# Sherwood Scientific

## 36000009 and 36000109 Model 360 Flame Photometer

DELIVERED INSTRUMENT CONTAINS

| Item | Part Number | | Quantity |
|---|---|---|---|
| Model 360 Flame Photometer | 360 00 009 | | 1 |
| Sodium Filter, 589.6nm | 001 27 060 | | 1 |
| Potassium Filter, 768nm | 001 27 061 | | 1 |
| Lithium Filter, 670nm | 001 27 062 | | 1 |
| Calcium Filter, 620nm | 001 27 063 | | 1 |
| Barium Filter, 500nm | 001 27 064 | | 1 |
| Air Tubing for compressor | 001 72 043 | | 2 Metres |
| Fuel Gas Tubing | 001 72 114 | | 2 Metres |
| Constant Head and Drain | 401 11 000 | | 1 |
| Drain Tube, all flames #20411 on | 400 22 000 | | 1 metre |
| Universal Power Supply Unit and Multi-Plug | 001 53 313 | | 1 |
| Nebuliser | 420 08 102 | | 1 |
| Nebuliser Cleaning Wire | 100 99 010 | | 1 pack of 3 |
| Nebuliser Inlet Tubing, 150mm | 400 22 003 | | 1 |
| Operator Manual | 360 91 001 | | 1 |
| Sodium 1000ppm Standard | 001 56 620 | * | 1 x 100ml |
| Potassium 1000ppm Standard | 001 56 621 | * | 1 x 100ml |
| Lithium 1000ppm Standard | 001 56 622 | * | 1 x 100ml |
| Calcium 1000ppm Standard | 001 56 623 | * | 1 x 100ml |
| Barium 1000ppm Standard | 001 56 124 | * | 1 x 100ml |
| Tubing Clips | 001 06 016 | | 4 |

*re-order numbers for standard solutions are for 6 x 100ml bottles, except Barium which is for 1 x 100ml

## Required Accessories/Services

**Mains Supply:** 100V - 240V ±10% at 50 or 60Hz.

**Compressed Air:** Dry & Oil-Free at Constant Flow of 6 Litres/min @ 11 psi

| Sherwood Scientific Compressors **(Require IEC lead and plug)** | Part Number |
|---|---|
| Model 851 230V | 851 01 001 |
| Model 851 115V | 851 01 000 |
| Model 855 with Water-cooled Moisture Trap 230V | 855 01 001 |
| Model 855 with Water cooled Moisture Trap 115V | 855 01 000 |

**Gas Supply:** 14-30 psi (Secondary regulator fitted in instrument)

| | | |
|---|---|---|
| Propane and mixed LPG | Cylinder Regulator | 001 08 234 |
| Butane | Cylinder Regulator 7.5Kg & 15Kg | 001 08 439 |

**Head Space:** at least 1 Metre above Instrument, which is 500mm high.
**Drain:** adjacent to instrument
**Bench Area:** 500mm x 500mm

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**OPTIONAL ACCESSORIES**

REAGENTS

**Diluent Concentrate:** for accurate work, aids consistent nebulisation, 6 x 100ml 001 56 681
**Tubing Disinfectant:** removes hazardous residues in diluter tubing etc, 6 x 100ml 001 56 682
**Enzymatic Cleaner/Disinfectant**, 6x5g sachets 001 56 182
**Cleaning Solution:** to be used regularly as part of Maintenance schedule, 500ml 001 56 184

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## 36000009 and 36000109 Model 360 Flame Photometer

## Performance Specifications

OPERATING CONDITIONS
**Temperature** +10°C to +35°C
**Humidity** 85% Max. @ +35°C NB. See Air Compressors

OPERATING RANGE
*Sodium is highly prone to self- absorbance in the flame above a concentration of 10ppm.*

RANGE Displayed
All elements 0 - 1999

| | **MINIMUM DETECTION LEVEL** @3 x noise | | | **CONCENTRATION to give min. 100 Units** | | | **LINEARITY** % of full value at 50% of set value |
|---|---|---|---|---|---|---|---|
| | **ppm** | **mg/l** | **meq/l** | **ppm** | **mg/l** | **meq/l** | |
| **Na** | 0.1 | 0.1 | 0.0044 | 1 | 1 | 0.0435 | ± 2% @ 3ppm |
| **K** | 0.1 | 0.1 | 0.0025 | 0.5 | 0.5 | 0.0127 | ± 2% @ 3ppm |
| **Li** | 0.1 | 0.1 | 0.0144 | 1 | 1 | 0.1441 | ± 2% @ 3ppm |
| **Ca** | 2* | 2* | 0.0998* | 20* | 20* | 0.9980* | ± 2% @ 100ppm |
| **Ba** | 20* | 20* | 0.2912* | 300** | 300** | 4.3680** | ± 2% @ 1000ppm |

***For optimum performance the Model 360 should be warmed up for 30 minutes.***

SPECIFICITY
**Na, K & Li Interference** is < 0.5% value of element under analysis.
Sodium interference for Calcium, and Potassium interference for Barium should be determined at concentrations appropriate to the analysis being undertaken.

REPRODUCIBILITY
≤ 1.5%* CV for 10ppm K set to 1000. (20 aliquots sampled for 20 seconds each from a single sample).
Reading taken 20 seconds after introduction and with a Blank aspirated for 10 seconds between each standard reading.

≤ 1.0%* CV for 20 consecutive readings taken at 20 second intervals without removing the uptake tube from a 10ppm Potassium solution set to 1000.

* May not be achievable if fuel gas used is Natural Gas.
** Ba with Natural Gas 1000ppm (mg/L) may give a 100 units response (or 14.56mEq/l)

ASPIRATION RATE
3-6 ml/min

SPEED OF ANALYSIS
Time to stability 20 seconds

DATA OUTPUT
Analogue: Voltage 0.20 Volts FSD

DIMENSIONS
500mm x 300mm x 230mm 5.6 Kg Nett
480mm x 420mm x 350mm 8.6 Kg Packed

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