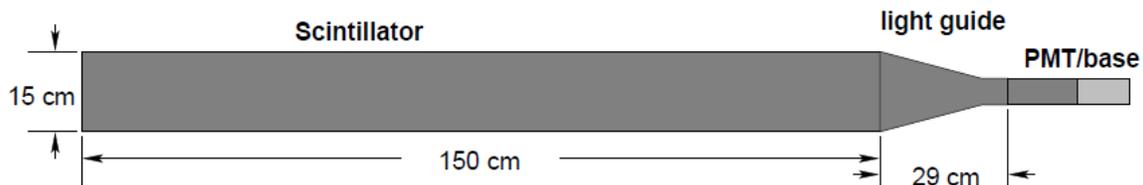


The counters are made of Bicron BC-412 scintillator [5] and have an active volume of $1.3 \times 15 \times 150 \text{ cm}^3$. The scintillator is glued to a wedge shaped, lucite light guide which is in turn glued to an EMI-9954KB photomultiplier tube [6]. The PMT bases were designed and built at Fermilab.

[5] Bicron Photonics Division,
Saint Gobain Crystals & Detectors,
12345 Kinsman Road,
Newbury, Ohio 44065, USA.

[6] Electron Tubes Inc. (formerly Thorn-EMI),
100 Forge Way, Unit F
Rockaway, NJ 07866, USA.



NIM A506 (2003) 7-19 describes counters in detail.

A high voltage power supply (Power Designs model 1570, 40 mA@3kV) provides bias voltages for all the counter PMTs. The individual values are set by a Berkeley high voltage zener divider box. The connection to the PMTs is through coaxial RG58 cable and BNC SHV connectors. The signals exit the PMTs with BNC connectors and pass through RG58 cable to the trigger electronics. The trigger electronics are housed in two standard NIM crates in a single rack that also contains the HV supply and divider box. A list of NIM modules utilized for the trigger logic is attached.

Power Designs HV supply 1570 (FNAL property number 18367)
<http://www-esd.fnal.gov/esd/catalog/main/powerdes/1570-spec.htm>
NIM Bin Model 1012H

http://www-css.fnal.gov/els/prep/catalog/hardware_info/bl_packer/1012.html

HV Zener Divider ES 7092 (FNAL property number 5615)

http://www-css.fnal.gov/els/prep/catalog/hardware_info/fermilab/rackmount/es7092.html

NIM modules for FNAL counters:

LeCroy 623 Octal Discriminator Qty 5

LeCroy 612 12 Channel PM Amplifier Qty 2

LeCroy 622 Quad Coincidence Qty 4

LeCroy 380A Multiplicity Logic Unit Qty 2

LeCroy 429 Logic Fan In Fan Out Qty 2

LeCroy 364 4-fold Logic Unit Qty 2

LeCroy 222 Dual Gate Generator Qty 3

NIM modules for MSU counters (3 standard NIM crates):

LeCroy 364 4-fold Logic Unit Qty 4

LeCroy 4616 ECL-NIM-ECL convertor Qty 3

LeCroy 622 Quad Coincidence Qty 9

FNAL 1880 Dual Channel BCD Scaler Qty 6