The 9658B is a 51mm (2") diameter end window photomultiplier with a prismatic window for enhanced cathode sensitivity, S20 infra-red sensitive photocathode, and 11 high gain, high stability, SbCs dynodes of the long-established venetian blind design providing a low afterpulse rate.

- photon counting of bio- and chemi-luminescent samples
- SOx, NOx, pollution monitoring
- low light level detection

extended infra-red sensitivity
low operating voltage
pin compatible with established type 9558B

### 9658B borosilicate

<table>
<thead>
<tr>
<th>spectral range*(nm)</th>
<th>290 - 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>refractive index (n_d)</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>

* wavelength range over which quantum efficiency exceeds

### Typical spectral response curve

#### Photocathode: S20
- quantum efficiency at peak % 21
- luminous sensitivity µA/Im 250
- with CR filter 6
- with IR filter 12
- max. rated sensitivity

#### Dynodes: 11VBSbCs
- anode sensitivity in divider A:
  - nominal anode sensitivity A/Im 200
  - max. rated anode sensitivity A/Im 2000
  - overall V for nominal A/Im V 950
  - overall V for max. rated A/Im V 1200
  - gain at nominal A/Im x 10^0 0.8
  - dark current at 20 °C:
    - dc at nominal A/Im nA 2
    - dc at max. rated A/Im nA 20
  - dark count rate s^-1 15000

#### Pulsed linearity (-5% deviation):
- divider A mA 2
- rate effect (I_r for ∆g/g=1%):
- magnetic field sensitivity:
  - the field for which the output decreases by 50%
  - most sensitive direction T x 10^-4 1.7
  - temperature coefficient: % °C ± 0.5
  - timing:
    - single electron rise time ns 10
    - single electron fwhm ns 22
    - transit time ns 65
  - weight: g 190

#### Maximum ratings:
- anode current µA 100
- cathode current mA 1000
- gain x 10^0 8
- sensitivity A/Im 2000
- temperature °C -80
- V (k-a)-1 V 2300
- V (k-d)-1 V 450
- V (d-d)-1 V 300
- ambient pressure (absolute) kPa 202

(1) subject to not exceeding max. rated sensitivity (2) subject to not exceeding max rated V(k-a)
**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>d₁₁</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>150V R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>2R</td>
<td>R</td>
<td>Standard</td>
<td></td>
<td></td>
<td></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**

- 51.5 max
- 140 ± 3
- 12.7 max

**10 base configuration (viewed from below)**

Our range of B19A sockets is available to suit the B19A hardpin base. The range includes versions with or without a mounting flange, and versions with contacts for mounting directly onto printed circuit boards.

**11 ordering information**

The 9658B meets the specification given in this data sheet. You may order variants by adding a suffix to the type number. You may also order options by adding a suffix to the type number. You may order product with specification options by discussing your requirements with us. If your selection option is for one-off order, then the product will be referred to as 9658B. For a repeat order, ET Enterprises will give the product a two digit suffix after the letter B, for example B21. This identifies your specific requirement.

**9658 options**

- E: electrostatic shielding
- S: electromagnetic shielding
- M: supplied with spectral response calibration

**specification options**

- B: as given in data sheet
- A: single order to selected specification
- Bnn: repeat order to selected specification

**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>d₁₁</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>C625E</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>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>C625F</td>
<td>150V</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>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

*R = 330kΩ

*mumetal is a registered trademark of Magnetic Shield Corporation*