

CONCEPTUAL SPECIFICATION

AUXILIARY INJECTION PROTECTION COLLIMATOR [LHC-TCLIA]

Equipment/system description

The TCLIA is a two-sided auxiliary injection protection collimator located between the separation dipoles in IR2 (right side) and IR8 (left side). Together with another auxiliary collimator (TCLIB) it complements the primary injection protection absorber TDIS in case of injection kicker (MKI) failures. The present TCLIA accommodates low-Z absorber blocks (C) with a total active length of 1m. It is to be evaluated if the present TCLIA design, in particular the absorber material, can be retained for the HL-LHC era or if a new design is required due to the increased beam brightness. In addition, it is to be determined if the present TCLIA design is compatible with aperture requirements imposed by ALICE ZDC operation during heavy ion physics runs.

| Layout Versions | LHC sectors concerned | CDD Drawings root names (drawing storage): |
|-----------------|-----------------------|--|
| V 1.0 | LSS2/LSS8 | LHC-TCLIA To be created by S. Chemli |

TRACEABILITY

Project Engineer in charge of the equipment

A. Lechner, O. Aberle

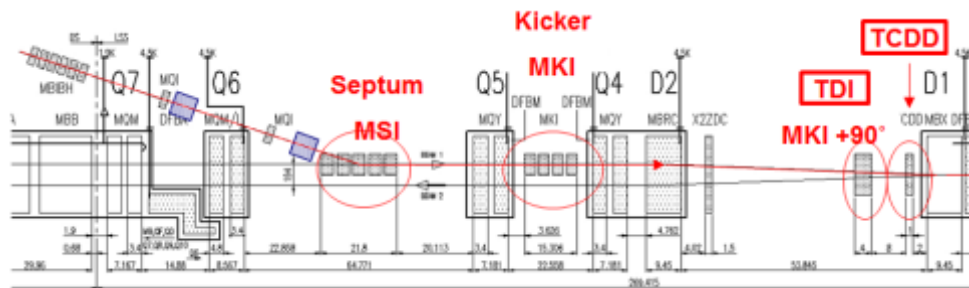
WP Leader in charge of the equipment

J. Uythoven

Main Points

- TCLIA is an auxiliary injection protection collimator at the other side of the IP than the TDI(S)
- Completes protection by TDIS for different phase errors
- Protects downstream D2 against damage
- Presently 1 m C blocks. Compatibility with bright LIU beams to be checked, as for the TDIS, taking into account realistic failure scenarios
- Possibly change of absorber material and/or length
 - Survival of absorber and protection
- For IP2 check compatibility opening for ALICE ZDC operation = maximum opening might need to be increased

Layout



IP

