

# CREMAT Modules:

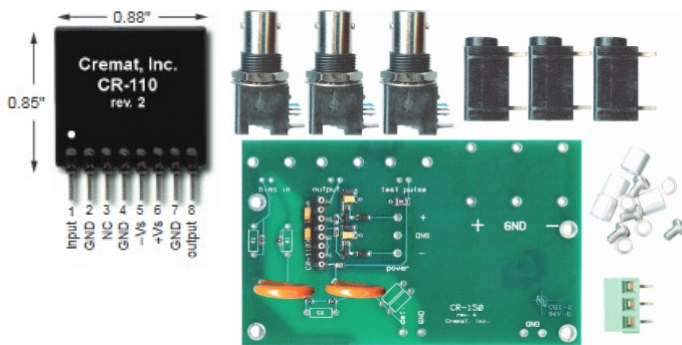


Model CR-110 Charge Sensitive Preamplifier, Model CR-200 Shaping Amplifier

## Charge Sensitive Preamplifier Module

**CR-110 Overview:** Ionizing radiation typically produces a small burst of current in the detector. This current flows into a charge sensitive preamplifier connected to the detector. The preamplifier integrates this burst of current, producing an output that is proportional to the total charge from the event.

Cremat offers the CR-110: a small, high performance charge sensitive preamplifier with a gain of 1.4V/pC. CR-111 has a gain of 0.15V/pC, CR-112 15mV/pC and CR-113 1.5mV/pC.



**CR-150 evaluation board:** Cremat also offers an evaluation board CR-150 for this preamplifier, providing an easy method for the casual user to operate and evaluate it. We offer a CR-150 ready assembled in an aluminum box with BNC connectors for input, output, test in and bias in and D-Sub 9 connector for power connection from a CSA4 or any other spectroscopy amplifier, power cable included, the CR-150-INST-D9. A similar box CR-150-BOX from Cremat is also available for self-made mounting a CR-150 board and connecting an own external power supply.

## Shaping Amplifier Module

**CR-200 Overview:** Shaping amplifiers are often used following the charge sensitive preamplifier stage and perform three functions: First, they provide an output pulse having a faster baseline restoration than the charge sensitive preamplifier output pulse. This is especially important at high count rates, where pulses from consecutive events can 'pile up'. Secondly, shaping amplifiers filter some of the noise from the preamplifier output signal. Finally, shaping amplifiers can also be used to provide extra gain to the signal, which may be very small (sub mV) at the preamplifier output. Cremat offers the CR-200 series of shaping amplifiers. They are available in different shaping times from 100 ns to 8 us. Each has a fixed gain of 10. To achieve greater gains, a broadband amplification stage should be added between the charge sensitive preamplifier and the shaping amplifier.

**CR-160 evaluation board:** Cremat offers an evaluation board for the CR-200 series amplifiers, which contains such a broadband amplifier. The combination of a CR-200 series amplifier with the CR-160 evaluation board creates a low noise Gaussian shaping amplifier having input and output BNC connectors, adjustable gain (0 to 10,000), reversible polarity, and pole/zero compensation.



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