

29 mm (1.13") photomultiplier

9780B series data sheet

1 description

The 9780B 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. The 9780QB is a variant for applications requiring extended UV sensitivity.

2 applications

- wide range of applications
- spectroscopy
- high light level
- replacement for 931A, IP21 and IP28

3 features

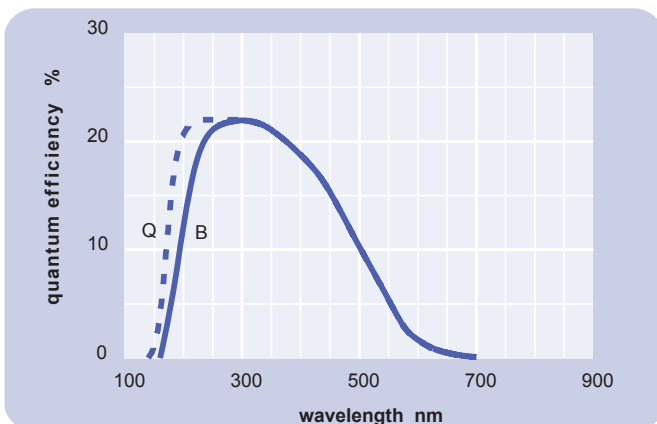
- compact
- higher operating voltage version of the 9781B
- UV sensitive

4 window characteristics

	9780B UV glass	9780QB* fused silica
spectral range (nm)**	165 - 680	160 - 680
refractive index (n_d)	1.48	1.46
K (ppm)	8500	<10
Th (ppb)	30	<10
U (ppb)	30	<10

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

5 typical spectral response curves

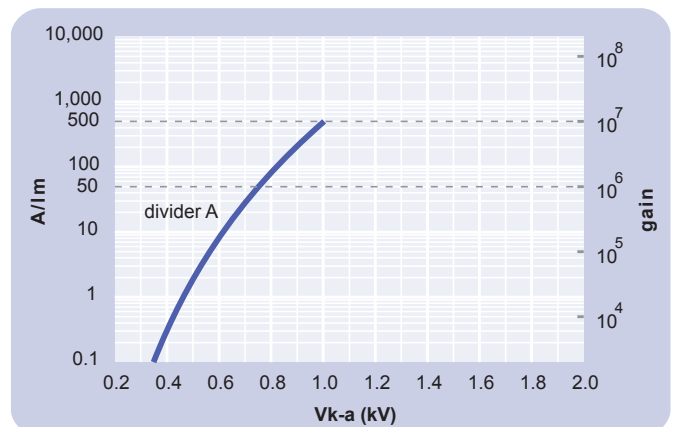


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		8 x 24	
quantum efficiency at peak	%		22	
luminous sensitivity	$\mu\text{A/lm}$	5	50	
with CB filter			9	
with CR filter			2	
with IR filter				
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		750	1200
overall V for max. rated A/lm	V		1050	
gain at nominal A/lm	$\times 10^6$		1.0	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.1	20
dc at max. rated A/lm	nA		1	
pulse linearity (-5% deviation):				
divider A	mA		10	
rate effect (Ia 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	$\times 10^6$			10
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)

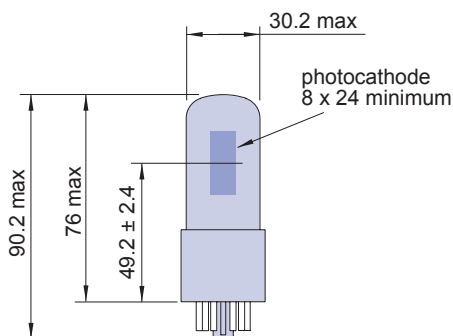
7 typical voltage gain characteristics



8 voltage divider distribution

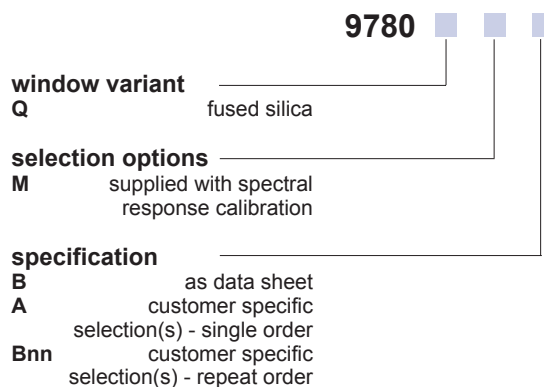
k	d ₁	d ₂	d ₈	d ₉	a
A	R	R	R	R	Standard

9 external dimensions mm

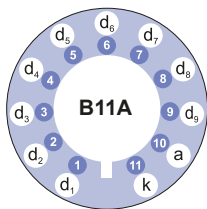


11 ordering information

The 9780B 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 9780A. 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.



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.

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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