29 mm (1.13") photomultiplier
9106B series data sheet

ET Enterprises electron tubes

1 description

The 9106B is a 29 mm (1.13″) diameter end window photomultiplier with enhanced green sensitive bialkali photocathode and 7 high gain, high stability, SbCs dynodes of linear focused design. The 9106QB is a version with a quartz window for extended UV sensitivity.

2 applications

- scintillation spectroscopy
- colour film scanning
- high light level applications

3 features

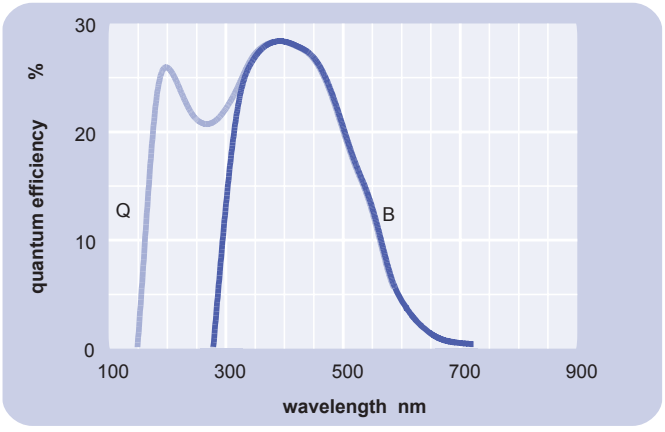
- compact
- good pulse height resolution
- low operating voltage

4 window characteristics

	9106B borosilicate	9106QB* fused silica
spectral range**(nm)	280 - 680	160 - 680
refractive index (n_d)	1.49	1.46
K (ppm)	300	<10
Th (ppb)	250	<10
U (ppb)	100	<10

* note that the sidewall of the envelope contains graded seals of high K content
** wavelength over which quantum efficiency exceeds 1 % of peak

5 typical spectral response curves

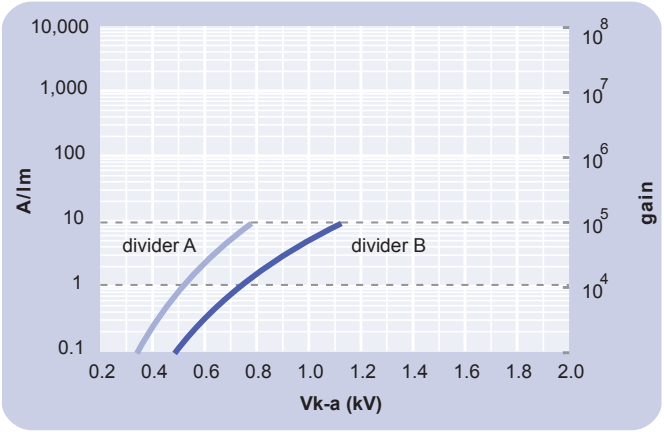


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		25	
quantum efficiency at peak	%		28	
luminous sensitivity	µA/lm		110	
with CB filter		8	12	
with CR filter			10	
dynodes: 7LFSbCs				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		1	
max. rated anode sensitivity	A/lm		10	
overall V for nominal A/lm	V		500	650
overall V for max. rated A/lm	V		750	
gain at nominal A/lm	x 10^6		0.01	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.02	0.8
dc at max. rated A/lm	nA		0.2	
pulsed linearity (-5% deviation):				
divider A	mA		25	
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	T x 10^{-4}		2	
temperature coefficient:	% °C^{-1}		± 0.5	
timing:				
multi electron rise time	ns		4.5	
multi electron (fwhm)	ns		7.5	
transit time	ns		26	
weight:	g		40	
maximum ratings:				
anode current	µA			100
cathode current	nA			100
gain	x 10^6			0.1
sensitivity	A/lm			10
temperature	°C	-30		60
V (k-a)(1)	V			1200
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

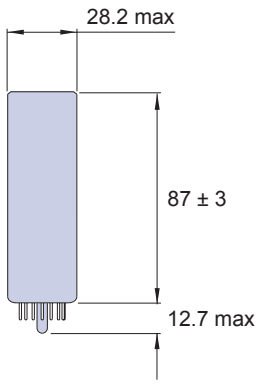


8 voltage divider distribution

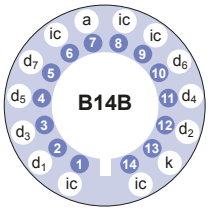
	k	d_1	d_2	d_3	d_4	d_5	d_6	d_7	a	
A	2R	R	R	R	R	R	R	R		Standard
B	2R	R	R	R	2R	3R	4R	3R		High Pulsed Linearity

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

9 external dimensions mm



10 base configuration (viewed from below)



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 9106B 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 9106A. 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.

9106 [ ] [ ] [ ]

window variants

Q fused silica

options

E electrostatic shielding see drawing below

S electromagnetic shielding see drawing below

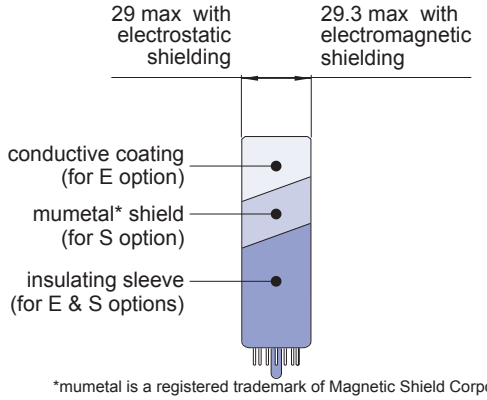
M supplied with spectral response calibration

specification options

B as given in data sheet

A single order to selected specification

Bnn repeat order to selected specification



*mumetal is a registered trademark of Magnetic Shield Corporation

12 voltage dividers

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

	k	d_1	d_2	d_3	d_4	d_5	d_6	d_7	a
C616A	1.5R	R	· · · · · · · · · · ·	R	R	R	R	R	
C616B	2R	R	· · · · · · · · · · ·	R	1.5R	2R	4R	2R	

R = 330 kΩ

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choose accessories for this pmt on our website

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