



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 _S | Voltage Supplies | +/-11 | +/-13 | V |
| +5 V _S | | +4.75 | +5.25 | |
| T _{STG} | Storage Temperature | -40 | +70 | °C |
| T _O | 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.

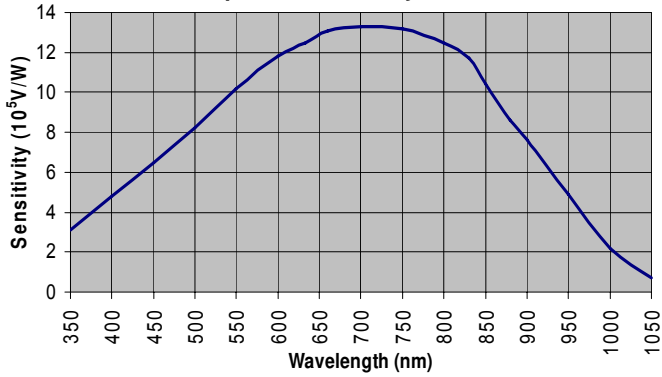
**To activate the external bias control (Red wire), turn the gain adjust fully counter clockwise and place a jumper across J1 the external bias select connector. Input voltage on Red wire 0 to 5 volts. The module must be operated with a heat sink.

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

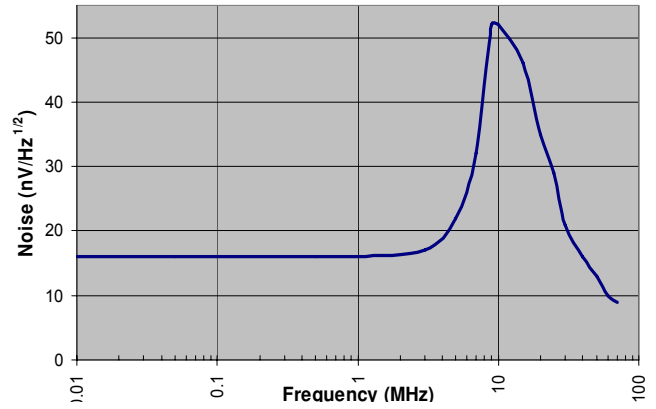
| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------|----------------------------|---------------------|-----|-----------------------|------|---------------------|
| I _s | Current Supply | +12V supply | 120 | | 220 | mA |
| | | -12V supply | 30 | | 50 | |
| | | +5V supply | 0.8 | | 1.9 | |
| V _{os} | Output Offset | | | ±1 | ±5 | mV |
| λ range | Spectral Application Range | Spot Scan | 350 | | 1050 | nm |
| S | Sensitivity | f = 1MHz, λ = 500nm | | 13.5 | | 10 ⁵ V/W |
| NEP | Noise Equivalent Power | f = 1MHz, λ = 500nm | | 7 x 10 ⁻¹⁵ | | W/√Hz |
| R _o | Output resistance | | | 50 | | ohms |
| f _{cut} | 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

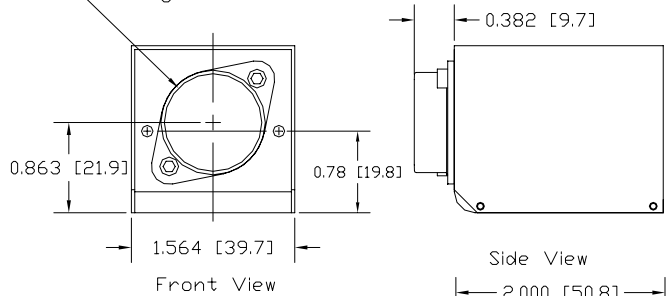


Dark Output Noise @ Gain 300

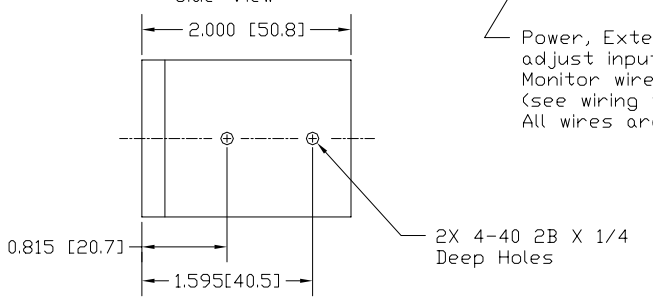
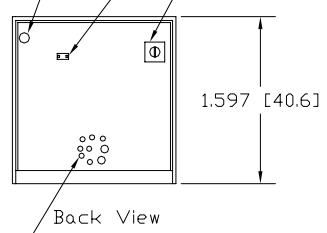


Mechanical Dimension in inches

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



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

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

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