

**REPORT FROM WORKING GROUP ON
DIAGNOSTICS AND EQUIPMENT**

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Conclusions WG beam diagnostics & equipment

BPM's

- ring needs 32-36 BPM's
- 0.1 mm resolution seems to be o.k.
- dynamic range should be sufficient to work with 10% of design current
- EPA type UMA sensitivity and resolution would be ok but impedance is too high for energy loss ($\approx 20 \text{ m}\Omega$ per UMA)
- DAFNE Φ BPM's seem to be ok for energy loss impedance ($\approx 0.8 \text{ m}\Omega$ per BPM) but sensitivity is insufficient for low current turn by turn observation.
- ideal BPM remains to be developed
- Frascati will take care of combiner ring and delay loop BPM's. Transfer line BPM's to be decided.
- CTF3 will need ≈ 100 -150 BPM's. Requires economic data acquisition/ digitizer design. Requirements have to be defined more precisely. Digitizing part should be consistent for all CTF3, probably to be done by CERN.

CTF3 Beam height

If nobody objects we will use the present EPA beam height.

Extraction kicker

Ripple on flat top should cause less than 10% increase of the train emittance.

Building

Modification of inner walls for delay loop seems to be not to difficult. Design should not consider these walls as a constraint.

PETS at end of linac

- Should be put at end of linac with provisional radiation wall at end of linac. This allows construction of ring and operation for 30 GHz testing in parallel.
- If still needed after completion of CR can be moved in the ring. This allows switching CR operation/30 GHz power tests without dismounting PETS.