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# **Portable Spectrometer**

Optoplex's **Portable Spectrometer** / portable near-infrared optical spectrum analyzer (NIR OSA) is a spectral engine for Process Analytical Technology (PAT) applications. The Portable Spectrometer acts as a stand-alone spectral engine, imaging and measuring a wide range of vapors, liquids and solids through transmission and diffuse reflection in a rapid non-destructive process. Leveraging our proprietary thinfilm coated tunable filter, Optoplex's portable OSA features the following characteristics: (1) compact; (2) light-weight; (3) low power consumption; and (4) wide wavelength coverage. These characteristics of Optoplex's portable spectrometer engines are suitable for a variety of handheld, portable or bench-top OSA/spectrometer applications. Equipped with a state-of-the-art internal wavelength reference, the OSA module is capable of precisely measuring the optical spectrum. Because it does not require an expensive InGaAs detector array, the portable OSA is a cost-effective alternative to other grating-based OSA/spectrometer engines. The OSA communicates with a PC or an instrument motherboard via an RS232, USB or DPRAM interface. Optoplex's portable OSA platform can be installed or co-packaged into existing NIR OSA/spectrometers as a cost-efficient alternative to other scanning engines.

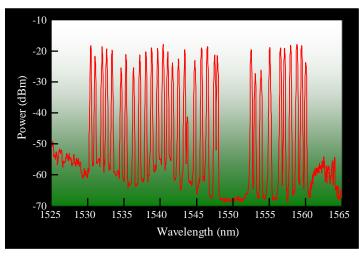


### **Applications**

- Analytical instrumentation
- Pharmaceutical manufacturing
- Chemical & petrochemical manufacturing
- Food, beverage & dairy processing
- Environmental testing
- Defense industry
- · Performance monitoring

#### **Key Features and Benefits**

- Excellent wavelength accuracy (with built-in wavelength reference)
- High power sensitivity
- Excellent power accuracy
- Compact size, light weight
- Fast scan speed
- Software upgradeable
- Low system cost solution
- Single or multi-mode fiber interface



## Portable Spectrometer Product Datasheet<sup>1</sup>

| Parameter                   | Unit | Specification                    | Note  |
|-----------------------------|------|----------------------------------|---|
| Spectral Range <sup>2</sup> | nm   | 1529 – 1562<br>1567 - 1602       | C-band<br>L-Band                              |
| Maximum Input Power         | mW   | 300                              | Total incident optical power                  |
| Input Power Range           | dBm  | <b>−40 ~ 0</b>                   | Per single spectrum                           |
| Power Accuracy              | dB   | ± 0.5                            |   |
| Power Repeatability         | dB   | ± 0.1                            | Short-term measurements                       |
| PDL                         | dB   | < 0.3                            |   |
| Wavelength Resolution       | nm   | 0.20 (Typical)<br>0.25 (Maximum) | FWHM, applicable to C- or L-band spectrometer |
| Bandwidth @ -20 dB          | nm   | 0.45                             |   |
| Wavelength Accuracy         | nm   | ± 0.05                           |   |
| Noise Floor                 | dBm  | -60                              |   |
| Output                      | -    | Power Spectrum                   | Reference to 0.2 nm bandwidth                 |
| Response Time               | ms   | 200                              |   |
| Power Supply                | V    | 5                                | DC  |
| Power Consumption           | W    | < 2                              |   |
| Operating Temperature       | °C   | 0 ~ 60                           |   |
| Storage Temperature         | °C   | <b>−40 ~ 85</b>                  |   |
| Electronics Interface       | -    | USB/RS232/DPRAM                  | Optoplex software provided through UART       |
| Dimension (L×W×H)           | mm   | 100×70×17.5                      |   |

#### **Notes:**

- 1. Certain parameter specifications can be varied based on customer demands.
- 2. Spectral range can be custom specified.

**Optoplex Corporation**, located in Fremont, California, is an ISO9001:2000 certified supplier of cutting-edge photonic components and modules for dynamic wavelength management and signal conditioning. The company designs, develops, manufactures, and markets innovative fiber-optic products to communications networks, and provides customized solutions to instrument, defense, spectroscopy and sensing industries. By combining its proprietary optical design and packaging technology with its state-of-the-art optical coating expertise and facility, Optoplex supplies DPSK demodulators, DQPSK demodulators, 90° optical hybrids, 2-port tunable optical filters, 3-port reconfigurable optical add/drop multiplexers (ROADMs), optical interleavers, flat-top comb filters, optical performance monitors (OPMs), and portable spectrometers.