

90 mm (3.5") photomultiplier

9307B series data sheet

1 description

The 9307B is a 90mm (3.5") diameter, end window photomultiplier with infra-red sensitive S20 photocathode and 6 high gain, high stability, SbCs dynodes of linear focused design for good linearity and timing.

2 applications

- film scanners

3 features

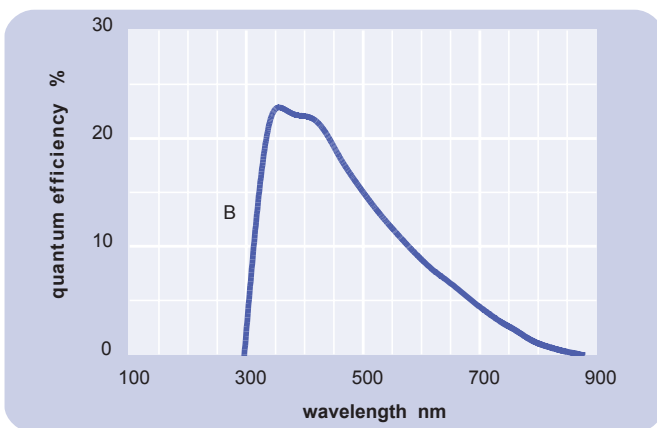
- large active area
- fast time response
- detects high light levels

4 window characteristics

9307B borosilicate	
spectral range (nm)*	285 - 870
refractive index (n_d)	1.47
K (ppm)	300
Th (ppb)	250
U (ppb)	100

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

5 typical spectral response curves

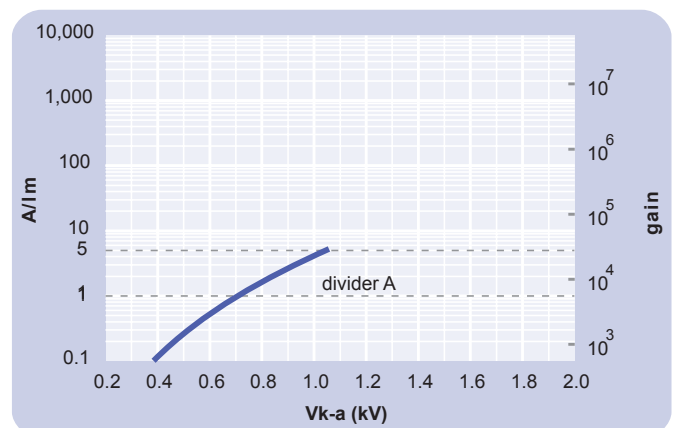


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		80	
quantum efficiency at peak	%		23	
luminous sensitivity	$\mu\text{A}/\text{lm}$	150	180	
with CB filter			8	
with CR filter			80	
with IR filter			10	
dynodes: 6LFSbCs				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		1	
max. rated anode sensitivity	A/lm		5	
overall V for nominal A/lm	V		700	1300
overall V for max. rated A/lm	V		1050	
gain at nominal A/lm	$\times 10^6$		0.006	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.2	3
dc at max. rated A/lm	nA		1	15
pulsed linearity (-5% deviation):				
divider A	mA		30	
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	$T \times 10^{-4}$		0.6	
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
single electron rise time	ns		4.6	
single electron fwhm	ns		14.5	
transit time	ns		49	
weight:	g		290	
maximum ratings:				
anode current	μA			100
cathode current	nA			3000
gain	$\times 10^6$			0.03
sensitivity	A/lm			5
temperature	$^\circ\text{C}$	-80		60
V (k-a) ⁽¹⁾	V			1800
V (k-d1)	V			600
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)

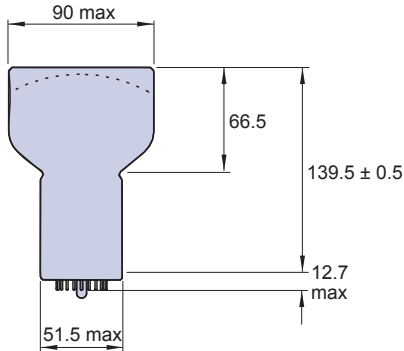
7 typical voltage gain characteristics



8 voltage divider distribution

k	d ₁	d ₂	d ₆	a	
A	3R	R	R	R	Standard

9 external dimensions mm



11 ordering information

The 9307B 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 9307A. 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.

9307

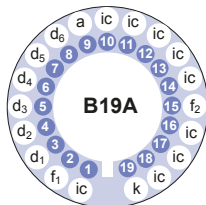
options

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

10 base configuration (viewed from below)



B19A hardpin base
(for 9307B)
'ic' indicates an internal connection

Our range of B19A sockets is available to suit the B19A hardpin base. The socket range includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

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	a
C627A	3R	R	R	R	R	R	R	
C627B	3R	R	R	R	2R	4R		

R = 330 kΩ note: f₁ and f₂ connected to d₁

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choose accessories for this pmt on our website

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