

ENTRY NO:CU16

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Machine Name: CYCLONE30

Institution: Korea Institute of Radiological & Medical Sciences (KIRAMS)

Address: 215-4, Gongneung-Dong, Nowon-Gu, Seoul, Korea

Telephone: +82-2-970-1331

Fax: +82-2-970-1332

Web Address: <http://lad.re.kr> or <http://cal.re.kr>

Person in Charge of Cyclotron: Jong Seo Chai

Person Reporting Information: Dong Hyun An

E-mail Address: jschai@kcch.re.kr, ectroan@kcch.re.kr

History

Designed by: IBA

Construction Dates: 2002.3.

First Beam Date: 2002.4.

Characteristic Beams

H-/30MeV/350uA

Transmission Efficiency (source to extracted beam)

Typical (%): 10

Best (%):

Emittance

Emittance Definition:

Vertical (pi mm mrad): 5

Horizontal (pi mm mrad): 10

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

USES

Basic Research (%): 0

Development (%): 0

Therapy (%): 0

Isotope Production (%): 95

Other Application (%): 0

Maintenance (%): 5

Beam Tuning (%): 0

Total Time (h/year): 2000

TECHNICAL DATA

(a)Magnet

Type: compact

Kb (MeV): 30

Kf (MeV): 30

Average Field (min./max. T): 1.06-1.12

Number of Sectors: 4

Hill Angular Width (deg.): 54-58

Spiral (deg.):

Pole Diameter (m): 1.6

Injection Radius (m): 0.03

Extraction Radius (m): 0.5-0.75

Hill Gap (m): 0.03

Valley Gap (m): 1

Trim Coils

Number:

Maximum Current (A-turns):

Harmonic Coils

Number:

Maximum Current (A-turns):

Main Coils

Number: 1x2

Total Ampere Turns: 36300/coil

Maximum Current (A): 110

Stored Energy (MJ): 0.03

Total Iron Weight (tons): 45

Total Coil Weight (tons): 4.2

Power

Main Coils (total KW): 7.5

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: 4

Dee Angular Width (deg.): 30

Voltage

At Injection (peak to ground, KV): 50

At Extraction (peak to ground, KV):

Peak (peak to ground, KV):

Line Power (max, KW): 30

Phase Stability (deg.):

Voltage Stability (%): 0.1

(c)Injection

Ion Source: multicusp

Source Bias Voltage (kV): 30

External Injection: axial

Buncher Type: double gap, sine-wave

Injection Energy (MeV/n):

Component: steering magnet, einzel lens, FC, buncher, glaser lens, spiral inflector

Injection Efficiency (%): 35

Injector:

(d)Extraction

Elements, Characteristic: Carbon stripper foil

Typical Efficiency (%): 99

Best Efficiency (%): 100

(e)Vacuum

Pumps: 2 cryopumps

Achieved Vacuum (Pa): 2.5e-5

REFERENCES

EXPERIMENTAL FACILITIES

COMMENTS