The 9490B is a 130 mm (5") diameter, end window photomultiplier with enhanced green sensitive bialkali photocathode. It has 10 high gain, high stability, SbCs dynodes of linear focused design for good linearity and timing. A version is available with the entire envelope manufactured in ultra-low background glass, which is the 9490UB.

### Applications
- radiation monitoring
- scintillation spectroscopy
- high energy physics studies

### Features
- good SER
- high pulsed linearity
- good pulse height resolution
- large active area

### Window Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>9490B borosilicate</th>
<th>9490UB borosilicate</th>
</tr>
</thead>
<tbody>
<tr>
<td>spectral range (nm)*</td>
<td>300 - 680</td>
<td>290 - 680</td>
</tr>
<tr>
<td>refractive index (n_d)</td>
<td>1.49</td>
<td>1.49</td>
</tr>
<tr>
<td>K (ppm)</td>
<td>4200</td>
<td>60</td>
</tr>
<tr>
<td>Th (ppb)</td>
<td>420</td>
<td>30</td>
</tr>
<tr>
<td>U (ppb)</td>
<td>380</td>
<td>30</td>
</tr>
</tbody>
</table>

* wavelength range over which quantum efficiency exceeds 1% of peak

### Typical Spectral Response Curves

![Spectral Response Curve](chart1.png)

### Typical Voltage Gain Characteristics

![Voltage Gain Characteristics](chart2.png)
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>450V</td>
<td>R</td>
<td></td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>Standard</td>
</tr>
<tr>
<td>B</td>
<td>450V</td>
<td>R</td>
<td></td>
<td>2R</td>
<td>3R</td>
<td>4R</td>
<td>3R</td>
<td></td>
<td></td>
<td></td>
<td>High Pulsed</td>
</tr>
</tbody>
</table>

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

9 external dimensions mm

The drawings below show the 9490B in hardpin format and the 9490KB with the B14A cap fitted. The 9490KFLB is shown in flying lead format with a temporary cap fitted. This temporary cap is attached as agreed with the customer.

10 base configurations (viewed from below)

Our range of B19A sockets is available to suit the hardpin base. Our range of B14A sockets is available to suit the B14A cap. Both socket ranges include versions with or without a mounting flange, and the versions with contacts for mounting directly onto printed circuit boards.

11 ordering information

The 9490B 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 9490A. 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.

window variant
U ultra-low background glass

base options
K capped
KFL flying lead base with temporary cap

options
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>9490</th>
<th>9490B</th>
<th>9490KB</th>
<th>9490KFLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>KB</td>
<td>FLB</td>
<td>k d₁</td>
</tr>
<tr>
<td>C647G</td>
<td>C636K</td>
<td>C655G</td>
<td>6R</td>
</tr>
<tr>
<td>C647H</td>
<td>C636L</td>
<td>C655H</td>
<td>R</td>
</tr>
<tr>
<td>C647I</td>
<td>C636M</td>
<td>C655I</td>
<td>R</td>
</tr>
<tr>
<td>C647J</td>
<td>C636N</td>
<td>C655J</td>
<td>450 V</td>
</tr>
</tbody>
</table>

R = 330kΩ

choose accessories for this pmt on our website

ET Enterprises Limited
45 Riverside Way
Uxbridge UB8 2YF
United Kingdom
tel: +44 (0) 1895 200880
toll free: (800) 399 4557
tfax: +44 (0) 1895 270873
e-mail: sales@et-enterprises.com
web site: www.et-enterprises.com

ADIT Electron Tubes
300 Crane Street
Sweetwater TX 79556 USA
tel: (325) 235 1418
toll free: (800) 399 4557
tfax: (325) 235 2872
e-mail: sales@electrontubes.com
web site: www.electrontubes.com

an ISO 9001 and ISO 14001 registered company

The company reserves the right to modify these designs and specifications without notice. Developmental devices are intended for evaluation and no obligation is assumed for future manufacture. While every effort is made to ensure accuracy of published information the company cannot be held responsible for errors or consequences arising therefrom.

© ET Enterprises Ltd, 2014
DS_9490B Issue 1 (20/02/14)