

CB211 Charge sensitive preamplifier.

The preamplifier **CB211** is a low noise charge sensitive preamplifier designed for PMTs. Low gain 166mV/pC and Z=50 Ohm impedance make it an excellent module for PMTs. The preamplifier is optimized for high input capacitance (up to 1000pF) and impedance of dividers. The module has bias input (up to 3 KV) and protection circuit to avoid breakdown of the input of the preamplifier circuit.



Model	Charge sensitivity (Si Equivalent)	Max. Noise (keV/(Si) (Cin = 0pF)	Energy range
CB211	10 mV/MeV	<1,45 KeV	0-700 MeV

Note: Noise characteristics see Fig.1.

PERFORMANCE

INPUTS/ OUTPUT

Decay time	1000 us	INPUT	Accepts positive or negative charge signal. DC Input resistance is 100KOhm. BNC connector. voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is optional value.
Dynamic input capacitance:	up to 1000 pF		
Noise/Input cap. ratio:	<9 e-/pF		
Rise time	7 ns (up to 100 pF detector capacitance)	BIAS (Optional)	pulse input connector is BNC type connector. Test capacitance is 3,3 pF.
Integral nonlinearity:	0,03 % (without termination)	TEST	
Dynamic output range :	+/- 7,5 V (without termination). +/-3 V(with 100 Ohms termination).		
Temperature stability:	+/- 100 ppm/C.	POWER	input power through 3 meter screened cable from spectrometric amplifier, NIM crate power supply or portable power supply.
Open loop gain:	50,000	ENERGY	output negative or positive linear pulse. BNC connector.
Output resistors:	100 Ohm		
Test Capacitance:	3,3 pF (+/-3%).		

POWER SUPPLY REQUIREMENTS:

The best solution is alimentation from a NIM standard power supply or special low noise linear power supplies.

Power supply pin out:

P. Voltage (V)	Current (mA)
+24	19,6
-24	10,0
+12	10,0
-12	11,6

Pin number	
7	+24 Volt
6	-24 Volt
4	+12 Volt
9	-12 Volt
1	Ground
2	Ground

Option version:
power voltage +/-12 Volt

Box dimensions: 111x80x40 mm. Cable length 3 m.

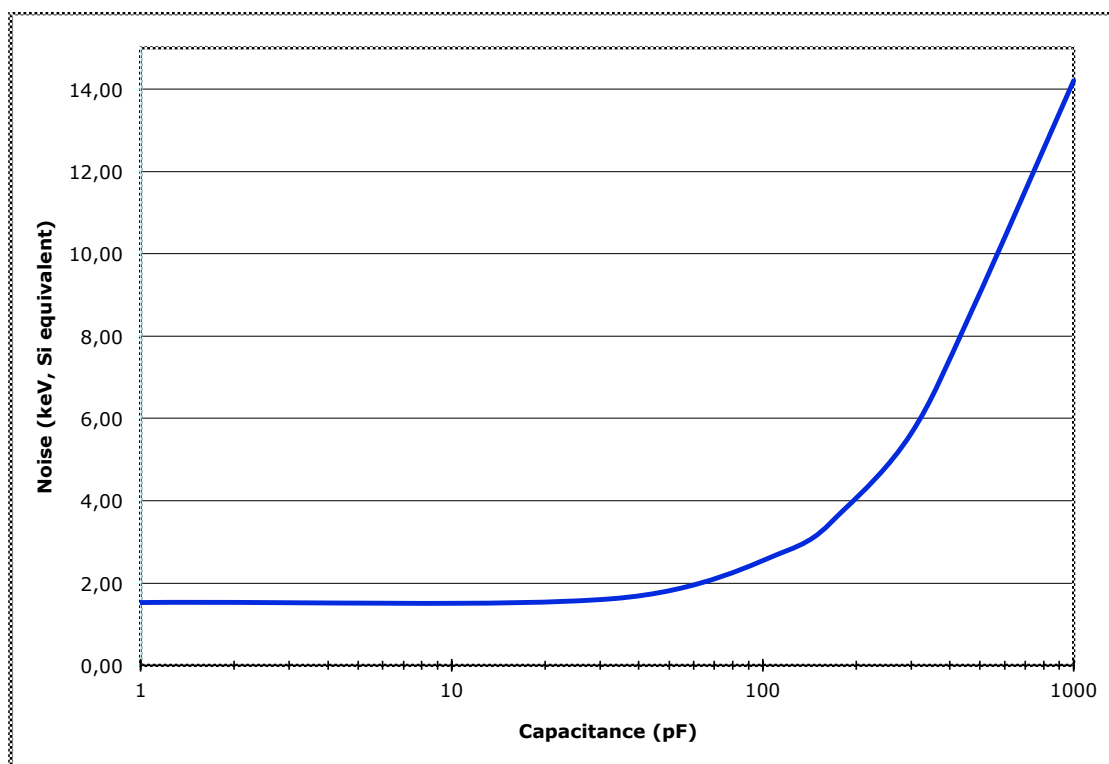


Fig.1. Typical noise as function of input capacitance measured with Spectrometric amplifier and 2 us time constant.