

# Optical Passives (OSP)

## OP51B4H

### Bidirectional Mux/Demux Module for BK Fiber Node Platforms

## FEATURES

- Bidirectional 4-channel forward path optical demux and 4-channel return path optical mux in a single slot 'BK' plug-in module
- Single COM port supports both forward and return path transmission of analog and digital signals on one optical fiber
- Mux: Combines 4 CWDM return path channels (1511, 1571, 1591, and 1611 nm)
- Demux: Separates 4 DWDM or LcWDM forward channels
- Operating temperature range  $-40^{\circ}$  to  $+85^{\circ}\text{C}$
- High optical isolation to minimize crosstalk
- Low polarization dependent loss (PDL)
- Available with SC/APC or E2000 optical connectors
- Epoxy-free on optical path



## PRODUCT OVERVIEW

ARRIS's OP51B4H series bidirectional 4-channel CWDM multiplexer and 4-channel DWDM or LcWDM demultiplexer is a single fiber, single slot, plug-in module for BK Fiber Node platforms, and is a component of ARRIS's integrated digital transport system.

The OP51B4H is intended to support network architectures where a single fiber is deployed between the headend and the node to support both downstream and upstream signal traffic. The optical multiplexer portion is designed to combine or add 4 return path CWDM wavelengths (1511, 1571, 1591, and 1611 nm) at the node. The optical demultiplexer portion is designed to separate or drop 4 forward path DWDM ITU-grid or LcWDM wavelengths.

## SPECIFICATIONS

Characteristics	Specification	
<b>Physical</b>		
Dimensions	4.0" L x 9.9" H x 1.6" W (10.0 cm x 25.0 cm x 4.0 cm)	
Weight	2.0 lbs (0.9 kg)	
<b>Environmental</b>		
Operating Temperature Range	-40° to +85°C (-40° to +185°F)	
Storage Temperature Range	-40° to +85°C (-40° to +185°F)	
Humidity	5% to 95% non-condensing	
<b>Optical</b>		
Return loss (dB), min	45	
Power handling, max (any channel port) (dBm), max	21.8	
Power handling, max (COM port) (dBm), max	24.8	
	<b>OP51B4H-CF1</b>	<b>OP51B4H-KK</b>
Downstream Demux output channels	DWDM ITU Channels 20, 21, 24, and 29	LcWDM Channels KK, LL, MM, NN
Upstream CWDM Mux input center wavelengths (nm)	1511, 1571, 1591, and 1611	1511, 1571, 1591, and 1611
Insertion losses - COM-to-Downstream Demux Output <sup>1</sup> (dB), max	1.8	1.6
Insertion loss - Upstream Mux Input-to-COM <sup>1</sup> (dB), max	2.2	2.2
Insertion losses – Paired, for either downstream or upstream <sup>1</sup> (dB), max	2.8	2.6
Polarization-dependent loss (dB), max	0.2	0.1
Downstream filters' passband (nm) (around the center wavelength), min	± 0.125 @ -0.5 dBc points	± 0.125 @ -0.2 dBc points
Upstream filters' passband (nm) (around the center wavelength), min	± 6.5 @ -0.3 dBc points	± 6.5 @ -0.3 dBc points
Insertion loss variation among channels <sup>1</sup> (dB), max		
Module	0.8	0.8
Paired <sup>2</sup>	0.6	0.5
Directivity, between any CWDM upstream input port and any downstream output port (dB), min	55	55
Isolation - Adjacent downstream channels (dB), min	30	25
Isolation - Non-adjacent downstream channels (dB), min	45	45
<b>Optical Interfaces</b>		
Optical connectors	SC/APC or E2000	
COM port	A single combined output/input port for CWDM Mux/DWDM or LcWDM Demux	
Upstream ports	4 CWDM Mux inputs	
Downstream ports	4 DWDM or LcWDM Demux outputs	

### NOTES:

- Including connectors
- Paired insertion loss when combined with 4-channel upstream CWDM demux module or 4-channel downstream DWDM or LcWDM mux module

**ORDERING INFORMATION**

Part Number	Description
OP51B4H-CF1-00-1-zz	zz = AS (SC/APC connectors); AE (E2000 connectors)
OP51B4H-KK-00-1-zz	zz = AS (SC/APC connectors); AE (E2000 connectors)

**RELATED PRODUCTS**

Optical Transmitters	Optical Passives
Digital Return	Optical Patch Cords
Optical Nodes	Installation Services

## Customer Care

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

**Note:** Specifications are subject to change without notice.

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