

## Features

- Low loss integrated 8-channel narrowcast demultiplexer with broadcast splitter and broadcast / narrowcast combiner
- Totally passive module
- Eliminates most fiber jumpers normally associated with BC-NC combining
- Low insertion loss

## Light-Plex® Optical Narrowcast Demux with BC/NC Combiner



The Aurora series of OP4538 Light-Plex modules provide a combined narrowcast demultiplexer with a broadcast/narrowcast combiner. Each OP4538 demultiplexes up to eight DWDM wavelengths and is available in various wavelength combinations. The OP4538 features four optical input ports (one carrying the DWDM narrowcast services for up to 40 ITU-grid optical channels and the remaining three for either a single eight-way split or dual four-way splits of broadcast services). Of the nine output ports, eight provide the combined output of the split broadcast signal and one of the eight demultiplexed narrowcast channels (via a common, industry-standard MPO style connector), and the remaining port provides a pass-through of narrowcast channels not demultiplexed by the unit.

One broadcast optical ("A") signal can be equally split eight ways, or each of two independent broadcast signals ("B1" and "B2") can be split four ways, while the narrowcast carriers are separated by an eight-channel demultiplexer on the DWDM ITU Grid (ITU-T G.694.1) with 100 GHz spacing between channels. Each demultiplexed optical carrier is then multiplexed with one of the common broadcast optical signals and passed to one of eight output ports. DWDM optical carriers whose wavelengths are not dropped by the demux are passed through to the DWDM output port.

Due to the very low insertion loss of their optical filters, up to three OP4538s can be installed in a single VH4000 Virtual Hub with their DWDM narrowcast passthrough signals cascaded from one unit to another, resulting in a single Virtual Hub capable of service to up to 20,000 homes.

By adding optical narrowcast carriers, the OP4538 allows MSOs to offer new revenue-generating services such as digital video, video-on-demand, high speed data and telephony more easily and cost effectively than ever before.

# OP4538

## Product Specifications

### Physical:

- Dimensions: 4.0" D x 4.5" H x 2.0" W (10.2 cm x 11.4 cm x 5.1 cm)
- Weight: 1.5 lbs (0.68 kg)

### Environmental:

- 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

### Optical Interface

- Optical connectors:  
SC/APC for broadcast inputs and narrowcast DWDM input and cascade output  
MPO (male) for 8 combined broadcast and narrowcast outputs
- Inputs: DWDM INP (narrowcast content), BROADCAST A, B1, B2
- Outputs:  
DWDM OUT (pass-through of all DWDM wavelengths not dropped)  
BC & NC Ch xx-yy OUT (common MPO connector with 8 discrete fibers for the combined broadcast and one dropped DWDM NC signal for each of narrowcast signals #1 through #8)
- Optical NC channel spacing: 100 GHz on DWDM ITU Grid

### Optical:

- Optical return loss: 45 dB min (> 50 dB typ)
- Polarization Dependent Loss (PDL): 0.25 dB max (< 0.2 typ)
- Directivity: 55 dB min (> 60 dB typ)
- **Broadcast:**

Insertion loss (including connectors):

Broadcast Input Port A: 11.9 dB max (<10.9 dB typ)

Broadcast Input Ports B1, B2: 8.7 dB max (<7.7 dB typ)

Uniformity (including connectors): 1.2 dB max (<0.7 dB typ)

Passband: At any given output port, the pass band for the BC signal transverse the entire C-band (or EDFA gain band), excluding the NC wavelength to be dropped at that port.

- **DWDM Narrowcast:**

ITU channels dropped: *See ITU Channel Plans.*

Passband @ 0.5 dB:  $\pm 0.11$  nm

Ripple within passband: 0.5 dB

Insertion loss (including connectors):

DWDM IN to #n OUT: 4.1 dB max (<3.1 dB typ)

DWDM IN to DWDM OUT: 2.8 dB max (<1.8 dB typ)

Paired insertion loss (including connectors):

With 8 total NC channels: 5.7 dB (Paired insertion loss measured when combined with a single correspondent 8- $\lambda$  model OP35M8x-x-xx-AS mux module or two 4- $\lambda$  model BP-35M4x-0-xx-AS mux back plates in the headend or hub, Ch. yy INP to Ch. yy OUT)

Optical channel isolation:

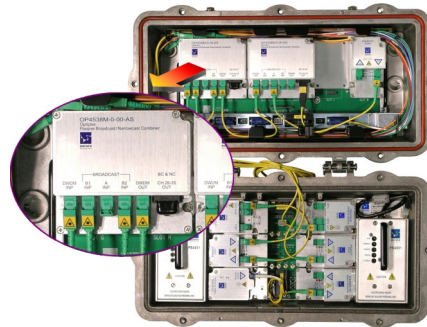
Adjacent: 55 dB min (>65 dB typ)

Non-adjacent: 55 dB min (>65 dB typ)

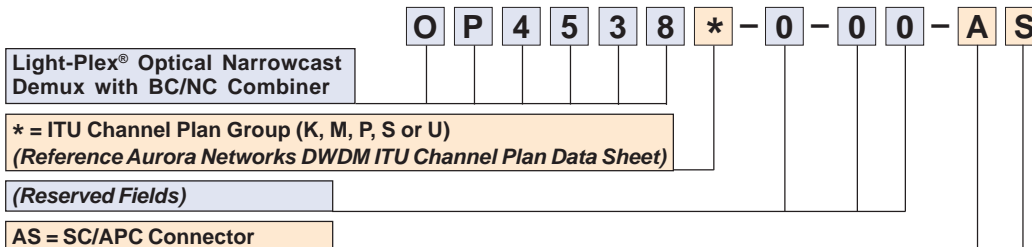
Uniformity: 2.0 dB max (*difference between max and min output power across the eight output ports*)

### ITU Channel Plans:

Aurora Networks supports DWDM network architectures with a variety of products on the standard DWDM ITU Grid (ITU-T G.694.1). For more complete description of available DWDM ITU Grid channels and Aurora's partitioning into convenient logical channel groups for DWDM mux and demux applications, please refer to the Aurora Networks DWDM ITU Grid Channel Plan data sheet.



## Ordering Information



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