

# QuickNet™ Signature Core™ Trunk Cable

## general information

QuickNet™ Signature Core™ Trunk Cable Assemblies allow for rapid deployment of high-density permanent links in a single assembly for data center applications requiring quick infrastructure deployment, such as main, horizontal, and zone distribution areas. These trunk cable assemblies optimize cable routing requirements to ensure efficient use of pathway space and significantly reduce installation time and cost. Signature Core™ Trunk Cable Assemblies are built with modular MPO connectivity and provide compatibility, flexibility, and system performance in all permanent link applications.



## technical information

Signature Core™ Fiber is a modal and chromatic dispersion compensating multimode fiber designed for optimum performance with high-speed Vertical Cavity Surfacing Emitting Lasers (VCSEL) transceivers. The refractive index profile is engineered to correct for the interaction between modal and chromatic dispersion increasing the total channel bandwidth. Current industry standards for OM3 and OM4 fibers neglect this interaction and as a result, channel reach can be significantly limited for a large population of VCSEL transceivers.

Like OM3 and OM4 fiber types, the actual supported reach for Signature Core™ Fiber depends on the electrical and optical characteristics of the VCSEL transceiver<sup>1</sup>. Under worst-case conditions, Signature Core™ Fiber will provide at least a 20% increase in reach over uncompensated OM4 fibers. Under nominal conditions, Signature Core™ Fiber will support a 600m reach with 10GBASE-SR transceivers compared to a 400m maximum reach over OM4 as specified in IEEE 802.3<sup>2</sup>. Applying the 20% minimum increase in reach for OM4 reach published in FC-P1-5 for Fibre Channel communication yields a reach of 225 meters with an 8G Fiber Channel transceiver (800-M5F-SN-I), and 150m with a 16G Fiber Channel transceiver (1 600-M5F-SN-I)<sup>3</sup>. Signature Core™ Fiber is 100% standards compliant meeting all OM4 specifications, with an additional requirement for Differential Mode Delay (DMD) that compensates for modal and chromatic dispersion effects<sup>4</sup>.

## application

Data centers requiring quick infrastructure deployment with extended reach.

## construction

<b>Cable type:</b>	Indoor unarmored
<b>Cable jacket ratings:</b>	Optical Fiber Non-conductive Plenum (OFNP) Low Smoke Zero Halogen (LSZH)
<b>Fiber type:</b>	OM4+ Signature Core™ Fiber
<b>Fiber count:</b>	12, 24
<b>Connector end 'A':</b>	Type: MPO female Color: Black and Aqua Polarity: Method A
<b>Connector end 'B':</b>	Type: MPO female Color: Black and Aqua Polarity: Method A
<b>Number of breakouts:</b>	12-fiber: 1 24-fiber: 2
<b>Jacket color:</b>	Aqua

## optical properties

<b>Maximum cable attenuation:</b>	2.3dB/km @ 850nm 0.6dB/km @ 1300nm
<b>Maximum connector insertion loss:</b>	0.25dB
<b>Minimum connector return loss:</b>	30dB

## physical properties

<b>Cable outside diameter (OD):</b>	12-fiber: 6.5mm 24-fiber: 9.4mm
<b>Cable tensile strength (installation):</b>	1335N
<b>Cable compressive load:</b>	220N/cm short term 110N/cm long term
<b>Cable flex:</b>	100 cycles
<b>Cable twist:</b>	10 cycles
<b>Connector durability:</b>	500 mating cycles
<b>Bend radius:</b>	Under load: 20 x cable OD Static: 10 x cable OD
<b>Transition outside diameter:</b>	12-fiber: 10mm 24-fiber: 14mm
<b>Pulling eye diameter:</b>	12-fiber: 19mm 24-fiber: 23mm
<b>Breakout length:</b>	1m

## environmental properties

<b>Storage and shipping temperature:</b>	-40°C to +70°C (-40°F to 158°F)
<b>Installation temperatures:</b>	0°C to +70°C (32°F to 158°F)
<b>Operating temperature:</b>	-20°C to 70°C (-4°F to 158°F)

## standards

Meets or exceeds ISO/IEC 11801, TIA/EIA-568-C.3, TIA-604-5 (FOCIS-5), TIA/EIA-568-C.1, RoHS compliant

<sup>1</sup> The actual channel reach of a laser optimized, multimode fiber (OM3, OM4, or Signature Core™) depends on the optical and electrical parameters of the VCSEL transceiver. For worst-case optical and electrical parameters, Signature Core™ Fiber will provide at least 20% greater reach over standard un-compensated OM4 fiber.

<sup>2</sup> OM4 fiber was ratified in the IEEE802.3/D3.0 proceedings from Dec. 15, 2011, Table 52-6 with an Operating Range of 2m to 400m.

<sup>3</sup> Reach values are a minimum.

<sup>4</sup> Differential Mode Delay (DMD) is a metric defined in telecommunications industry association standard EIA/TIA 455-220-A, January 2003, which describes a method for measuring the modal dispersion of laser optimized multimode fiber.

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## part number

Description: FSUSP5E5EKAM010 = Fiber OM4+ Signature Core™ 24 fiber, indoor trunk, plenum, MPO female to MPO female, method A ultra IL, with pulling eye end A, 10 meters

Character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Example	F	S	U	S	P	5	E	5	E	K	A	M	0	1	0

### 1 – Fiber

F = Fiber

### 2 – Fiber Type

S = OM4+ Signature Core™

### 3 – Fiber Count

T = 12-fiber

U = 24-fiber

### 4 – Cable Type

S = Indoor Trunk

### 5 – Flame Rating

L = Low Smoke Zero Halogen (LSZH)

P = Optical Fiber Non-conductive  
Plenum (OFNP)

### 6 – Connector Type

5 = MPO female

6 = MPO male

### 7 – Connector Variant

E = 1m equal breakout

N = No variant

### 8 – Connector Type

5 = MPO female

6 = MPO male

### 9 – Connector Variant

E = 1m equal breakout

N = No variant

### 10 – Performance/Polarity

K = Polarity A/Ultra IL

### 11 – Pulling Eye

A = Pulling Eye end A

N = No Pulling Eye

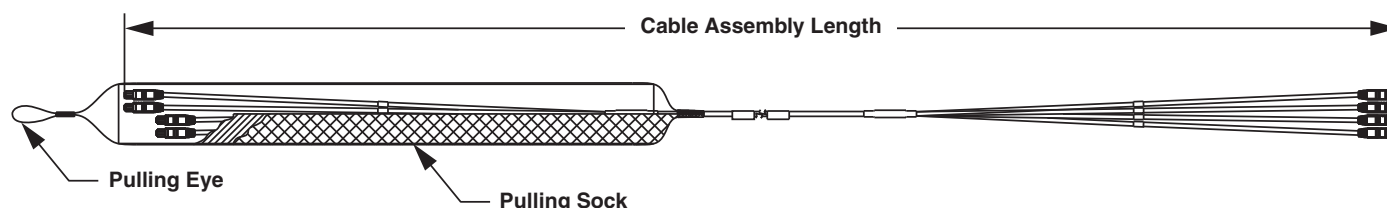
### 12 – Unit of Measure

M = Meters

### 13, 14, and 15 – Length

010 – 050m

## trunk cable assembly detail



### Notes:

- Standard lengths for MPO to MPO trunk cables are available from 10 – 100 feet in increments of 1 foot and 10m – 50m in increments of 1m. For additional lengths and availability, please contact Panduit customer service.
- Cable assembly lengths are measured as the distance between the furthest connector tips. Length tolerance is +4 feet (1.2m)/-0 for lengths up to 100 feet (30m) and +6 feet (1.8m)/-0 for lengths greater than 100 feet (30m).
- For hybrid solutions and special cable constructions/ratings/colors/availability, consult Panduit.

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