System specifications

ÄKTApurifier

Flow rate range setting, ÄKTApurifier 10	0.001 to 10 ml/min
Pressure range, ÄKTApurifier 10	0 to 25 MPa
Flow rate range setting, ÄKTApurifier 100	0.01 to 100 ml/min
Pressure range, ÄKTApurifier 100	0 to 10 MPa
Conductivity range (RPC – IEX – HIC gradients)	1 µS/cm to 999.9 mS/cm
pH range	2 to 12
Temperature range	4°C to 40°C
Solvent compatibility	all commonly used chromatographic solvents
Size (W × H × D)	500 × 620 × 460 mm
Weight	75 kg

Operating data

Pump P-903

Flow rate range	0.001 to 10 ml/min
Increment	0.001 ml/min
Pressure range	0 to 25 MPa (250 bar, 3625 psi)
Pressure limits	programmable upper and lower limit
Internal volume	< 600 µl/pump module
Viscosity	maximum 5 cP

Pump P-901

Flow rate range	0.01 to 100 ml/min
Increment	0.01 ml/min
Pressure range	0 to 10 MPa (100 bar, 1450 psi)
Pressure limits	programmable upper and lower limit
Internal volume	< 1800 µl/pump module
Viscosity	maximum 5 cP

Monitor UV-900

Wavelength range	190 to 700 nm in steps of 1 nm, 3 wavelengths simultaneously
Bandwidth	4 nm
Wavelength accuracy	± 2 nm
Wavelength reproducibility	± 0.01 nm
Linearity	< 2% deviation up to 2 AU at 260 nm with Uracil at pH 2
Noise* (at 230 nm)	$< 6 \times 10^{-5}$ AU
Drift (at 254 nm)	$< 2 \times 10^{-4}$ AU/h
Max. pressure	2 MPa (20 bar, 290 psi)

Monitor pH/C-900

Conductivity unit	
Conductivity range	1 µS/cm–999.9 mS/cm
Noise	± 0.5% of full-scale calibrated range
pH unit	
pH range	0 to 14 (specifications valid between 2 and 12)
Accuracy	± 0.1 pH unit, temperature compensated
Stability	max 0.1 pH units deviation/10 h

Monitor UPC-900

UV unit	
Lamp wavelength	Mercury lamp (for detecting proteins) supplied with 254 and 280 nm filters as standard. Filters for 313, 365, 405, 436, and 546 nm are optional. Zink lamp with 214 nm filter (for detecting peptides) is optional.
Lamp lifetime	Approx. 7000 h (mercury lamp, 254 nm filter, room temp.)
Sensitivity	0.001–5.0 AU
Noise	$\leq 4 \times 10^{-5}$ AU at 254 nm
Flow cell	2- and 5-mm flow cells
Operating temperature	4°C to 40°C
Voltage	100–240 VAC 50–60 Hz
Dimensions (W × H × D)	160 × 200 × 250 mm
Conductivity unit	
Conductivity range	1 µS/cm–999.9 mS/cm
Reproducibility	± 3% or ± 15 µS/cm maximum, short-term
Noise	± 0.5% maximum of full scale
Response time	3 s maximum (0–95% of step)
Flow cell	
Cell constant	$50\ cm^{-1} \pm 20$
Max. flow rate	100 ml/min
Max. pressure	50 bar (5 MPa, 725 psi)
Cell volume	24 µl
Wetted parts	PTFE and titanium
pH unit	
pH range	0–14 (specifications valid from 2–12)
Accuracy	± 0.1 pH unit, temperature compensated
Stability	0.1 pH unit maximum deviation/10 h
Response time	< 10 s (0–95% of step)
Flow cell	
Max. flow rate	100 ml/min
Max. pressure	5 bar (0.5 MPa, 73 psi)
Cell volume	88 µl
Wetted parts	FFKM, glass, and titanium (flow cell and electrode); PTFE (dummy electrode)

* Measured with water at 1 ml/min, time constant 1 s, 10-mm flow cell.

Fraction collection

With Frac-950 Fraction Collector

Flow rate range	0.001 ml/min–100 ml/min
Fraction capacity	
Optional racks	
Rack A	120 × 18 mm tubes 8 × 30 mm tubes
Rack B	240 × 12 mm tubes
Rack C	Four microplates (4 × 96-wells per plate) 8 × 30 mm tubes
Rack D	45 × 30 mm tubes
Preparative mode[1]	
Rack E	80 × 30 mm tubes
Rack F	20 × 250 mm vessels
Funnel to Flask (used with Rack E)	30 funnels

With Frac-920 Fraction Collector

Tube capacity	95 in Tube Rack 18 mm 40 in Tube Rack 30 mm (optional) 175 in Tube Rack 12 mm (optional)

[1] Requires Prep Mode Conversion Kit

Sample Pump P-960

Flow rate range	0.1 to 50 ml/min
Operating pressure	0 to 2.0 MPa
Viscosity	Max 5 cP Max 10 cP at reduced flow rate

Autosampler A-900

Sample capacity	96 standard vials (1.5 ml), 160 microvials (0.5 ml)
Injection volume	5 to 1000 µl, flushed loop 1 to 500 µl, partial loop fill 1 to 475 µl, µl pick up
Injection valve switch time	< 100 ms
Precision	
Full loop injections	rsd ≤ 0.3%
Partial loopfill injections	rsd ≤ 0.5% for injection volumes > 5 µl
µl pick-up	rsd ≤ 1.0% for volumes > 5 µl
Sample viscosity	0–10 cP
Programming	Through UNICORN control only
Dimensions (W × H × D)	280 mm × 440 mm × 540 mm

Autosampler A-900 with cooling

Cooling capacity	> 11.5 °C below ambient temperature (T) for 16°C < T < 40°C
Typical cooling times	34 min from 23°C to 4°C (at 45% relative humidity) 60 min from 32°C to 4°C (at 35% relative humidity)
Programming	Through UNICORN control only

Autosampler A-905 for ÄKTA

Sample capacity	
96-well microplate (low/high)	Direct filling or 96 microvials
384-well microplate	Direct filling or 384 microvials
48-vial adapter	48 vials
Injection volume	5–1000 µl, filled loop 1–500 µl, partial loopfill 1–475 µl, µl pick-up
Dispenser syringe	100 µl, 250 µl, 500 µl, and 1000 µl (standard)
Injection precision	≤ 0.3% rsd filled loop > 5 µl ≤ 0.5% rsd partial loopfill > 5 µl ≤ 1.0% rsd µl pick-up
Programming	Through UNICORN only
Cooling capacity	Max. 12°C below ambient temperature for working temperatures between 16°C and 40°C
Dimensions (W × H × D)	280 × 440 × 400 mm

AD-900 A/D Converter

Voltage range	± 2 V DC
Resolution	1 µV, 20 bit
Input impedance	≥ 1 MV
Accuracy	> ± 0.5% or ± 0.05 mV
Max. input voltage	± 5 V
Power requirement	18–36 DC through the UniNet 2 connection
Dimensions incl. attachment (W x H x D)	45 x 85 x 175 mm
Weight	0.4 kg

Computer requirements

Pentium 4, 1.5 GHz

256 Mb RAM

500 Mb available hard disk (150 Mb to run UNICORN), NTFS file system

CD-ROM drive

Windows™ 2000 or XP