The 9442B is a 29 mm (1.13") diameter end window photomultiplier with plano-concave window, enhanced green sensitive bialkali photocathode and 10 high gain, high stability, SbCs dynodes of linear focused design for good linearity and timing. The 9442QB is a variant for applications requiring uv sensitivity.

- high energy physics studies
- low operating voltage
- good SER
- fast time response
- high pulsed linearity
- low afterpulse rate

Window characteristics:

<table>
<thead>
<tr>
<th>9442B borosilicate</th>
<th>9442QB* fused silica</th>
</tr>
</thead>
<tbody>
<tr>
<td>spectral range** (nm)</td>
<td>280 - 630</td>
</tr>
<tr>
<td>refractive index (n)</td>
<td>1.49</td>
</tr>
<tr>
<td>K (ppm)</td>
<td>300</td>
</tr>
<tr>
<td>Th (ppb)</td>
<td>250</td>
</tr>
<tr>
<td>U (ppb)</td>
<td>100</td>
</tr>
</tbody>
</table>

* note that the sidewall of the envelope contains graded seals of high K content
** wavelength range over which quantum efficiency exceeds 1 % of peak

Typical spectral response curves:

The graph shows the quantum efficiency (% of peak) as a function of wavelength (nm) for different photomultipliers. The curves are labeled Q, B, and A.

Typical voltage gain characteristics:

The graph depicts the gain (A/lm) as a function of voltage (V) across the dynode (V-k-a). The curves are labeled divider A and divider B.
8 voltage divider distribution

<table>
<thead>
<tr>
<th>k</th>
<th>d1</th>
<th>d2</th>
<th>d3</th>
<th>d4</th>
<th>d5</th>
<th>d6</th>
<th>d7</th>
<th>d8</th>
<th>d9</th>
<th>d10</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>2R</td>
<td>R</td>
<td>2R</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>2R</td>
<td>R</td>
<td>R</td>
<td>1.5R</td>
<td>2R</td>
<td>4R</td>
<td>2R</td>
<td>R</td>
<td>R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Characteristics contained in this data sheet refer to divider A unless stated otherwise.

9 external dimensions mm

10 base configuration (viewed from below)

Our range of B14B sockets is available to suit the B14B hardpin base. The socket range includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

12 voltage dividers

The standard voltage dividers available for these pmts are tabulated below:

<table>
<thead>
<tr>
<th>k</th>
<th>d1</th>
<th>d2</th>
<th>d3</th>
<th>d4</th>
<th>d5</th>
<th>d6</th>
<th>d7</th>
<th>d8</th>
<th>d9</th>
<th>d10</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>C620A</td>
<td>2R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C620B</td>
<td>2R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>2R</td>
<td>3R</td>
<td>4R</td>
<td>3R</td>
</tr>
</tbody>
</table>

R = 330k Ω

*mumetal is a registered trademark of Magnetic Shield Corporation

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