



Figure 3.5: The completed, wrapped BPC north module.

deeper inside the BPC, light from such particles has to pass along a shorter length of wavelength shifter. Consequently, the energy response of the BPC becomes non-linear.

This effect is compensated by noticing that most of the light which eventually passes from the scintillator fingers into the wavelength shifter does so after a reflection from the back of the wavelength shifter. By varying the amount of light reflected, the attenuation can be compensated. To do this, the attenuation length is measured, and a pattern of black dots printed onto strips of Tyvek paper. These strips of paper are then inserted behind each wavelength shifter bar in the aluminium cassette. The density of the dots falls exponentially from the back to the front of the BPC. Tyvek paper is formed by compressing spun polythene. It has an extremely high UV reflectivity (as high as aluminium foil); it also does not discolour with time.

3.2.3 Photomultipliers

As can be seen from the CAD drawing of the BPC, the photomultipliers are situated immediately behind each BPC module. A very limited space is available for the PMT housings, which necessitates use of a physically small PMT.