



EASY-COUNT™

Field Smear / Filter Counter



FEATURES

- Lightweight field deployable Alpha/Beta smear counter
- Seamless operation with Colibri® or RDS-32™ survey meter (specific models)
- Alpha/Beta surface contamination measurement
- 17 cm² silicon PIPS® detector
- Excellent MDA
- High efficiency with improved sample to detector distance
- Belongs to the CSP™ family
- Calibration via PC
- Requires Colibri TTC or VLD Survey Meter (Software Version ≥ 3.1), RDS-31™ survey meter (firmware version ≥ 3.05.5) or RDS-32 with any firmware



DESCRIPTION

The Easy-Count unit is a field deployable smear counter for measurement of surface contamination. It is designed to be used with the Colibri or RDS-31/32 survey meters (specific model for each meter including dedicated holder and cable). The silicon PIPS detector with 17 cm² detection area makes it an ideal tool for direct measurement of alpha and beta emitters. PIPS technology brings numerous benefits to a field deployable smear counter.

These benefits are:

- An improved MDA (much lower gamma background compared to other technologies)
- Very good alpha/beta discrimination
- A durable entrance window (not pressure sensitive). It is also easy to clean!

The Easy-Count counter is an addition to the Canberra™ Smart Probe (CSP) family. It includes all key components of hardware circuitry (high voltage power supply, amplifier, discriminator, etc.). Also, the intelligence associated with controlling those components is located in the counter – including control and storage of key parameters, settings, calibrations, device ID, alarm settings (10 values for each unit to display with default setting), etc. Thus the counter is a fully integrated subsystem taking and transmitting the measurement to the instrument, which is used for display.

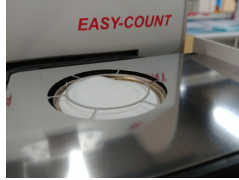
With high voltage and digitization of the data occurring in the counter, measurement quality is not dependent on external device quality (cable, host instrument). Moreover, a CSP uses a serial protocol to communicate with the host which can be an instrument or a PC.

EASY COUNT | FIELD SMEAR / FILTER COUNTER

Calibration and QA measurements can be performed directly with the counter, without using any instrument, by connecting the Easy-Count unit to a computer with CSPS™ (Canberra Smart Probe Software), allowing your instruments to remain deployed in the field.

Once calibrated, the Easy-Count counter is ready to be used as a plug and play “probe” to start a QA measurement in CPM, DPM, DPM/100 cm², c/s, Bq_{eq}, Bq_{eq}/cm². The Colibri version includes a specific bracket and CSP coiled cable, and the RDS version includes a specific holder and RDS coil cable.

Easy-Count counter accepts many different sizes of smears and planchets, which are loaded into the counter on a tray that ensures a reproducible geometry. This tray is easily accessible via a front panel door. It includes a rotating sample trap to keep the measured object in place. RDS version features an additional ring to support smear in planchet procedure and prevents the smear from damaging the internal detector.



A push-button located on the Easy-Count housing helps select the counting mode. When pressed, the probe switches to the next mode in a list of three and the LED is activated accordingly: Alpha only – LED off, Beta only – LED on and Alpha+Beta – LED blinking. Easy-Count counter can be easily upgraded (firmware) via CSPS, a USB cable and a PC.

SPECIFICATIONS

Nuclear

- Display units: CPM, DPM, DPM/100 cm², c/s, Bq_{eq}, Bq_{eq}/cm²
- Emitters: Alpha and Beta
- Detector: silicon 1700 mm² PIPS detector
- Detection area: 17 cm²
- Measurement range: 0 to 10 000 c/s, 0 to 600 kcpm. Activity equivalent range depends on calibration emitter. Conversion coefficients are factory set with ²³⁹Pu for Alpha channel and with ⁶⁰Co for Beta channel.
- Dead time: 8 μs with digital saturation at 10 000 c/s
- Energy range: Beta >100 keV, Alpha >3 MeV
- Gamma Sensitivity for ¹³⁷Cs: 8 c/s per μGy/h (4800 cpm per mR/h)
- Background: ambient ≤100 nSv/h (10 μR/h): Alpha <0.01 c/s (<0.6 cpm), Beta <0.8 c/s (<48 cpm)
- Cross talk: Alpha to Beta (²³⁹Pu) <5%, Beta to Alpha (⁹⁰Sr-⁹⁰Y) <0.2%

	Nuclide	Emitter	Typical efficiency over 2 π (%)	Guaranteed efficiency over 2 π (%)	Response to activity (c/s)/ Bq	MDA (Bq)
EASY-COUNT/RDS	²⁴¹ Am	Alpha	62	47	0.32	0.34
	²³⁹ Pu	Alpha	57	43	0.31	0.35
	⁹⁰ Sr + ⁹⁰ Y	Beta	43	33	0.26	3.75
	³⁶ Cl	Beta	51	39	0.32	3.05
	⁶⁰ Co	Beta + Gamma	19	15	0.09	10.8
EASY-COUNT/C	²⁴¹ Am	Alpha	70	53	0.35	0.31
	²³⁹ Pu	Alpha	63	47	0.34	0.32
	⁹⁰ Sr + ⁹⁰ Y	Beta	44	33	0.26	3.75
	³⁶ Cl	Beta	52	39	0.32	3.05
	⁶⁰ Co	Beta + Gamma	19	15	0.09	10.8

MDA: background = 0.01 c/s (alpha) and 0.8 c/s (beta), measured during 100 s in a 0.1 μGy/h ambience.
 Measuring time on source = 10 s
 Statistic: false alarm = 5% and non-detection = 5%

Ergonomic

- Display: provided by survey meter.
- Alarm setpoints: 10 values for each unit to display. Saved in probe memory and can be modified with CSPS and PC.
- Select Default alarm threshold using survey meter keypad.

Electrical

- Power: supplied by survey meter (low voltage only): +5 V
- Powered by the connected survey meter. RDS holder includes powering and/or charging capabilities when RDS-32 is loaded with rechargeable NiMH batteries.
- Consumption: 15 mA maximum
- Up to 22 hours of battery life with Colibri TTC Basic and up to 20 hours with RDS-32 meter (alkaline batteries)

Mechanical

- Housing: aluminium
- Dimensions: 23.4 x 17.8 x 33.7 cm (9.2 x 7.0 x 13.3 in.)
- Weight: 2.1 kg (4.62 lb) without Colibri meter

Environmental

- Temperature: from -10 °C to +40 °C (+14 to +104 °F)
- Storage temperature: from -10 °C to +40 °C (+14 to +104 °F)
- Relative humidity: 40% to 85% at 35 °C
- Cleaning: housing easy to decontaminate

Norm

- CE: meets CE requirements

Ordering References

- EASY-COUNT/C for Colibri: NOM006476 - EM96556
- EASY-COUNT/RDS for RDS-31/32: NOM006960 - EM108330
- USB cable for EASY-COUNT/C calibration: NOM006288 - EM78466
- USB cable for EASY-COUNT/RDS calibration: NOM007145 - EM109648
- Calibration/setup software SI unit, English CSPS/E: NOM006299 - EM80643
- Calibration/setup software US unit, English CSPS/R: NOM006298 - EM80642
- Calibration/setup software SI unit, French CSPS/F: NOM006289-EM78468



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