

Flame Photometers

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Jenway

304-018



Digital Flame Photometers

Jenway PFP7 digital flame photometer has been designed as a low cost approach for the routine determination of sodium and potassium. Extra built-in filters for barium, calcium and lithium are available as accessories.

The instrument, which is a low temperature single channel emission flame photometer has the advantage of a large clear digital readout and will resolve readings to 0.1 ppm.

One important safety aspect of the PFP7 is the provision of an automatic flame failure detector which will shut off the gas supply in the unlikely event of the flame extinguishing. Na and K narrow band filter types are supplied on a wheel as standard.

- Independent zero and gain controls with a backing off capability on the zero control
- Automatic regulation of air supply
- Fine control gas valve for a range of gases
- Fine and coarse sensitivity controls
- Built-in push button electronic ignition
- High resolution down to 0.1 ppm
- Universal voltage/frequency operation
- Recorder output
- Flame failure detection and warning light
- Switchable decimal point
- Operates from propane, butane or natural gas supplies

PFP7/C is similar to the PFP7, but designed for the routine clinical determinations of sodium and potassium in serum samples. Additional filters are available for lithium, calcium and barium.

Range: 120–160 mmol/L Na (linearised); 0–10.0 mmol/L K

Serum samples need to be diluted 200:1 or 100:1 prior to presentation to the flame photometer. To enable this to be carried out efficiently the Model 8225 Dilutor (304-019) is available as an accessory.

Specifications

Model		PFP7	PFP7/C
Limits of detection	NA	≤0.2ppm	—
	K	≤0.2ppm	—
	Li	≤0.25ppm	≤0.25ppm
	Ca	≤15ppm	≤15ppm
	Ba	≤30ppm	≤30ppm
Reproducibility		≤1% coefficient of variation for 20 consecutive samples using 10ppm Na set to read 50.0	
Linearity		Better than 2% when concentration of 3ppm Na and K and 5ppm Li are set to read 100	
Specificity		Interference from Na, K and Li equal in concentration to test element will be <0.5% (both models)	
Recorder output		Nominal 1.00 V for a reading of 100.0 (both models)	
Services	Air	Moisture and oil free; 6Ls/min at 1kg/cm ² (14psi) (both models)	
	Fuel	Propane, butane, natural gas or LPG (both models)	
Dimensions, mm		420x360x300 (both models)	
Weight, kg		8 (both models)	

Cat. No.	304-002	304-018
Price	POA	POA

Photometers are supplied with Na/K filters, fuel and air connectors, nebuliser cleaning wire, hose connecting clips, auxiliary power plug, Allen key, 2 lengths of drain tubing and a comprehensive instruction and service manual.

N.B. These units will only operate with the correct type of air compressor and gas regulator (see accessories). Please specify when ordering.

Accessories

Cat. No.	Description	Price	Cat. No.	Description	Price
304-019	Model 8225 Dilutor	POA	304-010	Clinical reagent 1.00mmol/L Li (ml)	POA
304-001	Air compressor (220V, 50Hz)	POA	304-024	Clinical reagent 140mmol/L Na, 5mmol/L K (ml)	POA
304-003	Calcium filter (factory fitted*)	POA	304-025	Clinical reagent 120mmol/L Na, 2mmol/L K (ml)	POA
304-004	Barium filter (factory fitted*)	POA	304-026	Clinical reagent 160 mmol/L Na, 8mmol/L K (ml)	POA
304-008	Lithium filter (factory fitted*)	POA	304-027	Industrial reagent 1000ppm Li (ml)	POA
304-005	Natural gas 2-stage regulator	POA	304-028	Industrial reagent 3000ppm Ba (ml)	POA
304-006	Propane 2-stage regulator	POA	304-015	Industrial reagent 1000ppm Ca (ml)	POA
304-007	Butane 2-stage regulator	POA	304-012	Minor spares kit	POA
304-020	Water separator (standard)	POA	304-017	Major spares kit	POA
304-021	Water separator (large)	POA			
304-022	Dust cover	POA			
304-023	Cleaning solution	POA			

* It is recommended that these filters be factory fitted at the time of ordering.

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Sherwood Scientific

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Models 410 and 420 Flame Photometers

Both instruments have identical air/gas/sample mixing and flame systems giving excellent reproducibility and sensitivity for all applications. The large sample area and cool chimney facilitates easy manipulation of samples.

The model 420 peak mode automatically senses final reading and holds result. The sophisticated software in model 420 enables many user changeable options allowing customisation of measuring modes and data readout. A fully automated unattended system is available, capable of 60 Na and K results per hour. An automatic continuous flow diluter gives highly reproducible results on clinical samples.

- Single and dual readout for industrial and clinical samples
- Manual (model 410) and automatic with internal standard (model 420)
- Full safety features and ergonomic design
- Highly sensitive technique for Na, K and Li analysis

Specifications

Model	Model 410 Clinical/Industrial	Model 420 Clinical/Industrial
Range	Na, K, Li, Ca, Ba, Cs, Rb, Sr Single element displayed	Na with K, Li internal standard Dual elements displayed Single elements also possible
Limits of detection		
Na/K/Li/ Ca/Ba	20ppb/20ppb/50ppb 0.2ppm/20ppm	20ppb/20ppb/50ppb
Sensitivity to give 100 units, ppm		
Na/K/Li/Ca/Ba	0.5/0.5/5.0/5.0/1000	0.5/0.5/5.0
Linearity	±1% midpoint 3ppm Na=100 (both models)	
Specificity interference Na, K	0.5% of concentration of element under test (both models)	
Reproducibility	<2%	<0.5% (with internal standard)
Time to stability, sec	<20	<20
Analogue output voltage	Fixed	User adjustable
Display	Single channel	Dual
Gas control/optimisation	Manual	Automatic
Internal standard	No	Yes
QC and repeat sample numbering	No	Yes
Result stored	No	Yes
Result display	Manual estimation	Auto Peak
RS232 (printer/computer option)	No	Yes
User help codes	No	Yes
Safety features	"Cool" chimney, air pressure detector, optical instant flame-on detector (both models)	
Fuel	Butane, propane, natural gas	Butane or propane, LPG
Dimensions, mm/ Weight, kg	510x390x345/ 9.5	510x390x345/ 9.5
Accessories	Diluter, lineariser	Diluter, printer, auto sampler



Cat. No.	Description	Price
304-033	Model 410 Industrial flame photometer supplied with Na/K/Ca filters, fuel and air tubing, constant head and drain, drain tubing, nebuliser, nebuliser cleaning wire and inlet tubing, tubing clamps, power supply cable, fuse, "O" ring, calibration standards (1000ppm Na, 1000ppm K, 1000ppm Ca) and instruction manual	POA
304-034	Model 410 Clinical flame photometer with lineariser supplied as above except with clinical calibration standards (140.0mmol/L Na, 5.00mmol/L K, 1.5mmol/L Li)	POA
304-035	Model 420 Industrial flame photometer, dual channel supplied as 304-033 except with Na/K/Li filters, RS232 output cable and Li 1000ppm internal standard	POA
304-029	Model 420 Clinical flame photometer, dual channel supplied as 304-034 except with Na/K/Li filters, RS232 output cable and Li 1000ppm internal standard	POA

N.B. These units will only operate with the correct type of air compressor and gas regulator. These are not supplied, please see accessories below.

Accessories

Cat. No.	Description	Price	Cat. No.	Description	Price	Cat. No.	Description	Price
304-032	Printer for model 420	POA	304-044	Li filter*	POA	304-054	140.0mmol Na, 5.00mmol/L K, 1.5mmol/L Li, 100 ml	POA
304-036	M 805 Diluter	POA	304-045	Ca filter*	POA	304-055	Diluent concentrate, 6x100ml	POA
304-037	Auto sampler for model 420	POA	304-046	Ba filter*	POA	304-056	Tubing disinfectant, 6x100ml	POA
304-031	Compressor	POA	304-047	Filter holder Ca, Ba*	POA	304-057	Deproteinising solution, 6x80ml	POA
304-038	Compressor (water trap)	POA	304-048	Nebuliser SS complete	POA	304-058	Cleaning solution, 500ml	POA
304-039	Primary butane regulator	POA	304-049	1000 ppm Na, 6x100ml	POA	304-059	3 molar Li internal standard 6x100ml for model 420 clinical	POA
304-040	Primary propane regulator	POA	304-050	1000 ppm K, 6x100ml	POA			
304-041	Natural gas regulator*	POA	304-051	1000 ppm Li, 6x100ml	POA			
304-042	Na filter*	POA	304-052	1000 ppm Ca, 6x100ml*	POA			
304-043	K filter*	POA	304-053	1000 ppm Ba, 500ml*	POA			

* Suitable for model 410 only.