

29 mm (1.13") photomultiplier 9134B series data sheet

1 description

The 9134B is a 29 mm (1.13 ") diameter end window photomultiplier with blue-green sensitive bialkali photocathode and 9 high gain, high stability, SbCs dynodes of linear focused design.

2 applications

- x-ray & gamma-ray spectroscopy
- high light level

3 features

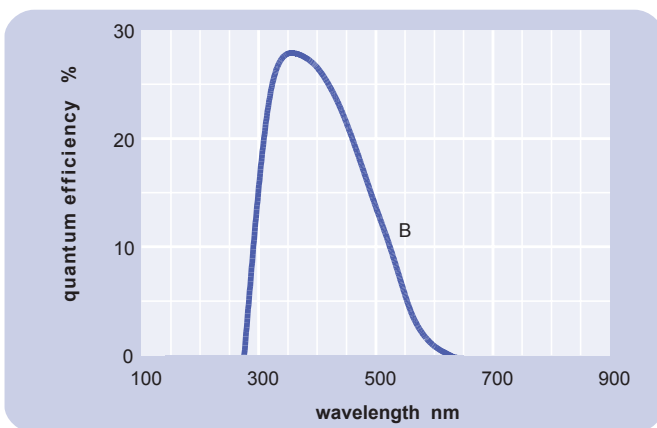
- compact
- low operating voltage

4 window characteristics

9134B borosilicate	
spectral range (nm)*	280 - 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

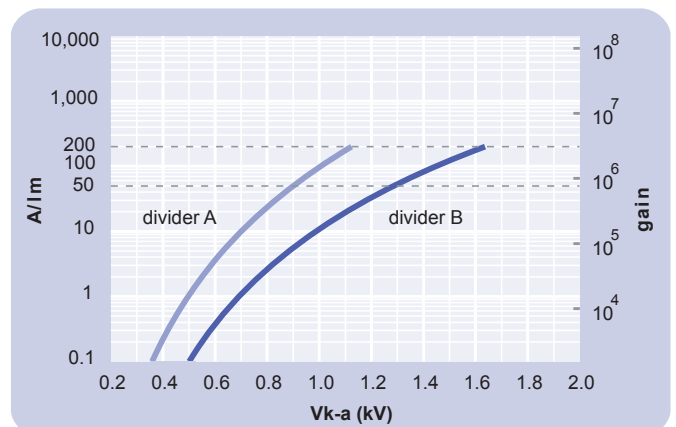


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		25	
quantum efficiency at peak	%		28	
luminous sensitivity	$\mu\text{A/lm}$		65	
with CB filter		7	11	
with CR filter			2	
dynodes: 9LFSbCs				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		50	
max. rated anode sensitivity	A/lm		200	
overall V for nominal A/lm	V		900	1100
overall V for max. rated A/lm	V		1050	
gain at nominal A/lm	$\times 10^6$		0.8	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.05	2
dc at max. rated A/lm	nA		0.2	
pulsed linearity (-5% deviation):				
divider A	mA		25	
divider B	mA		100	
pulse height resolution:				
^{137}Cs with 1" x 1" NaI (T1)			7.5	
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	$\text{T} \times 10^{-4}$		2	
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
multi electron rise time	ns		4.5	
multi electron (fwhm)	ns		7.5	
transit time	ns		30	
weight:				
	g		45	
maximum ratings:				
anode current	μA			200
cathode current	nA			50
gain	$\times 10^6$		3	
sensitivity	A/lm		200	
temperature	$^\circ\text{C}$	-30		60
V (k-a) ⁽¹⁾	V			2000
V (k-d1)	V			300
V (d-d) ⁽²⁾	V			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

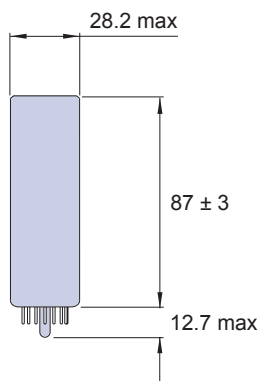


8 voltage divider distribution

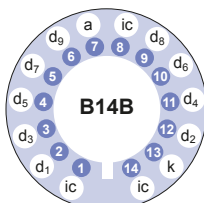
	k	d ₁	d ₂	.....	d ₆	d ₇	d ₈	d ₉	a	
A	2R	R	.....	R	R	R	R	R	R	Standard
B	2R	R	.....	R	2R	3R	4R	3R		High Pulsed Linearity

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

9 external dimensions mm



10 base configuration (viewed from below)



'ic' indicates an internal connection

Our range of B14B sockets, available for this series, includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

11 ordering information

The 9134B 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 9134A. 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.

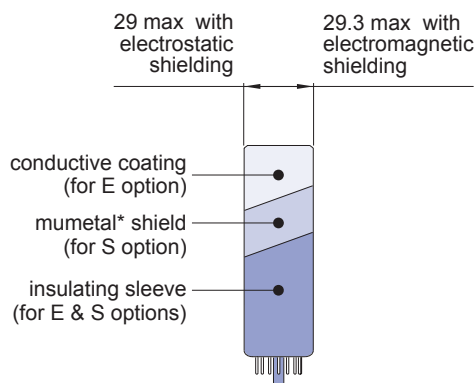
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options

- E** electrostatic shielding
see drawing below
- S** electromagnetic shielding
see drawing below
- 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:

	k	d ₁	d ₂	d ₆	d ₇	d ₈	d ₉	a
C615A	2R	R	R	R	R	R	R	
C615B	2R	R	R	2R	3R	4R	3R	

R = 330 kΩ

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ET Enterprises Limited
45 Riverside Way
Uxbridge UB8 2YF
United Kingdom
tel: +44 (0) 1895 200880
fax: +44 (0) 1895 270873
e-mail: sales@et-enterprises.com
web site: www.et-enterprises.com

ADIT Electron Tubes
300 Crane Street
Sweetwater TX 79556 USA
tel: (325) 235 1418
toll free: (800) 399 4557
fax: (325) 235 2872
e-mail: sales@electrontubes.com
web site: www.electrontubes.com

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DS_ 9134B Issue 6 (25/08/10)