

**ENTRY NO:** CU-20  
**Machine Name:** Oslo Cyclotron  
**Date:** 6/7/01 6:04:29 AM  
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#### HISTORY

**Designed By:** Scanditronix AB, Sweden  
**Construction Dates:** 1979  
**First Beam Date:** 1979

#### CHARACTERISTIC BEAMS

ions	/ energy(MeV/N)/current(pps)/power(w)
p	8 - 35 < 20 microA
d	2 - 8 10 microA
3He	4 - 15 3 microA
4He	2 - 8 3 microA

#### transmission efficiency(source to extract beam)

typical: 70% - best: 80%

#### tranverse emittance

##### emittance definition:

vertical:  $\pi$  mm mrad

horizontal:  $\pi$  mm mrad

longitudinal:  $(\Delta) E/E$ %xdeg RF

#### USES

basic research: 70%      therapy: %  
development: %      isotope production: 30%  
other: %      maintenance: %  
beam tuning: %      Total Time: h/year

#### TECHNICAL DATA

##### a)magnet: type:

Kb: MeV/A    Kf: MeV/A

average field (min/max): T

##### number of magnet sectors:

hill angular width: hill angular width

spiral (max): deg

##### pole parameters

diameter: m

injection radius: m

extraction radius: m

hill gap: m    valley gap: m

##### trim coils

-number: x2

-current(max): A-turns

##### harmonic coils

-number: xNsectorsx2

-current(max): A-turns

##### main coils

number: x2

total ampere-turns: A-turns

current: A

stored energy: MJ

weight - iron: t    coils: t

##### power

main coils (total): kW

trim coils (total max): kW

refrigerator (cryogenic): kW

##### b)RF

##### acceleration

frequency range: MHz

##### harmonic modes:

number of dees:

number of cavities:

dee angular width: degrees

##### voltage

at injection: kV(peak to ground, max)

at extraction: kV(peak to ground, max)

peak: kV(peak to ground, max)

line power(max): kW

##### stability

phase: deg

voltage: %

##### injection

c)ion source:

external injection:

components:

source bias voltage: kV

injection energy: MeV/N

buncher:

injection efficiency: %

d)injector:

e)extraction

##### efficiency

typical: %

best: %

f)vacuum

##### pumps:

achieved vacuum: Pa

#### REFERENCES

Annual Reports, Nuclear Physics Group, Univ. of Oslo

#### EXPERIMENTAL FACILITIES

CACTUS particle-gamma multidetector system

#### COMMENTS