

ENTRY NO: CU23
Date: 16 Mar 2005 11:57:40
Machine Name: Cyclone-3
Institution: University of Cambridge
Address: Wolfson Brain Imaging Centre, Addenbrooke's
Hospita
Telephone: +44 1223 33 18 20
Fax: +44 1223 33 18 26
Web Address: www.wbic.cam.ac.uk
Person in Charge of Cyclotron: Paul Burke/John Clark
Person Reporting Information: John Clark
E-mail Address: jcc24@wbic.cam.ac.uk

History

Designed by: IBA
Construction Dates:
First Beam Date:
Characteristic Beams
D+ 3 (MeV) 10 - 15 (microA)
Transmission Efficiency (source to extracted beam)

Typical (%):

Best (%):

Emittance

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

USES

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

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): 29.6

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): 10

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: electrostatic deflector -27kV

Typical Efficiency (%): 60

Best Efficiency (%):

(e)Vacuum

Pumps:

Achieved Vacuum (Pa): 6×10^{-5}

REFERENCES

EXPERIMENTAL FACILITIES

Single target 15-O

COMMENTS

Installation of IBA cyclone 3D is nearing completion

