

51 mm (2") tubes

51 mm (2") tubes		XP2020	XP2020Q	XP2020UR	XP2020URQ	XP20H0B
Key features		very fast, high gain, low noise	very fast, high gain, UV sensitive	ultra fast, high gain	ultra fast, high gain, UV sensitive	very fast, high PHR, double anode
Dynode structure / number of stages		focused/12	focused/12	focused/12	focused/12	focused/10
Cathode luminous sensitivity (μA/lm)	typ.	70	70	70	70	130
Cathode blue sensitivity (μA/lmF)	min	7.5	7.5	7.5	7.5	10
	typ.	10	10	10	10	12.5
Cathode radiant sensitivity (mA/W)	typ. at (nm)	80 mA/W 270420650	80 mA/W 160420650	80 mA/W 270420650	80 mA/W 160420650	100 mA/W 270420650
Gain	typ.	3x10 ⁷	3x10 ⁷	3x10 ⁷	3x10 ⁷	6x10 ⁵
Supply voltage	typ.	2 000	2 000	3 000	3 000	1 000
	min. (V)	1 750	1 750	2 200	2 200	750
	max. (V)	2 600	2 600	3 200	3 200	1 300
Anode dark current	typ. (nA)	10	10	20	20	3
	max. (nA)	100	100	100	100	50
Anode dark counts	typ. (cps)	900	900	15 000	15 000	---
	max. (cps)	2 500	2 500	25 000	25 000	---
Max. anode pulse current for linearity 2% (mA)		280	280	70	70	---
Time response	rise (ns)	1.5	1.5	1.4	1.4	1.6
	FWHM (ns)	2.4	2.4	2.3	2.3	2.35
PHR (%)		7.2	7.2	7.2	7.2	10.5
Maximum ratings	supply voltage (V)	3000	3000	3300	3300	2 500
	gain	2x10 ⁸	2x10 ⁸	1x10 ⁸	1x10 ⁸	4x10 ⁶
Accessories	Voltage divider	VD124K/T	VD124K/T	VD127K/T	VD127K/T	---
	Socket	FE1120	FE1120	FE1120	FE1120	FE1120
	Mu-metal shields	MS172	MS172	MS172	MS172	MS172

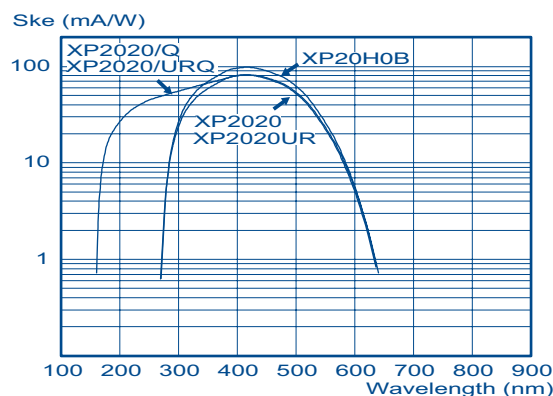
PHR: for radiation source ^{137}Cs , NaI Tl scintillator, Ø 51 mm, h51 mm; XP20H0 for radiation source ^{57}Co .

XP2020(Q): center-edge transit time difference 0.25 ns; transit-time spread σ 0.25 ns (type C divider, 2500 V supply). Both values are down to 0.2 ns for XP2020UR(Q).

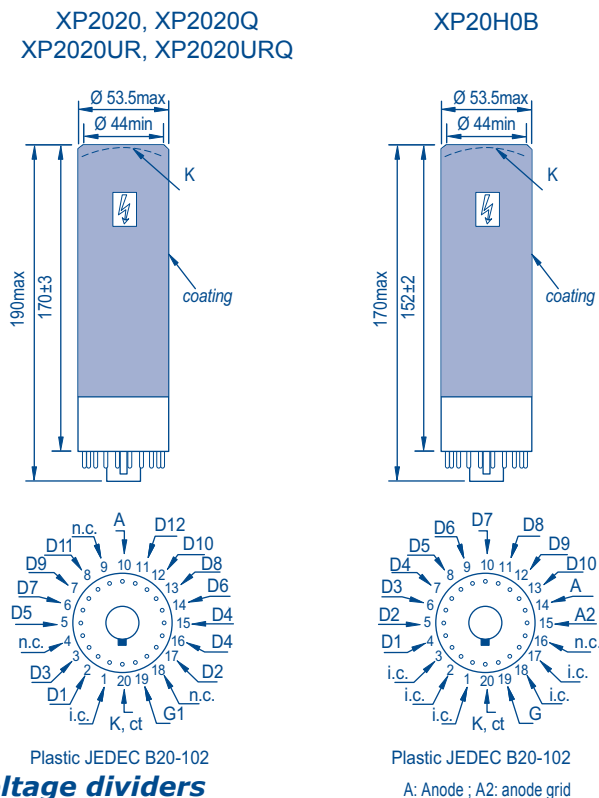
XP20D0B is the 8-stage variant of XP20H0B.

XP20H0B: time resolution (511keV) with LSO at 220ps, with $\text{LaBr}_3\text{:Ce}$ at 205ps.

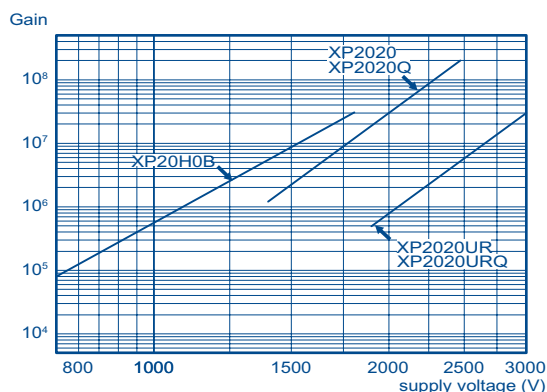
Typical spectral characteristics



Dimensions and pinning



Typical gain curves



Voltage dividers

Tube	A divider type voltage ratios (for maximum gain)								
	K	G	D1	D2	D3	...	Dn	A	
XP2020, XP2020Q	1.2	2.8	1.2	1.8	1	...	1	1	
XP2020UR, XP2020/URQ	2	8	2	1.5	1		1	1	
XP20H0B	1.8	4.2	1.2	1.8	1	...	1	1	

XP20H0B: A2 to adapt between D10 and A.