

Preamps: achieve detector-noise-limited performance

DC-Coupled Preamps for Photovoltaic HgCdZnTe Detectors

Model	481-1	481-5	481-10	481-20	481-50	481-100	481-200	477AG gain stage	491 Video Line Driver
Gain [R_D is detector resistance]	100 K/ R_D	24 K/ R_D	10 K/ R_D	5 K/ R_D	4 K/ R_D	2 K/ R_D	1 K/ R_D	Variable X5 to 200	X2
Transimpedance Factor (V_{out}/I_{in})	100K	24 K	10 K	5 K	4 K	2 K	1 K	Input 10K	--
Bandwidth (DC to...)	1 MHz	5 MHz	10 MHz	20 MHz	50 MHz	100 MHz	200 MHz	10 ⁺ MHz	100 MHz
Output (volts, max, p-p)	5				1			5	4
Noise (n V/Hz ^{1/2})	1.0				1.8				--
Input (Volts @ milliAmps quiescent)	+/-12 to 15 @ 18				+/-6 @ 25			+/- 5 to +/- 12 @ 20	
Size (inches)	2 x 2 x 1								1.1 x 0.9 x 2.3
Price	\$795							\$795	\$595

AC-Coupled Preamps for Photovoltaic or Photoconductive HgCdZnTe Detectors

Model	050/50	060/40	070/40	080/34	480	490	493A	493A/40	477AG gain stage	491 Video Line Driver
Gain	50 dB	40 dB	40 dB	34 dB	32 dB	26 dB	20 dB	40 dB	Variable, X5 to 200	X2
Bandwidth from:	10 Hz				1KHz				-	--
To:	1 MHz	3MHz	10 MHz	20 MHz	50 MHz	100 MHz	500+ MHz	500 MHz	10 ⁺ MHz	100 MHz
Output (volts, max, p-p)	4				3		5		5	5
Noise figure	1dB nominal				2.8 dB nominal		50 μ V RMS, wideband		--	
Input (Volts @ milliAmps quiescent)	-12 @ 10 to 20				+/-12 to 15 @ 40		+6 to 8 @ 30		+/-5 to +/-12 @ 20	
Size (inches)	2 x 2 x 1								1.1 x 0.9 x 2.3	
Price	\$795					\$895		\$795	\$595	

Notes:

1. We can tailor preamp bandwidth to customer requirements.
2. All units have BNC Connectors on Input and Output.
3. Output impedance is 50 ohms for all except model 491 which may be 2 ohm or 75 ohm output instead of 50 ohm on special order.
4. Cable from detector to amplifier should be less than 3 feet.
5. Use model 477AG gain stage on amp output if extra output voltage needed.
6. Use the model 491 line driver when output cable is longer than 6 feet.
7. Operating temperature range -55 to +85 C
8. Prices current as of 30 November 2002. Specifications & prices subject to change without notice.



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