

51 mm (2") photomultiplier 9850B series data sheet

1 description

The 9850B is a 51mm (2") diameter end window photomultiplier, with S20 infra-red sensitive photocathode, and 6 BeCu dynodes of linear focused design for good linearity and timing.

2 applications

- high light level
- film scanners

3 features

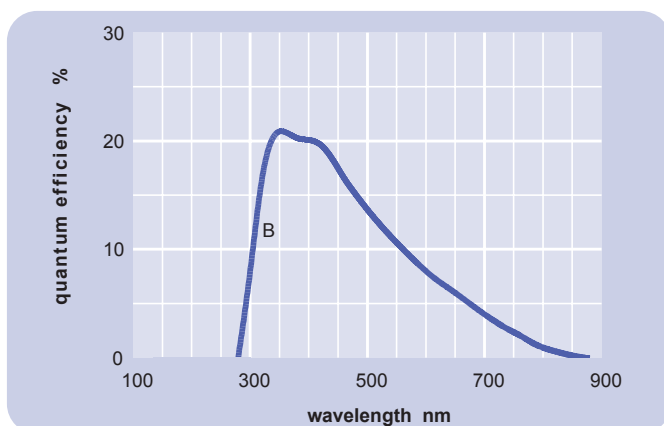
- compact

4 window characteristics

9845B borosilicate	
spectral range *(nm)	290 - 870
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

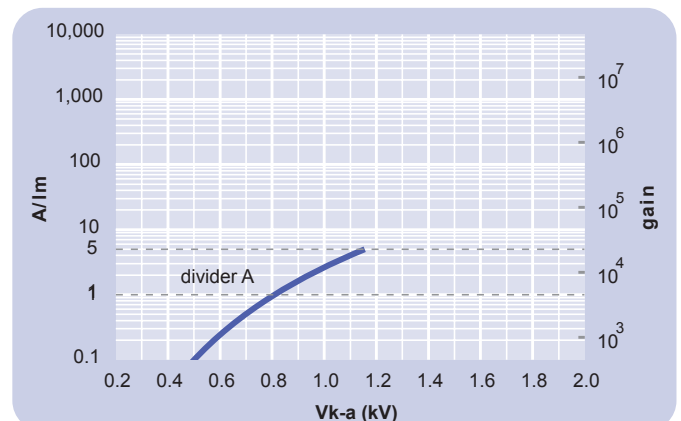


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		46	
quantum efficiency at peak	%		21	
luminous sensitivity	$\mu\text{A/lm}$	140	220	
with CB filter			9	
with CR filter			100	
with IR filter			13	
dynodes: 6LFBcCu				
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		800	1100
overall V for max. rated A/lm	V		1200	
gain at nominal A/lm	$\times 10^6$		0.005	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.1	1
dc at max. rated A/lm	nA		0.5	
pulsed linearity (-5% deviation):				
divider A	mA		50	
rate effect (I_a for $\Delta g/g=1\%$):				
	μA		1	
magnetic field sensitivity:				
the field for which the output decreases by 50 %				
most sensitive direction	$T \times 10^{-4}$			
temperature coefficient:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
multi electron rise time	ns		3	
multi electron fwhm	ns		4.5	
transit time	ns		20	
weight:	g		100	
maximum ratings:				
anode current	μA			100
cathode current	nA			1000
gain	$\times 10^6$			0.02
sensitivity	A/lm			5
temperature	$^\circ\text{C}$	-80		60
V (k-a) ⁽¹⁾	V			1500
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

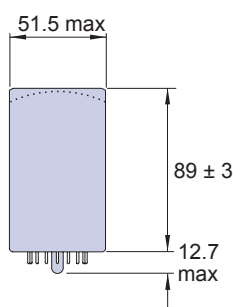


8 voltage divider distribution

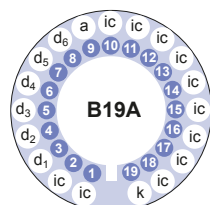
k	d ₁	d ₂	d ₃	d ₄	d ₅	d ₆	a	
A	150V	R	R	R	R	R	R	Standard

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

9 external dimensions mm



10 base configuration (viewed from below)



'ic' indicates an internal connection

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

11 ordering information

The 9850B 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 9850A. 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.

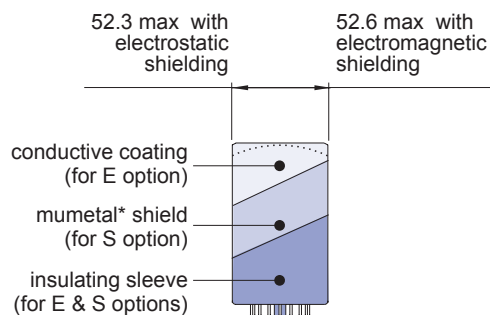
9850

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 divider available for types with a hardpin base is tabulated below:

k	d ₁	d ₂	d ₄	d ₅	d ₆	a
C626C	150V	R	R	R	R	

R = 1 MΩ

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