

ENTRY NO: C10
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Machine Name: C02
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History

Designed by: in house
Construction Dates: 1976-1980
First Beam Date: 1980
Characteristic Beams
 C12 1 (MeV/n) 5E13 (pps) 100 (w)
 U238 0.3 (MeV/n) 1E+11 (pps) <1 (w)
Transmission Efficiency (source to extracted beam)
Typical (%): 20
Best (%): 30

Emittance
Emittance Definition: 90
Vertical (pi mm mrad): 20
Horizontal (pi mm mrad): 40
Longitudinal (dE/E [%] x RF [deg.]): 0.5*6

USES

Basic Research (%):
Development (%):
Therapy (%): 0
Isotope Production (%): 0
Other Application (%): 0
Maintenance (%):
Beam Tuning (%):
Total Time (h/year):

TECHNICAL DATA

(a)Magnet
Type: compact
Kb (MeV): 28
Kf (MeV): 28
Average Field (min./max. T): 1.565/1.0
Number of Sectors: 1
Hill Angular Width (deg.):
Spiral (deg.):
Pole Diameter (m):
Injection Radius (m): 0.036
Extraction Radius (m): 0.488
Hill Gap (m): 0.021
Valley Gap (m):
Trim Coils
Number: 6x2
Maximum Current (A-turns):
Harmonic Coils
Number: xNsectorsx2
Maximum Current (A-turns):
Main Coils
Number: 1x2
Total Ampere Turns:
Maximum Current (A):
Stored Energy (MJ):
Total Iron Weight (tons):
Total Coil Weight (tons):
Power
Main Coils (total KW): 500
Trim Coils (total, maximum, KW):
Refrigerator (cryogenic, KW):

(b)RF

Acceleration
Frequency Range (MHz): 7 to 14
Harmonic Modes: 3

Number of Dees: 1
Number of Cavities:
Dee Angular Width (deg.):180
Voltage
At Injection (peak to ground, KV): 50 to 90
At Extraction (peak to ground, KV):
Peak (peak to ground, KV):
Line Power (max, KW):
Phase Stability (deg.): 0.1
Voltage Stability (%): 0.01

(c)Injection

Ion Source: ECR4M
Source Bias Voltage (kV): 25
External Injection: axial
Buncher Type: two-harmonic
Injection Energy (MeV/n): <0.0054
Component: 1 Muller inflector
Injection Efficiency (%): 25
Injector:

(d)Extraction

Elements, Characteristic:
 1 electrostatic deflector, 1 electrostatic quadrupole
Typical Efficiency (%): 90
Best Efficiency (%): 100

(e)Vacuum

Pumps: cryopumps
Achieved Vacuum (Pa): 5 10⁻⁶

REFERENCES

EXPERIMENTAL FACILITIES

injector of ssc1 IRRSUD

COMMENTS

