

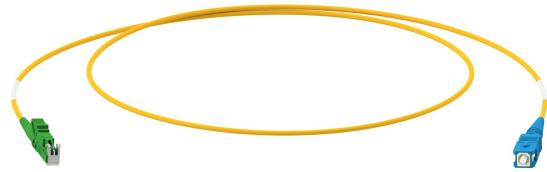
## PRODUCTPROFILE

**Catalogue number: 069A4018G657A1**

Partnumber: 20102017

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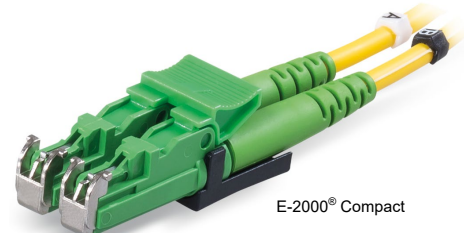
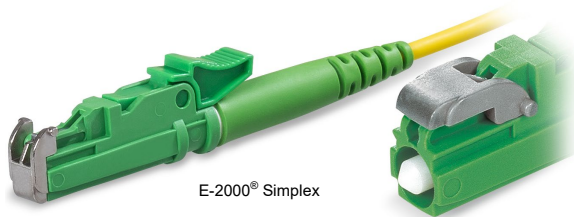
Fiber optic simplex patchcord  
Connector side A: E2000HRL Cat. 0.1dB Simplex  
SM RdM  
Connector side B: SC-Simplex  
9/125µm, 2.1mm, yellow  
Cable I-V(ZN)H1x2,1E9/125µm,G657A1



### **Related documents:**

DS_E2000_HRL01DB_OE	0.1dB
DS_FASER G657A1_OE	Fiber Data Sheet
DS_I-VZNH1X21TB900A_L_OE	Cable Data Sheet
DS_SC_STECKER_OE	Steckerdatenblatt

E-2000® HRL (APC 8°) connector category 0.1 dB



E-2000® is a registered trademark of DIAMOND SA

**Properties and applications**

- Our E-2000® HRL category 0.1 dB is a singlemode APC 8° fiber optic connector with solid-ceramic ferrule for all singlemode applications with particularly high requirements on optical transmission quality and protection of the connector ferrule, e.g. metropolitan (MAN) and long-haul (WAN) fiber optic networks and FTTx.
- Through its precision ferrule and its tuning with excentricity limit smaller than DINEN 61755-3-2 grade B specification, our E-2000® HRL category 0.1 dB reaches lowest insertion loss IL and highest return loss RL values at „each-to-each“ (random-mated) connections.
- With automatically closing metal shutter for protection against laser light and contamination of the connector ferrule, protection class IP40

**Standards**

IEC 61754-15 (LSH), tuning with excentricity limit smaller than DINEN 61755-3-2 grade B specification

**Material**

- Ferrule: Zirconia ceramic, Ø 2.50 mm
- Connector body: PBT, flammability UL94-V0
- Boot: TPR, flammability UL94-V0
- Protection shutter: Metal, not flammable

**Optical properties**

- Insertion Loss IL acc. to IEC61300-3-4, Method B, against reference, maximum [dB]: 0.15
- Insertion Loss IL „random mated“ acc. to IEC61300-3-34, Method 2, [dB]: Mean 0.12 / Maximum 0.28
- Return Loss RL acc. to IEC61300-3-6, Method 1, against reference, minimum [dB]: 80

**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**

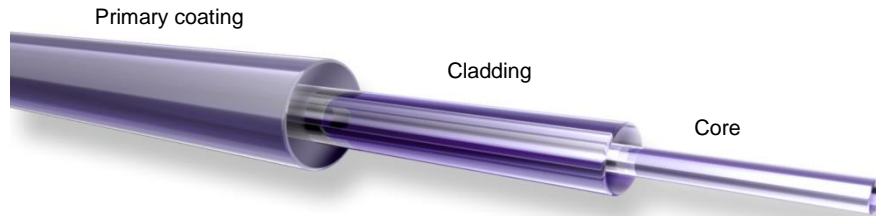
Round cable types Ø 0.9 to 3.0 mm

**Colors**

- Connector body: Green
- Boot: Green
- Protection shutter: Silver

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Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
H. Jungbäck	2022-11-21	M. Komarow	2022-11-21	008		---	---



**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

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**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

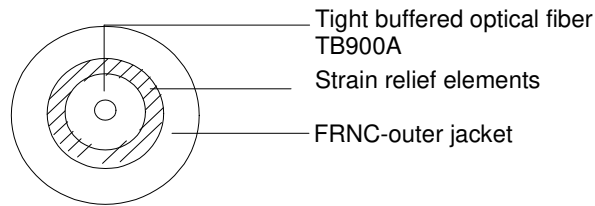
**Backscatter attenuation @ 1ns pulse width:**

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

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H. Jungbäck	12-04-15	P. Maier	12-04-15	001	without	H. Jungbäck	12-04-15

Fiber Optic Cable  
I-V(ZN)H 1x 2.1mm... TB900A



**Standards**

IEC 60794-2

**Structure**

**Cable core** TB900A = tight buffered optical fibre, acrylat upcoating, outer diameter 900 µm  
colour: yellow (E9/125), green (G50/125), blue (G62.5/125)  
Strain relief elements (aramid)

**Outer jacket:** Halogen-free and flame-retardant material, approx. 0.3 mm wall,  
Standard colours: Singlemode: yellow  
Multimode 50 µm: orange or green  
Multimode OM3: aqua (turquoise)  
Multimode 62,5 µm: orange  
Multimode OM4: violet

Other colours on request  
Outer diameter 2.1 mm  
Marking see separate drawing

**Mechanical properties**

<b>Min. bending radius</b>	static	30mm
	dynamic	60mm
<b>Min. bending radius with G657A</b>	static	15mm
	dynamic	30mm
<b>Max. pull force</b>		300 N
<b>Max. crush resistance long term</b>		100 N/dm
<b>Weight</b>		5.1 kg/km approx.

**Thermal properties**

<b>Transport and storage</b>	- 25°C to + 70°C
<b>Installation</b>	- 10°C to + 50°C
<b>In use</b>	- 20°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
- Fire Load 0.12 MJ/m

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**Fiber Optic Cable**  
I-V(ZN)H 1x 2.1mm... TB900A

**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**

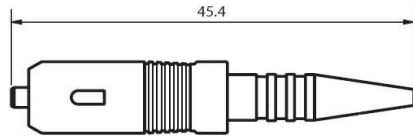
**Deliveryform**

**Disposable drums**

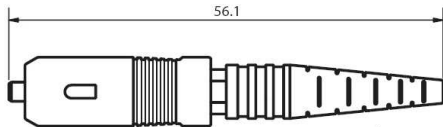
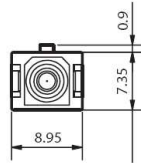
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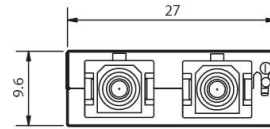
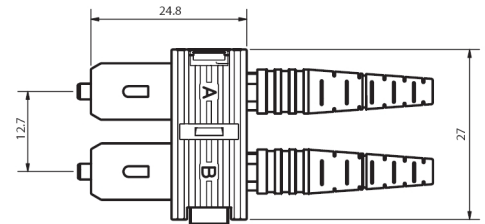
Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
H. Jungbäck	02.09.2005	DE	13.07.2015	004	without	Y. Zhang	22.06.2017



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**

Insertion Loss :	S/M	Typical	max.
	M/M	0.20 dB	0.40 dB
		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.

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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



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Y.Zhang	29.03.2017	H.Jungbäck	29.03.2017	002	---	Y.Zhang	29.03.2017