

# Bio Pure - Bio Pilot Purification System



Bio Pure - Bio Pilot is design for bio molecular purification in lab scale. It can be used for gram sample purification and drug research and development process. It can be combined with Bio analysis system in R&D process to accelerate progress of drug research.

<b>Solution inlet</b>	Three buffer inlets. One inlet can be used to feed sample. All of valve is membrane valves. The inlet line can be added by customer's requirements.  Gradient system added with matched solution inlet.		
<b>Air Sensor</b>	One ultrasonic air sensor used to detect air bubble in solution and sample.		
<b>Eluent Pump</b>	3L/h, PEEK pump head, plunger pump,100bar	6L/h, PEEK pump head, 100bar	15L/h, PEEK pump head, 100bar
<b>Drain valve</b>	For drain process of pump.		
<b>Flow meter</b>	Display and record the flow rate of system. One is in main flow path, the other one is in branch flow path.		
<b>Mixing chamber</b>	Static mixing, forming gradient eluent.		
<b>Pressure Transmitter</b>	Used to monitor the pressure and secure the chromatography system. There are three pressure transmitter in system. Two detect the block of filter. One used for detect the column block.		
<b>Bubble Trap</b>	One automated bubble trap equipped with by!pass, purge		
<b>Online filter</b>	Cartridge filter, pore size 0.2 μm. One online filter with by pass, drain function.		
<b>Sample Injection Valve</b>	One membrane manual valve used to inject small quantities of sample to test the column efficiency		
<b>Air Sensor</b>	One ultrasonic air sensor used to detect air before solution entry into column.		
<b>Bypass and Backlash function</b>	One specific block of 5 membrane valves to ensure by!pass and backflush functionality		
<b>Detection</b>	Conductivity and pH sensor after the column exit (pH range 1!14, conductivity 0!500 mS/cm)  Mutli!wavelength UV detector(190~700nm) equipped with a fiber optical flow cell		
<b>Collection Valves</b>	Five pneumatic 2!way membrane valves (normally closed) used to perform the fraction collection One valve connected to the waste outlet		



<b>System requirements</b>	
<b>Space requirement</b>	650mm*850mm*900mm
<b>Environment</b>	No direct sunlight, strong magnetic and electric fields, no strong vibration, no corrosive gas, dust
<b>Temperature</b>	40°C~50°C
<b>Humidity</b>	≤90%
<b>Power supply</b>	220V Three phase"#50Hz# 2kW
<b>Air supply</b>	0.6MPa, 1m3/min
<b>Whole system design</b>	
<b>System components</b>	Pump, sample injection system, air trap, detection system, fraction system, tube and valve system)
<b>System dimension</b>	600mm*800mm*850mm
<b>Weight</b>	100kg
<b>Connecting</b>	T!Clamp and chuck
<b>Material( wetted material and non"wetted material)</b>	All wetted material meets sanitary requirements. All stainless steel is SUS 316L. Tube and gaskets made of food silicone rubber material, shall comply with FDA, USP Class Ⅱ
<b>System Max. work pressure</b>	10MPa
<b>Pump</b>	
<b>Work mode</b>	Plunger pumps
<b>Maxing flow rate</b>	3L/H, 6 L/H or 15 L/H
<b>Material of pump head and diaphragm</b>	316/PTFE
<b>Material of check valve</b>	Ball: 316; Base: 316
<b>Motor</b>	0.25kw, 50Hz!380V!3PH,1500RPM,IP55
<b>UV Detector</b>	
<b>Wavelength range</b>	190!740nm
<b>Max. flow rate of flow cell</b>	1000ml
<b>Wet material</b>	316L
<b>Noise</b>	<1×10!5Au at 240 nm ( 1 channel )
<b>draft</b>	<1×10!4Au/h at 240 nm ( 1 channel )
<b>Accuracy</b>	±1.0nm



<b>Conductivity and pH detector</b>	
Detection range	0.02~500ms/cm
Accuracy	More than ±5.0%
Tolerance pressure	0~20bar
Temperature range	!20 to 150°C
Temperature accuracy	±0.1°C (±0.1°F)
Electrode material	SS 316L/1.4435
Body material	PEEK
PH range	0!14PH
Temperature range	0 to 140°C (32 to 284°F)
Tolerance pressure	0 to 6bar
Wetted material	Ceramic
Reference system	silver ion trap capture / silver chloride system
<b>Flow meter</b>	
Flow rate range	3L/H, 6L/H or 15 L/H
Tolerance pressure	>2MPa
Wetted material	1.4539/904L SST
<b>Pressure transmitter</b>	
Accuracy	0.15%
Detecting range	0!4Mpa
Wetted material	316L
<b>Air sensor</b>	
Tube size	1.6~25.4mm
Reaction time	Bubble detecting (wet to dry): Max. time 215ms Wet detecting (dry to wet): Max. time 46ms
<b>Air trap</b>	
Tolerance pressure	0.8MPa
Volume	200ml
Wetted material	316L/PTFE/EPDM



<b>Membrane valve</b>	
<b>Control mode</b>	Pneumatic, manual
<b>Wetted material</b>	SST316L PTFE
<b>Pressure range</b>	0!10bar
<b>Surface finish</b>	≤0.4μm
<b>Diameter</b>	DN4, DN6, DN10

<b>Tube</b>	
<b>Wetted material</b>	316L
<b>Connecting mode</b>	T!Clamp,
<b>Surface finish</b>	Inner surface Ra<0.4μm; outside surface Ra<0.8μm。

<b>SOFTWARE</b>	
<b>Package</b>	ClarityChrom
<b>compliance</b>	21CFR Part 11 compliance
<b>Multi"user environment</b>	Selectable system of user accounts with independently customizable behavior and appearance for individual users
<b>Integration</b>	27 integration parameters (peak width, threshold, tangent slope ratio etc.) integration parameters programmable in time, automatic re!integration
<b>Security and GLP</b>	Installation qualification test of the software; FDA 21 CFR Part 11 conformance, validation with virtual detector
<b>Instrument control</b>	method!based instrument control, Instrument status display and Direct!Control mode
<b>Chromatogram operations</b>	Overlay view, custom labels and settings, also applying mathematical operations to chromatograms
<b>Automation</b>	Sequences, automatic launch of selected commands or applications immediately following chromatogram acquisition – Post run, Batch
<b>System suitability test</b>	automates the calculation of system suitability parameters for system validation
<b>P&amp;ID function</b>	<p>The software includes a good operation interface (P&amp;ID); the whole system can be controlled by the relevant buttons in the P&amp;ID, for example:</p> <p>Set up the parameters for the pumps and detector, such as system pressure limit and wavelength, etc.</p> <p>Choose different fraction collection channels for the distillate (1!8).</p> <p>Normal operating system to carry out system balancing, sampling, sample elution and fraction collection, etc.</p>

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