

Photomultiplier

XP2090

**10-stage
39mm (1,5"), Round tube**

Applications

- ✓ Scintillation counting
- ✓ Energy 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 :		90		μA/lm
Blue * :	10	11.5		μA/lmf
Radiant, at 420nm		90		mA/W

Characteristics with voltage divider A

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		7.5		
For an anode blue sensitivity of		7.5		A/lmf
Supply voltage *	700	850	950	V
Gain		6.5x10 ⁵		
Anode dark current *		2	10	
Pulse height resolution ¹³⁷ Cs - NaI(Tl) 2"x2"		7.5		%
Pulse height resolution ⁵⁵ Fe - NaI(Tl) 2" x2"		39		%
Peak to valley ratio for ⁵⁵ Fe		40		
Mean anode sensitivity deviation :				
Long term (16h) :		0.6		%
After change of count rate :		1		%
Vs temperature between 0 and +40°C at 420 nm		-0.3		%/K
Gain halved for a magnetic field of :				
Perpendicular to axis "n" :		0.12		mT
Parallel to axis "n" :		0.3		mT

For a supply voltage of : 1000V

	Min	Typ	Max	Unit
Linearity (2%) of anode current up to :		30		mA
Gain		2.2x10 ⁶		
Anode pulse:				
Rise time:		2.7		ns
Duration at half height:		4.6		ns
Transit time:		37		ns

Recommended Voltage Divider

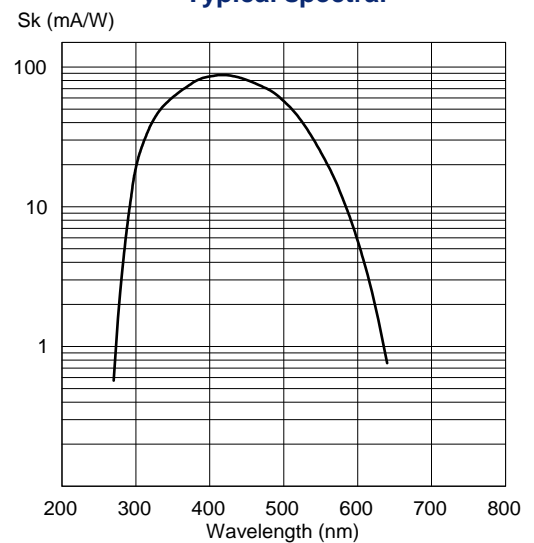
Type A for maximum gain

K D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 A
 2 1 1 1 1 1 1 1 1 1 1 1 (total : 12)

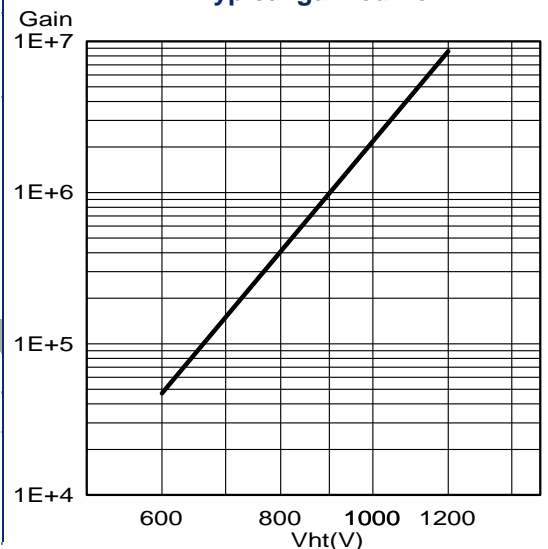
• characteristic mentioned on the test ticket of the tube

PHOTONIS

Typical spectral



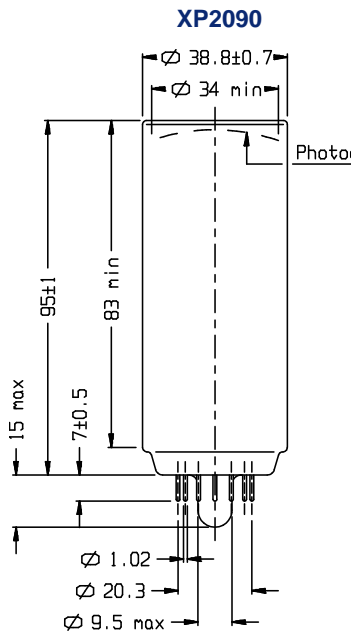
Typical gain curve



Photomultiplier

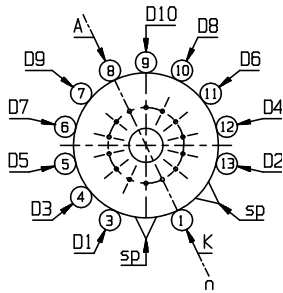
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Outline (dimensions in mm)



Mass: 80g

Accessories:
Socket: FE1112
Mu-metal shield: MS170

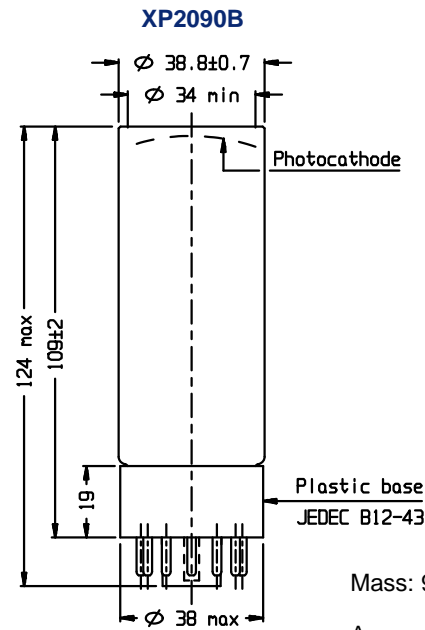


K: cathode
Dn: dynode

A: anode

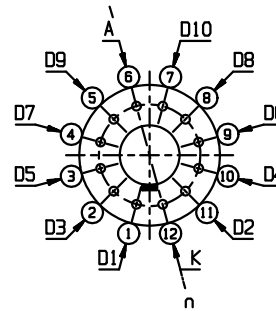
sp: short pin

n: plane of symmetry of the multiplier



Mass: 95g

Accessories:
Socket: FE1012
Mu-metal shield: MS170



Limiting values	Min	Max	Unit
Anode blue sensitivity		100	A/lmf
Supply voltage		1500	V
Continuous anode current		0.2	mA
Voltage between :			
D1 and photocathode :	100	400	V
Consecutive dynode :		300	V
Anode and D10 :	30	300	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

Variants

Finishing

B with plastic base JEDEC B12-43
F with flying leads $\varnothing 0.5$
FB with flying leads and plastic base

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Option

C with electrostatic coating
(conductive paint connected to the cathode + insulating coating)

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