

Aluminum target pattern for LP1 cathode

D. Karlen, June 4, 2008

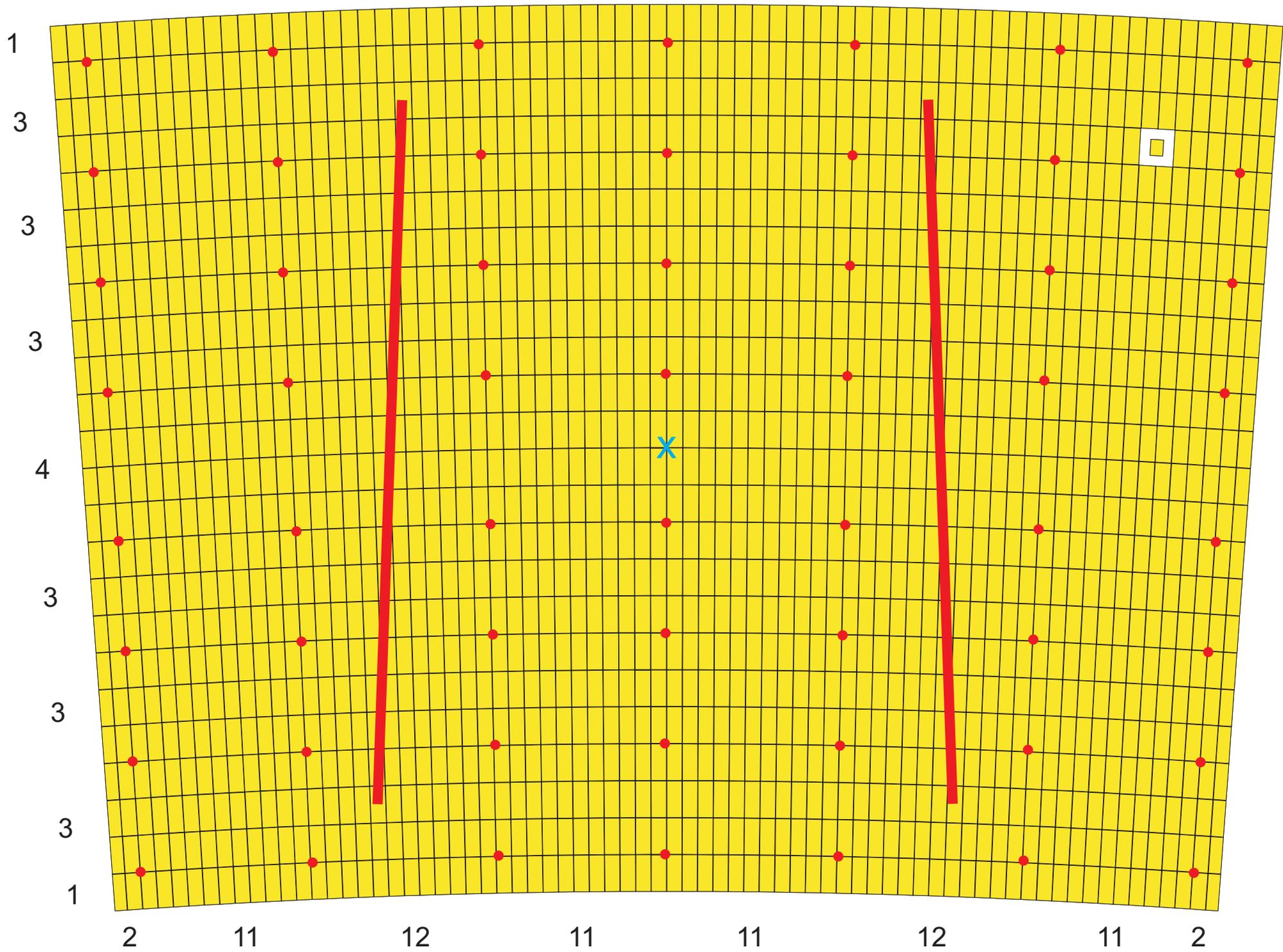
The photoelectron calibration system requires a pattern of aluminum dots and strips on the central cathode, in order to produce a control sample of drift electrons. A proposal for the dot pattern is given here in detail, according to the proposal presented at the February 2008 LP1 meeting at DESY.

The pads for the micromegas modules are the largest proposed, so to ensure good charge sharing for that system, the dots need to be aligned with the corners of the pads. In addition some strips are needed in order to monitor the diffusion.

A drawing showing the pad layout for one of the readout modules is shown on the next page. The proposed location of the dots and strips are overlaid in red. There are 24 rows and 72 columns of pads in a polar layout. The radial height of each row is 6.84 mm. The dots are all 2.0 mm in diameter. The strips are 2.0 mm wide. The dots are to be located at the corners of the pads, as shown. The strips are at an angle with respect to the pad column boundaries, in order that the diffusion can be determined. The pattern of dots and strips is to be replicated 7 times on the cathode – to match the 7 readout module locations.

The readout modules are referenced to a bounding box, as shown in the file, boundingboxes.pdf, as prepared by the Cornell group. I assume that the pad layout is centred within the bounding box. The dimensions of the pad layout bounding box are shown on the third page of this document (dashed line within the bounding box).

The tolerance for the dot placement is about 0.5 mm. The strip placement tolerance is looser (1 mm is fine). The locations of the dot centres, however, need to be known to high precision: 0.02 mm relative to other dots would be beneficial. This accuracy should be possible with CNC machining of the dots, within one setup. Multiple setups are needed, and the relative alignment of one set of dots with another set is expected to be only done with precision of 0.1 mm. A post machining survey of the relative dot locations (from one set to another) would be useful.



REVISIONS			
SYM	ZONE	DESCRIPTION	DATE

SCALE 1 / 2

