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## ***PE Lambda 750***

### ***Technical Description and Specifications***

All instruments will meet or achieve better than the confirmed specifications, under normal conditions of use as described in the user manual.

Principle	Double beam, double monochromator, ratio recording UV/Vis/NIR spectrophotometer with microcomputer electronics, controlled by a DELL® PC or compatible personal computer.	
Optical System	All reflecting optical system (SiO <sub>2</sub> coated) with holographic grating monochromator with 1440 Lines/mm UV/Vis blazed at 240 nm and 360 Lines/mm NIR blazed at 1100 nm, Littrow mounting, sample thickness compensated detector optics.	
Beam Splitting System	Chopper (46+ Hz, Cycle: Dark/Sample/Dark/Reference, Chopper Segment Signal Correction CSSC).	
Detector	Photomultiplier R955 for high energy in the whole UV/Vis wavelength range. Peltier cooled PbS detector for NIR.	
Source	Pre-aligned tungsten-halogen and deuterium.	
Wavelength Range	190 nm - 3300 nm	
UV/Vis Resolution	≤ 0.17 nm	
NIR Resolution	≤ 0.20 nm	
Stray Light	At 200 nm (12 g/L KCl USP/DAP method) At 220 nm (10 g/L NaI ASTM® method) At 340 nm (50 mg/L NaNO <sub>2</sub> ASTM® method) At 370 nm (50 mg/L NaNO <sub>2</sub> ASTM® method) At 1420 nm (H <sub>2</sub> O 1-cm pathlength) At 1690 nm (CHCl <sub>3</sub> 4-cm pathlength) At 2365 nm (CHCl <sub>3</sub> 1-cm pathlength)	> 2 A ≤ 0.0001 %T ≤ 0.0001 %T ≤ 0.0001 %T ≤ 0.0004 %T ≤ 0.0015 %T ≤ 0.002 %T
Wavelength Accuracy	± 0.15 nm UV/Vis ± 0.5 nm NIR	
Wavelength Reproducibility	UV/Vis (Deuterium Lamp Lines) NIR (Deuterium Lamp Lines) ≤ 0.1 nm	≤ 0.06 nm

Photometric Accuracy	Double Aperture Method 1 A Double Aperture Method 0.3 A NIST® 1930D Filters 2 A NIST® 930D Filters 1 A NIST® 930D Filters 0.5 A K2Cr2O7-Solution USP/DAP method	± 0.0012 A ± 0.0006 A ± 0.003 A ± 0.003 A ± 0.002 A ± 0.010 A
Photometric Linearity	At 3.0 A (Addition of filters UV/Vis at 546.1 nm, 2 nm Slit, 1-sec. integration time) (Residual from filter addition method)	± 0.020 A
Photometric Reproducibility	1 A with NIST® 930D Filter at 546.1 nm Standard Deviation for 10 measurements	≤ 0.0008 A
Photometric Range	6 A (using reference-beam attenuation)	

Photometric Display	Unlimited	
Bandpass	0.17 nm - 5.00 nm in 0.01 nm increments UV/Vis range 0.20 nm - 20.00 nm in 0.04 nm increments NIR range Fixed resolution, constant energy or slit programming.	
Photometric Stability	After warm-up at 500 nm, 0 A, 2 nm Slit, 2-sec. integration time, Peak to Peak	≤ 0.0002 A/h
Baseline Flatness	190 nm - 3100 nm, Slit (UV/Vis) 2 nm, Slit (NIR) Servo Mode, NIR Gain = 1,  integration time 3100-860.8 nm: 0.24 sec.,  integration time 860.8-190 nm: 0.20 sec.,  no smoothing applied	± 0.0015 A
Photometric Noise RMS	0 A and 190 nm 0 A and 500 nm 2 A and 500 nm 4 A and 500 nm 3 A and 1500 nm (2 nm Slit, 1-sec. integration time, Gain 1 NIR)	≤ 0.0001 A ≤ 0.00005 A ≤ 0.0002 A ≤ 0.002 A ≤ 0.003 A
Primary Sample Compartment	200 mm x 300 mm x 220 mm (W x D x H)	
Secondary Sample Compartment	480 mm x 300 mm x 220 mm (W x D x H)	
Instrument	1020 mm x 740 mm x 300 mm	

Dimension (W x D x H)		
Instrument Weight	~ 77 kg	
Digital I/O	RS 232 C	
Light Beam	90 mm above the base plate 120 mm beam separation 3 mm - 12 mm beam height	
Instrument Requirements	Power	90 VAC - 250 VAC, 50/60 Hz; 400 VA
	Temperature	10 °C - 35 °C
	Recommended Humidity	10 - 70% relative humidity, non-condensing



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