Just Add Gas

BWB Technologies

BWB Soil Flame Photometer

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Flame photometers that push the boundaries of low temperature flame analysis.

Analysis with a low temperature propane, LPG, or butane flame has been redefined by BWB Technologies.

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Our Mission

To redefine the boundaries of Flame Emission Spectroscopy (FES) by supplying unique, cost effective, reliable and accurate flame photometers (and related products) and to build strong, lasting relationships with our customers by providing the best customer service in the industry.

About BWB Technologies

BWB Technologies is a UK company focused on the design, manufacture and sales of award winning flame photometers. Drawing on an Anglo-American team of leading industry specialists, we strive to create high quality, cost effective products that redefine what is achievable with a low temperature flame. From our manufacturing plant in Newbury, England, BWB Technologies have introduced a series of flame photometer products and accessories which exceed existing expectations in terms of specification, usability, accuracy, reporting, build quality and value for money.

International support network

BWB Technologies are the only flame photometer manufacturer to have dedicated sales and technical support offices in Europe, The America's and the Middle East. We offer an unsurpassed level of customer support with a 24/7 support service and real people answering customer calls.

Pushing the boundaries of flame photometry

What can be achieved with a flame photometer has been redefined by BWB Technologies. With unrivalled accuracy, low cost and ease of use the BWB flame photometer is not only the best flame photometer available but is the first real alternative to AAS (atomic absorption spectrometry) and ICP (Inductively Coupled Plasma) for measuring Lithium (Li), Sodium (Na), Potassium (K), Calcium (Ca), Caesium (Cs) and Barium (Ba). The recent introduction of industry specific products for Biological samples, Sugar, Nuclear and others further defines BWB Technologies as the leader in "next generation" flame photometers.

Best customer service in the industry

- International telephone service available 24/7, with local access numbers in Europe, the USA and the Middle East
- An international distributor network servicing the needs of customers in over 100 countries.
- Fast delivery of spare parts and consumables backed by extensive inventory in multiple strategic locations.
- Pre-sales application specific product selection assistance
- 100's of hours of video training available in a wide choice of languages
- Technically competent customer service staff
- ISO9001 Certified manufacturer
- Excellent Globally acclaimed after-sale support and service by Value Added Distributors and Internet based assistance from GMT and PST time zones.

Contact Information

BWB Technologies UK Ltd Unit 8, The Galloway Centre, Hambridge Lane, Newbury, RG14 5TL UK

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E Orders orders@bwbtech.com Admin admin@bwbtech.com Technical technicalsupport@bwbtech.com Sales sales@bwbtech.com

www.bwbtech.com 12 months warranty

BWB Technologies UK, Ltd. warrants, subject to the conditions itemised within this document, through either BWB personnel or personnel of its authorised distributors, to repair or replace free of all charges, including labour, any part of this product which fails within the warranty time specified above, appertaining to this particular product. Such failure must have occurred because of a defect in material or workmanship and not have occurred as a result of operation of the product other than in accordance with procedures described in the instructions furnished with this product.

Common Features

All BWB products are built around the same innovative product design and world leading technologies, sharing the same core features across the range.

Just add gas!

BWB have revolutionised the flame photometry market by offering an instrument with all accessories supplied as standard. This means that the process of ordering a BWB flame photometer is incredibly simple. There are no complex product codes, accessory lists or ordering requirements. When you order a BWB flame photometer it will arrive with all the accessories you need.

Up to 5 Channels of simultaneous detection and display

The ability to measure and calibrate up to 5 different ions at the same time offer huge advantages over more traditional instrumentation. As the BWB is the first and only flame photometer to offer simultaneous detection and display, our customers do not need to waste valuable time changing filters and re-calibrating when a different measurement is required.

Built-in air compressor

Greatly reduces noise and laboratory footprint while increasing instrument stability, accuracy and reproducibility.

Advanced calibration system

The ability to store calibration data and perform multi-mode calibrations reduces analysis time significantly and increases accuracy.

Interfaces

Connect to your PC using USB 2. A 0-2.5volt output is supplied as standard for a chart recorder or for process control a 4-20mA output is available.

New modern technology offers increased accuracy and reliability

Introduced in 2005, the BWB flame photometer was designed from the ground up, using new, innovative and modern technology to give unsurpassed levels of accuracy, usability and reliability. With clean lines and contemporary bright colour schemes, the instrument looks exceptionally modern and will fit into any laboratory. The instrument has a large LCD display which can be easily viewed from any angle.

Computer connectivity as standard!

The FP-PC software package, included with every purchase, has been written with GLP compliance in mind and facilitates the creation of data and reports in .pdf and .csv formats.

Ease of use

With exceptional ease of use, a clear backlit liquid crystal display guides users through analysis using simple menu options. The display, used in conjunction with a comprehensive membrane switch panel ensures that accurate and reliable results can be obtained with minimal training.

As modern businesses may experience a large turnover of staff, laboratory managers will appreciate the comprehensive training video supplied with every BWB flame photometer. Our training videos are also available online in over 10 languages at www.bwbtech.com and on BWB's YouTube Channel http://www.youtube.com/user/BWBTechnologiesUKLtd

Long term savings

Excellent value for money and very low total cost of ownership.

Selective analysis Flame photometry excludes most elements which means very little interference.

Reliable & simple

Manipulation of the flame is the only adjustment available to the operator during operation ensuring reliable and accurate measurements every time.

Fast!

Once the instrument has stabilized it takes just a matter of seconds to obtain results.

Collection cup

Optional for 'online', continuous measurements, the collection cup turns the BWB Flame Emission Spectrometer (FES) into an 'online', real time, 24/7 analyser with 4-20mA output linked to a single channel. Via a 2 wire output the BWB FP can seamlessly integrate with any SCADA system. Totally unique and available on all models.

BWB Technologies

Green Credentials

We take our green responsibilities very seriously. We constantly evaluate our processes and procedures in order to minimise the impact to the environment. This is how we do it.

Instrument

Packing Box

BWB Technologies

Na 11 K 19 Ca 20 SOIL

BWB SOIL

Highly accurate and cost effective analysis in the lab or 'on the road'

Potassium is essential to plant growth, fertilisers and soil substrates have been analysed using flame photometry for decades. Building upon 2017 research papers conducted by Professor Akiharu Sasaki for the specific use of flame photometer analysis in the agricultural industry over and above other methods of analysis the BWB SOIL Flame Photometer was born.

This unique instrument has been designed and developed in conjunction with various field requests and operational requirements for the specific analysis of fertilisers and soil substrates. Building upon the footprint of the award winning BWB XP instrument the SOIL offers all the benefits of our base product optimised over and beyond the requirements for analysis in the agricultural industry.

The SOIL instrument offers enhanced Ca detection alongside Sodium and Potassium with the option to utilise Lithium as an internal reference standard.

The ease of portability of this instrument and 'Just add Gas' configuration allows the instrument to be set up in the back of a van and conduct field analysis on site at various geographical locations. With a thermal printer fitted as standard, traceability for sample analysis is maintained throughout.

The BWB SOIL is the first instrument of its kind optimised for the agricultural industry.

+ FEATURES

- SIMULTANEOUS DETECTION AND DISPLAY OF ALL 4 ATOMS OF INTEREST
- "IRS" (INTERNAL REFERENCE STANDARD) AVAILABLE
- INTUITIVE USER INTERFACE FOR TRUE EASE OF USE
- DISPLAY PROMPTS STEP BY STEP OPERATION
- BUILT-IN AIR COMPRESSOR
- SOLUTIONS AND LABWARE INCLUDED
- DATA SHARING VIA PC LINK
- OPERATOR INDEPENDENT DETERMINATION OF RESULTS
- 4 USER SELECTABLE UNITS OF MEASURE
- USER SELECTABLE DECIMAL PLACES
- IQ, OQ, PQ WEB-BASED CERTIFICATION AVAILABLE
- CAN BE USED WITH EITHER THE BWB COLLECTION CUP FEATURE OR OUR AFHS AUTOMATED SAMPLE HANDLING SYSTEM
- CORRECTION OF CA FOR THE INTERFERENCE FROM HIGH LEVELS OF NA

Just Add Gas

BWB Technologies

Na 11 K 19 Ca 20 SOIL

Technical Data

Just Add Gas

Sample rate
2 - 3.5ml/min

Tubing materials
Silicone and Tygon®

Required desk space for instrument
50cm (H) x 45cm (W) x 45cm (D)
For Safety reasons the Flame photometer requires 1m of unobstructed space above to allow dissipation of heat from the chimney.

Instrument size
Soil Flame Photometer
51cm (H) x 39cm (W) x 35cm (D)
(20in x 15in x 14in)
Shipping
65cm (H) x 49cm (W) x 43cm (D)
(25in x 19in x 17in)

Weight
Soil Flame Photometer - 14kg (30.8lbs)
Shipping - 25kg (55.1 lbs)

Optimal range
Single point calibration
Na 0.1 - 60ppm
K 0.05 - 100ppm
Ca 1.0 - 100ppm

Multi Point Calibration
Na 0.1 - 1000ppm
K 0.05 - 1000ppm
Ca 1.0 - 1000ppm

Reproducibility
<1% Coefficient of variability for 20 consecutive samples over ten minutes at concentrations of 100ppm or less. (After instrument stabilisation).

Specificity
Na/K/Li = <1% to each other when equal in concentration at <100ppm

Limit of detection (LOD) and limit of quantification (LOQ) displayed

LOD	LOQ
Na - 0.03ppm	Na - 0.1ppm
K - 0.02ppm	K - 0.05ppm
Ca - 0.3ppm	Ca - 1ppm

Time to stability
Less than 15 seconds after sample is introduced into the flame

Ions measured
Simultaneous measurement of Na, K, and Ca

Interfaces
USB
0-2.5 volt output (based on sample concentration linked to element of users choice)
Optional 4-20mA output in place of the above
.CSV and .PDF generated reports and files via FP-PC software

Recommended minimum warm up time based on ambient temperature
21ºC - 25 minutes

Power requirements
100V - 250V AC at 50 or 60Hz automatically selecting

Fuel requirement
Propane, Butane or Natural Gas*
regulated to 19Bar. Flow rate of 0.4l/min
*with modifications. BWB Technologies recommends either Propane or Butane for optimum results.

Readout
LCD, four line, alpha numeric, back lit.

+ WHAT'S IN THE BOX

- PC leads USB and RS232
- Power lead to suit region
- Gas hose
- Aspiration kit
- Manuals covering all aspects of the Soil FP
- Quick start guides
- Warranty registration form
- Certificates of analysis for all provided fluids
- Material safety data sheets for all provided fluids
- The FP-PC software installation USB
- 150ml of BWB recommended cleaning solution
- 150ml calibration fluids for all 3 elements at 10,000ppm
- 150ml 10,000ppm Li calibration standard for IRS
- 100ml conical flask with screw lid
- 100 disposable sample cups
- 1L of de-Ionised water
- 2m of waste tube
- Set of spare fuses
- 10 x 10ml pipettes
- 10 x 1ml pipette

Proudly Engineered and Manufactured in England

www.bwbtech.com

Manufactured in Newbury, County of Berkshire, England.
Registered office: BWB Technologies Ltd Unit 8, The Galloway Centre, Hambridge Lane, Newbury, RG14 5TL UK

Specifications and contents are subject to change without notice.

FP-PC and BWB Drive

FP-PC app

The BWB flame photometer has been configured to easily satisfy the most sophisticated IT requirements. The FP-PC app provides a useful interface to the BWB Flame Photometer (FP) facilitating the following operations:

- Normal calibration Report production
- Logging of streaming data for continuous on-line applications. (A 4-20 mA signal can also be output proportional to a calibrated channel on the FP).
- Extraction of data from the flame photometer when operated in automatic or semi-automatic mode with or without auto-sampler / auto-diluter known as Automatic Fluid Handling System (AFHS)

Calibration manipulation including:
1. Upload from / download to the FP
2. Storage / retrieval of calibrations using the PC or system hard drive

These functions are provided by the Welcome, Calibrate, Report, Logging, AFHS tabs together with one more (XP-Cal or BIO-Cal) that is dependent on the mode that the FP is being operated in.

The FP-PC app, included with every purchase, has been written with GLP compliance in mind and facilitates the creation of data and reports in PDF format.

BWB drive

Continuing to building on modern technologies, BWB have created an industry leading USB flash drive packed full of features and resources designed to aide your daily analysis and BWB experience. Exclusively for BWB customers, this self-contained resource includes:

- Tutorial videos in 10 languages
- PC and Mac compatibility
- FP-PC app installation package (PC only)
- Links to BWB's growing online video library (internet connection required)
- Manuals, guides, warranty information and registration PDF
- A list of international support and distributor contact details
- 13 GB of free space for you to use as you please!

This wealth of information is provided in a beautifully designed BWB branded USB memory stick, which includes a built in flash light!

www.bwbtech.com

The constantly evolving www.bwbtech.com maintains the companies striking bold colours and clean lines ensuring a crisp and easy to use interface packed full of new and exciting resources. With weekly updates the BWB website is at the forefront of the industry when it comes to education and resourcefulness, among many features it includes:

- FAQs
- FP Practical Applications
- User guides and reference materials
- Product specs and technical documents
- A vast video support library
- Support documents
- Local distributor lists
- Tech Support and Sales
- Support contact information

+ THANK YOU

BWB takes pride in working closely with its distributors from across the globe. Spearheaded by our New Media Consultant Simon Hustings, The BWB flash drive would not have been possible without the direct contribution from some of our amazing distributors.

Thank you to: Wolfgang, Mariusz, Andre, Jereon, Nhung, Stonepepple, Kaoriko, Fernando, Alvaro, Alexandra, Dr. Muhamed, Dimitri, Francois and Thiemdej.

BWB Technologies

IQ OQ PQ Certification

IQ OQ PQ is a unique validation and certification program from BWB.

The programme has been specially created to ensure the end user has the technical knowledge required to install and initialise their BWB Flame Photometer and the technical know-how and confidence to operate any of our 2015 and onwards range of flame photometers correctly and efficiently on a daily basis.

IQ - Installation Qualification

The installation qualification covers in detail the key steps required to correctly set up the BWB range of photometers and Auto Fluid Handling System. IQ stages include: maintenance and service plans, the installation environment and health and safety requirements.

OQ - Operation Qualification

The operation qualification covers the steps required to ensure that the BWB flame photometer and AFHS are operating correctly.

The user will undertake a series of hardware checks and test readings, providing the results to BWB for analysis.

PQ - Performance Qualification

The performance qualification has been designed to ensure that the instruments perform to the original factory specifications.

Once the IQ and OQ sections have been completed, the user runs a sample manually or using AFHS with the solutions, prints out the results and sends to BWB for analysis.

After completion of the qualification and confirmation from BWB, a signed certificate will be issued to the user.

IQ OQ PQ is a unique and effective program built to ensure technical ability, confidence and peace of mind for all users of the BWB 2015 and onwards Series of Flame Photometers and Auto Fluid Handling Systems.

To find more about IQ OQ PQ get in touch at info@bwbtech.com

+ THANK YOU

Over the years, BWB Technologies has forged strong ties within the industry and IQ OQ PQ certification is the evolution of those bonds. A big thank you to Wolfgang, Alexandra, "Eddie", Fernando, Iveta and Anna, Team Leader Harry R. Libengood - Company Co-Founder, and Hozan Edwards for their focus and dedication in developing IQ OQ PQ.

BWB Technologies

Testimonials

Alvaro Apéstegui, Ph.D., Laboratorios Labiclin, Costa Rica **BWB BIO**

"I have been working with ion selective instruments for a while, but after numerous errors with the lipemic samples, and the high running and maintenance costs associated with the instrument I started looking for a new flame photometer. I needed an instrument that gave me good precision, repeatability and an instrument that is viewed as the gold standard for ions such as sodium, potassium and lithium.

I have analysed many instruments but they always had something that was not adequate for my needs. I decided to go for a BWB BIO because it had very good construction and offered up to five different ions with calibration curves of up to fifteen points.

I have had the instrument for almost a year and must say that it is here to stay because of its sturdy construction, really fantastic electronics and most importantly, it will not allow you to make mistakes. Being able to actually see the stability of the readings and having calibrations that are very stable is comforting.

The communication with the people from BWB Technologies is fluent and professional. I have never had a question unanswered and responses normally come in less that 12 hour which says a lot since I am in Costa Rica and they are in England!.

I strongly recommend this instrument, and now that it can have automated sampling, makes it even easier and equals the automatic capabilities of the ion selective instruments."

Gregory Bathfield, Electrical & Control Specialists Ltd, Mauritius **BWB SUGAR**

"For the sugar industry, the flame photometer is used to measure Potassium which is directly related to sugar. The flame photometer is thus used to detect sugar in condensate return to the boiler. The BWB photometer is more user friendly and easier to use than others we came across. It is really good value for money."

Wolfgang Glock, THG-Glock Instruments, Germany **BWB XP**

"My experience I have made with the BWB-XP Flame Photometer is, that it is easy to install, easy to handle, gives accurate measurements and with the software the operator has a better summary of the work he has done in the Lab. The excellent service of BWB- Technologies and the excellent performance of the instrument makes the BWB- XP Flame Photometer the "best Flame Photometer which is on the market". At the moment no competitor can beat this instrument in performance and price."

Richard Griffiths, Fujifilm Imaging Colorants Ltd, England **BWB XP**

"We are very happy so far with the purchase of our BWB-XP flame photometer. We are using the unit for a colours application and had upgraded from a older Sherwood model. I carry out 5 point calibrations on each ion and these calibrations appear to hold from first thing in the morning until the end of the day. The BWB-XP produces accurate values and the ability to measure 5 elements simultaneously is less time consuming than the older instrument and has, on occasion, flagged up the presence of ions which we were not expecting to see and may not have been looking for on the older instrument."

DELIGHTED WITH YOUR BWB FLAME EMISSION SPECTROMETER? EMAIL US YOUR TESTIMONIAL AND WE WILL HAPPILY RESPOND WITH 5 BWB USB FLASH DRIVES! A GREAT KEY RING HOLDER, STORAGE SPACE AND TORCH FOR THE ENTIRE FAMILY!

BWB Technologies

Distributors

We have a global network of first class distributors.
Visit our website, www.bwbtech.com for full details.

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BWB Technologies Ltd. warrants, subject to the conditions itemised within this document, through either BWB personnel or personnel of its authorised distributors, to repair or replace free of all charges, including labour, any part of this product which fails within the warranty time specified above, appertaining to this particular product. Such failure must have occurred because of a defect in material or workmanship and not have occurred as a result of operation of the product other than in accordance with procedures described in the instructions furnished with this product.

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Registered office: BWB Technologies Ltd, Unit 7-8 Galloway Centre, Newbury, Berkshire, RG14 5TL, UK.

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