



**Cyberstar<sup>X2000</sup>**

**CBY02202**

**Fast Scintillation Detector and  
Pulse Processing Unit**

**Single Channel**

**Operating & Service Manual**

OXFORD DANFYSIK

Unit 1 Ferry Mills,

Osney Mead

Oxford,

OX2 0ES

UK

Tel: +44 (0) 1865 320 300

Fax: +44 (0) 1865 320 301

<http://www.oxford-danfysik.com>

## 4. Fast Scintillation Detector

### Caution :

**LETHAL VOLTAGE PRESENT INSIDE DEVICE  
WHEN OPERATED:**

1250 VOLTS MAXIMUM High Voltage supply .

**USER MUST DISCONNECT DEVICE BEFORE  
OPENING HOUSING FOR ANY REASON.**

Please note that permanent damage to the phototube can occur if rated High Voltage supply value (above) is exceeded.

**Disturbing ground loops warning :** In order to avoid unwanted effects, the body of the phototube should always be electrically *isolated* from the experiment where it is installed.

**Shielding ground warning :** In order to obtain the best signal shielding, the body of the phototube must always be electrically *connected* to the ground of the pulse processing electronics used .

### 4.1 Scintillator

- type Thallium activated NaI.  
Easily interchangeable thickness on customer request (minimum 1 mm).  
Other scintillators available BGO, BaF<sub>2</sub>, CsI, CsI(Tl), CsF, YAP
- detector aperture standard diameter 32 mm
- energy up to 50 KeV - NaI(Tl), 10 MeV - BGO
- window Beryllium, 0.2 mm thickness, optional aluminium
- background below 0.2 cps at 5 KeV - NaI(Tl)

*What we have per Alec 2/6/15*

### 4.2 Photomultiplier

- diameter 38 mm (scintillator 32 mm)
- photocathode bialkali adapted to most of scintillator emission wavelength (NaI(Tl), YAP, BGO ...)
- structure 10 dynodes
- gain 10<sup>6</sup> typical
- anode signal rise time 2.8 ns.