ENTRY NO:C44
Date: 5 Feb 2005 17:04:34
Machine Name: TR30/15 Cyclotron
Institution: Institute of Nuclear Research (INER)
Atomic Energy Council
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Person in Charge of Cyclotron: Ting-Shien Duh
Person Reporting Information: Ting-Shien Duh
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History
Designed by: TRIUMF
Construction Dates: 1993
First Beam Date: July, 1993
Characteristic Beams

H-:	15 - 30 MeV,	500 uA
D-:	8 -15 MeV,	150 uA

Transmission Efficiency (source to extracted beam)
Typical (%): 15-20
Best (%): 30
Emittance
Emittance Definition:
Vertical (pi mm mrad):
Horizontal (pi mm mrad):
Longitudinal (dE/E[%] x RF[deg.]):
USES
Basic Research (%): 5
Development (%):
Therapy (%):
Isotope Production (%): 72
Other Application (%):
Maintenance (%): 18
Beam Tuning (%): 5
Total Time (h/year): 5000

TECHNICAL DATA
(a)Magnet
Type: sector
Kb (MeV):
Kf (MeV):
Average Field (min./max. T): 1.2 (1.9/0.55)
Number of Sectors: 4
Hill Angular Width (deg.):
Spiral (deg.):
Pole Diameter (m): 0.76
Injection Radius (m):
Extraction Radius (m):
Hill Gap (m): 0.04
Valley Gap (m): 0.18
Trim Coils
Number: 4
Maximum Current (A-turns):
Harmonic Coils
Number:
Maximum Current (A-turns):
Main Coils
Number: 2
Total Ampere Turns: 7.5x10^4
Maximum Current (A): 470
Stored Energy (MJ):
Total Iron Weight (tons): 45
Total Coil Weight (tons):
Power
Main Coils (total KW):
Trim Coils (total, maximum, KW):
Refrigerator (cryogenic, KW):

(b)RF
Acceleration
Frequency Range (MHz): 73.129
Harmonic Modes: 4
Number of Dees: 2
Number of Cavities: 1
Dee Angular Width (deg.): 45
Voltage
At Injection (peak to ground, KV): 50
At Extraction (peak to ground, KV): 50
Peak (peak to ground, KV): 50
Line Power (max, KW):
Phase Stability (deg.):
Voltage Stability (%):

(c)Injection
Ion Source: H- DC CUSP
Source Bias Voltage (kV): 25
External Injection:
Buncher Type:
Injection Energy (MeV/n): 0.025
Component: EBSQQ
Injection Efficiency (%): 20
Injector:

(d)Extraction
Elements, Characteristic: foil (Graphite)
Typical Efficiency (%): 95
Best Efficiency (%):

(e)Vacuum
Pumps: Cryo
Achieved Vacuum (Pa): 2x10^-7 torr

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS