ENTRY NO: CU01
Date: 17 Mar 2005 08:43:20
Machine Name: CYCLONE30
Institution: ANSTO Radiopharmaceuticals Division
Address: POB M34, Camperdown, NSW 2040, AUSTRALIA
Telephone: +612 9565 7600
Fax: +612 9565 7676
Web Address: http://www.ansto.gov.au
Person in Charge of Cyclotron: Dr. Nabil Morcos
Person Reporting Information: Dr. Nabil Morcos
E-mail Address: nxm@ansto.gov.au

History
Designed by: Ion Beam Applications (IBA)
Construction Dates: 9 April 1991
First Beam Date: 9 July 1991
Characteristic Beams
ions / energy(MeV/N)/current(pps)/power(w)
H- 15 – 30 10 - 450 95000
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 (%): 95
Other Application (%):
Maintenance (%): 5
Beam Tuning (%):
Total Time (h/year): 4000

TECHNICAL DATA
(a)Magnet
Type: Compact
Kb (MeV):
Kf (MeV):
Average Field (min./max. T): 1.7
Number of Sectors: 4
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): 7.2
Trim Coils (total, maximum, KW):
Refrigerator (cryogenic, KW):

(b)RF
Acceleration
Frequency Range (MHz): 65.5
Harmonic Modes: 4
Number of Dees: 2
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): 50.0
Line Power (max, KW): 15.0
Phase Stability (deg.):
Voltage Stability (%):

(c)Injection
Ion Source: Multi cusp
Source Bias Voltage (kV): 28
External Injection: External
Buncher Type:
Injection Energy (MeV/n):
Component:
Injection Efficiency (%):
Injector:

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

(e)Vacuum
Pumps: Cryogenic
Achieved Vacuum (Pa):

REFERENCES 1. B Mukherjee and D W Arnott: Proc 13th ICCA 2. B Mukherjee: Proc 14th ICCA 3. B Mukherjee: Proc 14th ICCA 4. E M Conard, D W Arnott and S Purcell: Proc 14th ICCA 5. B Mukherjee, R Ronningen and P Rossi: Proc 15th ICCA 6. B Mukherjee: Proc 15th ICCA 7. B Mukherjee: Proc 15th ICCA 8. B Mukherjee: Proc 16th ICCA 9. B Mukherjee, R M Ronningen, P Rossi and P Grivins: Proc 16th ICCA

EXPERIMENTAL FACILITIES
1. Fast and Thermal Neutron irradiation facility using the parasitic neutrons 2. Neutron dosimetry 3. Neutron spectrometry 4. Radiation monitoring and insrumentation

COMMENTS