

ENTRY NO: CU05

Date: 28 Feb 2005 06:37:27

Machine Name: Radio Isotope Delivery System (RDS) 112

Institution: Hamilton Health Sciences

Address: Department of Nuclear Medicine, 1200 Main St. West

Telephone: 905-521-2100 ex. 76893

Fax: 905-546-1125

Web Address:

Person in Charge of Cyclotron: Raman Chirakal

Person Reporting Information: Raman Chirakal

E-mail Address: chiraklr@mcmaster.ca

History

Designed by: Cyclotron Corporation

Construction Dates: 1989

First Beam Date: 1989

Characteristic Beams

ions / energy(MeV/N)/current(pps)/power(w)

Negative ion Proton 10 MeV 150 uA

Transmission Efficiency (source to extracted beam)

Typical (%): 70

Best (%): 96

Emittance

Emittance Definition:

Vertical (pi mm mrad):

Horizontal (pi mm mrad):

Longitudinal (dE/E[%] x RF[deg.]):

USES

Basic Research (%): 10

Development (%): 10

Therapy (%): 0

Isotope Production (%): 90

Other Application (%):

Maintenance (%):

Beam Tuning (%):

Total Time (h/year): 300

TECHNICAL DATA

(a)Magnet

Type:

Kb (MeV):

Kf (MeV):

Average Field (min./max. T):

Number of Sectors:

Hill Angular Width (deg.):

Spiral (deg.):

Pole Diameter (m):

Injection Radius (m):

Extraction Radius (m):

Hill Gap (m):

Valley Gap (m):

Trim Coils

Number: x2

Maximum Current (A-turns):

Harmonic Coils

Number: xNsectorsx2

Maximum Current (A-turns):

Main Coils

Number: x2

Total Ampere Turns:

Maximum Current (A):

Stored Energy (MJ):

Total Iron Weight (tons):

Total Coil Weight (tons):

Power

Main Coils (total KW):

Trim Coils (total, maximum, KW):

Refrigerator (cryogenic, KW):

(b)RF

Acceleration

Frequency Range (MHz):

Harmonic Modes:

Number of Dees:

Number of Cavities:

Dee Angular Width (deg.):

Voltage

At Injection (peak to ground, KV):

At Extraction (peak to ground, KV):

Peak (peak to ground, KV):

Line Power (max, KW):

Phase Stability (deg.):

Voltage Stability (%):

(c)Injection

Ion Source:

Source Bias Voltage (kV):

External Injection:

Buncher Type:

Injection Energy (MeV/n):

Component:

Injection Efficiency (%):

Injector:

(d)Extraction

Elements, Characteristic: efficiency

Typical Efficiency (%):

Best Efficiency (%):

(e)Vacuum

Pumps:

Achieved Vacuum (Pa):

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS