

**MIRION**  
Connect **21**  
Annual Users' Conference



# Alpha/Beta Counting and Alpha Spectroscopy Laboratory Updates

Lee Reagan

Product Line Manager

Alpha/Beta Counting and Alpha Spectroscopy

# Who am I?

- 32 Years with Mirion and its antecedents
- Field Engineer, Production Manager, Tech Support Manager
- 16 Years Product Manager
- CC, Tech, Colleges and Universities
- Knoxville 15 minutes from Mirion
- Spouse Christie
- Two “kids”
  - 17y HS Senior
  - 24y Navy Nuke ETN
- Jeeps, Mustangs, Beagles...





# Product Families



*i*Link



 Apex-Alpha/Beta™

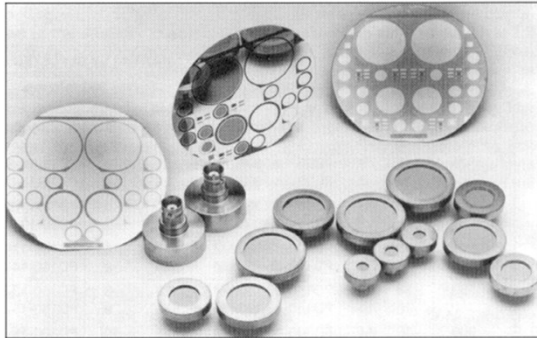
 Apex-Alpha™

# Design Philosophies

Older	Newer
Built Like a Tank	More like an aircraft
Expert Operator	Novice+ Operator / Advanced Manager
Disassembly Required	Minimal (or no) Disassembly
Myriad of Options and Models	More content, fewer models
More Components	Fewer
Complex Mystery ☺	Keep It Simple

# Alpha Analyst

- Continue to refine and improve new Alpha Analyst (Model 7200-XX)
- All internals have been redesigned with modern components



# Apex-Alpha

## Version 1.4

- Windows 10 Compatibility
- Windows Server 2019
- Tool to migrate from 1.2 or 1.3 to 1.4
- Local admin no longer needed
- Automatic Snap driver installation
- Crash and BSOD improvements
- Integrate patches from 1.3

## Version 1.4+

- Microsoft Signed SNAP Driver

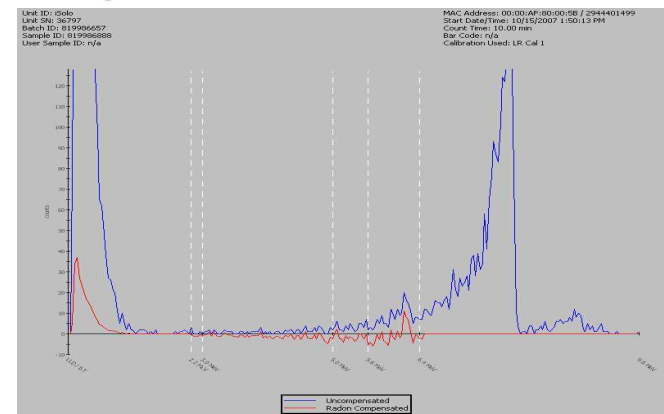
## Future

- ?



# iSeries

- **iSolo** and **iMatic** gasless, firmware-based counting systems employ proprietary PIPS® technology and sophisticated radon/thoron rejection algorithms.
- Allows for quick and reliable analysis of your air filters and smear or swipe samples.





# iSeries Updates

- **iSolo** 1.13.02 Firmware Update
- **iMatic** 1.25.02 firmware
  - USB Connectivity
- **iLink** Software 2.0.4 update
  - Improves USB (3) reliability
  - Correct Install Issue

**iLink**



# Series 5 LB5500



**Series 5** automatic sample changer system with 5" Diameter Detector

 Apex-Alpha/Beta™



# What is APEX-Alpha/Beta?

- Control & Analysis software for most Canberra Alpha/Beta counters including LB4200, LB4100, MINI20, IN20, Series 5-XLB & LB5500 and Series 6LB
- Windows 10 x64 compatible
- “Eclipse, OSUM & Scarabee replacement”



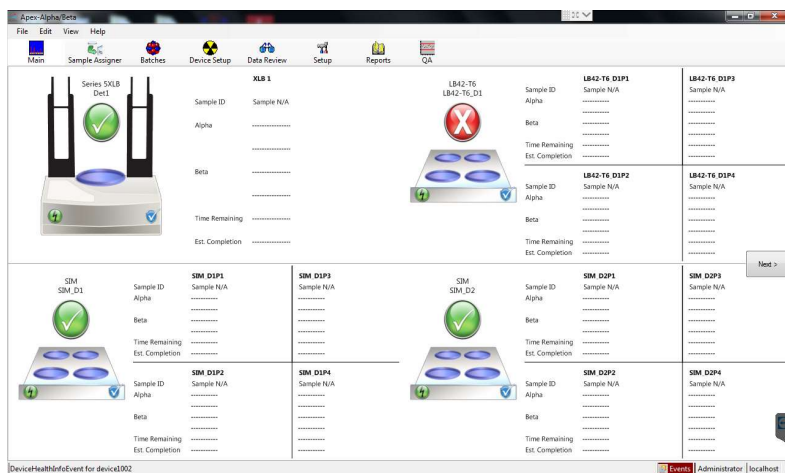
# APEX-Alpha/Beta Features

- Automated Plateau and Region of Interest setup
- Unattended Calibration on Changer Systems
- Calibration and QC Sequences
- Enhanced efficiency calibration including multiple curve-fitting models
- Integrated QA capabilities
- Custom procedure creation for sample type-specific acquisition and analysis
- Sample database tracks samples through log-in, counting and data review processes
- Integrated support for ISO11929 MDA and Bayesian Best Estimates
- Simplified report customization with integrated report editor
- Common look and feel with the rest of the Mirion family of Apex® Productivity Software
- Includes SQL Server Express 2014 database



# Main View

- APEX uses current counting view
  - Use Data Review and Main View vs single list
  - Shows Gas State, Status, Errors...

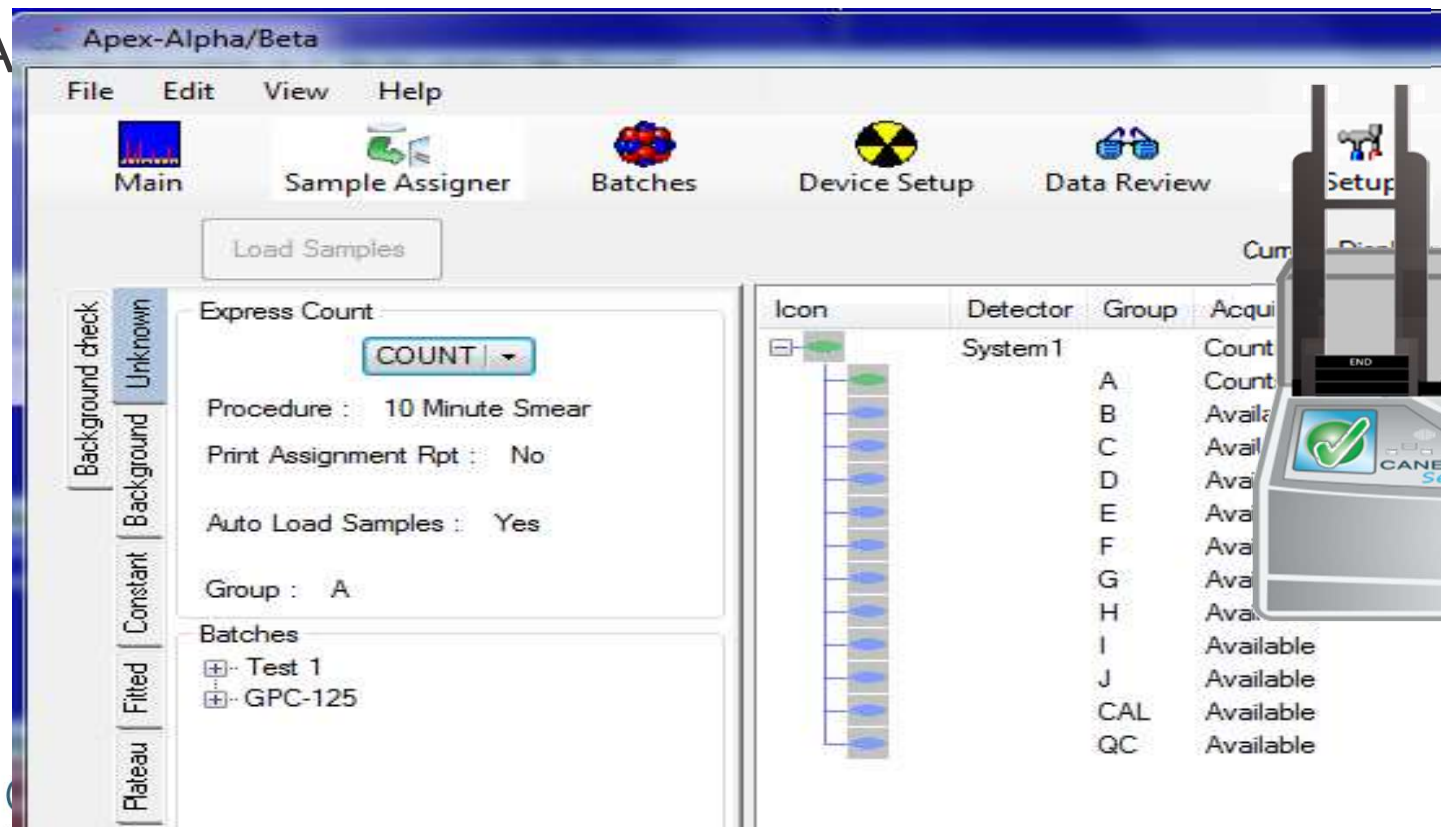


	<b>S5XLB-1</b>
Sample ID	System Background_11
Alpha	.....
	.....
Beta	.....
	.....
Time Remaining	.....
Est. Completion	.....

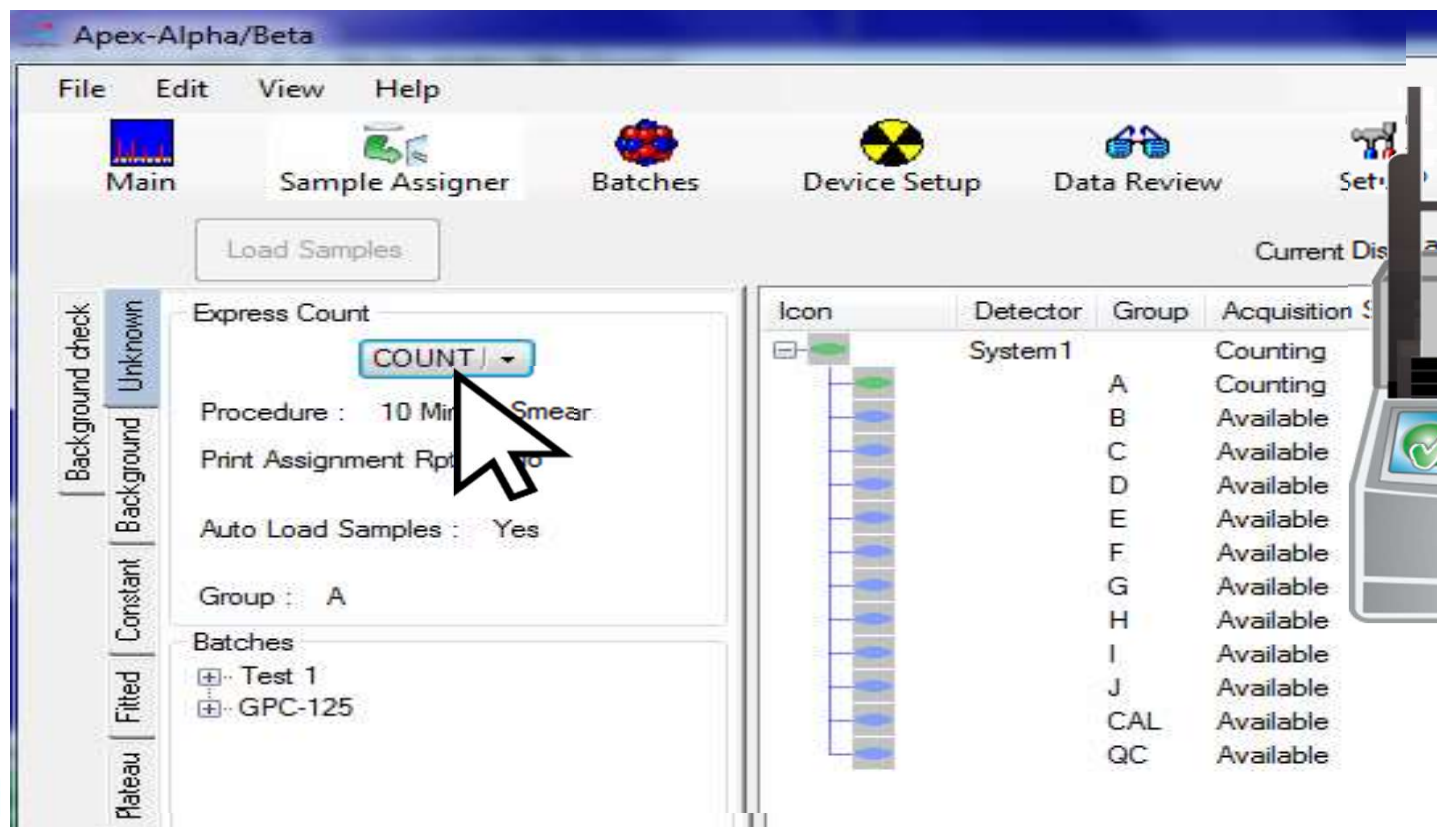


# Drag and Drop Start

• A



# Express Count Start



# Sample Auto Start

- What if I forget to start the count?
- Countdown Clock

Security | Counting | Devices | Standards | Plateau procedure | Calibration | Procedures | Manual

### Express Count Batch

**Available Elements**  
Count Start Date/Time\*  
Procedure Name  
Sample Physical State  
User Sample Identifier

Name must include one or more of the elements marked with an asterisk (\*).  
>>  
<<  
Move Up  
Move Down

**Selected Elements**  
Static String ("Batch")  
Batch ID\*

Example:  
Batch\_1001

**Sample Delay**  
☒ Enable sample delay      Sample delay (min) : 1

**Export report**  
☐ Auto Export      Extension type : Adobe PDF File  
Export Path :  ...

**Displaying activity uncertainty**  
☒ Absolute      ☐ Relative

Apex-Alpha/Beta

File Edit View Help

Main Sample Assigner Batches Device Setup Data Review

Load Samples Remaining Time : 00:00:00

	Sample	Icon	Detector	G
Unknown	COUNT		XLB Sta...	
Background	Procedure : Beta Only Sample - CPM			A
	Print Assignment Rpt : No			B
	Auto Load Samples : No			C
				D
				E

# Apex-Alpha/Beta

## Version 2.0

- End XP Support
- SQL Server 2014
- Series 5 Auto Compatibility
- Improved Sample Assigner
- Auto ROI
- Improved Data Review
- Link to Batches in Data Review
- Cal and QC Sequences
- Count Delay (Auto Count Down)
- Choice of absolute or relative
- Bug Fixes

## Version 2.1

- Windows 10 and 7
- 64 Bit Only Support
- Series 6LB Support
- ATB Count Times
- Express and Sequence 6LB
- Gamma Option for Series 5
- Main Screen Info Group/Carrier
- Batch Versioning
- Manual Calibration
- Calibration/Procedure Share
- Bug Fixes

## 2.1+

### Patches Available

- S6LB Barcode Decoding
- Humidity Sensor Enable
- Barometric Pressure Bug Fix

### Working on currently

- S5-XLB, LB5500 & S6LB Eclipse-Like SuperSequence
- ISO 11929 MDA Bug

# LB4200



- **LB4200 Multi-Detector Gas Flow Counter** is ideal for applications requiring high sample throughput with long counting times.
- With the flexibility to accommodate 1-4 drawers and multiple detectors sizes within a system, the **LB4200** can simplify the most demanding lab operations.

Ancestors:

LB1000

LB4000

LB4100 (LB4110)

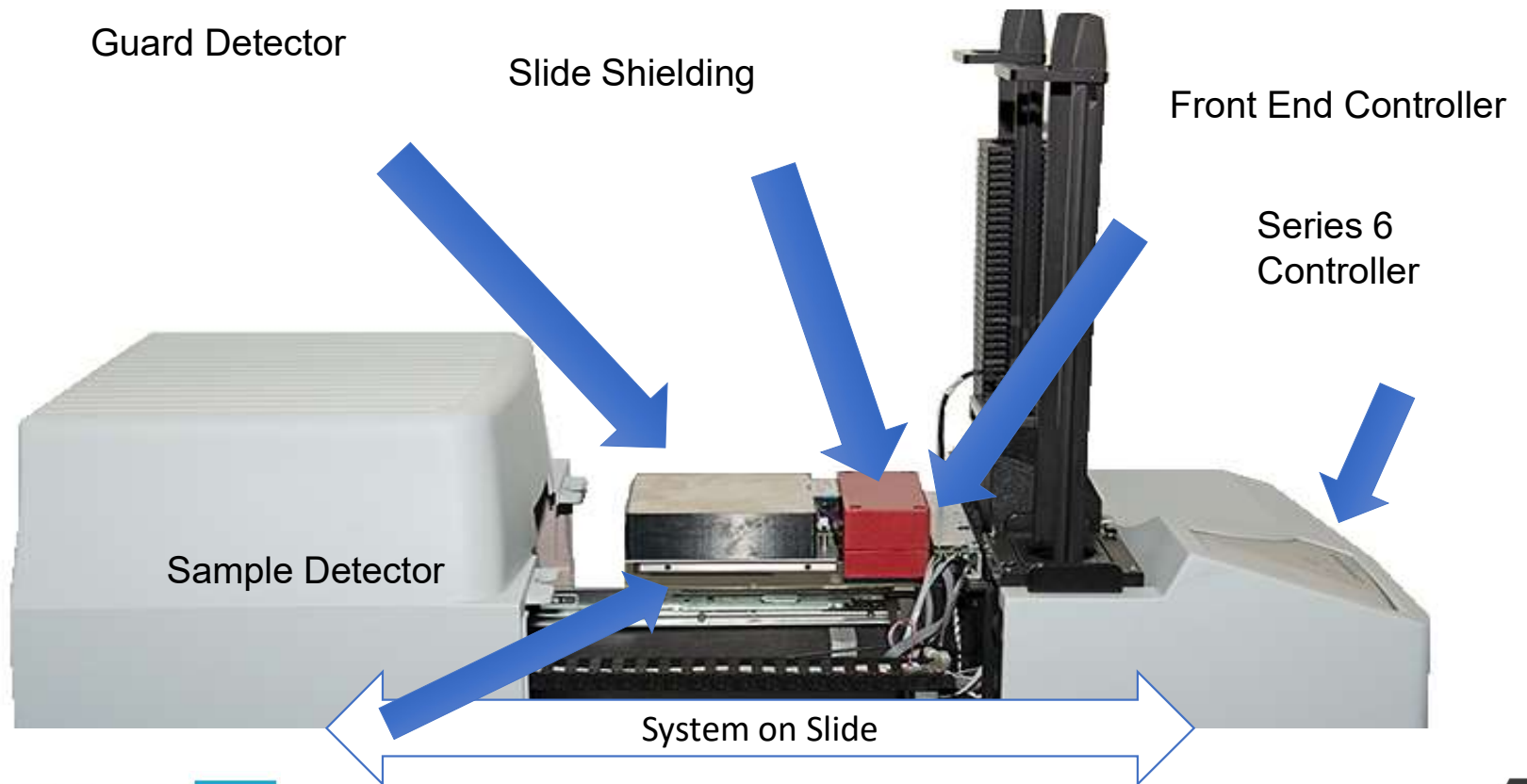


# Series 6LB

- LB = Low Background (Tennelec)
- LB1000 and LB5100 “Series 1” 1970’s
- LB5100 Series II 1982
- LB5100 Series III 1988
- LB5100-Z 1990
- LB5100-W 1992
- LB5100-IV 1994
- Series 5 HP, SOLO, APC, E 1996-2005
- Series 5 XLB™ 1995-2020
- Series 5 LB5500™ 1996-Present
- Series 6LB 2019-????

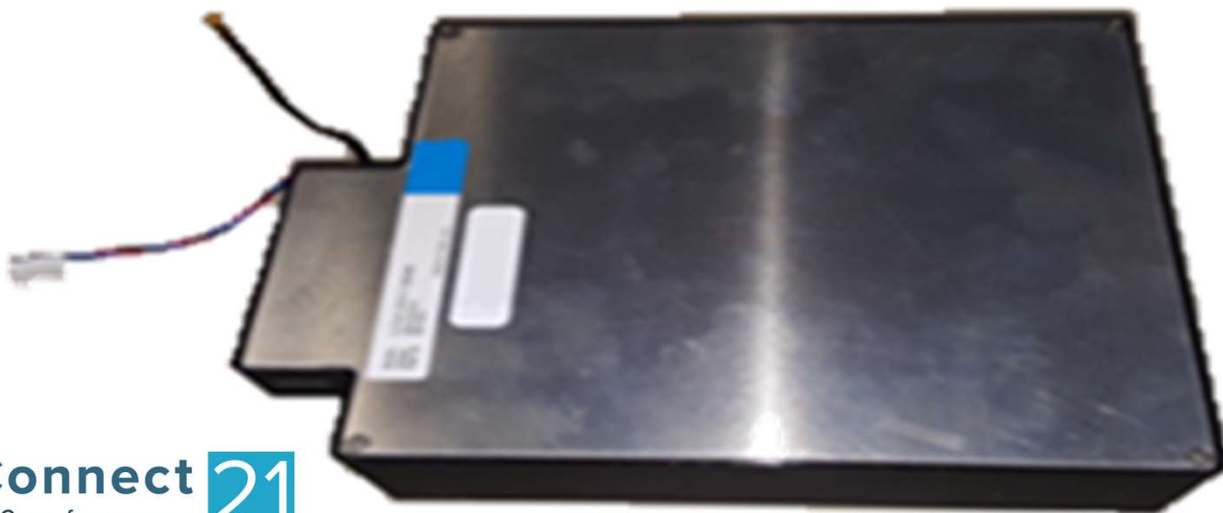


# Access Detector with NO LIFTING

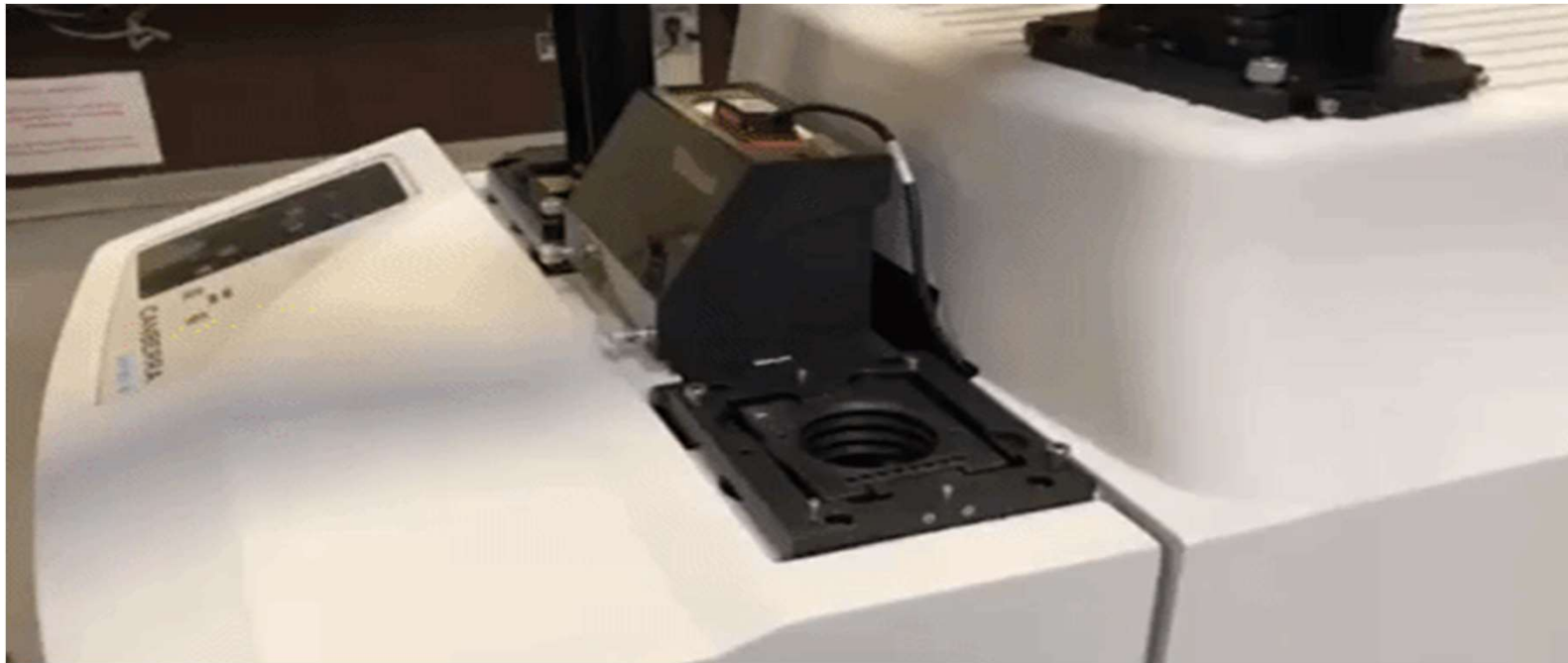


# Gasless Guard / Coated Lead

- Like, but not like iSOLO Guard
- Not Gas Flow – Plastic Scintillation
- More Rugged than PMT - **SiPM**
- Additional possibilities in the future (timing/shaping etc.)
- System goes from NO GAS to good backgrounds within MINUTES since there is no need to purge the guard detector



# “Lock and Load” Removable Stacks



# Easiest Analysis Start

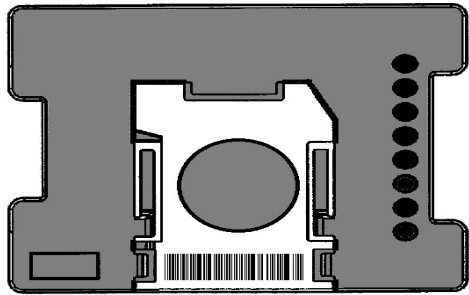
- Express and QC Checks
- Auto Approve
- AutoPrint or LIMS Transfer or...
- Custom reports to flag hot samples



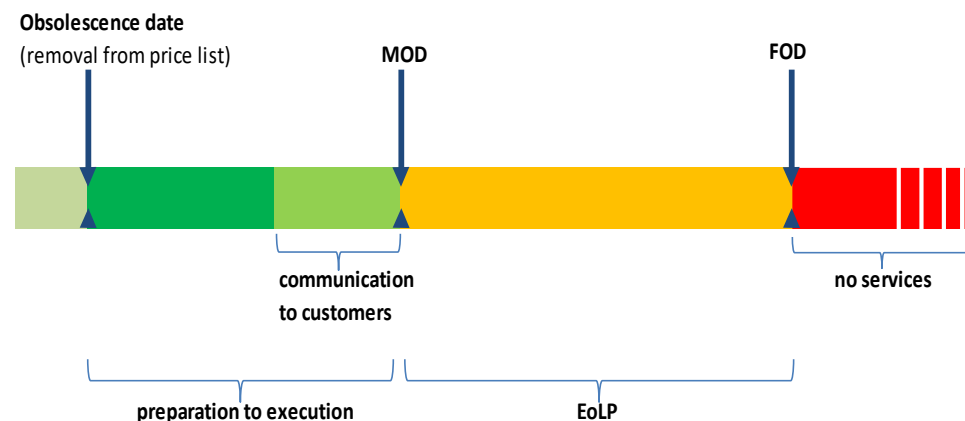


# Sample Coding

- 1D Code39 and QR Code via patch
- Was the correct sample, check source or calibration standard properly placed in the correct sample carrier?
- Was it still in the carrier before the slide inserted?
- Was it still in the carrier when the slide came out?
- You can KNOW by reviewing the “security footage”



# Products in End of Life Period



Product	Full Obsolescence Date	Notes
LB4100	2020	LB4200 replacement, Existing Contracts Continue No Board Level Repairs Possible
Eclipse	PC OS Dependent	Continued Support
Series 5 XLB	2026	Series 6LB replacement Full Support

# Survival Strategies

- LB4100 STILL works under APEX-Alpha/Beta (Upgrade Soon!)
- Series 5-XLB should be Upgraded from Eclipse
- Series 5 LB5500 should be Upgraded from Eclipse
- Series 5E should be upgrades to XLB (and APEX) ASAP
- And/Or
- Budget for REPLACEMENT S6LB or LB4200





## Thursday | September 23, 2021



### TODAY'S SCHEDULE Thursday – September 23

7:00 AM – 8:00 AM  
Registration (Adams Foyer)

7:00 AM – 8:00 AM  
Breakfast (Adams Prefunction)

8:00 AM – 10:00 AM  
General Session (Adams A)

10:00 AM and 2:30 PM  
Breaks (Adams Prefunction)

10:30 AM – 12:00 PM  
Breakout Sessions (see schedule)

12:00 PM – 1:00 PM  
Lunch (Adams Prefunction)

1:00 PM – 2:30 PM  
Breakout Sessions (see schedule)

3:00 PM – 4:30 PM  
Breakout Sessions (see schedule)

7:00 PM – 10:00 PM  
Group Dinner (Juniper Ballroom)

### ATTENDANCE CHECK IN

Scan or click this QR code to check in for today's sessions. Please remember to complete by the end of each day. Daily QR codes for Training and Breakout sessions will be available at the Registration Desk.

### SELFIE CONTEST!

STILL TIME TO ENTER:

### LOOKING FORWARD TO ANOTHER GREAT DAY!

Our keynote speaker today is Michael Shellenberger, author of *Apocalypse Never*. He will discuss his book and the benefits of expanding nuclear energy as a solution to climate change and other environmental problems.



### CUSTOMER PRESENTATIONS

Following the keynote, we will have two customer presentations. First, David Perkins, Senior Technical Executive from Electric Power Research Institute, who will present *Automated Gamma Isotopic Demonstration*.

Lastly, David Brehm, Supervisor for RP Tech Support from Omaha Public Power District will speak on *Fission Product Gas Monitoring During Fuel Drying Operations at Fort Calhoun Station*.

Today we offer three breakout sessions. We look forward to seeing you.

### RMS CUSTOMERS

Welcome back to day two of your meeting.

### GROUP DINNER

Join us in the Juniper Ballroom at 7:00 PM for our group dinner. We're sure to have a memorable evening! Please wear your name badge for admittance and bring tickets for your guests.

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