

Laser beams in LP.

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In LP prototype we can install micromirrors and create set of ~ 1 mm laser beams. Currently I have bundles of micromirrors used in STAR and ALICE TPC laser system. The principle to create laser beams is to illuminate small 1 mm mirrors (which assembled in bundle with 7 micromirrors) by wide laser beam (NIM A499(2003) 692-702). If we install 2 bundles on inner surface of field cage at different distances from endplate and put 2 optical windows ~ 10 mm diameter on endplate and cathode side we'll illuminate bundles and practically have laser beams in all detectors. On fig. 2 a pattern from STAR bundle is presented. On fig.1 the pattern from ALICE bundle is presented. I already have STAR bundle and waiting a respond about ALICE bundle. The drawing for ALICE bundle is presented on Fig.3. For STAR bundle the set of angles is different. For now I am asking to make 2 holes diameter 10-12 mm with axis ~ 20 mm from inner diameter of field cage. One hole is in endplate, other is in cathode side. These holes should be on one line of sight to provide laser beam alignment. If it is too late, I can tolerate one hole only from any TPC side. We need glue quartz windows and glue on field cage supports for mirror bundle. Bundle support will be glued to Cu strips only and not make any bridges across gaps. We used this approach at STAR and it seems works.

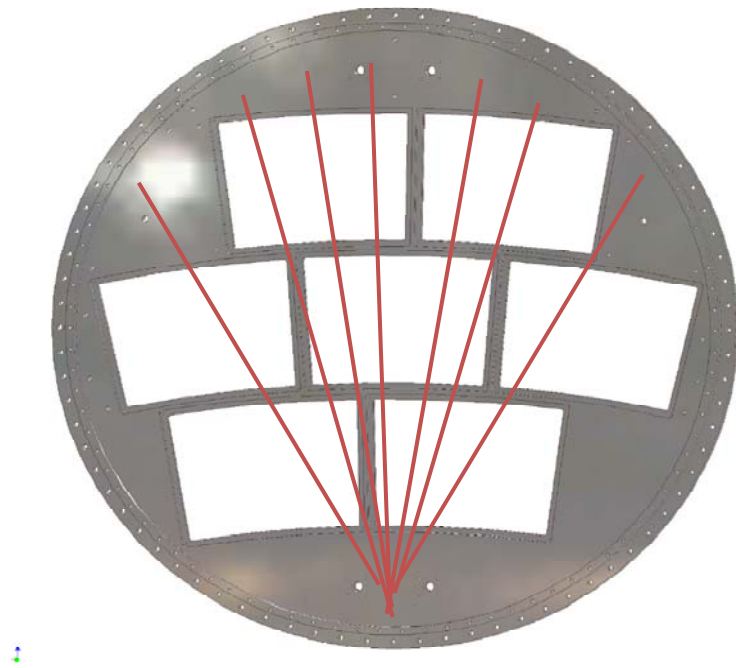


Fig. 1. Laser beam pattern from ALICE bundle.

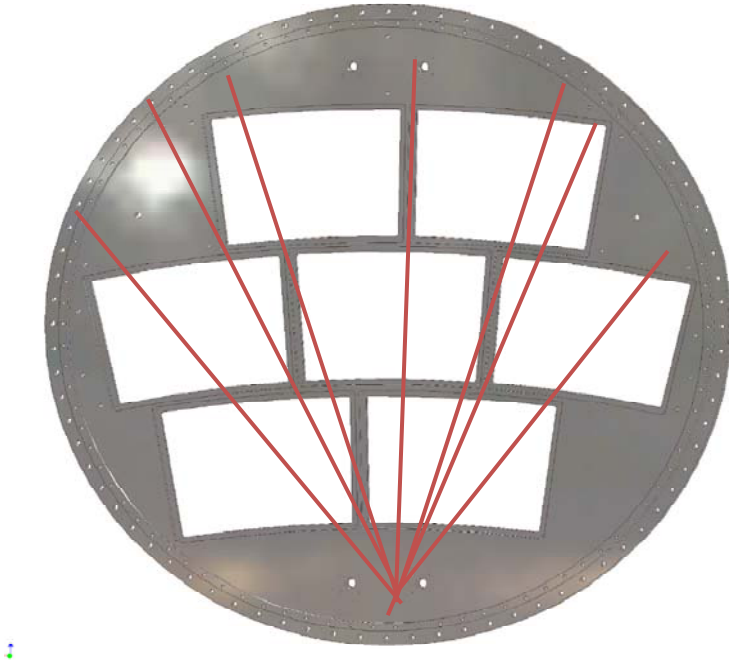


Fig. 2. Laser beam pattern from STAR TPC bundle.

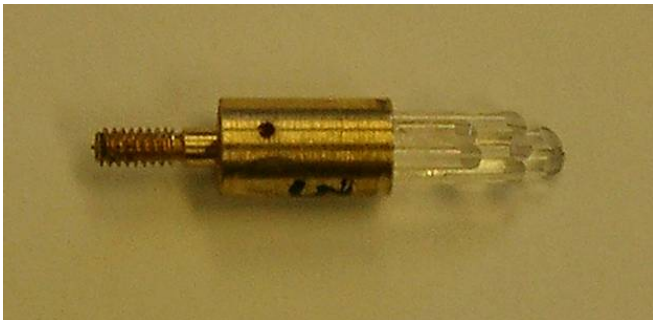


Fig.3. Foto of STAR bundle.

