

## 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 $1 \text{ s}^{-1}$ KD: 1pM to 1mM Active Concentration: 1pM to 1mM
	Molecular weight cutoff	100 Da
	Temperature Control	Control accuracy at 0.01 °C Range: 50°C to 10°C below ambient temperature max down to 6°C
	PC interface	USB 3.0
	Data IO port	IO ports for sending and receiving raw signals with other equipment.
	Outer dimension and weight	355(w) x 250 (h) x 515 (d) mm and 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 programable infusion pump. Providing >8 hours of continuing operation.
	Sample injection volume	10 to 500 $\mu\text{L}$ (application dependent)
	Sample injection methods	Semi automated (BI-4500) Fully automated ( BI-4500A)
	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) .
	Compliance	CE compliance; 21 CFR part 11 compliance; IQOQ certification
Optional Accessories	BI-Autosampler PP100 (standard with BI-4500A)	Automatic sample loading up to 768 compounds with programmable sample mixing and dilution. Sample capacity: two SBS microtiter plates or two 48 1.5mL Vials trays or two 12 10mL Vials trays
	BI-auto-buffer exchange pump (standard with BI-4500AP)	Six ports auto buffer exchange pump with inline degasser extending continuing unattended operation >120 hours.

Product specification and descriptions in this document are subject to change without notice. January 2024