

4" x 4" x 16" Scintillation Detector with Spectroscopic Amplifier and Single Channel Analyzer (SCA)

Features :

- Built-in Ultra stable Cockroft Walton High Voltage Generator
- Built-in Preamplifier, spectroscopic amplifier and SCA
- Low power consumption (250 mW)

Description :

The detector contains a complete set of electronics. The detector has an internal High Voltage supply based on the Cockroft Walton principle. This ensures stable gain also at high count rates and low power consumption.

The signals from the photomultiplier tube are processed with a hybrid low power spectroscopic amplifier system; the output pulses can be directly fed into the MCA. The low power consumption makes the scintillation probe ideally suited for use with portable, battery operated multi-channel analyzer systems. A built-in SCA with LLD and ULD adjustable provides TTL output pulses, 1.5 μ s wide, 5V High. This TTL signal can be driven over 15 m cable length.

High Voltage, upper and lower level discriminators can be set with 20-turns gain potentiometers with test points present at the back of the assembly whereas the test voltages equal the real analog voltages of the signal.



Specifications:

Type number:

V102A406/ 3.5M-HV-E3-X2

Photomultiplier: 3,5" diameter demountable PMT with solid μ -metal shield

High voltage generator:

Cockroft Walton Type

High voltage polarity: Negative

High voltage regulation: 0 – 1500 V (20 turn screw potentiometer at back of assembly)

HV test point: 1V = 1 kV (red)

Required Power Supply:

+5V or +12V (stabilized)

Test point: Present at back of assembly (1 V = 1 kV)

LLD test = blue

ULD test = yellow

LLD/ULD adjust: Two 20-turns potentiometers (0-100%) with test points

Power requirements: 250 mW

Electrical connections:

2-core shielded cable for power supply and signal (3m).

Special connectors available on request.

Temperature range: -30° to +60 ° C

Housing: 1.0 mm aluminum or stainless steel

Spectroscopy amplifier

Output impedance: 50 Ω

Shaping time: 0.56 μ s

Pulse shape: Bipolar

1 μ s rise time

1 μ s fall time

Maximum output: 8.5 V

Energy resolutions:

< 8 % FWHM at 662 keV

HV generator noise: < 2 keV

