



CSP PROBES

EASY-COUNT™

Field Smear / Filter Counter



CSP Family

FEATURES

- Lightweight field deployable Alpha/Beta smear counter
- Seamless operation with Colibri® survey meter
- Alpha/Beta surface contamination measurement
- 17 cm² silicon PIPS® detector
- Very good alpha/beta discrimination
- 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 or greater)

DESCRIPTION

The Easy-Count is a field deployable smear counter for measurement of surface contamination. It is designed to be used with the Colibri survey meter. Its 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 are:

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

The Easy-Count is an addition to the CANBERRA's 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 even using any instrument, by connecting the Easy-Count to a computer with the CSPS™ software, allowing your instruments to remain deployed in the field.

Once calibrated, Easy-Count is ready to be used as a plug and play “probe” to start a QA measurement in CPM, DPM, DPM/100 cm², c/s, Bqeq, Bqeq/cm². A Colibri easily bracket mounts to the Easy-Count and connects via a coiled cable.

Easy-Count accepts many different sizes of smears and planchets. Smears and planchets are loaded into the counter on a tray that ensures a reproducible geometry. This tray is easily accessible via a front panel rotating door.

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 can be easily upgraded (firmware) via CSPS, a USB cable and a PC.

SPECIFICATIONS

Nuclear

- Display units: CPM, DPM, DPM/100 cm², c/s, Bqeq, Bqeq/cm²
- Emitters: Alpha and Beta
- Detector: silicon 1700 mm² PIPS
- 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) <4%, 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)
²³⁹ Pu	Alpha	65	52	0,31	0,35
⁹⁰ Sr + ⁹⁰ Y	Beta	57	46	0,27	3,63
³⁶ Cl	Beta	60	48	0,32	3,06
⁶⁰ Co	Beta + Gamma	19	15	0,1	9,79

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 = 10s

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. They can be edited with CSPS and PC.

Default alarm threshold is chosen in a list by use of survey meter keypad.

Electrical

- Power: supplied by survey meter (low voltage only): +5 V
- Powered by Colibri battery
- Consumption: 15 mA maximum
- Up to 22 hours of battery life with Colibri TTC Basic

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

Environmental

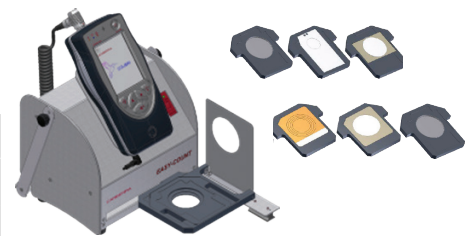
- Temperature: from -10 °C to +40 °C (+14 to +104 °F)
- Storage temperature: from -10 °C to +40 °C (+14 to +104 °F)
- Relative humidity: 40% to 85% at 35 °C
- Cleaning: housing easy to decontaminate

Norm

- CE: meets CE requirements

Ordering References

- Easy-Count: EM96556
- Colibri TTC-Basic: EM96846 (does not include BT, Wi-Fi® or GPS)
- Colibri TTC-GPS: EM87771
- Colibri VLD-Basic: EM96146 (does not include BT, Wi-Fi or GPS)
- Colibri VLD-GPS: EM86789
- Colibri internal detector calibration cable: EM88940
- Colibri internal detector calibration English software CSPS-E (SI units): EM80643
- Colibri internal detector calibration English software CSPS-R (US units): EM80642
- Colibri internal detector calibration French software CSPS-F (US units): EM78468



CANBERRA

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