



# Optical Passives

## Optical Mux/Demuxes, Optical Splitters, Optical Switch, Optical Shelves, Sidecar Enclosures

### Wavelength Division Multiplexers (WDM) Specifications

Operating Wavelength (CWDM-Band)	1310 ±40 nm, 1460 – 1620 nm
Insertion Loss, maximum	1.2 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Relative Humidity, maximum	95% non-condensing

### Dense Wave Division Multiplexers (DWDM), 100 GHz Channel Spacing, 1x4 Specifications

Channel Spacing	100 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.11 nm
Insertion Loss, maximum	2.0 dB
Upgrade Port Insertion Loss , maximum	2.5 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

### Dense Wave Division Multiplexers (DWDM), 100 GHz Channel Spacing, 1x8 Specifications

Channel Spacing	100 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.11 nm
Insertion Loss, maximum	3.0 dB
Upgrade Port Insertion Loss , maximum	3.5 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

# Technical Specification

## Optical Passive, Splitter, and Switch Technical Specifications

---

### Dense Wave Division Multiplexers (DWDM), 100 GHz Channel Spacing, 1x16 Specifications

---

Channel Spacing	100 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.11 nm
Insertion Loss, maximum	4.0 dB
Upgrade Port Insertion Loss , maximum	4.0 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Dense Wave Division Multiplexers (DWDM), 100 GHz Channel Spacing, 1x40 Specifications

---

Channel Spacing	100 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.11 nm
Insertion Loss, maximum	6.0 dB
Upgrade Port Insertion Loss , maximum	6.0 dB
Isolation @ Adjacent Channel, minimum	25 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Coarse Wave Division Multiplexers (CWDM), 20 nm Channel Spacing, 1x4 Specifications

---

Channel Spacing	20 nm
Operating Wavelength Range	1271-1611 nm
Pass Band @ 0.5 dB, minimum	±7.5 nm
Insertion Loss, maximum	1.6 dB
Upgrade Port Insertion Loss , maximum	1.8 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

## Optical Passive, Splitter, and Switch Technical Specifications

---

### Coarse Wave Division Multiplexers (CWDM), 20 nm Channel Spacing, 1x8 Specifications

---

Channel Spacing	20 nm
Operating Wavelength Range	1271-1611 nm
Pass Band @ 0.5 dB, minimum	±7.5 nm
Insertion Loss, maximum	2.5 dB
Upgrade Port Insertion Loss , maximum	3.0 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Coarse Wave Division Multiplexers (CWDM), 20 nm Channel Spacing, 1x10 Specifications

---

Channel Spacing	20 nm
Operating Wavelength Range	1271-1611 nm
Pass Band @ 0.5 dB, minimum	±7.5 nm
Insertion Loss, maximum	3.0 dB
Upgrade Port Insertion Loss , maximum	3.5 dB
Isolation @ Adjacent Channel, minimum	30 dB
Isolation @ Non-adjacent Channel, minimum	40 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Coarse Wave Division Multiplexers (CWDM), Three Drop Optical Add-Drop Multiplexers (OADM) Specifications

---

Channel Spacing	20 nm
Operating Wavelength Range	1260-1620 nm
Pass Band @ 0.5 dB, minimum	±7.5 nm
Insertion Loss, Pass, maximum	1.2 dB
Insertion Loss, Reflect, maximum	1.0 dB
Directivity, minimum	50 dB
Optical Return Loss, minimum	45 dB
Isolation Pass Channel, minimum	30 dB
Isolation Reflect Channel, minimum	12 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Optical Power, maximum	300 mW
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

## Optical Passive, Splitter, and Switch Technical Specifications

---

### Optical Add-Drop Multiplexers (OADM) , Split Broadcast Applications Specifications

---

Channel Bandwidth	3 nm
Operating Wavelength Range	1260-1620 nm
Pass Wavelength	1545 nm
Pass Band @ 0.5 dB, minimum	±1.5 nm
Insertion Loss, Pass, maximum	1.2 dB
Insertion Loss, Reflect, maximum	1.0 dB
Directivity, minimum	50 dB
Isolation (below 1542 nm and above 1548 nm)	30 dB
Isolation (Pass Channel to Reflect Channel), minimum	12 dB
Optical Return Loss, minimum	45 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Optical Power, maximum	300 mW
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Dense Wave Division Multiplexers (DWDM), Three Port Optical Add-Drop Multiplexers (OADM), 100 GHz Channel Spacing Specifications

---

Channel Spacing	100 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.11 nm
Insertion Loss, Pass, maximum	1.2 dB
Insertion Loss, Reflect, maximum	1.0 dB
Directivity, minimum	50 dB
Optical Return Loss, minimum	45 dB
Isolation Pass Channel, minimum	30 dB
Isolation Reflect Channel, minimum	12 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Dense Wave Division Multiplexers (DWDM), Three Port Optical Add-Drop Multiplexers (OADM), 200 GHz Channel Spacing Specifications

---

Channel Spacing	200 GHz
Operating Wavelength Range	1528-1563 nm
Pass Band @ 0.5 dB, minimum	±0.25 nm
Insertion Loss, Pass, maximum	1.2 dB
Insertion Loss, Reflect, maximum	1.0 dB
Directivity, minimum	50 dB
Optical Return Loss, minimum	45 dB
Isolation Pass Channel, minimum	30 dB
Isolation Reflect Channel, minimum	12 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in),, LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

# Optical Passive, Splitter, and Switch Technical Specifications

## CHP CORWave™ Specifications

Operating Wavelength Range	1260 to 1380 nm and 1400 to 1620 nm
Channel Options	CORWave 4x4: MW01-1291, MW02-1293, MW03-1295, MW04-1290 CORWave 2x4 and 2x2: MW01-1291, MW02-1293 CWDM return paths: 1471, 1491, 1591, 1611 nm
Channel Wavelength Range	$\lambda$ CORWave $\pm 0.22$ nm $\lambda$ CWDM $\pm 7.5$ nm
Upgrade Port Wavelength Range	At non-selected CWDM and CORWave channels within operating range
CHP CORWave Channel Insertion Loss (per end)	2.0 dB typical (2.5 dB maximum) for 4x4 configurations 1.5 dB typical (2.0 dB maximum) for 2x4 and 2x2 configurations
CWDM Channel Insertion Loss (per end)	2.0 dB typical (2.5 dB maximum) for 4x4 and 2x4 configurations 1.5 dB typical (2.0 dB maximum) for 2x2 configurations
Upgrade Port Insertion Loss	3.0 dB for 2x4 and 4x4, 2.5 dB for 2x2
Upgrade Port Isolation	>15 dB
Insertion Loss Change Over Operating Temperature (all ports)	< $\pm 0.5$ dB
Directivity	45 dB minimum
Optical Return Loss, minimum	>45 dB
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Optical Power, maximum	300 mW
Dimensions	Contact ARRIS for dimensions

## CHP CORWave™ II Specifications

### Channel Optical Performance

Channel Spacing	100 GHz		
ITU Channel Plan (Central Wavelength)	Insertion Loss*	Uniformity	Upgrade Port
2 forward-only (CHP CORWave II MW01, MW02)	1.5 dB typ., 1.8 dB max.	0.5 dB max.	2.5 dB max.
4 forward-only (CHP CORWave II MW01 to MW04)	1.7 dB typ., 2.0 dB max.	0.5 dB max.	2.5 dB max.
8 forward-only (CHP CORWave II MW01 to MW08)	2.7 dB typ., 3.0 dB max.	1.0 dB max.	3.5 dB max.
16 forward-only (CHP CORWave II MW01 to MW16)	3.5 dB typ., 4.0 dB max.	2.0 dB max.	4.0 dB max.
2 x 2 forward & return (CORWave II MW01, MW02; DWDM digital return MWR01, MWR02)	1.7 dB typ., 2.0 dB max.	0.5 dB max.	3.0 dB max.
4 x 4 forward & return (CHP CORWave II MW01 to MW04; DWDM digital return MWR01 to MWR04)	2.7 dB typ., 3.0 dB max.	1.0 dB max.	3.5 dB max.
8 x 8 forward & return (MW01 to MW08; DWDM digital return MWR01 to MWR08)	3.5 dB typ., 4.0 dB max.	2.0 dB max.	4.0 dB max.
Passband @ 0.5dB	ITU $\pm 0.11$ nm		
Test Points Insertion Loss	19 dB min., 21 dB max.		
Isolation	Adjacent Channel: 30 dB min.; Non-adjacent Channel: 40 dB min.		
Ripple	Passband: 0.5 dB max.		

### General Optical Performance

Directivity	50 dB, min.
Return Loss	45 dB, min.
Power Handling	300 mW, min.

### Temperature Range

Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
-----------------------------------	----------------------------

### Mechanical

Fiber Type	SMF-28e with 900um tight buffer
Connector Type	SC/APC**
Dimensions	Contact ARRIS for dimensions

\* Loss per channel; does not include loss due to connectors.

\*\* Contact your ARRIS sales representative for other connector options.

# Optical Passive, Splitter, and Switch Technical Specifications

---

## Optical Splitters Specifications

---

Operating Wavelength Range (Standard Passband)	1310 nm $\pm$ 40 nm, 1550 nm $\pm$ 40 nm		
Operating Wavelength Range (CWDM Band)	1260 to 1620 nm (excluding water peak)		
Insertion Loss (without connectors)		Maximum (dB)	Typical (dB)
	1 x 2	3.6	3.4
	1 x 4	7.6	7.1
	1 x 8	10.7	10.1
	1 x 16	14.0	13.3
	1 x 32	16.9	16.2
Insertion Loss Temperature Coefficient	0.002 dB/°C maximum		
PDL	0.15 dB maximum (1 x 2)		
	0.20 dB maximum (1 x 4, 1 x 8, 1 x 16)		
	0.30 dB (1 x 32)		
Directivity	>50 dB		
Connector Loss	0.2 dB typical, 0.4 dB maximum		
Optical Return Loss	>55 dB		
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)		
Optical Power, maximum	300 mW		

---

## Optical Self-Healing 1x2 Switch (OSW1X2L1) (for Optical Passive LGX Chassis Shelf Installations) Specifications

---

### Electrical

Optical Insertion Loss	1.5 dB typical, 2.0 dB maximum
Optical Wavelength	1290 to 1330 nm, 1530 to 1570 nm
Optical Input Power Range	-20 to 20 dBm
Polarization Sensitivity	<0.2 dB
Optical Return Loss	>55 dB
Optical Threshold Range (both inputs)	1 <sup>st</sup> range: 0 to -10 dBm, 2 <sup>nd</sup> range: -10 to -20 dB
Switchover Time Upon Fault	10 ms typical, 15 ms maximum
Switch Restore Time When Port A Is Primary	10 sec
Voltage	12 VDC
Current	800 mA

### Mechanical

Physical Dimensions (H x W x D)	4.18 x 1.08 x 6.45 in (12.2 x 2.7 x 16.4 cm)
Faceplate Dimensions (H x W)	5.1 x 1.13 in (13.0 x 2.9 cm)
Optical Connectors	SC/APC

### Environmental

Operating Temperature Range	0° to 50° C (32° to 122° F)
Storage Temperature Range	-20° to 80° C (-4° to 176° F)
Humidity	0 to 95% non-condensing (operating and storage)

---

## Optical Passive, Splitter, and Switch Technical Specifications

---

### Optical Shelf (OS1000 – Standard Optical Passive Shelf for LGX modules; 4 RU, 12 slots) Specifications

---

Dimensions, without mounting bracket (W x H x D)	43.2 x 17.7 x 30.5 cm (17.0 x 6.97 x 12.0 in)
Dimensions, with mounting bracket (W x H x D)	48.3 x 17.7 x 30.5 cm (19.0 x 6.97 x 12.0 in)
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Optical Shelf (OS0500 – High-density optical passive shelf for LGX modules; 3 RU, 14 slots) Specifications

---

Dimensions (W x H x D)	48.3 x 13.2 x 11.4 cm (19.0 x 5.2 x 4.5 in)
Operating and Storage Temperature	-40 to 85°C (-40 to 185°F)
Dimensions	LGX single wide: 15.8 x 12.9 x 2.9 cm (6.2 x 5.1 x 1.1 in), LGX double wide: 15.8 x 12.9 x 5.8 cm (6.2 x 5.1 x 2.3 in), LGX triple wide: 15.8 x 12.9 x 8.7 cm (6.2 x 5.1 x 3.4 in) Non-LGX: contact ARRIS for dimensions

---

### Gel-Sealed Fiber Optic Splice Closure Sidecar Specifications

---

#### Mechanical

Physical Dimensions (diameter x length)	9.8 x 24.0 in (24.9 x 61.0 cm)
Weight	15 lb (6.8 kg)
Trays per Closure	6
Sealing System	
Closure Dome-to-Base or Top-to-Bottom	“O” Ring/ Clamp
Termination Hardware	6 cable attachments included
Ground Feed-Through Lugs	3
Slack Basket Type	Standard Size

---

#### Electrical

Channels	CWDM (CTBH-C-x-x), single and two fiber solutions DWDM (CTBH-D-x-x) single and two fiber solutions
----------	---

---

Specifications are subject to change without notice.

The capabilities, system requirements and/or compatibility with third-party products described herein are subject to change without notice. ARRIS, the ARRIS logo, Auspice®, BigBand Networks®, BigBand Networks and Design®, BME®, BME 50®, BMR®, BMR100®, BMR1200®, C3™, C4®, C4c™, C-COR®, CHP Max5000®, ConvergeMedia™, Cornerstone®, CORWave™, CXM™, D5®, Digicon®, E6000™, ENCORE®, EventAssure™, Flex Max®, FTTMax™, HEMI®, MONARCH®, MOXI®, n5®, nABLE®, nVision™, OpsLogic®, OpsLogic® Service Visibility Portal™, Opti Max™, PLEXIS®, PowerSense™, QUARTET®, Rateshaping®, Regal®, ServAssure™, Service Visibility Portal™, TeleWire Supply®, TLX®, Touchstone®, Trans Max™, VIP™, VSM™, and WorkAssure™ are all trademarks of ARRIS Group, Inc. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and the names of their products. ARRIS disclaims proprietary interest in the marks and names of others. © Copyright 2012 ARRIS Group, Inc. All rights reserved. Reproduction in any manner whatsoever without the express written permission of ARRIS Group, Inc. is strictly forbidden. For more information, contact ARRIS.



www.arrisi.com