PRODUCT NOTE

Atomic Absorption

Key Benefits

- Lowest cost-per-element flame AA analysis on the market
- More than 2X faster than other automated systems for greater productivity
- Automatic preparation of standards
- More accurate and precise results
- Error-free dilution of samples
- Fast, simple setup and operation

FAST Flame Sample Automation Platform—the fastest way to perform Flame AA

How much faster and more efficient would your flame atomic absorption (AA) analyses be if you could automate your sample preparation and introduction? What would it mean to throughput? What could it do for productivity? How would it impact profitability? Today you can find out with PerkinElmer's FAST Flame Sample Automation Platform.

Designed to deliver the lowest cost-per-element analysis on the market, FAST Flame lets you perform your daily workflows with unparalleled speed, consistency and precision. Eliminate the variability of manual sample preparation. Generate more accurate results. Make more informed decisions.

Optimize and enhance your Flame AA system

The FAST Flame Sample Automation Platform is compatible with PerkinElmer's PinAAcle™ 500, 900 and AAnalyst™ 200/400 flame AA instruments, further enhancing the performance and productivity of today's industry-leading AA platforms. It also seamlessly integrates with Syngistix™ for AA software, giving you complete control over your entire system through a single user interface that simplifies everything from method development to results generation.

CAPABILITIES OVERVIEW FOR FLAME AA APPLICATIONS

FAST Flame offers laboratories a fast, automated, error-free way to:

- Prepare calibration standards
- Dilute over-range sample solutions
- Add chemicals and other flame sampling needs

PerkinElmer®
For the Better

Greater Speed = Greater Productivity

If you want to run more samples in less time without compromising precision or accuracy, you've come to the right place. FAST Flame lives up to its name by handling up to 560 samples per hour, more than twice the throughput of other automated front-end AA systems on the market.

Using a discrete sample introduction loop, FAST Flame's rapid injection system pumps at a user-defined flow rate, while the normal flow rate is 5mL/minute. This low sample uptake not only creates the most stable signals available, it also minimizes carryover, allowing faster washout times for even greater speed and efficiency. The system will even simultaneously prepare the next sample during an analysis, further enhancing your throughput and productivity.

BARRICK GOLDSTRIKE TIME SAVINGS

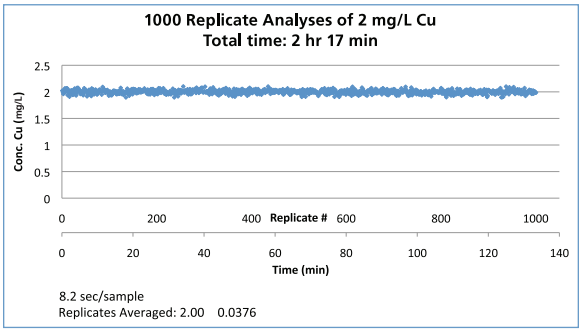
	Self-Aspirating Systems	FAST Flame Systems
Read Delay (sec)	15	5
Read Time (sec)	15	6
Wash Time (sec)	15	5
Total Analysis (sec)	45	16
Rack of 60 Samples (min)	45	16

BLANK READINGS AFTER 10,000 mg/L Fe SAMPLE USING FAST FLAME 1

Blank Replicate	Concentration (mg/L)	Washout Factor
1	1.606	6227
2	0.541	18484
3	0.174	57471
4	0.045	222222
5	0.024	416667
6	0.024	416667
7	0.017	588235

Greater Accuracy = Greater Confidence

By automating what is typically a manual and tedious task, FAST Flame not only produces faster results but also delivers improved performance and detection limits. Precise and reproducible, the system eliminates any potential human error, reducing both sample variability and viscosity effects for greater accuracy and more reliable results.



FAST Flame offers exceptional reproducibility and minimum drift over hours of continuous operation.

MDL Rep	Without FAST Flame 1 Pb (mg/L)	With FAST Flame 1 Pb (mg/L)
1	0.2279	0.1992
2	0.2440	0.2064
3	0.2397	0.2035
4	0.2470	0.2023
5	0.2696	0.1985
6	0.2836	0.1978
7	0.2240	0.1904
Mean	**0.2480**	**0.1997**
Std Dev	0.0216	0.0051
MDL	**0.0678**	**0.0161**

With the superior detection limits of FAST Flame, the City of York Wastewater Treatment Plant was able to lower its calibration standard for lead and other analytes from above 250 µg/L to just 50 µg/L.

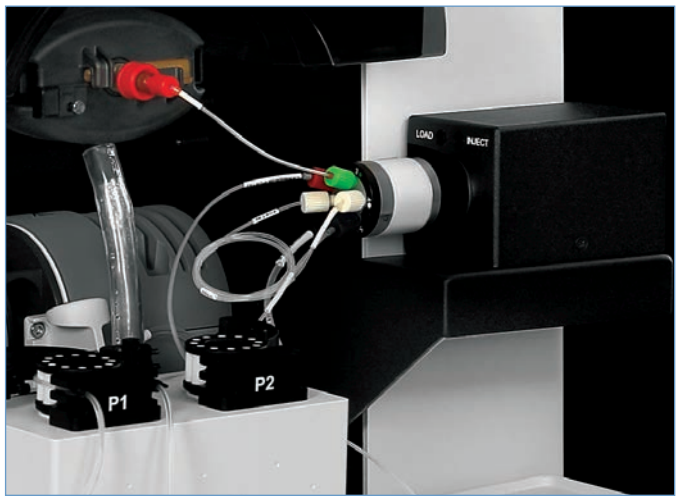
FAST Flame automates the preparation of calibration standards from a stock standard, allowing you to avoid tedious and time-consuming manual dilution steps. It also recognizes over-range samples and automatically brings them into calibration range, minimizing reruns and optimizing productivity.

Interference correction is simplified with an integrated port that allows you to automatically add chemicals—including ionization buffers or diluent—to suit a particular application.

Greater Savings = Greater Profitability

By aspirating lower volumes per minute than standard flame AA systems, FAST Flame minimizes sample consumption on every run for dramatically reduced operating costs. Couple this efficiency with the platform's unparalleled throughput and you get the lowest cost-per-element analysis available.

FAST Flame's reliability and reproducibility also add to its economy. Human error is eliminated, minimizing reruns while maximizing confidence in your results.

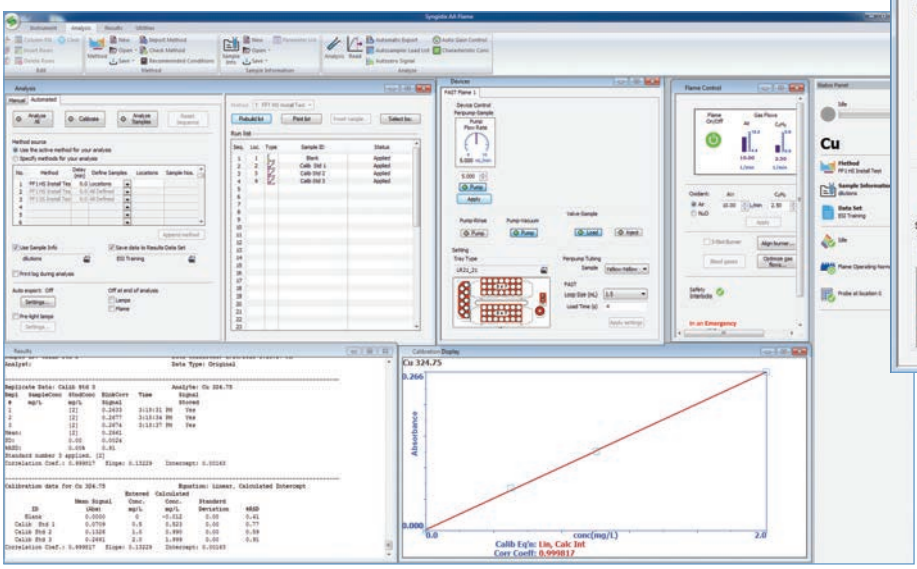


Peristaltic pump(s), injection valve, rinse and vacuum pumps, and trays can all be easily controlled through the Devices menu, with the chosen sample loop.

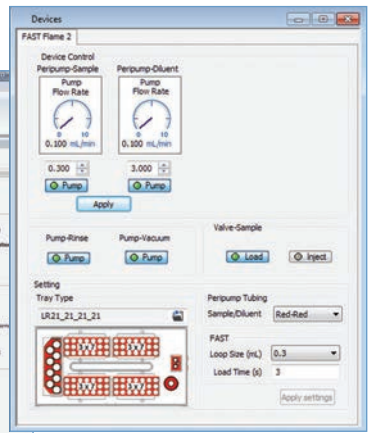
Greater Simplicity = Greater Efficiency

FAST Flame seamlessly integrates with PerkinElmer's Flame AA instruments on both a hardware and software level. The entire system is controlled through the intuitive, icon-based interface of Syngistix for AA software. From setup to data acquisition to results reporting, users are walked through every step of an analysis for simple, reliable, reproducible operation.

Syngistix for AA software offers a full suite of features designed to optimize data security and ensure regulatory compliance. Safeguards and controls include user access privileges, sum checking, signature verification, and date/time stamps.



Analysis using the FAST Flame 1 model allowing analysis of more than 560 samples/hour, delivering high productivity.



Analysis using the FAST Flame 2 model with automated standard sample preparation capability delivering the highest productivity.

Technical Specifications

Dilution Range	1-100x
Sample Introduction Volume/Analysis	0.3-4 mL
Throughput	Up to 560/hr
Compatible Flame AA Instruments	PinAAcle 500, 900 and AAnalyst 200/400
Load/Inject/Rinse Cycle Time	~6 sec
Optional Tee	For online addition of ionization buffer or diluent
Gold Detection Limits	5-10 µg/L
Dilution Calibration Accuracy	R2 > 0.9999

Configurations

Designed for labs of all sizes and throughputs, FAST Flame comes in a variety of models to help enhance your productivity and performance.

- AAPrep2 includes an autosampler and two precision peristaltic pumps, providing automatic standard and sample preparation for single-element or sequential multi-element analysis by Flame AA.
- FAST Flame 1 consists of a high-speed autosampler, a precision peristaltic pump and a switching valve, offering high sample throughput for single-element or sequential multi-element analysis by Flame AA.
- FAST Flame 2 is a combination of AAPrep2 and FAST Flame 1—high-speed autosampler, two precision peristaltic pumps and a switching valve—offering the highest productivity for single-element or sequential multi-element analysis by Flame AA.

FEATURE	AAPrep2	FAST Flame 1	FAST Flame 2
Ability to handle viscous samples	X	X	X
High throughput		X	X
Inline matrix modification		X	X
Low memory effects		X	X
Automated dilution of over-range samples	X		X
Automated calibration standards preparation	X		X
Integrated software operation	X	X	X

CONTINUING A LEGACY OF LEADERSHIP

The FAST Flame Sample Automation Platform extends and advances the capabilities of PerkinElmer's industry-leading Flame AA platforms and reflects our ongoing commitment to delivering innovative solutions, superior productivity, and greater value to laboratories worldwide.

If you're looking for a way to work more quickly and efficiently in Flame AA, think FAST—the FAST Flame Sample Automation Platform. Learn more at perkinelmer.com/FASTflame.

PerkinElmer, Inc.
940 Winter Street
Waltham, MA 02451 USA
P: (800) 762-4000 or
(+1) 203-925-4602
www.perkinelmer.com

PerkinElmer®

For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs

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