Optical Splitters for FTTx & RFoG Solutions

- **Full Line of Optical Passives and Accessories**
- **Cost Effective Solution**
- **High Port Isolation**
- **Low Insertion Loss Flexibility for Customization**
- **Wide Operating Wavelength: From 1260nm to 1650nm**
- **Wide Operating Temperature: From -40°C to 85°C**
- **High Reliability and Stability**

ACT offers a complete line of Optical Splitters, which feature low insertion loss, high isolation and excellent wavelength stability. The optical splitters come as different form factor packages, 1RU 19" rack-mount chassis, standard LGX modules or flat box assemblies.

The Planar lightwave circuit (PLC) splitter is a type of optical power management device that is fabricated using silica optical waveguide technology. It features small size, high reliability, wide operating wavelength range and good channel-to-channel uniformity, and is widely used in PON networks to realize optical signal power splitting.

ACT developed the complete series of 1xN and 2xN splitter products that are tailored for specific applications suc as HFC, FTTx (P2P, P2MP), RFOG (Radio Frequency over Glass) applications, permitting DOCSIS and HFC to operate over a EPON/GPON compliant Passive Optical Network (PON) as commonly deployed for Fibre to the Home (FTTH) developments solution in high density FTTX networks to bring the video services to business and home premises.

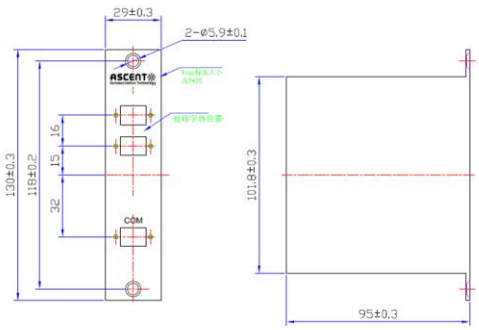
Optical Splitters Specifications 1x2

ACT Optical Passives Optical Splitters (AOS)

Optical Specifications	
Operating Wavelength	1260 nm to 1650 nm
Configuration	1x2
Insertion Loss	Varies. See below chart
Uniformity	≤0.6 dB
Directivity	≥50 dB
Polarization Dependent Loss	≤0.1 dB
Return Loss	≥55 dB
Connectors	SC/APC, SC/PC, LC/APC, LC/PC
Fiber Types	900 µm, 2 mm, or 3 mm
General Specifications	
Operating Temperature	-20 °C to +70 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	5 % to 95 % RH (non-condensing)
Dimensions (W × D × H)	LGX, Splice Tube or Flat Box (ABS): 100 mm × 80 mm × 10.5 mm
Weight	Weight varies depending on model.

Split Ratio	**Typical Insertion Loss (dB)**
50/50	3.6/3.6
55/45	3.1/4.3
60/40	2.8/4.8
65/35	2.3/5.3
70/30	2.1/6.1
75/25	1.6/7.2
80/20	1.3/8.0
85/15	1.2/9.6
90/10	0.9/11.3
95/05	0.6/15

Note: Contact ACT for different packaging options. Losses excluding connector loss (a pair of connector loss max: 0.2 dB)



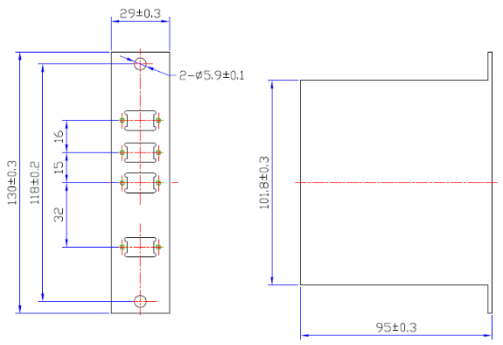
Optical Splitter Specifications 1x3

ACT Optical Passives Optical Splitters (AOS)

Optical Specifications	
Operating Wavelength	1260 nm to 1650 nm
Configuration	1x3
Insertion Loss	Varies. See below chart
Uniformity	≤0.6 dB
Directivity	≥50 dB
Polarization Dependent Loss	≤0.2 dB
Return Loss	≥55 dB
Connectors	SC/APC, SC/PC, LC/APC, LC/PC
Fiber Types	900 µm, 2 mm, or 3 mm
General Specifications	
Operating Temperature	-20 °C to +70 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	5 % to 95 % RH (non-condensing)
Dimensions (W × D × H)	LGX, Splice Tube, or Flat Box (ABS): 100 mm × 80 mm × 10.5 mm (≤8 output ports), 140 mm × 115 mm × 18 mm (>8 output ports)
Weight	Weight varies depending on model

Split Ratio	Typical Insertion Loss (dB)
80/10/10	1.3/11.4/11.4
70/15/15	2/9.7/9.7
60/20/20	2.8/8/8
50/25/25	3.7/7.1/7.1
40/30/30	4.3/5.6/5.6
33/33/33	5.2/5.2/5.2
30/35/35	5.6/4.9/4.9

Note: Contact ACT for different packaging options. Losses excluding connector loss (a pair of connector loss max: 0.2 dB)



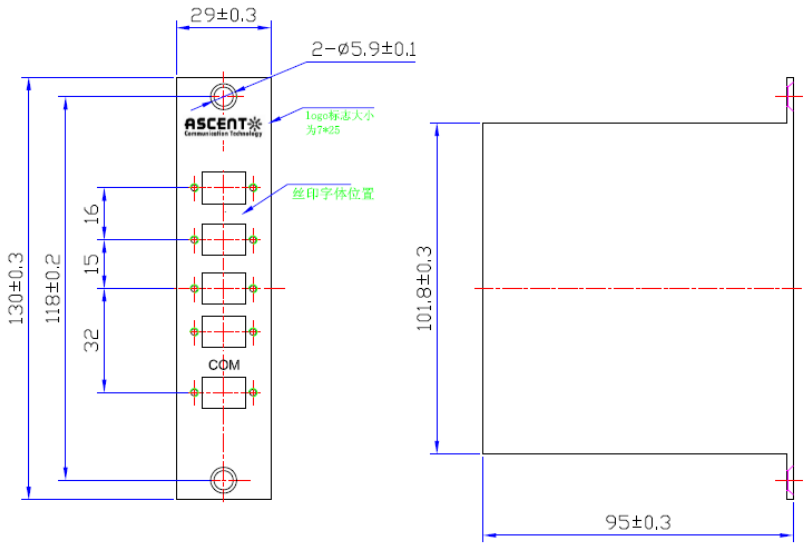
Optical Splitters Specifications 1x4, 1x5, 1x6, 1x8

ACT Optical Passives Optical Splitters (AOS)

Optical Specifications	
Operating Wavelength	1260 nm to 1650 nm
Configuration	1x4, 1x5, 1x6
Insertion Loss	Varies. See below chart
Uniformity	≤0.6 (1x4) ≤0.8 (1x5, 1x6) ≤1.8 (1x8)
Directivity	≥50 dB
Polarization Dependent Loss	≤0.3 dB
Return Loss	≥ 55 dB
Connectors	SC/APC, SC/PC, LC/APC, LC/PC
Fiber Types	900 µm, 2 mm, or 3 mm
General Specifications	
Operating Temperature	-20 °C to +70 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	5 % to 95 % RH (non-condensing)
Dimensions (W × D × H)	LGX, Splice Tube or Flat Box (ABS): 100 mm × 80 mm × 10.5 mm
Weight	Weight varies depending on model.

Split ratio	**Typical Insertion Loss (dB)**
25/25/25/25	6.8
1x5 Balanced	7.8
1x6 Balanced	8.7
1x8 Balanced	10.2

Note: Contact ACT for different packaging options. Losses excluding connector Loss (a pair of connector loss max: 0.2 dB)



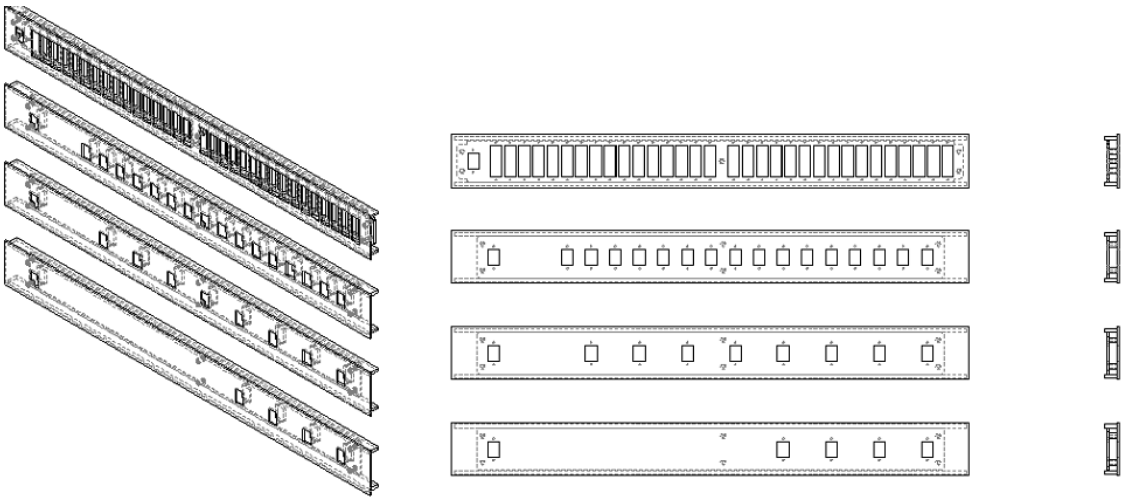
Optical Splitters Specifications 1x16, 1x32, 1x64

ACT Optical Passives Optical Splitters (AOS)

Optical Specifications	
Operating Wavelength	1260 nm to 1650 nm
Configuration	1x16, 1x32, 1x64
Insertion Loss	Varies. See below chart
Uniformity	≤1.2 dB (1x16); ≤1.5 dB (1x32); ≤2.5 dB (1x64)
Directivity	≥55 dB
Polarization Dependent Loss	≤0.4 dB
Return Loss	≥ 55 dB (Bare Fiber or APC)
Connectors	SC/APC, SC/PC, LC/APC, LC/PC
Fiber Types	900 µm, 2 mm, or 3 mm
General Specifications	
Operating Temperature	-20 °C to +70 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	5 % to 95 % RH (non-condensing)
Dimensions (W × D × H)	LGX, Flat Box, or splice fiber tray
Weight	Weight varies depending on model.

Split ratio	Typical Insertion Loss (dB)	Max. Insertion Loss (dB)
1x16 Balanced	13	13.5
1x32 Balanced	16	16.9
1x64Balanced	19.5	21.0

Note: Contact ACT for different packaging options. Losses excluding connector Loss (a pair of connector loss max: 0.2 dB)



Optical Splitters Specifications 2x2, 2x4, 2x8, 2x16, 2x32, 2x64

ACT Optical Passives Optical Splitters (AOS)

Item		**Description**					
Operating Wavelength		1260 nm to 1650 nm					
Configuration		2x2, 2x4, 2x8, 2x16, 2x32, 2x64					
Type		**2x2**	**2x4**	**2x8**	**2x16**	**2x32**	**2x64**
Insertion Loss (dB)	Typ.	4.0	7.0	10.5	13.5	16.5	20.5
	Max.	4.1	7.4	10.8	14.3	17.3	20.7
Uniformity (dB)	Typ.	0.6	0.8	1.0	1.5	2.0	2.0
	Max.	0.8	0.8	1.5	2.0	2.5	2.5
PDL (dB)	Typ.	0.1	0.1	0.1	0.2	0.2	0.2
	Max.	0.2	0.2	0.3	0.4	0.4	0.4
Wavelength	Typ.	0.10	0.10	0.10	0.30	0.40	0.70
Dependent Loss (dB)	Max.	0.20	0.30	0.40	0.60	0.80	1.00
Temperature	Typ.	0.30	0.30	0.30	0.40	0.40	0.40
Dependent Loss	Max.	0.50	0.50	0.50	0.50	0.50	0.50
PLC Splitter Bare Fiber (mm)		4x4x55	4x4x55	4x4x55	4x7x60	4x7x60	4x7x60
PLC Splitter Blockless (mm)		4x4x55	4x12x60	4x12x60	4x12x80	6x20x80	6x20x80
PLC Splitter Module (mm)		100x80x10	100x80x10	100x80x10	120x80x18	120x80x18	141x115x18
Directivity		55 dB min.					
Return Loss		55 dB (50) min.					
Operating Temperature		-40 °C +85 °C					
Storage Temperature		-40 °C to +85 °C					
Fiber Length		1 m or customized					
Fiber Type		G652D, G657A or other					
Connector Type		Customized					
PLC-splitter-rack-mountable		19” 1U 2U rack-mounted box, LGX box, ODF box					

Note: Contact ACT for different packaging options. Losses excluding connector loss (a pair of connector loss max: 0.2 dB)

Optical Shelf and Frame Specifications

ACT Optical Passive Shelf and Optical Passive Distribution Frame

- Standard 19" cabinet design for convenient and quick installation.
- Specially-structured front-back latch of the cases facilitates easier adjusting and suitable for different kind of frame installation.
- Fiber can be led in from both the left and the right sides with complete front operations.
- Each module has a reliable restricting and positioning mechanism to ensure correct operations.
- Patent design for protecting bare fiber fusing point.
- Convenient cable fixing device

Optical Shelf Specifications

Material	1.5 mm thick cold-rolled sheet
Capacity	Host up to 3 LGX modules (1RU), Host up to 14 Metal LGX modules (3RU), Host up to 16 Plastic LGX modules (3RU), Host up to 12 LGX modules (4RU)
Dimensions (W × H × D)	With mounting bracket 483 mm × 44 mm × 320 mm (1RU) With mounting bracket 483 mm × 133 mm × 305 mm (3RU) With mounting bracket 483 mm × 177 mm × 305 mm (4RU)
Model Number	AOP-LGX-CH-1RU, AOP-LGX-CH-3RU, AOP-LGX-CHP-3RU, AOP-LGX-CH-4RU

Optical Distribution Frame Specifications

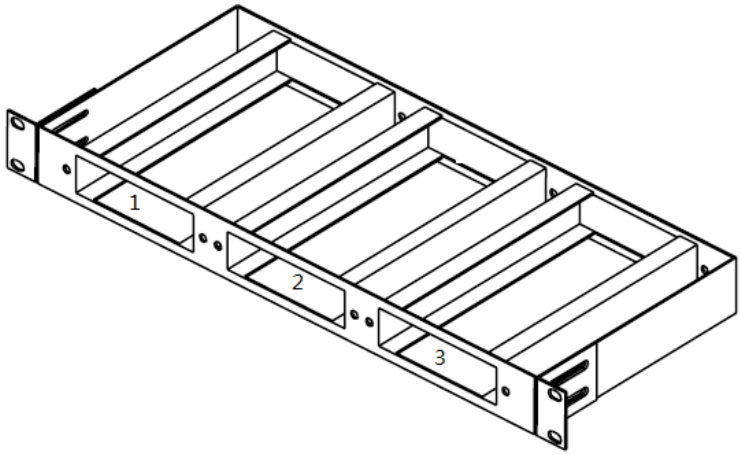
Material	1.5 mm thick cold-rolled sheet, 1 to 4RU
Insertion Loss	≤0.5 dB
Optical Connector	AS: SC/APC; US: SC/UPC; AF: FC/APC or UF: FC/UPC
Return Loss	PC ≥ 40 dB, UPC ≥ 50 dB, APC ≥ 60 dB
Model Number	AOP-ODF-DXX-YY (XX: 36, 48, 72, 96 Fiber, YY: Optical Connector)

General Specifications

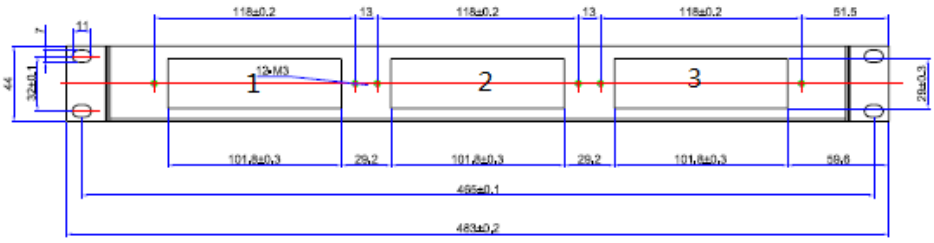
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	5 % to 95 % RH (non-condensing)
Weight	Varies by model type

Note: Contact ACT for different packaging options. 8° angle polished

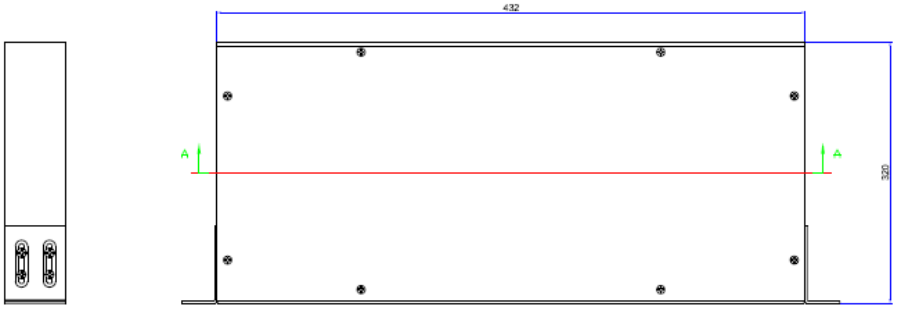
ACT Optical Passive Shelf 1RU (3 LGX slots) Mechanical Design Diagram:



Top View without Cover



Front View with Dimensions



Top and Side View

Ordering Information

AOS-S Optical Splitters (typical part numbers)

AOS-S-1-2-L-9XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 9XXXXXX, 50/50 SC/APC
AOS-S-1-2-L-0XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 0XXXXXX, 95/05, SC/APC
AOS-S-1-2-L-1XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 1XXXXXX, 90/10, SC/APC
AOS-S-1-2-L-2XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 2XXXXXX, 85/15, SC/APC
AOS-S-1-2-L-3XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 3XXXXXX, 80/20, SC/APC
AOS-S-1-2-L-4XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 4XXXXXX, 75/25, SC/APC
AOS-S-1-2-L-5XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 5XXXXXX, 70/30, SC/APC
AOS-S-1-2-L-6XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 6XXXXXX, 65/35, SC/APC
AOS-S-1-2-L-7XXXXXX-1	Optical Splitter, Standard 1x2, LGX Box, Coupling Ratio = 7XXXXXX, 60/40, SC/APC
AOS-S-1-3-L-6XXX9XX-1	Optical Splitter, Standard 1x3, LGX Box, Coupling Ratio = 6XXX9XX, 34/33/33, SC/APC
AOS-S-1-4-L-B000000-1	Optical Splitter LGX Box 1x4 even balanced SC/APC
AOS-S-1-5-L-B000000-1	Optical Splitter LGX Box 1x5 even balanced SC/APC
AOS-S-1-6-L-B000000-1	Optical Splitter LGX Box 1x6 even balanced SC/APC
AOS-S-1-08-R-B000000-1	Optical Splitter 1RU 1x8 Bare Fiber even balanced SC/APC
AOS-S-1-16-R-B000000-1	Optical Splitter 1RU Box 1x16 Bare Fiber even balanced SC/APC
AOS-S-1-32-R-B000000-1	Optical Splitter 1RU Box 1x32 Bare Fiber even balanced SC/APC
AOS-S-2-32-R-B000000-1	Optical Splitter 1RU Box 2x32 Bare Fiber even balanced SC/APC
AOS-S-1-64-R-B000000-7	Optical Splitter 1RU 1x64 Bare Fiber even balanced LC/APC
AOS-S-2-64-R-B000000-7	Optical Splitter 1RU 2x64 Bare Fiber even balanced LC/APC
AOP-LGX-CH-1RU	AOP Optical LGX Chassis 1RU, 19 inches wide, 3 standard LGX slots
AOP-LGX-CH-3RU	AOP Optical LGX Metal Chassis 3RU, 19 inches wide, 14 slots for Metal LGX modules
AOP-LGX-CHP-3RU	AOP Optical LGX Metal Chassis 3RU, 19 inches wide, 16 slots for ABS LGX modules
AOP-LGX-CH-4RU	AOP Optical LGX Chassis 4RU, 19 inches wide, 12 standard LGX slots, with fiber management tray

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