

51 mm (2") photomultiplier

9956B series data sheet

1 description

The 9956B is a 51mm (2") diameter end window photomultiplier, with enhanced green sensitive bialkali photocathode, and 10 high gain, high stability, SbCs dynodes of the long established venetian blind design providing a low afterpulse rate.

2 applications

- wide range of applications

3 features

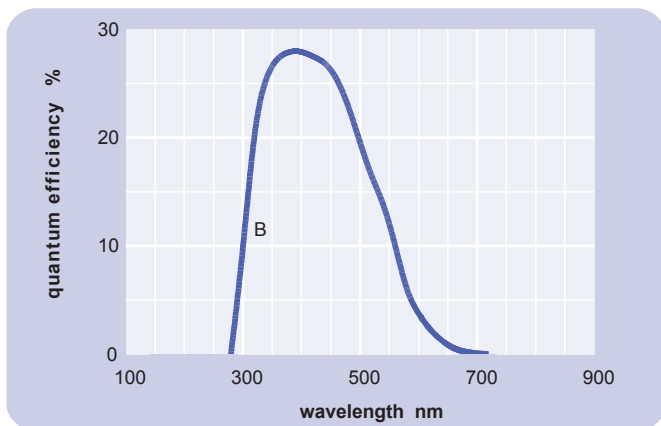
- high gain
- low afterpulse rate

4 window characteristics

	9956B borosilicate
spectral range *(nm)	290 - 680
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

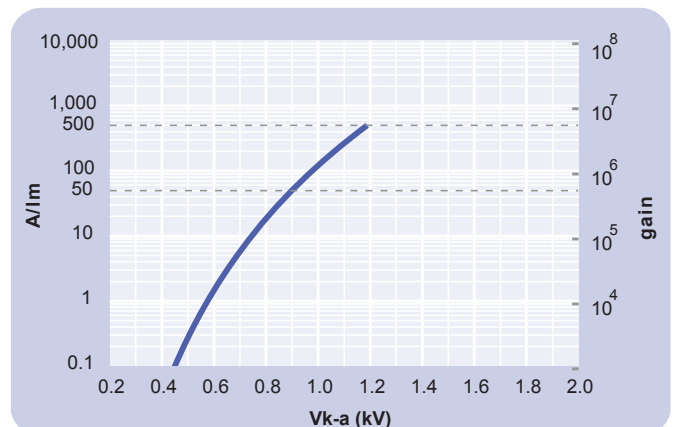


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		46	
quantum efficiency at peak	%		28	
luminous sensitivity	$\mu\text{A}/\text{lm}$		90	
with CB filter		8	12	
with CR filter			6	
dynodes: 10VBSbCs				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		50	
max. rated anode sensitivity	A/lm		500	
overall V for nominal A/lm	V		900	1150
overall V for max. rated A/lm	V		1250	
gain at nominal A/lm	$\times 10^6$		0.6	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.3	3
dc at max. rated A/lm	nA		3	
dark count rate	s^{-1}		800	
pulsed linearity (-5% deviation):				
divider A	mA		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	$\text{T} \times 10^{-4}$			
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
single electron rise time	ns		10	
single electron fwhm	ns		22	
transit time	ns		65	
weight:	g		140	
maximum ratings:				
anode current	μA			100
cathode current	nA			200
gain	$\times 10^6$			6
sensitivity	A/lm			500
temperature	$^\circ\text{C}$	-30		60
V (k-a) ⁽¹⁾	V			2000
V (k-d1)	V			450
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



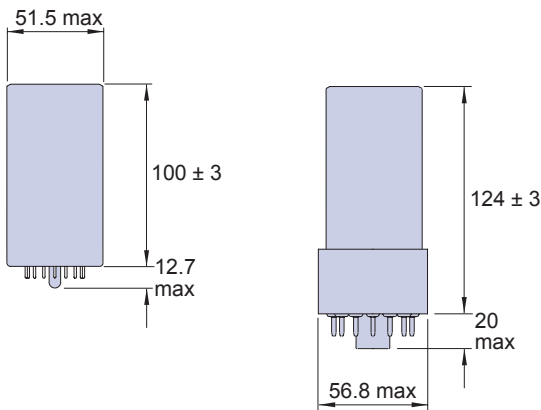
8 voltage divider distribution

k	d ₁	d ₂	.....	d ₇	d ₈	d ₉	d ₁₀	a	
A	150V	R	.....	R	R	R	2R	R	Standard

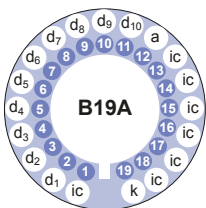
Characteristics contained in this data sheet refer to divider A unless stated otherwise.

9 external dimensions mm

The drawings below show the 9956B in hardpin format and the 9956KB with the B14A cap fitted.

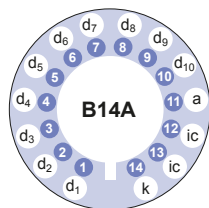


10 base configuration (viewed from below)



B19A hardpin base
(for 9956B)

'ic' indicates an internal connection



B14A cap
(for 9956KB)

'ic' indicates an internal connection

Our range of B19A sockets is available to suit the B19A 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 9956B 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 9956A. 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.

9956

base options

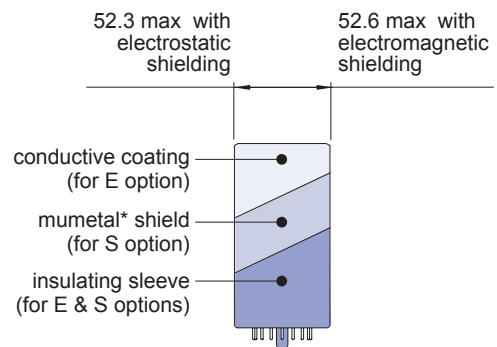
K capped

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 hardpin variants of these pmts are tabulated below:

9956B	9956KB	k	d ₁	d ₂	d ₆	d ₇	d ₈	d ₉	d ₁₀	a
C647E	C636E	2R	R	R	R	R	R	R	R	
C647F	C636F	150 V	R	R	R	R	2R	R		

R = 330 kΩ

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