

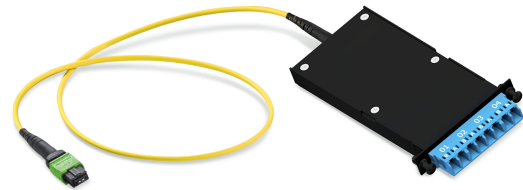
## PRODUCTPROFILE

**Catalogue number: 170H8001G657A1-1000**

Partnumber: 779728

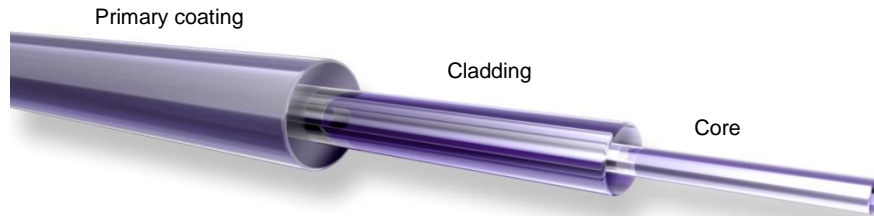
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SMAP-G2 HD Port-Breakout-Unit  
MTP-LC, OCTO 8 fiber SM, 1/3HU 1/6  
Front: 4 LC-Duplex (1xLC8) SM blue  
Back plane: 1 cable pigtail MTP OCTO female  
Length: 1m  
Polarity: Rx to Tx  
RAL9005 black



### **Related documents:**

DS_FASER G657A1_OE	Fiber Data Sheet
DS_I-FZNH_L_OE	Cable Data Sheet
DS_LC_SIMPLEXDUPLEX_STECKER_OI	Steckerdatenblatt
DS_LC8_KUPPLUNG_K04_OE	LC8 Kupplung
DS_MTPNX12_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

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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:**

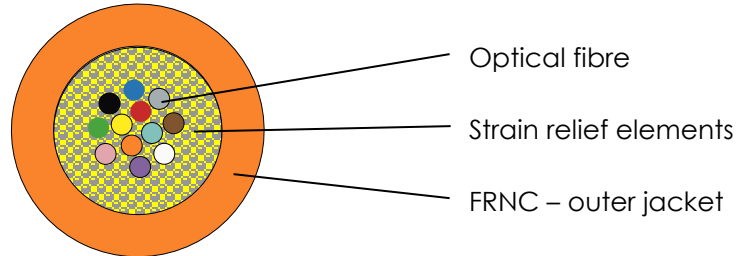
@ 1310 nm 1.4676  
 @ 1550 nm 1.4682

**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
- EN 50575:2014 +A1:2016 Number of Declaration of Performance:
  - 24 fibers B2ca CDEAL0000098-V1
  - 8, 12, 16 fibers not tested

**Structure**

- Cable:**
- Up to 24 optical fibers within the cable jacket filled with Aramid strain relief elements
  - Fiber color code 1 to 12: red, green, blue, yellow, white, grey, brown, violet, turquoise, black, orange, pink
  - Fiber color code 13 to 24: red, green, blue, yellow, white, grey, brown, violet, turquoise, transparent, orange, pink, all with black ring-marking

- Outer jacket:**
- FRNC-LSZH flame-retardant and halogen-free material
  - Standard jacket colors:
    - Singlemode: yellow
    - Multimode OM2: orange or green
    - Multimode OM3: aqua (turquoise)
    - Multimode OM4: violet
    - Multimode OM5: fibrous green
  - Wall thickness see geometrical properties
  - Inkjet marking black acc. to separate drawing

**Geometrical properties**

Number of fibers	Outer diameter [mm]	Jacket wall thickness [mm]	Weight [kg/km]	Fire load [MJ/m]
8	2,0	0,25	3,8	0,05
8	3.0	0.55	8	0.14
12	3.0	0.55	8	0.14
16	3.0	0.55	8	0.14
24	3.7	0.60	12	0.21

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**Mechanical properties**

- Min. bending radius fixed (static) acc. IEC 60794-1-2 E11A  
15 x outside diameter
- Min. bending radius during installation (dynamic) with additional tensile strain acc. IEC 60794-1-2 E6  
20 x outside diameter
- Max. tensile force acc. IEC 60794-1-21 E1 long term = 300 N
- Max. crush resistance acc. IEC 60794-1-21 E3 long term = 200 N/dm

**Thermal properties**

- Transport and storage - 25°C to + 70°C
- Installation - 5°C to + 50°C
- In use acc. IEC 60794-1-2 F1 - 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
- Fire Class according EN 13501-6: 24 fibers B2<sub>CA</sub>/s1a/d1/a1, 8, 12, 16 fibers not tested

**Transmission characteristics**

See fiber data sheets

**Applications**

Indoor cable particularly appropriate for short MTP®/MPO Patchcords and Harnesses

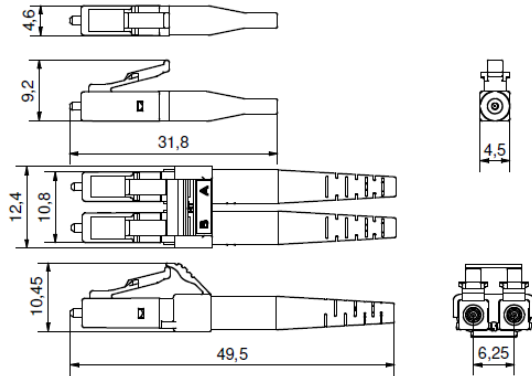
**Deliveryform**

On one-way drums

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Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
H. Jungbäck	2015-11-02	P. Maier	2015-11-02	004	without	H. Jungbäck	2022-06-15

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

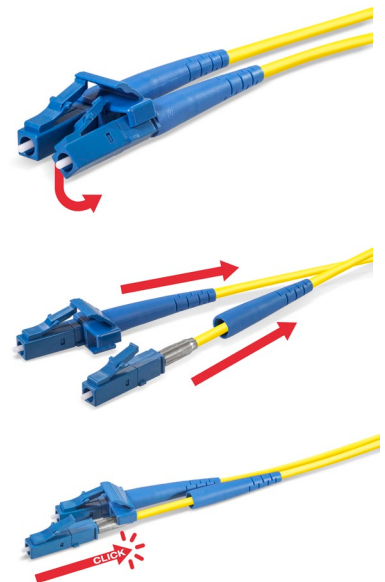
- When changing polarity, the release levers should be facing up as shown in the picture.
- Remove one of two simplex connectors from the duplex clip by pressing down and out, supported by a slight tilt movement.
- Then release the second simplex connector from the duplex clip in a similar manner.

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.

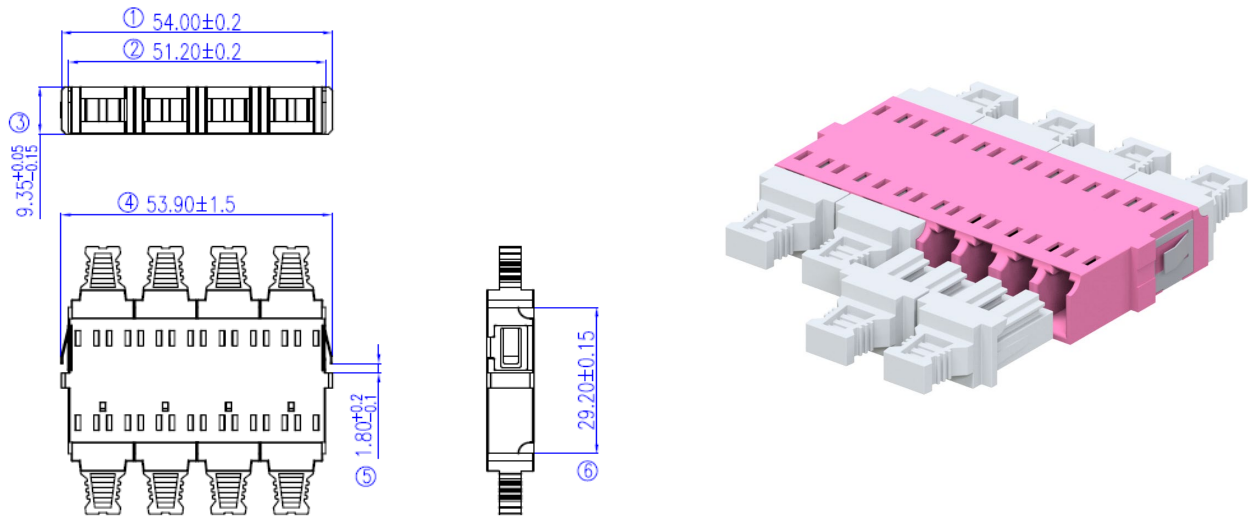


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Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
S. Wiener	16.03.2021	H. Jungbäck	2021-03-16	003		H. Jungbäck	2022-10-07

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LC8 adapter  
senior/senior, without flanges



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

Properties and applications

- LC adapter connect LC-Simplex, LC-Duplex and LC-COMPACT connectors
- senior / senior = at both sides maximum long guidance of the LC connectors within the adapter
- One-piece break-proof adapter body
- Screwless mounting by mounting clip
- In particular appropriate for HIGH-DENSITY (HD) and ULTRA-HIGH-DENSITY (UHD) applications
- Translucence duplex protection cap, even at HD and UHD port densities fast and secure to handle and permeable for the light of laser pointers (visual fault locators)

Standards

IEC/EN 61754-20, TIA/EIA 604-10, REACH and RoHS compliant

Material

- C-Sleeve Zirconia ceramic
- Adapter body PEI, flammability UL94 V-0
- Mounting clip Stainless spring steel
- Duplex protection cap PVC, flammability UL94 V-0

Optical data

Insertion loss Change over mating cycles Max. 0.2 dB

Mechanical data

Mating cycles Min. 500

Thermal properties

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

Colors

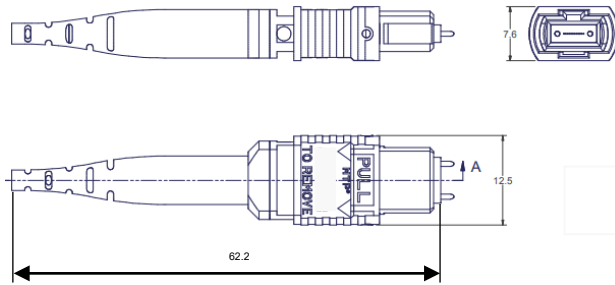
aqua for OM3 / violet for OM4 / lime green for OM5 / blue for SM-PC 0° / green for SM-APC 8°

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Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
H. Jungbäck	2021-01-25	R. Mees	2021-01-25	001	---	---	---



MTP® (MPO) connector n x 12 fibers



Properties and applications

- MTP® (MPO) multi-fiber connector up to 72 fibers, based on n x 12 fiber MT ferrules, with strain relief and boot for round cable
- Centric coding-key
- Multimode MTP® (MPO) are acc. to world standard PC 0° polished, Singlemode APC 8°
- Polarity and gender can be changed acc. to USCONEC AEN-1405
- <sup>1)</sup> With MTP® PRO protection cap, debris-repellent (better than anti-static), non-outgassing, halogen-free

Standards

IEC 61754-7 and EIA/TIA 604-5

Material

- Ferrule: PPS filled with glass particles
- Body: PBT, flammability UL94-V0
- Boot: TPO, flammability UL94-V0
- Protection cap: TPO, flammability UL94-V0

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

Applied USCONEC ferrule qualities:

	Quality features	BASIC	PURE
- Singlemode SM, 9/125µm all numbers of fibers		Standard	Elite
- Multimode OM2, OM3, OM4, OM5, 50/125µm up to 12 fibers		Elite	Elite
- Multimode OM2, OM3, OM4, OM5, 50/125µm larger 12 fibers		Standard	Elite

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

	Quality features	BASIC	PURE
- Singlemode SM, 9/125µm, Standard ferrule		0,40	---
- Singlemode SM, 9/125µm, Elite ferrule		0.35	0.25
- Multimode OM2, OM3, OM4, OM5, 50/125µm, Elite ferrule		0.35	0.25
- Multimode OM2, OM3, OM4, OM5, 50/125µm, Standard ferrule		0.60	---

Insertion Loss IL „random mated“ in application

Multimode OM2, OM3, OM4, OM5, 50/125µm, Elite ferrule [dB]:

- 12 fibers and OCTO 4+4	89% lower 0.25
- 24 fibers	80% lower 0.25

**GHMT PVP certificates**  
 No.: c6955X-XX  
 No.: c6956X-XX



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MTP® (MPO) connector n x 12 fibers

**Optical properties**

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

- Singlemode SM, 9/125µm 0.15
- Multimode OM2, OM3, OM4, OM5, 50/125µm 0.15

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

	Quality feature	BASIC	PURE
- Singlemode SM, 9/125µm, APC 8°		55	70
- Multimode all OM classes, PC 0°		30	30

**Mechanical properties**

- Mating cycles min. 500, 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 2.0 to 4.5 mm

**Colors**

Connector body / boot:

- Singlemode SM, 9/125µm, APC 8° green / black
- Multimode OM2, OM3, OM4, OM5, 50/125µm black / black

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Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Y. Zhang	2017-03-31	H. Jungbäck	2017-03-31	005	---	H. Jungbäck	2022-10-07

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