Amplified Photomultiplier

PMM02

Description

The PMM02 is an amplified photomultiplier tube designed for detection of light signals from DC to 20 kHz. A buffered output drives a 50 Ω impedance up to 5 V. The PMM02 housing includes SM1 (1.035" x 40) threads that are compatible with any number of Thorlabs SM1 threaded accessories. The housing also includes threaded holes that are compatible with Thorlabs' 30 mm cage system. These features allow convenient mounting of external optics, light filters, and apertures, as well as provide an easy mounting mechanism using the Thorlabs cage assembly accessories.
The PMM01 has three 8-32 (M4 on –EC version) tapped mounting holes with 0.2" mounting depth and includes a power supply.

Specifications

PMM02	
Photomultiplier Module	
Photocathode Type	Multialkali (S20)
Photocathode Geometry	Head-On
Dynode Chain Orientation	Circular
Photocathode Active Diameter	22 mm
Wavelength Range	280 – 850 nm
Gain (Max)	3.1 x 10^6
Peak Responsivity (Max)	67 mA/W
Quantum Efficiency at Peak (Typ)	21%
Transimpedance Gain	Hi-Z: 1 x 10^6 V/A 50 Ω: 5 x 10^5 V/A
Dark Current (@ 20 °C)	0.5 – 5 nA
Dark Count Rate (@ 20 °C)	3000 s^{-1}
Bandwidth (6dB)[a]	0-20 kHz
Amplifier Noise (Typ)	2 mV RMS
Amplifier Offset (Typ)	1 mV
Output Rise and Fall Times	15 µs
Output Impedance	50 Ω
Output Signal[b]	0-10 V (unterminated) 0-5 V (term. into 50 Ω)
Power Input	+12 V (12 to 15): 40 mA -12 V (-12 to -15): 10 mA
Anode Current (Max)	100 µA
HV Voltage Control (max[c])	+1.8 V
HV Control Connector	2.5 mm Mono Jack
HV Control Sensitivity	-1000 V/V
HV Control Volts (Max)	1.8 V
Warm Up Time	<10 s
Output Connector	SMA

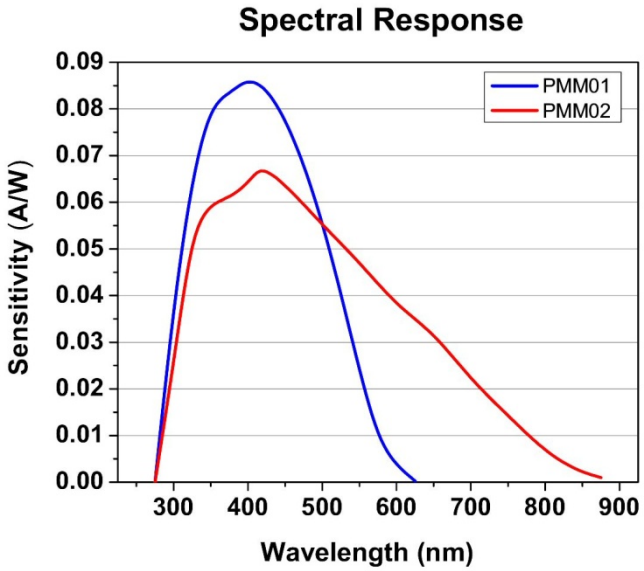
PMM02	
General	
Module Dimensions	3.66" x 1.6" x 2.46" (92.9 x 40.6 x 62.5 mm)
Operating Temperature	5 to 55 °C
Storage Temperature	-40 to 55 °C
Mounting Holes	8-32 (M4 on –EC version)
Weight (Module)	236 g (0.52 lb)
Weight (Total)	1.3 kg (2.94 lbs)
Window Characteristics	
Material	Borosilicate
Type	Plano-Concave
Refractive Index	1.49
Potassium (K)	300 ppm
Thorium (Th)	250 ppm
Uranium (U)	100 ppm

a The bandwidth decreases with increased output signal levels

b The output signal should be below the maximum output voltage to avoid saturation. Use ND filters if necessary.

*c *subject to not exceeding the rated gain of the PMT*

Plot



Drawings