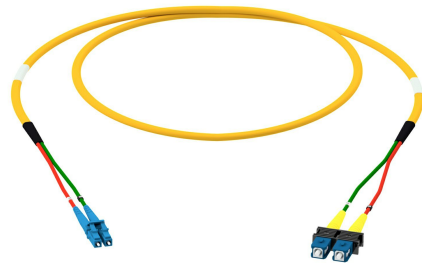


## PRODUCTPROFILE

### Catalogue number: 087A2000G657A1

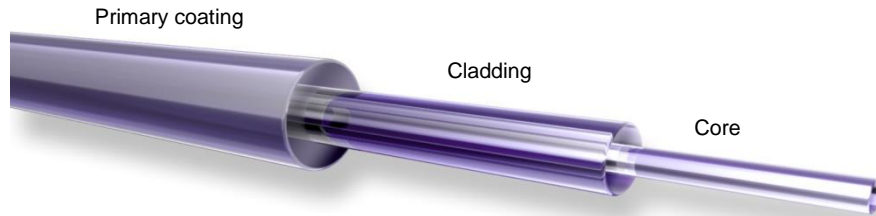
Partnumber: 709096

Fiber optic duplex patchcord  
Connector side A: LC-Duplex SM  
Connector side B: SC-Duplex  
9/125µm, double jacket 2x2.1/3.3x5.2mm,  
yellow  
Polarity: crossed A to B  
Cable I-V(ZN)HH2x2,1E9/125µm,G657A1



#### **Related documents:**

DS_FASER G657A1_OE	Fiber Data Sheet
DS_I-VZNHH2X21_900_L_OE	Cable Data Sheet
DS_LC_SIMPLEXDUPLEX_STECKER_OI	Steckerdatenblatt
DS_SC_STECKER_OE	Steckerdatenblatt



**Standards**

Stepped index fiber 9/125µm according to  
 -ISO/IEC 11801 und EN 50173-1 OS2  
 -IEC 60793-2-50 type B1.3  
 -ITU G.657.A1 und G.652.D

**Structure**

Silica fiber with two layer acrylate primary coating

**Geometrical properties**

Modefield diameter @1310 nm	9.2 µm +/- 0.4 µm
Modefield diameter @1550 nm	10.4 µm +/- 0.5 µm
Cladding diameter	125 µm +/- 0.07 µm
Cladding non-circularity	≤ 0.7 %
Core-Cladding concentricity	≤ 0.5 µm
Primary coating diameter	242 µm +/- 5 µm
Coating-Cladding concentricity	< 12 µm

**Mechanical properties**

Break strength SCREEN-Test 1 % strain for 1 s @100 kpsi

**Thermal properties**

Operating temperature range -60 to +85°C

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG

**Transmission characteristics**

Attenuation:

**Cabled fiber tight buffered:** @ 1310 nm max. 0.38 dB/km  
@ 1550 nm max. 0.28 dB/km

**Cabled fiber loose tube:** @ 1310 nm max. 0.36 dB/km  
@ 1550 nm max. 0.22 dB/km

**Uncabled fiber:** @ 1310 nm max. 0.32 dB/km  
@ 1383 nm max. 0.32 dB/km  
@ 1490 nm max. 0.21 dB/km  
@ 1550 nm max. 0.18 dB/km  
@ 1625 nm max. 0.20 dB/km

Macrobending, induced attenuation, uncabled fiber:

Radius 10 mm, 1 turn, @ 1550 nm ≤ 0.50 dB  
Radius 10 mm, 1 turn, @ 1625 nm ≤ 1.50 dB  
Radius 15 mm, 10 turns, @ 1550 nm . 0.05 dB  
Radius 15 mm, 10 turns, @ 1625 nm ≤ 0.30 dB  
Radius 25 mm, 100 turns, @ 1310, 1550 und 1625 nm ≤ 0.01 dB

Dispersion:

@ 1285 - 1330 nm ≤ 3.0 ps/(nm\*km)  
@ 1550 nm ≤ 18.0 ps/(nm\*km)  
@ 1625 nm ≤ 22.0 ps/(nm\*km)

Polarization Mode Dispersion (PMD):

PMD Link Design Value ≤ 0.04 ps/√km  
Maximum individual fiber PMD ≤ 0.1 ps/√km

Cut-off-Wavelength: ≤ 1260 nm

Effective group index of refraction:

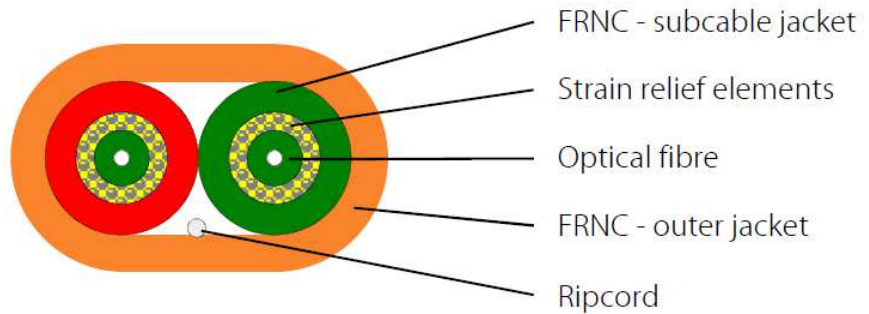
@ 1310 nm 1.4676  
@ 1550 nm 1.4682

Backscatter attenuation @ 1ns pulse width:

@ 1310 nm -77 dB  
@ 1550 nm -82 dB  
@ 1625 nm -83 dB

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
H. Jungbäck	12-04-15	P. Maier	12-04-15	001	without	H. Jungbäck	12-04-15



**Standards**

IEC 60794-2

**Structure**

**Cable core:**  
buffered optical fiber, outer diameter 0.9 mm  
colour: yellow (E9/125), green (G50/125), blue (G62.5/125)  
Strain relief elements (aramid) Subcable-jacket halogen-free and flame-retardant material, wall thickness approx. 0.3 mm,  
colour: orange at multi-mode and yellow at single-mode  
Outer diameter: 2.1 mm

**Outer jacket:**  
Two break-out subcables parallel  
Halogen-free and flame-retardant material (FRNC), wall thickness approx. 0.44 mm  
Outer diameter approx. 3.3 mm x 5.2 mm

**Standard colours:**  
Singlemode: yellow  
Multimode 50 µm: orange or green  
Multimode OM3: aqua (turquoise)  
Multimode 62.5 µm: orange  
Multimode OM4: violet

Ripcord under the jacket  
Inkjet marking black acc. to separate drawing

**Geometrical properties**

Number of fibers	Outer diameter [mm]	Weight [kg/km]	Fire load [MJ/m]
2	3.3 x 5.2	19	0.63

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG

Fiber Optic Cable  
I-V(ZN)HH 2x 2.1mm... 900µm

033AXXXX

**Mechanical properties**

Min. bending radius (over the flat side) for cables with standard fibers

static	35mm
dynamic	65mm
Max. pull force	600 N
Max. crush resistance long term	400 N/dm

**Thermal properties**

Transport and storage	- 25°C to + 70°C
Installation	- 5°C to + 50°C
In use	- 5°C to + 70°C

**Chemical properties**

No resistance to oil, petrol, acid, leach and water

**Fire performance**

- Flame-retardant acc. to IEC 60332-1-2 and IEC 60332-3-22 Cat. A
- Smoke density acc. to IEC 61034
- Halogen-free acc. to IEC 60754-1
- Acidity of the combustion gases acc. to IEC 60754-2

**Transmission characteristics**

See fiber data sheets

**Applications**

Indoor cable for the installation in cable ducts and in tubes and also suitable for interconnections  
For direct connector assembly  
Ideal for fiber to the desk

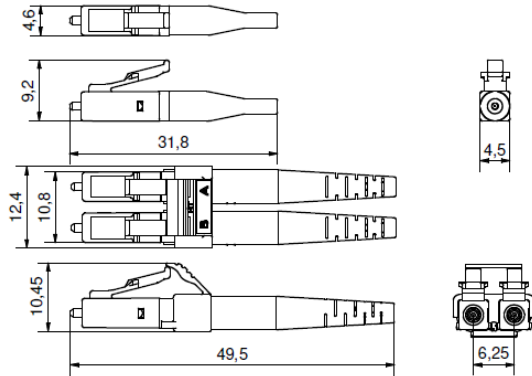
**Deliveryform**

Disposable drums

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
P. Maier	03.08.2016	H. Jungbäck	03.08.2016	001	without	Y. Zhang	22.06.2017

LC-Simplex/Duplex connector



**Properties and applications**

- LC-Simplex/Duplex connectors for fiber optic cabling in broadband networks (telecom, MAN, WAN, CATV, GPON, FTTA, FTTx), building cabling (LAN, campus), data center, industry, laboratory and medical technology
- for cables with single core elements 600/900µm (e.g. buffered fiber for pigtails, breakout, mini breakout, figure "0" and figure "8" cables)
- A/B polarity of duplex connectors easily changeable without tools
- Translucence protection cap, fast and secure to handle and permeable for the light of laser pointers (visual fault locators)

**Standards**

LC-Simplex/Duplex connector according to IEC/DINEN 61754-20 and EIA/TIA 604-10

**Material**

- Ferrule: Zirconia ceramic, Ø 1.25 mm
- Body: PEI, flammability UL94-V0
- Boot: TPE, flammability UL94-V0
- Protection cap: POM, flammability UL94-HB

**Optical properties**

The quality feature of the connector at your product is identified by the part number:

- BASIC: Part numbers like XXXAXXXX
- PURE: Part numbers with "P" at their end, XXXAXXXXP

Details about PURE see Produktinfo\_Qualitätsmerkmal-PURE\_od

Insertion Loss IL acc. to IEC61300-3-4, Method B, against reference, maximum [dB]:

	Quality feature	BASIC	PURE
- Singlemode SM, 9/125µm		0,30	0,20
- Multimode low IL OM2, OM3, OM4, OM5, 50/125µm		0,15	0,15

Insertion Loss IL „random mated“ acc. to IEC61300-3-34, Method 2, [dB]:

Qualitätsmerkmal BASIC	Mittelwert	Maximum
- Singlemode SM, 9/125µm	0,13	0,50
- Multimode low IL OM2, OM3, OM4, OM5, 50/125µm	0,03	0,27

Insertion Loss IL quality feature PURE "random mated" application limit value, maximum [dB]:

- Singlemode SM, 9/125µm	97%	0,25
- Multimode low IL OM2, OM3, OM4, OM5, 50/125µm	100%	0,40

**GHMT PVP certificate**  
**No.: c5711X-XX**  
**No.: c5937X-XX**



Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG

LC-Simplex/Duplex connector

Optical properties

Return Loss RL acc. to IEC61300-3-6, Method 1, against reference, minimum [dB]:

	Quality feature	BASIC	PURE
- Singlemode SM, 9/125µm, PC 0°		45	45
- Singlemode SM, 9/125µm, UPC 0°		55	55
- Singlemode SM, 9/125µm, APC 8°		65	70
- Multimode all 50µ OM classes		35	40

Mechanical properties

- Mating cycles min. 1000, IL increase < 0.2 dB
- Strain relief max. 100 N, dependent on cable type

Thermal properties

- Operation temperature range -40°C to +85°C, dependent on cable type
- Storage temperature range -40°C to +85°C

Cable diameters

- Round cable types Ø 0,9 bis 3.0 mm
- Hotmelt Duplex Ø 4,8 ~ 7.0mm

Colors

Connector body / boot:

- Singlemode SM, 9/125µm, PC and UPC 0° blue / blue
- Singlemode SM, 9/125µm, APC 8° green / green
- Multimode OM2, OM3, OM4, OM5, 50/125µm black / black

Polarity change

Step 1: Remove duplex clip

- When changing polarity, the release levers should be facing up as shown in the picture.
- Remove one of two simplex connectors from the duplex clip by pressing down and out, supported by a slight tilt movement.
- Then release the second simplex connector from the duplex clip in a similar manner.

Step 2: Reattach duplex clip

- Push back the boot of both simplex connectors
- Reattach the duplex clip over the simplex connectors that have been changed in position and insert the simplex connectors (a click is noticeable).

Step 3: Final assembly duplex connector

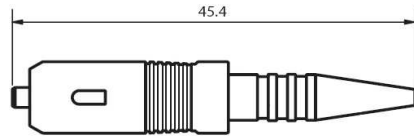
- Slide the boot of both simplex connectors to their original position.



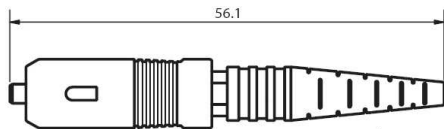
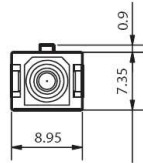
Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
S. Wiener	16.03.2021	H. Jungbäck	2021-03-16	003		H. Jungbäck	2022-10-07

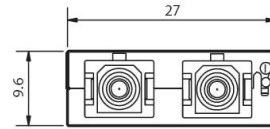
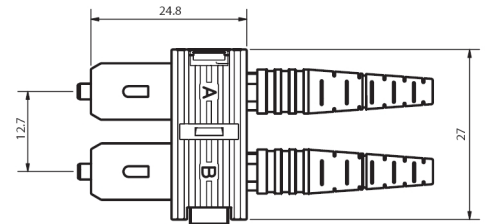
While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.



SC-simplex, buffered fiber



SC-simplex, cable



SC-duplex

All dimensions are in mm; tolerances acc. ISO 2768 m-H

**Properties**

Standard SC connectors for applications in telecommunications, data center, cabling and LAN, connections to active components.

**Interface**

SC, acc. to IEC 61754-4

**Material for connectors**

Ferrule : Zirconia ceramic, Ø 2.5 mm  
 Body : Plastics  
 Boot : Plastics

**Optical data**

	Typical	max.
Insertion Loss : S/M	0.20 dB	0.40 dB
M/M	0.20 dB	0.40 dB
Return Loss : S/M	≥45 dB(PC), ≥55 dB(UPC), ≥65 dB(APC)	
M/M	≥30 dB	

**Mechanical data**

Mating cycle ≥ 1000  
 Strain relief 100 N(dependent on the cable type)

**Environmental data**

Operation temperature range -40°C to +85°C  
 Storage temperature range -40°C to +85°C

**Suitable cables**

Cable Types : Ø 0.9 ~ 3.5 mm

**Packaging**

Standard Packaging.

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG



Connector Part	Part No
<b>Connector Body</b>	
Singlemode, PC, blue	98 SCS 120-101
Singlemode, APC, green	98 SCS 110-101
Multimode, 50 µm, black	98 SCS 130-101
Multimode, 62.5 µm, beige	98 SCS 130-102
<b>Duplex clip, black</b>	98 ZD 02-0BK
<b>Crimp sleeve</b>	
for Ø 2.1	98 ZC 05-000
for Ø 2.8-3.5	98 ZC 04-000
<b>Boot, Ø 0.9 mm buffered fiber</b>	
blue	98 ZB 06-0BU
green	98 ZB 06-0GN
black	98 ZB 06-0BK
yellow	98 ZB 06-0YE
red	98 ZB 06-0RD
<b>Boot, Ø 2.1 mm cable</b>	
blue	98 ZB 05-0BU
green	98 ZB 05-0GN
black	98 ZB 05-0BK
yellow	98 ZB 05-0YE
red	98 ZB 05-0RD
<b>Boot, Ø 2.8-3.5 mm cable</b>	
blue	98 ZB 04-0BU
green	98 ZB 04-0GN
black	98 ZB 04-0BK
yellow	98 ZB 04-0YE
red	98 ZB 04-0RD



Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger OSI GmbH & Co. OHG

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Y.Zhang	29.03.2017	H.Jungbäck	29.03.2017	002	---	Y.Zhang	29.03.2017