



# Bare Splitter & Coupler Specification Guide

## Singlemode PLC & FBT Devices

COMMScope®

# Introduction

Passive optical components can have a significant impact on the efficiency and cost-effectiveness of communication network rollouts. One way to reduce the number of fibers in the network, lessen the footprint and decrease investment costs of a network rollout is by incorporating fiber-optic splitters/couplers. In existing networks, fiber optic splitters allow capacity upgrades at a relatively low cost without additional construction work. Singlemode wideband splitters/couplers are branching devices used to split and combine light, allowing for an increase amount of traffic over a single fiber. CommScope's offers a portfolio of splitters/couplers are available in a wide range of styles, sizes and split ratios.

CommScope's splitter portfolio is based on planar lightwave circuit (PLC) and fused biconic tapered (FBT) technologies. PLC splitters support 1:N and 2:N configurations where N=1 to 128. FBT couplers are only available in 1:2 and 2:2 split ratios (including those that are asymmetric). CommScope's splitters/couplers are packaged in a compact housing with options for 250  $\mu\text{m}$  leads and 900  $\mu\text{m}$  leads. Input fiber color coding is clear. Output fiber color coding is blue, orange, green, brown, slate, white, red, and black. PLC splitters are released with and without connectors. Connector types are LC/APC, LC/UPC, SC/APC, SC/UPC. CommScope's splitters/couplers meet OSP requirements of -40C to 70C operating temperatures and environments.

## Advantages

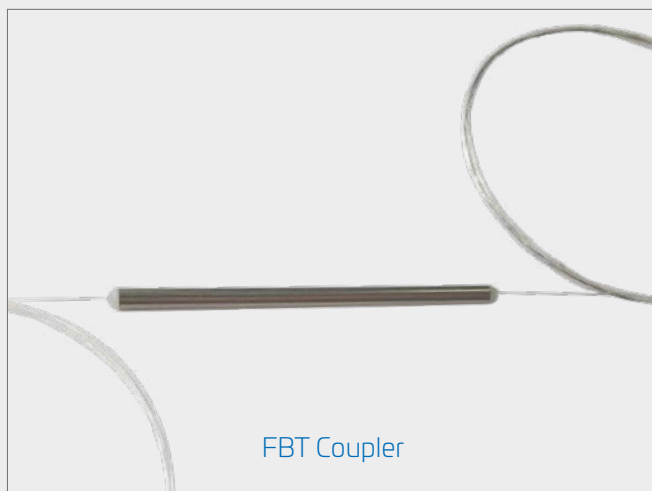
- Low insertion loss
- Consistent performance
- Small footprint
- Excellent uniformity
- Low PDL

## Applications

- Passive optical networks (PONs) – FTTH & FTTx
- Telecommunications Networks
- CATV / MSO's

CommScope's PLC & FBT products are designed to meet Telcordia GR-1209 & GR-1221. PLC splitter fiber type is G657.A2, and FBT coupler fiber type is G657.A1.

PLC & FBT products are tested to GR-63-CORE packaging requirements and IEC 61300-2-1, 61300-2-4, 61300-2-5, 61300-2-9, 61300-2-19, 61300-2-21, 61300-2-22, 61300-2-4 and 61300-2-45.



# PLC Splitter Optical Performance

## 1xN PLC Splitters. No Connectors. 250µm and 900µm options.

Split Ratio	1x2	1x4	1x8	1x16	1x32	1x64	1x128
MAX Housing Dimension (250 µm) (Height x Width x Length (mm))	4 x 4 x 40	4 x 4 x 40	4 x 4 x 40	4 x 5 x 45	4 x 7 x 55	4 x 12 x 60	4 x 24 x 80
MAX Housing Dimension (900 µm) (Height x Width x Length (mm))	4 x 7 x 60	4 x 7 x 60	4 x 7 x 60	4 x 12 x 60	6 x 20 x 80	6 x 40 x 120	8 x 80 x 100
Input Fiber Length (m)	2.5 ± 0.1						
Output Fiber Length (m)	2.5 ± 0.1						
Bandpass (nm)	1260-1650						
Insertion Loss MAX (dB)	3.7	7.1	10.4	13.7	17.0	20.5	26.0
Uniformity MAX (dB)	0.6	0.7	1.0	1.3	1.6	2.0	3.0
RL MIN (dB)	55	55	55	55	55	55	55
PDL MAX (dB)	0.2	0.2	0.2	0.3	0.3	0.4	0.4
Directivity MIN (dB)	55	55	55	55	55	55	55

## 1xN PLC Splitters. INPUT and OUTPUT with connectors. 250µm and 900µm.

Split Ratio	1x2	1x4	1x8	1x16	1x32
MAX Housing Dimension (250 µm) (Height x Width x Length (mm))	4 x 4 x 40	4 x 4 x 40	4 x 4 x 40	4 x 5 x 45	4 x 7 x 55
MAX Housing Dimension (900 µm) (Height x Width x Length (mm))	4 x 7 x 60	4 x 7 x 60	4 x 7 x 60	4 x 12 x 60	6 x 20 x 80
Input Fiber Length (m)	1.0 +0/-0.03				
Output Fiber Length (m)	1.0 +0/-0.03				
Bandpass (nm)	1260-1650				
Insertion Loss MAX (dB)	4.3	7.7	11	14.3	17.6
Uniformity MAX (dB)	0.9	1.0	1.3	1.6	1.9
RL MIN (dB)	50	50	50	50	50
PDL MAX (dB)	0.2	0.2	0.2	0.3	0.3
Directivity MIN (dB)	55	55	55	55	55

Optical Performance includes connector loss.

## 2xN PLC Splitters. No Connectors. 250µm and 900µm options.

Split Ratio	2x2	2x4	2x8	2x16	2x32	2x64
MAX Housing Dimension (250 µm) (Height x Width x Length (mm))	4 x 4 x 40	4 x 4 x 40	4 x 4 x 40	4 x 5 x 45	4 x 7 x 55	4 x 12 x 60
MAX Housing Dimension (900 µm) (Height x Width x Length (mm))	4 x 7 x 60	4 x 7 x 60	4 x 7 x 60	4 x 12 x 60	6 x 20 x 80	6 x 40 x 120
Input Fiber Length (m)	2.5 ± 0.1					
Output Fiber Length (m)	2.5 ± 0.1					
Bandpass (nm)	1260-1650					
Insertion Loss MAX (dB)	4.2	7.5	10.9	14.3	17.7	21.3
Uniformity MAX (dB)	1.2	1.4	1.6	2.0	2.4	2.9
RL MIN (dB)	55	55	55	55	55	55
PDL MAX (dB)	0.3	0.3	0.3	0.4	0.4	0.4
Directivity MIN (dB)	55	55	55	55	55	55

# PLC Splitter Optical Performance

## PLC Splitter Ordering Information. No Connectors.

MID	Description
SP-10200NNNNXABB	1x2 splitter, 250 micron, no connectors
SP-10400NNNNXABB	1x4 splitter, 250 micron, no connectors
SP-10800NNNNXABB	1x8 splitter, 250 micron, no connectors
SP-11600NNNNXABB	1x16 splitter, 250 micron, no connectors
SP-13200NNNNXABB	1x32 splitter, 250 micron, no connectors
SP-16400NNNNXABB	1x64 splitter, 250 micron, no connectors
SP-1AA00NNNNXABB	1x128 splitter, 250 micron, no connectors
SP-20200NNNNXABB	2x2 splitter, 250 micron, no connectors
SP-20400NNNNXABB	2x4 splitter, 250 micron, no connectors
SP-20800NNNNXABB	2x8 splitter, 250 micron, no connectors
SP-21600NNNNXABB	2x16 splitter, 250 micron, no connectors
SP-23200NNNNXABB	2x32 splitter, 250 micron, no connectors
SP-26400NNNNXABB	2x64 splitter, 250 micron, no connectors

MID	Description
SP-10200NNNNXBBB	1x2 splitter, 900 micron, no connectors
SP-10400NNNNXBBB	1x4 splitter, 900 micron, no connectors
SP-10800NNNNXBBB	1x8 splitter, 900 micron, no connectors
SP-11600NNNNXBBB	1x16 splitter, 900 micron, no connectors
SP-13200NNNNXBBB	1x32 splitter, 900 micron, no connectors
SP-16400NNNNXBBB	1x64 splitter, 900 micron, no connectors
SP-1AA00NNNNXBBB	1x128 splitter, 900 micron, no connectors
SP-20200NNNNXBBB	2x2 splitter, 900 micron, no connectors
SP-20400NNNNXBBB	2x4 splitter, 900 micron, no connectors
SP-20800NNNNXBBB	2x8 splitter, 900 micron, no connectors
SP-21600NNNNXBBB	2x16 splitter, 900 micron, no connectors
SP-23200NNNNXBBB	2x32 splitter, 900 micron, no connectors
SP-26400NNNNXBBB	2x64 splitter, 900 micron, no connectors

## PLC Splitter Ordering Information. INPUT and OUTPUT with connectors.

MID	Description
SP-10200L2L2CAAA	1x2 splitter, 250 micron, LC/APC
SP-10400L2L2CAAA	1x4 splitter, 250 micron, LC/APC
SP-10800L2L2CAAA	1x8 splitter, 250 micron, LC/APC
SP-11600L2L2CAAA	1x16 splitter, 250 micron, LC/APC
SP-13200L2L2CAAA	1x32 splitter, 250 micron, LC/APC
SP-10200L1L1CAAA	1x2 splitter, 250 micron, LC/UPC
SP-10400L1L1CAAA	1x4 splitter, 250 micron, LC/UPC
SP-10800L1L1CAAA	1x8 splitter, 250 micron, LC/UPC
SP-11600L1L1CAAA	1x16 splitter, 250 micron, LC/UPC
SP-13200L1L1CAAA	1x32 splitter, 250 micron, LC/UPC
SP-10200S2S2CAAA	1x2 splitter, 250 micron, SC/APC
SP-10400S2S2CAAA	1x4 splitter, 250 micron, SC/APC
SP-10800S2S2CAAA	1x8 splitter, 250 micron, SC/APC
SP-11600S2S2CAAA	1x16 splitter, 250 micron, SC/APC
SP-13200S2S2CAAA	1x32 splitter, 250 micron, SC/APC
SP-10200S1S1CAAA	1x2 splitter, 250 micron, SC/UPC
SP-10400S1S1CAAA	1x4 splitter, 250 micron, SC/UPC
SP-10800S1S1CAAA	1x8 splitter, 250 micron, SC/UPC
SP-11600S1S1CAAA	1x16 splitter, 250 micron, SC/UPC
SP-13200S1S1CAAA	1x32 splitter, 250 micron, SC/UPC

MID	Description
SP-10200L2L2CBAA	1x2 splitter, 900 micron, LC/APC
SP-10400L2L2CBAA	1x4 splitter, 900 micron, LC/APC
SP-10800L2L2CBAA	1x8 splitter, 900 micron, LC/APC
SP-11600L2L2CBAA	1x16 splitter, 900 micron, LC/APC
SP-13200L2L2CBAA	1x32 splitter, 900 micron, LC/APC
SP-10200L1L1CBAA	1x2 splitter, 900 micron, LC/UPC
SP-10400L1L1CBAA	1x4 splitter, 900 micron, LC/UPC
SP-10800L1L1CBAA	1x8 splitter, 900 micron, LC/UPC
SP-11600L1L1CBAA	1x16 splitter, 900 micron, LC/UPC
SP-13200L1L1CBAA	1x32 splitter, 900 micron, LC/UPC
SP-10200S2S2CBAA	1x2 splitter, 900 micron, SC/APC
SP-10400S2S2CBAA	1x4 splitter, 900 micron, SC/APC
SP-10800S2S2CBAA	1x8 splitter, 900 micron, SC/APC
SP-11600S2S2CBAA	1x16 splitter, 900 micron, SC/APC
SP-13200S2S2CBAA	1x32 splitter, 900 micron, SC/APC
SP-10200S1S1CBAA	1x2 splitter, 900 micron, SC/UPC
SP-10400S1S1CBAA	1x4 splitter, 900 micron, SC/UPC
SP-10800S1S1CBAA	1x8 splitter, 900 micron, SC/UPC
SP-11600S1S1CBAA	1x16 splitter, 900 micron, SC/UPC
SP-13200S1S1CBAA	1x32 splitter, 900 micron, SC/UPC

# FBT Coupler Optical Performance

Split Ratio	1x2: 50/50	1x2: 55/45	1x2: 60/40	1x2: 70/30	1x2: 80/20	1x2: 85/15	1x2: 90/10	1x2: 93/07	1x2: 95/05	1x2: 97/03	1x2: 98/02	1x2: 99/01	2x2: 50/50
MAX Housing Dimension: Length x Diameter (mm)	55 x 3.2												
Input Fiber Length (m)	2.5 ± 0.1												
Output Fiber Length (m)	2.5 ± 0.1												
Bandpass (nm)	1260-1360 & 1420 - 1625												
Insertion Loss MAX Primary Output (dB)	4.1	3.2	2.7	2.0	1.3	1.0	0.8	0.6	0.5	0.4	0.4	0.4	4.1
Insertion Loss MAX Secondary Output (dB)	4.1	4.1	4.7	6.0	7.8	9.2	11.2	13.5	14.4	17.9	18.0	21.0	4.1
Uniformity MAX (dB)	1.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.1
RL MIN (dB)	55	55	55	55	55	55	55	55	55	55	55	55	55
PDL MAX (dB)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Directivity MIN (dB)	55	55	55	55	55	55	55	55	55	55	55	55	55

No Connectors. 250µm and 900µm options.

## FBT Coupler Ordering Information

MID	Description
SF-10201NNNNXABB	1x2 FBT, 99/01 Split Ratio, 250 micron, no connectors
SF-10202NNNNXABB	1x2 FBT, 98/02 Split Ratio, 250 micron, no connectors
SF-10203NNNNXABB	1x2 FBT, 97/03 Split Ratio, 250 micron, no connectors
SF-10205NNNNXABB	1x2 FBT, 95/05 Split Ratio, 250 micron, no connectors
SF-10207NNNNXABB	1x2 FBT, 93/07 Split Ratio, 250 micron, no connectors
SF-10210NNNNXABB	1x2 FBT, 90/10 Split Ratio, 250 micron, no connectors
SF-10215NNNNXABB	1x2 FBT, 85/15 Split Ratio, 250 micron, no connectors
SF-10220NNNNXABB	1x2 FBT, 80/20 Split Ratio, 250 micron, no connectors
SF-10230NNNNXABB	1x2 FBT, 70/30 Split Ratio, 250 micron, no connectors
SF-10240NNNNXABB	1x2 FBT, 60/40 Split Ratio, 250 micron, no connectors
SF-10245NNNNXABB	1x2 FBT, 55/45 Split Ratio, 250 micron, no connectors
SF-10200NNNNXABB	1x2 FBT, 50/50 Split Ratio, 250 micron, no connectors
SF-20200NNNNXABB	2x2 FBT, 50/50 Split Ratio, 250 micron, no connectors

MID	Description
SF-10201NNNNXBBB	1x2 FBT, 99/01 Split Ratio, 900 micron, no connectors
SF-10202NNNNXBBB	1x2 FBT, 98/02 Split Ratio, 900 micron, no connectors
SF-10203NNNNXBBB	1x2 FBT, 97/03 Split Ratio, 900 micron, no connectors
SF-10205NNNNXBBB	1x2 FBT, 95/05 Split Ratio, 900 micron, no connectors
SF-10207NNNNXBBB	1x2 FBT, 93/07 Split Ratio, 900 micron, no connectors
SF-10210NNNNXBBB	1x2 FBT, 90/10 Split Ratio, 900 micron, no connectors
SF-10215NNNNXBBB	1x2 FBT, 85/15 Split Ratio, 900 micron, no connectors
SF-10220NNNNXBBB	1x2 FBT, 80/20 Split Ratio, 900 micron, no connectors
SF-10230NNNNXBBB	1x2 FBT, 70/30 Split Ratio, 900 micron, no connectors
SF-10240NNNNXBBB	1x2 FBT, 60/40 Split Ratio, 900 micron, no connectors
SF-10245NNNNXBBB	1x2 FBT, 55/45 Split Ratio, 900 micron, no connectors
SF-10200NNNNXBBB	1x2 FBT, 50/50 Split Ratio, 900 micron, no connectors
SF-20200NNNNXBBB	2x2 FBT, 50/50 Split Ratio, 900 micron, no connectors

CommScope pushes the boundaries of communications technology with game-changing ideas and ground-breaking discoveries that spark profound human achievement.

We collaborate with our customers and partners to design, create and build the world's most advanced networks. It is our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at [commscope.com](https://commscope.com)

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