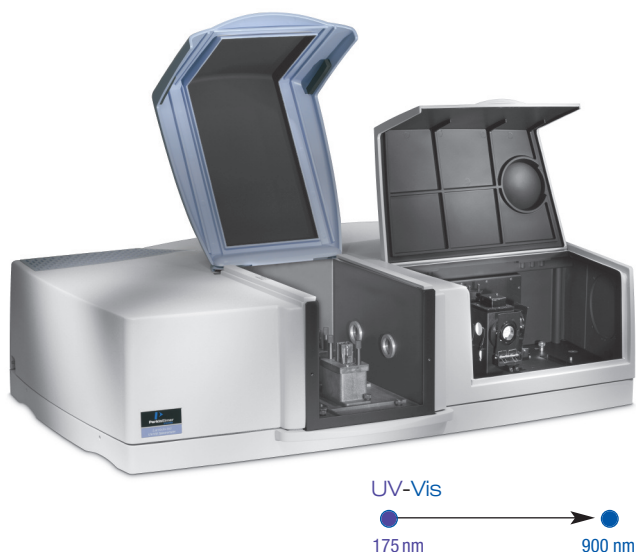


# Technical Specifications for the LAMBDA 850 UV/Vis Spectrophotometer



## Introduction

PerkinElmer® UV/Vis and UV/Vis/NIR spectrophotometers are built to the highest ISO-9001 manufacturing standards. This document presents confirmed performance specifications for the LAMBDA 850 based on factory tests.

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

The LAMBDA™ Series of spectrophotometers is the industry standard for high performance, flexibility and convenience. Each model includes the same range of modular components and snap-in accessories to tackle a range of tough applications. Whatever specifications your laboratory requires, the LAMBDA Series provides best-in-class accuracy, precision and reproducibility.

Choose the LAMBDA 850 for ultra-high UV/Vis performance between 175 nm and 900 nm. For applications such as sun protection, reflectance properties of flat panel display screens, paint films, transmission and reflectance characterization of glass, solar cells, and more.

## Technical description and specifications

<b>Principle</b>	Double beam, double monochromator, ratio recording UV/Vis spectrophotometer with microcomputer electronics, controlled by DELL™ PC or compatible personal computer.
<b>Optical System</b>	All reflecting optical system (SiO <sub>2</sub> coated) with holographic grating monochromator with 1440 lines/mm UV/Vis blazed at 240 nm, Littrow mounting, sample thickness compensated detector optics.
<b>Beam Splitting System</b>	Chopper (46+ Hz, Cycle: Dark/Sample/Dark/Reference, Chopper Segment Signal Correction).
<b>Detector</b>	Photomultiplier R6872 for high energy in the whole UV/Vis wavelength range.
<b>Source</b>	Pre-aligned tungsten-halogen and deuterium.
<b>Wavelength Range</b> N <sub>2</sub> purge required below 185 nm	175 nm - 900 nm
<b>Resolution</b>	≤ 0.05 nm
<b>Stray Light</b>	
At 200 nm (12 g/l KCl USP/DAP method)	> 2 A
At 220 nm (10 g/l NaI ASTM method)	≤ 0.00007 %T
At 340 nm (50 mg/l NaNO <sub>2</sub> ASTM method)	≤ 0.00007 %T
At 370 nm (50 mg/l NaNO <sub>2</sub> ASTM method)	≤ 0.00007 %T
<b>Wavelength Accuracy</b>	± 0.080 nm
<b>Wavelength Reproducibility</b>	
Deuterium lamp lines	≤ 0.020 nm
Standard deviation of 10 measurements	≤ 0.005 nm
<b>Photometric Accuracy</b>	
Double Aperture Method 1 A	± 0.0006 A
Double Aperture Method 0.5 A	± 0.0003 A
NIST 1930D Filters 2 A	± 0.0030 A
NIST 930D Filters 1 A	± 0.0030 A
NIST 930D Filters 0.5 A	± 0.0020 A
K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> -Solution USP/DAP method	± 0.0100 A
<b>Photometric Linearity</b>	
Addition of filters UV/Vis at 546.1 nm, 2 nm slit, 1 second integration time	
At 1.0 A	± 0.006 A
At 2.0 A	± 0.017 A
At 3.0 A	± 0.020 A

## Technical description and specifications

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### Photometric Reproducibility

1 A with NIST 930D Filter at 546.1 nm	
Standard deviation for 10 measurements	≤ 0.00016 A
0.5 A with NIST 930D Filter at 546.1 nm	
Standard deviation for 10 measurements	≤ 0.00008 A
0.3 A with NIST 930D Filter at 546.1 nm	
Standard deviation for 10 measurements	≤ 0.00008 A
2 nm slit, 1 second integration time	

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<b>Photometric Range</b>	8 A
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<b>Photometric Display</b>	Unlimited
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<b>Bandpass</b>	0.05 nm - 5.00 nm in 0.01 nm increments. Fixed resolution, constant energy or slit programming.
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### Photometric Stability

After warm-up at 500 nm, 0 A, 2 nm slit, 2 second integration time, peak to peak	≤ 0.0002 A/h
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### Baseline Flatness

190-860 nm, 2 nm slit, 2 second integration time, no smoothing applied	± 0.0008 A
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### Photometric Noise RMS

0 A and 190 nm	≤ 0.00010 A
0 A and 500 nm	≤ 0.00005 A
2 A and 500 nm	≤ 0.00020 A
4 A and 500 nm	≤ 0.00100 A
6 A and 500 nm	≤ 0.00500 A
2 nm slit, 1 second integration time	

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### Primary Sample Compartment Dimensions

<b>(W x D x H)</b>	200 mm x 300 mm x 220 mm
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### Secondary Sample Compartment Dimensions

<b>(W x D x H)</b>	480 mm x 300 mm x 220 mm
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### Purging

Optics	YES
Sample Compartment	YES

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<b>Instrument Dimension (W x D x H)</b>	1020 mm x 740 mm x 300 mm
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<b>Instrument Weight</b>	~ 77 kg
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<b>Digital I/O</b>	RS 232 C
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<b>Light Beam</b>	90 mm above the base plate 120 mm beam separation 3 mm - 12 mm beam height
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### Instrument Requirements

Power	90 VAC - 250 VAC, 50/60 Hz; 250 VA
Temperature	10 °C - 35 °C
Recommended Humidity	10-70% relative humidity, non-condensing

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