

19 mm (0.75") photomultiplier

9086FLB data sheet

1 description

The 9086FLB is a 19 mm (0.75") diameter, end window photomultiplier with plano-concave window, S20 infra-red sensitive photocathode and 10 BeCu dynodes of linear focused design for good linearity and timing.

2 applications

- wide range of applications

3 features

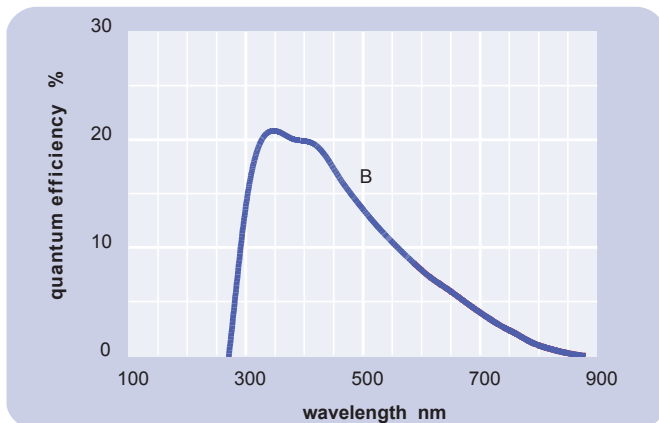
- fast time response

4 window characteristics

	9086FLB borosilicate
spectral range**(nm)	280 - 800
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

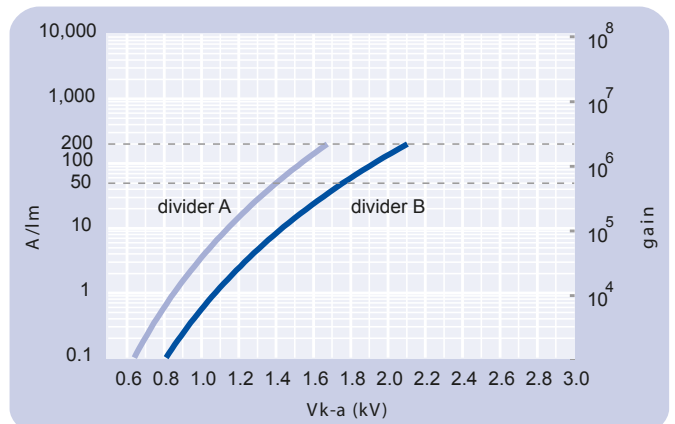


6 characteristics

	unit	min	typ	max
photocathode: S20				
active diameter	mm		15	
quantum efficiency at peak	%		21	
luminous sensitivity	$\mu\text{A/lm}$	80	130	
with CB filter			9	
with CR filter			50	
with IR filter			2	
dynodes: 10LFBcCu				
anode sensitivity in divider A:				
nominal anode sensitivity	A/lm		50	
max. rated anode sensitivity	A/lm		200	
overall V for nominal A/lm	V		1400	1700
overall V for max. rated A/lm	V		1650	
gain at nominal A/lm	$\times 10^6$		0.4	
dark current at 20 °C:				
dc at nominal A/lm	nA		0.2	2
dc at max. rated A/lm	nA		0.8	
dark count rate	s^{-1}		1000	
pulsed linearity (-5% deviation):				
divider A	mA		20	
divider B	mA		100	
rate effect (I_a for $\Delta g/g=1\%$):				
	μA		1	
magnetic field sensitivity: the field for which the output decreases by 50 %				
most sensitive direction	$\text{T} \times 10^{-4}$		2.4	
temperature coefficient:				
	$\% \text{ } ^\circ\text{C}^{-1}$		± 0.5	
timing:				
single electron rise time	ns		1.8	
single electron fwhm	ns		2.7	
single electron jitter fwhm	ns		2.5	
weight:				
	g		20	
maximum ratings:				
anode current	μA			100
cathode current	nA			200
gain	$\times 10^6$			1.5
sensitivity	A/lm			200
temperature	$^\circ\text{C}$	-80		60
V (k-a) ⁽¹⁾	V			2500
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



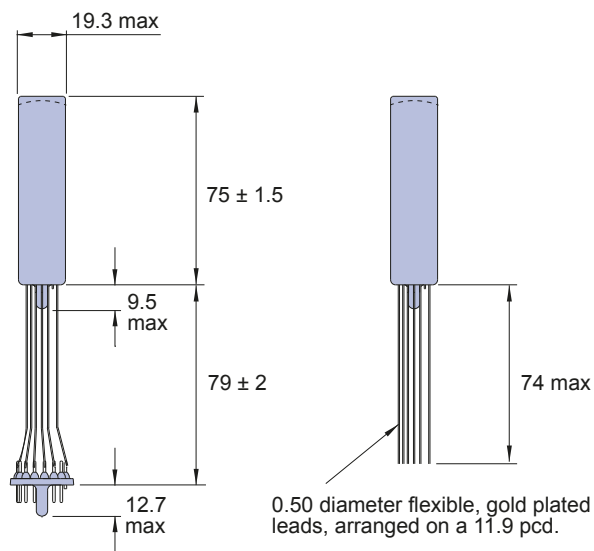
8 voltage divider distribution

	k	d ₁	d ₂	.....	d ₇	d ₈	d ₉	d ₁₀	a	
A	1.5R	R	.....		R	R	R	R	R	Standard
B	2R	R	.....		R	1.5R	2R	4R	2R	High Pulsed Linearity

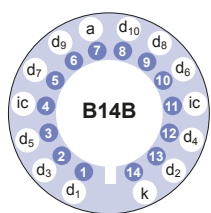
Characteristics contained in this data sheet refer to divider A unless stated otherwise.

9 external dimensions mm

The drawings below show the 9086FLB in flying lead format, with and without the temporary B14B glass base fitted.

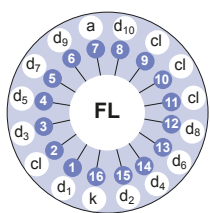


10 base configuration (viewed from below)



B14B hardpin base
(for 9086FLB)

'ic' indicates an internal connection



flying lead base
(for 9086FLB)

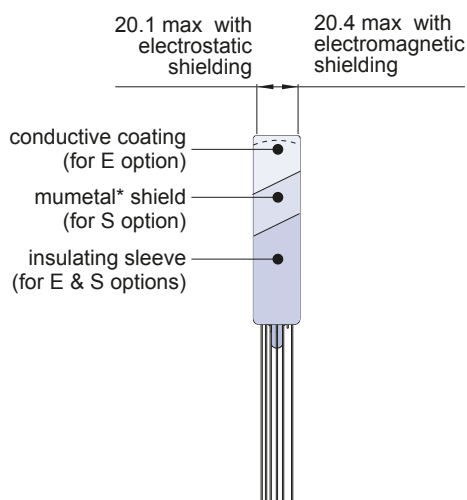
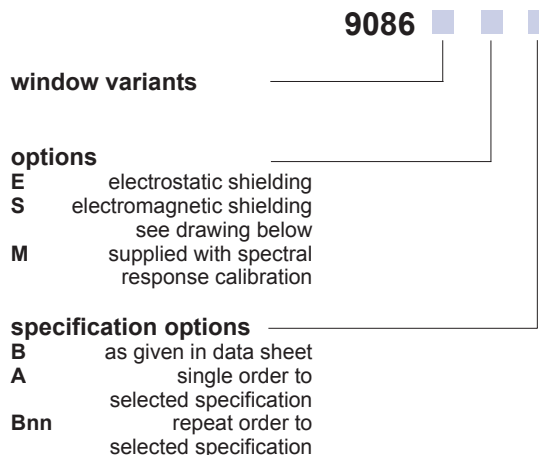
after removal of temporary base

'cl' indicates cut lead

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

11 ordering information

The 9086FLB 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 9086FLA.



12 voltage dividers

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

	k	d ₁	d ₂	d ₃	.....	d ₆	d ₇	d ₈	d ₉	d ₁₀	a
C669A	1.5R	R	R	.....		R	R	R	R	R	
C669B	1.5R	R	R		R	1.5R	2R	4R	2R	
C669C	150 V	R	R		R	R	R	R	R	
C669D	150 V	R	R		R	1.5R	2R	4R	2R	

R = 330 kΩ

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