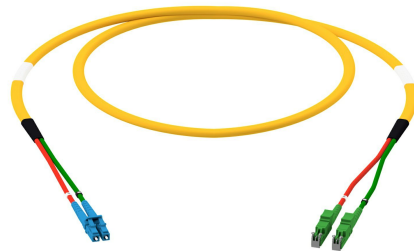


PRODUCTPROFILE

Catalogue number: 087A2235G657A1

Partnumber: 754949

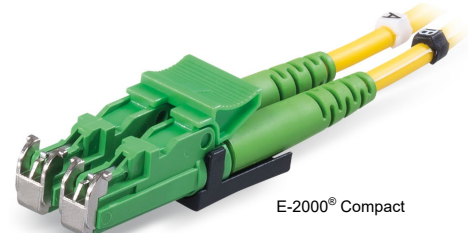
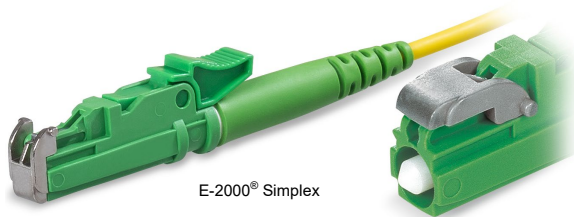
Fiber optic duplex patchcord
Connector side A: LC-Duplex SM
Connector side B: E2000HRL Simplex ceramic
9/125µm, double jacket 2x2,8/4,0x6,8mm,
yellow
Polarity: uncrossed A to A
Cable I-V(ZN)HH2x2,8E9/125µm,G657A1



Related documents:

DS_E2000HRL_STECKER_R_SM_OE	Steckerdatenblatt
DS_FASER G657A1_OE	Fiber Data Sheet
DS_I-VZNHH2X28_900_L_OE	Cable Data Sheet
DS_LC_SIMPLEXDUPLEX_STECKER_OI	Steckerdatenblatt

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

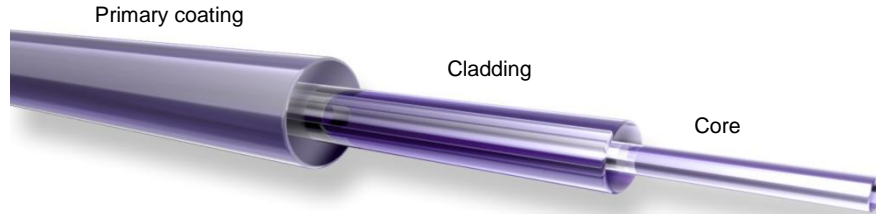
- Connector body: Green
- Boot: Green
- Protection shutter: Silver

**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:

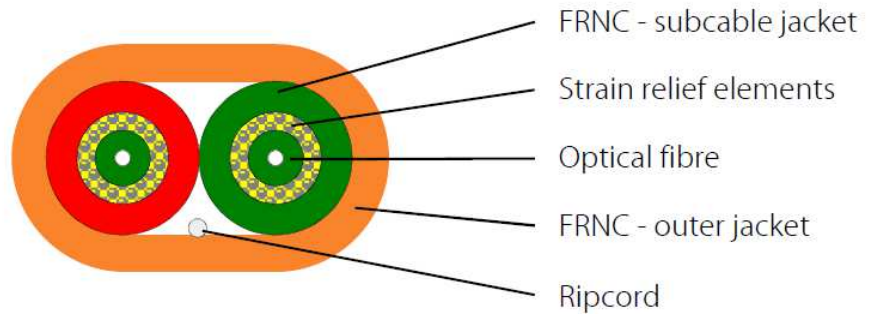
@ 1310 nm 1.4676
@ 1550 nm 1.4682

Backscatter attenuation @ 1ns pulse width:

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

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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. 0.5 mm,
 colour: orange at multi-mode and yellow at single-mode
 Outer diameter: 2.8 mm

Outer jacket:

Two break-out subcables parallel
 Halogen-free and flame-retardant material (FRNC), wall thickness approx. 0.44 mm
 Outer diameter approx. 4.0 mm x 6.8 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	4.0 x 6.8	32	0.83

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Fiber Optic Cable
I-V(ZN)HH 2x 2.8mm... 900µm

033AXXXX

Mechanical properties

Min. bending radius fixed (static) acc. IEC 60794-1-2 E11A 10 x outside diameter
Min. bending radius during assembly (dynamic), with additional tensile strain acc. IEC 60794-1-2 E6 15 x outside diameter
Max. tensile force acc. IEC 60794-1-2 E1 600 N
Max. crush resistance acc. IEC 60794-1-2 E3, long term 600 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

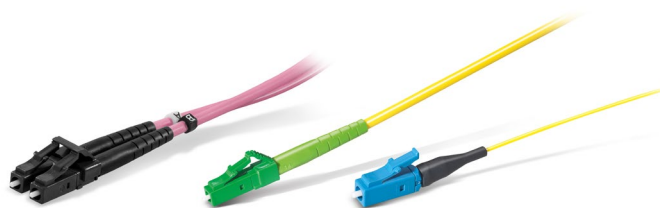
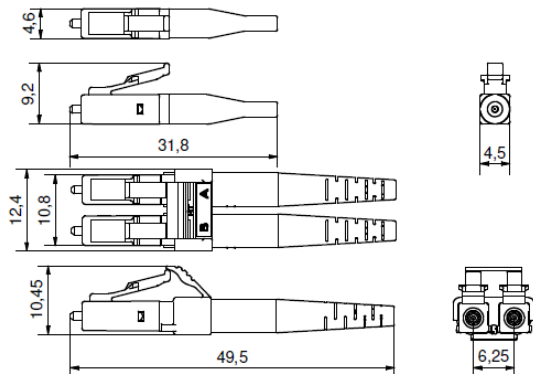
Deliveryform

Disposable drums

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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



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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

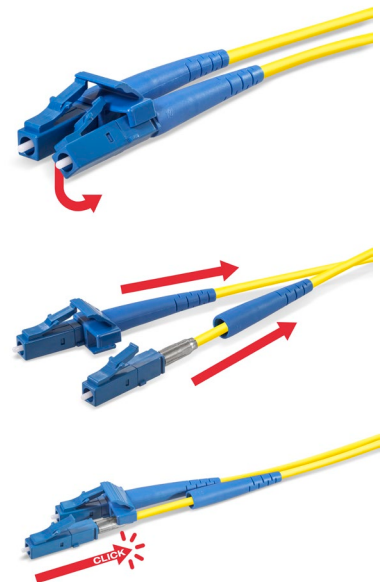
- When changing polarity, the release levers should be facing up as shown in the picture.
- Remove one of two simplex connectors from the duplex clip by pressing down and out, supported by a slight tilt movement.
- Then release the second simplex connector from the duplex clip in a similar manner.

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.



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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

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