ENTRY NO: CU-11
Machine Name: Juelich Compact Cyclotron CV28
Date: 5/31/01 4:58:35 AM
Institution: Forschungszentrum Juelich, IFF
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HISTORY
Designed By: The Cyclotron Corporation, Bercely, Ca
Construction Dates: 1973 - 1975
First Beam Date: Oct. 1975
CHARACTERISTIC BEAMS

ions	/ **energy**(MeV/N)/**curre**nt(pps)/**powe**r(w)	
p	2 - 24	ext. 70
d	3 - 14	ext. 100
3He++	5 - 36	ext. 70
4He++	6 - 28	ext. 50

transmision efficiency(source to extract beam)
typical: % - **best:** %
tranverse emmitance
emmitance definition:
vertical: π mm mrad
horizontal: π mm mrad
longitudinal: (Δ) E/E)%xdeg RF

USES
basic research: 50% **therapy:** %
development: % **isotope production:** 50%
other: % **maintenance:** %
beam tuning: % **Total Time:** h/year

TECHNICAL DATA
a)magnet: **type:** compact
Kb: MeV/A **Kf:** MeV/A
average field (min/max): 1,85 T
number of magnet sectors:
hill angular width: hill angular width
spiral (max): deg
pole parameters
diameter: 0,96 m
injection radius: m
extraction radius: 0,42 m
hill gap: 0,05m **valley gap:** 0,10m
trim coils
-number: 4x2
-current(max): A-turns
harmonic coils
-number: 3xNsectorsx2
-current(max): A-turns
main coils
number: 6x2
total ampere-turns: A-turns
current: 428 A
stored energy: MJ
weight - iron: 23t coils: t
power
main coils (total): 60 kW
trim coils (total max): 50 kW
refrigerator (cryogenic): kW
b)RF
acceleration
frequency range: 6 - 26MHz
harmonic modes: fundamental
number of dees: 2
number of cavities:
dee angular width: 90degrees
voltage
at injection: kV(peak to ground, max)
at extraction: kV(peak to ground, max)
peak: 23kV(peak to ground, max)
line power(max): 75kW
stability
phase: deg
voltage: %
injection
c)ion source: "Cold Cathode" Penning
external injection:
components:
source bias voltage: kV
injection energy: MeV/N
buncher:
injection efficiency: %
d)injector:
e)extraction
dc electrostatic and magnetic channel
efficiency
typical: 55%
best: 80%
f)vacuum
pumps: Diffusion Pumps 2*2000 l/s
achieved vacuum: 0,1 mPaPa
REFERENCES
J. Hemmerich, R. Hlzle, W.Kogler, Kerntechnik 2 (1977), 67
EXPERIMENTAL FACILITIES

COMMENTS