

Photomultiplier

XP1805

8-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 (foil first dynode)

Photocathode characteristics

	Min	Typ	Max	Unit
Spectral range :		270-650		nm
Maximum sensitivity at :		420		nm
Sensitivity :				
Luminous :		60		μA/lm
Blue * :	9	10		μA/lmf
Radiant, at 420nm		80		mA/W
Quantum efficiency at 420nm		23		%

Characteristics with voltage divider B

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		6		
For a gain of		10 ⁶		
Supply voltage *	1300	1700	1950	V
Anode dark current *		15	50	nA
Background noise *		5000	10000	c/s
Single electron spectrum peak to valley ratio*	1.2	1.4		
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 : 1700V

	Min	Typ	Max	Unit
Gain		10 ⁶		
Linearity (2%) of anode current up to :		60		mA
Anode pulse :				
Rise time :		2.7		ns
Duration at half height :		6.5		ns
Transit Time spread (FWHM) :		2.4		ns
Transit time :		20		ns

Recommended Voltage Divider

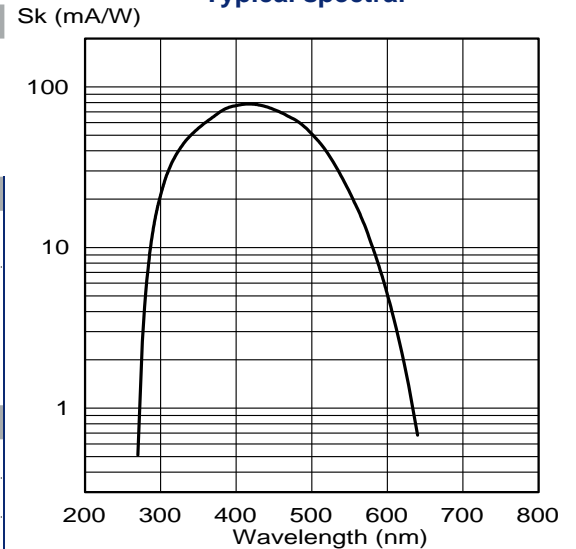
Type B for maximum gain

K G1 D1 G2 D2 D3 D4 D5 D6 D7 D8 A (total : 28.7)

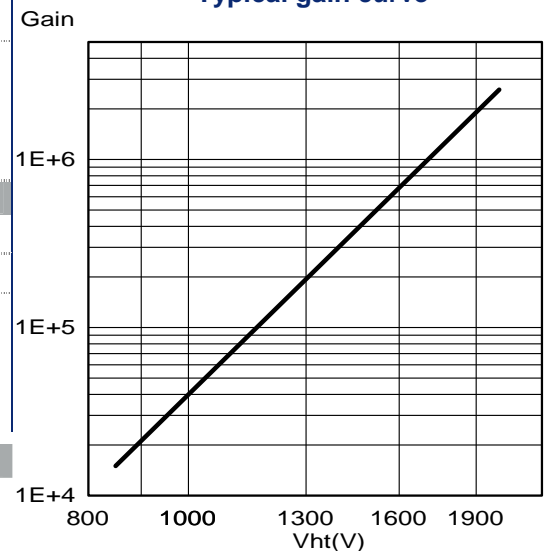
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* characteristic measured and mentioned on the test ticket of each tube

Typical spectral



Typical gain curve

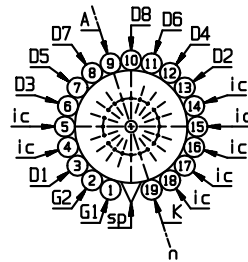
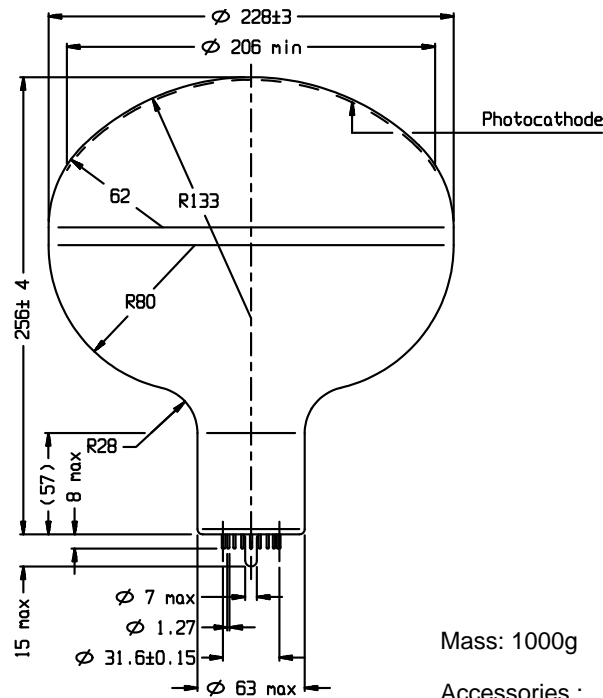


HZC PHOTONICS

Photomultiplier

XP1805

Outline (dimensions in mm)



K: cathode
sp: short pin

Gn: focusing and accelerating electrodes
n: plane of symmetry of the multiplier

Dn: dynode
ic: internal connection

A: anode

Limiting values	Min	Max	Unit
Anode blue sensitivity		3×10^6	
Supply voltage		2000	V
Continuous anode current		0.2	mA
Voltage between :			
G1 and photocathode :	300	1500	V
D1 and photocathode :		1500	V
Consecutive dynode :		300	V
Anode and D8 :	20	300	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

Variants

XP1805

Finishing

B with plastic base JEDEC B20-402

FL 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.