

# InnoSep-BioPilot Purification system



InnoSep!BioPilot is design for bio!molecular purification in scale!up. It can be used for hundreds gram purification and drug production.!!

<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>	30L/h, Double diaphragm metering pumps,10bar"	60L/h, Double diaphragm metering pumps, 10bar"	180L/h, Double diaphragm metering pumps, 10bar"
<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)"  Mutil!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"		

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<b>System requirements"</b>	
<b>Space requirement!</b>	1000mm*1300mm*2000mm"
<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>	380V (Three phase) , 50Hz, 5kW"
<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>	850mm*1100mm*1700mm*"
<b>Weight!</b>	0.9T"
<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 or European Pharmacopoeia requirements."
<b>System Max. work pressure!</b>	0.6MPa"
<b>Pump"</b>	
<b>Work mode!</b>	Double diaphragm metering pumps"
<b>Maxing flow rate!</b>	30L/H, 60 L/H or 180 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"

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<b>Conductivity and pH detector"</b>	
<b>Detection range!</b>	0.02~500ms/cm"
<b>Accuracy!</b>	More than ±5.0%"
<b>Tolerance pressure!</b>	0~20bar"
<b>Temperature range!</b>	120 to 150°C"
<b>Temperature accuracy!</b>	±0.1°C (±0.1°F) !
<b>Electrode material!</b>	SS 316L/1.4435"
<b>Body material!</b>	PEEK"
<b>PH range!</b>	0!14PH"
<b>Temperature range!</b>	0 to140°C (32 to 284°F) !
<b>Tolerance pressure!</b>	0 to 6bar"
<b>Wetted material!</b>	Ceramic"
<b>Reference system!</b>	silver ion trap capture / silver chloride system"
<b>Flow meter!</b>	
<b>Flow rate range!</b>	30L/H, 60 L/H or 180 L/H"
<b>Tolerance pressure!</b>	>2MPa"
<b>Wetted material!</b>	1.4539/904L SST"
<b>Pressure transmitter"</b>	
<b>Accuracy!</b>	0.15%"
<b>Detecting range!</b>	0!4Mpa"
<b>Wetted material!</b>	316L"
<b>Air sensor"</b>	
<b>Tube size!</b>	1.6~25.4mm"
<b>Reaction time!</b>	Bubble detecting (wet to dry): Max. time 215ms! Wet detecting (dry to wet): Max. time 46ms"
<b>Air trap"</b>	
<b>Tolerance pressure!</b>	0.8MPa"
<b>Volume!</b>	200ml"
<b>Wetted material!</b>	316L/PTFE/EPDM"

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<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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