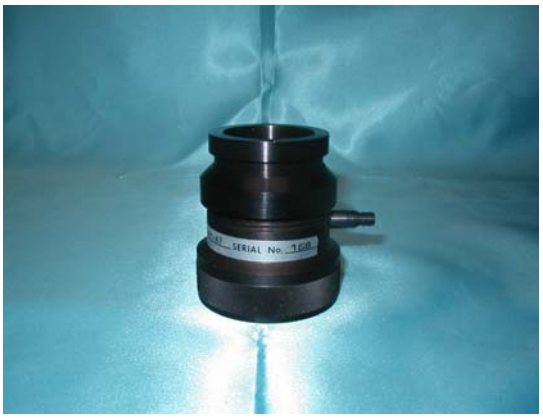
AEP - 47 / BEP - 47

Models AEP-47 & BEP-47 Particulate Detector Assemblies

The AEP-47 and BEP-47 are working level detection assemblies for use with the Pylon AB-5 monitor. The AEP-47 & the BEP-47 are used to detect Alpha emitting or Beta emitting airborne particles respectively. The Pylon model AEP-47 Alpha Detection Assembly is designed for use with 47 mm diameter filters for collection and measurement of airborne particles such as radon daughters. The BEP-47 is used for measuring beta emitting airborne particles. Nuclepore polycarbonate filters are recommended for use with this unit.



AEP-47

Applications:

- Industrial Applications
- Epidemiological Studies

Features:

- WL Measurements of alpha and beta emitting airborne particles
- Measurements can be taken during and after sampling
- Features allow execution of Tsivoglou-Thomas, Rolle and Kuznetz sampling methods

Theory of Operation:

Pylon model AEP-47 and BEP-47 detectors attach to the PMT access port on the front panel of the AB-5 radiation monitor. With the use of the AB-5's internal pump, these detectors use a filter to trap airborne particles. A scintillation disc which responds to Alpha or Beta radiation, is positioned to react with the sample collected on the back of the filter. The light released from the scintillation material is then counted by the AB-5's PMT. The construction ensures minimum contamination of the detector, when used with the recommended filter type. Using software package (SP-55), results can be reported in Working Levels.

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DETECTION UNITS

Specifications:

	AEP-47	BEP-47	
Radiation Detected:	Alpha	Beta	
Scintillator:	ZnS(Ag)	Plastic Type BC400	
Energy Ranges:	4.5 to 9	0.1 to 3	MeV
Efficiency:	16	16	%
Accuracy [1] :	± 5	± 5	%
Active Surface Area:	10.55 (1.64)	11.86 (1.84)	cm^2 (in^2)
Detector Background:	< 0.5	< 15	cpm
Calibration [2] :	Single Point	Single Point	
Filter Size:	47 (1.9)	47 (1.9)	mm (in)
Light Shield:	Aluminized Mylar	Aluminum	
Maximum Flow Rate:	10 (0.35)	10 (0.35)	lpm (ft^3/min)
Operating Temperature Range:	0 to +50 (+32 to +122)	0 to +50 (+32 to +122)	°C (°F)
Storage Temperature Range:	-20 to +75 (-4 to +167)	-20 to +75 (-4 to +167)	°C (°F)
Relative Humidity Range [3] :	0 to 90	0 to 90	%
Diameter:	6.2 (2.4)	6.2 (2.4)	cm (in)
Height:	7.2 (2.8)	7.2 (2.8)	cm (in)
Weight:	200 (0.44)	200 (0.44)	g (lb)

[1] At a 2σ Confidence Level.
[2] Custom calibrations available. Custom calibrations include multi-point calibrations and calibrations at non standard activity levels.
[3] Non-Condensing.
• Values are nominal.
• Specifications are based on new units which have been appropriately calibrated.
• Alpha efficiency refers to an Am241 point source at contact and at mid-point with a 0.8 um pore size Nuclepore filter.
• Beta efficiency refers to a Sr90/Y90 point source at contact and at mid-point with a 0.8 um pore size Nuclepore filter.

Ordering Information:

Model	*Part Number*	*Description*
AEP-47	A202041	Alpha Emitting Particulate Detector Assembly
BEP-47	A202043	Beta Emitting Particulate Detector Assembly

Specifications subject to change without notice.

Datasheet: 107 Rev 1

PYLON ELECTRONICS INC.
147 Colonnade Road, Ottawa, ON K2E 7L9 CANADA
www.pylonelectronics.com
TEL: 613-226 7920
FAX: 613-226 8195
instrument@pylonelectronics.com