CB210 Charge sensitive preamplifier.

The preamplifier **CB210** is a low noise charge sensitive preamplifier designed for PMTs. Low gain 10,20,30 mV/pC and Z=50 Ohm impedance make it an excellent module for PMTs. The preamplifier is optimized for high input capacitance (up to 5000pF) and impedance of dividers. The module has protection circuit to avoid breakdown of the input of the preamplifier circuit.

GENERAL PROPETIES:

Model	Charge sensitivity (Si Equivalent)	Max. Noise (keV/(Si) (Cin = 0pF)	Energy range
CB210	0.6 mV/MeV (10mV/pC)	<1,45 KeV	0-11600 MeV
CB210A	1.2 mV/MeV (20mV/pC)	<1,45 KeV	0-5800 MeV
CB210B	1.8 mV/MeV (30mV/pC)	<1,45 KeV	0-3860 MeV

Note: Noise characteristics see Fig.1.

PERFORMANCE

Decay time	**CB210**	100 us
	CB210A	50 us
	CB210B	30 us
Dynamic input capacitance:	up to 5000 pF	
Noise/Input capacitance ratio:	<5 e-/pF	
Integral nonlinearity:	0,1 % (without termination)	
Dynamic output range:	+/- 7,5 V (without termination). +/-3 V(with 100 Ohms termination).	
Temperature stability:	+/- 100 ppm/C.	
Open loop gain:	30,000	
Output resistor:	100 Ohm	
Test Capacitance:	3,3 pF (+/-3%).	

INPUTS/ OUTPUT

INPUT	BNC connector, accepts positive or negative charge signal.
BIAS (Optional)	voltage can be applied through SHV input connector. The serial resistance between input and bias connectors is optional value.
TEST	pulse input connector is BNC type connector. Test capacitance is 3 pF.
POWER	input power through 3 meter screened cable from spectrometric amplifier, NIM crate power supply or portable power supply.
ENERGY	output negative or positive linear pulse. BNC connector.

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POWER SUPPLY REQUIREMENTS:

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

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

Power supply pin out:

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

Box dimensions: 111x80x40 mm

Cable length 3 m.

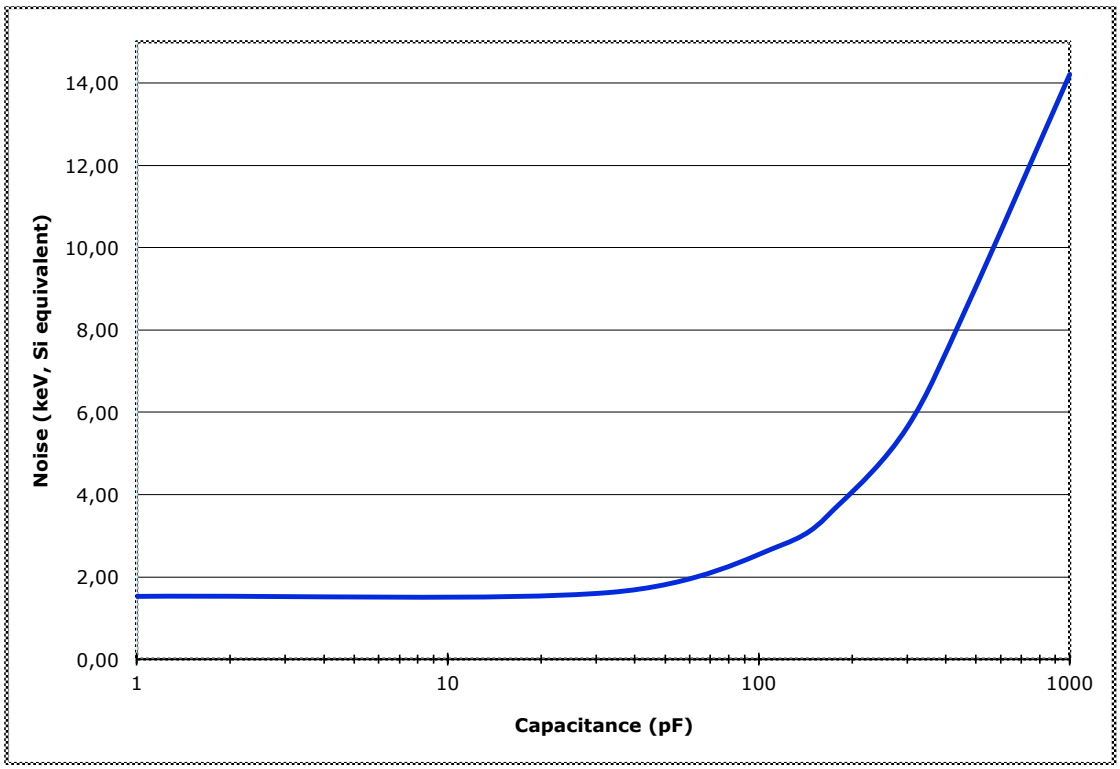

Fig.1. Typical noise as function of input capacitance measured with Spectrometric amplifier and 2 us time constant.

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