ENTRY NO:CM05
Date: 8 Feb 2005 14:26:48
Machine Name: IBA C10 Cyclotron
Institution: Ion Beam Applications (IBA)
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History
Designed by: Ion Beam Applications (IBA)
Construction Dates: 2003-2004
First Beam Date: November 2004
Characteristic Beams
ion proton; energy 10 MeV; current 100 microA; power 1 kWatt
Transmission Efficiency (source to extracted beam)
Typical (%): 60 %
Best (%): 65 %
Emittance
Emittance Definition:
Vertical (pi mm mrad): -
Horizontal (pi mm mrad): -
Longitudinal (dE/E[%] x RF[deg.]): -
USES
Basic Research (%):
Development (%):
Therapy (%):
Isotope Production (%): 100 %
Other Application (%):
Maintenance (%):
Beam Tuning (%):
Total Time (h/year):

TECHNICAL DATA
(a)Magnet
Type: compact
Kb (MeV): 10 MeV/A
Kf (MeV/A): 10 MeV/A
Average Field (min./max. T): 1.35 (0.4/1.9) T
Number of Sectors: 4
Hill Angular Width (deg.): 54 deg
Spiral (deg.): 0 deg
Pole Diameter (m): 0.76 m
Injection Radius (m): 0.02 m
Extraction Radius (m): 0.35 m
Hill Gap (m): 0.03
Valley Gap (m): 0.8
Trim Coils
Number: 0
Maximum Current (A-turns): N/A
Harmonic Coils
Number: 0
Maximum Current (A-turns): N/A
Main Coils
Number: 2
Total Ampere Turns: 112000
Maximum Current (A): 200
Stored Energy (MJ): 0.015 MJ
Total Iron Weight (tons): 12 Tons
Total Coil Weight (tons): 1.25 Tons
Power
Main Coils (total KW): 17 kWatt
Trim Coils (total, maximum, KW): N/A
Refrigerator (cryogenic, KW): N/A

(b)RF
Acceleration
Frequency Range (MHz): 40 MHz
Harmonic Modes: 2
Number of Dees: 2
Number of Cavities: 2
Dee Angular Width (deg.): 30 deg
Voltage
At Injection (peak to ground, KV): 32 kV
At Extraction (peak to ground, KV): 32 kV
Peak (peak to ground, KV): 32 kV
Line Power (max, KW): 10 kW
Phase Stability (deg.): 0.1
Voltage Stability (%): 0.1

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

(d)Extraction
Elements, Characteristic: Stripping
Typical Efficiency (%): 100 %
Best Efficiency (%): 100 %

(e)Vacuum
Pumps: 1 ODP
Achieved Vacuum (Pa): 5*10-5

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS
self-shielded version available