

51 mm (2") photomultiplier

9205B series data sheet

1 description

The 9205B is a 51mm (2") diameter, end window photomultiplier with blue-green sensitive bialkali photocathode and 10 high gain, high stability, SbCs dynodes of linear focused design.

2 applications

- glass inspection
- radiation monitoring

3 features

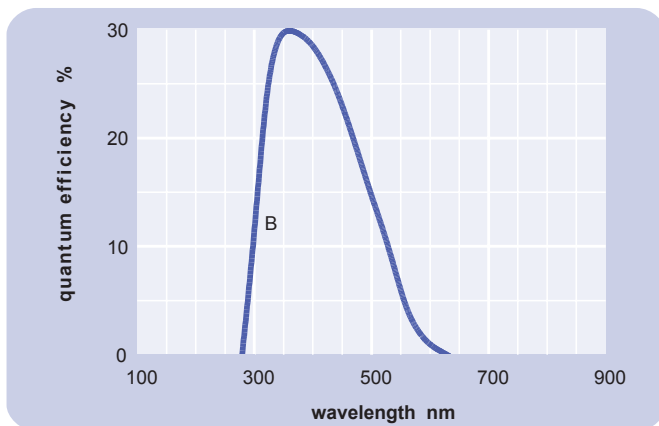
- good pulsed linearity
- plug-in replacement for 6097B with improved timing and linearity

4 window characteristics

9205B borosilicate	
spectral range (nm)*	290 - 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

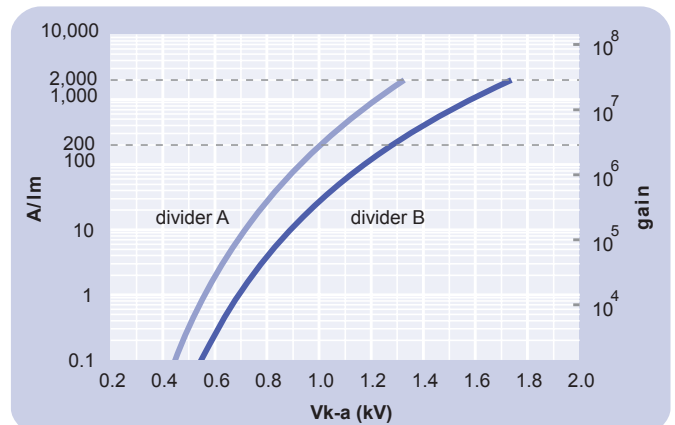


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		48	
quantum efficiency at peak	%		30	
luminous sensitivity	$\mu\text{A/lm}$		70	
with CB filter		8	11.5	
with CR filter			2	
dynodes: 10LFSbCs				
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		1000	1350
overall V for max. rated A/lm	V		1300	
gain at nominal A/lm	$\times 10^6$		3	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.5	10
dc at max. rated A/lm	nA		5	
pulsed linearity (-5% deviation):				
divider A	mA		30	
divider B	mA		100	
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	$\text{T} \times 10^{-4}$		1.3	
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
single electron rise time	ns		2	
single electron fwhm	ns		3.2	
single electron jitter (fwhm)	ns		6	
multi electron fwhm	ns		6.5	
multi electron rise time	ns		4	
transit time	ns		46	
weight:	g		110	
maximum ratings:				
anode current	μA			100
cathode current	nA			100
gain	$\times 10^6$		7	
sensitivity	A/lm		500	
temperature	$^\circ\text{C}$	-30		60
V (k-a) ⁽¹⁾	V			1800
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



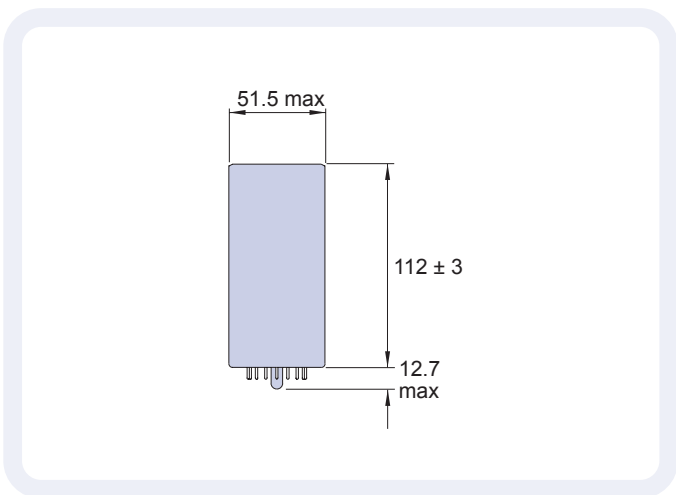
8 voltage divider distribution

	k	d ₁	d ₆	.....	d ₇	d ₈	d ₉	d ₁₀	a	
A	150V R	.....	R	R	R	2R	R			Standard
B	150V R	.....	R	2R	3R	4R	3R			High Pulsed Linearity

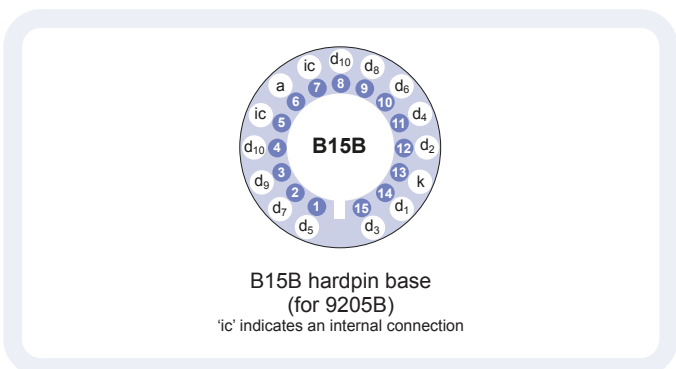
Characteristics contained in this data sheet refer to divider A unless stated otherwise.

9 external dimensions mm

The drawings below show the 9205B in hardpin format and the 9205KB with the B14A cap fitted.



10 base configuration (viewed from below)



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 9205B 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 9205A. 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.

9205

base options

K capped

options

E electrostatic shielding
see drawing below

S electromagnetic shielding
see drawing below

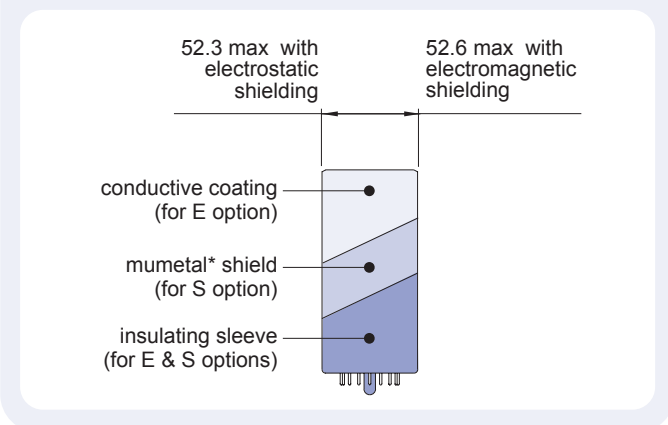
M supplied with spectral response calibration

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 these pmts are tabulated below:

	k	d ₁	d ₂	d ₇	d ₈	d ₉	d ₁₀	a
C621E	2R	R	R	R	R	R	R	
C621F	2R	R	R	2R	3R	4R	3R	

R = 330 kΩ

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