

SYSTIMAX®  
InstaPATCH® 360  
Fiber TAP Solution

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# Introduction

This performance specification defines the optical fiber cabling topology limits for channels that include optical network traffic access point (TAP) functionality comprised of InstaPATCH 360 components in support of a wide variety of applications. The optical TAPs permit monitoring of signals within the communications channel by splitting off a fraction of the signal power towards a monitoring device. There are two split ratios available, specifically 50/50 and 70/30. The 50/50 split ratio divides the signal approximately equally between the MAIN (through) output and TAP (monitor) output. The 70/30 split ratio delivers more signal strength to the MAIN output than the 50/50 split ratio by splitting off 30 percent of the signal towards the TAP output for the monitor function. Consequently the MAIN channel topology limits are more robust with the 70/30 split ratio than with the 50/50 split ratio.

When choosing TAPs with 50/50 split ratio, the same topology limit tables apply to both the MAIN channel and TAP channels. However the topology itself will likely be different for the MAIN channel and TAP channels. In the simplest case this is because of the different number of LC and MPO connections in each channel due to the configuration of the 360™ hardware. The topology limit for the MAIN channel is determined in the conventional way by counting the number of connections of each type and looking up the corresponding supportable distance for the fiber type in the table under the application of interest. The topology limit for the TAP channels are determined by examining the configurations of the two channels that exist between the monitor and two end points. Overall, the topologies of the MAIN and two TAP channels must comply with the supportable distance limits of this performance specification.

For applications that support 50/50 split ratio, the monitor can employ minimally standards-compliant transceivers. However, the option of using the 50/50 split ratio is generally afforded only to applications having sufficiently robust power budgets to overcome the added loss of the 50 percent TAPs. Less robust power budgets, such as several of those defined by Fibre Channel standards for multimode fiber, do not support the loss of the 50 percent TAP under worst-case conditions. For these applications only the 70/30 TAP option is defined. The 70 percent output is assigned to the MAIN channel to support transmission for active endpoints using minimally compliant transceivers. With the exception of 4G Fibre Channel on TeraSPEED single-mode cabling, the monitor must employ better than minimally compliant transceivers in order to reliably receive the reduced signals from the 30 percent TAP output, and the length of the equipment cord between the TAP and the monitor should be minimized, typically to 20 m or less. Consult the monitor supplier's channel design guidelines for specifics.

When deploying TAPs with 70/30 split ratio in channels having a central cross connect it is advisable to place the TAPs at the central cross connect rather than at one end of the channel. This is because the monitor will be located more equitably between the active equipment endpoints providing more evenly balanced transmission fidelity to the monitor for all channels compared to placement near one end of the channel which would stress the monitor more for signals received from the far end.

# Ethernet Applications

## 100 GIGABIT ETHERNET, 1310 NM WDM (100GBASE-LR4)

Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	4 (6.5)	3.1 (5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)
2	3.7 (6)	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)
3	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.6 (1)
4	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0.3 (0.5)
5	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.6 (1)	0 (0)
6	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0.3 (0.5)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1.9 (3)	1.2 (2)	0.6 (1)	0.3 (0.5)	0 (0)	0 (0)
2	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)
3	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
4	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
5	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)
6	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 40 GIGABIT ETHERNET, 1310 NM WDM (40GBASE-LR4)

Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	4 (6.5)	3.4 (5.5)	2.8 (4.5)	2.5 (4)	1.9 (3)	1.2 (2)
2	3.7 (6)	3.1 (5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	1.2 (2)
3	3.7 (6)	3.1 (5)	2.5 (4)	1.9 (3)	1.6 (2.5)	0.9 (1.5)
4	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	1.2 (2)	0.6 (1)
5	3.1 (5)	2.5 (4)	1.9 (3)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)
6	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	1.2 (2)	0.6 (1)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2.2 (3.5)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)
2	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)
3	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)
4	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
5	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
6	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 10 GIGABIT ETHERNET, 850 NM SERIAL (10GBASE-S)

Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1250 (380)	1230 (375)	1200 (365)	1180 (360)	1160 (355)	1150 (350)
2	1230 (375)	1210 (370)	1200 (365)	1160 (355)	1150 (350)	1130 (345)
3	1210 (370)	1200 (365)	1180 (360)	1160 (355)	1130 (345)	1120 (340)
4	1200 (365)	1180 (360)	1160 (355)	1150 (350)	1130 (345)	1100 (335)
5	1200 (365)	1160 (355)	1150 (350)	1130 (345)	1120 (340)	1080 (330)
6	1180 (360)	1150 (350)	1130 (345)	1120 (340)	1100 (335)	1070 (325)

LazrSPEED 550, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	970 (295)	940 (285)	900 (275)	870 (265)	840 (255)	790 (240)
2	950 (290)	920 (280)	870 (265)	840 (255)	800 (245)	770 (235)
3	920 (280)	890 (270)	850 (260)	820 (250)	770 (235)	740 (225)
4	900 (275)	870 (265)	820 (250)	790 (240)	750 (230)	710 (215)
5	870 (265)	840 (255)	800 (245)	750 (230)	720 (220)	670 (205)
6	850 (260)	800 (245)	770 (235)	720 (220)	690 (210)	640 (195)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	980 (300)	970 (295)	940 (285)	920 (280)	890 (270)	870 (265)
2	970 (295)	950 (290)	920 (280)	900 (275)	870 (265)	850 (260)
3	950 (290)	940 (285)	900 (275)	890 (270)	850 (260)	840 (255)
4	940 (285)	920 (280)	890 (270)	870 (265)	840 (255)	820 (250)
5	920 (280)	900 (275)	870 (265)	850 (260)	820 (250)	790 (240)
6	900 (275)	890 (270)	850 (260)	820 (250)	800 (245)	770 (235)

LazrSPEED 300, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	660 (200)	590 (180)	560 (170)	520 (160)	460 (140)	430 (130)
2	620 (190)	560 (170)	520 (160)	490 (150)	430 (130)	390 (120)
3	590 (180)	520 (160)	490 (150)	460 (140)	390 (120)	330 (100)
4	560 (170)	520 (160)	460 (140)	430 (130)	360 (110)	300 (90)
5	520 (160)	490 (150)	430 (130)	360 (110)	330 (100)	260 (80)
6	490 (150)	430 (130)	390 (120)	330 (100)	260 (80)	200 (60)

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	490 (150)	490 (150)	490 (150)	490 (150)	480 (145)	460 (140)
2	490 (150)	490 (150)	490 (150)	480 (145)	480 (145)	460 (140)
3	490 (150)	490 (150)	480 (145)	480 (145)	460 (140)	440 (135)
4	490 (150)	490 (150)	480 (145)	460 (140)	440 (135)	440 (135)
5	490 (150)	480 (145)	460 (140)	460 (140)	440 (135)	430 (130)
6	480 (145)	480 (145)	460 (140)	440 (135)	430 (130)	430 (130)

LazrSPEED 150, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	360 (110)	330 (100)	310 (95)	300 (90)	260 (80)	250 (75)
2	340 (105)	330 (100)	300 (90)	280 (85)	250 (75)	230 (70)
3	330 (100)	310 (95)	280 (85)	260 (80)	230 (70)	210 (65)
4	310 (95)	300 (90)	260 (80)	250 (75)	210 (65)	180 (55)
5	300 (90)	280 (85)	250 (75)	230 (70)	200 (60)	160 (50)
6	280 (85)	260 (80)	230 (70)	200 (60)	160 (50)	130 (40)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 10 GIGABIT ETHERNET, 1310 NM SERIAL (10GBASE-L)

Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)
2	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)
3	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)
4	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)
5	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)
6	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
2	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
3	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)
4	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 1 GIGABIT ETHERNET, 850 NM SERIAL (1000BASE-SX)

Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2790 (850)	2620 (800)	2460 (750)	2460 (750)	2300 (700)	2130 (650)
2	2620 (800)	2620 (800)	2460 (750)	2300 (700)	2300 (700)	2130 (650)
3	2620 (800)	2460 (750)	2300 (700)	2300 (700)	2130 (650)	2130 (650)
4	2460 (750)	2460 (750)	2300 (700)	2130 (650)	2130 (650)	1970 (600)
5	2460 (750)	2300 (700)	2130 (650)	2130 (650)	1970 (600)	1970 (600)
6	2300 (700)	2300 (700)	2130 (650)	1970 (600)	1970 (600)	1800 (550)

LazrSPEED 550, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1310 (400)	1150 (350)	1150 (350)	980 (300)	820 (250)	660 (200)
2	1310 (400)	1150 (350)	980 (300)	820 (250)	820 (250)	660 (200)
3	1150 (350)	980 (300)	980 (300)	820 (250)	660 (200)	490 (150)
4	1150 (350)	980 (300)	820 (250)	660 (200)	490 (150)	490 (150)
5	980 (300)	820 (250)	660 (200)	660 (200)	490 (150)	330 (100)
6	820 (250)	820 (250)	660 (200)	490 (150)	330 (100)	330 (100)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2460 (750)	2460 (750)	2300 (700)	2130 (650)	2130 (650)	1970 (600)
2	2460 (750)	2300 (700)	2300 (700)	2130 (650)	1970 (600)	1970 (600)
3	2300 (700)	2300 (700)	2130 (650)	2130 (650)	1970 (600)	1970 (600)
4	2300 (700)	2130 (650)	2130 (650)	1970 (600)	1970 (600)	1800 (550)
5	2300 (700)	2130 (650)	1970 (600)	1970 (600)	1800 (550)	1800 (550)
6	2130 (650)	2130 (650)	1970 (600)	1800 (550)	1800 (550)	1640 (500)

LazrSPEED 300, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1310 (400)	1150 (350)	980 (300)	980 (300)	820 (250)	660 (200)
2	1150 (350)	1150 (350)	980 (300)	820 (250)	660 (200)	660 (200)
3	1150 (350)	980 (300)	820 (250)	820 (250)	660 (200)	490 (150)
4	980 (300)	980 (300)	820 (250)	660 (200)	490 (150)	490 (150)
5	980 (300)	820 (250)	660 (200)	490 (150)	490 (150)	330 (100)
6	820 (250)	660 (200)	660 (200)	490 (150)	330 (100)	160 (50)

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1970 (600)	1970 (600)	1840 (560)	1840 (560)	1710 (520)	1710 (520)
2	1970 (600)	1840 (560)	1840 (560)	1710 (520)	1710 (520)	1570 (480)
3	1840 (560)	1840 (560)	1710 (520)	1710 (520)	1570 (480)	1570 (480)
4	1840 (560)	1710 (520)	1710 (520)	1570 (480)	1570 (480)	1570 (480)
5	1840 (560)	1710 (520)	1710 (520)	1570 (480)	1570 (480)	1440 (440)
6	1710 (520)	1710 (520)	1570 (480)	1570 (480)	1440 (440)	1440 (440)

LazrSPEED 150, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1050 (320)	1050 (320)	920 (280)	790 (240)	790 (240)	660 (200)
2	1050 (320)	920 (280)	790 (240)	790 (240)	660 (200)	520 (160)
3	920 (280)	920 (280)	790 (240)	660 (200)	520 (160)	520 (160)
4	920 (280)	790 (240)	660 (200)	660 (200)	520 (160)	390 (120)
5	790 (240)	790 (240)	660 (200)	520 (160)	390 (120)	260 (80)
6	790 (240)	660 (200)	520 (160)	390 (120)	390 (120)	130 (40)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 1 GIGABIT ETHERNET, 1310 NM SERIAL (1000BASE-LX)

Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2.17 (3.50)	1.86 (3.00)	1.55 (2.50)	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)
2	2.17 (3.50)	1.86 (3.00)	1.24 (2.00)	0.93 (1.50)	0.62 (1.00)	0 (0)
3	1.86 (3.00)	1.55 (2.50)	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)	0 (0)
4	1.86 (3.00)	1.24 (2.00)	0.93 (1.50)	0.62 (1.00)	0 (0)	0 (0)
5	1.55 (2.50)	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)	0 (0)	0 (0)
6	1.55 (2.50)	0.93 (1.50)	0.62 (1.00)	0 (0)	0 (0)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	0.93 (1.50)	0.62 (1.00)	0 (0)	0 (0)	0 (0)	0 (0)
2	0.93 (1.50)	0.31 (0.50)	0 (0)	0 (0)	0 (0)	0 (0)
3	0.62 (1.00)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
4	0.31 (0.50)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.



# Fibre Channel Applications

16 GIGABIT FIBRE CHANNEL, 850 NM SERIAL (FC-PI-5 1600-MX-SN)  
Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	250 (75)	180 (55)	80 (25)	0 (0)	0 (0)	0 (0)
2	200 (60)	110 (35)	0 (0)	0 (0)	0 (0)	0 (0)
3	150 (45)	50 (15)	0 (0)	0 (0)	0 (0)	0 (0)
4	80 (25)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	200 (60)	150 (45)	80 (25)	0 (0)	0 (0)	0 (0)
2	160 (50)	100 (30)	0 (0)	0 (0)	0 (0)	0 (0)
3	110 (35)	30 (10)	0 (0)	0 (0)	0 (0)	0 (0)
4	70 (20)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	110 (35)	80 (25)	50 (15)	0 (0)	0 (0)	0 (0)
2	100 (30)	70 (20)	0 (0)	0 (0)	0 (0)	0 (0)
3	80 (25)	30 (10)	0 (0)	0 (0)	0 (0)	0 (0)
4	50 (15)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

16 GIGABIT FIBRE CHANNEL, 1310 NM SERIAL (FC-PI-5 1600-SM-LC-L)  
Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	4 (6.5)	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)
2	3.7 (6)	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)
3	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)
4	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)
5	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)
6	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)
2	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)
3	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
4	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
5	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)
6	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

10 GIGABIT FIBRE CHANNEL, 850 NM SERIAL (10GFC 1200-MX-SN-I)  
Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1200 (365)	1180 (360)	1160 (355)	1150 (350)	1130 (345)	1120 (340)
2	1200 (365)	1160 (355)	1150 (350)	1130 (345)	1120 (340)	1100 (335)
3	1180 (360)	1160 (355)	1130 (345)	1120 (340)	1100 (335)	1080 (330)
4	1160 (355)	1150 (350)	1130 (345)	1100 (335)	1080 (330)	1070 (325)
5	1150 (350)	1130 (345)	1120 (340)	1100 (335)	1070 (325)	1050 (320)
6	1130 (345)	1120 (340)	1100 (335)	1080 (330)	1050 (320)	1030 (315)

LazrSPEED 550, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	920 (280)	900 (275)	870 (265)	840 (255)	790 (240)	750 (230)
2	900 (275)	870 (265)	840 (255)	800 (245)	770 (235)	720 (220)
3	890 (270)	850 (260)	820 (250)	770 (235)	740 (225)	690 (210)
4	850 (260)	820 (250)	790 (240)	750 (230)	710 (215)	670 (205)
5	840 (255)	800 (245)	750 (230)	720 (220)	670 (205)	640 (195)
6	800 (245)	770 (235)	740 (225)	690 (210)	640 (195)	590 (180)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	950 (290)	940 (285)	900 (275)	890 (270)	850 (260)	840 (255)
2	940 (285)	920 (280)	890 (270)	870 (265)	840 (255)	820 (250)
3	920 (280)	900 (275)	870 (265)	850 (260)	820 (250)	800 (245)
4	900 (275)	890 (270)	850 (260)	840 (255)	800 (245)	790 (240)
5	890 (270)	870 (265)	840 (255)	820 (250)	790 (240)	770 (235)
6	870 (265)	850 (260)	820 (250)	800 (245)	770 (235)	740 (225)

LazrSPEED 300, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	620 (190)	560 (170)	520 (160)	490 (150)	430 (130)	390 (120)
2	590 (180)	520 (160)	490 (150)	460 (140)	390 (120)	360 (110)
3	560 (170)	520 (160)	460 (140)	430 (130)	360 (110)	300 (90)
4	520 (160)	490 (150)	430 (130)	390 (120)	330 (100)	260 (80)
5	490 (150)	430 (130)	390 (120)	330 (100)	260 (80)	200 (60)
6	460 (140)	390 (120)	360 (110)	300 (90)	230 (70)	160 (50)

\* Number of connections excludes the connection to the active device at each end of the channel.

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	490 (150)	490 (150)	480 (145)	480 (145)	460 (140)	440 (135)
2	490 (150)	490 (150)	480 (145)	460 (140)	440 (135)	440 (135)
3	490 (150)	480 (145)	460 (140)	460 (140)	440 (135)	430 (130)
4	480 (145)	480 (145)	460 (140)	440 (135)	430 (130)	430 (130)
5	480 (145)	460 (140)	440 (135)	440 (135)	430 (130)	410 (125)
6	460 (140)	460 (140)	440 (135)	430 (130)	410 (125)	390 (120)

LazrSPEED 150, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	340 (105)	310 (95)	300 (90)	280 (85)	250 (75)	230 (70)
2	330 (100)	310 (95)	280 (85)	260 (80)	230 (70)	210 (65)
3	310 (95)	300 (90)	260 (80)	250 (75)	210 (65)	180 (55)
4	300 (90)	280 (85)	250 (75)	230 (70)	200 (60)	160 (50)
5	280 (85)	260 (80)	230 (70)	200 (60)	160 (50)	130 (40)
6	260 (80)	230 (70)	210 (65)	180 (55)	150 (45)	100 (30)

\* Number of connections excludes the connection to the active device at each end of the channel.

## 10 GIGABIT FIBRE CHANNEL, 1310 NM SERIAL (10GFC 1200-SM-LL-L)

Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)
2	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)
3	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)
4	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)
5	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)
6	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
2	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
3	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)
4	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
5	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

8 GIGABIT FIBRE CHANNEL, 850 NM SERIAL "LIMITING RECEIVER"  
 (FC-PI-5 800-MX-SN)  
 Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	480 (145)	430 (130)	360 (110)	280 (85)	200 (60)	100 (30)
2	440 (135)	380 (115)	310 (95)	230 (70)	130 (40)	0 (0)
3	390 (120)	330 (100)	250 (75)	150 (45)	30 (10)	0 (0)
4	340 (105)	280 (85)	180 (55)	70 (20)	0 (0)	0 (0)
5	300 (90)	210 (65)	100 (30)	0 (0)	0 (0)	0 (0)
6	250 (75)	130 (40)	0 (0)	0 (0)	0 (0)	0 (0)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	390 (120)	340 (105)	300 (90)	230 (70)	160 (50)	80 (25)
2	360 (110)	310 (95)	250 (75)	200 (60)	110 (35)	0 (0)
3	330 (100)	280 (85)	210 (65)	130 (40)	30 (10)	0 (0)
4	300 (90)	230 (70)	160 (50)	70 (20)	0 (0)	0 (0)
5	250 (75)	180 (55)	100 (30)	0 (0)	0 (0)	0 (0)
6	200 (60)	110 (35)	0 (0)	0 (0)	0 (0)	0 (0)

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	230 (70)	210 (65)	180 (55)	150 (45)	110 (35)	70 (20)
2	210 (65)	200 (60)	160 (50)	110 (35)	80 (25)	0 (0)
3	200 (60)	160 (50)	130 (40)	100 (30)	20 (5)	0 (0)
4	180 (55)	150 (45)	100 (30)	50 (15)	0 (0)	0 (0)
5	150 (45)	110 (35)	70 (20)	0 (0)	0 (0)	0 (0)
6	130 (40)	80 (25)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

8 GIGABIT FIBRE CHANNEL, 1310 NM SERIAL (FC-PI-5 800-SM-LC-I)  
Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	3.7 (6)	3.1 (5)	2.5 (4)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)
2	3.4 (5.5)	2.8 (4.5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)
3	3.4 (5.5)	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)
4	3.1 (5)	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)
5	2.8 (4.5)	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)
6	2.5 (4)	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2.2 (3.5)	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)
2	1.9 (3)	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)
3	1.6 (2.5)	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)
4	1.2 (2)	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)
5	0.9 (1.5)	0.3 (0.5)	0 (0)	0 (0)	0 (0)	0 (0)
6	0.6 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

4 GIGABIT FIBRE CHANNEL, 850 NM SERIAL (FC-PI-5 400-MX-SN-I)  
Supportable Distance ft (m)

LazrSPEED 550, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	920 (280)	850 (260)	720 (220)	660 (200)	520 (160)	390 (120)
2	850 (260)	790 (240)	660 (200)	520 (160)	460 (140)	330 (100)
3	790 (240)	720 (220)	590 (180)	460 (140)	330 (100)	200 (60)
4	720 (220)	590 (180)	520 (160)	390 (120)	260 (80)	130 (40)
5	660 (200)	520 (160)	390 (120)	260 (80)	130 (40)	0 (0)
6	590 (180)	460 (140)	330 (100)	200 (60)	70 (20)	0 (0)

LazrSPEED 300, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	790 (240)	720 (220)	660 (200)	590 (180)	460 (140)	390 (120)
2	790 (240)	660 (200)	590 (180)	520 (160)	390 (120)	260 (80)
3	720 (220)	590 (180)	520 (160)	390 (120)	330 (100)	200 (60)
4	660 (200)	520 (160)	460 (140)	330 (100)	260 (80)	130 (40)
5	590 (180)	460 (140)	390 (120)	260 (80)	130 (40)	0 (0)
6	520 (160)	390 (120)	330 (100)	200 (60)	70 (20)	0 (0)

LazrSPEED 150, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	590 (180)	520 (160)	460 (140)	390 (120)	330 (100)	260 (80)
2	520 (160)	460 (140)	390 (120)	330 (100)	260 (80)	200 (60)
3	520 (160)	460 (140)	390 (120)	330 (100)	260 (80)	130 (40)
4	460 (140)	390 (120)	330 (100)	260 (80)	200 (60)	70 (20)
5	390 (120)	330 (100)	260 (80)	200 (60)	130 (40)	0 (0)
6	390 (120)	330 (100)	260 (80)	130 (40)	70 (20)	0 (0)

\* Number of connections excludes the connection to the active device at each end of the channel.

4 GIGABIT FIBRE CHANNEL, 1310 NM SERIAL (FC-PI-5 400-SM-LC-I)  
Supportable Distance mi (km)

TeraSPEED, 70/30 split ratio, MAIN (70%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	5.28 (8.50)	4.97 (8.00)	4.66 (7.50)	4.35 (7.00)	4.04 (6.50)	3.73 (6.00)
2	5.28 (8.50)	4.66 (7.50)	4.35 (7.00)	4.04 (6.50)	3.73 (6.00)	3.42 (5.50)
3	4.97 (8.00)	4.66 (7.50)	4.35 (7.00)	4.04 (6.50)	3.73 (6.00)	3.11 (5.00)
4	4.97 (8.00)	4.35 (7.00)	4.04 (6.50)	3.73 (6.00)	3.42 (5.50)	3.11 (5.00)
5	4.66 (7.50)	4.35 (7.00)	4.04 (6.50)	3.73 (6.00)	3.11 (5.00)	2.80 (4.50)
6	4.66 (7.50)	4.04 (6.50)	3.73 (6.00)	3.42 (5.50)	3.11 (5.00)	2.49 (4.00)

TeraSPEED, 50/50 split ratio

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	4.35 (7.00)	3.73 (6.00)	3.42 (5.50)	3.11 (5.00)	2.49 (4.00)	2.17 (3.50)
2	4.04 (6.50)	3.73 (6.00)	3.11 (5.00)	2.80 (4.50)	2.49 (4.00)	1.86 (3.00)
3	3.73 (6.00)	3.42 (5.50)	3.11 (5.00)	2.49 (4.00)	2.17 (3.50)	1.55 (2.50)
4	3.73 (6.00)	3.11 (5.00)	2.80 (4.50)	2.49 (4.00)	1.86 (3.00)	1.55 (2.50)
5	3.42 (5.50)	3.11 (5.00)	2.49 (4.00)	2.17 (3.50)	1.55 (2.50)	1.24 (2.00)
6	3.11 (5.00)	2.80 (4.50)	2.49 (4.00)	1.86 (3.00)	1.55 (2.50)	0.93 (1.50)

TeraSPEED, 70/30 split ratio, TAP (30%) output

# LC Connections* with:	1 MPO	2 MPOs	3 MPOs	4 MPOs	5 MPOs	6 MPOs
1	2.17 (3.50)	1.86 (3.00)	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)	0.00 (0.00)
2	1.86 (3.00)	1.55 (2.50)	0.93 (1.50)	0.62 (1.00)	0.00 (0.00)	0.00 (0.00)
3	1.86 (3.00)	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)	0.00 (0.00)	0.00 (0.00)
4	1.55 (2.50)	0.93 (1.50)	0.62 (1.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5	1.24 (2.00)	0.62 (1.00)	0.31 (0.50)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
6	0.93 (1.50)	0.62 (1.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)

\* Number of connections excludes the connection to the active device at each end of the channel.



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