

## Microcontroller Based Flame Photometer (21 CFR Part-11 Compliance)

Model:  $\mu$ FlameCal100 | Make: ANALAB | HSN Code: 90275010



Supplied with Two Filters (Na and K), Inbuilt Air Supply Unit, Atomizer Tube, Sample Beaker (06 Nos.), Gas Lighter, LPG Tube, Power Cord, ANALABsafe software, USB Interface Cable, Operational & Instruction Manual with SOP, Calibration Test Certificate (Without Traceability Document) and Warranty Card.



## Technical Specification:

|                                 |  |
|---------------------------------|--|
| Element Range                   | : Na, K, & Li: 1-200 ppm, Ca: 15-300 ppm, Ba: 30-3000 ppm  |
| Sensitivity                     | : Na: 0.5 ppm, K: 0.5 ppm, Li: 0.5 ppm, Ca: 15 ppm, Ba: 50 ppm   |
| Filter Selection                | : Automatic by soft touch key  |
| Resolution                      | : 0.1 ppm  |
| Detector                        | : Silicon Photodiode   |
| Linearity                       | : <b>Better than 2%</b>  |
| Unit of Measurement             | : <b>ppm</b>   |
| Calculation of Concentration    | : <b>In built with system &amp; can be measure by Sample Weight &amp; Dilution Factor.</b>   |
| Reproducibility                 | : <b>&lt;1% Coefficient of Variation (CV) for 20 consecutive samples using 10 ppm Na set as maximum standard &amp; Barium 3% CV for 20 consecutives samples of Concentrations between 50 to 199 ppm.</b> |
| Stability                       | : <b>&lt; 2% drift over 5min when continuously aspirating 10 ppm sample</b><br><b>Specificity Interference from Na/K and Li.</b>   |
| Curve Fitting Accuracy          | : <b>&lt;1% error when 3 ppm Na/K and 5 ppm Li are set as maximum standards and can measure calculation of curve coefficient automatically.</b>  |
| Correlation Factor              | : <b>Possible with System</b>  |
| Quick Calibration Facility      | : <b>With Highest standard</b>   |
| Calibration                     | : <b>Up to 05 standards per Elements with Curve Fitting Software in-built with Instrument &amp; have automatic calculation of curve coefficient.</b>   |
| Measurement of Sample           | : <b>Multi elements in single aspiration OR one by one.</b>  |
| Calibration of Sample           | : <b>Multi elements in single aspiration OR one by one.</b>  |
| Ignition System                 | : <b>Auto Igniter</b>  |
| Auto LPG Shut-off at Power Off: | : <b>Safety feature in case of sudden power failure</b>  |
| Flame Type                      | : <b>LPG &amp; Dry Oil Free Air</b>  |
| Auto Flame ON / OFF Detection   | : <b>Audio and Visual Alarm</b>  |
| Gas Control                     | : <b>Adjustable with Regulator</b>   |
| Atomizer                        | : <b>Axial Flow Type</b>   |
| Air Flow Monitoring Facility    | : <b>4 – 6 ml/min., In-built with Instrument</b>   |
| Error Messages                  | : <b>“LPG is Off”, “Home Detection”, “Memory Full”, “Flame is Off”, “Do Warm-up”, “In Correct Standard” &amp; “Enter in Range”.</b>  |
| Display                         | : <b>20 x 4 Line Alphanumeric Backlit LCD</b>  |
| Keypad                          | : <b>Membrane waterproof polycarbonate soft touch keypad compliance to UL/ROHS</b>   |
| Air Supply Unit (In-built)      | : <b>Consist of Air Compressor, Pressure Gauge, Pressure Regulator, Moisture Filter, PU Tube (2 Meters) and Air filter with moisture absorbent catalyst.</b>   |

- Calibration Data Storage : Non-Volatile Memory which can store, print & view report date & time, company name, Last calibration date & time, calibration done by, standards result, calibration done on, instrument serial number, instrument ID etc.
- Analysis Data Storage : **More than 1500** analysis data can be stored with corresponding calibration data, analysis date & time, record number, Batch number / ID, sample name, username, assigned method number, Corresponding Calibration data of lower & higher standard, Sample Result, Dilution factor, Sample Weight, Calculation of Concentration, instrument ID, serial number, model number, make, etc. **Secondly**, analysis data can be print online without saving in Instrument.
- Searching of data : With record number, batch number, date, date range and by scrolling.
- Report Formation : **As per GLP Compliance**
- 21 CFR Part-11 Compliance :
  - **In-built with system for ease of operation without PC.**
  - **2 Admin, 10 Reviewers, 40 Users & 1 Manufacturer with individual Login ID & Passcode.**
  - **Audit trail can store more than 5000 lines in instrument.**
  - **Audit trail includes action taken, date & time, action taken by whom.**
  - **Audit trail can be transfer to PC through ANALABsafe software and can print on 40 / 80 column dot matrix printer for record.**
  - **Admins can set up operation permission of each Users & Reviewers.**
  - **Strict Admins control to audit and monitor usage and access.**
  - **Audit trail record can be printed with Date, Date Range and by individual User's ID.**
  - **Once Audit trail transfer to the PC or Printer, system will delete Audit trail records and before final deletion, the system will give warning twice.**
  - **Data integrity with database capability to store Analysis Data, Calibration Data, Calibration and Analysis Method, Audit trail and Passcode in instrument.**
  - **No direct access to data from outside the instrument, thereby creating a closed system.**
  - **Audit traceability to ensure that the device and results are appropriately handled.**
  - **Auto User's logout after defined Logout time.**
  - **Auto Users & Reviewers block when password is entered incorrectly 3 consecutive times.**
- Printer Interface : Centronics Parallel Port / Serial (RS-232 C) Port
- Printer : 40 / 80 Column Dot Matrix Printer (**Printer must procure optionally**)
- PC Interface : USB Type - B

|                 |  |
|-----------------|--|
| PC Connectivity | : By USB Interface Cable with Driver, <b>ANALABsafe</b> software to transfer Analysis data in GLP format, Calibration data and Audit trail from Instrument to PC in <b>non-editable format (Cannot be Deleted)</b> |
| Power Supply    | : 230VAC $\pm$ 10%, 50 Hz  |

## Optional

### 1. IQ/OQ/PQ/DQ Documents

- Note:**
- Please provide Customer's Name & Address prior to dispatch.
  - To perform onsite documentation, visit charge will be extra depending upon place of Installation.
  - Traceability documents along with installation report.
  - Standards / Chemicals / Buffers required to perform documents are in customer's scope.
  - We don't send documents by email.

### 2. Calcium (Ca) Filter – HSN Code : 90022000

### 3. Lithium (Li) Filter – HSN Code : 90022000

### 4. Barium (Ba) Filter – HSN Code : 90022000

### 5. Sodium 100 ppm Stock Solution – 500 ml - HSN : 3822.0090

### 6. Potassium 100 ppm Stock Solution – 500 ml - HSN : 3822.0090

### 7. Calcium 100 ppm Stock Solution – 500 ml - HSN : 3822.0090

### 8. Lithium 100 ppm Stock Solution – 500 ml - HSN : 3822.0090

### 9. Barium 1000 ppm Stock Solution – 500 ml - HSN : 3822.0090

### 10. GMP Enclosure made up of Stainless Steel

### 11. 40 / 80 Column dot matrix printer – HSN Code : 84433220

### 12. Keypad Screen Guard – HSN Code : 39199010

### 13. Traceability Documents

### Available other Models of Flame Photometer

- Microcontroller Based Flame Photometer Model:  $\mu$ FlameCal5 with Single Standard Calibration
- Microcontroller Based Flame Photometer Model:  $\mu$ FlameCal10+ with Three Standard Calibration as per Non-GLP Format
- Microcontroller Based Flame Photometer Model:  $\mu$ FlameCal50 with Five Standard Calibration with Printing Facility as per GLP Format
- Microcontroller Based Flame Photometer Model:  $\mu$ FlameCal100 with 21 CFR Part-11 Compliance & Printing Facility as per GLP Format

### Product Range

- pH/mV/°C/ORP Analyzer • Conductivity/TDS/Resistivity/Salinity/°C Analyzer
- Multiparameter Analyzer (pH/ORP/Conductivity/TDS/Resistivity/Salinity/°C)
- Karl Fischer Titrator • Auto Titrator • Automatic Melting Point Apparatus
- Flame Photometer • Friability Test Apparatus • Tablet Dis-integration Test Apparatus
- Tap Density Test Apparatus • Tablet Hardness Tester • Leak Test Apparatus
- Tablet Dissolution Test Apparatus • Electromagnetic Sieve Shaker • Ultrasonic Bath (Sonicator) • Analytical Electronics Balance • Halogen Based Moisture Analyzer
- Visible & UV-Vis. Spectrophotometer • Nitrogen Gas Generator • Zero Air Gas Generator • Combination Nitrogen / Zero Air Gas Generator • Air Drying Unit for TOC Analyzer • Dew Point Apparatus • Gas Handling & Purification System • Laboratory Furniture & Fume Hood • Exhaust Hood for AAS/ICP.

## ANALAB SCIENTIFIC INSTRUMENTS PVT. LTD.

AN ISO 9001 : 2015 CERTIFIED CO.  
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