

89 mm (3.5") photomultiplier

L89B26 series data sheet



1 description

The L89B26 is a 89mm (3.5") 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 B89D01 but without the need for a separate focus connection.

The short base version (L89B26S) is a plug-in alternative to many other 10 stage photomultiplier having a 14 pin capped base. A flexible wire version is available (L89B26W) 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

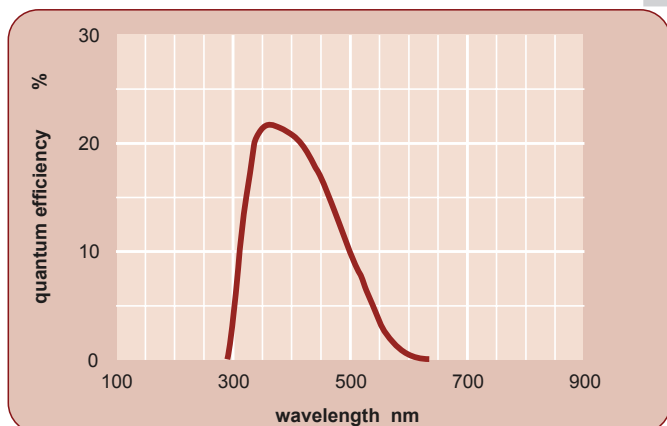
3 features

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

4 window characteristics

L89B26 soda lime	
spectral range*(nm)	290 - 620
refractive index (n _s)	1.52
K (ppm)	50,000
Th (ppb)	250
U (ppb)	200

5 typical spectral response curves

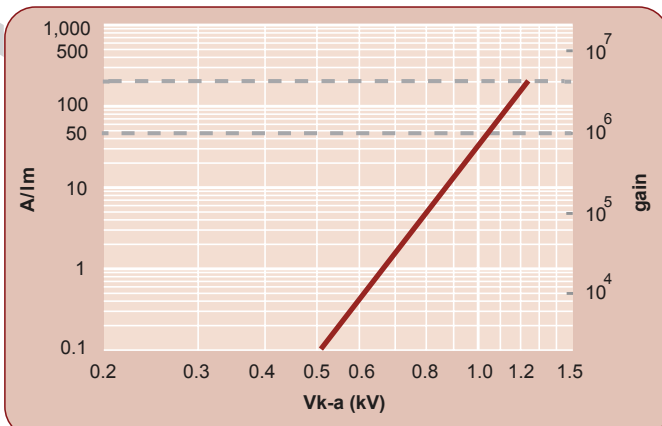


6 characteristics

	unit	min	typ	max
photocathode: bialkali				
active diameter	mm		83	
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		2.0	
dark count rate	s^{-1}		-	
pulsed linearity(-5% deviation)	mA		30	
rate effect(I for $\Delta g/g+1\%$):	μA		20	
magnetic field sensitivity:				
the field for which the output decreases by 50%	$\text{T} \times 10^{-4}$		1.3	
most sensitive direction	$\% \text{C}^{-1}$		± 0.5	
temperature coefficient:				
timing:				
multi electron rise time	ns		TBD	
multi electron (fwhm)	ns			
transit time	ns			
weight:	g		162	
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



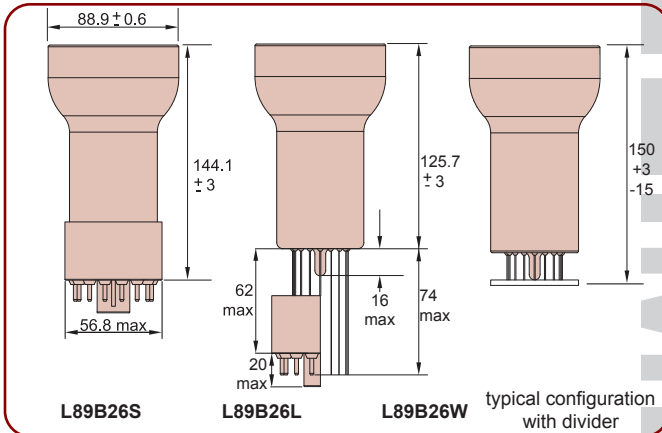
8 voltage divider distribution

k	d ₁	d ₂	d ₇	d ₈	d ₉	d ₁₀	a
3R	R			R	R	R	R	Standard

Characteristics contained in this data sheet refer to standard divider.

9 external dimensions mm

The drawings below show the L8926BS and L89B26L with the B14A cap fitted, the L89B26W in flying lead format and the L89B26W with a factory fitted voltage divider.



11 ordering information

The L89B26 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.

L89B26

base options

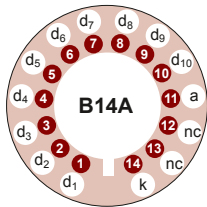
W flying leads, no cap
S capped
L temporary B14 cap

L89B26

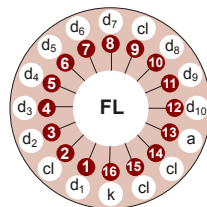
specification options

A nnn special requirements
 unique designator

10 base configuration (viewed from below)



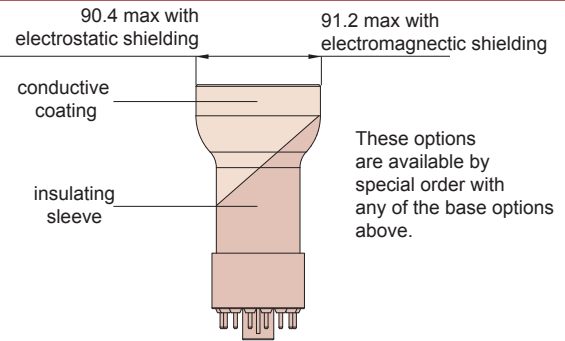
B14A cap for L89B26S and L89B26L
 'nc' indicates no internal connection



flying lead base for L89B26W
 'cl' indicates cut lead

A range of B14A sockets is available to suit the B14A cap of the L89B26S and L89B26L. The socket range includes versions with or without a mounting flange, and with contacts for mounting directly onto printed circuit boards.

The L89B26 can be supplied with a custom designed voltage divider installed.



12 voltage dividers

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

L89B26S	k	d ₁	d ₂	d ₆	d ₇	d ₈	d ₉	d ₁₀	a
L89B26L										
TBD										

R=330 kΩ

Custom dividers available for all base options.

ADIT Electron Tubes
 300 Crane Street
 Sweetwater, Texas 79556 U.S.A.
 tel: (325) 235-1418
 toll free: (800) 399-4557
 fax: (325) 235-2872
 email: sales@electrontubes.com
 website: www.electrontubes.com

ET Enterprises Limited
 45 Riverside Way
 Uxbridge UB8 2YF
 United Kingdom
 tel: +44(0)1895 200880
 fax: +44(0)1895 270873
 email: sales@et-enterprises.com
 website: www.et-enterprises.com

choose accessories for this pmt on our website

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