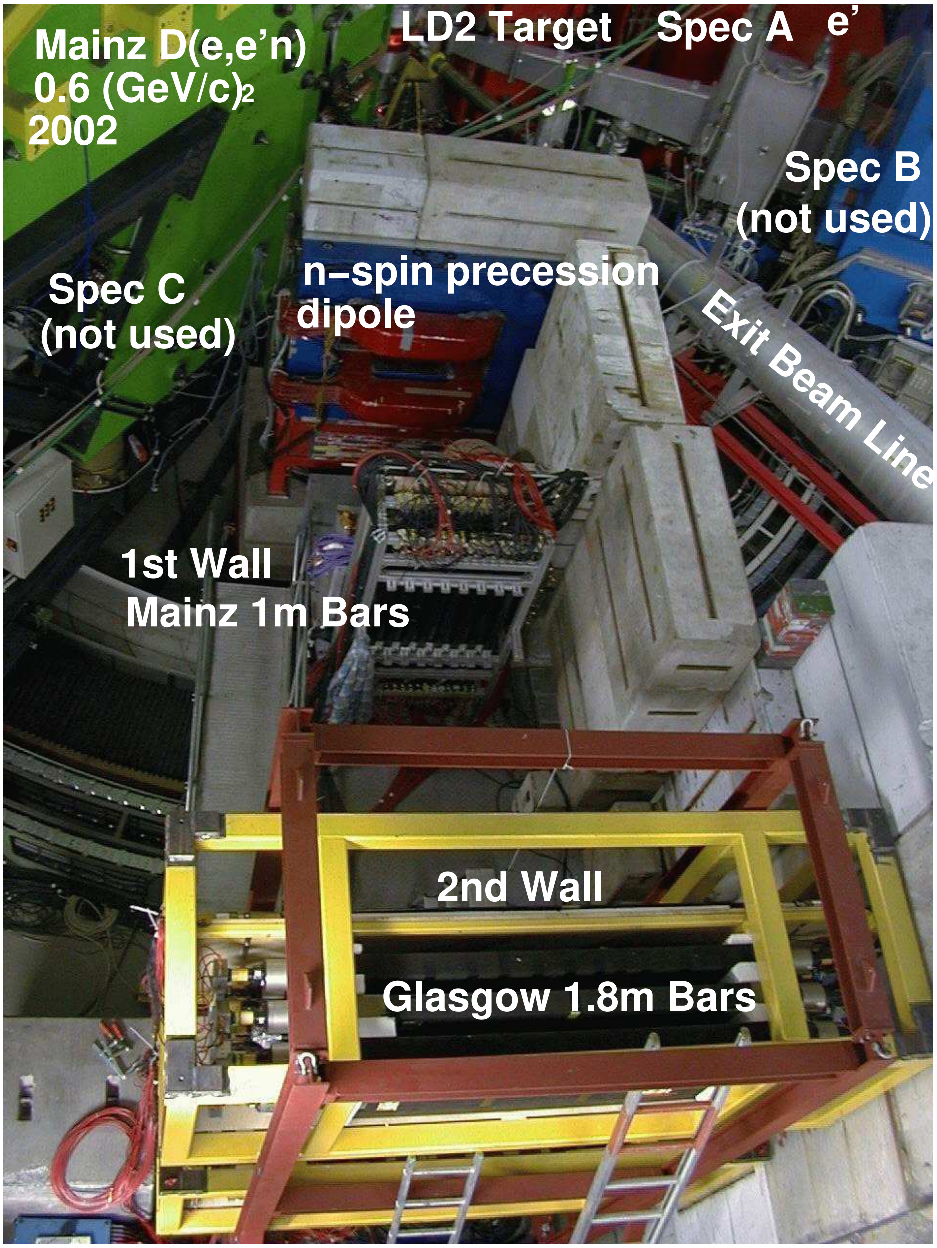
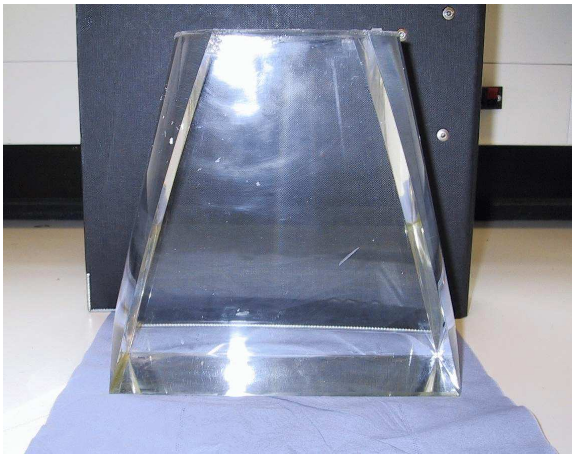
The Mainz A1 $\mathrm{D}(\vec{e}, e'\vec{n})$ Setup



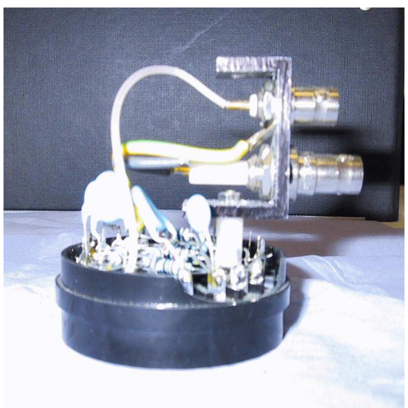
Some 1.8 m Bar Components

Light Guide

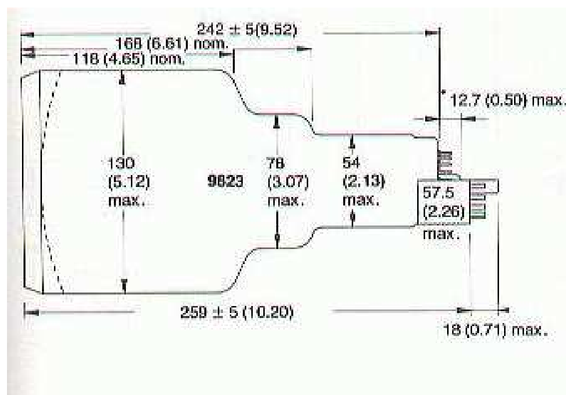


Light Guide

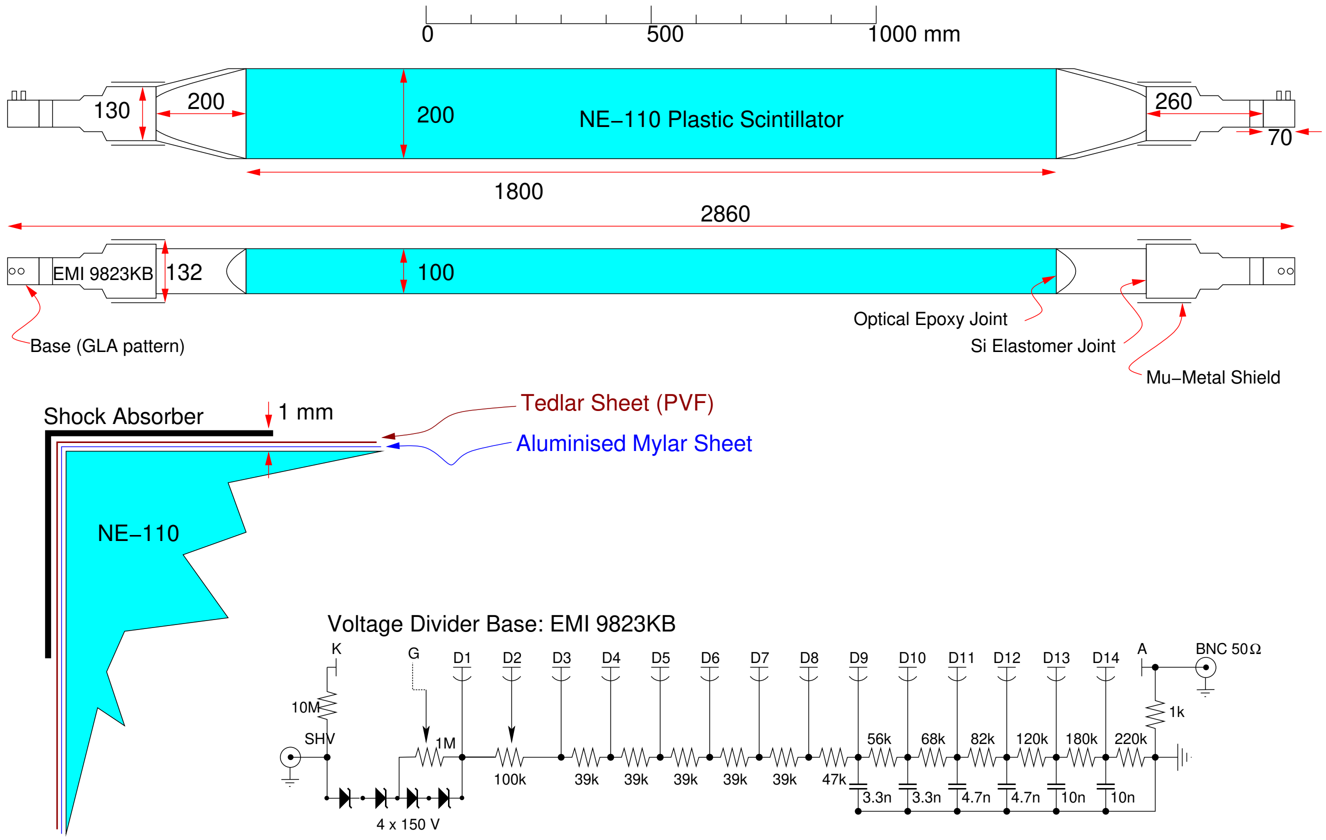
PMT base under construction



PMT dimensions



1.8 m Scintillator Bar Specification



Resistors: 47 – 82k 0.75W metal film, 100 ppm/deg−C
120 – 220k 1.0W metal film, 100 ppm/deg−C
Potentiometers: 1.0W cermet, 100 ppm/deg−C
Capacitors: ceramic disk, 2kV
Zeners: 150V, 1.3W

J.R.M. Annand, 28th May 2003

1.8m Bar Performance

- A description of the initial performance tests can be found in Annand et al., NIM A262(1987), 329-339.

- For cosmic rays the timing resolution was ~ 350 ps FWHM.

- The bars have been operated at ~ 1 MHz in Mainz experiments.

- The optical properties of the scintillator (NE-110 nominal attenuation length 4m) have degraded so that the effective attenuation length is shorter than when new. Cosmic-ray tests prior to the last A1 G_{En} experiments confirm this.

- Lucite light guides show very little apparent ageing effects.

- Remains to be seen how much light collection efficiency can be recovered after refurbishment.

Status

- A1 $\mathrm{D}\,(\vec{e}\,,e'\vec{n}\,)$ experiment finished 2002
- 1.8 m scintillators disassembled and shipped to Glasgow early 2003
- PMT (9823KB) testing in progress. Replace where necessary with unused spares
- PMT voltage divider base construction in progress
- Cleaning and selective repolishing of scintillator and lucite light guides being assessed
- Assemble 3 bars for cosmic-ray testing in Glasgow
- Ship disassembled components to JLab
- Assemble and cosmic-ray test in EEL building