Vacuum Ultraviolet Detector

chrozen GC-VUV

New and Worthy Alternative

YOUNG IN Chromass

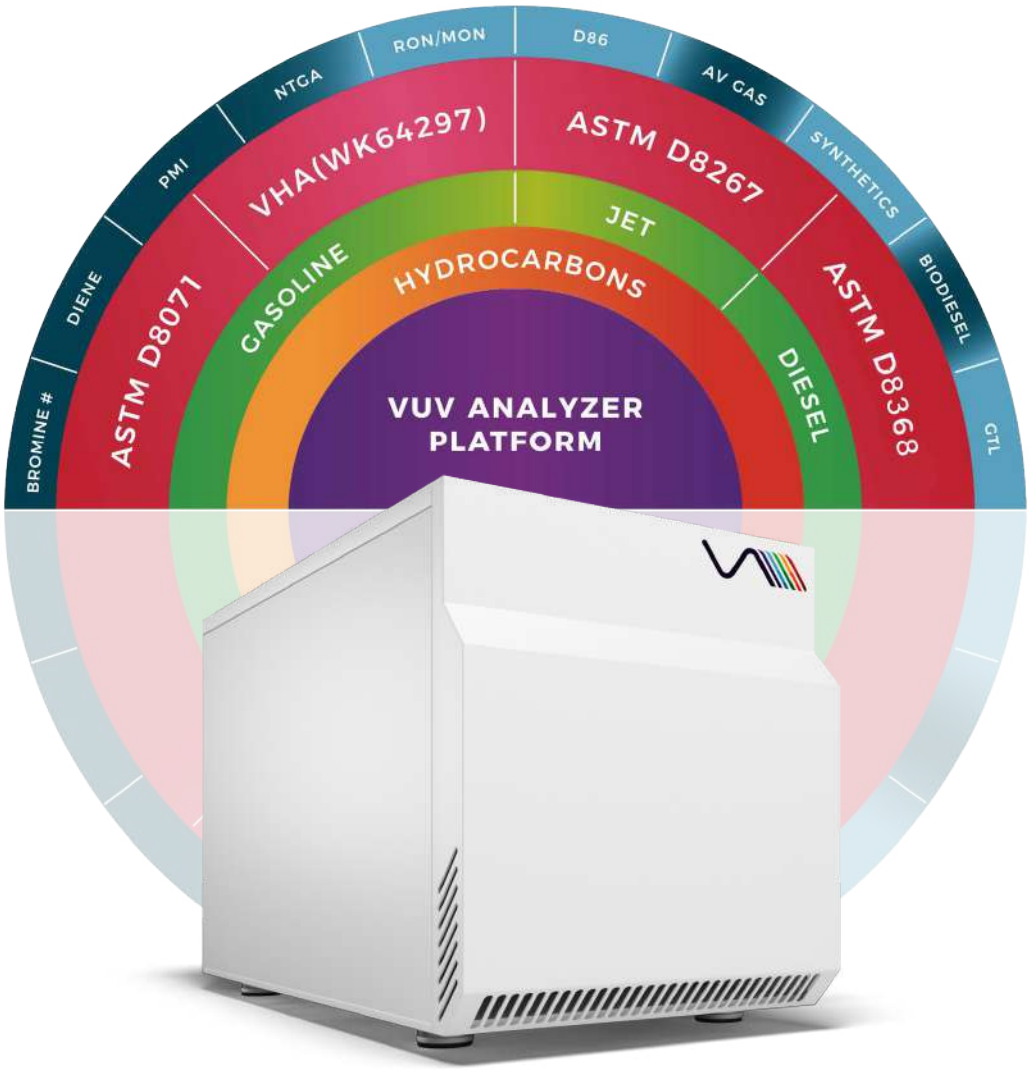
VUV(Vacuum Ultraviolet) Detector

PDA for Your GC But Worth more

VUV detector is the latest technology of universal detection for gas chromatography. It is designed to identify and quantitate most gaseous molecules in VUV region. The strong absorption of gas phase molecules in the VUV provides excellent sensitivity, and the compound-specific absorption spectra provides unparalleled selectivity.

Everything you need in one GC detector

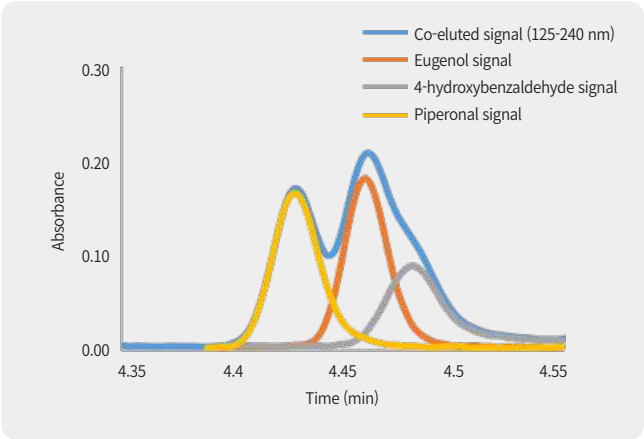
- Universal and selective detector
- Fast detector response
- First-principal technique drastically reduces calibration issues
- Easy to operate and maintain (No vacuum pumps required)
- Identification and quantitation of ambiguous compounds including isomers
- No need of ionization
- Excellent resolution
- Solution for co-eluting analytes



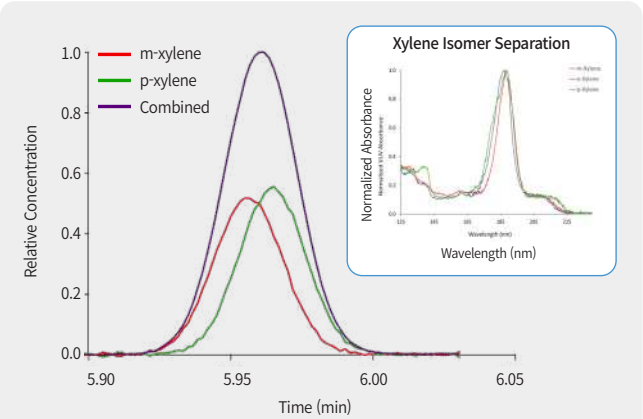
Unique Selectivity

Identification and Quantitation of Unambiguous Compounds

Each compound has a unique spectral fingerprint in the VUV spectrum and it is matched with spectral library. The library search algorithm provides correct and unambiguous identification of your compound, including most isomers.



Deconvolution of co-eluting peaks

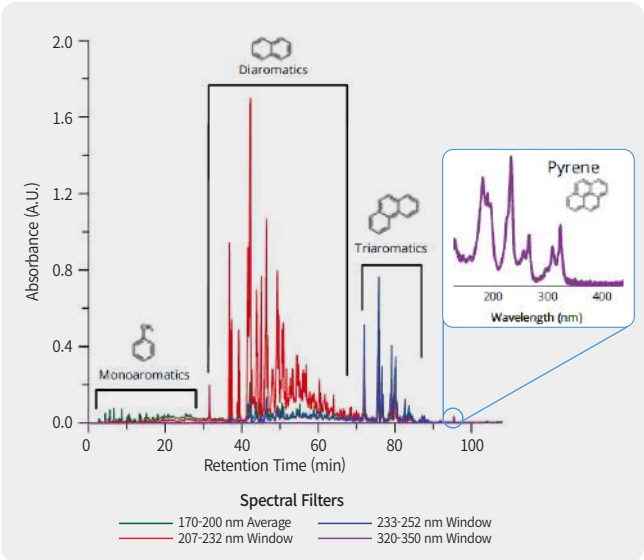


Isomer differentiation of Xylene

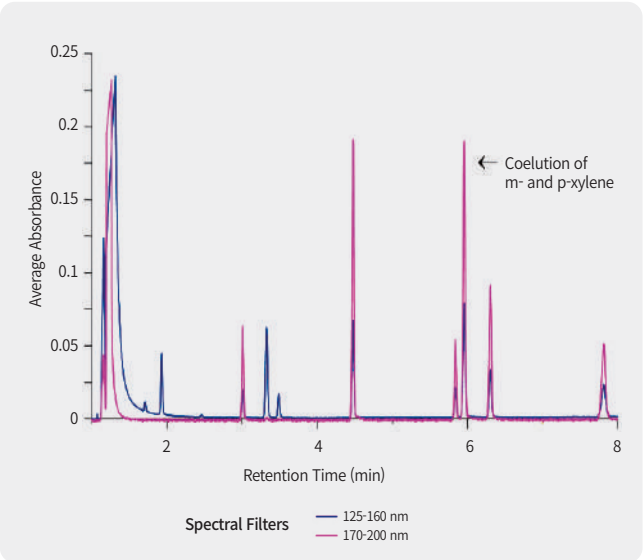
Excellent Sensitivity

Spectral Filters to Enhance Analyte Specificity

Spectral filters increase analyte sensitivity throughout in targeted wavelength regions while ensuring quantitation at very low concentration levels and suppressing background contributions.



Spectral filter comparison of diesel fuel fraction

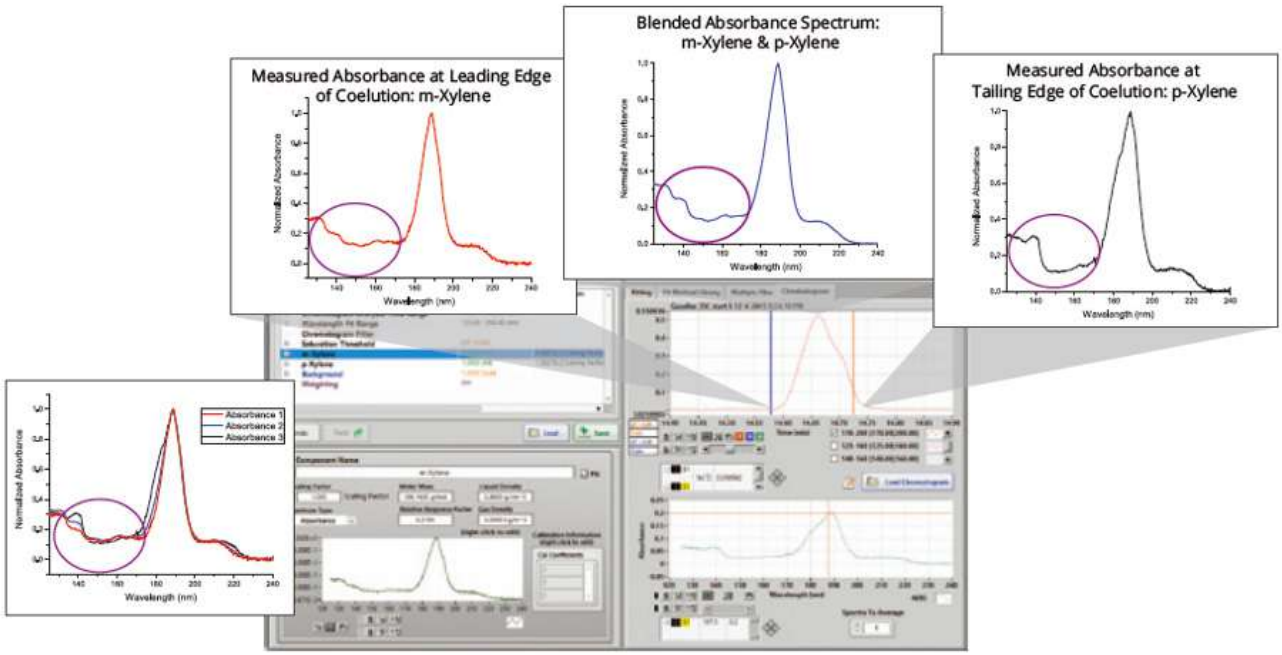


Xylene isomer VUV absorbance sensitivity comparison using different spectral filters

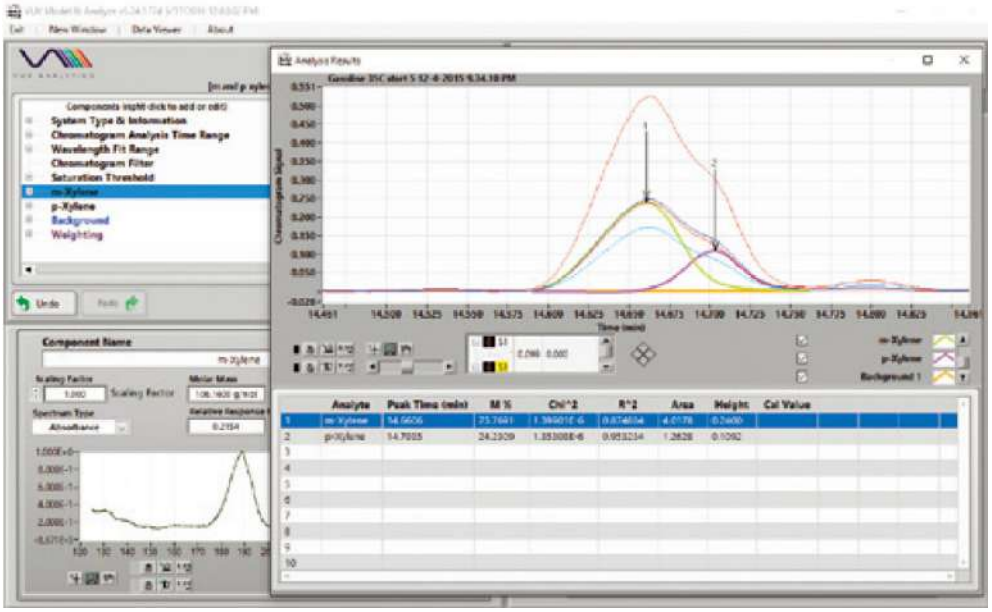
Simple but Powerful Software

Straightforward Workflows

VUV detector comes with easy-to-understand, yet powerful analysis tools. The user-defined methods can be operated with one-button of START-STOP trigger. Real-time chromatogram is shown during the whole data collection. First-principal measurement technique provides an easily predictable linear response. The measured spectra can be matched against an existing compound specific absorption cross section library to rapidly identify the compounds.



Matching the peaks of interest to compounds in the VUV absorbance library
Every data point in the sum absorbance peak has a unique spectrum reflecting the contribution of known compounds at a given retention time.



Deconvolution of m- and p-Xylene allows quantitation of each isomer

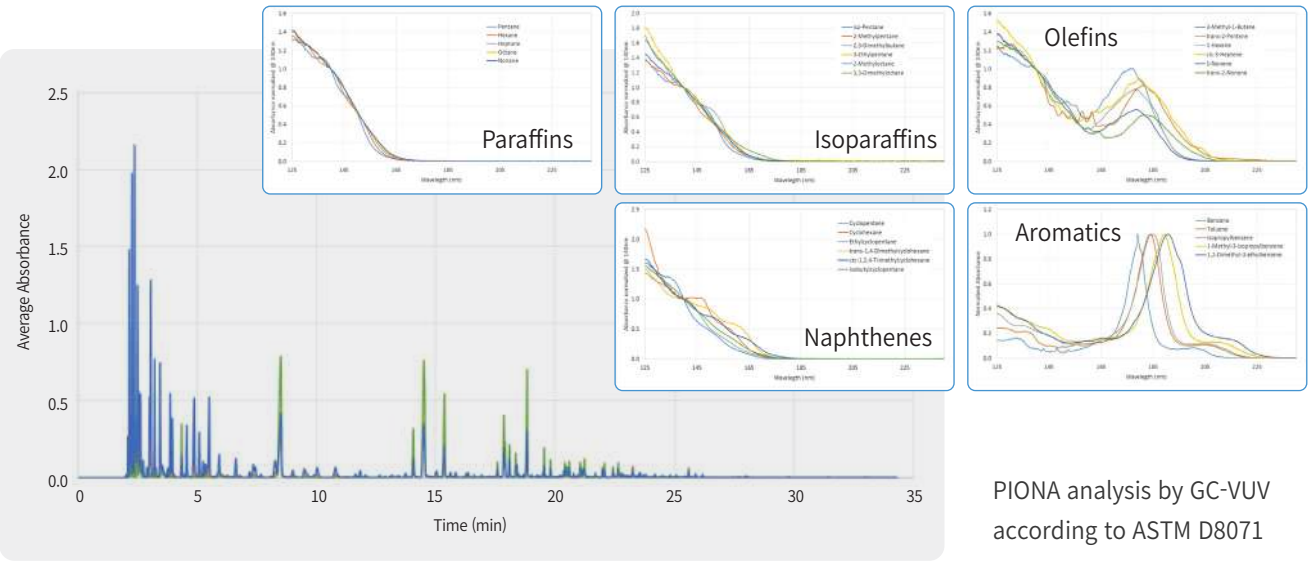
Universal Detector for Every Application

Any Analysis, Any Industries

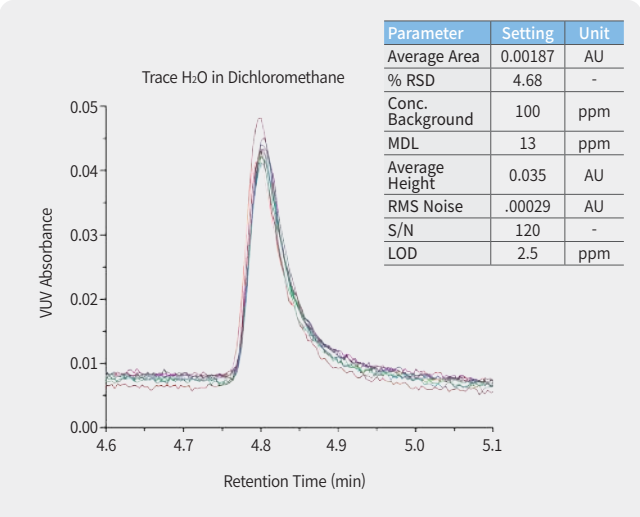
All gas phase molecules absorb strongly in the vacuum ultraviolet(VUV) region so, identification and quantitation of compounds is possible for a broad range of industries such as environmental research, oil & gas, forensics, fragrances & flavors, petrochemical, specialty gas, agrochemical, food & beverage safety and life science.

Reliable Analysis by ASTM Approval

- Finished gasoline Analysis (ASTM D8071)
- Jet Fuel Analysis (ASTM D8267)
- Diesel Analysis (ASTM 8368)
- VHA™ (Verified Hydrocarbon Analysis)(ASTM 8369)

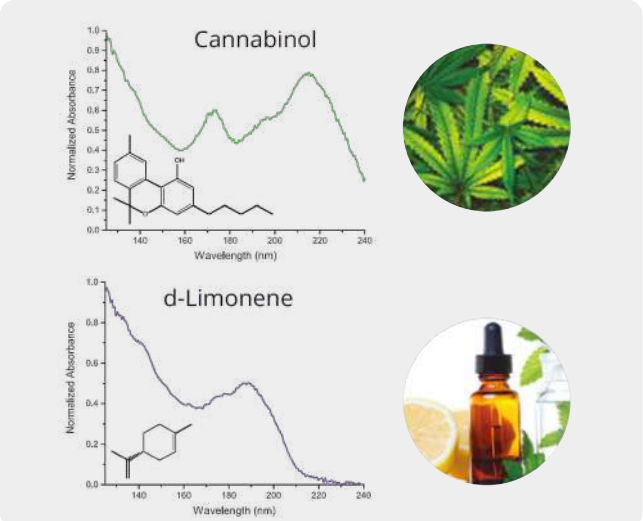


PIONA analysis by GC-VUV according to ASTM D8071



Parameter	Setting	Unit
Average Area	0.00187	AU
% RSD	4.68	-
Conc. Background	100	ppm
MDL	13	ppm
Average Height	0.035	AU
RMS Noise	.00029	AU
S/N	120	-
LOD	2.5	ppm

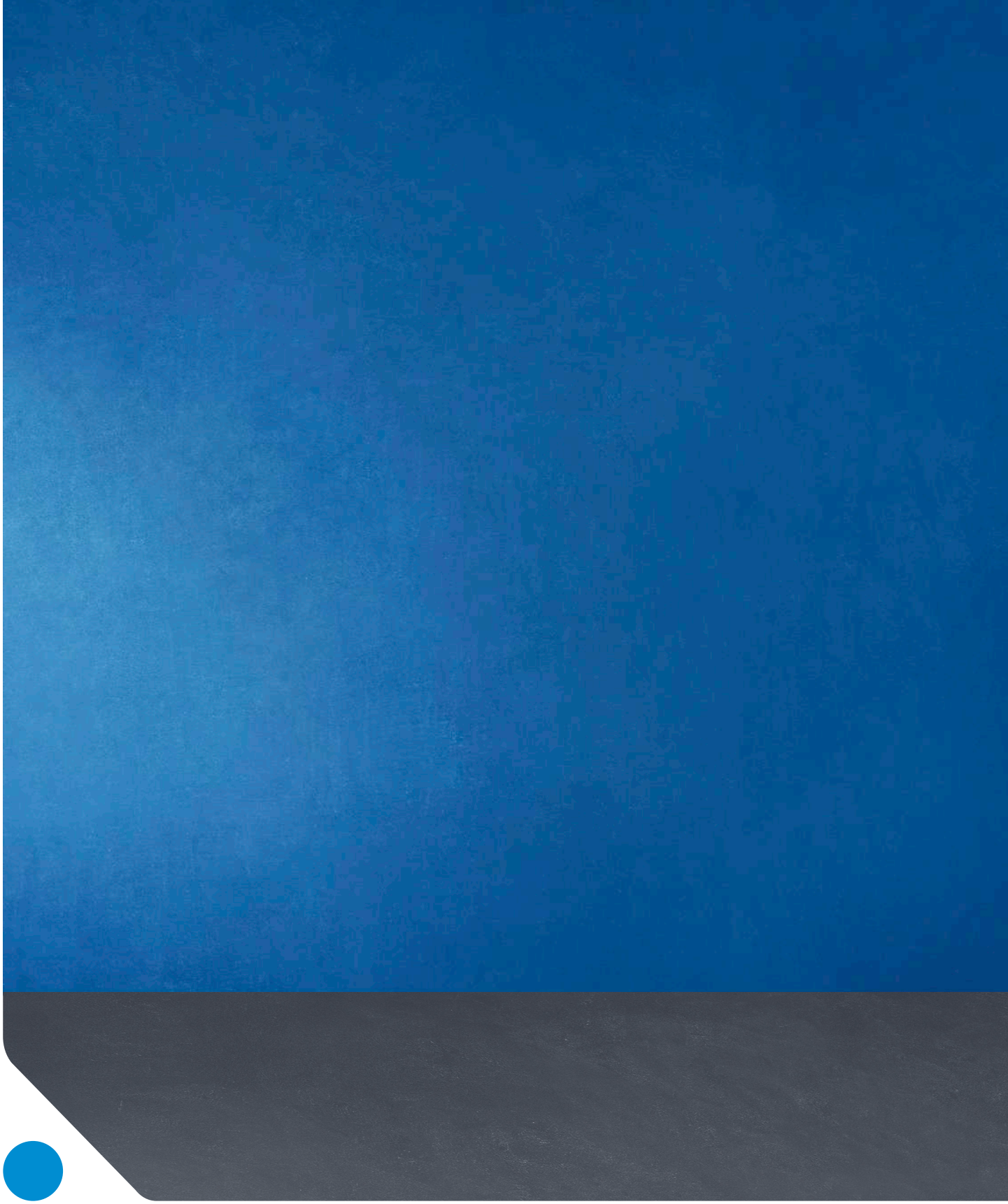
Reproducibility and detection limits of trace-level water determination by GC-VUV



VUV absorbance spectra in various samples

VUV Detector Specifications

Parameter	VGA-100	VGA-101
Light Source	Deuterium lamp (<2000 hr)	
Wavelength Range	125-240 nm	125 - 430 nm
Wavelength Accuracy	± 0.2 nm	
Wavelength Reproducibility	0.05 nm	
Type of Response	Universal	
Spectral Bandwidth	± 0.4 nm	
Maximum Acquisition Rate	75 Hz	
Data Collection Interval	11 ms	
Response Characteristic	Absorption vs. Wavelength	
Detected Species	All compounds and classes	
LOD(pg on column)	alpha-Pinene: 30 Methyl Decanoate: 30 Flourene: 35 Coumarin: 35 n-Decane (C10): 40 Phenylacetaldehyde: 40 Citronellol: 65	Benzene: 15 Nicotine: 20 Napthol: 30 Derivitized β-estradiol: 30 Octane: 60 Methanol:170 Water: 246
Linear Range	3-4 orders (5-6 orders using saturation threshold)	
Temperature Range	Ambient - 300°C	Ambient - 430°C
Carrier Gases	H_2, N_2 or He	
Makeup gas	Ar, He, N_2	
Flow Cell Dimensions	10 cm pathlength	10 cm pathlength
	80 µℓ cell volume	40 µℓ cell volume
Instrument Dimensions	76.2 x 33 x 43.2 cm	
Weight	54.4 kg	
Power Input Voltage	100/240V	
Power Consumption	< 700 VA	
Additional Facilities Requirements	Clean Dry Air (CDA) connection (70-90 psi) 99.999% N_2, Ar or He connection 40 ml/min purge requirement	



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