

Photomultiplier

XP2020/UR

12-stage 51mm (2"), Round tube

Application

- ✓ Energy physics

Features

- ✓ Very Fast
- ✓ Good linearity
- ✓ 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 :		70		μA/lm
Blue * :	7.5	10		μA/lmf
Radiant, at 420nm		80		mA/W

Characteristics with voltage divider A

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		9		
For a gain of		3x10 ⁷		V
Supply voltage *	2200	3000	3200	V
Anode dark current *		20	100	nA
Background noise *		15000	25000	cps
Single electron spectrum resolution		70		%
Peak to valley ratio		2.5		%
Pulse amplitude resolution for ¹³⁷ Cs		7.2		%
Gain halved for a magnetic field of :				
Perpendicular to axis "n" :		0.15		mT
Parallel to axis "n" :		0.12		mT

For a supply voltage of : 3000V

	Min	Typ	Max	Unit
Linearity (2%) of anode current up to :		25		mA
Anode pulse :				
Rise time :		1.6		ns
Duration at half height :		3.7		ns
Transit Time :		27		ns

Recommended Voltage Divider

Type A for maximum gain

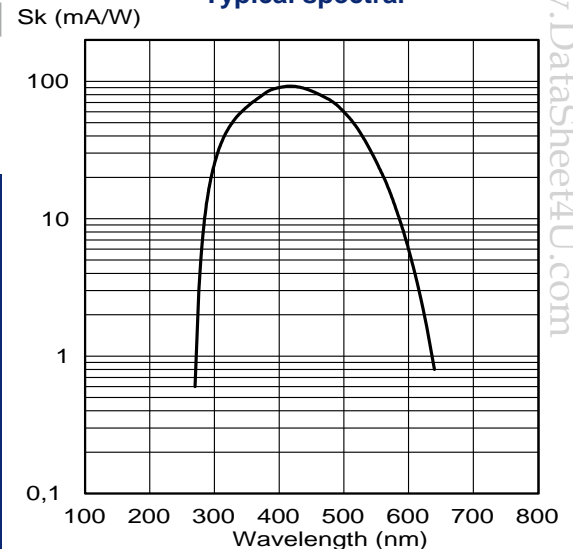
K 2 G 8 D1 2 D2 1.5 D3 1 D4 1 D5 1 D6 1 D7 1 D8 1 D9 1 D10 1 D11 1 D12 1 A (total : 23.5)

Type C for linearity

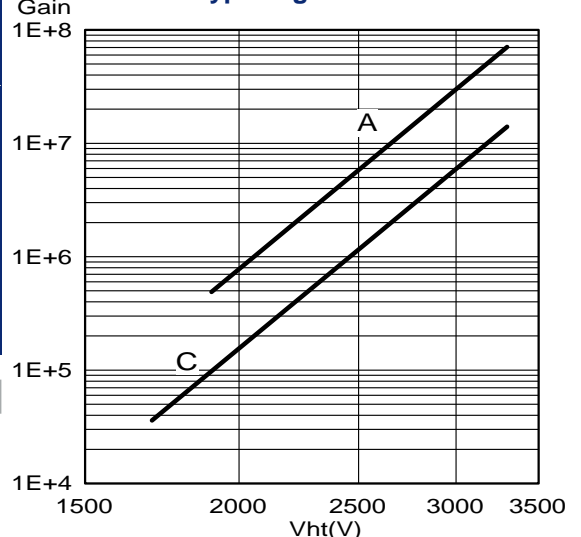
K 2 G 8 D1 2 D2 1.5 D3 1 D4 1 D5 1 D6 1 D7 1 D8 1 D9 1.5 D10 1.5 D11 3 D12 2.5 A (total : 28)

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

Typical spectral



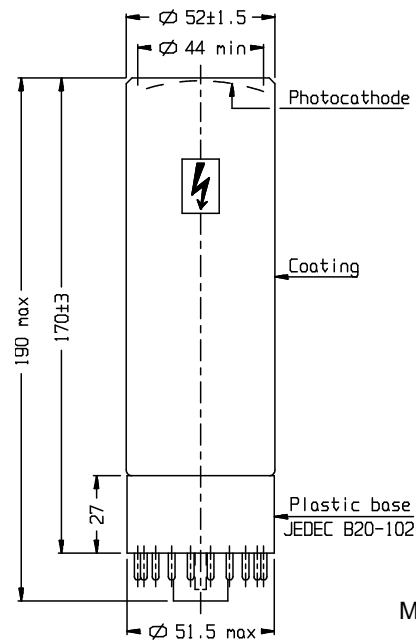
Typical gain curve



Photomultiplier

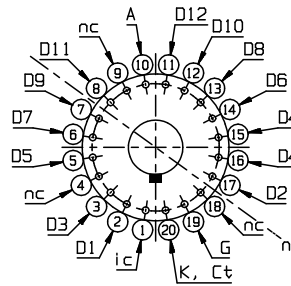
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Outline (dimensions in mm)



Mass : 240g

Accessories :
 Socket : FE1120
 Mu-metal shield : MS172
 Voltage divider : VD124K/T



K: cathode
 sp: short pin
 G: focusing electrode

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

A: anode
 nc: not connected

nc: not connected
 Ct: coating

Limiting values	Min	Max	Unit
Anode Luminous sensitivity		10^8	
Supply voltage		3300	V
Continuous anode current		0.2	mA
Voltage between :			
G and photocathode :		300	V
First dynode and PK :	600	1400	V
Consecutive dynode (except 11 & 12) :		400	V
Dynodes D11 and D12 :		600	V
Anode and D12:	80	700	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

Variants

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Finishing

F with flying leads $\varnothing 0.5$
FB with flying leads and plastic base

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