

29 mm (1.13") photomultiplier

9781B series data sheet

1 description

The 9781B is a 29 mm (1.13") diameter, side window photomultiplier with a blue-green sensitive bialkali photocathode and 9 high gain, high stability, SbCs dynodes of circular focused design.

2 applications

- wide range of applications
- spectroscopy
- high light level

3 features

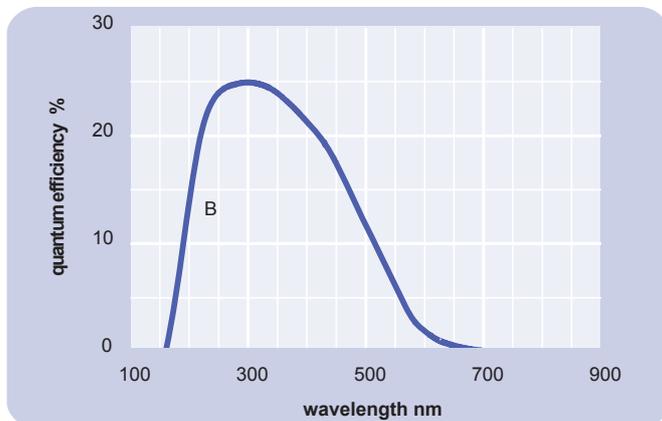
- compact
- low operating voltage
- UV sensitive

4 window characteristics

	9781B UV glass
spectral range (nm)*	165 - 680
refractive index (n_d)	1.48
K (ppm)	8500
Th (ppb)	30
U (ppb)	30

* wavelength range over which quantum efficiency exceeds 1 % of peak

5 typical spectral response curves

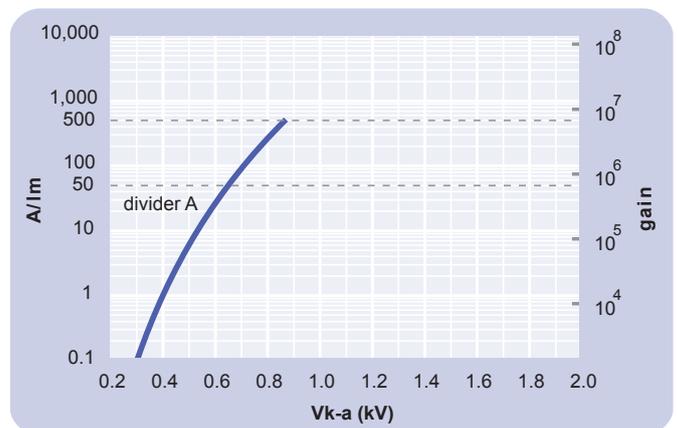


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		8 x 24	
quantum efficiency at peak	%		25	
luminous sensitivity	$\mu\text{A}/\text{lm}$		75	
with CB filter		5	10	
with CR filter			5	
dynodes: 9CFSbCs				
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		650	800
overall V for max. rated A/lm	V		850	
gain at nominal A/lm	$\times 10^6$		0.7	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.2	5
dc at max. rated A/lm	nA		2	
pulsed linearity (-5% deviation):				
divider A	mA		10	
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	$T \times 10^{-4}$		25	
temperature coefficient:				
	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
single electron rise time	ns		2	
single electron (fwhm)	ns		4	
single electron jitter (fwhm)	ns		2.2	
transit time	ns		20	
weight:				
	g		45	
maximum ratings:				
anode current	μA			100
cathode current	nA			5000
gain	$\times 10^6$			7
sensitivity	A/lm			500
temperature	$^\circ\text{C}$	-80		60
V (k-a) ⁽¹⁾	V			1250
V (k-d1)	V			150
V (d-d) ⁽²⁾	V			150
ambient pressure (absolute):	kPa			202

⁽¹⁾ subject to not exceeding max. rated sensitivity ⁽²⁾ subject to not exceeding max rated V(k-a)

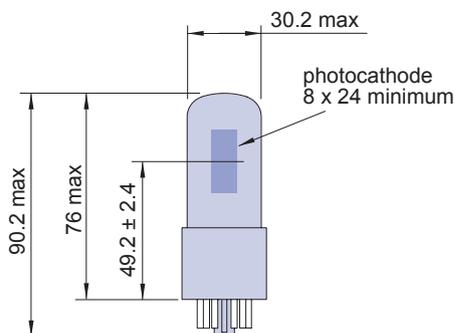
7 typical voltage gain characteristics



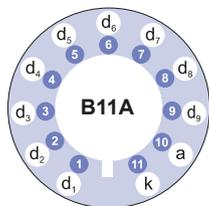
8 voltage divider distribution

k	d ₁	d ₂	d ₈	d ₉	a
A	R	R	R	R	Standard

9 external dimensions mm



10 base configuration (viewed from below)



The B11A socket range, available for this series, includes versions with or without a mounting flange, and with contacts for mounting directly onto printed circuit boards.

11 ordering information

The 9781B 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 9781A. 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.

9781

selection options

M supplied with spectral response calibration

specification

B as data sheet
A customer specific selection(s) - single order
Bnn customer specific selection(s) - repeat order

12 voltage dividers

The standard voltage dividers available for these pmts are tabulated below:

k	d ₁	d ₂	d ₃	d ₈	d ₉	a
C639A	R	R	R	R	R	

R = 100 kΩ

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