

## PRODUCTPROFILE

### Catalogue number: 069A2200G657A1

Partnumber: 703956

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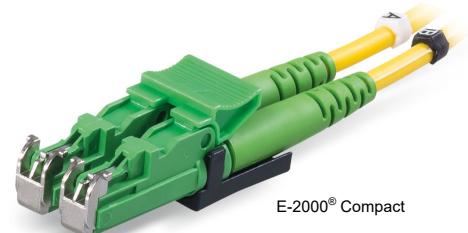
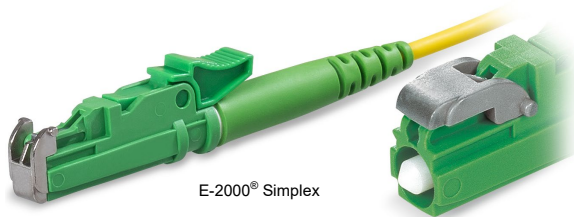
Fiber optic duplex patchcord  
Connector side A: E2000HRL Simplex ceramic  
Connector side B: E2000HRL Simplex ceramic  
9/125µm, Zipcord 2x2.8mm, yellow  
Polarity: uncrossed A to A  
Cable I-V(ZN)H2x2,8E9/125µm,G657A1



#### **Related documents:**

|                             |                   |
|-----------------------------|-------------------|
| DS_E2000HRL_STECKER_R_SM_OE | Steckerdatenblatt |
| DS_FASER G657A1_OE          | Fiber Data Sheet  |
| DS_I-VZNH2X28_900_L_OE      | Cable Data Sheet  |

E-2000® HRL (APC 8°) connector



E-2000® is a registered trademark of DIAMOND SA

**Properties and applications**

- Our E-2000® HRL is a singlemode APC 8° fiber optic connector with solid-ceramic ferrule for all singlemode applications with high requirements on optical transmission quality and protection of the connector ferrule, e.g. LAN backbone, metropolitan (MAN) fiber optic networks, FTTx and industrial applications.
- Through its precision ferrule and its tuning with excentricity limit according to DINEN 61755-3-2 grade B specification, our E-2000® HRL reaches low insertion loss IL and high 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 according to 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]: 0.25
- 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]: 70

**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**

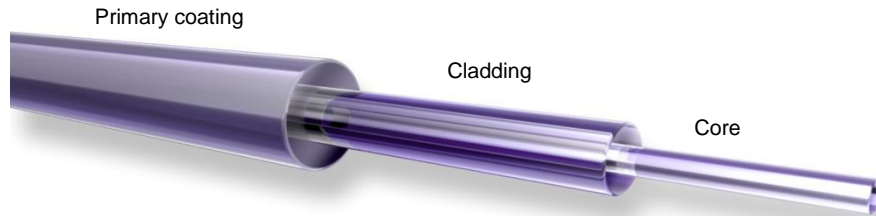
- Connector body: Green
- Boot: Green
- Protection shutter: Silver

**GHMT PVP certificate  
No.: c5803X-XX**



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|             |            |            |            |      |                           |      |      |
|-------------|------------|------------|------------|------|---------------------------|------|------|
| Draft       | Date       | Approved   | Date       | Rev. | Engineering change number | Name | Date |
| H. Jungbäck | 2022-11-21 | M. Komarow | 2022-11-21 | 009  |                           | ---  | ---  |



**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:**

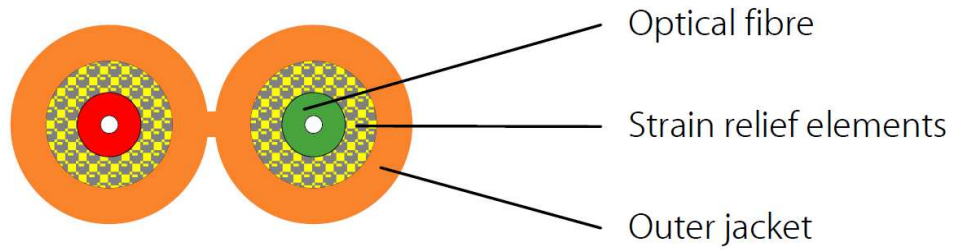
@ 1310 nm -77 dB  
@ 1550 nm -82 dB  
@ 1625 nm -83 dB

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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 2x 2.8mm... 900µm

033AXXXX



**Standards**

IEC 60794-2

**Structure**

**Cable core:**  
buffered optical fiber, outer diameter 0.9 mm  
colour: red, other core yellow (E9/125), green (G50/125), blue (G62.5/125)  
Strain relief elements (aramid)

**Outer jacket:**  
Halogen-free and flame-retardant material (FRNC)  
Standard colours:

|                       |                  |
|-----------------------|------------------|
| Singlemode:           | yellow           |
| Multimode 50 µm:      | orange or green  |
| Multimode OM3:        | aqua (turquoise) |
| Multimode 62.5 µm:    | orange           |
| Multimode OM4:        | violet           |
| Wall thickness 0.5 mm |                  |

Inkjet marking black acc. to separate drawing

**Geometrical properties**

| Number of fibers | Outer diameter [mm] | Weight [kg/km] | Fire load [MJ/m] |
|------------------|---------------------|----------------|------------------|
| 2                | 2.8 x 5.7           | 15.8           | 0.36             |

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**Mechanical properties**

**Min. bending radius (over the flat side) only for bending resistant fibers**

|         |      |
|---------|------|
| static  | 15mm |
| dynamic | 30mm |

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

|         |      |
|---------|------|
| static  | 30mm |
| dynamic | 60mm |

**Max. pull force** 600 N  
**Max. crush resistance long term** 600 N/dm

**Thermal properties**

|                              |                  |
|------------------------------|------------------|
| <b>Transport and storage</b> | - 25°C to + 70°C |
| <b>Installation</b>          | - 5°C to + 50°C  |
| <b>In use</b>                | - 10°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

**Deliveryform**

Disposable drums

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| P. Maier | 02.02.2016 | H. Jungbäck | 02.02.2016 | 001  | without                   | Y. Zhang | 22.06.2017 |