

# Food Monitoring Solutions



Out-of-the-box solutions for quickly and accurately monitoring food for radiation contamination both in the field and in the lab.



### **ORTEC Food Monitoring Solutions**

ORTEC Food Monitoring systems have been designed to work out-of-the-box to address the full spectrum of food monitoring needs from fast screening to advanced analysis and reporting all in an easy-to-use interface.

#### FoodGuard-1: Fast, Portable Nal Screening System

The FoodGuard-1 Nal system was designed for quick screening of the most common nuclides expected from events in nuclear power plants (<sup>131</sup>I, <sup>103</sup>Ru, <sup>134</sup>Cs and <sup>137</sup>Cs). The system is battery operated, portable, and low power so it can be used anywhere foodstuffs are gathered, imported, sold or consumed. Audible alarms and a simple drop-down entry interface make this ideal for any operator. Additionally, the system can be purchased precalibrated and installed, so setup onsite takes only a few minutes before making the first measurements.

## FoodGuard-2: Customizable High Resolution HPGe Radiation Analysis System

FoodGuard-2 is a complete out-of-the box solution using High Purity Germanium to give accurate results of radiation activity in food down to <1Bq/L within minutes. The system can be setup to work right out of the box or customized to change nuclides, alarm limits, and nuclide groups to meet different government regulations. The system ships with several preconfigured alarm limits based on published international standards. The system can also be configured with advanced reporting options to create your own customized reports as well as create trend reports across multiple samples.



### Benefits

- Easy to use no special spectroscopy training required.
- Fast sample loading of common Marinelli containers.
- Clear results and alarms when limits are exceeded.
- Decreased user error.
- Simple setup of different sample types and sample specific limits.
- Detection limits well below government regulations.
- No calibration required.

#### Features

- Detector options: Nal for screening or wide choice of 40–80% efficiency HPGe detectors.
- Liquid nitrogen and mechanically cooled options.
- Configurable alarm limits based on sample types and nuclide groups.
- Operator and password protected supervisor mode.
- Preinstalled and calibrated systems.
- Audible and visual alarms.
- Includes derived international limit tables.<sup>1</sup>
- Customizable nuclide lists, groups, and reports.\*

#### Software

FoodGuard-1 and FoodGuard-2 are based on the same software interface designed to make food monitoring tests as efficient as possible. The software is easily configured by a supervisor to include the different sample types and names that will be tested as well as what types of report outputs are needed. Once configured, an operator simply chooses from a list of drop-down menus and selects Run, limiting the potential for user error during operation.

FoodGuard software continually displays feedback to the operator to show progress and finishes with a clear display of the results including visual and audible alerts for any exceeded limits. The software was designed to be easy to use so the user does not need any specific training or spectroscopy knowledge.

	FoodGuard-2				
		Admini	strator Mode		Log Out
	Application Version: 1.0.8 Department: A8 Sorial Number: 1B3-7742		n Setup	MCB: DSP	EC_PRO LAB 02 Stopped
	Parameters Setup Calibration	Check Bun Benot Mea	summent Statistics		
	Counting		Administrative		
	Detector:	DSPEC_PRO LAB 02	Department (		ooratories 💌
	Calibration File:	C:\User\FoodGuard-2\C;	Serial Numb		
	Check Source Activity: Preset Sample Count Time:	31881.00 dps 10.00 min	Report Head	ABC Laborato	mes
	Maximum Input Count Rate:	550.00 cps			
	Entry Format:	All Details	•	assword: •••••	
	Report Output Device:	Screen Printer	Supervisor P		
	Use Ratio Sum For Alarm?	<b>V</b>	Contract day		
	Report Uncertainty?	V		Modify	Pasaword
	Allow operator to change calibration file?				
10 1 2	Default Report Style:	Full Format uQ	- ×		
oodGuard-2					
Ad application Version: 1.0.8	dministrator Mode	Log OL MCB: DSPEC_PRO_LAB		librated at the factor	y and you can
epartment: AB Rur	n Sample				
erial Number: 183-7742	10-10 10-10	Sample: Acquir	ing	Print	
meters Setup Calibration Check Run Report	Measurement Statistics				
Sample: TD-KF-201110131522-AB-14					
10000	278/	550 CPS Horizontal			
	G FoodGuard-2				
1000 -	ORTEC		rd-2 Analys BC Laborator 183-7742 Depa	ies	AMETE
	ORTEC Sample Code: Sample Code: Sample Locatio	Al ystem Serial Number: 1 TD-KF-201108311722- Total	BC Laborator 1B3-7742 Depai AB Opera Samp Place	ies	oratories
	ORTEC Sample Code: Sample Code: Sample Location Sample Date:	Al stem Serial Number: TD-KF-201108311722- Total n: Kingston	BC Laborator 1B3-7742 Depai AB Opera Samp Place Samp	ies rtment: ABC Lab ator: SPT le Name: Diet of Origin: Cont	AMETE oratories lainer A123D03 Kg
	2299.00 200.00 200.000 200.000 200.000 200.000 200.000 200.00	Al stem Serial Number: TD-KF-201108311722- Total n: Kingston Aug 31, 2011 17:22:03 Aug 31, 2011 17:22:06 123.90s (3% dead)	BC Laborator 183-7742 Depar AB Opera Samp Place Samp Limits Live 1	ies rtment: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.756 Library: USFD/ fime: 120.005	AMETE oratories lainer A123D03 Kg
	2000 ORTEC Sample Code: Sample Deate: Sample Locatio Sample Date: Analysis Start: The count rate WARNING - Th of 1.00	Al ystem Serial Number: TD-KF-201108311722- Total n: Kingston Aug 31, 2011 17:22:03 Aug 31, 2011 17:22:04	BC Laborator 183-7742 Depar AB Oper- Samp Place Samp Limits Live T the alarm threshol	ies rtment: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.756 Library: USFD/ fime: 120.005 d of 1400.00 cps	AMETE oratories lainer A123D03 Kg A Derived
10	2990 00 Sample Code: Sample Code: Sample Code: Sample Date: Sample Date: Sample Date: Sample Date: Sample Code: Sample Type: Sample Code: Sample	All ystem Serial Number: TD-KF-201108311722- Total n: Kingston Aug 31, 2011 17:22:03 (30, 30, 30, 30, 30, 30, 30, 30, 30, 30,	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limite Live 1 Live 1 Live 1 Live 1 Live 1 Live 3 Live 1 Live 3 Live 3 Liv	Ies trument: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.76/ Library: USFD/ Time: 120.00s d of 1400.00 cps S5) is at or above	AMETE oratories lainer A123D03 Kg A Derived
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	2990 00 Sample Code: Sample Code: Sample Code: Sample Date: Sample Date: Sample Date: Sample Date: Sample Code: Sample Type: Sample Code: Sample	All ystem Serial Number: TD-KF-201108311722- Total n: Kingston Aug 31, 2011 17:22:03 Aug 31, 2011 17:22:03 (703.48 cps) is below to e sum of the activity of Nuclide Report:	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limit Live 1 Live 1	Ies trument: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.76/ Library: USFD/ Time: 120.00s d of 1400.00 cps S5) is at or above	AMETE oratories lainer A123D03 Kg A Derived
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	2280 00 Sample Code: Sample Code: Sample Doet Sample D	All return Serial Number: TD-KF-201108311722- Total n: Kingston Aug 31, 2011 17:22:03 Aug 31, 2011 17:22:03 (3), 2013 1	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limit Live T Live T	ies rtment: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.75/ Library: USFD Time: 120.00s d of 1400.00 cps 35/ is at or above of Alarm Alarm	AMETE oratories lainer A123D03 Kg A Derived
10	2398 00 Norrigition Sample Code: Sample Type: Sample Locatio Sample Date: Analysis Start: The count rate Walking – The Outring Time: Nuclide Activ 241 <sub>Am</sub>	Al yetem Serial Number: " TD-KF-201108311722- Total m: Kingston Aug 31, 2011 17:22:03 Aug 31, 2011 17:22:03 123.906 (3% dead) 123.906 (3% dead) 120.946 (29) is below to work of the activity of Nuclide Report: try (BqlKg) Uncertaint 00 2.31"	BC Laborator IB3-7742 Depa AB Opera Samp Place Samp Place Samp Via Samp Via Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via Samp Via S Samp Via S S	ies rtment: ABC Lab ator: SPT ie Name: Diet of Origin: Confi le Weight: 0.76 Library: USFDU is at or above of Alarm Alarm 0%	AMETE oratories lainer A123D03 Kg A Derived
B 100 - 10 - 10 - 10 - 10 - 10 - 10 - 10	2000 ORTEC Smple Code: Sample Code: Sample Lose: Sample Lose: Analysis Start: Counting maile Date: Analysis Start: St	Ag   Applied   TD-KF-201108/12   Total   rotal   rotal   Aug 31, 2011 17:22:03   Aug 31, 2011 17:22:04   Aug 31, 2011 17:22:05   Nuclea Report   17:23:05 (3% dead)   10:00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.312   34108 2.327	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limits Live 1 be alarm threshol ver limit ratios (2.0 % 2.0 % 2.0 % 600.0 % 600.0 % 1200.0	ies triment: ABC Laba ator: SPT le Name: Diet of Origin: Conti le Weight: 0.75 library: USFD lime: 120.00s of 140.00 do of 140.00 do of 140.00 do of 140.00 do 0% 0% 0% 0% 285% ***	AMETE oratories lainer A123D03 Kg A Derived
5 100	2298 00 Regy(keV) Sample Code: Sample Code: Sample Dote: Sample Dote: Sample Dote: Sample Dote: Sample Dote: Sample Dote: Sample Dote: Sample Code: Sample Type: Counting System: Counting System: Absolute Level Nuclide Active 2 <sup>64</sup> Am Group 01 Group 02	Alg   stars   TD-KF-20110831722- Total   rs   rs   Xay 31, 2011 17:2206   T23.05 (3) (6 deal)   T03.05 (3) (6 deal)   T04.05 (78) (4 deal)   Nuclide Report   tht (16 gkKg)   Uncertaint   0   2.79   0.0   0.0   0.0   0.0	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limits Live 1 be alarm threshol ver limit ratios (2.0 % 2.0 % 2.0 % 600.0 % 600.0 % 1200.0	ies rtment: ABC Lab ator: SPT le Name: Diet of Origin: Cont le Weight: 0.760 is Library: USFDJ imme: 120.00s d of 1400.00 cps 35) is at or above of Alarm Alarm 0% 0% 0%	AMETE oratories lainer A123D03 Kg A Derived
B 100 - 10 - 10 - 10 - 10 - 10 - 10 - 10	2280 00 Sample Code: Sample Code: Sample Dost: Sample	Ag   Applied   TD-KF-201108/12   Total   rotal   rotal   Aug 31, 2011 17:22:03   Aug 31, 2011 17:22:04   Aug 31, 2011 17:22:05   Nuclea Report   17:23:05 (3% dead)   10:00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.311   00 2.312   34108 2.327	BC Laborator IB3-7742 Depai AB Opera Samp Place Samp Limits Live 1 be alarm threshol ver limit ratios (2.0 % 2.0 % 2.0 % 600.0 % 600.0 % 1200.0	ies triment: ABC Laba ator: SPT le Name: Diet of Origin: Conti le Weight: 0.75 library: USFD lime: 120.00s of 140.00 do of 140.00 do of 140.00 do of 140.00 do 0% 0% 0% 0% 285% ***	AMETE oratories lainer A123D03 Kg A Derived
B 100 - 10 - 10 - 10 - 10 - 10 - 10 - 10	2880.00 Sample Code: Sample Code: Sample Lote: Sample Lote: Counting mele Date: Manyets Start: Counting mele Date: Manyets Start: Start: Manyets Start: Star	A A A A A A A A A A A A A A A A A A A	BC Laborator IIBJ-7742 Depai ABA Samp Piace Samp Limits Live to He alarm thresholing (Limit (Bq/Kg) K S 20 S 20 S 20 S 20 S 20 S 20 S 20 S 20	Ice Ice   rtmmt: ABC Lab ABC   dor: SPT Same: Diet   le Name: Diet Official: Control   of Origin: Control Neight: 0.76   lubrary: USPD: Imme: 120.00 Ops   of Alarm Alarm   0% Official: Control   0% Official: Control	AMETER oratories aimer A123D03 Kg A Derived the alarm threshold
B 100 - 10 - 10 - 10 - 10 - 10 - 10 - 10	2280 00 Sample Code: Sample Code: Sample Doction Sample Do	A control of the sector of the	BC Laborator IB3-7742 Depa Samp Pilece Samp Limits Limits Limit (Bq/Kg) (K S 1200 K) 1	Ies Itement: ABC Lab   stor: SPT   te Name: Diet   of Ordign: Control   tubrary: Used   tubrary: Used   statistic 0.75   of Alarm Alarm   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%	AMETE oratories ainer A122D03 Kg x Derived the alarm threshold the alarm threshold
10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	2288.00 Party Code: Sample Code: Sample Type: Sample Date: Sample D	Alg.   TD-KF-2010801722- Total   rs: Kingston   Aug 31, 2011 17:22:03   Aug 31, 2011 17:22:04   Aug 31, 2011 17:22:05   Nuclide Report:   try (Bq/Kg) Uncertaint   0 2.71'   3410.8 2.02'   0 2.71'   3410.8 2.02'   0 0.77'   m Was Troggerd Nuclide Report:   ty (Bq/Kg) Uncertaint 0.07'	BC Laborator IIISJ-7742 Depai IIISJ-7742 Depai Samp Piace Samp Pia	Ice Ice   rttment: ABC Lab ABC   tor: SPT Stars: SPT   le Name: Diet Officie: Condition   le Veight: 0.75 Library: USED: Time: 120.005   did 1400.00 cpp Sp5 is at or above   of Alarm Alarm   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%   0% 0%	AMETER ainer A123D03 Kg A Derived the alarm threshold %

<sup>1</sup>Available in FoodGuard-2.

## **ORTEC Food Monitoring Solutions**

#### Ordering Information<sup>2</sup>

#### FOODGUARD-1 Nal-based Food Monitoring Systems

#### FOODGUARD-1-PC

A complete Nal-based food monitoring system including: ORTEC 905-4 3" x 3" Integral Nal Detector and Photomultiplier

ORTEC G5-FOODGUARD-1 Low-background Lead Shield (30 mm thick)

ORTEC digiBase all-in-one high performance digital electronics, MCA and high voltage supply

FG-1-B32 FoodGuard-1 food monitoring software (precalibrated)

6 each GA-MA 133N-E 1L marinelli beakers with lids <sup>40</sup>K (KCL) ring source for stabilization ORTEC PC-L-FG standard Laptop **ORTEC PC-PRT-1 LaserJet Printer** 

#### For use with customer supplied computer order:

#### FOODGUARD-1

Nal-based food monitoring system including:

ORTEC 905-4 3 "x 3" Integral Nal Detector and Photomultiplier

ORTEC G5-FOODGUARD-1 Low-background Lead Shield [30 mm thick]

ORTEC digiBase all-in-one high performance digital electronics, MCA and high voltage supply FG-1-B32 FoodGuard-1 food monitoring software

(precalibrated)

6 each GA-MA 133N-E 1L marinelli beakers with lids <sup>40</sup>K (KCL) ring source for stabilization

FoodGuard Computer Requirements PC capable of operating Microsoft® Windows® XP Professional SP3 or Windows 7 and CD-ROM drive (software is supplied on CD). Printer required for hard copy output.

#### **1L-MARINELLI-CASE**

A full case (33 beakers) of additional GA-MA 133N-E 1L Marinellis with lids.

#### FOODGUARD-2 HPGe-based Food Monitoring Systems

#### FOODGD2-PC-20

Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.

#### FOODGD2-PC-40

Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.

#### FOODGD2-PC-60

Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, CFG-PV4 cryostat and DWR-30 dewar.

#### FOODGD2-PC-XCOOL-115-20

Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, and X-COOLER-II 115 V.

#### FOODGD2-PC-XCOOL-230-20

Includes GEM20P4-70 detector with 20% relative efficiency and 70 mm endcap, and X-COOLER-II 230 V.

#### FOODGD2-PC-XCOOL-115-40

Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, and X-COOLER-II 115 V.

#### FOODGD2-PC-XCOOL-230-40

Includes GEM40P4-76 detector with 40% relative efficiency and 76 mm endcap, and X-COOLER-II 230 V.

#### FOODGD2-PC-XCOOL-115-60

Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, and X-COOLER-II 115 V.

#### FOODGD2-PC-XCOOL-230-60

Includes GEM60P4-83 detector with 60% relative efficiency and 83 mm endcap, and X-COOLER-II 230 V.

#### All FoodGuard-2 Systems also include:

HPLBS-1 High Performance Low Background Lead Shield. DSPEC Pro Advanced Digital Gamma Ray Spectrometer. FoodGuard-2 Food Monitoring software. Personal Computer and Printer. 6 each 2-liter Marinelli beakers. <sup>40</sup>K (KCI) check source in 2-liter Marinelli.

<sup>2</sup>Details of all included items available on the ORTEC website.

Specifications subject to change 053012



Tel. (865) 482-4411 • Fax (865) 483-0396 • ortec.info@ametek.com 801 South Illinois Ave., Oak Ridge, TN 37831-0895 U.S.A. For International Office Locations, Visit Our Website

