

76 mm (3.0") photomultiplier

L76B25 series data sheet



1 description

The L76B25 is a 76mm (2") diameter, end window photomultiplier with a blue-green sensitive photocathode and 10 high gain, high stability, SbCs linear focused dynodes. It is electrically and mechanically interchangeable with the ADIT B76D01 but without the need for a separate focus connection. The L76B25 is a lower gain version of the L76B17.

The short base version (L76B25S) is a plug-in alternative to many other 10 stage photomultipliers having a 14 pin capped base. A flexible wire version is available (L76B25W) and this can also be supplied fitted with a voltage divider to a configuration agreed upon with the customer.

2 applications

- scintillation counting
- general purpose low light level detection

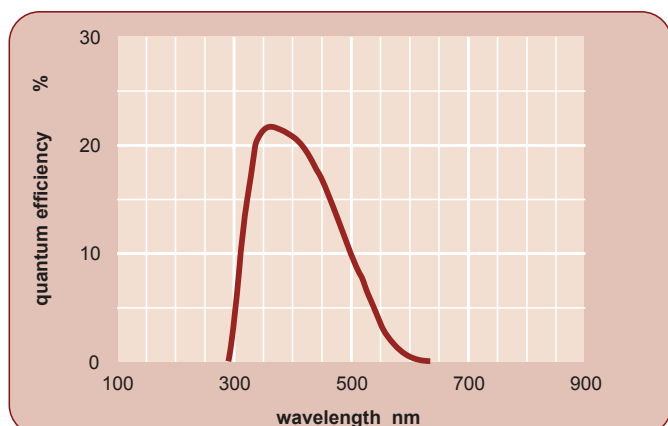
3 features

- low dark current
- good energy resolution
- high pulse linearity
- low rate effect
- helium resistant envelope

4 window characteristics

L76B25 soda lime	
spectral range*(nm)	290 - 620
refractive index (n_d)	1.52
K (ppm)	50,000
Th (ppb)	250
U (ppb)	200

5 typical spectral response curves

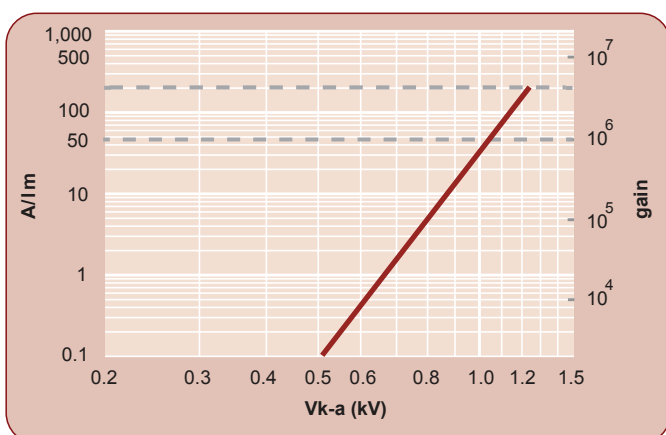


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		68	
quantum efficiency at peak	%	22		
luminous sensitivity	$\mu\text{A/lm}$		50	
with CB filter		5	9	
with CR filter			0.5	
dynodes: 10LFSbCs				
anode sensitivity:				
nominal anode sensitivity	A/lm		50	
max. rated anode sensitivity	A/lm		200	
overall V for nominal A/lm	V	850	1050	1300
overall V for max. rated A/lm	V		1250	
gain at nominal A/lm	$\times 10^6$		1	
dark current at 20°C:				
dc at nominal A/lm	nA		0.5	3.0
dc at max. rated A/lm	nA		2	
dark count rate	s^{-1}		-	
pulsed linearity(-5% deviation)				
rate effect(I for $\Delta g/g+1\%$):	μA		20	
magnetic field sensitivity:				
the field for which the output decreases by 50%				
most sensitive direction	$\text{T} \times 10^{-4}$		1.3	
temperature coefficient:				
timing:	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
multi electron rise time	ns		7	
multi electron (fwhm)	ns		15	
transit time	ns		45	
weight:	g		142	
maximum ratings:				
anode current	μA			100
cathode current	nA			100
gain	$\times 10^6$			10
anode sensitivity	A/lm			200
temperature	$^\circ\text{C}$	-30		60
V (k-a) ⁽¹⁾	V			2000
V (k-d1)	V			300
V (d-d) ⁽²⁾	V			300
ambient pressure (absolute)	kPa			101

(1) subject to not exceeding max. rated sensitivity (2) subject to not exceeding max. rated V(k-a)

7 typical voltage gain characteristics



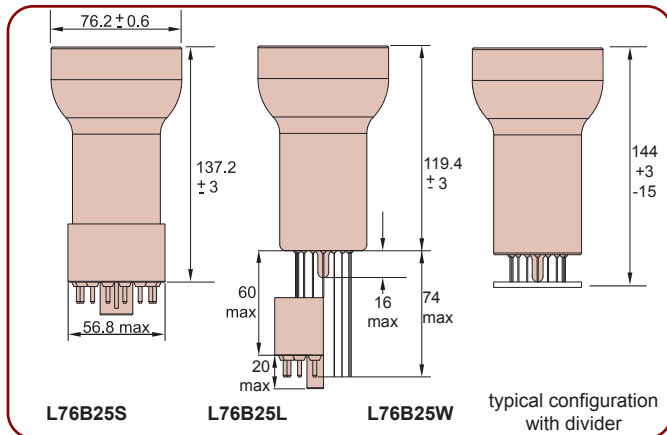
8 voltage divider distribution

	k	d ₁	d ₂	.....	d ₇	d ₈	d ₉	d ₁₀	a	
A	3R	R	.....		R	R	R	R	R	Standard
B	3R	R	.....		R	2R	3R	4R	3R	High Pulsed linearity

Characteristics contained in this data sheet refer to standard divider.

9 external dimensions mm

The drawings below show the L76B25S and L76B25L with the B14A cap fitted, the L76B25W in flying lead format and the L76B25W with a factory fitted voltage divider.



11 ordering information

The L76B25 meets the specifications given in this data sheet. The desired basing option must be specified when ordering by appending the W, S or L suffix to the part number. Custom specifications are available.

Product with special test requirements, integral voltage divider network or with one or more of the shielding options below will be assigned a suffix with the letter A followed by a unique 3 digit number to designate the requirement.

L76B25

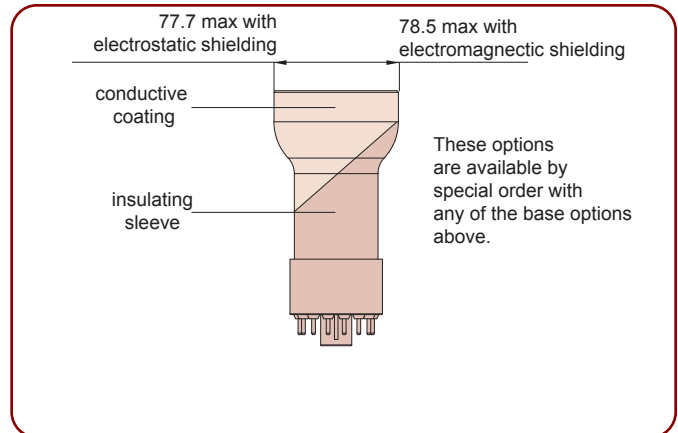
base options

W flying leads, no cap
S capped
L temporary B14 cap

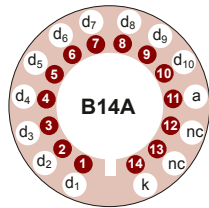
L76B25

specification options

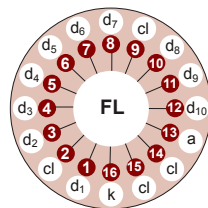
A nnn special requirements
 unique designator



10 base configuration (viewed from below)



B14A cap for
L76B25S and L76B25L
'nc' indicates no
internal connection



flying lead base
for L76B25W
'cl' indicates cut lead

A range of B14A sockets is available to suit the B14A cap of the L76B25S and L76B25L. The socket range includes versions with or without a mounting flange, and with contacts for mounting directly onto printed circuit boards.

The L76B25 can be supplied with a custom designed voltage divider installed.

12 voltage dividers

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

L76B25S	L76B25L L76B25W	k	d ₁	d ₂.....d ₆	d ₇	d ₈	d ₉	d ₁₀	a
C636P	C655P	3R	R		R	R	R	R	R
C636R	C655R	3R	R		R	2R	3R	4R	3R
C636S	C655S	150V	R		R	R	R	R	R
C636T	C655T	150V	R		R	2R	3R	4R	3R

R=330 kΩ

Custom dividers available for all base options.

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 website: www.et-enterprises.com

choose accessories for this pmt on our website

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 DS_L76B25W Issue 2 (05.19.16)