

RadEye HEC+

Alpha/Beta Sample Counter



The Thermo Scientific™ RadEye™ HEC+ portable sample counting system, providing simultaneous alpha and beta radiation measurements. Readings are automatically logged for later retrieval to a PC.

FEATURES

- Simultaneous alpha/beta measurements in classic mode
- Special EC-Mode measures low energy beta emitters (e.g. Ni-63) and electron capture nuclides (e.g. Fe-55, Mn-54, Cr-51)
- Cost effective alternative to liquid scintillation counters for Ni-63 and H-3 samples
- 800 hours battery operation
- Customized library of up to 16 nuclides with automated half life correction
- Simple detector performance verification with 9 g Lutetium Test Adapter

The system incorporates a 50 mm (2") windowless, low noise, dual phosphor scintillation detector that is sensitive for beta emitters from approximately 10 keV, low energy X-ray emitters from approximately 3 keV and alpha emitters. The detector is mated to a sliding drawer accommodating up to 60 mm (2.36 inch) diameter samples. Using a height-adjustable sampling area, the drawer permits the use of different sample types and must slide fully to the rear to initiate the counting.

The housing is made of durable plastic to withstand even rough handling. The built-in handle, in combination with the battery option, allows up to 800 hours field use before



The last 4500 values of the measured data in the selected measuring units are recorded internally and can be read out via USB Interface. Additionally the RadEye HEC+ sample counting system logs the last 250 alarms, errors and changes of the configuration. All events are time stamped and can be read out via USB interface. The characteristic features of the RadEye HEC+ sample counting system are the use of sophisticated low power technology components and microprocessor based fully automatic self checks. No

RadEye HEC+

SPECIFICATIONS

Detector	Detector 50.8 mm diameter (20 cm ²), windowless alpha and beta-sensitive scintillator																																
Efficiency	Typical sensitivity relative to surface emission rate (2 π) for 50mm samples: <table border="1"><thead><tr><th></th><th>Isotope</th><th>A/B Channels</th><th>EC Channel</th></tr></thead><tbody><tr><td>Alpha</td><td>Am-241</td><td>70%</td><td>-</td></tr><tr><td>Beta</td><td>Sr/Y-90</td><td>65%</td><td>6%</td></tr><tr><td></td><td>Cl-36</td><td>60%</td><td>7%</td></tr><tr><td></td><td>Tc-99</td><td>45%</td><td>20%</td></tr><tr><td></td><td>C-14</td><td>20%</td><td>28%</td></tr><tr><td></td><td>Ni-63</td><td>5%</td><td>35%</td></tr><tr><td></td><td>H-3</td><td>-</td><td>0.60%</td></tr></tbody></table>		Isotope	A/B Channels	EC Channel	Alpha	Am-241	70%	-	Beta	Sr/Y-90	65%	6%		Cl-36	60%	7%		Tc-99	45%	20%		C-14	20%	28%		Ni-63	5%	35%		H-3	-	0.60%
	Isotope	A/B Channels	EC Channel																														
Alpha	Am-241	70%	-																														
Beta	Sr/Y-90	65%	6%																														
	Cl-36	60%	7%																														
	Tc-99	45%	20%																														
	C-14	20%	28%																														
	Ni-63	5%	35%																														
	H-3	-	0.60%																														
Background	≤ 1 cps in the beta and EC channel μA 0.05 cps in the alpha channel at 100 nSv/h (10 $\mu\text{R/h}$)																																
Crosstalk	< 5% alpha into beta < 1% beta into alpha																																
Sample drawer	The sample holder and slide have a durable finish for ease of decontamination. Adapters for a variety of circular and rectangular air filters and test sources are provided. Maximum diameter for circular filters: 60 mm																																
Mechanical	Single-package design with carrying handle facilitates easy portability																																
Units	cps, cpm, Bq, dps, dpm, Bq/cm ²																																
Count time	User-selectable between 1 and 9999 seconds																																
Preset count	User-selectable between 1 and 9999 seconds																																
Background update	User-selectable between 1 and 9999 seconds; used in subtraction of sample counts																																
Alarms	Rate alarms, out of calibration, overload																																
Calibration	Source test routine checks alpha/beta efficiency and crosstalk values. Efficiencies automatically computed based upon user-defined sources. Automatic decay correction of sources. Source tests are automatically prompted at user-defined intervals.																																
Power supply	100.240 VAC, 47.63 Hz Charging indicators for internal NiMH battery. Rechargeable battery, 7.2 volts, 3.9 Amp Hr., 800 hours of operation between charges																																
Check sources	Routine that permits quick verification and operability of system to user-defined acceptance criteria. All check source events are logged																																
Internal memory	The last 4500 measured values are saved and can be read out via PC program. Logbook with 250 entries for changes of configuration and errors																																
Operating temperature	-20° to +50° C, Storage temperature -25°C to + 50°C																																
Humidity	10% to 95% at 35 μEC non-condensing																																
Degree of protection	IP 32 according to EN 60 529																																
Audible	Alarms, when the sample has completed its count, audible pulse (if enabled)																																
Size	120 mm wide x 380 mm high x 304 mm deep																																
Weight	4.1 kg (9.0 lbs)																																
Testing/Certifications	CE-Certified, Disturbance Emission: EN 61000-6-3, Immunity: EN 61000-6-2																																



ThermoFisher
SCIENTIFIC