

Photomultiplier

XP1802

11-stage 230mm (9") hemispherical tube

Application

- ✓ Neutrino physics

Features

- ✓ Fast
- ✓ High gain



Description

Window material	Borosilicate glass
Photocathode	Bi-alkali
Refr. Index at 420nm	1.48
Multiplier structure	Linear focused

Photocathode characteristics

	Min	Typ	Max	Unit
Spectral range :		270-650		nm
Maximum sensitivity at :		420		nm
Sensitivity :				
Luminous :		60		μA/lm
Blue * :	9.0	10		μA/lmf
Radiant, at 420nm		80		mA/W
Quantum efficiency at 420nm		23		%

Characteristics with voltage divider A

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		8		
For a gain of		10 ⁷		
Supply voltage *	1700	2000	2500	V
Anode dark current *		10	50	nA
Background noise *		5000	10000	c/s
Single electron spectrum peak to valley ratio*	1.2	1.5		
Mean anode sensitivity deviation :				
Long term (16h) :		1		%
After change of count rate :		4		%
Vs temperature between 0°C and +40°C at 400nm :		0.2		%/K

For a supply voltage of : 2000V

	Min	Typ	Max	Unit
Gain		10 ⁷		
Linearity (2%) of anode current up to :		30		mA
Anode pulse :				
Rise time :		3		ns
Duration at half height :		6		ns
Transit Time standard deviation		1.4		ns
Transit time difference centre to 108mm from centre :		1.5		ns

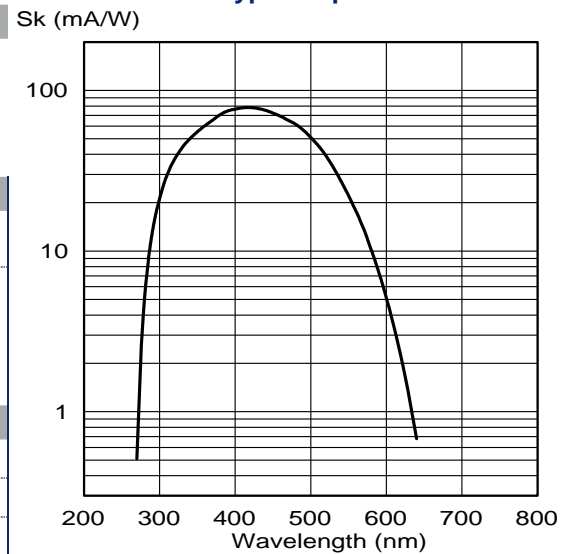
Recommended Voltage Divider

Type A for maximum gain

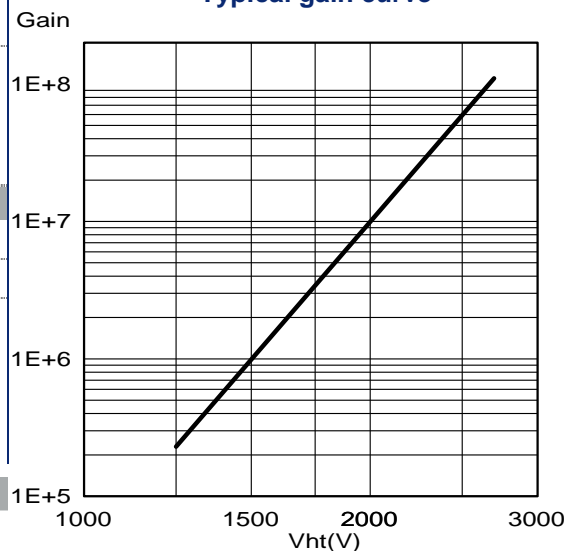
K G1 D1 G2 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 A
 9.8 0.2 1 3 1 1 1 1 1 1 1 1 1 1 1 (total : 24)

* characteristic measured and mentioned on the test ticket of each tube

Typical spectral



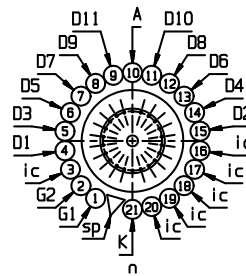
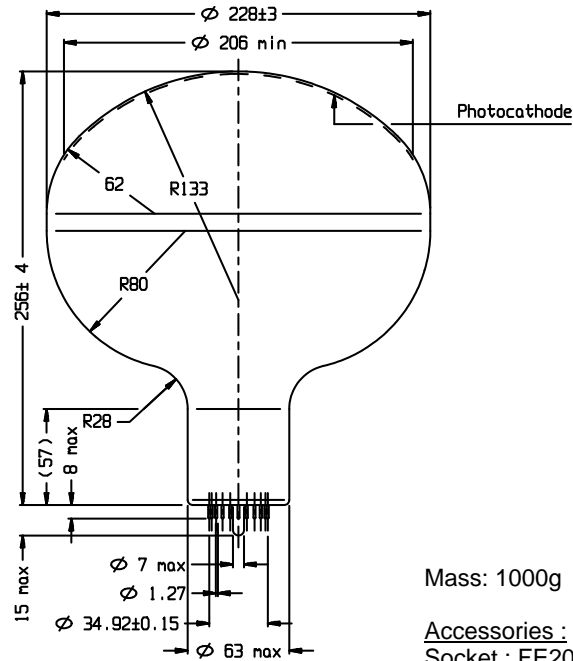
Typical gain curve



Photomultiplier

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Outline (dimensions in mm)



K: cathode
sp: short pin

Dn: dynode
Gn: focusing and accelerating electrodes

A: anode

n: plane of symmetry of the multiplier
ic: internal connection

Limiting values	Min	Max	Unit
Anode blue sensitivity		10^8	
Supply voltage		3000	V
Continuous anode current		0.2	mA
Voltage between :			
G1 and photocathode :	500	1500	V
D1 and photocathode :		1500	V
Consecutive dynode :		300	V
Anode and D11 :	20	300	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

Variants

XP1802

Finishing

B with plastic base JEDEC B20-402
F with flying leads $\varnothing 0.7$
FB with flying leads and plastic base

Also, other variants can be made. Please, contact us to discuss any specific product requirements.

PHOTONIS