

Photomultiplier

XP72B20

10-stage 80mm (3.1"), Round tube



Application

✓ High energy physics

Features

✓ High Quantum Efficiency
✓ Low profile

Description

Window material	Borosilicate low K
Photocathode	Bi-alkali
Refr. Index at 420nm	1.54
Multiplier structure	Box and Linear focused

Photocathode characteristics

	Min	Typ	Max	Unit
Spectral range:		290-700		nm
Maximum sensitivity at		404		nm
Sensitivity:				
Luminous		110		μA/lm
Blue *	10	12		μA/lmF
Quantum Efficiency, at 404 nm	25	28		%
Quantum Efficiency, at 470 nm	18	20		%

Characteristics with voltage divider A

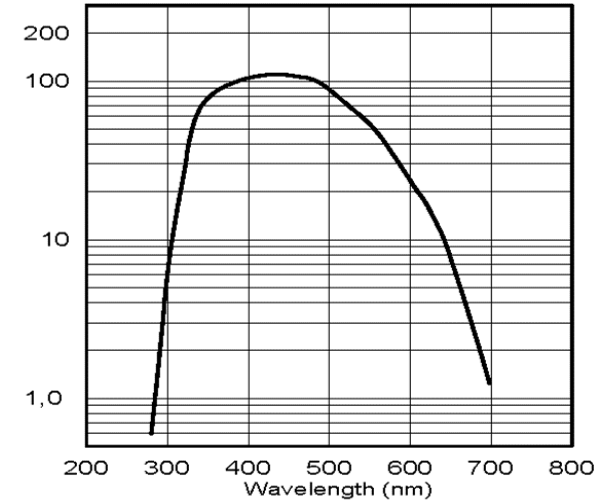
	Min	Typ	Max	Unit
Gain slope (vs supp. Volt., log/log)		6.8		
For an anode blue sensitivity of		120		A/lmF
Supply voltage *	1000	1300	1500	V
Gain		1x10 ⁷		
Anode dark current *		20	300	nA
Noise		1500	2000	Hz
Mean anode sensitivity deviation				
Long term (16h)		1		%
After change of count rate		1		%
Vs temperature between 0 and +40°C at 420 nm		-0.3		%/K

For a supply voltage of : 1000V

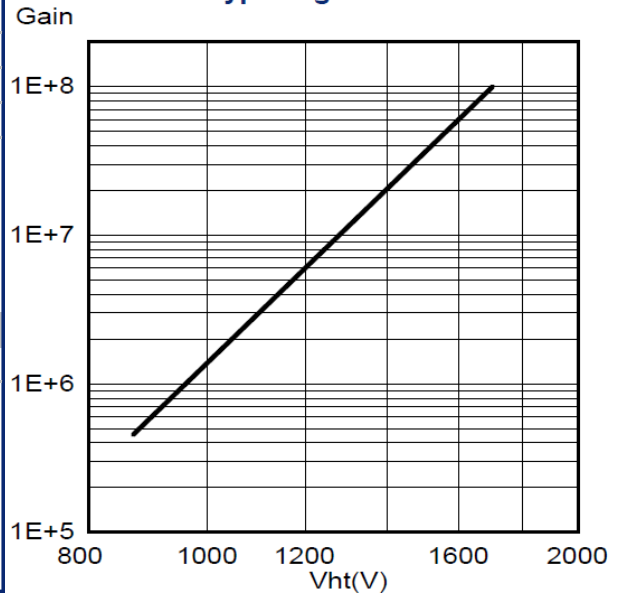
	Min	Typ	Max	Unit
Linearity (2%) of anode current up to		25		mA
Anode pulse:				
Rise time		3.5		ns
Duration at half height		5		ns
Transit time		49		ns
Center to edge difference (C.E.D)		1		ns
Time resolution at 511 keV with LSO		1.3		ns

Sk (mA/W)

Typical spectral



Typical gain curve



Recommended Voltage Divider

Type A for maximum gain

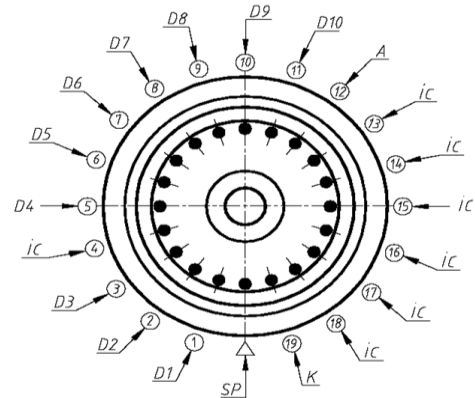
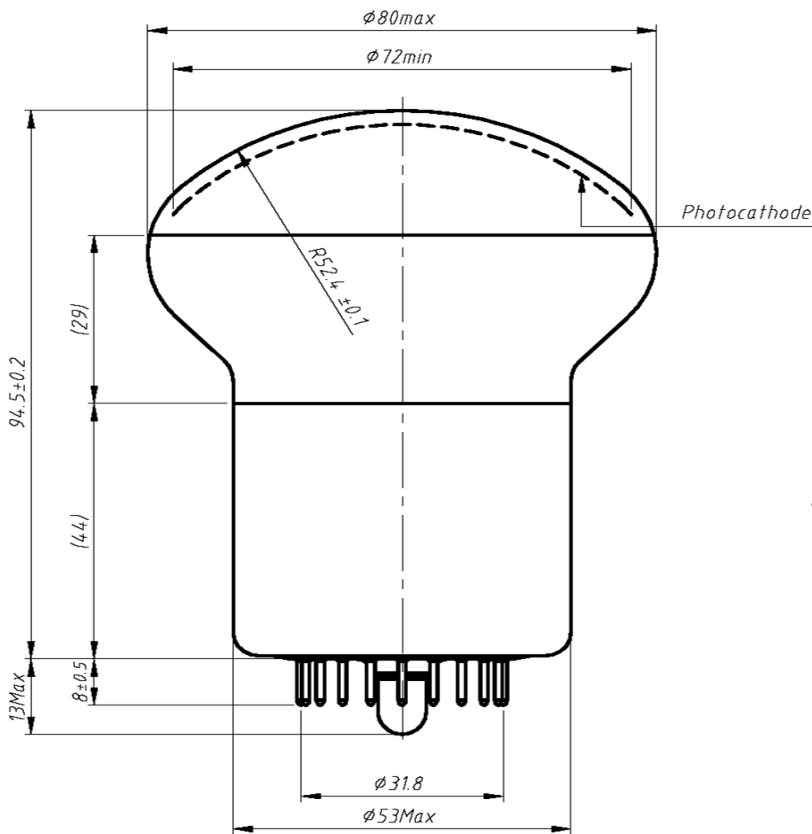
K	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	A	
3	1	1	1	1	1	1	1	1	1	1	1	(Total: 13)

* characteristic mentioned on the test ticket of the tube

Photomultiplier

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Outline (dimensions in mm)



K: cathode
A: anode

sp: short pin
Dn: dynode

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

Limiting values	Min	Max	Unit
Anode blue sensitivity		130	A/lmF
Supply voltage		2000	V
Continuous anode current		0.2	mA
Voltage between:			
D1 and photocathode	150	500	V
Consecutive dynode		300	V
Anode and D10	40	300	V
Ambient temperature:			
Short operation (<30 mn)	-30	+80	°C
Continuous operation & storage	-30	+50	°C

Variants

Finishing

- B** with plastic base
- F** with flying leads Φ 0.5
- FB** with flying leads and plastic base

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.