CTech™ SoloVPE® System

Product Specifications

Part ID: **SYS-VPE-SOLO5**

Overview

The CTech™ SoloVPE® System unlocks the power of Slope Spectroscopy® with its unique and patented variable pathlength technology (VPT). By evolving beyond the limitations of traditional fixed pathlength spectroscopy, the SoloVPE System transforms the ultraviolet-visible (UV-Vis) technique from a 2-dimensional to a 3-dimensional science. Conceptually simple and analytically empowering, the patented variable pathlength technology revolutionizes the measurement of concentration by delivering rapid and accurate results while avoiding costly dilution and background correction steps.

The Slope Spectroscopy method leverages the power and flexibility of variable pathlength technology to create a rapid and robust concentration measurement method. It is ideally suited for biologics but can be used on any liquid sample typically analyzed with a UV-Vis instrument. Unlike the single absorbance result generated by legacy UV-Vis methods, the data dense slope-based technique characterizes samples using multiple absorbance data points acquired at different pathlengths. The resultant section (absorbance vs. pathlength) data set allows for greater insight into the sample and the measurement result.

The section data is analyzed in real time to verify linearity in compliance with the Beer-Lambert law. The linear region of the section curve is directly proportional to the concentration of the sample based upon the sample extinction coefficient. This relationship allows the SoloVPE System to report concentration results in less than 60 seconds. Capable of making spectral and fixed-point measurements at wavelengths between 190 nm and 1100 nm and at pathlengths between 5 microns and 15 millimeters, the SoloVPE System is adaptable to a wide range of sample types and concentrations. The flexibility and robustness of the technology is unparalleled when compared to traditional UV-Vis techniques and equipment.

Features | Benefits

No Dilution	Measure highly concentrated samples directly without dilution.
Eliminate Background Correction	Buffer/background correction only required in special circumstances.
Reduce Sample Preparation	Direct measurements of highly concentrated samples save time and consumables.
Rapid Results	Concentration results in approximately one minute.
Low Sample Volume	Method and sample vessel dependent ranging from <20 µl to 2.5 ml.
Slope Spectroscopy Methods	The first and only spectrometer capable of Slope-based measurements. Slope results are based upon multiple data points instead of a single absorbance value.
Rapid Sample Characterization	Rapidly characterize samples at different wavelengths and pathlengths using a single method.
Linear Range-Finder Technology	The system automatically identifies the linear region of section data sets to verify compliance with the Beer-Lambert law.
Education/Support	On-site installation and training included with system purchase.

System Specifications

Device Dimensions (W x D x H)	255 mm x 255 mm x 381 mm (10 in x 10 in x 15 in)
Weight	9 kg (20 lb)
Spectroscopic Engine	Agilent Cary 60 spectrophotometer*
Fiber Optic Integration	CTech Dual Use Fiber Optic Coupler
SoloVPE Power Requirements	SoloVPE instrument contains no power supply (powered via Cary 60)
Cary 60 Power Requirements	100–240 VAC, frequency 47–63 Hz
Maximum Pathlength	15.000 mm
Minimum Pathlength Step	0.005 mm
Variable Pathlength Speed	>1.3 mm/sec
Slope Repeatability	2% RSD[†]
Sample Vessel Compatibility	Fused silica (large, small, micro), disposable plastic (small)
Fibrette® Optical Component	OF0002 (fused silica + polyimide)
Sample Volume Required	Dependent on sample vessel used and method pathlength range
Orientation of Pathlength Measurement Axis	Vertical[‡]

Photometric performance characteristics are based upon the Cary 60 spectrophotometer specifications and are applicable to the Cary 60 independent of the SoloVPE instrument.

†Repeatability performance requires properly validated method and controlled homogeneous samples.

‡Samples that are not homogeneous, suspensions, improperly mixed or not in solution could produce unexpected results. This should be assessed during method development.

SoloVPE Software (V3.1) Information

Required Computer Hardware[§]	Min processor: Intel i3 Min hard drive: 250 GB (SSD preferred) Min RAM: 8 GB
Operating System	Microsoft Windows 7 or Windows 10
Software Environment	Agilent Cary WinUV Software Suite Version 5.0/5.1.3.xxx
VPT Software Control	SoloVPE Software Version 3.1
Validation Companion (optional)	QuickVCA for use with the SoloVPE Validation Cuvette Adapter (SVCA)
Security Companion (optional)	SecureVPE Software Version 3.1 (for GxP implementations)
Prior Version	Prior software versions may be available on request. Contact Repligen Analytics for more information.
Legacy Support	Support for legacy products can be secured but subject to limitations.

CTech ViPER® ANLYTX Software Information

Required Computer Hardware[§]	Min processor: Intel i5 Min hard drive: 250 GB (SSD preferred) Min RAM: 8 GB
Operating System	Microsoft Windows 10 or Windows 11
Software Environment	CTech™ ViPER® ANLYTX software platform
VPT Software Control	ViPER ANLYTX software
Validation Companion (optional)	ViPER validation check application for use with the SoloVPE Validation Cuvette Adapter (SVCA)
Security Companion (optional)	ViPER SecureVPT settings (for GxP implementations)
Prior Version	No prior versions, new platform release
Legacy Support	New platform release, no legacy products. Please contact Repligen for more information.

[§]*Recommendation per the minimum requirements of Agilent Cary WinUV Software Package*

Customer Support Options

Support and Training	Repligen is committed to customer success from predelivery through installation and training. Included with purchase: • IQOQ • On-site training • Full 12-month warranty support

Available Options	Available as additional options:
	• Single- and multi-year service contract options, including
	  ◊ Annual qualification (standard or CPV)
	  ◊ One service repair visit
	• Software support
	• Computer System Validation (CSV)

More information	Final application suitability of all materials and ratings are the sole responsibility of the user. Specified pressure and temperature ratings may be subject to limitations. Contact a Repligen's Analytics Representative for more information. C Technologies, Inc. and/or its affiliates, to the extent allowed by law, disclaims, and in no event shall be liable for, any incidental or consequential damages in connection with user, instrument, or system performance in relation to all content contained in this document, including but not limited to fitness for location of use, specific purpose for use, or application. Information, descriptions, and specifications in this publication are subject to change without notice.

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