



## CHEM4 Series

Our CHEM4 series spectrophotometers are convenient PC-based systems that allow you to acquire and display data in a matter of milliseconds. Each CHEM4 system comes with a fully integrated light source and cuvette holder that attaches to the spectrometer for a remarkably small-footprint system. The cuvette holders for all CHEMUSB4 systems are designed for standard 1-cm square cuvettes.

## Applications

- » Concentration measurements
- » Absorbance measurement
- » Chemical analysis
- » Water analysis
- » Colorimetry
- » Food and drink analysis
- » Industrial and pharmaceutical analysis

## Features

- » Onboard, 2-MHz A/D converter
- » USB-to-PC interface
- » Linear CCD-array detector
- » RoHS and CE compliance
- » Flow cell combination capabilities

## Advantages

- » Small footprint (89.1 mm x 63.3 mm)
- » Plug and play operation
- » User friendly
- » No external power supply
- » Multi purpose
- » User-configured wavelength range and resolution
- » Fibre coupled SMA 905
- » User-interface software compatibility

# Specifications

## CHEM4-UV-VIS

## CHEM4-VIS-NIR

## CHEM4-UV-FIBER

## CHEM4-VIS-FIBER

DETECTOR				
Type	Linear CCD array	Linear CCD array	Linear CCD array	Linear CCD array
Detector range	200 - 1100 nm	200 - 1100 nm	200 - 1100 nm	200 - 1100 nm
Active Pixels	3648	3648	3648	3648
Pixel size	8 µm x 200 µm	8 µm x 200 µm	8 µm x 200 µm	8 µm x 200 µm
Pixel well depth	~ 100 000 electrons	~ 100 000 electrons	~ 100 000 electrons	~ 100 000 electrons
Sensitivity	130 photons / count at 400 nm 60 photons / count at 600 nm	130 photons / count at 400 nm 60 photons / count at 600 nm	130 photons / count at 400 nm 60 photons / count at 600 nm	130 photons / count at 400 nm 60 photons / count at 600 nm
SPECTROSCOPIC				
Wavelength range	210 - 880 nm	370 - 985 nm	200 - 885 nm	430 - 990 nm
Optical resolution	~ 1.0 nm (FWHM)	~ 1.0 nm (FWHM)	~ 1.0 nm (FWHM)	~ 1.0 nm (FWHM)
Signal-to-noise ratio	300:1	300:1	300:1	300 : 1
A/D resolution	16 bit	16 bit	16 bit	16 bit
Dark noise	50 RMS counts	50 RMS counts	50 RMS counts	50 RMS counts
Dynamic range	1300 : 1	1300 : 1	1300 : 1	1300 : 1
Integration time	3.8 ms to > 10 seconds	3.8 ms to > 10 seconds	3.8 ms to > 10 seconds	3.8 ms to > 10 seconds
Stray light	< 0.05 % @ 600 nm; < 0.10 % @ 435 nm	< 0.05 % @ 600 nm; < 0.10 % @ 435 nm	< 0.05 % @ 600 nm; < 0.10 % @ 435 nm	< 0.05 % @ 600 nm; < 0.10 % @ 435 nm
Corrected linearity	> 99.8 %	> 99.8 %	> 99.8 %	> 99.8 %
PHYSICAL				
Dimensions spectrometer	89.1 x 63.3 x 34.4 mm	89.1 x 63.3 x 34.4 mm	89.1 x 63.3 x 34.4 mm	89.1 x 63.3 x 34.4 mm
Weight spectrometer	190 grams	190 grams	190 grams	190 grams
Dimensions light source	198 x 105.1 x 40.6 mm	47.4 x 88.8 x 34.1 mm	198 x 104.9 x 40.9 mm	155 x 50 x 53.3 mm
Weight light source	200 grams	130 grams	400 grams	240 grams
COMPUTER				
Operating systems	Windows, Mac, Linux	Windows, Mac, Linux	Windows, Mac, Linux	Windows, Mac, Linux
Computer interfaces	USB 2.0 ; RS-232	USB 2.0 ; RS-232	USB 2.0 ; RS-232	USB 2.0; RS-232
Peripheral interfaces	SPI (3-wire); I <sup>2</sup> C integrated circuit	SPI (3-wire); I <sup>2</sup> C integrated circuit	SPI (3-wire); I <sup>2</sup> C integrated circuit	SPI (3-wire); I <sup>2</sup> C integrated circuit



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