



PORTABLE RADIATION MEASUREMENT

B-100™ Detection Module

The B-100 Detection Module provide enhanced surface contamination measurement options for beta emitters. Module B-100/A (with Mylar window) comes with a superior detection performance for low beta energies, while module B-100/B with aluminium window ensures consistent focus on beta-only detection.

The CSPevo® 100 cm² Detection Module, part of the CSPevo family, offers lightweight, ergonomic design that reduces user fatigue and enhances ease of use, making it ideal for reliable frisking and smear counting. Its robust construction minimizes maintenance, while improved detection homogeneity ensures accurate results. It integrates with Mirion smart probes and compatible survey meters (i.e. RDS-32™ and AVIOR®-2) for flexibility in various applications.

The CSPevo family, enhanced with LightLink technology, combines interchangeable modules, handles and survey meters for flexible user experience and efficiency. An evolution of the Canberra™ Smart Probes (CSP™) product family, the CSPevo family ensures backwards compatibility with existing CSP products.



CSPevo®
POWERED BY LIGHTLink®

FEATURES

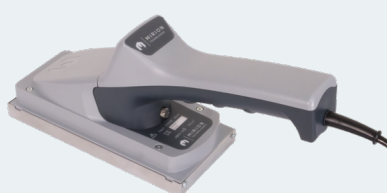
- ✓ **Advanced LightLink® Technology:** Enhances light collection and robustness and improves product availability
- ✓ **High Detection Homogeneity:** Over 85% detection homogeneity ensures reliable and consistent results
- ✓ **USB-C Compatibility:** Facilitates connectivity with third-party systems and calibration software
- ✓ **Lightweight, Ergonomic Design:** Reduces operator fatigue and supports comfortable use during extended contamination monitoring tasks
- ✓ **Broad Integration Options:** Flexible integration with legacy CSP meters and RDS-32 survey meter
- ✓ **One-Handed Operation:** Allows seamless use in situations where the operator's other hand is occupied or mobility is limited

A lightweight design facilitates one-handed operation – ideal for frisking and contamination assessment. Optimized for always-ready use, the CSPevo family ensures reliable performance and seamless integration across diverse radioprotection environments.

Cable-handle for meter/probe connection

Cable-free use with the RDS-32 meter

Snap-on handle & meter connection



SPECIFICATIONS

Nuclear Characteristics:

- **Units to Display:** Depending on survey meter (c/s, Bq, Bq/cm² with SI units and CPM, DPM, DPM/100 cm² with US units)
- **Emitters:** Beta - Gamma
- **Detector:** 0.25 mm thick plastic scintillator
- **Detection area:** 101.25 cm² (67.5 x 150 mm – 2.66 x 5.9 in.)
- **Detection uniformity:** ≥85% (IEC 60325)
- **Entrance windows:** on metallic frame, quick to remove
 - B-100/A: Aluminized Mylar that improves beta efficiency but also detects alpha particles with thickness: 6 µm (0.84 µg/cm²) made of 2 layers of 3 µm each
 - B-100/B: Aluminium window that guarantees a very good alpha rejection with thickness: 20 µm (5.4 mg/cm²) made of 2 layers of 10 µm each
- **Protection Grid Transparency:** 83%. Honeycomb mesh of 7.1 mm held to detector housing via 2 screws only
- **Measurement Range:** 0 to 100,000 c/s (600 kcpm). The conversion factor is factory-set using ⁶⁰Co.
- **Dead Time:** ≤3 µs
- **Energy Range:** B-100/A: 50 keV to 2.2 MeV, B-100/B: 100 keV to 2.2 MeV
- **Gamma Sensitivity for ¹³⁷Cs:** 45 c/s per µGy/h
- **Background:** Ambient ≤100 nSv/h (10 µR/h): ≤5 c/s (≤300 cpm)
- **Typical Alpha Influence ²³⁹Pu:** B-100/A: 45%, B-100/B: 1% or less

Norms:

- **EMC:** Conform
- **CE:** Meets CE requirements
- **IEC:** Type tested to IEC 60325-2002 (DOC025689)
- **ANSI:** Type tested to ANSI 42.17A-2003 (DOC025689)

Electrical:

- **Power:** Dual voltage with automatic selection supplied by survey meter or computer (+5 V or +3.3 V)
- **Battery Life:** 50 hrs approx. with AVIOR-2 meter operating on back-up battery (Backlight level 1, no alarm, one probe connected). 140 hrs approx. with RDS-32 powered with NiMH rechargeable batteries and 180 hrs with Alkalines batteries (No radio, backlight, LED, or alarm)

- **Consumption:** ≤25 mW. 5 mA maximum with 5 V power and 7.6 mA maximum with 3.3 V power

Ergonomic:

- **Display:** Provided by survey meter
- **Alarm Setpoints:** 10 values for each unit to display. Saved in probe memory. They can be changed with CSPS™ and PC. Default alarm threshold is chosen in a list by use of survey meter keypad
- **Connection:** CSP-EVO USB-C versatile interface

Mechanical:

- **Housing:** Molded ABS/PC easily decontaminable
- **Drop:** Tested from 1 meter height on concrete
- **Dimensions (Length x Width x Height):**
 - B-100 alone: 187 x 84 x 71 mm (7.4 x 3.3 x 2.8 in.)
 - With RDS-I-HANDLE: 278 x 84 x 151 mm (10.9 x 3.3 x 5.9 in.)
 - With RDS-C-HANDLE or CSP-C-HANDLE: 278 x 84 x 121 mm (10.9 x 3.3 x 4.8 in.)
- **Weight:** B-100 alone: 370 g (13 oz), with RDS-I-HANDLE: 570 g (20.1 oz), with RDS-C-HANDLE or CSP-C-HANDLE: 640 g (22.6 oz)

Environment:

- **Operating Temperature:** -20 °C to +50 °C (-4 °F to +122 °F)
- **Storage Temperature:** -25 °C to +60 °C (-13 °F to +140 °F) device in shipping package
- **Relative Humidity:** 10% to 95% at 35 °C (95 °F)
- **Cleaning:** Housing easy to decontaminate
- **Ingress Protection:** B-100: IP53, RDS-I-HANDLE: IP54, RDS-C-HANDLE/CSP-C-HANDLE: IP64

ORDERING INFORMATION

- **B-100/A:** NOM008875
- **B-100/B:** NOM008876
- **RDS-I-HANDLE (cable-free for RDS-32):** NOM008005
- **RDS-C-HANDLE (wired for RDS-32):** NOM008214
- **CSP-C-HANDLE (wired for CSP meter):** NOM008216
- **Calibration/Setup Software (CSPS):** CSPS-F (French – SI units): NOM006289, CSPS-E (English – SI/US units): NOM006299

Detection efficiencies and MDAs with 100 cm² ISO 8769 sources in contact with probe:

Nuclide	Emitter	Typical efficiency over 2π (%)		Guaranteed efficiency over 2π (%)		Response to activity (c/s)/Bq		MDA (Bq)	
		B-100/A	B-100/B	B-100/A	B-100/B	B-100/A	B-100/B	B-100/A	B-100/B
⁹⁰ Sr+ ⁹⁰ Y	Beta	58	48	44	36	0.76	0.62	3.1	3.75
³⁶ Cl	Beta	59	47	44	35	0.36	0.29	6.4	8.1
¹³⁷ Cs	Beta + Gamma	54	39	41	29	0.34	0.24	6.9	9.6
⁶⁰ Co	Beta + Gamma	46	24	35	18	0.22	0.11	11	20
¹⁴ C	Beta	25	-	19	-	0.08	-	30	-

- **MDA:** Background = 3.5 c/s (Beta), measured during 100 s in a 0.1 µSy/h ambience

- Measuring time on source = 10 s
- **Statistic:** False alarm = 5% and non-detection = 5%



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