

130 mm (5") photomultiplier

9330B series data sheet

1 description

The 9330B is a 130mm (5") diameter, end window photomultiplier with blue-green sensitive bialkali photocathode on a plano-concave window. It has 11 high gain, high stability SbCs dynodes of linear focused design for good linearity and timing.

2 applications

- radiation monitoring
- scintillation spectroscopy

3 features

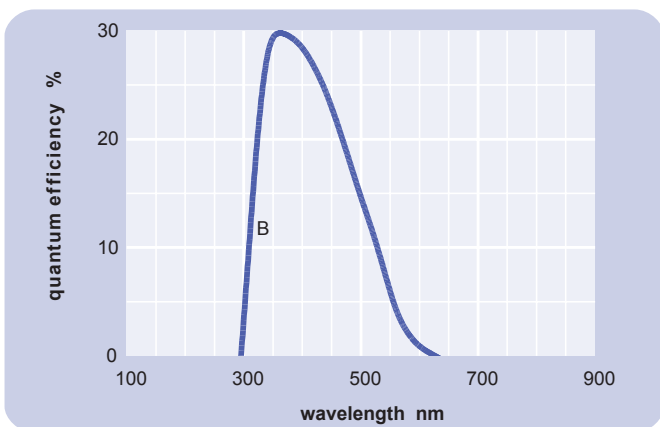
- high gain
- low operating voltage
- good SER
- good pulse height resolution
- large active area

4 window characteristics

9330B borosilicate	
spectral range (nm)*	300 - 630
refractive index (n_d)	1.49
K (ppm)	300
Th (ppb)	250
U (ppb)	100

* wavelength range over which quantum efficiency exceeds 1 % of peak

5 typical spectral response curves

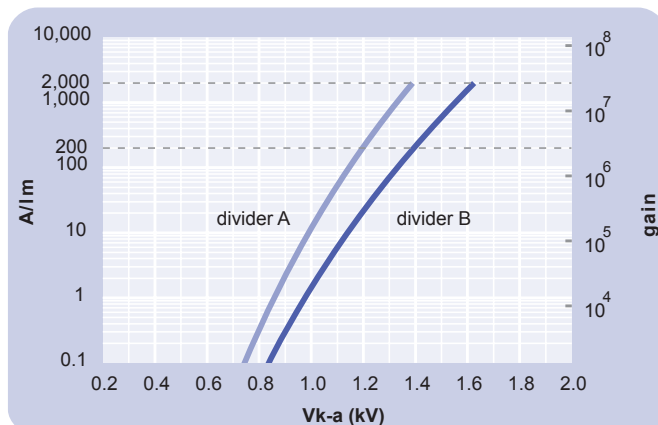


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		115	
quantum efficiency at peak	%		30	
luminous sensitivity	$\mu\text{A/lm}$		75	
with CB filter		8	12	
with CR filter			2	
dynodes: 11LFSbCs				
anode sensitivity in divider B:				
nominal anode sensitivity	A/lm		200	
max. rated anode sensitivity	A/lm		2000	
overall V for nominal A/lm	V		1200	1700
overall V for max. rated A/lm	V		1400	
gain at nominal A/lm	$\times 10^6$		3	
dark current at 20 °C:				
dc at nominal A/lm	nA		4	100
dc at max. rated A/lm	nA		40	
dark count	s^{-1}		1500	
pulsed linearity (-5% deviation):				
divider A	mA		30	
divider B	mA		100	
pulse height resolution:				
single electron peak to valley	ratio		2	
rate effect (I_a for $\Delta g/g=1\%$):				
	μA		20	
magnetic field sensitivity:				
the field for which the output decreases by 50 %				
most sensitive direction	$T \times 10^{-4}$			
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
multi electron rise time	ns		13	
multi electron fwhm	ns		25	
single electron rise time	ns		5	
single electron fwhm	ns		8	
transit time	ns		65	
weight:				
	g		350	
maximum ratings:				
anode current	μA			100
cathode current	nA			500
gain	$\times 10$			27
sensitivity	A/lm			2000
temperature	$^\circ\text{C}$	-30		60
V (k-a) ⁽¹⁾	V			2500
V (k-d1)	V			650
V (d-d) ⁽²⁾	V^6			300
ambient pressure (absolute)	kPa			202

(1) subject to not exceeding max. rated sensitivity (2) subject to not exceeding max rated V(k-a)

7 typical voltage gain characteristics



8 voltage divider distribution

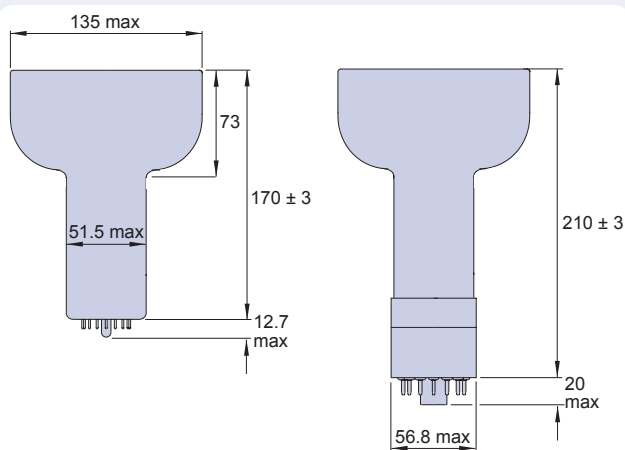
k d₁ d₇ d₈ d₉ d₁₀ d₁₁ a

A	450V	R	.....	R	R	R	2R	R	Standard
B	450V	R	.....	R	2R	3R	4R	3R	High Pulsed Linearity

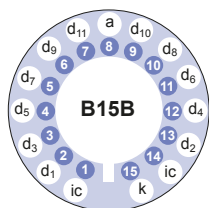
Characteristics contained in this data sheet refer to divider A unless stated otherwise.

9 external dimensions mm

The drawings below show the 9330B in hardpin format and the 9330KB with the B14A cap fitted.

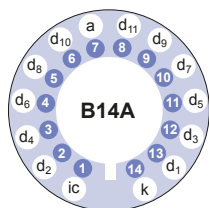


10 base configurations (viewed from below)



B15B hardpin base
(for 9330B)

'ic' indicates an internal connection



B14A cap
(for 9330KB)

'ic' indicates an internal connection

Our range of B15B sockets is available to suit the hardpin base. Our range of B14A sockets is available to suit the B14A cap. Both socket ranges include versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

11 ordering information

The 9330B meets the specification given in this data sheet. You may order **variants** by adding a suffix to the type number. You may also order **options** by adding a suffix to the type number. You may order product with **specification options** by discussing your requirements with us. If your selection option is for one-off order, then the product will be referred to as 9330A. For a repeat order, ET Enterprises will give the product a two digit suffix after the letter B, for example B21. This identifies your specific requirement.

9330

base options

K capped

options

M supplied with spectral response calibration

specification options

B as given in data sheet

A single order to

selected specification

Bnn repeat order to

selected specification

12 voltage dividers

The standard voltage dividers available for this pmt are tabulated below:

9330B	9330KB	k	d ₁	d ₇	d ₈	d ₉	d ₁₀	d ₁₁	a
C623C	C632C	450V	R	R	R	R	2R	R
C623D	C632D	450V	R	R	2R	3R	4R	3R

R = 330k Ω

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choose accessories for this pmt on our website

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