

DATASHEET

4-48F Breakout –2.0mm tail Fiber Patch Cables

Make High-speed Optical network Racks&equipment



OMC INDUSTRY CO.LIMITED

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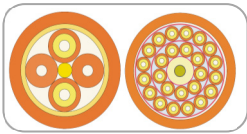
4-48F Breakout –2.0mm tail Fiber Patch Cables

Description

Breakout Patch cables are installation cables that are suitable for laying in buildings, primarily in cable conduits and cable trays. They are designed for direct connector assembly with no need for splice connectors.

OMC's Patch cables are manufactured and tested in compliance with TIA 604 (FOCIS), IEC 61754 and YD/T industry standards. OM1, OM2, OM3, OM4, OM5 or OS2 fiber types to meet the demand of Gigabit Ethernet, 10 Gigabit Ethernet and high speed Fiber Channel. Every termination through rigorous parameter test to ensure the highest in network performance.

Products Materials



G652D, G657A1, G657A2/B2, G657B3, OM1, OM2, OM3, OM4, OM5 Fibers
4cores:7.3mm OD/6cores:9mm OD/8cores:10.5mm OD/12cores:12.5mm OD/16cores:13mm OD/24cores:15.5mm OD/48cores:20.5mm OD
 PVC (Riser/OFNR), LSZH, Plenum (OFNP) Jacket materials



High quality SM Ceramic ferrule, Good concentricity<0.5um
 High quality MM Ceramic ferrule, Good concentricity<4.0um



Standard connectors LC, SC, ST, FC, E2000, MU, D4, Din, LX.5, SMA are available
 High precious connector guarantee Good Repeatability and Interchangeability
 OEM Housing kits Color, OEM boot Colors
 Customized Design for special demand

Standard Compliance

- TIA 604 (FOCIS)
- TIA/EIA 492AAAE
- IEC 61754
- IEC 60793-2-10
- IEC61300-3-35
- YD/T1272.1-2003
- RoHS, ISO9001 Compliant

Features

- High quality zirconia ferrules.
- Good repeatability and interchange.
- Flame-retardant, rugged and durable jacket.
- 100% optically tested for insertion loss to ensure high quality

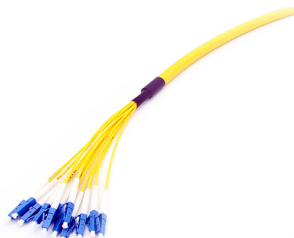
Application

- Data Center
- Enterprise
- Fiber to the X (FTTX)
- LAN and WAN
- CATV Network
- Telecommunications Network

Connector Type

LC

Standard ,Uniboot .
 Typical Applications : High-density connections, SFP and SFP+ transceivers, XFP transceivers.



SC

Standard boot , Short boot
 Typical Applications : Telecom; GPON; EPON; GBIC.



FC

Standard boot
 Typical Applications : Datacom, Telecom, measurement equipment, single-mode lasers



ST

Standard boot
 Typical Applications : Datacom





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Connector Standard

SC: TIA/EIA, FOCIS3, GR-326.NTT-SC IEC61754-4 and JIS C5973.

LC: TIA/EIA, FOCIS10, GR-326 EIA/TIA-604-10, IEC61754-20 and JIS C5973.

FC: EIA /TIA-604-04, FOCIS4, NTT-FC, GR-326. IEC61754-13 and JIS C5973

ST: TIA/EIA, FOCIS2, GR-326. IEC61754-2 and JIS C5973 Etc.

MU: TIA/EIA-604-3A, GR-326.NTT-MU, JIS and IEC.

MTRJ: TIA/EIA, FOCIS12, GR-326. IEC and JIS C5973.

DIN: IEC61754-3

Optical Specifications-Standard quality

| | | | |
|----------------|--|-----------------------|-------------------------------------|
| Insertion loss | ≤0.25dB Mean (Standard) | Interchangeability | ≤0.2dB |
| Return loss | SM UPC ≥ 50dB SM APC ≥ 60dB MM PC ≥ 35dB | Vibration | ≤0.2dB |
| Polarity | A(Tx) to B(Rx) | Maximum pulling force | 660N(<12 cores) 1320N(>12 cores) |

Optical Specifications-IEC Grade B quality

| | | | |
|----------------|--|-----------------------|-------------------------------------|
| Insertion loss | ≤0.12dB mean, ≤0.25dB max. for >97% of sample | Interchangeability | ≤0.2dB |
| Return loss | SM UPC ≥ 50dB SM APC ≥ 60dB MM PC ≥ 35dB | Vibration | ≤0.2dB |
| Polarity | A(Tx) to B(Rx) | Maximum pulling force | 660N(<12 cores) 1320N(>12 cores) |

Geometric Specification(if Customer requested)

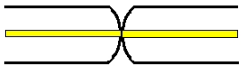
| Items | Parameter | | |
|------------------------|-----------|---------|--------|
| Polishing | PC | APC | |
| ROC | SC/FC/ST | 10 ~ 25 | 5 ~ 12 |
| | LC/MU | 7~ 25 | 5 ~ 12 |
| Apex Offset | ≤ 50 | | |
| Fiber Spherical Height | ±100 | | |
| Angle | ± 0.5 | 8 ± 0.5 | |



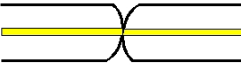
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Polishing Method

UPC(Ultra-Polished connector)



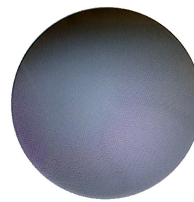
APC(8 Angled Polished connector)



Polishing End-face



SM UPC



SM APC



MM PC

End-face Quality (SM)

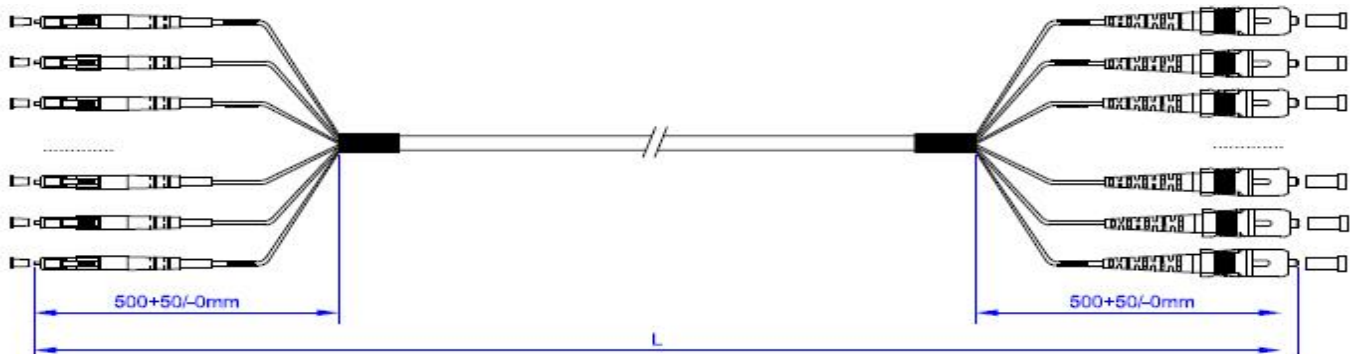
| Zone | Range (μm) | Scratches | Defects | Reference |
|--------------------|------------|-----------|---------|---------------------|
| A: Core | 0 to 25 | None | None | IEC 61300-3-35:2015 |
| B: Cladding | 25 to 115 | None | None | |
| C: Adhesive | 115 to 135 | None | None | |
| D: Contact | 135 to 250 | None | None | |
| E: Rest of ferrule | | None | None | |

End-face Quality (MM)

| Zone | Range (μm) | Scratches | Defects | Reference |
|--------------------|------------|-----------|---------|---------------------|
| A: Core | 0 to 65 | None | None | IEC 61300-3-35:2015 |
| B: Cladding | 65 to 115 | None | None | |
| C: Adhesive | 115 to 135 | None | None | |
| D: Contact | 135 to 250 | None | None | |
| E: Rest of ferrule | | None | None | |

Length Tolerance

| Overall Length(L)(m) | length of tolerance(cm) |
|----------------------|-------------------------|
| 0<L<1 | +5/-0 |
| 1<L<10 | +10/-0 |
| 10<L<40 | +15/-0 |
| 40<L | +0.5% x L/-0 |

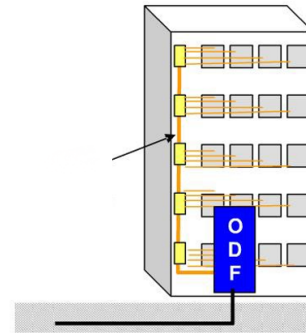
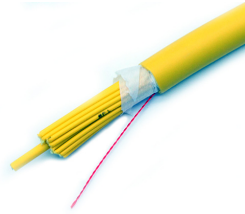
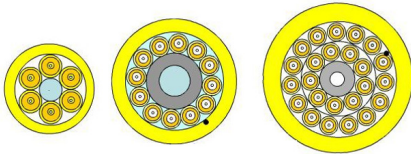




4-48F Breakout –2.0mm tail Fiber Patch Cables

Application

The ideal cable for vertical wiring in the building, Especially suitable for the application of dispersion spectrometer in shaft



Packaging

This easily taken and well-protected fiber optical cable package has been labelled and marked by OMC as default .Standard carton size : 34*22*15 cm; 44*34*24 cm ; 54*39*34 cm . Which carton to be used depends on goods Qty . Packing can be customized.



1, PE Wrapped



2, Paper Carton



3, fumig-free Pallet

- OME service** {
1. Cable color, printing word, material of cable jacket, connector's color
 2. OEM Label, Identify ring, cable's label, box, shipping marks
 3. Different quality Level.

Order Instruction

| Patch cord | Fiber count | Fiber Grade | Connector A | Connector B | Out jacket | Cable Color | length |
|------------|---------------------|---------------|-------------|-------------|------------|-------------|-------------|
| A | Standard Quality | 1 - G652D | A LC UPC | A LC UPC | H- LSZH | A Blue | 1=1m ... |
| | | 2 - G657A1 | B SC UPC | B SC UPC | C - PVC | B Orange | |
| | | 3 - G657A2/B2 | C FC UPC | C FC UPC | R - OFNR | C Green | |
| | | 4 - G657B3 | D ST UPC | D ST UPC | P - OFNP | D Brown | |
| | | 5 - OM1 | E LC APC | E LC APC | | E Grey | |
| | | 6 - OM2 | F SC APC | F SC APC | | F White | |
| | | 7 - OM3 | G FC APC | G FC APC | | G Red | |
| | | 8 - OM4 | H ST APC | H ST APC | | H Black | |
| | | 9 - OM5 | I E2000 UPC | I E2000 UPC | | I Yellow | |
| | IEC Grade B Quality | C1- 4cores | J E2000 APC | J E2000 APC | | J Purple | |
| | | C2- 6cores | L DIN UPC | L DIN UPC | | K Pink | |
| | | C3- 8cores | M DIN APC | M DIN APC | | L aqua | |
| | | C4- 12cores | N D4 | N D4 | | M Magenta | |
| | | C5- 16cores | O MU UPC | O MU UPC | | X- other | |
| | | C6- 24cores | P MU APC | P MU APC | | | |
| | | C7- 48cores | R LX.5 UPC | R LX.5 UPC | | | |
| | | | S LX.5 APC | S LX.5 APC | | | |



Transmission Distance Comparison

| Data Rate | Interface Type | Fiber Mode | Wavelength | Maximum Distance |
|-----------|----------------|------------|------------|------------------|
| 1G | 1000BASE-LX | OM5 | 850nm | 550m |
| | | OM4 | 1300nm | 550m |
| | | OM3 | 1300nm | 550m |
| | | OM2 | 1300nm | 550m |
| | | OM1 | 1300nm | 550m |
| | | SMF | 1310nm | 10km |
| | 1000BASE-SX | OM4 | 850nm | 550m |
| | | OM3 | 850nm | 550m |
| | | OM2 | 850nm | 550m |
| | | OM1 | 850nm | 275m |
| 10G | 10GBASE-SR | OM4 | 850nm | 400m |
| | | OM3 | 850nm | 300m |
| | | OM2 | 850nm | 82m |
| | | OM1 | 850nm | 33m |
| | 10GBASE-LRM | OM5 | 850nm | 220m |
| | | OM3 | 1300nm | 220m |
| | | OM2 | 1300nm | 220m |
| | | OM1 | 1300nm | 220m |
| | 10GBASE-LR | SMF | 1310nm | 10km |
| | 10GBASE-ER | SMF | 1550nm | 30-40km |
| | 10GBASE-ZR | SMF | 1550nm | 80-100km |
| 40G | 40G-BIDI | OM5 | 850nm | 200m |
| | | OM4 | 850nm | 150m |
| | | OM3 | 850nm | 100m |
| | 40GBASE-SR4 | OM5 | 850nm | 150m |
| | | OM4 | 850nm | 150m |
| | | OM3 | 850nm | 100m |
| | 40G-SWDM4 | OM5 | 850nm | 440m |
| | | OM4 | 850nm | 350m |
| | | OM3 | 850nm | 240m |
| | 40GBASE-LR4 | SMF | 1310nm | 10km |



Transmission Distance Comparison

| Data Rate | Interface Type | Fiber Mode | Wavelength | Maximum Distance |
|-----------|----------------|------------|------------|------------------|
| 100G | 100GBASE-SR4 | OM5 | 850nm | 100m |
| | | OM4 | 850nm | 100m |
| | | OM3 | 850nm | 70m |
| | 100G-SWDM4 | OM5 | 850nm | 150m |
| | | OM4 | 850nm | 100m |
| | | OM3 | 850nm | 75m |
| | 100GBASE-SR10 | OM4 | 850nm | 125m |
| | | OM3 | 850nm | 100m |
| | 100GBASE-LR4 | SMF | 1310nm | 10km |
| | 100GBASE-ER4 | SMF | 1310nm | 40km |

How to Choose The Right Fiber Optic Cable Type?

| Designation | Fiber Dia. (µm) | Type | Fast Ethernet 100BASE-FX | 1 Gigabit Ethernet 1000BASE-SX | 1 Gigabit Ethernet 1000BASE-LX | 10Gbps Ethernet 10GBASE | 40Gbps Ethernet 40GBASE SR4 | 100Gbps Ethernet 100GBASE SR4 |
|----------------------|-----------------|-------------|--------------------------|--------------------------------|--------------------------------|-------------------------|-----------------------------|-------------------------------|
| OM1 | 62.5/125 | Multi- | 2000 Meters | 275 Meters | 550 Meters | 33 Meters | Not sup- | Not sup- |
| OM2 | 50/125 | Multi-mode | 2000 Meters | 550 Meters | 550 Meters | 82 Meters | Not supported | Not supported |
| OM3(Laser Optimized) | 50/125 | Multi-mode | 2000 Meters | 550 Meters | 550 Meters | 300 Meters | 100 Meters(SR4) | 100 Meters (SR4) |
| OM4(Laser Optimized) | 50/125 | Multi-mode | 2000 Meters | 550 Meters | 550 Meters | 400 Meters | 150 Meters(SR4) | 150 Meters (SR4) |
| Singlemode | 9/125 | Single-mode | 2000 Meters | 5km at 1310nm | 5km at 1310nm | 10km at 1310nm | N/A | N/A |

PS:The difference of OM4 and OM3 fiber mode as the following

1. OM4 was developed specifically for VSCSEL laser transmission and allows 10 Gig / second link distances of up to 550 Meters (compared to 300M with OM3).
2. The effective modal bandwidth for OM4 is more than double that of OM3.