Multileaf collimators (MLC) have a theoretical advantage in conformal and intensity modulated radiation therapy (IMRT). The leaf step of usually 1cm distracts the enthusiasm of full acceptance of MLC. The leaves can be optimized for a blocked field by in, mid and out configurations. The results of MLC optimization and its effect on the choice of beam energy is investigated for a four field prostate treatment using AcQPlan Treatment Planning System. The planning target volume (PTV) with a 1cm margin is optimized with MLC leaves. Three Dimensional (3D) dose calculations were performed for each case and the dose volume histogram (DVH) was evaluated. Dose calculations were done using a grid size of 1.25mm for increased accuracy of modelling the penumbra regions. Results show that using a 10MV beam with mid optimization for the MLC leaves provide results closest to a plan with cerrobend blocks. The DVH for 6MV and 18MV were slightly inferior to the 10MV. Analysis of the 18MV DVH shows that this plan is equivalent to an increase in the PTV margin by 2mm. Using an out optimization for the leaves results in slight improvement in target dosimetric coverage at the expense of increasing dose to normal structures such as the bladder and rectum. It is concluded that MLC with proper optimization (mid) could provide identical dose coverage to the target and other normal structures as that of a cerrobend block.