

## SFP

### DL4000 VIDEO TRANSPORT SYSTEM

### Small Form-Factor Pluggable (SFP) Optics Overview



#### Features

#### Industry Standard SFP Transceivers Transmit and Receive in one flexible unit

#### Formats Supported:

- 2.976Gb/s 3G-SDI (SMPTE 424M)
- 1.485Gb/s HD-SDI (SMPTE-292)
- SD-SDI (SMPTE 259M-C ITU 656)
- SDTI (SMPTE 305M)
- DVB-ASI
- Artel 270
- 19.39Mb/s ATSC (SMPTE 310M)
- 10/100/1000 Ethernet

#### Industry standard wavelengths

- 1310nm
- 1550nm
- CWDM (ITU G.694.2)
- DWDM (ITU G.694.1)

#### Up to 34dB loss budget

#### LC/PC Optical Connectors

#### Compatible with:

- DL4000 Optical Filters
- MegaWav
- Other ITU G.694 Standard Filters

#### WDM and CWDM support transmission and reception of SDI and HD-SDI pathological patterns

#### Compatibility

Model	DLS31VX-11	DLS31VX3G-11	DLS31VX-30	DLS55VX-30	DLSCxxVX-30	DLSWxxHX-33
<b>DLC100</b>	✓	✓	✓	✓	✓	
<b>DLC100T</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>DLC150E</b>	✓	✓	✓	✓	✓	
<b>DLC170AD</b>	✓	✓	✓	✓	✓	✓
<b>DLC170DA</b>	✓	✓	✓	✓	✓	✓(2)
<b>DLC270</b>	✓	✓	✓	✓	✓	✓(2)
<b>DLC200</b>	✓	✓	✓	✓	✓	✓
<b>DLC274M/D</b>	✓	✓	✓	✓	✓	✓
<b>DLC300</b>	✓(1)	✓	✓(1)	✓(1)	✓(1)	✓
<b>DLC710</b>	N/A	N/A	N/A	N/A	N/A	N/A

Note 1: Excluding 3G Mode

Note 2: Excluding Native SDI Modes

Artel's DL4000 Video Transport System uses Small Form-Factor Pluggable (SFPs) optics to provide flexibility when provisioning function modules. SFPs include both an optical transmitter and a receiver, and use standard LC/PC connectors.

DL4000 function modules use a common set of SFPs featuring WDM, CWDM, DWDM transmitters and wide-band receivers with optical budgets to 34dB. This enables a variety of flexible deployments with significantly less stocked optical components. Externally accessible SFPs make deploying and modifying optical networks a simple process taking only seconds without tools. Compatibility with DL4000, MegaWav and other ITU G694 standard multiplexers allow creation of flexible fiber efficient optical networks.

## Small Form-Factor Pluggable (SFP) Optics Specifications

Model	1310nm Short Range		WDM		CWDM	DWDM
	DLS31VX-11	DLS31VX3G-11	DLS31VX-30	DLS55VX-30	DLSCxxVX-30	DLSWxxHX-33
<b>Optical Budget</b>	11dB	11dB	30dB	30dB	30dB	33dB
<b>Transmitter</b>						
Wavelength	1310nm ± 30nm	1310nm ±30nm	1310nm ±30nm	1550nm ±40nm	ITU G.694.2 Standard 1427 through 1611 ±6.5nm	ITU-T G.694.1 Standard Channels 21-60
Optical Output Power (Min)	-7dBm	-7dBm	0dBm	0dBm	0dBm	+4dBm
Optical Output Power (Max)	0dBm	0dBm	+3dBm	+3dBm	+3dBm	+7dBm
Spectral Width	3nm	3nm	1nm	1nm	1nm	.4nm
Dispersion Penalty	N/A	N/A	N/A	1dB @ 120km	2dB @ 120km	1dB @ 120km
<b>Receiver</b>						
Receiver Sensitivity	-18dBm	-18dBm	-30dBm	-30dBm	-30dBm	-29dBm
Maximum Input	0dBm	0dBm	-9dBm	-9dBm	-9dBm	-9dBm
Input Wavelength	1270 to 1610nm	1270 to 1610nm	1250 to 1620nm	1250 to 1620nm	1250 to 1620nm	1250 to 1620nm
Bit Error Rate	10 <sup>-13</sup>	10 <sup>-13</sup>	10 <sup>-13</sup>	10 <sup>-13</sup>	10 <sup>-13</sup>	10 <sup>-13</sup>
Maximum Bit-Rate	1.5Gb/s	3Gb/s	1.5Gb/s	1.5Gb/s	1.5Gb/s	3Gb/s

## Ordering Information

### WDM Video Transceiver (30dB)

Model	Optical Wavelength	Part #
DLS31VX-30	1310nm	393-021310-00
DLS55VX-30	1550nm	393-021550-00

### Short Range

Model	Optical Wavelength	Part #
DLS31VX-11	1310nm	393-021310-11
DLS31VX3G-11	1310nm	393-051310-11

### CWDM Video Transceiver (30dB)

Model	Channel Number	Optical Wavelength	Part #
DLSC27VX-30	27	1427nm	393-041427-00
DLSC29VX-30	29	1429nm	393-041429-00
DLSC31VX-30	31	1431nm	393-041431-00
DLSC33VX-30	33	1433nm	393-041433-00
DLSC35VX-30	35	1435nm	393-041435-00
DLSC37VX-30	37	1437nm	393-041437-00
DLSC39VX-30	39	1439nm	393-041439-00
DLSC41VX-30	41	1441nm	393-041441-00
DLSC43VX-30	43	1443nm	393-041443-00
DLSC45VX-30	45	1445nm	393-041445-00
DLSC47VX-30	47	1471nm	393-041471-00
DLSC49VX-30	49	1491nm	393-041491-00
DLSC51VX-30	51	1511nm	393-041511-00
DLSC53VX-30	53	1531nm	393-041531-00
DLSC55VX-30	55	1551nm	393-041551-00
DLSC57VX-30	57	1571nm	393-041571-00
DLSC59VX-30	59	1591nm	393-041591-00
DLSC61VX-30	61	1611nm	393-041611-00

### DWDM Transceiver (33dB)

Model	Channel Number	Freq (THz)	Approx Center Wavelength (nm)	Part #
DLSW21HX-33	21	192.1	1560.61	393-240033-21
DLSW22HX-33	22	192.2	1559.79	393-240033-22
DLSW23HX-33	23	192.3	1558.98	393-240033-23
DLSW24HX-33	24	192.4	1558.17	393-240033-24
DLSW25HX-33	25	192.5	1557.36	393-240033-25
DLSW26HX-33	26	192.6	1556.55	393-240033-26
DLSW27HX-33	27	192.7	1555.75	393-240033-27
DLSW28HX-33	28	192.8	1554.94	393-240033-28
DLSW29HX-33	29	192.9	1554.13	393-240033-29
DLSW30HX-33	30	193.0	1553.33	393-240033-30
DLSW31HX-33	31	193.1	1552.52	393-240033-31
DLSW32HX-33	32	193.2	1551.72	393-240033-32
DLSW33HX-33	33	193.3	1550.92	393-240033-33
DLSW34HX-33	34	193.4	1550.12	393-240033-34
DLSW35HX-33	35	193.5	1549.32	393-240033-35
DLSW36HX-33	36	193.6	1548.51	393-240033-36
DLSW37HX-33	37	193.7	1547.72	393-240033-37
DLSW38HX-33	38	193.8	1546.92	393-240033-38
DLSW39HX-33	39	193.9	1546.12	393-240033-39
DLSW40HX-33	40	194.0	1545.32	393-240033-40
DLSW41HX-33	41	194.1	1544.53	393-240033-41
DLSW42HX-33	42	194.2	1543.73	393-240033-42
DLSW43HX-33	43	194.3	1542.94	393-240033-43
DLSW44HX-33	44	194.4	1542.14	393-240033-44
DLSW45HX-33	45	194.5	1541.35	393-240033-45
DLSW46HX-33	46	194.6	1540.56	393-240033-46
DLSW47HX-33	47	194.7	1539.77	393-240033-47
DLSW48HX-33	48	194.8	1538.98	393-240033-48
DLSW49HX-33	49	194.9	1538.19	393-240033-49
DLSW50HX-33	50	195.0	1537.40	393-240033-50
DLSW51HX-33	51	195.1	1536.61	393-240033-51
DLSW52HX-33	52	195.2	1535.82	393-240033-52
DLSW53HX-33	53	195.3	1535.04	393-240033-53
DLSW54HX-33	54	195.4	1534.25	393-240033-54
DLSW55HX-33	55	195.5	1533.47	393-240033-55
DLSW56HX-33	56	195.6	1532.68	393-240033-56
DLSW57HX-33	57	195.7	1531.90	393-240033-57
DLSW58HX-33	58	195.8	1531.12	393-240033-58
DLSW59HX-33	59	195.9	1530.33	393-240033-59
DLSW60HX-33	60	196.0	1529.55	393-240033-60