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OL 410
Precision Lamp Sources

The OL 410 is a microprocessor-controlled, precision DC lamp source specifically designed to accurately operate tungsten filament lamp standards and calibration sources. The power output range is 150 watts for the OL 410-150, 200 watts for the OL 410-200, and 1000 watts for the OL 410-1000. All units feature:

Output current accuracy of ±0.02% or better

- Controlled ramp up / ramp down of the lamp current
- Simultaneous digital readout of lamp current, voltage, and power
- Ten (10) element lamp library with individual lamp hours monitors
- Large two-line display with ON/OFF control
- Adjustable tilt handle
- Full-speed USB 2.0 interface

Tungsten lamp standards must be operated at their specified calibration current in order to realize the accuracy of the standard. A small error in setting the lamp current can induce a sizeable, wavelength dependent error in the spectral output of the lamp. The OL 410 enables the lamp current to be set to an accuracy of better than ±0.02%, a factor of about 12½ better than most other commercial power supplies, which are typically 0.25%. The advantage of the OL 410's increased accuracy is illustrated in the table.

In order to eliminate electrical shocking of the lamp due to high initial current surges, a ramp function is used to control the turn-on current rise. Once the instrument is turned on, the current automatically increases at a slow, safe rate until the set current is reached. A fail-safe, shut down circuit protects the lamp standard against any equipment malfunctions.

The current sources will maintain their accuracies while experiencing ±10% fluctuations in line voltage and ±10% variance on the load voltage. These features effectively compensate for transients in the power line and variations in resistance from one lamp to another.

OL 410 improvements over the OL 65A and OL 83A Programmable Current Sources include:

- User-configurable line voltage (on the OL 410-150 and OL 410-200)
- Pre-regulator eliminates the range switch, thus allowing a wider range of lamps (not available on the OL 410-150)
- Three point calibration for better accuracy at low currents
- USB interface instead of RS-232/ GPIB
- New .NET software development kit and application
- Enhances reliability due to improved heat sink and single output transistor
- More stable due to improved drive electronics

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As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.

SPECTRAL IRRADIANCE UNCERTAINTY DUE TO ERROR IN SETTING LAMP CURRENT		
Wavelength (nm)	OL Series 410 ± 0.02%	Other Supplies ± 0.25%
250	0.24%	3.0%
300	0.18%	2.3%
550	0.08%	1.0%
1000	0.04%	0.5%
2000	0.02%	0.3%
*Tungsten Lamp @ ~3000K		

SPECIFICATIONS	OL 410-150	OL 410-200	OL 410-1000
Power output (Watts maximum)	150 Watts	200 Watts	1000 Watts
Voltage output (VDC maximum)	24.0	32 Volts DC	120 Volts DC
Current Output (ADC maximum)	6.60	8.00 Amps DC	8.4 Amps DC
Minimum lamp impedance (Ohms)	3.00	1.00	3.00
Resolution (A)	0.001		
Accuracy (% of full scale)	0.02%		
Stability after warm-up	10ppm		
Line voltage sensitivity	< 2 ppm/ V		
Temperature sensitivity	< 25 ppm/ °C		
Power input voltage **	100/ 115/ 200/ 230 VAC, 50/ 60 Hz		
Power input current @ 100/ 115/ 200/ 230 VAC	5/ 5/ 3.2/ 3.2 A	6/ 6/ 3.2/ 3.2 A	20/ 20/ 10/ 10 A
Operating temperature range	15°C to 35°C		
Operating humidity range	10% to 85% (non-condensing)		
Dimensions (inches)	14.00 D x 9.38 W x 5.38 H		14.62 D x 17.00 W x 7.00 H
Dimensions (cm)	35.56 D x 23.83 W x 13.67 H		37.1 D x 43.2 W x 17.8 H
Weight	17.7 lbs (7.7 kg)	21.5 lbs (9.8 kg)	47.0 lbs (21.3 kg)
Output connector	D-sub for sphere sources and banana jacks	banana jacks	twist-lock latch design connector

NOTE: The OL 400-RM Rack Mount is available as an option
*** The power input voltage is factory configured on the OL 410-10000.*

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PCS Rad-SDK Software Development Kit

The PCS Rad-SDK software development kit is provided with the OL 410 Precision Lamp Source and consists of an instrument control software application and a software development kit. The application user interface allows the user to operate all of the current source's functions from a host computer.

The software development kit includes a Microsoft™ .NET DLL, which functions as an instrument driver. Additionally, programmers may develop custom applications from suitable .NET-compatible development environments. The software development kit gives the user the power to control multiple control sources with the same program. Examples in this software development kit are provided for Visual Basic™ .NET, Visual C++™, and Visual C# ™.NET.

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For further information

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