

29 mm (1.13") photomultiplier

9136B series data sheet

1 description

The 9136B is a 29 mm (1.13 ") diameter, end window photomultiplier with S20 infra-red sensitive photocathode and 11 high gain, high stability, SbCs dynodes of linear focused design for extended linearity.

2 applications

- wide range of applications
- photon counting of bio- and chemi-luminescent samples
- SO_x NO_x pollution monitoring

3 features

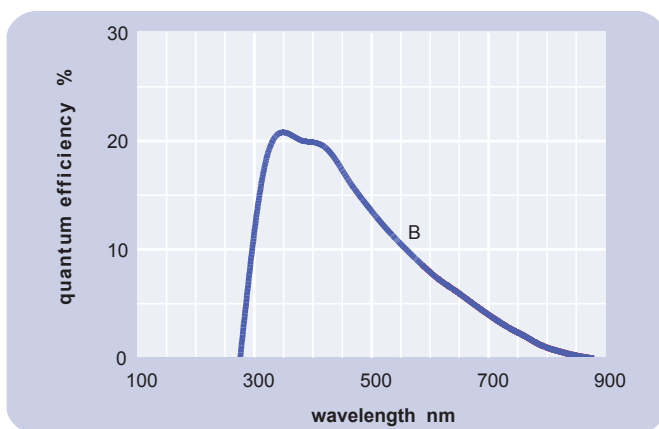
- compact
- extended infra-red sensitivity
- high pulsed linearity

4 window characteristics

9136B borosilicate	
spectral range (nm)*	280 - 850
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

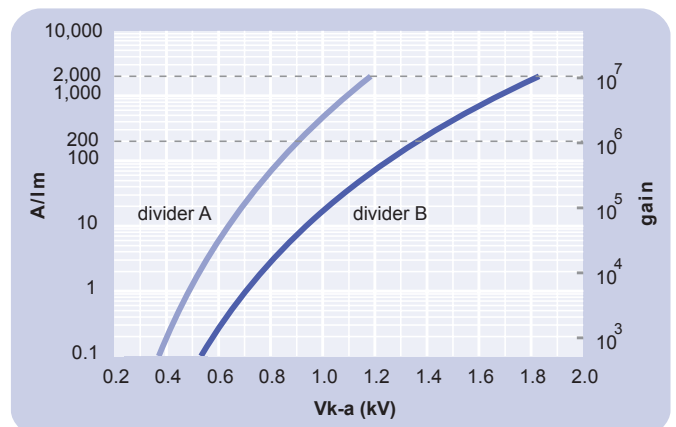


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		25	
quantum efficiency at peak	%		21	
luminous sensitivity	μA/lm	130	190	
with CB filter			9	
with CR filter			90	
with IR filter			12	
dynodes: 11LFBcCu				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		200	
max. rated anode sensitivity	A/lm		2000	
overall V for nominal A/lm	V		900	1100
overall V for max. rated A/lm	V		1200	
gain at nominal A/lm	x 10 ⁶		1	
dark current at 20 °C:				
dc at nominal A/lm	nA		2	10
dc at max. rated A/lm	nA		20	
dark count rate	s ⁻¹		5000	
pulsed linearity (-5% deviation):				
divider A	mA		25	
divider B	mA		100	
rate effect (I_a for Δg/g=1%):				
	μA		20	
magnetic field sensitivity:				
the field for which the output decreases by 50 %				
most sensitive direction	T x 10 ⁻⁴		2	
temperature coefficient:				
	% °C ⁻¹		± 0.5	
timing:				
single electron rise time	ns		3	
single electron (fwhm)	ns		5	
single electron jitter (fwhm)	ns		4	
transit time	ns		33	
weight:				
	g		42	
maximum ratings:				
anode current	μA			100
cathode current	nA			500
gain	x 10 ⁶			11
sensitivity	A/lm			2000
temperature	°C	-80		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

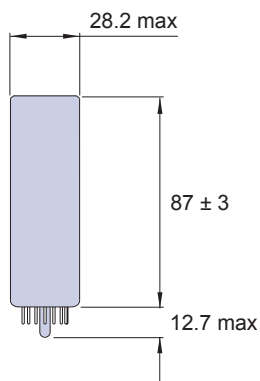


8 voltage divider distribution

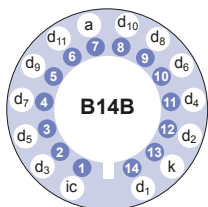
	k	d ₁	d ₂	.....	d ₆	d ₇	d ₈	d ₉	a	
A	2R	R	.....	R	R	R	R	R	R	Standard
B	2R	R	.....	R	2R	3R	4R	3R		High Pulsed Linearity

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 9136B 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 9136A. 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.

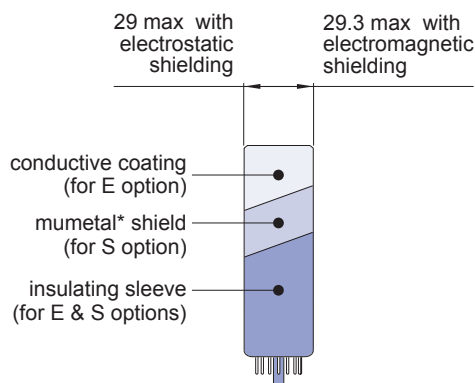
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options

- 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 ₇	d ₈	d ₉	d ₁₀	d ₁₁	a
C637A	2R	R	R	R	R	R	R	R	
C637B	2R	R	R	2R	3R	4R	3R		
C637C	150 V	R	R	R	R	R	R		

R = 330k Ω

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