material	LSFH, low smoke, halogen-free and self-extinguishing			
Connector	all HUBER+SUHNER standard connectors			
Pulling tube with pulling eye				
Outer diameter	23.5 mm	31 mm	45 mm	
Maximum tensile strength ²⁾	1000 N	1000 N	1200 N	
Crush resistance	200 N/cm	250 N/cm	250 N/cm	
Watertightness	IP67	IP67	IP67	
Cable				
Maximum length ³⁾	4000 m			
Cable diameter max.	8.5 mm	15 mm	15 mm	
Cable types with solid conductors	with rodent protection without rodent protection	LSFH, low smoke, halogen-free and self-extinguishing PE for outdoor applications, longitudinal and transversal watertight		
Temperature range ⁴⁾				
During installation	-10 to +50 °C		IEC 61300-2-22	
In service	-25 to +70 °C			
In storage	-25 to +70 °C			



1) Length of fanout can be freely defined (max. of 5.0 m). The fan-out has to be staggered for using the pulling tube.

2) Tensile load on entire cable system, including pulling tube. For tensile load on cable, see data sheet for cable type.

3) Longer cable lengths after consultation with the technical support

4) Temperature range for entire cable system

MASTERLINE Classic with 1.7 mm tube

Specifications

	MASTERLINE classic	Upon request				
Number of fibers	up to 24	up to 60	up to 72	up to 144		
Divider	small	medium	large	large		
Outer diameter	22 mm	31 mm	45 mm	45 mm		
Installed length	48 mm	58 mm	70 mm	70 mm		
Bore diameter for mounting	15.6 to 16.4 mm	25.5 to 26.5 mm	37.0 to 39.0 mm	37.0 to 39.0 mm		
Maximum tensile load on divider	1000 N	1000 N	1200 N	1200 N		
Fanout	increased fiber density					
Diameter of single fiber cable	1.7 mm	1.7 mm	1.7 mm	1.7 mm		
Standard fanout staggered ¹⁾	longest length	1045 mm ±50	1235 mm ±50	1235 mm ±50		
	shortest length	520 mm ±50	650 mm ±50	520 mm ±50		
Identification	coded numbers					
Jacket material	LSFH, low smoke, halogen-free and self-extinguishing					
Connector	all HUBER+SUHNER standard connectors					
Pulling tube with pulling eye						
Outer diameter	31 mm	31 mm	on request, depending on the type of connector and fanout length			
Maximum tensile strength ²⁾	1000 N	1000 N				
Crush resistance	250 N/cm	250 N/cm				
Watertightness	IP67	IP67				
Cable						
Maximum length ³⁾	4000 m					
Cable diameter max.	8.5 mm	10.5 mm	11.7 mm	15.0 mm		
Cable types with solid conductors	with rodent protection	LSFH, low smoke, halogen-free and self-extinguishing				
	without rodent protection	PE for outdoor applications, longitudinal and transversal watertight				
Temperature range ⁴⁾						
During installation	-10 to +50 °C		IEC 61300-2-22			
In service	-25 to +70 °C					
In storage	-25 to +70 °C					

1) Length of fanout can be freely defined (max. of 5.0 m). The fan-out has to be staggered for using the pulling tube.

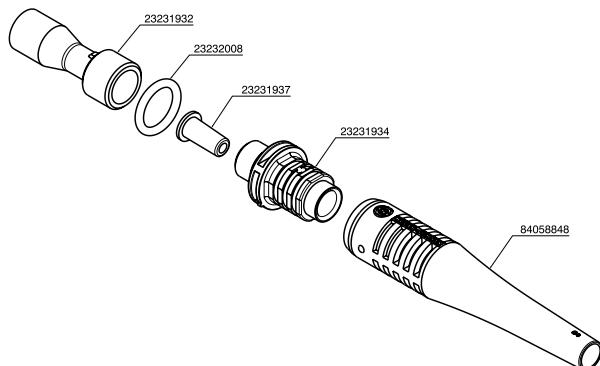
2) Tensile load on entire cable system, including pulling tube. For tensile load on cable, see data sheet for cable type.

3) Longer cable lengths after consultation with the technical support

4) Temperature range for entire cable system

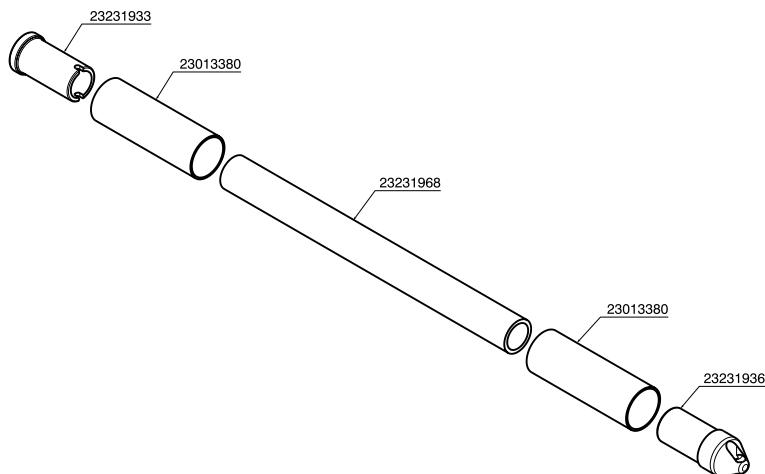
MASTERLINE Classic - small divider

For up to 24 fibers with 1.7 mm tube or 12 fibers with 2.1 mm tube ¹⁾



Item no.	Item description	Description	Quantity (pcs.)
23231932	Body_ARMT_BK_Small	housing	1
23232008	O-Ring_13.95x2.62_02_BK	O-ring	1
23231937	Glue_sleeve_AEM_34_Small	glue sleeve	1
23231934	Cable_Entry_AEMT_90_Small	cable entry 9 mm	1
84058848	BOOT ODC 8.0_BK	boot	1

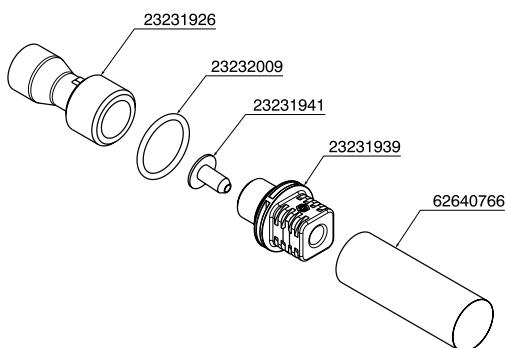
MASTERLINE Classic - small pulling tube



Item no.	Item description	Description	Quantity (pcs.)
23231933	Sheath_AEMRT_Small	sleeve for pulling tube, Ø 22 mm	1
23013380	Shrink_tube_22x4x70_01_03_BK	heatshrink for pulling tube, Ø 22 mm	2
23231968	Tube_14.7x18.9_04_05_GY	pulling tube, PG 13.5	1
23231936	Pulling_Head_AELMRT_Small	cone with pulling eye, Ø 22 mm	1

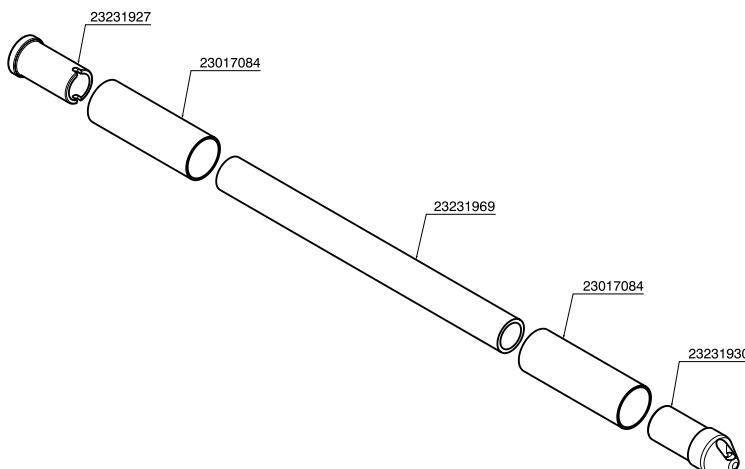
1) If pulling tube is not suitable for your configuration, change the adapter to medium size.

MASTERLINE Classic - medium divider for up to 12 fibers



Item no.	Item description	Description	Quantity (pcs.)
23231926	Body_ARMT_BK_Medium	housing	1
23232009	O-Ring_25.07x2.62_02_BK	O-ring	1
23231941	Glue_sleeve_AE_34_Medium	kevlar separator 9 mm	1
23231939	Cable_Entry_AEM_90_Medium	cable entry 9 mm	1
62640766	Shrink_tube_24x3x70_01_01_BK	heatshrink TFD 1" black	1

MASTERLINE Classic - medium pulling tubes



Item no.	Item description	Description	Quantity (pcs.)
23231927	Sheath_AEMRT_Medium	sleeve for pulling tube, Ø 31 mm	1
23017084	Shrink_tube_34x4x100_01_01_BK	heatshrink for pulling tube, Ø 31 mm	2
23231969	Tube_23x28.8_04_05_GY	pulling tube, PG 21	1
23231930	Pulling_Head_AEMRT_Medium	cone with pulling eye, Ø 31 mm	1

Optional

Item no.	Item description	Description	Quantity (pcs.)
84082085	Adapter_SM_A_shortneck	adapter small to medium	1

MASTERLINE Lite

Are you looking for an indoor cable system with fast installation and a good price-performance ratio? Then we recommend MASTERLINE Lite as the ideal solution.

Features

- Ready to use, plug-and-play system
- Fast and simple installation
- No splicing or connector assembly required
- Single-sided or double-sided equipment assemblies
- Treadproof and dust-proof pulling tube (IP50)
- 2 to 24 fibers
- Easy-to-mount dividers (with slot or screw-on fixture)
- Cable for indoor use, with or without anti-rodent protection
- Can be assembled with all standard connector types
- Reusable pulling tube with hinged fixing sleeve
- Can be supplied as a cable coil, on cardboard or wooden reel

Applications

MASTERLINE lite is a low-cost, pre-assembled cable system designed primarily for indoor applications.

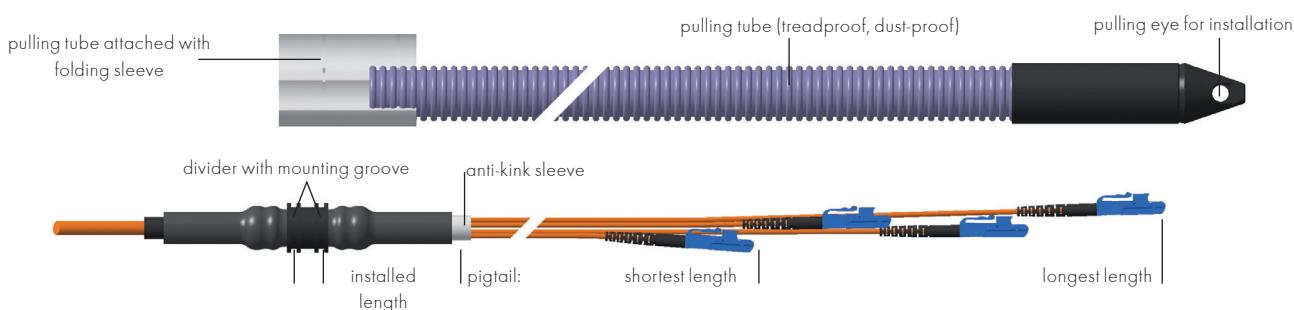
- Building backbone (horizontal wiring)
- LAN wiring and private networks



MASTERLINE Lite

Specifications

		MASTERLINE Lite	Upon request
Number of fibers		up to 12	up to 24
Divider		small	medium
Outer diameter		18 mm	25 mm
Installed length, two mounting grooves		50 mm/60 mm	50 mm/60 mm
Size mounting groove		15 mm/15 mm	19 mm/15 mm
Optional accessories	thread size for mounting	PG 16	PG 21
	min. bore for mounting	22.5 mm	28.5 mm
	width across flats	26 mm	32 mm
Maximum tensile load on divider		500 N	500 N
Fanout			
Diameter of single fiber cable		2.1 mm	2.1 mm
Standard fanout staggered ¹⁾	longest length	1045 mm ±50	1235 mm ±50
	shortest length	520 mm ±50	520 mm ±50
Identification		coded numbers	
Jacket material		LSFH, low smoke, halogen-free and self-extinguishing	
Connector		all HUBER+SUHNER standard connectors	
Pulling tube with pulling eye			
Outer diameter		22 mm	25 mm
Outer diameter, folding sleeve, pulling tube		26 mm	30 mm
Maximum tensile strength ²⁾		500 N	500 N
Crush resistance		120 N/cm	120 N/cm
Watertightness		IP50	IP50
Cable			
Maximum length ³⁾		2000 m	2000 m
Cable diameter max.		8.5 mm	8.5 mm
Cable types with solid conductors	with rodent protection	LSFH, low smoke, halogen-free and self-extinguishing	
	without rodent protection	PE for outdoor applications, longitudinal and transversal watertight	
Temperature range ⁴⁾			
During installation		-5 to +50 °C	
In service		-15 to +70 °C	
In storage		-20 to +70 °C	



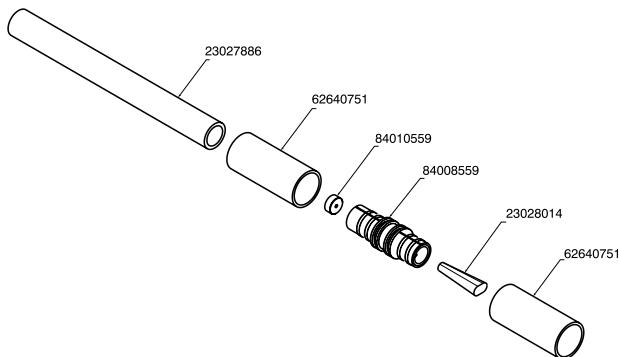
1) Length of fanout can be freely defined (max. of 5.0 m). The fan-out has to be staggered for using the pulling tube.

2) Tensile load on entire cable system, including pulling tube. For tensile load on cable, see data sheet for cable type.

3) Longer cable lengths after consultation with the technical support

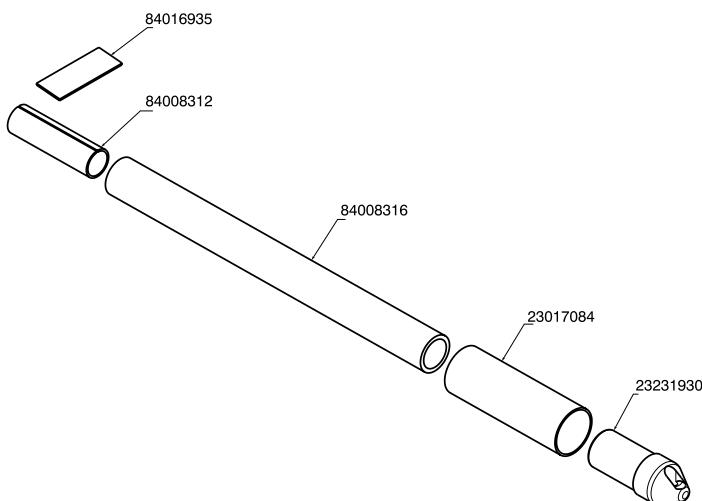
4) Temperature range for entire cable system

MASTERLINE Lite - small divider for up to 12 fibers



Item no.	Item description	Description	Quantity (pcs.)
62640751	Shrink_tube_19x3x50_01_01_BK	3/4" shrink tube, length 50 mm, black	2
23028014	INSULATING_TUBE_423951_8mm	insulation tube (teflon)	1
84008559	Body_Lite_BK_Small	divider lite for up to 12 fibers	1
84010559	Sleeve_L_01_18	divider sleeve lite	1
23027886	Shrink_tube_12x4x150_01_01_BK	shrink tube 45 mm using cable with 5.0 mm	1

MASTERLINE Lite - pulling tube



Item no.	Item description	Description	Quantity (pcs.)
84016935	Label_40x15_01_01_WH_T	sticker snaplock	1
84008312	Sheath_L_Folding_medium	connect-ring M25	1
84008316	Tube_17.8x25_02_GY	pulling tube M25 plastic	1
23017084	Shrink_tube_34x4x100_01_BK	heatshrink for pulling tube, Ø 31 mm	1
23231930	Pulling_Head_AEMRT_Medium	cone with pulling eye, Ø 31 mm	1
84099173	Adapter_SM_L_open	adapter small to medium	1

MASTERLINE Compact

MASTERLINE Compact is the most compact cable solution with the best possible system integration in cases of space restrictions in communications, network and data center applications.

Features

- Ready to use, plug-and-play system
- Narrow cable divider
- Good thermal properties
- Fast and simple installation
- No splicing or connector assembly required
- Single-sided or double-sided equipment assemblies
- 2 to 24 fibers
- Dividers with mounting slot to fix in distribution boxes
- Cable for indoor use, with or without rodent protection
- Can be assembled with all standard connector types
- Can be supplied as a cable coil, on cardboard or wooden reel

Applications

MASTERLINE Compact is a pre-assembled cable system that is ideally suited as a patch or connecting cable between two distribution units for short to medium distances.

- External patch/connecting cable (interconnection)
- Connection between the main distribution device and transmitters
- Connection between the main distribution device and terminal area

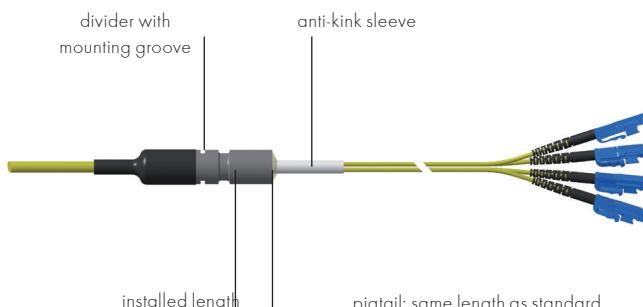


MASTERLINE Compact

MASTERLINE Compact is a compact and robust cable system for indoor applications with limited available space.

Specifications

	MASTERLINE Compact	Upon request
Number of fibers	to 12	to 24
Divider	small	small
Outer diameter	15 mm	15 mm
Installed length	30 mm	30 mm
Size mounting groove	12 mm	12 mm
Maximum tensile load on divider	800 N	800 N
Fanout		
Diameter of single fiber cable	2.1 mm	1.7 mm
Pigtail length, standard	not staggered ¹⁾	1000 mm ±50
	staggered ²⁾	optional
Identification of single fiber cable	coded numbers	
Jacket material	LSFH, low smoke, halogen-free and self-extinguishing	
Connector	all HUBER+SUHNER standard connectors	
Pulling tube with pulling eye	no	
Cable		
Maximum length ³⁾	2000 m	2000 m
Cable diameter max.	8.5 mm	8.5 mm
Cable types (mit/without rodent protection)	LSFH, low smoke, halogen-free and self-extinguishing	
Temperature range ⁴⁾		
During installation	-10 to +50 °C	IEC 61300-2-22
In service	-25 to +70 °C	
In storage	-20 to +70 °C	

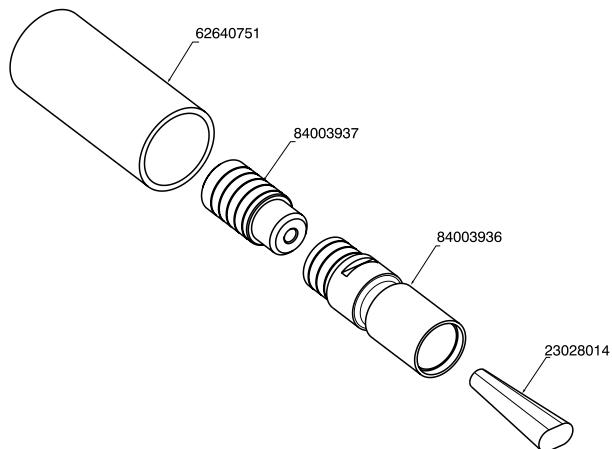


1) Length of fanout can be freely defined (max. of 5.0 m). The fan-out has to be staggered for using the pulling tube.

2) Longer cable lengths after consultation with the technical support

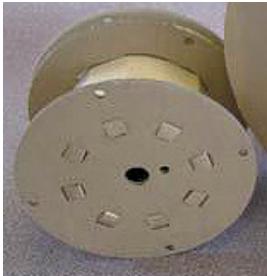
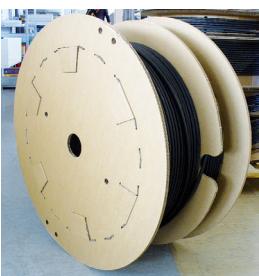
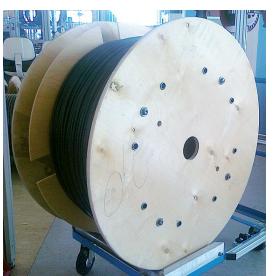
3) Temperature range for entire cable system

MASTERLINE Compact - divider for up to 12 fibers



Item no.	Item description	Description	Quantity (pcs.)
23028014	INSULATING_TUBE_423951_8mm	insulation tube (teflon)	1
84003936	BODY_Compact_BK_Small	divider compact up to 24 fibers	1
84003937	Glue_sleeve_C_55_Small	glue sleeve compact small	1
62640751	Shrink_tube_19x3x50_01_01_BK	¾" shrink tube, length 50 mm, black	1

Spools

Cardboard reel 460 × 460 × 260 mm	Cardboard reel 700 × 700 × 410 mm	Cardboard reel 900 × 900 × 420 mm	Plywood drum 900 × 900 × 510 mm
			
Max. 180 m	Max. 310 m	Max. 790 m	Max. 1820 m

Max. capacity of reels based on cable diameter of 7.0 mm

Bill of material for cardboard reel 460 × 460 × 260 mm

Item no.	Item description	Quantity (pcs.)
84077181	ODC SPOOL SIDE WALL	4
84130276	ODC SPOOL CORE DOUBLE w Slots	1
84092352	BOX_460MMx460MMx4MM_03_BN	2

Bill of material for cardboard reel 700 × 700 × 410 mm

Item no.	Item description	Quantity (pcs.)
84092333	BOX_680MMx874MMx4MM_03_BN	2
84092332	BOX_670MMx670MMx4MM_03_BN	2
84092331	BOX_700MMx700MMx4MM_03_BN	4

Bill of material for cardboard reel 900 × 900 × 420 mm

Item no.	Item description	Quantity (pcs.)
84092339	BOX_678MMx1180MMx4MM_03_BN	2
84092338	BOX_859MMx871MMx4MM_03_BN	2
84092336	BOX_900MMx900MMx4MM_03_BN	4

Bill of material for plywood drum reel 900 × 900 × 510 mm

Item no.	Item description	Quantity (pcs.)
23003652	Reel_WOi_900x600x510-350ML	1

Auxiliary materials - pots and spacers



MASTERLINE Classic small and MASTERLINE Compact

Item no.	Item description	Description
23308105	ML Pot_A+C_small	auxiliary tools for small ML Classic and Compact manifolds
23308101	ML Spacer_A_small_12_21_12_09	
84065987	ML Spacer_A_small_24_17_24_09	

MASTERLINE Classic Medium

Item no.	Item description	Description
23308106	ML Pot_A_Medium	auxiliary tools for medium ML Classic manifolds
23308103	ML Spacer_A_Medium_24_17_24_09	

MASTERLINE Lite

Item no.	Item description	Description
84058858	ML Pot_L_Small	auxiliary tools for ML Lite manifolds
84058857	ML Spacer_L_Small_12_21_12_09	

Empty tubes

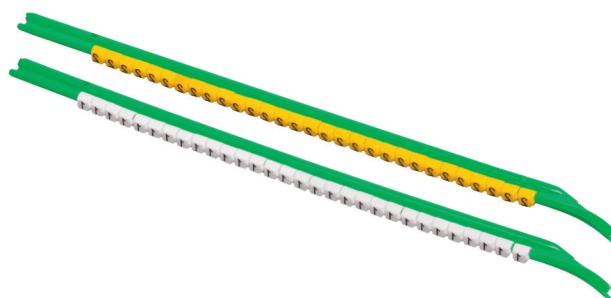


Item no.	Item description	Description
23030476	00-0/CHJH-G21-4	empty tube 0.5/0.9 mm, Ø 2.1 mm LSFH jacket colour: black
22521897	00-0/CHJH-D21-4	empty tube 0.5/0.9 mm, Ø 2.1 mm LSFH jacket colour: orange
84007275	00-0/CHJH-E21-4	empty tube 0.5/0.9 mm, Ø 2.1 mm LSFH jacket colour: yellow
84094215	00-0/CHJH-M21-4	empty tube 0.5/0.9 mm, Ø 2.1 mm LSFH jacket colour: turquoise
84010314	00-0/CHJH-D17-4	empty tube 0.5/0.9 mm, Ø 1.7 mm LSFH jacket colour: orange
84033291	00-0/CHJH-E17-4	empty tube 0.5/0.9 mm, Ø 1.7 mm LSFH jacket colour: yellow
23025672	00-0/CHJH-G17-4	empty tube 0.5/0.9 mm, Ø 1.7 mm LSFH jacket colour: black

MASTERLINE tools

Tools	Item no.	Item description	Description
	23270107	TOOL-STRP-BUFFER-TUBE (Stripping_tool_4006_2)	cable stripper
	84028806	STRIPPING_TOOL_0.5-12.5MM	hand wire jacket stripper
	84139660	TOOL-STRP-JOKARI 28H	long and round slit cable jacket cutter
	23227387	TOOL-GLUE-GUN-DMA54	cartridge glue gun
	84115105	PAK_Adhesive_Ergo_0107	two part cartridge 50 ml
	85096604	TOOL-GLUE-NOZ-SHORT-0107-10P	short nozzle for 50 ml cartridge
	85028774	TOOL-GLUE-NOZZLE-ERGO-0107-10P	nozzle for 50 ml cartridge
	23234310	TOOL-SPEC-LOCTITE_480	black Loctite glue 480
	23001944	TOOL-GRIPPER-SMALL	gripping pliers
	22664046	Moulding_Stand_small	two part cartridge 50 ml
	85101885	TOOL-OVMO-WUERTH-MOULDRL-SEAGNT	silicone-free mold release spray

Marking sleeves



Item no.	Item description	Description
84075978	Marking sleeve "0" _1.40-1.80_YE	marking labels, yellow numbers from 0 to 9, for cables Ø 1.40 to 1.80 mm
84075979	Marking sleeve "1" _1.40-1.80_YE	
84075980	Marking sleeve "2" _1.40-1.80_YE	
84075981	Marking sleeve "3" _1.40-1.80_YE	
84075982	Marking sleeve "4" _1.40-1.80_YE	
84075983	Marking sleeve "5" _1.40-1.80_YE	
84075984	Marking sleeve "6" _1.40-1.80_YE	
84075985	Marking sleeve "7" _1.40-1.80_YE	
84075986	Marking sleeve "8" _1.40-1.80_YE	
84075987	Marking sleeve "9" _1.40-1.80_YE	

Item no.	Item description	Description
84071770	Marking sleeve "0" _1.40-1.80_WH	marking labels, white numbers from 0 to 9, for cables Ø 1.40 to 1.80 mm
84071771	Marking sleeve "1" _1.40-1.80_WH	
84071772	Marking sleeve "2" _1.40-1.80_WH	
84071773	Marking sleeve "3" _1.40-1.80_WH	
84071774	Marking sleeve "4" _1.40-1.80_WH	
84071775	Marking sleeve "5" _1.40-1.80_WH	
84071776	Marking sleeve "6" _1.40-1.80_WH	
84071777	Marking sleeve "7" _1.40-1.80_WH	
84071778	Marking sleeve "8" _1.40-1.80_WH	
84071780	Marking sleeve "9" _1.40-1.80_WH	

Marking sleeves

Item no.	Item description	Description
23003803	Marking sleeve "0" _1.90-2.65_YE	
23003804	Marking sleeve "1" _1.90-2.65_YE	
23003805	Marking sleeve "2" _1.90-2.65_YE	
23003806	Marking sleeve "3" _1.90-2.65_YE	
23003807	Marking sleeve "4" _1.90-2.65_YE	
23003808	Marking sleeve "5" _1.90-2.65_YE	
23003809	Marking sleeve "6" _1.90-2.65_YE	
23003810	Marking sleeve "7" _1.90-2.65_YE	
23003811	Marking sleeve "8" _1.90-2.65_YE	
23003812	Marking sleeve "9" _1.90-2.65_YE	

Item no.	Item description	Description
23308140	Marking sleeve "0" _1.90-2.65_WH	
23308141	Marking sleeve "1" _1.90-2.65_WH	
23308142	Marking sleeve "2" _1.90-2.65_WH	
23308143	Marking sleeve "3" _1.90-2.65_WH	
23308144	Marking sleeve "4" _1.90-2.65_WH	
23308145	Marking sleeve "5" _1.90-2.65_WH	
23308146	Marking sleeve "6" _1.90-2.65_WH	
23308147	Marking sleeve "7" _1.90-2.65_WH	
23308148	Marking sleeve "8" _1.90-2.65_WH	
23308149	Marking sleeve "9" _1.90-2.65_WH	

Jelly-free glass-armoured multi-fiber loose tube cables - with up to 24 fibers



Properties

- Metal-free indoor and outdoor cable
- Jelly-free, no need for cleaning the fibers
- Rodent-protected, glass-armoured
- Low smoke, halogen-free and self-extinguishing
- Longitudinal and transversal watertight cable



Applications

- Data cable in distribution networks
- For vertical applications up to 500 m
- For installation in cable ducts
- For high safety requirements in case of fire

Design

Cable design	dry multi-fiber loose tube with up to 24 fibers
Strain relief and rodent protection	glass - roving
Fiber colour	according to colour code
Jacket material	LSFH™
Jacket colour	colour coded

According to IEC 60794-1-2

Ordering information

24.../Q{ZNG}H...70 *

24.../Q{ZNG}H...85

24.../Q{ZNG}H...120

Approvals

* UL listed acc. OFNR/OFNG/OFN

Jelly-free glass-armoured multi-fiber loose tube cables - with up to 24 fibers

Specification					
Jacket Ø	mm	7.0	8.5	12.0	
Number of fibers		2 to 24	2 to 24	2 to 24	
Approx. weight	kg/km	50	83	178	

Mechanical properties					
Tensile strength	during installation	N	2000	3000	9000
	in service	N	1200	1500	4500
Min. bend radius	during installation	mm	110	130	180
	in service	mm	70	80	120
Crush resistance	short-term	N/dm	5000	8000	11000
	long-term	N/dm	2000	300	6000
Impact resistance	W _p = 1 J	impacts	100	30	IEC 60794-1-2 E4
	W _p = 4.4 J				
	W _p = 4.5 J			500	

Thermal properties						
Temperature range	during installation	°C	-10 to +50		IEC 60794-1-22 F1	
	in service	°C	-40 to +70			
	in storage	°C	-40 to +70			

Combustion properties					
Fire load		MJ/m	1.0	1.5	3.1
Fire propagation	on a vertical single cable		p	p	p
Fire propagation	on vertical cable bundle		p	p	p
Smoke density			p	p	p
Water penetration	h = 1 m, 24 h, p < 3 m		p	p	p
2011/65/EC (RoHS)			compliant		
(EU) No 305/2011 (CPR)			*	**	***

p = passed

* Dca-s1a, d2, a1

** Dca-s1a, d0, a1

*** B2ca-s1a, d0, a1

Order information for universal cables

Jelly-free - dry block glass-armoured multi-fiber loose tube cables – with up to 24 fibers
with LSFH™ jacket 7.0 mm



Item no.	Cable type	Description
85020587	12-12E9/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 9/125 µm G.652.D, loose tube 2.8 mm, LSFH black
85008099	12-12E9A2/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 9/125 µm G.657.A2, loose tube 2.8 mm, LSFH black
85026736	12-12E9A2/Q(ZNG)LH-G70-UR	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 9/125 µm G.657.A2, loose tube 2.8 mm, LSFH black, UL rating OFN/OFNG
85023867	12-12G50/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM2, loose tube 2.8 mm, LSFH black
85026737	12-12G50/Q(ZNG)H-G70-UR	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM2, loose tube 2.8 mm, LSFH black, UL rating OFN/OFNG
85026277	12-12G50/Q(ZNG)H-G70-F#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM3, loose tube 2.8 mm, LSFH black
85026738	12-12G50/Q(ZNG)H-G70-F-UR	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM3, loose tube 2.8 mm, LSFH black, UL rating OFN/OFNG
85026278	12-12G50/Q(ZNG)H-G70-G#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM4, loose tube 2.8 mm, LSFH black
85026739	12-12G50/Q(ZNG)H-G70-G-UR	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 50/125 µm OM4, loose tube 2.8 mm, LSFH black, UL rating OFN/OFNG
85024090	12-12G62/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 62.5/125 µm OM1, loose tube 2.8 mm, LSFH black
85026740	12-12G62/Q(ZNG)H-G70-UR	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 12 x 62.5/125 µm OM1, loose tube 2.8 mm, LSFH black, UL rating OFN/OFNG
85030630	24-24E9/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 24 x 9/125 µm G.652.D, loose tube 2.8 mm, LSFH black
85029988	24-24E9A2/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 24 x 9/125 µm G.657.A2, loose tube 2.8 mm, LSFH black
85030631	24-24G50/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 24 x 50/125 µm OM2, loose tube 2.8 mm, LSFH black
85024091	24-24G62/Q(ZNG)H-G70#D	Jelly-free glass-armoured multi-fiber loose-tube cable Ø 7.0 mm, 24 x 62.5/125 µm OM1, loose tube 2.8 mm, LSFH black

HUBER+SUHNER AG
Fiber Optics
Degersheimerstrasse 14
9100 Herisau
Switzerland
Phone +41 71 353 4111
hubersuhner.com

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