Datasheet LCA-30-200G

## **Ultra-Low-Noise Current Amplifier**



Features	<ul> <li>Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)</li> <li>Extremely Low Noise, 0.5 fA/√Hz Equivalent Input Noise Current</li> <li>Bandwidth DC 30 Hz</li> <li>Transimpedance (Gain) 2 x 10<sup>11</sup> V/A</li> </ul>		
Applications  Specifications	<ul> <li>Photodiode- and Photomultiplier-Amplifier</li> <li>Spectroscopy</li> <li>Charge-Amplifier</li> <li>Ionisation Detectors</li> <li>Preamplifier for Lock-Ins, A/D-Converters, etc.</li> </ul>		
	Test Conditions	$Vs = \pm 15 \text{ V}$ , $Ta = 25^{\circ}\text{C}$ Warm-up 20 minutes (min. 10 minutes recommended)	
Gain	Transimpedance Accuracy	2 x 10 <sup>11</sup> V/A (>10 kΩ Load) $\pm$ 1%	
Frequency Response	Lower Cut-Off Frequency Upper Cut-Off Frequency Rise- / Fall-Time Gain Flatness	DC 30 Hz (- 3 dB) 12 ms (10% - 90%) ± 0.1 dB	
Input	Equ. Input Noise Current Equ. Input Noise Voltage Input Bias Current Input Bias Current Drift Offset Current Compensation Max. Input Current Input Offset Voltage DC Input Impedance	0.5 fA/√Hz (@ 10 Hz) 90 nV/√Hz (@ 10 Hz) 20 fA typ. / 30 fA max. Factor 2 / 10 K ± 15 pA, Adjustable by Offset-Trimpot ± 50 pA (Linear Amplification) < 0.5 mV 1 kΩ (Virtual) // 5 pF	
Output	Output Voltage Output Impedance Max. Output Current	$\pm$ 10 V (>10 k $\Omega$ Load) 50 $\Omega$ (Terminate with >10 k $\Omega$ for best Performance) $\pm$ 10 mA (Linear Amplification)	
Power Supply	Supply Voltage Supply Current	$\pm$ 15 V $\pm$ 15 mA typ.	
Case	Weight Material	210 gr. (0.5 lbs) AlMg4.5Mn, nickel-plated	
Temperature Range	Storage Temperature Operating Temperature	-40 +100 °C 0 +60 °C	

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

F E T O

DE-LCA-30-200G\_R6/JM/13MAR2019 Page 1 of 3

Datasheet LCA-30-200G

## **Ultra-Low-Noise Current Amplifier**

Absolute Maximum Ratings	Input Voltage Power Supply Voltage	± 10 V ± 22 V
Connectors	Input Output Power Supply	BNC  LEMO Series 1S, 3-pin Fixed Socket  Pin 1: + 15V  Pin 2: - 15V  Pin 3: GND  PIN 2  PIN 3  GND  PIN 3  GND

**Application Diagrams** 

Photo Detector Biasing in Photovoltaic Mode: Use for Low Speed Applications and Minimum Dark Current.

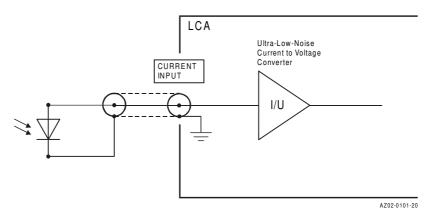
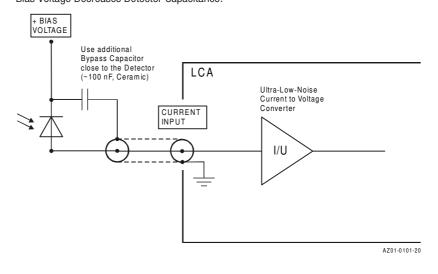


Photo Detector Biasing in Photoconductive Mode: Use for Fast Applications and if More Dark Current is Tolerable. Bias Voltage Decreases Detector Capacitance.



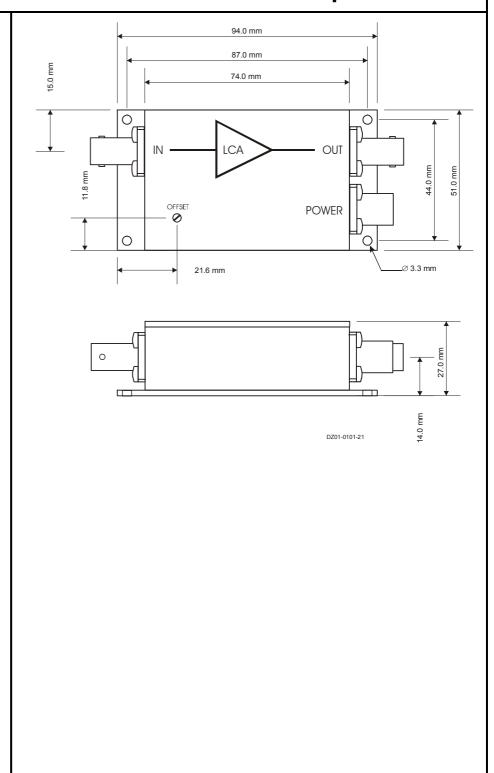
SOPHISTICATED TOOLS FOR SIGNAL RECOVERY



Datasheet LCA-30-200G

## **Ultra-Low-Noise Current Amplifier**

Dimensions



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