29 mm (1.13") photomultiplier
9130/100B series data sheet

ET Enterprises electron tubes

1 description

The 9130/100B is a 29mm (1.13″) diameter, end window photomultiplier with S20 infra-red sensitive photocathode, electrostatically reduced to 2.5 mm diameter, and 11 BeCu dynodes of linear focused design for extended linearity.

2 applications

- low light level detection
- particle counting
- particle sizing

3 features

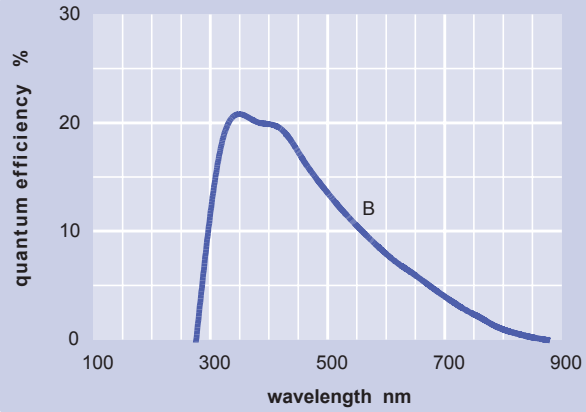
- electrostatically reduced photocathode area (2.5 mm active diameter)
- low dark counts

4 window characteristics

	9130/100B borosilicate
spectral range (nm)*	280 - 850
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

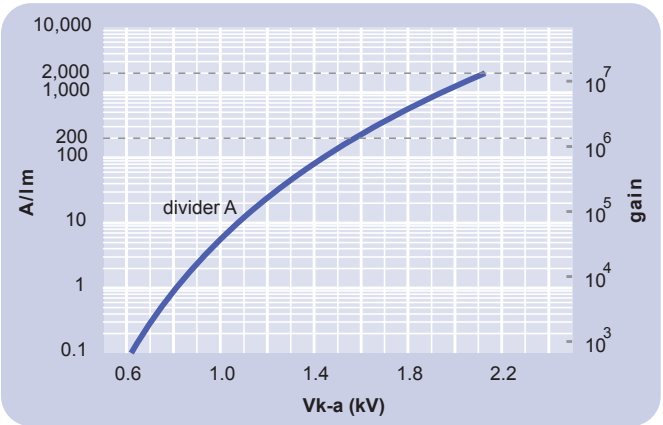


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		2.5	
quantum efficiency at peak	%		21	
luminous sensitivity	µA/lm	80	150	
with CB filter			8	
with CR filter			60	
with IR filter			6	
dynodes: 11LFBeCu				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		200	
max. rated anode sensitivity	A/lm		2000	
overall V for nominal A/lm	V		1550	1800
overall V for max. rated A/lm	V		2250	
gain at nominal A/lm	x 10^6		1.3	
dark current at 20 ºC:				
dc at nominal A/lm	nA		0.05	1
dc at max. rated A/lm	nA		0.5	
dark count rate	s^{-1}		40	
after pulse rate:	%		0.5	1
afterpulse time window	µs	0.05		3.2
pulsed linearity (-5 % deviation):				
divider A	mA		50	
rate effect (I_a for $\Delta g/g=1\%$):	µA		1	
temperature coefficient:	% $ºC^{-1}$	± 0.5		
timing:				
single electron rise time	ns		3.5	
single electron fwhm	ns		5	
transit time	ns		30	
weight:	g		50	
maximum ratings:				
anode current	µA			100
cathode current	nA			10
gain	x 10^6			13
sensitivity	A/lm			2000
temperature	°C	-80		60
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)

7 typical voltage gain characteristics

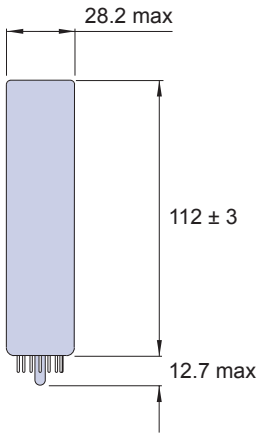


8 voltage divider distribution

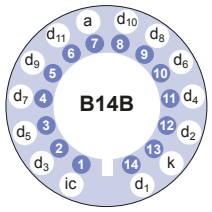
k	d_1	d_2	. . . . .	d_{11}	a	
A	2R	R	R · · · · · · · · · · · · · · · ·	R	R	Standard

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 B14B sockets is available to suit the B14B hardpin base. The range includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

11 magnetic sensitivity

The location of the active area will move if a magnetic field is applied. Even when operating in the earth's field it is recommended that the S option is chosen for this type (see section 12).

12 ordering information

The 9130/100B 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 a one-off order, then the product will be referred to as 9130/100A. For a repeat order, ET Enterprises Limited will give the product a two digit suffix after the letter B, for example B21. This identifies your specific requirement.

9130/100 □ □

options

S electromagnetic shielding see drawing below

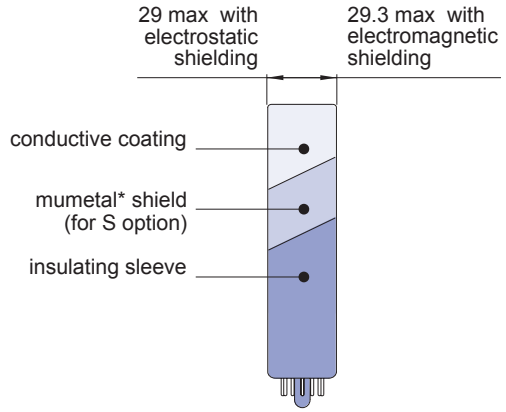
M supplied with spectral response calibration

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

13 voltage dividers

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

	k	d_1	d_2	. . . . .	d_7	d_8	d_9	d_{10}	d_{11}	a
C637A	2R	R		. . . . .	R	R	R	R	R	
C637B	2R	R		. . . . .	R	2R	3R	4R	3R	
C637C	150V	R		. . . . .	R	R	R	R	R	
C637D	150V	R		. . . . .	R	2R	3R	4R	3R	

R = 330 kΩ

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choose accessories for this pmt on our website

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