

29 mm (1.13") photomultiplier

9130/350B series data sheet

1 description

The 9130/350B is a 29 mm (1.13") diameter end window photomultiplier with S20 infra-red sensitive photocathode, electrostatically reduced to 9 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

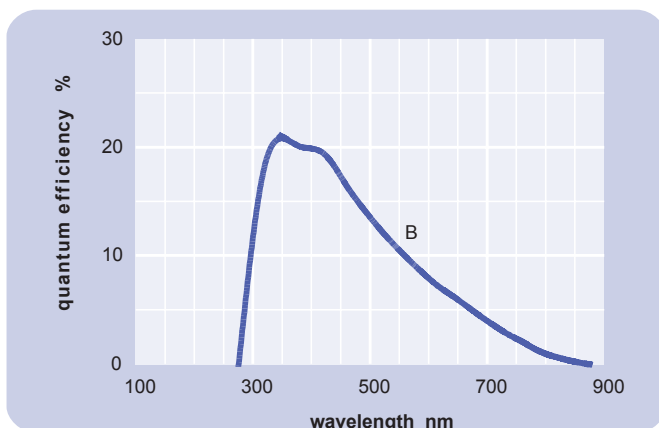
- electrostatically reduced photocathode area (9 mm active diameter)
- low counts

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

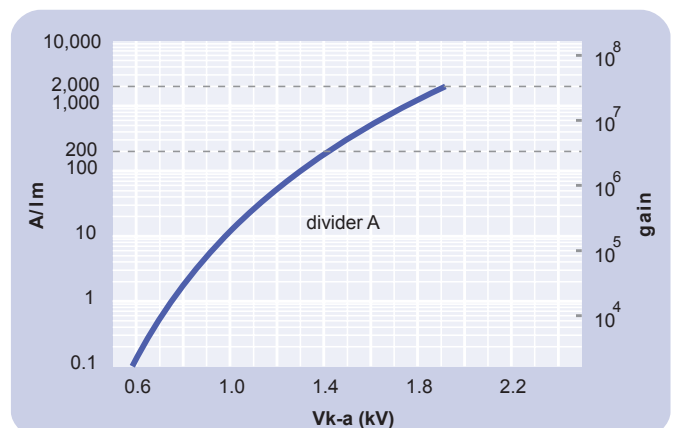


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		9	
quantum efficiency at peak	%		21	
luminous sensitivity	$\mu\text{A}/\text{lm}$	80	150	
with CB filter		6	8	
with CR filter			60	
with IR filter			6	
dynodes: 11LFBcCu				
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		1400	1800
overall V for max. rated A/lm	V		1900	
gain at nominal A/lm	$\times 10^6$		1.3	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.2	2
dc at max. rated A/lm	nA		2	
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:	$\% \text{ } ^\circ\text{C}^{-1}$	± 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			150
gain	$\times 10^6$			13
sensitivity	A/lm			2000
temperature	$^\circ\text{C}$	-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

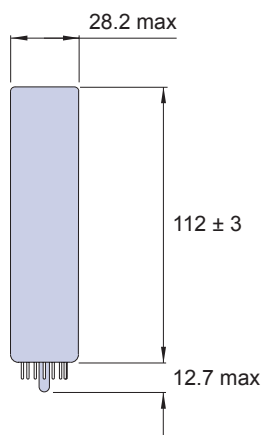


8 voltage divider distribution

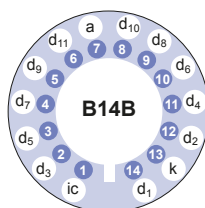
k	d ₁	d ₂	.....	d ₁₁	a
A	2R	R	R	.....	R R Standard

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 socket 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 9130/350B 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 9130/350A. For a repeat order, Electron Tubes will give the product a two digit suffix after the letter B, for example B21. This identifies your specific requirement.

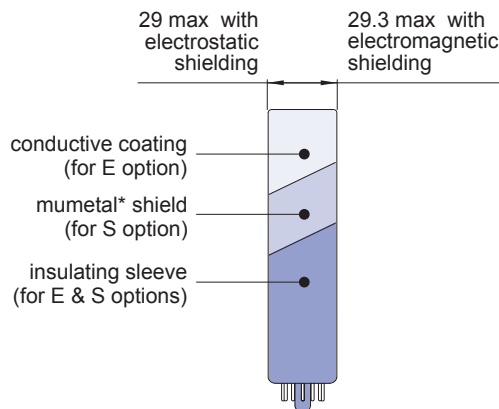
9130/350

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



13 voltage dividers

The standard voltage dividers available for this pmt 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	150 V	R	.....		R	R	R	R	R	

R = 330k Ω

*mumetal is a registered trademark of Magnetic Shield Corporation

ET Enterprises Limited

45 Riverside Way
Uxbridge UB8 2YF
United Kingdom
tel: +44 (0) 1895 200880
fax: +44 (0) 1895 270873
e-mail: sales@et-enterprises.com
web site: www.et-enterprises.com

ADIT Electron Tubes

300 Crane Street
Sweetwater TX 79556 USA
tel: (325) 235 1418
toll free: (800) 399 4557
fax: (325) 235 2872
e-mail: sales@electrontubes.com
web site: www.electrontubes.com

choose accessories for this pmt on our website

an ISO 9001 registered company

The company reserves the right to modify these designs and specifications without notice. Developmental devices are intended for evaluation and no obligation is assumed for future manufacture. While every effort is made to ensure accuracy of published information the company cannot be held responsible for errors or consequences arising therefrom.



© ET Enterprises Ltd, 2010
DS_ 9130/350B Issue 6 (25/08/10)