

# Nal Detector and Low Power Scintillation Probe Model xx B xx / y-M-HV-E3-X



## Features :

- Suitable for X-ray and gamma-ray spectroscopy
- High resolution spectroscopy
- Crystal sizes from 25 x 25 mm up to 152 x 76 mm
- Built-in Ultra stable Cockroft Walton High Voltage Generator
- Built-in Preamplifier and spectroscopic amplifier
- Ruggedised assembly
- Low power consumption ( 225 mW)

## Description:

The probe consists of a ruggedised construction of a scintillation crystal, a photomultiplier Tube and all associated electronics. All possible type of scintillation crystals can be provided (NaI(Tl), CsI(Tl), BGO etc.). The probe 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 Housing is made of Anodized Aluminum with a thickness of 0.5 mm around the scintillation crystal.

The signals from the photomultiplier Tube are processed with a hybrid low power preamplifier plus a spectroscopic shaping amplifier system; the output pulses can be directly fed into the MCA. The low power consumption make the scintillation probe ideally suited for use with portable, battery operated multi-channel analyzer systems.

## Specifications

Specifications are provided or the standard 51 x 51 mm scintillation crystal size. For larger crystal dimensions, other photomultiplier types and dimensions apply.

**Scintillation crystal:** Standard 51 x 51 mm NaI(Tl) or larger

**Photomultiplier Tube:** 51 mm diameter, fast linear focussed

**High Voltage Generator:** Cockroft Walton type

**High Voltage regulation:** 0 - 1500 V , (20 turn screw potentiometer at back of assembly)

**Power supply :** + 5 V - + 6 V

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

**Power requirements:** 250 mW

**Electrical connections:** 3-core shielded cable for power supply and signal (2 m).

Connector on Probe: ERA 0 S 304 CLL

Connector on cable: FFA 0 S 304 CLAC42

Connector at other side of cable (to MCA+power : FFA 0 S 304 CLAC42

**Connector layout :** Pin 1 = Signal (green)  
Pin 2 = internally connected to ground  
Pin 3 = Power supply (brown)  
Pin 4 = Ground (white)

### Spectroscopy amplifier

**Output impedance:** 50 Ω

**Pulse shape :** Bipolar , 1 μs rise time, 1 μs fall time.

**Maximum Output:** + 8.5 V

Energy resolution : < 7.5 % FWHM @ 662 keV

NaI 27022003

