

# Photomultiplier

# XP9120-64

## Compact, multianode 25.4 mm (1") square tube

### Applications

- ✓ Animal PET scanners
- ✓ Analytical control

### Features

- ✓ 64-channel
- ✓ wide effective area
- ✓ easy stacking



### Description

|                        |                             |
|------------------------|-----------------------------|
| Window material        | Borosilicate glass          |
| Photocathode           | Bi-alkali                   |
| Refr. Index at 420nm   | 1.48                        |
| Multiplier structure   | Foil, 12-stage              |
| Minimum effective area | 18.1 x 18.1 mm <sup>2</sup> |
| Anode size             | 2 x 2 mm <sup>2</sup>       |

### Photocathode characteristics

|                          | Min | Typ     | Max | Unit  |
|--------------------------|-----|---------|-----|-------|
| Spectral range :         |     | 290-650 |     | nm    |
| Maximum sensitivity at : |     | 410     |     | nm    |
| Sensitivity :            |     |         |     |       |
| Luminous :               | 50  | 60      |     | μA/lm |
| Radiant, at 410nm *      | 60  | 70      |     | mA/W  |

### Characteristics with voltage divider A

|  | Min | Typ             | Max  | Unit |
|--|-----|-----------------|------|------|
| Gain slope (vs supp. Volt., log/log)         |     | 11              |      |      |
| For a gain of                                |     | 10 <sup>6</sup> |      |      |
| Supply voltage *                             | 850 | 950             | 1050 | V    |
| Anode dark current per channel               |     | 0.2             | 2    | nA   |
| Anode dark current total                     |     | 12              | 70   | nA   |
| Cross talk (with 1mm optical fiber) :        |     | 2               |      | %    |
| Uniformity between anodes (min/Max ratio)    |     | 1:3             | 1:5  |      |
| Mean anode sensitivity deviation :           |     |                 |      |      |
| Long term (16h) :                            |     | 1               |      | %    |
| After change of count rate :                 |     | 1               |      | %    |
| Vs temperature between 0 and +40°C at 410 nm |     | -0.3            |      | %/K  |

### For a supply voltage of : 1200V

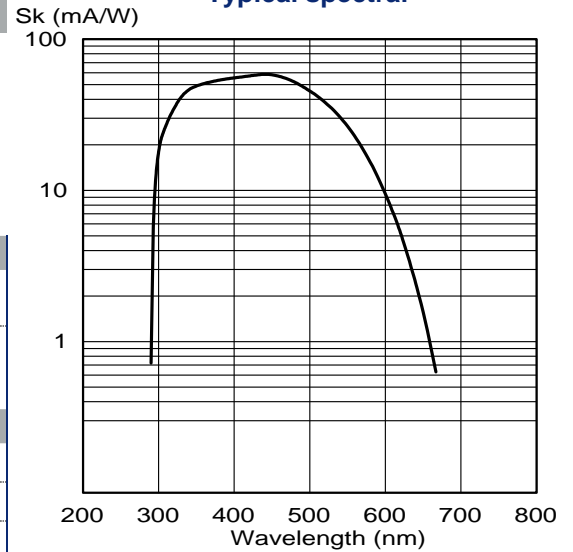
|   | Min | Typ | Max | Unit |
|---|-----|-----|-----|------|
| Linearity (5%) of anode current up to : |     | 1   |     | mA   |
| Anode pulse :                           |     |     |     |      |
| Rise time :                             |     | tbd |     | ns   |
| Duration at half height :               |     | tbd |     | ns   |
| Transit Time :                          |     | tbd |     | ns   |

### Recommended Voltage Divider

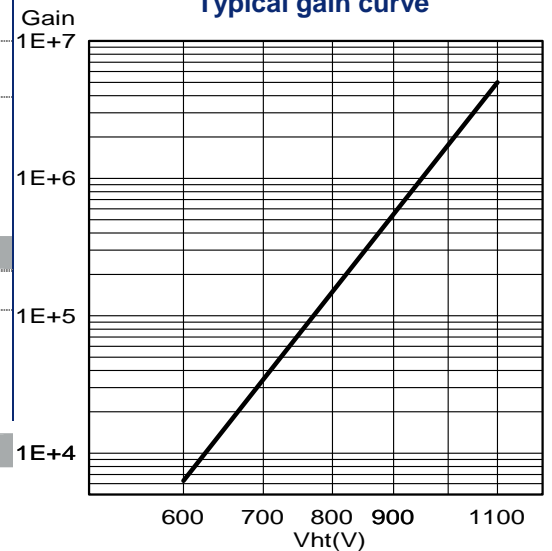
Type A for maximum gain

|   |    |    |    |    |    |    |    |    |    |     |     |     |              |
|---|----|----|----|----|----|----|----|----|----|-----|-----|-----|--------------|
| K | D1 | D2 | D3 | D4 | D5 | D6 | D7 | D8 | D9 | D10 | D11 | D12 | Ai           |
| 2 | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1  | 1   | 1   | 3   | (total : 16) |

Typical spectral



Typical gain curve

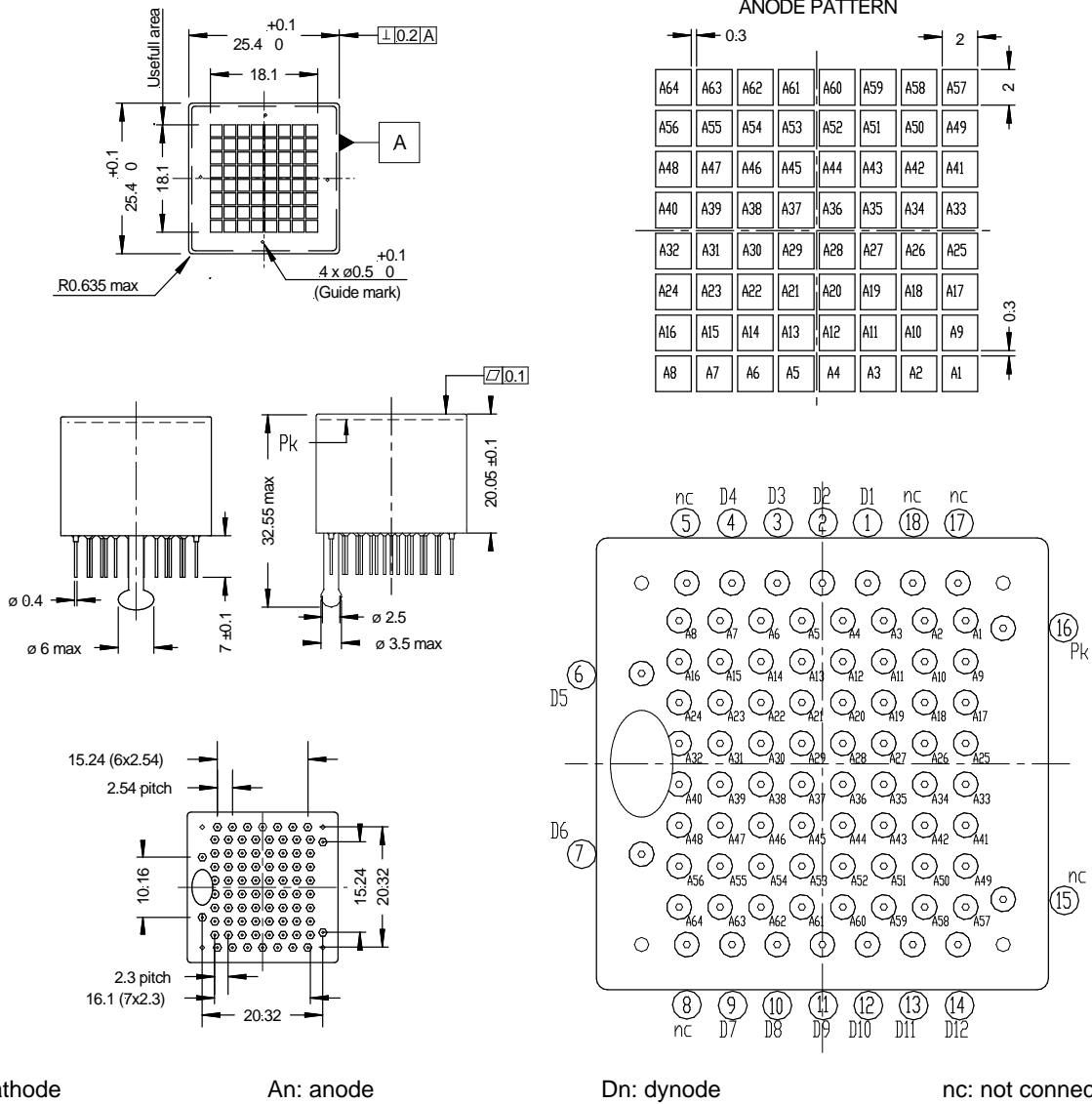


\* characteristic mentioned on the test ticket of the tube

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## Outline (dimensions in mm)



### Limiting values

|                                  | Min | Max  | Unit  |
|----------------------------------|-----|------|-------|
| Anode blue sensitivity           |     | 30   | A/lmf |
| Supply voltage                   |     | 1200 | V     |
| Continuous anode current         |     | 0.2  | mA    |
| Voltage between :                |     |      |       |
| D1 and photocathode :            | 50  | 200  | V     |
| Consecutive dynode :             |     | 200  | V     |
| Anode and D12 :                  | 30  | 200  | V     |
| Ambient temperature :            |     |      |       |
| Short operation (<30 mn) :       | -30 | +50  | °C    |
| Continuous operation & storage : | -30 | +50  | °C    |

### Variants

Variants can be made. Please, contact us to discuss any specific product requirements.