Model OSP-9100

λCommander
Programmable Spectral Processor

The LambdaCommander™ Model OSP-9100 is a Programmable Spectral Processor (PSP) for complete control of optical spectrum profiles.

The LambdaCommander PSP is a fiber-coupled instrument that is dynamically re-configurable, capable of generating static or time-dependant spectral profiles over a range of 100nm. Based on Digital Light Processing™ technology, LambdaCommander uses the Digital Micromirror Device that is at the heart of DLP™ technology to rapidly switch segments on-and-off, in an incremental manner, transforming a diffracted spectral profile into an optical output.

Effectively, the fiber-coupled instrument can apply a desired transformation to the original optical signal to create the exact spectrum from simply passing selected narrow wavelengths and blocking others. It can also apply a complex, time varying function to the spectral shape with a resolution of 0.42 nm.

The LambdaCommander includes both stand-alone or PC interface operation to utilize all its features using simple commands.

The instrument allows creating, activating, and saving transmission profiles from the instrument menu options allowing storage of up to 300 spectral transmission profiles that can be retrieved via the front panel or its PC interface. Pre-programmed filter functions can also be uploaded from the instrument into a PC, modified, and stored back in the instrument for immediate use.

Additionally, a real time drag and drop transmission function design software enables reshaping of spectral characteristics by easily changing its shape right on the computer or the instrument screen.

Custom profile generation with sub-nanometer control is easily achieved, and there are simple commands to superimpose new or saved profiles, permitting the realization of complex functions required in research, manufacturing or quality assurance.

Key Features

- *Wavelength and Amplitude Tunability*
- *300-Spectral Profile Storage*
- *1520nm to1620nm*
- *0.16nm Wavelength Resolution*
- *0.42nm Instrument Resolution*
- *Transform Editor via Front-Panel or PC*

Applications

- *Optical filter design and simulation*
- *Passive optical component testing*
- *White light interferometry and optical coherence tomography*
- *Fiber optic sensing*
- *Optical source gain flattening*
- *WDM system simulation*

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Instrument Specifications

General

Connector Type	FC/APC
Dimension [in. (mm)]	14.0 x 14.2 x 3.5 (355 x 360 x 90)
Weight [lb (kg)]	15.4 (7)

Optical

Wavelength Range	1520-1620 nm
Instrument Resolution (pm)	<420
Wavelength Repeatability (pm)	±20
Transmission Dynamic Range (dB)	30
Maximum Slope (dB/nm)	30
Open Loop Transmission Accuracy (dB)	±1
Closed Loop Transmission Accuracy (dB)	±0.1
Transmission Repeatability (dB)	±0.1
Transmission Resolution (dB)	0.1
Insertion Loss	<6 dB
Return Loss (Input/Output) (dB)	>45
Polarization Dependent Loss, Maximum	0.25 dB

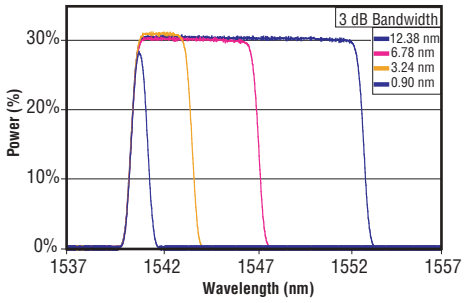
Electrical

Power Consumption (W)	<25
Input Voltage	90 to 132 VAC or 198 to 254 VAC
Operating Current (90 to 132) VAC (A)	1.0
Operating Current (198 to 264) VAC (A)	0.5
Communication Interfaces	RS-232 and GPIB

Environmental Operating Conditions

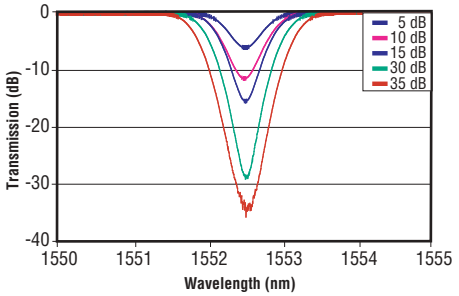
Operating Temperature Range	32° to 104°F
Storage Temperature Range	-4° to 140°F
Humidity	5% to 90% Non-Condensing R.H.
Max Operational Altitude (ft)	5906
Operational Vibration (Sinusoidal)	0.1g @ 5Hz to 100 Hz

Variable Bandpass



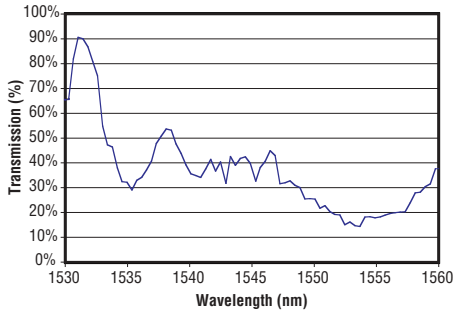
- *Variable bandwidth from less than 1 nm to greater than 100 nm*
- *Tunable center wavelength*
- *Tunable edge sharpness (apodization)*
- *High out-of-band extinction of 30 dB*

Variable Notch Filter



- *Variable bandwidth from less than 1 nm to greater than 100 nm*
- *Tunable center wavelength*
- *Tunable filter shape*
- *Variable attenuation depth*

Arbitrary Filter



- *Fully programmable spectral filtering*
- *Complex function capability*

DLP
A TEXAS INSTRUMENTS TECHNOLOGY

CiDRA Photonics
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Newport Corporation, Irvine, California, has been certified compliant with ISO 9001 by the British Standards Institution.

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