

# LeCroy 620AL

## 8-Channel Discriminator

[ [Page 1](#) | [Page 2](#) | [Retrieve other information](#) ]

### Page 1



### NIM Model 620AL

## 8-Channel Discriminator

The Model 620AL 8-Channel Discriminator is a new, low cost, 8-fold discriminator combining the most useful operating features of standard, general-purpose discriminators with the high packaging density, economy, and improved input characteristics afforded by a hybrid circuit input stage.

The 620AL offers a low minimum threshold of -30 mV, which is variable up to -1 volt via front-panel screwdriver adjustment and continuously variable up to -600 mV. A threshold monitor point is provided to permit the measurement of the threshold level with a common voltmeter rather than the more difficult and less precise analog measurement via oscilloscope. The stability of the threshold is  $< 0.2\%^{\circ}\text{C}$  to assure accurate results in varied operating environments. Because of the extremely low reflections from its input (2%), the 620AL is significantly more protected against multiple pulsing due to reflections at -30 mV than the standard 10% reflection discriminators are at -50 mV.

The Model 620AL was designed to operate at maximum rates in excess of 100 MHz. It is a non-updating unit, requiring that its output returns to zero before it will again retrigger. At minimum output width setting, the 620AL will respond to a second pulse within 8 ns after the leading edge of the first pulse. Propagation delay through the 620AL is approximately 7.5 ns.

The outputs of the 620AL are low impedance voltage outputs, providing output levels greater than -800 mV into a 50  $\Omega$  load. The output durations are independently presettable via front-panel screwdriver adjustment from 5 ns to greater than 20 ns. Output rise and falltimes are less than 2.5 ns.

Voltages required by the Model 620AL are  $\pm 12$  volts and  $\pm 6$  volts. By special option, an internal power supply operating from 120 VAC may be added to eliminate the  $\pm 6$  volt requirement.

### Page 2

**INPUT CHARACTERISTICS**

Signal Input:	Threshold, -30 mV to approximately -1.0 volt, (common to all channels, continuously variable up to -600 mV); front-panel screwdriver adjust (screwdriver included) $50\Omega \pm 1\%$ , protected to $\pm 5$ A for 0.5 $\mu$ s clamping at $\pm 7$ V; reflections < 2% for input pulses of 2 ns risetime; stability < 0.2%/° C to 60° C operating range; offset $0 \pm 1$ mV; threshold monitor 10:1 ratio of monitor voltage to actual voltage.
Gate:	Slow gate via rear connector and rear panel ON-OFF switch; risetimes and falltimes approximately 50 ns; clamp to ground from +5 inhibits; direct-coupled.

**OUTPUT CHARACTERISTICS**

\*3 NIM-level voltage outputs, quiescently 0 volts, -800 volts during output; duration : 5 ns to > 20 ns, continuously variable via front-panel screwdriver control (narrower minimum width possible at slight expense of amplitude), risetimes and falltimes typically 2.0 ns (max. 2.5 ns), 10% to 90%. Width stability better than  $\pm 0.2\%$ /° C maximum.

**GENERAL**

Maximum Rate:	> 100 MHz, input and output.
Double-Pulse Resolution:	Less than 10 ns.
Time Slewing:	1 ns. for input amplitudes 110% of threshold and above.
Input-Output Delay:	7.5 ns nominal.
Multiple-Pulsing:	None; one and only one output pulse of preset duration is produced for each input pulse, regardless of input pulse amplitude or duration.
Packaging:	In RF shielded AEC/NIM #1 module; Lemo-type connectors.
Power Requirements:	+6 V at 210 mA; -6 V at 620 mA; +12 V at 50 mA; -12 V at 2 mA. Optional, at slight additional cost; internal power supply operating from 120 VAC to eliminate $\pm 6$ V requirement.

[ [Go to top of page](#) | [Retrieve other information](#) ]