

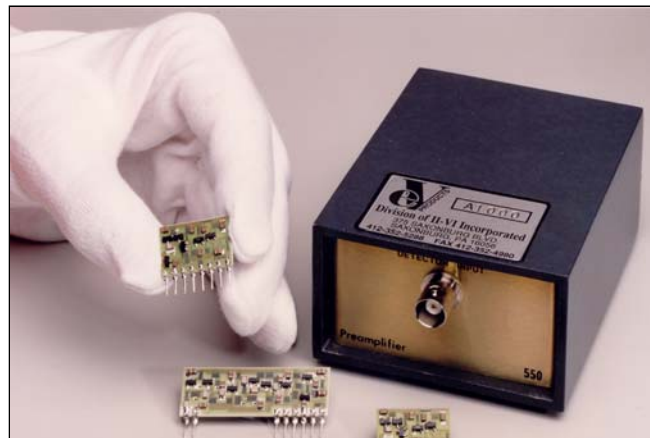


## *eV-550 Preamplifier Box*

Ultra low noise charge sensitive preamplifier box

The eV-550 preamplifier is essentially a charge-to-voltage converter. Charge carriers from a detector on the input, generated by ionizing radiation, provide a proportional voltage at the output. The eV-550 is designed for maximum flexibility in a wide range of applications. This is made possible by the use of a creative electronic design and the fact that the front-end electronics are located on a hybrid circuit (8-pin DIP). The hybrid circuit (eV-509x) can be easily removed and replaced with any of three other standard circuits that are available at present or with a custom circuit. This versatile configuration also allows for fast, low cost repair of damaged circuitry by plugging in a new hybrid. EI Detection & Imaging Systems has designed and manufactured the best front-end electronics and has developed a proprietary mother-board/chassis design for superior noise reduction.

The eV-550 interfaces with any of the four (4) standard EI Detection & Imaging Systems eV-5091, eV-5092, eV-5093 and eV-5094 hybrid preamplifiers (see separate data sheets) and incorporates a BNC connector for the input.

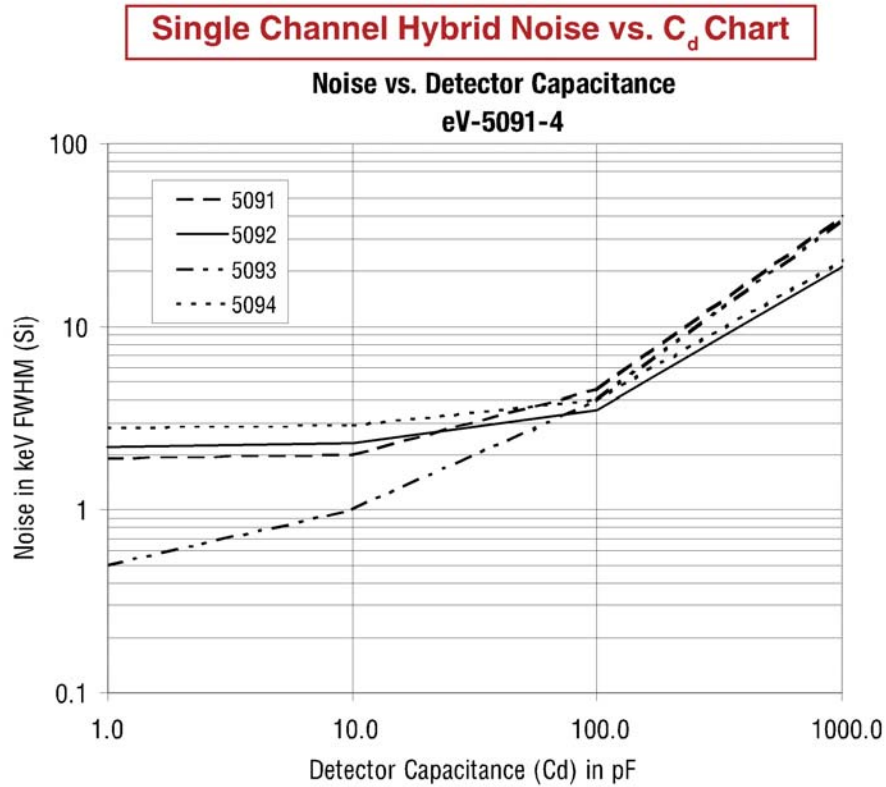


### *Applications*

- Semiconductor detectors
  - CdZnTe
  - Si
  - Ge
  - HgI<sub>2</sub>
- Channel Electron Multiplier Arrays (CEMA)
- Resistive Anode Readouts
- Photodiode Detectors
- Proportional Gas Detectors for Charged Particles or Neutrons

### *Features*

- Easy to Connect Multiple Different Detectors



## Specifications

### Input

- Detector input: Charge pulse from detector (input FET diode protected, allows  $\pm 5$  kV bias)
- Test input: From pulse generator for calibration
- Operating voltage:  $\pm 12$  VDC (cable provided)\*\*

### Output

- Energy: Inverted tail pulse (for energy)
- Impedance: 93  $\Omega$  or 50  $\Omega$  (user specified)

### Performance

- Charge sensitivity: 0.2 - 3.6 mV/fc, Si 5 - 158 mV/MeV, Si
- Risetime: 20ns @  $C_{source} = 2$ pF (nom) (other values available)
- Falltime: 25 $\mu$ s (other values available)

### Connectors

- Power: 9 pin sub-D
- Detector input: BNC
- (Energy) output: BNC
- Bias: SHV (100M  $\Omega$  or 500M  $\Omega$  bias resistor)

\*\* HV and Signal cables not provided