

SHERWOOD SCIENTIFIC FLAME PHOTOMETER MODEL 420Cs

CAESIUM and LITHIUM INTERNAL
REFERENCE FOR ANALYSIS OF
SODIUM, POTASSIUM AND LITHIUM



SHERWOOD SCIENTIFIC

FLAME PHOTOMETER MODEL 420Cs

The M420Cs is Sherwood's newest addition to the Flame Photometer product line. Evolved from the well-established M420, the M420Cs provides a precision (%CV) ≤ 0.5 , now achievable with all new dual channel models: i.e. the M420 & M425.

Unique to the M420Cs, is addition of a Caesium reference channel. This enables the analyst to work with Caesium or Lithium as an internal reference. The M420Cs' additional internal reference option provides greater flexibility; operators have the ability to choose the internal reference element based on the sample matrix considerations or existing procedures developed for discontinued instrumentation such as the IL 943 Flame Photometer.

A practical example where the Caesium option is beneficial is analysis of Lithium in clinical samples while still being able to benefit from the improved precision achieved by use of an internal reference.

- On board firmware with blanking, calibration and sample routines.
- Simultaneous measurement of two out of three elements: Sodium, Potassium and/or Lithium.
- Linearised Sodium response over the expected clinical Sodium concentration range (1 in 200 sample dilution).
- Internal reference facility for improved precision.
- Automatic flame ignition and optimisation.
- Safety features including optical flame and low air pressure detection for fuel gas shut off.
- Two digital displays for calibration and analysis data of each channel; analogue outputs for use with chart recorders and some on-line analysers.
- A "no tools" maintenance approach allowing easy access to mixing chamber and burner assembly.
- RS232 for data output to a serial printer.

PERFORMANCE

Measurement Range

Na Serum	110.0 to 170.0 mmol/l
Na Urine	0.0 to 199.9 mmol/l
K Serum	0.00 to 10.00 mmol/l
K Urine	0.0 to 200.0 mmol/l
Li Serum	0.00 to 3.00 mmol/l

Reproducibility

Na (140.0 mmol/l)	better than 0.5% CV (w/ Ref Facility)
K (5.00 mmol/l)	better than 0.5% CV (w/ Ref Facility)
K (80.0 mmol/l)	better than 0.5% CV (w/ Ref Facility)
Li (1.50 mmol/l)	better than 0.8% CV (w/ Ref Facility)

Linearity

Na Serum within	± 2 mmol/l
Na Urine within	± 4 mmol/l
K Serum within	± 0.2 mmol/l
K Urine within	± 2 mmol/l
Li Serum within	± 0.2 mmol/l

Dilution Factor

Na Serum/Urine	1 in 200 with de-ionised water
K Serum	1 in 200 with de-ionised water
K Urine	1 in 200 with de-ionised water
Li Serum	1 in 50 with de-ionised water

The above is correct for use with Propane. Results obtained from 20 replicates of the same sample, aspirating sample for 20 seconds, then water for 10 seconds. To achieve the stated specification the flame must be alight for a minimum of 30 minutes, with diluent being aspirated. (For a brand new, newly installed unit, that stabilisation is highly likely to be greater than 30 minutes).

ITEMS INCLUDED

CODE	DESCRIPTION	CODE	DESCRIPTION
47542300	M420Cs 2-CHANNEL CLINICAL FLAME PHOTOMETER	00156100	SOLUTION; 140.0, 5.00 & 1.50 mmol/L Na, K & Li (100 ML)
42008102	ATOMISER STAINLESS STEEL COMPLETE	00156601	SOLUTION, 10000 PPM CAESIUM (100 ML)
00153420	POWER SUPPLY UNIT, UNIVERSAL, IEC (no plug)	00156603	SOLUTION, 3 MOLAR LITHIUM (100 ML)
40022002	TUBE, DRAIN	10099010	WIRE, ATOMISER CLEANING PK3
00172043	TUBE, PVC REINFORCED, 2 METRES	92609052	LEAD, INSTRUMENT TO PRINTER/PC
00172114	TUBE, GAS 6.3 MM ID, 2 METRES	47171900	LEAD, MAINS 2M BLACK 10A IEC, PLAIN
40022003	TUBE, ATOMISER INLET	42591001	MANUAL, OPERATOR