

# B29B10W Photomultiplier Tube

The B29B10W is a 1-1/8" diameter, 11-stage end-on photomultiplier designed for scintillation counting and other applications where high quantum efficiency, low dark current, good collection efficiency, and gain stability are of paramount importance.

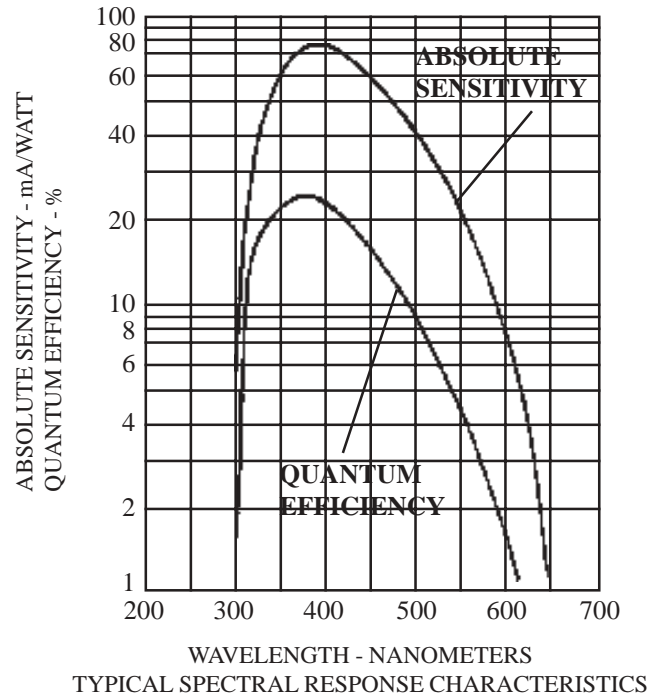
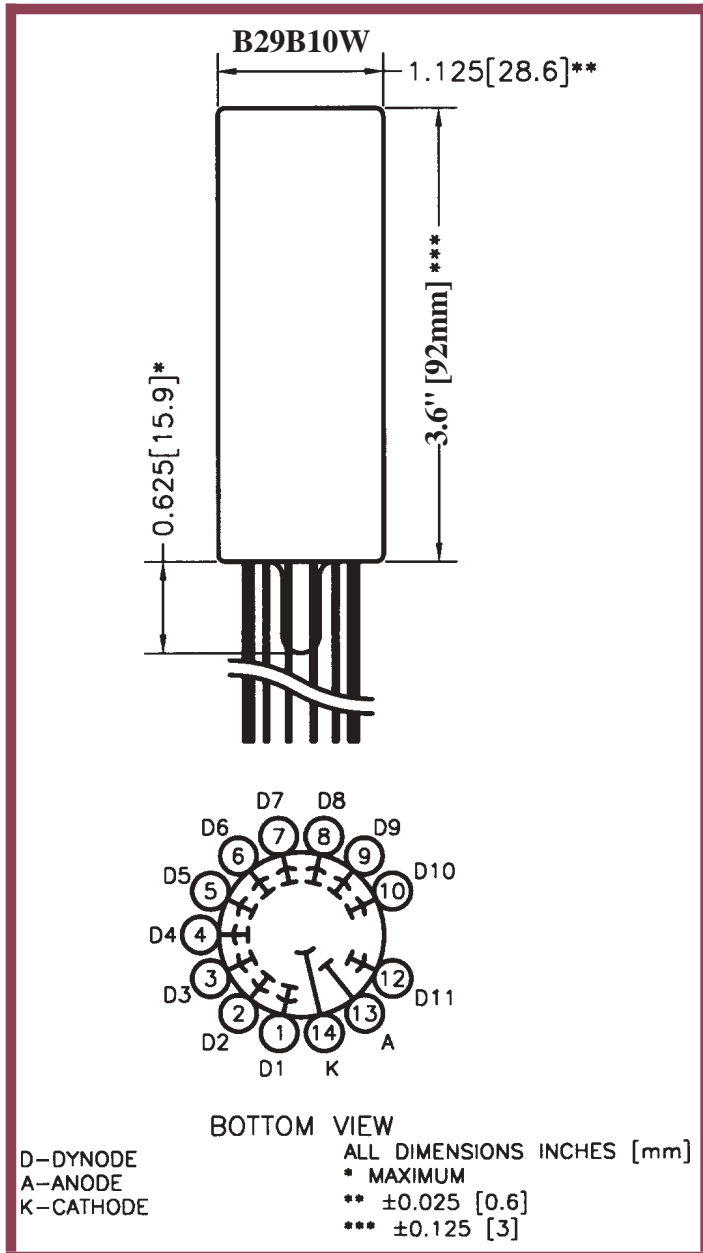


FIGURE 1

Photocathode:	Semitransparent Bialkali
Spectral Response	See Figure 1
Wavelength of maximum response	400 ± 50 nm
Minimum diameter	24 mm
Window shape	plano-plano, circular
Window index of refraction @ 436 nm	1.523
Dynodes	CsSb, coated Box & Grid
Capacitance (anode to all electrodes)	4 pF
Operating position	Any
Weight	50 grams

Rev. 01/04

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## ELECTRICAL OPERATING RATINGS

	MINIMUM	TYPICAL	MAXIMUM <sup>(4)</sup>	UNITS
Cathode to dynode No. 1 voltage	40	150	300	VDC
Cathode to anode voltage		700	1500	VDC
Voltage between consecutive dynodes			250	VDC
Ambient storage temperature		23	60	°C
Anode current, average over 30 sec.		10	10.0	μA
Cathode current		0.2	0.3	μA
Cathode luminous sensitivity: <sup>(1)</sup> With 2854° K tungsten source	50	70	90	μA/lm
With blue light source <sup>(2)</sup>	5	10	13	μA/lm(B)
Quantum efficiency @ 420 nm		25		%
Cathode radiant sensitivity @ 420 nm		80		mA/W
Anode luminous sensitivity 700 VDC: With 2854° K tungsten source of $1 \times 10^{-3}$ lm	10	20	40	A/lm
Current amplification @ 700 VDC		$1 \times 10^6$		
Anode dark current <sup>(3)</sup> @ 22° C	0.02	0.05	2.0	nA
Plateau width @ 40 mV threshold (approx. 100 keV) with <sup>137</sup> Cs source		180		Volts

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

(4) Recommended operating maximums.

**BASING OPTIONS:** W - Wire Leads (No Base)

Voltage dividers available made to customer specifications.



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