

ENTRY NO: CU-21
Machine Name: MC 17, Cyclotron
Date: 6/1/01 6:39:22 AM
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HISTORY

Designed By: Scanditronix Uppsala Sweden
Construction Dates: 1989
First Beam Date: 1991

CHARACTERISTIC BEAMS

ions	/ energy(MeV/N)/current(pps)/power(w)
F-	17 MeV n1 25A
C11	17 MeV n1 45A
O15	8.5 MeV n2 40A
Br76	17 MeV n1 10A

transmission efficiency(source to extract beam)

typical: 80% - best: 87%

tranverse emittance

emittance definition:

vertical: π mm mrad

horizontal: π mm mrad

longitudinal: $(\Delta) E/E) \% \times \text{deg RF}$

USES

basic research: %	therapy: %
development: %	isotope production: 97%
other: %	maintenance: 3%
beam tuning: %	Total Time: 2000h/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): 50 kW

trim coils (total max): 3 kW

refrigerator (cryogenic): kW

b)RF

acceleration

frequency range: 26MHz

harmonic modes:

number of dees: 2

number of cavities: 1

dee angular width: degrees

voltage

at injection: kV(peak to ground, max)

at extraction: 35kV(peak to ground, max)

peak: kV(peak to ground, max)

line power(max): kW

stability

phase: +5 deg

voltage: %

injection

c)ion source: PIG discharge type

external injection:

components: tantalum cathodes

source bias voltage: 1kV

injection energy: MeV/N

buncher:

injection efficiency: %

d)injector:

e)extraction

efficiency

typical: %

best: %

f)vacuum

pumps: Baltzer

achieved vacuum: -6Pa

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS