

Photomultiplier

XP1803

11-stage 230mm (9") hemispherical tube

Applications

- ✓ Cherenkov application
- ✓ Scintillation counting

Features

- ✓ Concave – convexe
- ✓ 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 * :	8.0	10		μA/lmf
Radiant, at 420nm		80		mA/W
Quantum efficiency at 420nm		24		%

Characteristics with voltage divider B

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		8		
For a gain of		10 ⁷		
Supply voltage *	1300	1600	2100	V
Anode dark current *		30	100	nA
Background noise *		3000	10000	c/s
Single electron spectrum peak to valley ratio*	2	2.3		
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 : 1600V

	Min	Typ	Max	Unit
Gain		5x10 ⁷		
Linearity (2%) of anode current up to :		150		mA
Anode pulse :				
Rise time :		5		ns
Duration at half height :		7		ns
Transit Time spread (FWHM) :		2.4		ns
Transit time :		80		ns

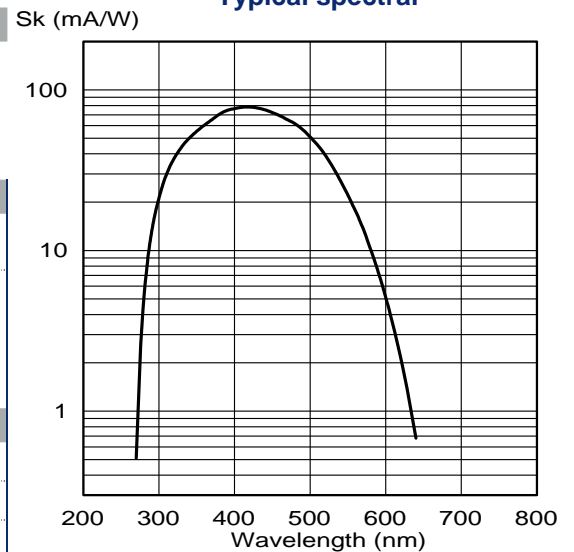
Recommended Voltage Divider

Type B for maximum gain

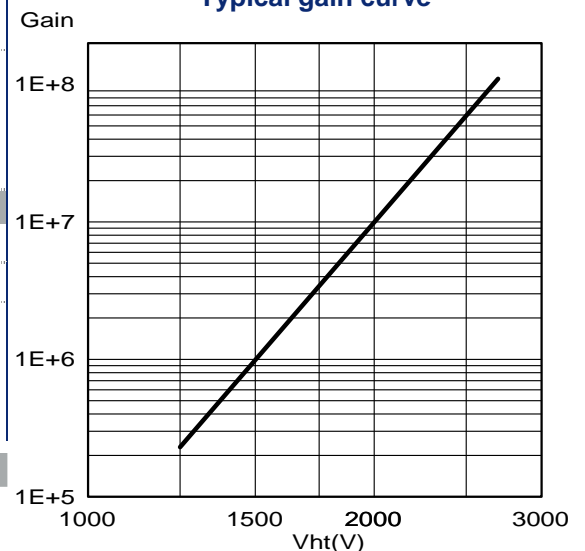
K	G1	D1	G2	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	A	(total : 33.5)
	0.07	0.025		4	1	1	1	1	1.5	2	2.5	3	2.5		
←	10	→←	4	→											

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

Typical spectral



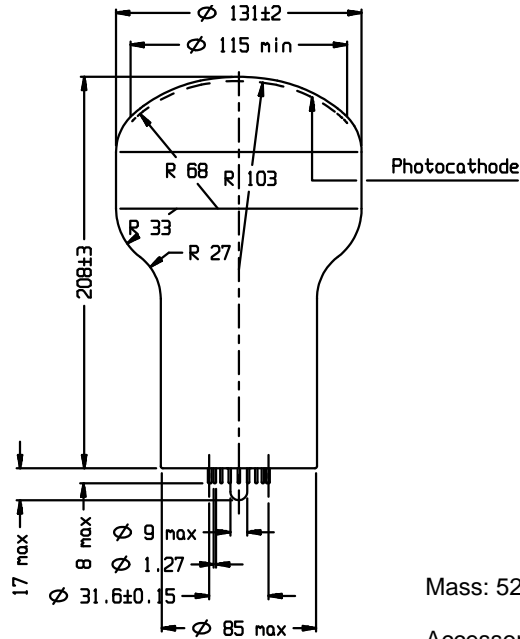
Typical gain curve



Photomultiplier

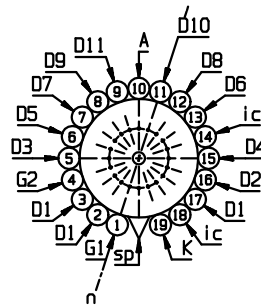
XP1803

Outline (dimensions in mm)



Mass: 520g

Accessories :
Socket : FE2019



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		2300	V
Continuous anode current		0.2	mA
Voltage between :			
D1 and photocathode :	500	1100	V
Consecutive dynode :		300	V
Anode and D11 :	30	300	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

Variants

XP1803

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.

PHOTONIS