

## HP-210 Hand Probe

### Features

- Thin Window "Pancake" GM
- High Beta Sensitivity
- Window Protective Screen



The Model HP-210 series hand probes provide a sensitive beta detector featuring a "Pancake" GM tube with a thin mica window. The open window, which is protected by an etched stainless steel screen, permits useful beta sensitivities down to 40 keV. The detector is alpha sensitive (above 3 MeV).

The HP-210 is designed for contamination surveys on personnel, table tops, floors,

equipment, etc. The HP-210T, with a high density tungsten shield, permits relatively low-level beta monitoring in a gamma background. Also available is the HP-210L with a lead shield which has the same specifications as the tungsten shield. When low-level beta monitoring is required in a low background area, the HP-210AL with an aluminum housing may be used.

## Specifications

### HP-210T (DT-304) HP-210L, HP-210AL

#### Operating Voltage

- 900 + 50V

#### Plateau Length

- 100 V minimum

#### Plateau Slope

- 0.1% per V maximum

#### Dead Time

- 50  $\mu$ s maximum

#### Temperature Range

- -30 °C to 75 °C (-22 °F to 167 °F)

#### Mica Window Thickness

- 1.4 to 2.0 mg/cm<sup>2</sup>

#### Mica Window Size

- 4.45 cm diameter (1.75")
- 15.5 cm<sup>2</sup> (2.4 in<sup>2</sup>)

#### Series Resistor

- 3.3 M $\Omega$  (in probe)

#### Shielding Ratio

- <sup>60</sup>Co = 4:1, HP-210T, HP-210L (window: back)
- <sup>60</sup>Co = 1:1, HP-210AL

#### \*Beta Efficiencies

- With Screen
  - <sup>137</sup>Cs = 22%
  - <sup>60</sup>Co = 16%
  - <sup>90</sup>Sr-<sup>90</sup>Y = 32%
  - <sup>99</sup>Tc = 15%
  - <sup>14</sup>C = 6%

- Without Screen

- <sup>137</sup>Cs = 33%
- <sup>60</sup>Co = 22%
- <sup>90</sup>Sr-<sup>90</sup>Y = 37%
- <sup>99</sup>Tc = 20%
- <sup>14</sup>C = 9%

#### Alpha Sensitivity

- 3 MeV at window

#### Connector

- BNC series coaxial

#### Size

- 16.5 cm x 8.9 cm x 9.7 cm (6.5" L x 3.5" W x 3.8" H)

#### Weight

- 1.9 kg (4.25 lb) HP-210T, HP-210L
- 0.7 kg (1.5 lb) HP-210AL

## OPTIONS

#### Instruments

ASP-1  
E-120  
E-140  
E-520  
E600  
RM 25  
Surveyor 50

#### Cables

CA-16-60  
CA-1-36  
CA-1-36  
CA-1-36  
CA-102-36  
CA-16-6  
CA-16-36

\*Efficiencies listed as percentage of  $4\pi$  emission rate, from a 2" diameter circular area of a 10cm<sup>2</sup> square source for <sup>137</sup>Cs and <sup>60</sup>Co sources. Efficiencies listed as percentage of  $4\pi$  emission rate, from a 1.75 diameter source for other isotopes. Open area of the etched stainless steel screen is 79%.

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