

# Photomultiplier

# XP3112

## 10-stage 25mm (1"), Round tube

### Applications

- ✓ High energy physics
- ✓ Scintillation counting

### Features

- ✓ Fast
- ✓ Low profile
- ✓ Low voltage



### Description

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

### Photocathode characteristics

	Min	Typ	Max	Unit
Spectral range :		270-650		nm
Maximum sensitivity at :		420		nm
Sensitivity :				
Luminous :		90		μA/lm
Blue * :	9	11		μA/lmf
Radiant, at 420nm		85		mA/W

### Characteristics with voltage divider A

	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		6.8		
For an anode blue sensitivity of		10		A/lmf
Supply voltage *	650	800	1000	V
Gain		9.1x10 <sup>5</sup>		
Anode dark current *		1	5	nA
Pulse height resolution <sup>137</sup> Cs - NaI(Tl) 1"x1"		7.7		%
Mean anode sensitivity deviation :				
Long term (16h) :		1		%
After change of count rate :		1		%
Vs T° between 0 and +40°C at 420 nm		-0.2		%/K
Gain halved for a magnetic field :				
Perpendicular to axis "n" :		0.2		mT
Parallel to axis "n" :		0.1		mT
Parallel to tube axis :		0.3		mT

### For a supply voltage of : 1100V

	Min	Typ	Max	Unit
Linearity (2%) of anode current up to :		30		mA
Gain		2.10 <sup>6</sup>		
Anode pulse: Rise time:		2		ns
Duration at half height:		3.1		ns
Transit time:		19		ns
Capacitance anode to all dynodes		5		pF

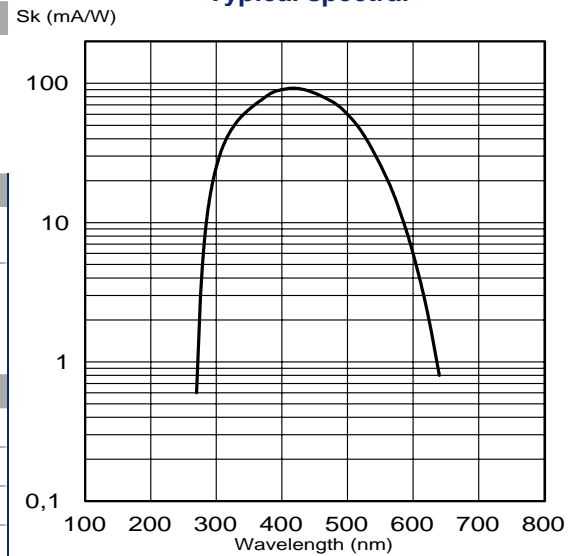
### Recommended Voltage Divider

Type A for maximum gain

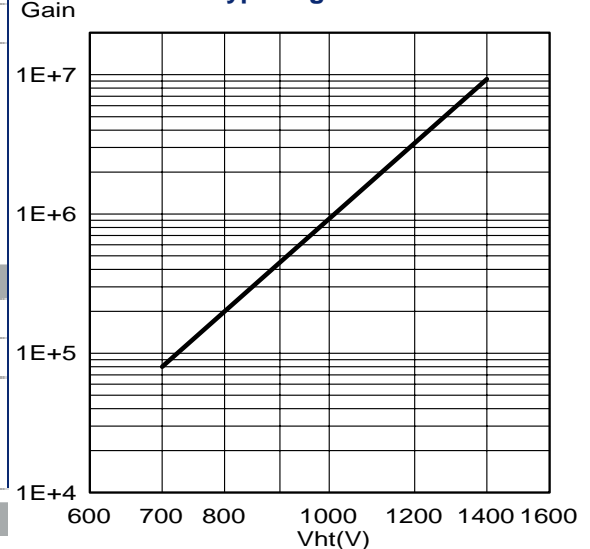
K	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	A	
3	1	1	1	1	1	1	1	1	1	1	1	(total : 13)

\* characteristic mentioned on the test ticket of the tube

Typical spectral



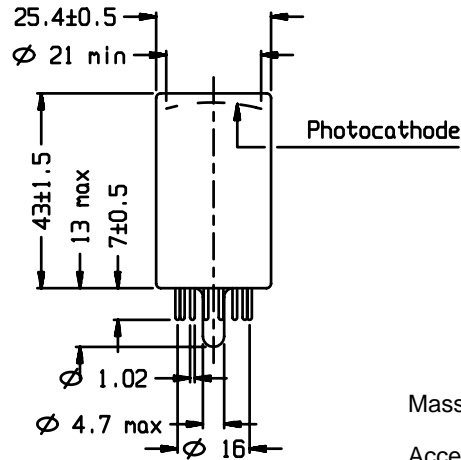
Typical gain curve



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## Outline (dimensions in mm)



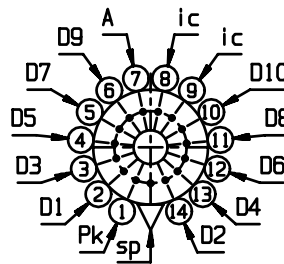
Mass: 20g

### Accessories:

Socket for wires: FE3214/W

Socket for PCB: FE3214/PC

Voltage divider: VD1A1/TA



K: cathode  
Dn: dynode

A: anode  
ic: internal connection

sp: short pin

n: plane of symmetry of the multiplier

Limiting values	Min	Max	Unit
Anode blue sensitivity		100	A/lmf
Supply voltage		1600	V
Continuous anode current		0.2	mA
Voltage between :			
D1 and photocathode :	120	350	V
Consecutive dynode :		250	V
Anode and D10 :	30	300	V
Ambient temperature :			
Short operation (<30 mn) :	-30	+80	°C
Continuous operation & storage :	-30	+50	°C

## Variants

### Finishing

**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.

# PHOTONIS

14/12/2006