Waters
THE SCIENCE OF WHAT'S POSSIBLE.™

2535 QUATERNARY GRADIENT MODULE

The Waters® 2535 Quaternary Gradient Module (QGM) is a low-pressure mixing quaternary gradient pump (up to 50.00 mL/min) that serves as a solvent delivery device for purification systems. Programmable flow path selection enables the system volume to change when the column size is changed.

OPERATING SPECIFICATIONS

Number of solvents	Up to four: A, B, C, D
Solvent conditioning	Sparging: one channel per solvent
Flow rate range	0.50 to 50.00 mL/min, in 0.01 mL/min increments
Compressibility compensation	Automatic and continuous
Delay volume	Small-scale: < 6 mL Large-scale: < 13 mL
Programmable flow path selection	From the method editor, chose either large or small, depending on the experiment
Plunger seal wash	Integral, active, programmable
Gradient profiles	11 gradient curves, including linear, step [2], concave [4], and convex [4]
Priming	Self prime from solvent container on floor with dry lines
Maximum operating pressure	6000 psi
Composition accuracy	± 3.0% absolute (full-scale) from 5% to 95%; and from 1.0 to 50.0 mL/min (methanol or water step gradients) at 600 psi
Composition precision	Retention time variation < 0.15 min SD (uracil/caffeine; 1, 5, 20, 50 mL/min; 70:30 water/methanol dial-a-mix)
Primary wetted materials	316 stainless steel, UHMWPE blend, sapphire, ruby, Tefzel (ETFE), Teflon (FEP, PTFE, PFA), Kel-F, PAEK, Nitronic 60, and PEEK
Flow accuracy	± 1.0% of required flow (methanol or water at 600 psi)
Leak test	Fully automatic diagnostic

INSTRUMENT CONTROL AND COMMUNICATION

Number of contact closure outputs	4
Stop flow input	TTL signal or contact closure
Start gradient input	TTL signal or contact closure
Auxiliary input two	TTL signal or contact closure (one dedicated to leak detector)
Chart outputs	Two 0 to 2 volts per scale
Ethernet	RJ45 connector

PHYSICAL/ENVIRONMENTAL SPECIFICATIONS

Dimensions	Width: 28.0 cm (11.0 in.) Height: 43.2 cm (17.0 in.) Depth (no drip tray): 66.0 cm (26.0 in.)
Weight	39.5 kg (87.0 lbs.)
Operating temperature	4 to 40 °C (39.2 to 104.0 °F)
Operating humidity	10% to 90%, non-condensing
Acoustic noise	< 60 dBA

ELECTRICAL SPECIFICATIONS

Power requirements	6.5 A
Line voltage	100 to 240 Vac ± 10%
Frequency	50/60 Hz
Fuse	10 A, 5 x 20 mm, slow-blow, IEC type
Power consumption	650 W

ORDERING INFORMATION	PART NUMBER
2535 Quaternary Gradient Module	176001739
Prep Chromatography Rack (Optional)	205000619
FlexInject (Optional)	205000237

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August 2009 720003202EN LB-PDF

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