KNAUER

AZURA P 6.1L – quaternary LPG

Quaternary analytical HPLC pump

The AZURA pump P 6.1L uses technology to overcome the challenges of pumping LC solvents at high pressure and high flow rates. This pump is designed to fulfill the needs for low pressure mixing tasks.

The pump can deliver flow in the range of 0.001 – 10 mL/min at pressures up to 700 bar. The AZURA quaternary pump contains one high pressure pump (700 bar) and an integrated LPG mixing block with a 4 channel inlet solvent selection valve and the new developed AZURA mixer, a low-volume mixing device.

The integrated degasser and AZURA inline filter are completing the analytical AZURA HPLC pump and turn this pump into a working horse in the lab.

Solvent delivery	
Pump head	10 ml/min
Pulsation compensation	active pulsation compensation
Pump head materials	stainless steel
Maximum delivery pressure	70 Mpa (700 bar, 10150 psi) up to 5 ml/min, 40 MPa (400 bar, 5800 psi)
Flow rate range	0.001 - 10 ml/min 0.02 - 10 ml/min (recommended)
Flow rate increment	0.001 ml/min
Flow rate accuracy	± 1%, measured at 5 - 80% of flow range using ethanol
Flow rate precision	< 0.1% RSD based on retention time at constant room temperature
Pulsation	< 2% amplitude (typically < 1.3%) or < 0.3 MPa (3 bar), whatever is greater, at 1 mL/min ethanol, at all pressures > 1 MPa (10 bar, 147 psi).
Gradient formation	low pressure quaternary mixing
Gradient range	0 - 100% 1 - 99% (recommended)
LPG: minimum increment	0.1%
LPG: gradient accuracy	± 0.3% at 1 ml/min, 150 bar ethanol/caffeine tracer) ± 2% (1 - 99%, measured at 5 - 50% of the flow range, water/caffeine tracer)
LPG: gradient precision	< 0.1% RSD at 1 ml/min, 0.5% RSD overall, based on retention time at constant room temperature
Mixing volume	50, 100, 200 µl
Delay volume	210 µl (depending on mixer)
Piston seal washing	standard
System protection	soft start, Pmin and Pmax are programmable
Wetted materials	stainless steel, graphite fiber reinforced PTFE, FKM, PEEK, sapphire, aluminium oxide (Al2O3)
Degasser module	
Degasser channels	4 channels, Teflon® AF
Degasser maximum flow rate	10 ml/min
Degassing method	gas permeation through Teflon® AF amorphous fluoropolymer membrane
Degassing efficiency	< 0.5 ppm dissolved O2 at 1 ml/min
Degassing chamber volume	480 µl volume per channel
Solvent applicability	universal, with the exception of hydrochloric acid and halogenated hydrocarbons - in particular hexafluoroisopropanol (HFIP)
Wetted materials	PEEK, Tefzel®, Teflon® AF
Vacuum chamber	polypropylene and stainless steel
Vacuum pump	low hysteresis behavior
Communication	
Control	LAN; analog and event controlled
Analog inputs	0 - 10 V
Analog control input	flow rate
Technical parameters	
Ambient conditions	temperature range: 10 - 40 °C; 50 - 104 °F air humidity: below 90 % humidity (non condensing)
Leak sensor	yes
General	
Power supply	voltage range: 100 - 240 V, 50 - 60 Hz
Dimensions	361 x 208.2 x 523 mm (W x H x D)
Weight	12.7 kg
Special features	automatic adaption of LPG cycle time

Ordering details:

APH34EA	AZURA P 6.1L Quaternary analytical HPLC pump with degasser, 10 ml pump head
APH64EB	AZURA P 6.1L Quaternary analytical HPLC pump with degasser, metal-free, 10 ml pump head

AZURA made in germany