ENTRY NO:CU03

Date: 15 Feb 2005 11:27:09

Machine Name: CYCLONE-30 - Comercial Machine from Ion Beam Applications (IBA) - Belgium - Project parameters

can be obtained from IBA.

Institution: Energetic and Nuclear Research Institute

Address: Av. Prof. Lineu Prestes, **Telephone:** +55 11 3816 9274 Fax: +55 11 3816 9263 Web Address: http://www.ipen.br

Person in Charge of Cyclotron: Wanderley de Lima Person Reporting Information: Valdir Sciani E-mail Address: vsciani@ipen br, wdelima@ipen.br

History

Designed by: Ion Beam Applications - Belgium

Construction Dates: 1997 - 1998

First Beam Date: 1998 Characteristic Beams Proton - Energy 15 - 30 MeV

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 (%): 90 Other Application (%):

Maintenance (%): 5 Beam Tuning (%): 5 Total Time (h/year): 1500

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:

Maximum Current (A-turns):

Harmonic Coils

Number:

Maximum Current (A-turns):

Main Coils

Number:

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: Typical Efficiency (%):

Best Efficiency (%):

(e)Vacuum

Pumps: Cyclotron: 2 x cryopumps / Beam lines: diffusion

pumps / ion source: diffusion pump

Achieved Vacuum (Pa):

REFERENCES

EXPERIMENTAL FACILITIES

2 external beam lines / 3 target stations

COMMENTS

