

ENTRY NO: CM03
Date: 03 Feb 2005 10:27:13
Machine Name: C235
Institution: Ion Beam Applications
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History

Designed by: IBA and SHI
Construction Dates:
First Beam Date:
Characteristic Beams
p 232 (MeV) 2.e12 (pps)
Transmission Efficiency (source to extracted beam)
Typical (%):
Best (%):
Emittance
Emittance Definition: RMS
Vertical (pi mm mrad): 2.
Horizontal (pi mm mrad): 5.
Longitudinal (dE/E[%] x RF[deg.]): 30

USES

Basic Research (%):
Development (%):
Therapy (%): 100
Isotope Production (%):
Other Application (%):
Maintenance (%):
Beam Tuning (%):
Total Time (h/year):

TECHNICAL DATA

(a)Magnet

Type: compact
Kb (MeV): 235
Kf (MeV): 232
Average Field (min./max. T): 2.15/1.7
Number of Sectors: 4
Hill Angular Width (deg.): 54
Spiral (deg.): 60
Pole Diameter (m): 2.24
Injection Radius (m): 0
Extraction Radius (m): 1.08
Hill Gap (m): 0.096/0.009
Valley Gap (m): 0.6

Trim Coils

Number: 0x2
Maximum Current (A-turns):

Harmonic Coils

Number: 1xNsectorsx2
Maximum Current (A-turns): 500

Main Coils

Number: 1x2
Total Ampere Turns: 523720
Maximum Current (A): 800
Stored Energy (MJ):
Total Iron Weight (tons): 210
Total Coil Weight (tons): 20

Power

Main Coils (total KW): 185
Trim Coils (total, maximum, KW):
Refrigerator (cryogenic, KW):

(b)RF

Acceleration

Frequency Range (MHz): 106
Harmonic Modes: 4
Number of Dees: 2
Number of Cavities: 2

Dee Angular Width (deg.):30

Voltage

At Injection (peak to ground, KV): 55
At Extraction (peak to ground, KV): 150
Peak (peak to ground, KV): 150
Line Power (max, KW): 100
Phase Stability (deg.):
Voltage Stability (%): 5.e-4

(c)Injection

Ion Source: PIG
Source Bias Voltage (kV):
External Injection: NA
Buncher Type:
Injection Energy (MeV/n):
Component:
Injection Efficiency (%):
Injector: NA

(d)Extraction

Elements, Characteristic: Electrostatic septum, 16 MV/m
Passive gradient corrector, Permanent magnet quadrupole
doublet
Typical Efficiency (%): 60
Best Efficiency (%):

(e)Vacuum

Pumps: Oil diffusion
Achieved Vacuum (Pa): 1.e-3

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS