

# Optical Passives (OSP)

## DP95Dxx

4, 8, 12, 16, 20, and 40-channel OSP DWDM Demuxes

### FEATURES

- 4, 8, 12, 16, 20, and 40 channel optical de-multiplexer cassettes that are also suitable for use as outdoor multiplexers since each device is bidirectional
- OSP de-multiplexer companions to ARRIS DP35M-Series ISP LGX DWDM mux modules
- Temperature hardened (-40° to +85°C) compact field enclosures for OSP outside plant mounting in existing splice trays
- 100 GHz DWDM ITU channel spacing (ITU-T G694.1)
- EXP express and UPG upgrade ports (available on some model types)
- Separate -20 dB TP test ports with SC/APC connectors for Tx and Rx signal paths
- LC/APC, LC/UPC, SC/APC or no-connector options for all other optical ports



### PRODUCT OVERVIEW

ARRIS's DP95D-Series DWDM optical de-multiplexer cassettes are intended for applications in non-controlled outdoor environments. They are typically mated with compatible headend/hub-based DP35M-Series ISP LGX DWDM multiplexer modules. These products are also suitable for use as outdoor multiplexers since each device is bidirectional.

The DP95D-Series is designed to de-multiplex 4, 8, 12, 16, 20, or 40 DWDM wavelengths with 100 GHz frequency spacing on the DWDM ITU Grid (ITU-T G.694.1). Some model types also have an EXP express port (for insertion of other wavelengths outside the C-band), a UPG upgrade port (for cascading other DWDM wavelengths), and separate -20 dB TP line monitoring taps (for Tx and Rx signal paths).

These compact, ruggedized, anodized aluminum cassettes have been designed for use in an outside plant environment, for mounting into existing splice trays like the Tyco FOSC-series. All pigtail fibers are color-coded and individually labeled to ensure proper installation and wavelength management.

## SPECIFICATIONS

Characteristics	Specification		
<b>Physical</b>			
Dimensions	<b>xx = channels</b>	<b>s = Cassette case</b>	<b>Dimensions (cm)</b>
	xx = 4, 8	s = M-case	8.9 L x 4.1 W x 0.9 H
	xx = 4	s = S-case	8 L x 5.1 W x 0.9 H
	xx = 8, 12	s = F-case	9.6 L x 7.8 W x 0.8 H
	xx = 16, 20	s = G-case	9.6 L x 7.8 W x 1.3 H
	xx = 40	s = H-case	9.6 L x 7.8 W x 1.6 H
Weight	0.8 lbs (0.36 kg)		
<b>Environmental</b>			
Operating Temperature Range (outdoor)	-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 Interface</b>			
Optical ports	xx = # of DWDM ITU channel output ports (See Table 2) i = ITU channel group dropped (See Table 2) COM: Input from fiber network EXP: Express port to cascade wavelengths outside DWDM ITU 14-70 <sup>1</sup> UPG: Upgrade port to cascade DWDM channels from another DWDM demux <sup>1</sup> TP-Tx: Unidirectional -20 dB tap off COM port <sup>1</sup> TP-Rx: Unidirectional -20 dB tap off COM port <sup>1</sup>		
Optical connector on Test Ports	SC/APC (with 0.75-meter of 900 micron fiber pigtails) on TP-Tx and TP-Rx		
All other ports' connector options	AL: LC/APC (with 0.75-meter of 900-µm fiber pigtails) UL: LC/UPC (with 0.75-meter of 900-µm fiber pigtails) AS: SC/APC (with 0.75-meter of 900-µm fiber pigtails) 00: NO connectors (with 1.5-meter of 900-µm fiber pigtails) (See the Ordering Information section for connector options available for each part number.)		
Fiber pigtail labels	COM fiber: RED labels All other fibers: YELLOW labels		
Fiber pigtail colors	See Table 4 for xx = 4, 8, 20, 40 ITU channels See Table 3 for xx = 12, 16 ITU channels		

## SPECIFICATIONS CONTINUED

Characteristics	Specification
<b>Optical</b>	
Channel Spacing	100 GHz grid (ITU-T G.694.1)
Channel Passband @ -0.5 dBc points, min	$\pm 0.125$ nm ( $= \pm 15.6$ GHz) around center wavelength
	<b>DP95Dxx50iB2S</b> <span style="float: right;"><b>DP95Dxx50iA2R</b></span>
Channel passband @ -3 dBc points, min	$\pm 0.22$ nm ( $= \pm 27.5$ GHz) around center wavelength <span style="float: right;"><math>\pm 0.28</math> nm (<math>= \pm 35</math> GHz) around center wavelength</span>
UPG and EXP ports passbands	COM to UPG: 1527.22 – 1566.31 nm (ITU channels 14-63) COM to EXP: 1260-1520 nm and 1570-1635 nm
Insertion Loss, max (including connectors)	COM to CHANNEL: See Table 1. Paired: See Table 1. COM to UPG: See Table 1. COM to EXP: 3 dB COM to TP-Tx: 20.4 COM to TP-Rx: 20.4
Module Uniformity, max	2 dB
Paired Uniformity, max	1 dB
Ripple within passband, max	0.5 dB
Isolation, min	
CHANNEL-to-CHANNEL, adjacent channels	30 dB
CHANNEL-to-CHANNEL, non-adjacent channels	45 dB
EXP-to-CHANNEL	12 dB
Directivity, min	
Between any two CHANNEL ports	50 dB
Between UPG port and any CHANNEL port	50 dB
Between EXP port and any CHANNEL port	45 dB
Return loss, min	45 dB
Polarization dependent loss, max	0.25 dB
Polarization mode dispersion, max	0.15 ps
Thermal wavelength shift, max	0.002 nm/°C
Insertion loss variation over temperature, max	0.01 dB/°C
Power handling (any port), max	21.8 dBm

**NOTE:**

1. EXP, UPG and Test Ports are available on certain models. See the Ordering Information section for details.

TABLE 1: INSERTION LOSS (dB) INCLUDING OPTICAL CONNECTORS, MAX

Channel Count	Model Type	COM to CHANNEL	Paired loss <sup>2</sup>	COM to UPG
4	DP95D04S0iB2S	2.5	4.4	2.2
	DP95D04S0iA0S	1.4	2.3	1.1
8	DP95D08S0iB2S	3.3	5.2	3.1
	DP95D08S0iA0S or DP95D08SmnA0S	2.3	3.1	2.0
12	DP95D08S0iB2S	4.2	6.1	3.9
16	DP95D16S0iB2S	5	6.9	4.7
	DP95D16S0iA0S	3.8	4.8	3.7
	DP95D16SmnA0S	2.8		2.5
20	DP95D20S0iA2R	4.1	5.5	3.6
	DP95D20S0iB2S	4.7	6.6	4.2
40	DP95D40S0U22R	4.9	6.3	4.4
40	DP95D40S0UZ0S-1HN	4.3	8.9	
	DP95D40S0UZ2S-1HN	4.8	10.4	

**NOTE:**

2. Paired insertion loss when combined with compatible ARRIS DP35Mxx multiplexer module (from mux CHANNEL input to the corresponding demux CHANNEL output)

**TABLE 2: ITU G.694 WAVELENGTH TABLE AND CORRESPONDING DP95DXX MODELS**

ITU Channel Plan							ARRIS Channel #	Channel frequency and wavelength per ITU G.694.1, 02/2012	
<i>j</i> for xx = 4	<i>j</i> for xx = 8	<i>j</i> for xx = 10	<i>j</i> for xx = 12	<i>j</i> for xx = 16	<i>j</i> for xx = 20	<i>j</i> for xx = 40		Channel frequency	Wavelength
H							16	191.6 THz	1564.679nm
							17	191.7 THz	1563.863nm
							18	191.8 THz	1563.047nm
							19	191.9 THz	1562.233nm
J	K	2					20	192.0 THz	1561.419nm
							21	192.1 THz	1560.606nm
K	M			A			22	192.2 THz	1559.794nm
L							23	192.3 THz	1558.983nm
M	P	3					24	192.4 THz	1558.173nm
N							25	192.5 THz	1557.363nm
P	S	4					26	192.6 THz	1556.555nm
							27	192.7 THz	1555.747nm
S	U	5	A				28	192.8 THz	1554.940nm
							29	192.9 THz	1554.134nm
T							30	193.0 THz	1553.329nm
							31	193.1 THz	1552.524nm
U							32	193.2 THz	1551.721nm
							33	193.3 THz	1550.918nm
V							34	193.4 THz	1550.116nm
							35	193.5 THz	1549.315nm
							36	193.6 THz	1548.515nm
							37	193.7 THz	1547.715nm
							38	193.8 THz	1546.917nm
							39	193.9 THz	1546.119nm
							40	194.0 THz	1545.322nm
							41	194.1 THz	1544.526nm
							42	194.2 THz	1543.730nm
							43	194.3 THz	1542.936nm
							44	194.4 THz	1542.142nm
							45	194.5 THz	1541.349nm
							46	194.6 THz	1540.557nm
							47	194.7 THz	1539.766nm
							48	194.8 THz	1538.976nm
							49	194.9 THz	1538.186nm
							50	195.0 THz	1537.397nm
							51	195.1 THz	1536.609nm
							52	195.2 THz	1535.822nm
							53	195.3 THz	1535.036nm
							54	195.4 THz	1534.250nm
							55	195.5 THz	1533.465nm
							56	195.6 THz	1532.681nm
							57	195.7 THz	1531.898nm
							58	195.8 THz	1531.116nm
							59	195.9 THz	1530.334nm
							60	196.0 THz	1529.553nm
							61	196.1 THz	1528.773nm
							62	196.2 THz	1527.994nm
							63	196.3 THz	1527.216nm

**TABLE 3: FIBER PIGTAIL COLORS (DP95D12 AND DP95D16)**

xx = 12	xx = 16	Color Codes	
COM	COM		White
EXP	EXP		Black
UPG	UPG		Orange
TP Rx	TP Rx		Aqua
TP Tx	TP Tx		Rose
50	25		Black + white strip
51	26		White + black strip
52	27		Red + black strip
53	28		Blue + black strip
54	29		Green + black strip
55	30		Yellow + black strip
56	31		Orange + black strip
57	32		Brown + black strip
58	33		Rose + black strip
59	34		Slate + black strip
60	35		Violet + black strip
61	36		Aqua + black strip
	37		Red
	38		Blue
	39		Green
	40		Yellow

**TABLE 4: FIBER PIGTAIL COLORS (DP95D04, DP95D08, DP95D20 AND DP95D40)**

	xx=04	xx=08	xx=20	xx=40	Color Codes	
COM						White
EXP						Black
UPG						Orange
TP Rx						Aqua
TP Tx						Rose
16						Red
17						Black
18						Yellow
19						Violet
20						Blue
21						Orange
22						Green
23						Brown
24						Slate
25						White
26						Red
27						Black
28						Yellow
29						Violet
30						Blue
31						Orange
32						Green
33						Brown
34						Slate
35						White
36						Red
37						Black
38						Yellow
39						Violet
40						Blue
41						Orange
42						Green
43						Brown
44						Slate
45						White
46						Red
47						Black
48						Yellow
49						Violet
50						Blue
51						Orange
52						Green
53						Brown
54						Slate
55						White
56						Red
57						Black
58						Yellow
59						Violet
60						Blue
61						Orange
62						Green
63						Brown

## ORDERING INFORMATION

Part Number	Description
DP95D0450iB25-1sB-yz	4 ITU channel output ports i = H, J, K, L, M, N, P, R, S, T, U or V CHANNEL ports group (See Table 2.) With EXP and UPG ports Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors s = M (M-case) or S (S-case) yz = 00 (No connectors); AL (LC/APC connectors); AS (SC/APC connectors); UL (LC/UPC connectors)
DP95D0450iA0S-1MB-UL	4 ITU channel output ports i = J, K, L, M, N, P, R, S, T, or U CHANNEL ports group (See Table 2.) With UPG port; No EXP port No test port M-case enclosure LC/UPC optical connectors
DP95D0850iB25-1sB-yz	8 ITU channel output ports i = K, M, P, S or U CHANNEL ports group (See Table 2.) With UPG port; No EXP port Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors s = M (M-case) or F (F-case) yz = 00 (No connectors); AL (LC/APC connectors); AS (SC/APC connectors); UL (LC/UPC connectors)
DP95D0850iA0S-1MB-UL	8 ITU channel output ports i = K, M, P, S or U CHANNEL ports group (See Table 2.) With UPG port; no EXP port No test port M-case enclosure LC/UPC optical connectors
DP95D085mnA0S-1MB-UL	8 ITU channel output ports mn = 14 (ITU 14,15,16,17,18,19,20,21 CHANNEL ports) 22 (ITU 22,23,24,25,26,27,28,29 CHANNEL ports) 30 (ITU 30,31,32,33,34,35,36,37 CHANNEL ports) 38 (ITU 38,39,40,41,42,43,44,45 CHANNEL ports) 46 (ITU 46,47,48,49,50,51,52,53 CHANNEL ports) 54 (ITU 54,55,56,57,58,59,60,61 CHANNEL ports) With UPG port; no EXP port No test port M-case enclosure LC/UPC optical connectors
DP95D1250iB25-1FB-yz	12 ITU channel output ports i = A (ITU CHANNEL ports Group A (See Table 2.)) With EXP and UPG ports Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors F-case enclosure yz = 00 (No connectors); AL (LC/APC connectors); AS (SC/APC connectors); UL (LC/UPC connectors)
DP95D1650iB25-1GB-yz	16 ITU channel output ports i = A (ITU CHANNELports Group A (See Table 2.)) With EXP and UPG ports Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors G-case enclosure yz = Optical connector type (00 = No connectors, AL = LC/APC, AS = SC/APC, UL = LC/UPC)
DP95D165mnA0S-1GB-UL	16 ITU channel output ports mn = 14 (ITU 14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29 CHANNEL ports) 30 (ITU 30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45 CHANNEL ports) 46 (ITU 46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61 CHANNEL ports) With UPG port; no EXP port No test port G-case enclosure LC/UPC optical connectors
DP95D2050iB25-1GB-yz	20 ITU channel output ports i = N (ITU CHANNELports Group N (See Table 2.)) or U (ITU CHANNELports Group U (See Table 2.)) With EXP and UPG ports Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors yz = 00 (No connectors); AL (LC/APC connectors); AS (SC/APC connectors); UL (LC/UPC connectors)
DP95D2050iZ2R-1GB-00	20 ITU channel output ports i = N (ITU CHANNELports Group N (See Table 2.)) or U (ITU CHANNELports Group U (See Table 2.)) No UPG port; No EXP port Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors No connectors (except on the test ports) Wider CHANNEL pass bandwidth at -3 dBc points (See the SPECIFICATIONS section for details.)

**ORDERING INFORMATION CONTINUED**

Part Number	Description
DP95D40S0UZkS-1HN-yz	40 ITU channel output ports ITU CHANNEL ports Group U (See Table 2.) k = 0 (No test port) or 2 (two unidirectional test ports (TP-Tx and TP-Rx)) No EXP and UPG ports H-case enclosure yz = 00 (No connectors); AL (LC/APC connectors); AS (SC/APC connectors); UL (LC/UPC connectors) Built with AWG (Array Waveguide) devices
DP95D40S0UZ2R-1HB-00	40 ITU channel output ports ITU CHANNEL ports Group U (See Table 2.) No EXP and UPG ports H-case enclosure Two unidirectional test ports (TP-Tx and TP-Rx) with SC/APC connectors No connectors except on the test ports Built with TFF (thin-film filter) devices Wider CHANNEL pass bandwidth at -3 dBc points (See the Specifications section for details.)

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