

4500 System Specifications

Base Station	Light source	Two low coherent light sources (670 nm)
	Detection speed	4 ms
	Incident angles	40-47 Deg (gas) 67-81 Deg (liquid)
	Refractive index ranges	1.00 - 1.40
	Baseline noise	< 0.06 RU RMS (0.01 mDeg RMS)
	Baseline drift	0.30 RU/hr (0.05 mDeg/hr) (when ambient drifts < 1°C/hr)
	Measurement ranges	Association rate constant k_a : up to $10^8 \text{ M}^{-1} \text{ s}^{-1}$ Dissociation rate constant k_d : 10^{-6} to 1 s^{-1} KD: pM to mM
	Molecular weight cutoff	100 Da
	Temperature Control	Range: 50°C to 10°C below ambient temperature max down to 6°C Control accuracy: 0.01 °C
	PC interface	USB 3.0
	Data IO port	IO ports for sending and receiving raw signals with other equipment
	Outer dimension	355(w) x 250 (h) x 515 (d) mm
	Weight	11.5 kg
	Power supply	110-230 V 50/60 Hz
Fluid Handling	Sample channels	5 channels
	Flow cell material	PEEK (biologically compatible)
	Flow rate	1.0 to 150 $\mu\text{L}/\text{min}$ (application dependent)
	Buffer handling	Dual syringes driven by programmable infusion pump (BI-4500/4500A) Automatic Buffer Exchange Pump and Degasser (BI-4500AP)
	Sample injection volume	10 to 500 μL (application dependent)
	Sample injection methods	Semi automated (BI-4500) Fully automated (BI-4500A/4500AP)
	Channel volume	< 32 nL
	Injection rise time	< 0.2 s
	Analysis module (standard)	5 channel BI-DirectFlow™ Module
	Optional modules	EC SPR module for SPR measurement with electrochemistry EC-DualFlow™ for two channel flowthrough EC SPR measurement Gas SPR module for chemical vapor SPR measurement
Control System	Computer Software	Windows OS
		SPR Control software for real-time instrument control with programmable interaction assays for various application protocols. Data Analysis software for affinity, kinetics analysis, and concentration determination (calibrated or calibration-free).
Autosampler (option)	Sample capacity	2 x SBS standards (384 / 96), 2 x 48 Vials (1.5mL), 2 x 12 Vials (10mL)
	Sample cooling	Minimum: 4°C +/- 2°C
	Outer dimension	300 (w) x 575 (h) x 360 (d) mm
	Weight	21 kg
Automatic Buffer Exchange Pump and Degasser (option)	Buffer exchange	Automatic buffer exchange up to six sources
	Buffer degasser	In-line
	Buffer delivery	Continuous
	Outer dimension	305 (w) x 191 (h) x 330 (d) mm
	Weight	6.8 kg
Compliance		CE, 21 CFR part 11 IQOQ certification

Product specifications and descriptions in this document are subject to change without notice.

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