

ENTRY NO:CU07

Date: 2 Mar 2005 12:52:04

Machine Name: CV 28

Institution: Forschungszentrum Juelich, Institut fuer Festkoerperforschung

Address: D-52425 Juelich, Germany

Telephone: +49 2461 613151

Fax: +49 2461 618258

Web Address: http://www.fz-juelich.de/iff/e_ge_bb_zyclo

Person in Charge of Cyclotron: R.Hoelzle

Person Reporting Information: R.Hoelzle

E-mail Address: r.hoelzle@fz-juelich.de

History

Designed by: The Cyclotron Corporation, Berkely, Calif.

Construction Dates: 1970

First Beam Date: 1975

Characteristic Beams

p 2-24MeV, extern 70uA

d 3-14MeV, extern 100uA

3He 5-36MeV, extern 70uA

4He 6-28MeV, extern 50uA

Transmission Efficiency (source to extracted beam)

Typical (%): 60

Best (%): 80

Emittance

Emittance Definition:

Vertical (pi mm mrad): 15

Horizontal (pi mm mrad): 15

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

USES

Basic Research (%): 40

Development (%): 40

Therapy (%):

Isotope Production (%): 20

Other Application (%):

Maintenance (%):

Beam Tuning (%):

Total Time (h/year): 1800h beam on target

TECHNICAL DATA

(a)Magnet

Type: Compact

Kb (MeV):

Kf (MeV):

Average Field (min./max. T): 1,85T

Number of Sectors:

Hill Angular Width (deg.):

Spiral (deg.):

Pole Diameter (m): 0,96

Injection Radius (m):

Extraction Radius (m): 0,42

Hill Gap (m): 0,05

Valley Gap (m): 0,1

Trim Coils

Number: 4

Maximum Current (A-turns):

Harmonic Coils

Number: 2 sets of 3

Maximum Current (A-turns):

Main Coils

Number: 1

Total Ampere Turns:

Maximum Current (A): 450

Stored Energy (MJ):

Total Iron Weight (tons): 23t

Total Coil Weight (tons):

Power

Main Coils (total KW): 60

Trim Coils (total, maximum, KW): 50

Refrigerator (cryogenic, KW):

(b)RF

Acceleration

Frequency Range (MHz): 6 to 26

Harmonic Modes: fundamental

Number of Dees: 2

Number of Cavities:

Dee Angular Width (deg.): 90

Voltage

At Injection (peak to ground, KV):

At Extraction (peak to ground, KV):

Peak (peak to ground, KV): 30

Line Power (max, KW):

Phase Stability (deg.):

Voltage Stability (%):

(c)Injection

Ion Source: "cold cathode" Penning or themionic mode

Source Bias Voltage (kV):

External Injection:

Buncher Type:

Injection Energy (MeV/n):

Component:

Injection Efficiency (%):

Injector:

(d)Extraction

Elements, Characteristic: dc electrostatic deflector and magnet channel

Typical Efficiency (%): 60

Best Efficiency (%): 80

(e)Vacuum

Pumps: Diffiusion pump

Achieved Vacuum (Pa): 6*10-5

REFERENCES

J.Hemmerich,R.Hoelzle,W.Kogler,Kerntechnik19(1977)

F.Dworschak et al, EPAC 88,Rome 1988, p. 105

Z.Kormany ez al, EPAC 94, London p. 152

EXPERIMENTAL FACILITIES

Isopope Production

Nuclear Chemistry

Solid State Physics

COMMENTS

