Product Datasheet

Flow-RAM 2™

Nuclear Medicine radio-HPLC Detector

Flow-RAM 2 System Specifications	
Dimensions (without detector)	70 (h) x 160 (l) x 150 (w), all mm.
Weight	2.0 kg
Collimator dimensions	25 x 3 mm slit (changeable; available down to 25 x 1 mm); 15 mm Pb thickness.
Power requirements	24 Vdc and 5 Vdc USB-C (cables supplied).
Power consumption (standby)	0.4 W, 0.8 W (MCA variant)
Power consumption (idle - SiPM)	4 W, 6 W (MCA variant)
Power consumption (idle - PMT)	5 W, 8 W (MCA variant, 2x PMT)
Power consumption (running - SiPM)	6 W, 8 W (MCA variant)
Power consumption (running – PMT)	7 W, 10 W (MCA variant, 2x PMT)
Detector operating voltages	Smart detector technology – all optimised detector operating voltage parameters stored in detector memory PMT-based detectors nominal operating voltage 800 - 900 Vdc SiPM-based detectors nominal operating voltage 40 Vdc
Default discrimination window settings	Smart detector technology – all optimised detector discrimination window parameters stored in detector memory LLD and ULD selectable in the range 0 to 3000 mV
Lower and upper detection limits	Count rate ~2,500,000 cps (Linearity 0 - 1,000,000 cps $r^2 \geq 0.99$). Maximum sample activity dependent on counting efficiency and dwell time. Example lower detection limit (^{137}Cs): 10 kBq
Background count rate	<10 cps for all variants
I/O	2 x Configurable I/O lines, 0-5 V; Analogue output 0-3 V, scalable as counts/mV

Detector Specifications

SiPM/NaI(Tl): r-TLC, r-HPLC and gamma spec	
Recommended Use	SPECT gamma
Scintillator	NaI(Tl) 25.4 mm D x 25.4 mm T
Typical Counting Efficiency (%)	Co-57: 9%; Tc-99m: 2.5%, based on 5 µl spot, 1 mm/s
Recommended Energy Range	50 keV to 1.5 MeV
Typical Background Count Rate	<10 cps shielded
Operating Voltage	42 V nominal
Temperature Range	10 to 40°C
Connection Type	N/A – internal interface
Dimensions	50 x 50 x 74 mm
Mass	407 g
Cooling	Peltier

PMT/NaI(Tl): r-TLC, r-HPLC and gamma spec	
Recommended Use	SPECT gamma
Scintillator	NaI(Tl) 25.4 mm D x 25.4 mm T
Typical Counting Efficiency (%)	Co-57: 8%; Tc-99m: 3.2%, based on 5 µl spot, 1 mm/s
Recommended Energy Range	50 keV to 1.5 MeV
Typical Background Count Rate	<10 cps shielded
Operating Voltage	700 to 1000 V, 900 V nominal
Temperature Range	10 to 40°C
Connection Type	N/A – internal interface
Dimensions	50 x 50 x 132 mm
Mass	691 g

Low Energy NaI(Tl)/PMT (legacy): r-HPLC	
Recommended Use	Low energy gamma – I-125
Scintillator	NaI(Tl), 25.4 mm D x 1 mm T
Typical Counting Efficiency (%)	I-125: 33.5%; I-129: 18%
Recommended Energy Range	10 to 60 keV
Typical Background Count Rate	<10 cps shielded
Operating Voltage	700 to 1200 V, 800 V typical
Temperature Range	10 to 40°C
Connection Type	SHV
Dimensions	51 (D) x 178 (H) mm
Mass	0.5 kg

2" NaI(Tl)/PMT (legacy): r-HPLC	
Recommended Use	Moderate to high energy gammas
Scintillator	NaI(Tl), 51 mm D x 51 mm T
Typical Counting Efficiency (%)	I-125: 4%; Co-57: 20%; Cs-137: 9%; Co-60: 15%
Recommended Energy Range	30 keV to 3.0 MeV
Typical Background Count Rate	<10 cps shielded
Operating Voltage	500 to 1200 V, 800 V typical
Temperature Range	10 to 40°C
Connection Type	SHV
Dimensions	66 (D) x 279 (H) mm
Mass	1.04 kg

Well detector NaI(Tl)/PMT (legacy): r-HPLC only	
Recommended Use	Gamma assay, low-level
Scintillator	NaI(Tl), 51 mm D x 46 mm L
Typical Counting Efficiency (%)	I-129: 65%; Cs-137: 33%; Co-60: 43%
Recommended Energy Range	50 keV to 1.5 MeV
Typical Background Count Rate	<10 cps shielded
Operating Voltage	500 to 1200 V, 800 V typical
Temperature Range	10 to 40°C
Connection Type	SHV
Dimensions	63 (D) (Max.) x 246 (H) mm
Mass	912 g
Fixed Flow Cell Volumes	10, 20 ,50, 100 and 200 µl

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