



### FEATURES

- Low noise
- Small size
- High sensitivity

### DESCRIPTION

The **SD 394-70-72-661** module Incorporates a 10mm cooled APD, TEC controller, HV supply, and two stage preamplifier, in a small package

### APPLICATIONS

- Industrial
- Medical

### ABSOLUTE MAXIMUM RATING\* (TA)= 23°C UNLESS OTHERWISE NOTED

SYMBOL	PARAMETER	MIN	MAX	UNITS
+/- 12 V <sub>S</sub>	Voltage Supplies	+/-11	+/-13	V
+5 V <sub>S</sub>		+4.75	+5.25	
T <sub>STG</sub>	Storage Temperature	-40	+70	°C
T <sub>O</sub>	Operating Temperature	0	+40	°C

### ELECTRIC WIRING TABLE

WIRE COLOR	ITEM
Red	+12V
Green	GND
Black	-12V
Red**	External Bias Adjust Input
Orange	HV Monitor
Violet	Temperature Monitor
Gray	Temperature Monitor GND
Yellow	+5V
White	GND for +5V Supply

\*All specifications apply when APD is at 0°C with a gain of 300 and a load resistance of 50 ohms. Typical HV divider Ratio and voltage gain is 404.

Recommended load on amplifier output is from 50ohms to 1Mohm. Devices must be mounted to a heat sink with TEC on.

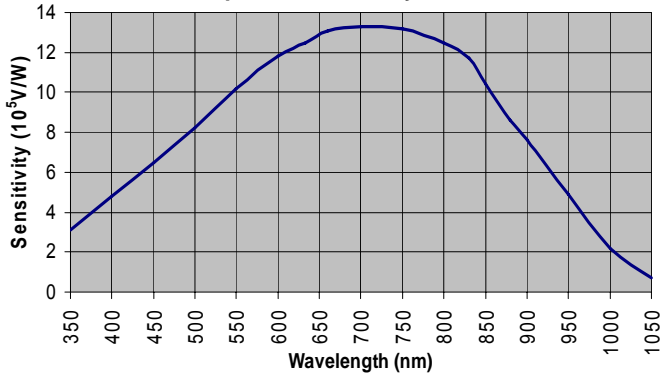
\*\*To activate the external bias control (Red wire), turn the gain adjust fully counter clockwise and place a jumper across J1 the external bias select connector. Input voltage on Red wire 0 to 5 volts. The module must be operated with a heat sink.

### \*ELECTRO-OPTICAL CHARACTERISTICS RATING (TA)= 23°C UNLESS OTHERWISE NOTED

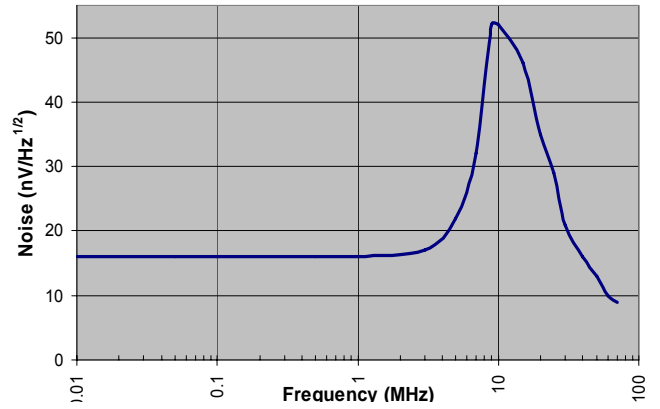
SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>s</sub>	Current Supply	+12V supply	120		220	mA
		-12V supply	30		50	
		+5V supply	0.8		1.9	
V <sub>os</sub>	Output Offset			±1	±5	mV
λ range	Spectral Application Range	Spot Scan	350		1050	nm
S	Sensitivity	f = 1MHz, λ = 500nm		13.5		10 <sup>5</sup> V/W
NEP	Noise Equivalent Power	f = 1MHz, λ = 500nm		7 x 10 <sup>-15</sup>		W/√Hz
R <sub>o</sub>	Output resistance			50		ohms
f <sub>cut</sub>	High Cutoff Frequency	λ = 675 nm	10	11		MHz

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.

**Spectral Sensitivity @ Gain 300**

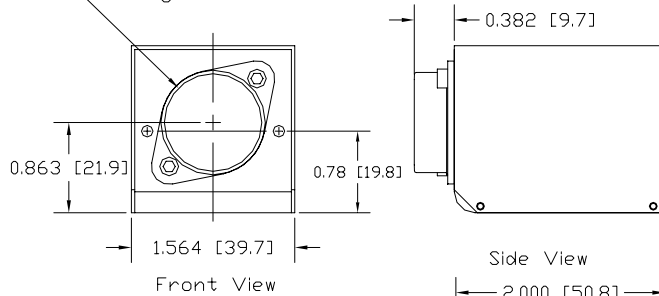


**Dark Output Noise @ Gain 300**

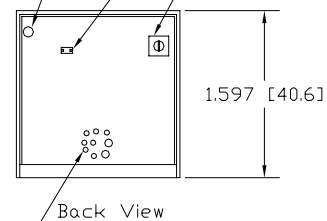


**Mechanical Dimension in inches**

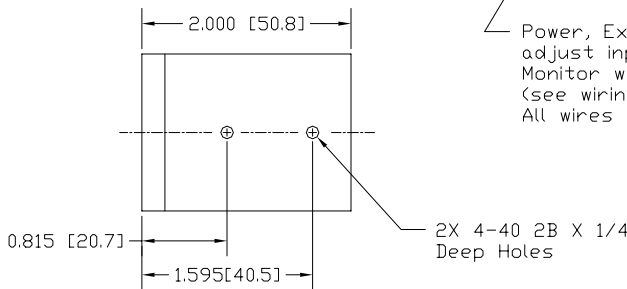
10 mm dia. APD  
Package 0.970 [24.6] Dia.



3.5 inch long RG188A/U  
coax with male BNC  
External  
Bias Select  
Gain Adjust



Power, External bias  
adjust input and  
Monitor wires  
(see wiring table)  
All wires are 2ft long



Bottom view shown without  
APD and electrical wires. Side  
views shown without electrical wires.

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.