

B51D03 Photomultiplier Tube

The B51D03 is a 2" diameter 10-stage end-on photomultiplier with extended sensitivity in the blue, green and red regions. Designed for scintillation counting and other applications where high quantum efficiency, low dark current, good collection efficiency, and gain stability are of paramount importance. This tube is the same as our B51D01, except the focus is interconnected to Dynode 1.

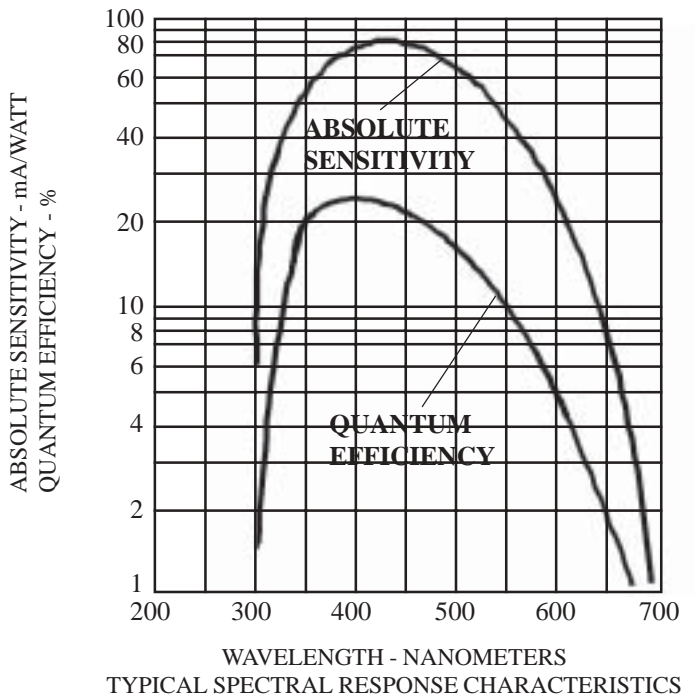
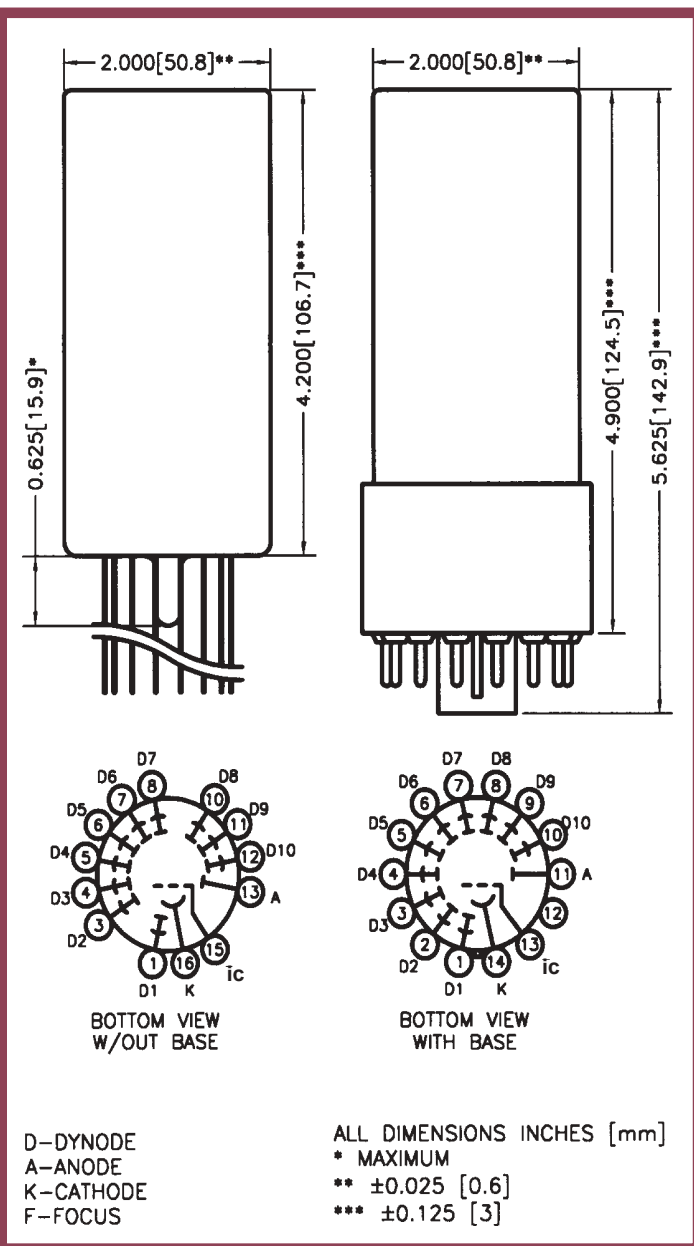


FIGURE 1

Photocathode:	Semitransparent Extended Bialkali
Spectral Response	See Figure 1
Wavelength of maximum response	400 ± 50 nm
Window shape	plano-plano, circular
Window index of refraction @ 436 nm	1.523
Dynodes	BeCu, Box & Grid
Capacitance (anode to all electrodes)	9.5 pF
Operating position	Any
Weight	170 grams

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ELECTRICAL OPERATING RATINGS

	MINIMUM	TYPICAL	MAXIMUM ⁽⁵⁾	UNITS
Cathode to dynode No. 1 voltage	40	150	300	VDC
Cathode to anode voltage		1100	1500	VDC
Voltage between consecutive dynodes		23	100	VDC
Ambient storage temperature			60	°C
Anode current, average over 30 sec.			20.0	μA
Cathode current		1	5	μA
Cathode luminous sensitivity: ⁽¹⁾ With 2854° K tungsten source	80	120	180	μA/lm
With blue light source ⁽²⁾	5	12	15	μA/lm(B)
With red light source ⁽³⁾	5	10	15	μA/lm(R)
Quantum efficiency @ 420 nm		25		%
Cathode radiant sensitivity @ 420 nm @ 540 nm @ 600 nm @ 680 nm		97 45 25 4		mA/W
Anode luminous sensitivity 1100 VDC: With 2854° K tungsten source of 1×10^{-3} lm	3	20	50	A/lm
Current amplification @ 1100 VDC		1×10^6		
Anode dark current ⁽⁴⁾ @ 22° C	<1	10	50	nA

(1) With 150 VDC between cathode and all other elements connected as anode.

(2) This measurement is made with a blue filter (Corning CS-5-58, 1/2 stock thickness) interposed between a calibrated 2854° K tungsten light source and the photocathode. The (B) appearing in the units signifies that the measurement is made with the blue filter in place.

(3) This measurement is made with a red filter (Corning CS-2-62) interposed between a calibrated 2854° K tungsten light source and the photocathode. The (R) appearing in the units signifies that the measurement is made with the red filter in place.

(4) Measured at the supply voltage which gives an anode sensitivity of 20 A/lm.

(5) Recommended operating maximums.

NOTE: When ordering one of the following basing options must be added, i.e. B51D03S

BASING OPTIONS: L - Long Base S - Short Base W - Wire Leads (No Base)

Voltage dividers available made to customer specifications.



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