

MAIN RING APERTURE REQUIREMENTS

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Main Ring Lattice used F3' (but without Collins insertions since these have little effect on the conclusions reached).

Tolerances. Using FOCPAR code a set of magnification factors has been obtained that permits the calculation of a set of self-consistent tolerances for the rms value of random errors.

These are

| | <u>Horizontal</u> | <u>Vertical</u> |
|---------------------------|----------------------|-----------------|
| Displacements | 1 mm | 1 mm |
| Tilt of MP | | 1.65 mrad |
| Field Errors $\delta B/B$ | 1.7×10^{-3} | |
| Stray Fields | 2.2 gauss | 3.7 gauss |

These tolerances would then give a 98% probability c.o. amplitude of $\pm 4\sqrt{\beta}$ mms where β is in meters.

For gradient errors $\frac{\delta G}{G}$ the beam radius beat factors are given by

$$B = \left[1 + 0.17 \frac{\delta G}{G} \right]$$