

ENTRY NO: C09
Date: 07 Feb 2005 11:59:30
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History

Designed by: in house
Construction Dates: 1976-1980
First Beam Date: 1980

Characteristic Beams

ions	energy(MeV/N)	current(pps)	power(w)
C12	1 (MeV/n)	1.E14 (pps)	1 (w)
Ar36	1 (MeV/n)	1.E14 (pps)	1 (w)
U238	0.3 (MeV/n)	1.E11 (pps)	<1 (w)

Transmission Efficiency (source to extracted beam)

Typical (%): 50
Best (%): 65

Emittance

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

USES

Basic Research (%): 65
Development (%): 10
Therapy (%): 0
Isotope Production (%): 0
Other Application (%): 0
Maintenance (%): 10
Beam Tuning (%): 15
Total Time (h/year): 3000

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): 0.076
Extraction Radius (m): 0.488
Hill Gap (m): 0.021
Valley Gap (m):

Trim Coils

Number: 6x2
Maximum Current (A-turns):

Harmonic Coils

Number:
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: 1

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): 30

Phase Stability (deg.): 0.1

Voltage Stability (%): 0.01

(c)Injection

Ion Source: ECR4

Source Bias Voltage (kV): 100

External Injection: axial

Buncher Type: two-harmonic buncher

Injection Energy (MeV/n): <0.024

Component: spiral inflector

Injection Efficiency (%): 65

Injector:

(d)Extraction

Elements, Characteristic:

1 electrostatic deflector, 1 electrostatic quadrupole

Typical Efficiency (%): 90

Best Efficiency (%): 100

(e)Vacuum

Pumps: 3 cryopumps

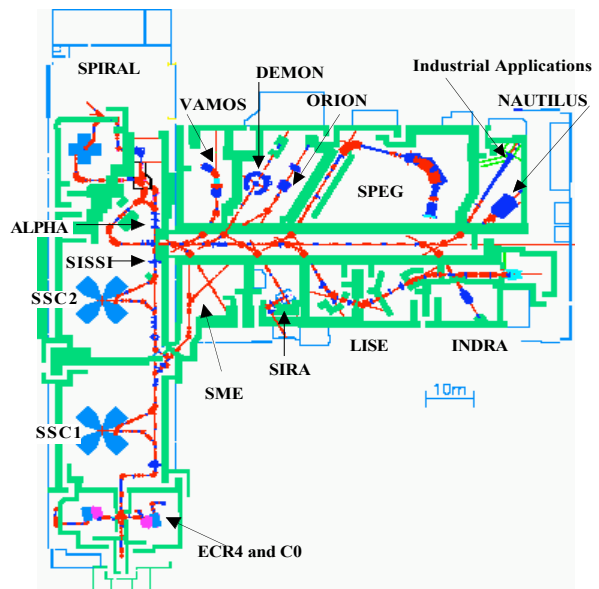
Achieved Vacuum (Pa): 5 10⁻⁶

REFERENCES

EXPERIMENTAL FACILITIES

Injector of SSC1 IRRSUD

COMMENTS



(b)RF

Acceleration