

## Ethernet Standard Distances Support in Type of Fiber and Transceivers

Transceiver Type	Form Factor	Connector Type	Bandwidth thru Fibre	OM3 50u MMF Cable	OM4 50u MMF Cable	OM5 50u MMF Cable	SMF Cable
Gigabit-SX SFP	SFP	LC	1G / MMF	550m	550m	550m	-
Gigabit-LX SFP	SFP	LC	1G / SMF	550m	550m	550m	10km
10GBASE-SR SFP+	SFP+	LC	10G / MMF	300m	400m	400m	-
10GBASE-LR SFP+	SFP+	LC	10G / SMF	-	-	-	10km
25G SR SFP28	SFP28	LC	25G / MMF	70m	100m	100m	-
25G ESR SFP28	SFP28	LC	25G / MMF	200m	300m	300m	-
25G LR SFP28	SFP28	LC	25G / SMF	-	-	-	10km
40G BiDi SR QSFP+	QSFP+	LC	40G / MMF	100m	150m	200m	-
40G SR4 QSFP+	QSFP+	MPO	40G / MMF	100m	150m	200m	-
40G ESR4 QSFP+ 10G-SR interop.	QSFP+	MPO	40G / MMF	300m	400m	400m	-
40G PSM4 QSFP+ 10G-LR interop.	QSFP+	MPO	40G / SMF	-	-	-	10km
40G LR4 QSFP+	QSFP+	LC	40G / SMF	-	-	-	10km
100G SR BiDi QSFP28	QSFP28	LC	100G / MMF	70m	100m	150m	-
100G SR4 QSFP28	QSFP28	MPO	100G / MMF	70m	100m	150m	-
100G ESR4 QSFP28	QSFP28	MPO	100G / MMF	170m	300m	400m	-
100G PSM4 QSFP28 Pigtailed	QSFP28	MPO	100G / SMF	-	-	-	2km
100G LR4 QSFP28	QSFP28	LC	100G / SMF	-	-	-	10km

### Reference

[https://en.wikipedia.org/wiki/Multi-mode\\_optical\\_fiber](https://en.wikipedia.org/wiki/Multi-mode_optical_fiber)

[https://en.wikipedia.org/wiki/100\\_Gigabit\\_Ethernet](https://en.wikipedia.org/wiki/100_Gigabit_Ethernet)

Extreme publishes up-to-date Optical transceiver and cable compatibility information via its Extreme Networks:

<https://optics.extremenetworks.com>

[Extreme Optics Solutions Guide](#)

**MPO to LC required min. 8 core fiber with MPO fanout ( 4x 10G SFP+ LC)**

**Cost effective for 40/100G interconnection above 100m is to use PSM4 connection:**

**40G SMF can be utilised 8 core with PSM4 QSFP+ up to 10km with MPO fanout to 4 x LC breakout patch cable**

**100G SMF can be utilised 8 core with PSM4 QSFP28 up to 2km with MPO fanout to 4 x LC breakout patch cable**

**PSM4: Parallel Single Mode 4-channel (PSM4) is a type of single-mode transceiver that uses a parallel fiber design for reaches from up to 2 km for 100G and 10km for 40G**

Example:

10326 40G PSM4 QSFP+ 10km 10G-LR interop.

10405 100G PSM4 QSFP28 2km Pigtailed

Must used with 10327, MPO-to-4xLC SMF fanout patch cord to break out the 4-fiber pair of the MPO parallel connector to four separate fiber pairs.