



**FEATURES**

- Low noise
- Small size
- High sensitivity

**DESCRIPTION**

The **SD 394-70-74-661** 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
Blue**	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.

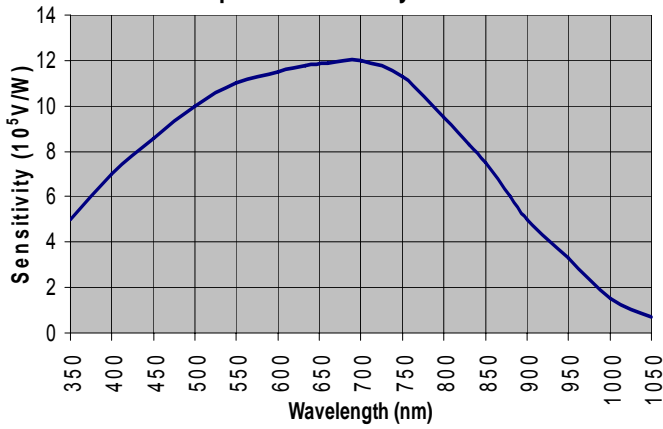
\*\*To activate the external bias control (Blue wire), turn the gain adjust fully counter clockwise and place a jumper across J1 the external bias select connector. Input voltage on Blue wire 0 to 5 volts. The module must be operated with a heat sink.

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

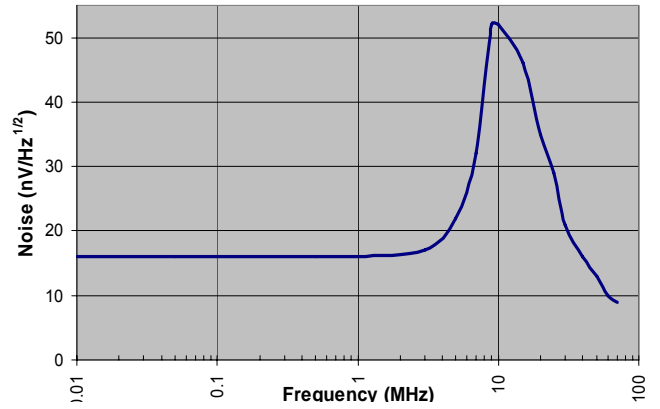
SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I <sub>s</sub>	Current Supply	+12V supply	120		220	mA
		-12V supply	30		50	
		+5V supply	0.8		1.9	
V <sub>os</sub>	Output Offset			±1	±5	mV
λ range	Spectral Application Range	Spot Scan	350		1050	nm
S	Sensitivity	f = 1MHz, λ = 500nm		9.5		10 <sup>5</sup> V/W
NEP	Noise Equivalent Power	f = 1MHz, λ = 500nm		10 x 10 <sup>-14</sup>		W/√Hz
R <sub>o</sub>	Output resistance			50		ohms
f <sub>cut</sub>	High Cutoff Frequency	λ = 675 nm	10	11		MHz

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**Spectral Sensitivity @ Gain 300**

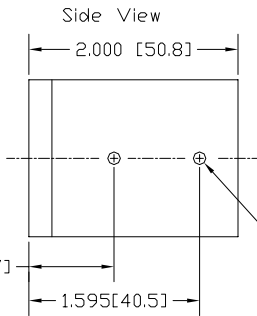
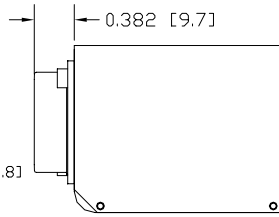
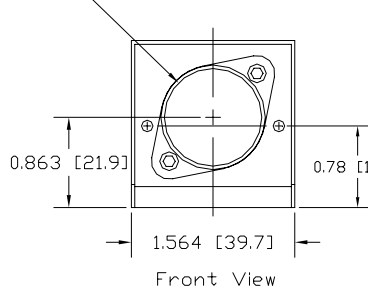


**Dark Output Noise @ Gain 300**



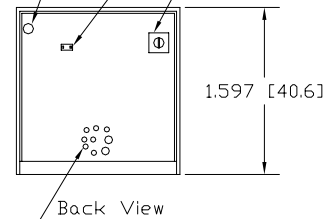
**Mechanical Dimension in inches**

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



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

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

2X 4-40 2B X 1/4 Deep Holes