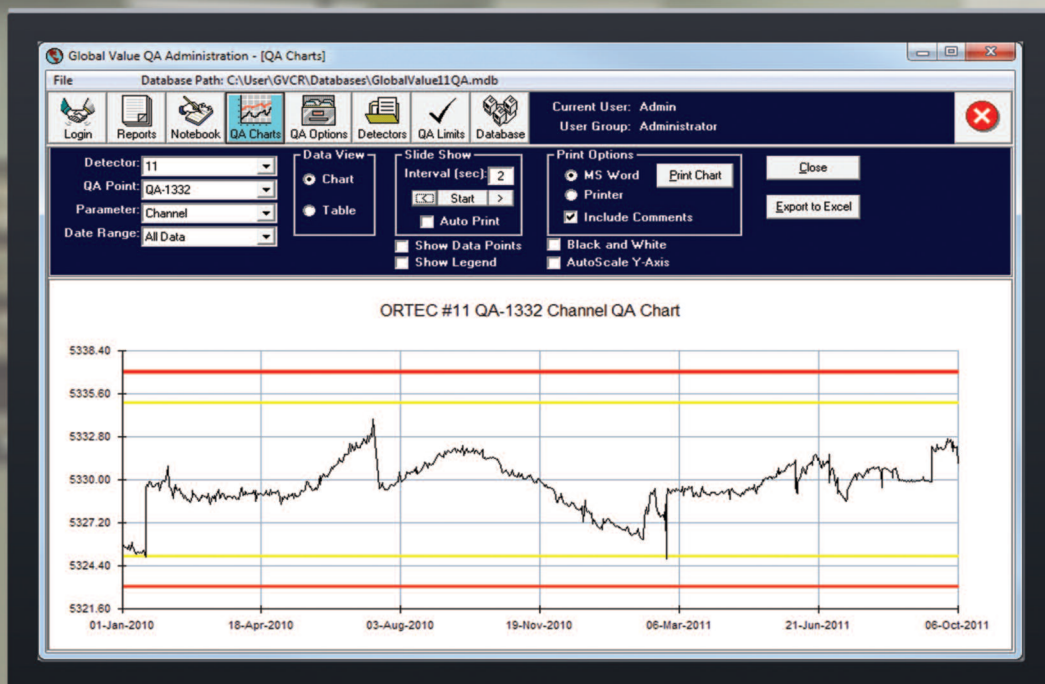


# ORTEC<sup>®</sup>

## Global Value 7

Productivity Suite for GammaVision



“Optimizing Gamma Spectrometry Processes through Secure Data Management and Measurement Automation.”

**AMETEK<sup>®</sup>**  
ADVANCED MEASUREMENT TECHNOLOGY

# Global Value 7

Global Value was designed to transform the standard GammaVision spectroscopy system into a state-of-the-art production environment with automated measurement processes, custom reporting, quality assurance, and secure data management. These functions greatly simplify measurement and data integration processes by predefining measurement details, minimizing manual data entry, and eliminating labor intensive document control practices.

Getting started with Global Value is quick and easy. The standard automation processes are pre-configured to meet most measurement needs, and Turn-Key operation with data integration to site systems and Subject Matter Expert (SME) training can normally be accomplished within a few weeks on site with our experienced technical staff.

## Why GLOBAL VALUE? Save Time and Money While Improving Data Quality!

### Compatibility

- Operates in the most common PC Environments – Windows XP, 7, 8, and 10
- Easily Configurable Reports with Custom Calculations, Nuclide Data Filters, and Spectrum Graphics
- Seamless Integration with Microsoft Word, Excel, and Access
- Flexible Configuration Architecture for Small Systems or Large-Scale Network Environments

### Process Efficiency

- Preconfigured Automation Scripting for Consistent measurement processes out of the box
- Electronic Data review and Automated Integration with Data and Document Management Systems
- Automated Post-Analysis Calculations, Reports, and Analysis Record Queries
- Secure Remote Data access to analysis and quality control results

### Defendable Results

- Robust Security Features limit access to sensitive functions and settings
- Detailed Quality Control Reports, Trending, Warnings, and optional instrument lock-out
- Analysis Editor Audit Log to track and report post-analysis data modifications
- Fully Compatible with GammaVision 7 for Analysis Accuracy and Standards Compliance

## A World of New Features in Global Value 7!

**New!** 64-Bit Windows 7/8.1/10 and GammaVision 7/8 Compatibility

**New!** Preconfigured Automation processes for sample and QA measurements

**New!** Audit Log to capture measurement modifications in the Analysis Editor

**New!** Standardized Data and Document Management System interfacing

**New!** Interactive Spectrum Viewer embedded in Sample and QA Administration programs

**New!** Configurable menus to launch programs and open files directly from the Quick Start Program

**New!** Analysis Editor Filter options based on User-Defined parameter data

**New!** Additional reporting parameters including Spectrum Image, all GammaVision nuclide data, and calculated fields

**New!** Simplified access to Archived Databases

**New!** Improved QA Options with user-defined date ranges, faster chart loads, and Reporting Options

**New!** Spectrum Multiplexer with flexible options for spectrum summing in parallel or series acquisition modes

**New!** QA Measurement Scheduling with alerts when overdue

**New!** Data Management utilities for file system backup and verification

# Global Value 7

## Measurement Automation with GammaVision

Global Value Quick Start  
Global Value Apps QA  
Detector: HPGe #1 Always On Top  
Automation Groups: Det1, GVSsampleData Examples, GVSsampleDataPlus Examples, GVSsampleData, QA  
Automation Jobs  
Active Jobs: Show Remote Jobs  
GV Sample Data  
Analysis Data:  
Analysis Method: RCS Liquid Isotopic Custom Sample Data  
Sample Description: SP-1  
Sample Comment: RCS Liquid Isotopic  
Decay Date/Time: 6/26/2012 12:59:00  
Sample Type: RCS  
Geometry: 250mlPolyBottle\_0  
Library: Rx1isotopic  
Sample Quantity: 2.5000E+02 ml  
Dilution Factor: 1.0000E+00  
Analysis Quantity: 250 ml  
Activity Units: uCi  
Custom Sample Data: Sample Number: 12345  
GammaVision - 20090328 MS Calc... Mixed Gamma Calibration Source  
GammaVision - 1\_2012-05-22\_0212A1 (High Activity Demo - 1\_2012-05-22\_0212A1)  
GammaVision - 1\_2012-05-22\_0212A1 (High Activity Demo - 1\_2012-05-22\_0212A1)

### QA Administration

Global Value QA Administration - [QA Charts]  
Database Path: C:\Users\Administrator\Desktop\GlobalValue1\QA.mdb  
Current User: Admin  
User Group: Administrator  
Detector: 11  
QA Point: QA-1332  
Parameter: Channel  
Date Range: All Data  
Print Options: MS Word, PDF, Print, Date Chart, Export to Excel  
ORTEC #11 QA-1332 Channel QA Chart  
Y-axis: 5321.00 to 5338.40  
X-axis: 01-Jan-2010 to 08-Oct-2011

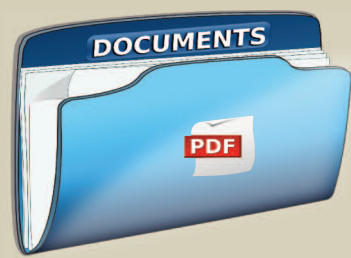
### Sample Administration

Global Value Sample Administration - [Analysis Editor]  
Database Path: C:\Users\Administrator\Desktop\GlobalValue1.mdb  
Current User: Admin  
User Group: Administrator  
Detector: HPGe #1  
Spectrum: 1\_2012-01-01\_001  
Filter By: All  
Analysis Report: Sample Data, Sample Data, Undetected Peaks, Custom Data, Change Summary  
Viewer Font Size: 11  
Report Content: MS Word, PDF, Print, Date Chart, Export to Excel  
Sample ID: 2012-01-01\_001  
Sample Name: Admin  
Department Name: Admin  
Gamma Spectroscopy Results  
Sample Comment: DEFO RCS Liquid Isotopic  
Sample Type: Genesis  
Analysis Method: DEFO Method  
Sample Quantity: 2.5000E+02 ml  
Sample Flow Rate: 0.0000E+00 ml  
Dilution Factor: 1.0000E+00  
Analysis Quantity: 2.5000E+02 ml  
Collection Start: 8/19/2011 19:40  
Collection Stop: 8/19/2011 19:40  
Acquisition Start: 8/19/2011 19:40:00  
Acquisition Stop: 8/19/2011 19:40:00  
Live Time: 1000  
Dead Time: 1000  
Dead Time: 0.76 %  
Analyst: Admin  
Editor: Administrator

## Site Systems and Groups



Data Management



Document Control



Other Entities

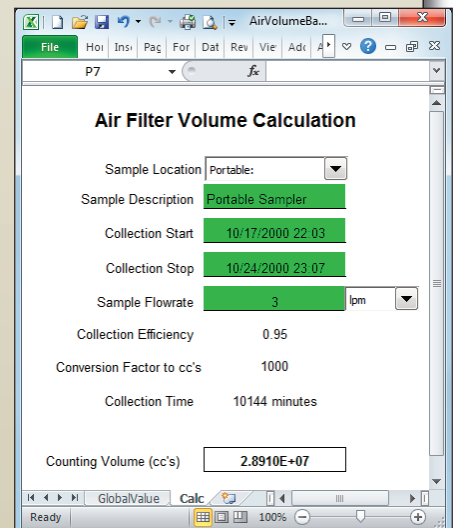
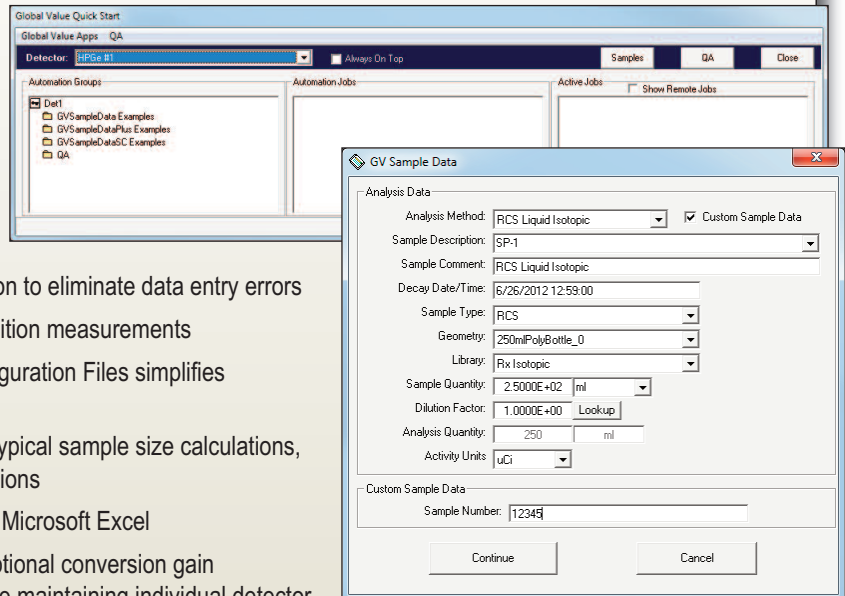
## Measurement Automation – Powerful and Easy

Gamma Spectroscopy measurements are no longer an intimidating task using Global Value. Simply select a detector and the type of measurement from a simple Windows Explorer style interface, and the automation scripts guide you through the process. These scripts can be pre-configured to minimize data entry errors for the novice or busy multi-tasker by setting nearly all analysis options in advance, or tailored for the more experienced analyst to make more decisions during the measurement process.

Global Value comes preconfigured with a variety of Quality Assurance and Sample measurement processes that are ready to use out of the box and easily modified to meet individual site needs.

### Key Automation Features:

- γ Security to prevent measurements by unauthorized personnel
- γ Standardized Data Management System Integration to eliminate data entry errors
- γ Spectrum Re-analysis concurrent with data acquisition measurements
- γ Automation Scripts based on Templates and Configuration Files simplifies maintenance and multiple detector configurations
- γ Configurable Data Entry options accommodating typical sample size calculations, such as air filter volume, dilution, and unit conversions
- γ Completely Customizable Data Entry option using Microsoft Excel
- γ Software Spectrum Multiplexing (Summing with optional conversion gain adjustment) for Detector Array Configurations while maintaining individual detector performance monitoring
- γ Dual spectrum analysis processes for more efficient sample throughput of particulate/iodine air filters and other sample types
- γ Dead Time Verification and Acquisition Start Timer controls for improved measurement accuracy and consistency
- γ Additional Data Entry Linked to Samples: Sample and Record Types (or document control codes), Site Unit, Batch ID, GDT Pressure, Sample Pump ID, Radiation Work Permits, Radiation Monitor Readings, Unlimited Custom Data Fields and Comments
- γ Core Sample Measurement Process Options
  - GVSAMPLEDATA: Basic sample data entry or customizable Excel interfacing with single sample measurement structure
  - GVSAMPLEDATAPLUS: Configurable sample size calculations based on sample flow rate or unit conversion with single sample measurement structure
  - GVSAMPLEDATASC: Comprehensive interface for sample data and analysis settings with optional Sample Changer operation and Data Management System interfacing.
- γ Quality Assurance (QA) Process Options
  - Basic Instrument QA and Background Measurements
  - Instrument QA with automated Energy and/or Shape Recalibration
  - Instrument QA with automated Gain Stabilization
  - QA Status verification integrated with sample measurement process





## Sample Administration – Accessibility Made Simple

Managing analysis results can be a daunting task with traditional gamma spectroscopy systems. Hard copy analysis reports are lengthy, often require manual mark-up, and are labor intensive to archive. Nuclide data is also frequently used for additional calculations or manually loaded into data management systems – an error prone and time consuming process.

Global Value simplifies these processes and eliminates errors through secure electronic data editing/review and seamless integration with data management and document control systems. The productivity gained by automating document management and reducing the time and errors associated with manual data processing pays for Global Value many times over.

Key Sample Administration Features:

- γ Robust security to restrict modification of system configuration parameters or measurement results
- γ Electronic Data Editing and Review
  - All report modifications and comments implemented electronically based on security settings
  - User names available to report and query by the original Analyst, Editor, Reviewer, and Publisher
  - Detailed audit log for changes applied during electronic review
  - Filter analysis results by review status or custom parameter settings for validation efficiency
  - Publishing function renders analysis data in various formats (XML, CSV, ASCII Text, and PDF) or transfers data to an unsecured Microsoft Access database to facilitate automated integration with site Document Control and Data Management Systems
  - Publishing function can be automated with electronic review or configured as a separate approval function
  - Integrated Spectrum viewer for detailed peak interrogation
- γ Analysis Log queries by all stored analysis and sample data parameters with immediate access to analysis reports
- γ Rich Reports with Intuitive Configurable Templates
  - Simple interface requires No Programming Experience
  - Nuclide data calculations such as Dose Equivalent Iodine or Xenon, DAC Fraction, Nuclide Ratios, and Detection Limit evaluation
  - Configurable data table views and evaluation filters for detected and non-detected nuclides
  - Dual analysis results from the same spectrum on a single report
- γ Integrated Database Maintenance – No External Database Administration or Licensing, such as Oracle or SQL Server, required
- γ Unlimited User-Defined Custom Data Parameters for reporting and system queries for related samples

The screenshot displays the 'Global Value Sample Administration - [Analysis Editor]' window. It includes a menu bar (File, View, Login, Change Password), a toolbar with icons for home, user, radiation, and printer, and a main workspace. The workspace is divided into several panes: 'Analysis Report' (with options for View, Print, and Report Content), 'Spectrum Viewer' (with zoom controls and a plot of a spectrum), and a central 'Description' pane containing sample details like 'Nuclear Plant X Generating Station' and 'Gamma Isotopic Results'. A 'Print' dialog is also visible, showing options for printer, format (PDF, Text), and font size.

Below the main interface, a sample report is shown. It includes a header with 'Your Site Name' and 'Doc Type: 7605'. The report content includes a description, detector information, sample details, and a table of nuclides with their activity and uncertainty.

Nuclide	Activity uCi/ml	% Uncertainty
Ba-139	6.46E-04	4.06
Cs-137	1.45E-02	1.83
Co-60	2.47E-04	2.88
Co-60	4.43E-04	2.26
CS-137	3.74E-04	3.24
CS-137	4.40E-04	2.62

The report also contains a 'Comments' section with a note: 'Sample analyzed for testing.' and a 'Total' section listing changes to peak resolution and radiation monitor lists.

## Quality Assurance – Complete Confidence

Instrument performance must be validated on a regular basis to ensure that measurements meet certain quality standards. The performance checks may be dictated by regulations, industry standards, or site procedures. These documents may dictate which parameters to monitor as well as frequency and corrective actions – all of which are easily met using Global Value.

Quality Assurance is one of Global Value's prominent strengths. It offers a flexible configuration to monitor all of the key indicators with controls to ensure that the instrument performance is validated within the prescribed frequency. The data evaluation and reporting capabilities also simplify proof of performance for auditors, routine data review, and integration of data and reports with existing site systems – all in a secure environment.

### Key Quality Assurance Features:

#### γ Data Evaluation

- Failure notification through reports, automation launch pad, and integrated with sample measurement processes with optional instrument lockout
- Historical data evaluation with extensive data access, trend charts, and optional export to Excel with automated statistics
- Control and Warning limit evaluation for all QA parameters
- Parameters Monitored:
  - Background Parameters: Count Rate
  - Peak Parameters: Energy Centroid, Channel Centroid, Peak Shape (FWHM), Net Area, Intensity (count rate), Uncertainty, Activity
  - All instrument parameters can be monitored in terms of Percent Difference from a target value
  - Maximum time interval between QA measurements

#### γ Electronic Data Review

- User names available to report and query by the original Analyst, Editor, Reviewer, and Publisher
- Detailed history of changes applied during electronic review
- Filter analysis results by review status and QA Type
- Publishing function renders QA data in various formats (XML, CSV, ASCII Text, and PDF) to facilitate automated integration with site Document Control and Data Management Systems
- Publishing function can be automated with electronic review or configured as a separate approval function

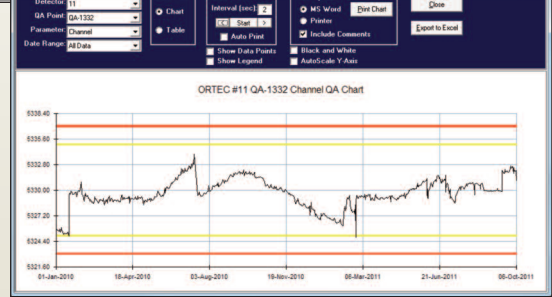
#### γ Lab Notebook to track corrective action and instrument history with flexible reporting options

#### γ Integrated Database Management

#### γ Configurable QA Reports with user-defined corrective action

#### γ Color-coded QA Summary for snapshot status of all detectors

QA Type	QA Date/Time	Analyst	Reviewer	Review Date	Publisher	Publish Date
QA Peak	10/5/2011 14:01:07	Admin	Admin	10/5/2011 18:49		
QA Peak	10/5/2011 14:01:06	Admin	Admin	10/5/2011 18:49		
QA Backg	10/5/2011 06:13:59	Admin	Admin	10/5/2011 06:58		
QA Peak	10/5/2011 15:31:04	Admin	Admin	10/5/2011 18:24		

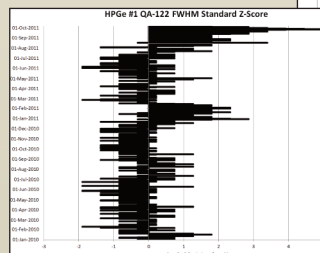
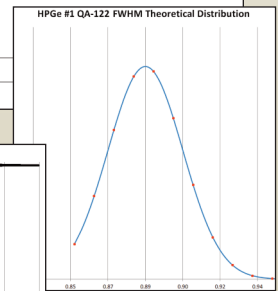


HPGe #1 QA-122 FWHM Statistics 8-Mar-14

Evaluation of Current Limits	Low Control	Low Tolerance	High Tolerance	High Control
Current Limit	0.75	0.80	1.00	1.15
Current Limit Deviation from the mean	7.19	4.54	6.04	13.98
Calculated Limit (2 or 3 Sigma)	0.83	0.85	0.92	0.94
Deviation % Difference from Calculated	-139.68%	-127.23%	-201.90%	-365.84%

StatDev (1 Sigma)	1.89E-02
2 Sigma	3.78E-02
3 Sigma	5.67E-02
Mean	0.89
Median	0.88
Mode	0.88
# Samples	1328
Sum of squared deviations from the mean	4.74E-01
Average deviation from the mean	1.43E-02
Variance	3.57E-04
RSD	2.13%
t-Score (99.9%)	3.30
Min Value / Deviation from the mean	0.85
Max Value / Deviation from the mean	0.98
Skewness	1.33
Kurtosis	3.01



Global Value QA Summary

Last Update Time: 24-Aug-2012 15:59 Refresh

Detector	QA Peak Status	QA Peak Due	QA Background Status	QA Background Due
ORTEC #1	11-Dec-2008 21:37 - OOC	13-Dec-2008 03:37 - Overdue	21-Nov-2008 15:24 - Pass	22-Nov-2008 21:24 - Overdue
ORTEC #2	24-Aug-2012 00:00 - OOT	25-Aug-2012 06:00	24-Aug-2012 00:00 - Pass	25-Aug-2012 06:00
ORTEC #3	02-Aug-2008 04:42 - Pass	03-Aug-2008 10:42 - Overdue	25-Aug-2008 04:54 - Pass	30-Aug-2008 10:54 - Overdue
ORTEC #4	09-Sep-2008 09:27 - Pass	10-Sep-2008 15:27 - Overdue	09-Sep-2008 13:41 - Pass	09-Sep-2008 19:41 - Overdue
ORTEC #5	24-Aug-2012 12:01 - Pass	25-Aug-2012 18:01	24-Aug-2012 13:07 - Pass	25-Aug-2012 19:07

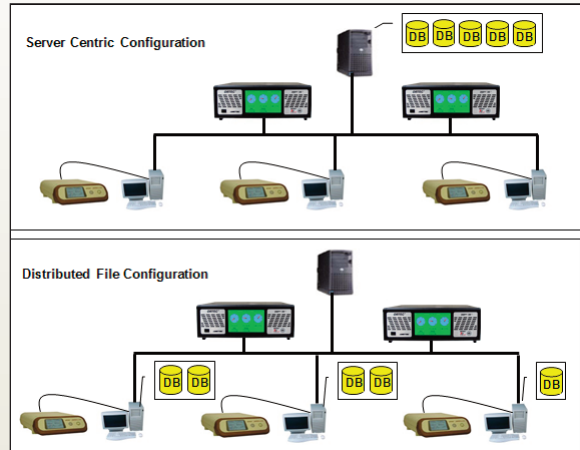
## System Configuration and Administration

Global Value is designed to accommodate a broad range of data storage and networking requirements while minimizing the need for system administration programs and Information Technology expertise. This is accomplished through a distributed file and database architecture that works equally well on stand-alone computers or networked systems, and maintenance tools for data backup, validation, and restoration.

Our expert technical staff is available to establish Turn-Key installations to minimize the implementation time, train administrative personnel, and integrate data and reports with site systems. We recognize that you invest significant time configuring applications, changing procedures, and training personnel when system changes are implemented, and our goal is make the transition as smooth as possible.

Key System Configuration and Administration Features:

- γ Advanced System Architecture allows for server centric configurations, stand-alone computer installations, or distributed file storage in a local area network
- γ Fully Integrated Database Management functions
- γ Seamless Microsoft Office Integration
  - Excel Add-In supporting worksheet and Visual Basic for Applications (VBA) functions to automate post-analysis calculations, custom reports, and custom data processing
  - QA Data export to Excel for advanced statistical evaluation
  - Analysis Data Export to unsecured Microsoft Access database for custom data processing
  - Render Reports directly in Microsoft Word
- γ Simplified data integration using standard file formats
  - PDF, XML, CSV, ASCII Text, Microsoft Access and Excel
  - Native integration with GCR's NuclearIQ data management system
- γ Detector Status utility shows color coded acquisition state for all detectors
- γ Configurable File Backup utility with automatic deletion of specified files from local computers
- γ File Compare utility for verification of critical system files
- γ Efficiency Table Converter simplifies generation of calibration source certificates from master source data
- γ Spectrum Multiplexer for software spectrum summing in parallel or series acquisition modes
- γ Gamma Products Sample Changer operation over serial port communication



Global Value - WinCDMS Data Transfer

**Global Value Source**

Detector: HPIGE #1  
 Spectrum ID: 1\_2014-03-06\_003  
 Sample Description: RCS ACT 2  
 Collection Date/Time: 07-Mar-2014 19:40:00  
 Analyst: Ken Embury  
 Comments:

**WinCDMS Target**

Plant Mode: Mode 1  
 Site Unit: 2  
 System: RCS ACT 2  
 Memo:

**Analysis Data**

Gamma Accuracy: 6.074E-02  
 Total Particulates: 6.066E-02  
 DEI-131: 8.035E-05  
 I-131: 8.035E-05  
 Hn-54: 5.607E-05  
 Co-58: 7.294E-03  
 Co-60: 2.095E-03  
 Ag-110m: 4.181E-04  
 Sb-124: 4.859E-05  
 Sb-125: 3.474E-03  
 Cs-134: 1.623E-03  
 Cs-137: 4.617E-02

Database Connection Properties | Send Data to WinCDMS | Close

Print, Save, and Close | Send to NuclearIQ | RCS ACT 2

SpectrumID	First Count		Delayed Count		Plant Mode
	1_2014-03-06_002	1_2014-03-06_003			
SampleDescription	RCS ACT 1	RCS ACT 2	Total RCS	Iodine Activity	DEI Factor
Sample Date/Time	5/19/11 19:40	5/19/11 19:40			DEI
I-131		8.035E-05	8.035E-05	1.000E+00	8.035E-05
I-132	3.495E-05		3.495E-05	6.000E-03	2.097E-07
I-133	3.611E-05		3.611E-05	1.664E-01	6.008E-06
I-134	1.645E-05		1.645E-05	1.000E-03	1.645E-08
I-135	2.338E-05		2.338E-05	2.900E-02	6.779E-07
<b>Iodine Ratio</b>		<b>2.225E+00</b>	<b>DEI-131</b>		<b>8.726E-05</b>

Global Value Detector Monitor

Last Update Time: 8/24/2012 16:46:47 | Update Interval: 5 (min) | Pause

Current Time: 8/24/2012 16:47:05

Next Update Time: 8/24/2012 16:51:47

Detector	Status	HV Setting	Real Time	Live Time	Acq Start Time
FLM Lab digBase	HV On / Counting	953v	15	15	8/24/2012 16:46:37
DSpec#2	HV Off / Counting	0v	126	126	8/24/2012 16:44:49
DSPEC-PRO #3	HV Off / Stopped	0v	1299864	1159346	8/9/2012 15:28:12
DSPEC-502 Input #1	HV Off / Stopped	0v	0	0	8/15/2012 09:19:23
DSPEC-502 Input #2	HV On / Stopped	750lv	91	91	8/24/2012 16:45:24

# Global Value 7

## Prerequisites

- Windows 10, 8.1, 7, or XP Operating System
- GammaVision Version 7
- Microsoft Excel/Word 2003 or higher (if integration with Microsoft Office is desired)
- Modern PDF reader programs, such as Adobe Acrobat Reader, can be used to view PDF files generated by Global Value.

## Ordering Information

Model	Description
GlobalValue-BWS	Global Value Productivity Suite for GammaVision - Site License For use with Networked Database Connections. Includes 2-days on-site installation and training (See Note 1) (Travel to site is not included.)
GlobalValue-UWS	Global Value Productivity Suite for GammaVision - Site License Upgrade For use with Networked Database Connections. Includes 2-days on-site installation and training. (See Note 1) (Travel to site is not included.) Requires previous Site License model (Global Value, Global Value-BWS or GlobalValue-UWLS)
GlobalValue-UWS-SC	Global Value Productivity Suite for GammaVision - Site License Upgrade – Service Contract Includes 4-days on-site installation and training. (Travel to site is not included.) Requires previous Site License model within the previous 12 months.
GlobalValue-BWL	Global Value Productivity Suite for GammaVision - Single Computer License For use on a single computer with databases stored on the same computer. No on-site time included.
GlobalValue-UWL	Global Value Productivity Suite for GammaVision - Single Computer License Upgrade For use on a single computer with databases stored on the same computer. Requires previous version of Global Value-BWL. No on-site time included.
GlobalValue-UWLS	Global Value Productivity Suite for GammaVision - Single Computer to Site License Upgrade For use with Networked Database Connections. Requires previous version of Global Value-BWL. No on-site time included.
GlobalValue-ADD	Additional day of installation, customization, or training. (Excludes associated expenses)

**NOTES:** Additional days of Global Value Add required for Turn Key setup. Duration is dependent on the extent of system configuration, integration, and training required.

## Options

A66-BW	GammaVision High Resolution Gamma Spectroscopy Software for Windows Includes standalone or first network copy and binary use license.
A66-UW	Update from A66-B32, A66-BW, or A66-NW to latest version of GammaVision.

Specifications subject to change  
052621