

29 mm (1.13") photomultiplier

9878B series data sheet

1 description

The 9878B is a 29 mm (1.13") diameter, end window photomultiplier with high temperature bialkali photocathode and 11 BeCu dynodes of box and grid design.

2 applications

- oil well logging

3 features

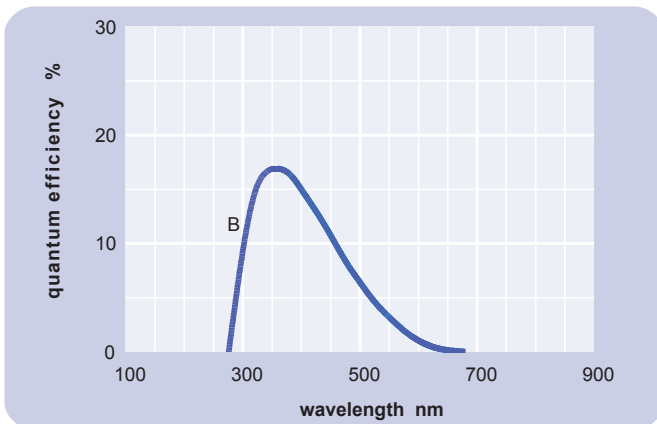
- will operate up to 150 °C
- tarnish-free gold plated base pins

4 window characteristics

	9878B borosilicate
spectral range *(nm)	280 - 630
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

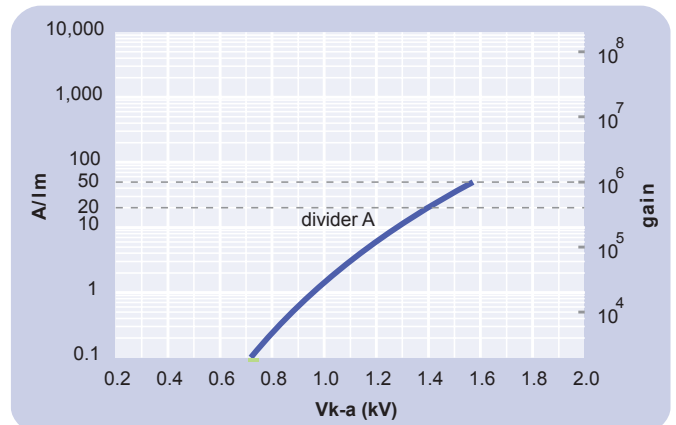
	unit	min	typ	max
photocathode:				
high temperature bialkali				
active diameter	mm		25	
quantum efficiency at peak	%		17	
luminous sensitivity	μA/lm		50	
with CB filter		4	6	
with CR filter			5	
dynodes: 11BGBeCu				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		20	
max. rated anode sensitivity	A/lm		50	
overall V for nominal A/lm	V		1400	1600
overall V for max. rated A/lm	V		1550	
gain at nominal A/lm	x 10 ⁶		0.4	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.03	1
dc at max. rated A/lm	nA		0.08	
pulsed linearity (-5% deviation):				
divider A	mA		0.5	
rate effect (I_a for Δg/g=1%):				
	μA		1	
magnetic field sensitivity:				
the field for which the output decreases by 50 %				
most sensitive direction	T x 10 ⁻⁴		2	
temperature coefficient:				
	% °C ⁻¹		± 0.5	
timing:				
single electron rise time	ns		15	
single electron (fwhm)	ns		30	
transit time	ns		80	
weight:	g		55	
maximum ratings:				
anode current	μA			100
cathode current	nA			50
gain	x 10 ⁶			1
sensitivity	A/lm			50
temperature	°C	-55		150
V (k-a) ⁽¹⁾	V			2000
V (k-d1)	V			300
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)

spectral data	unit	20 °C typ	150 °C typ	max
operating voltage for 50 pC/MeV	V	1200	1300	-

⁽³⁾ measured with ¹³⁷Cs/NaI(Tl) crystal

7 typical voltage gain characteristics

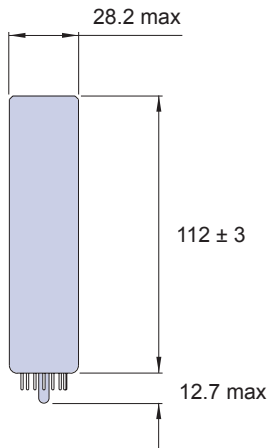


8 voltage divider distribution

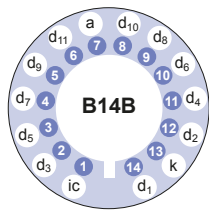
k	d ₁	d ₂	d ₈	d ₉	d ₁₀	d ₁₁	a	
A	150V	R	R	R	R	2R	R	Standard

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

9 external dimensions mm



10 base configuration (viewed from below)



'ic' indicates an internal connection

Our range of B14B sockets, available for this series, includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

11 ordering information

The 9878B 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 9878A. 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.

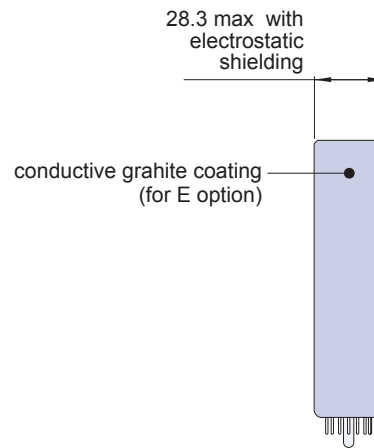
9878

options

- E** electrostatic 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



Safety note

Photomultipliers supplied with the optional graphite coating are for use with positive HV only.

12 voltage dividers

The standard voltage dividers available for these pmts are tabulated below; they are rated to 70 °C:

	k	d ₁	d ₂	d ₇	d ₈	d ₉	d ₁₀	d ₁₁	a
C635A	2R	R	R	R	R	R	R	R	
C635B	2R	R	R	R	R	2R	R		
C635C	150 V	R	R	R	R	R	R		
C635D	150 V	R	R	R	R	2R	R		

R = 330 kΩ

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choose accessories for this pmt on our website

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