

ENTRY No. 107

NAME OF MACHINE Medi-Physics 750 P.V. Cycl. DATE
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IN CHARGE R. Hubbard REPORTED BY E. A. Kowalski

HISTORY AND STATUS (CGR-MeV/Sumitomo)

DESIGN, date Model tests
ENG DESIGN, date
CONSTRUCTION, date
FIRST BEAM, date (or goal) Feb. 18, 1986
MAJOR ALTERATIONS

COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ENGINEERS 4
TECHNICIANS 11 CRAFTS 2
GRAD STUDENTS involved during year
OPERATED BY Planned Research staff or XX Operators
OPERATION 120 hr/wk, On target 100 hr/wk
TIME DISTR. in house 100% , Outside %
BUDGET, op & dev
FUNDED BY

RESEARCH STAFF, not included above
USERS, in house outside
GRAD STUDENTS involved during year
RESEARCH BUDGET, in house
FUNDED BY

MAGNET

POLE FACE, diameter (compact) 180 cm, R extraction 75 cm
R injection cm
GAP, min 13.3 cm, Field 21 kG
max 31.5 cm, Field kG at
AVERAGE FIELD at R ext 16.4 kG Ampere turns
B max/

NUMBER OF SECTORS {compact 4} Spiral, max deg
{separated} deg
SECTOR ANGLE (SSC) deg
TRIMMING COILS 10 sets, max 300A

CONDUCTOR, material and type DHFC Square Tube
STORED ENERGY (cryogenic) MJ
POWER: main coils 103 max, kW; current stability 4x10^-5
trimming coils 10 max, kW; current stability 5x10^-4

WEIGHT: Fe 120 tons; coils 5.6 tons
COOLING system 92 L/min, for Main Coil.
ION ENERGY (bending limit) E/A = q^2/a^2 MeV/amu
(focusing limit) E/A = q^2/a^2 MeV/amu

ACCELERATION SYSTEM

DEES, number 2; angle 83 deg
BEAM APERTURE 2.4 cm; DC Bias 0 kV
TUNED by, coarse shorting stub fine capacity
RF 13 to 25 MHz, stable +/- 10^-7
Orb F to MHz
HARMONICS, RF/Orb F, used 1
DEE - Gnd, max 50 kV, min gap cm
STABILITY, (pk-pk noise)/(pk RF volt) +/- 10^-3
ENERGY GAIN, max 123 KEV/turn kV/turn
RF PHASE, stable to +/- deg
RF POWER input, max 2x50 K.W. class B amp. kW
FREQUENCY MODULATION, rate /s
modulator, type
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 1x10^-5 Torr or mbar
PUMPS, No, Type, Size 2x1,000 L/S
Diffstak

ION SOURCES

Livingston-Jones (Hot Filament)

INJECTION SYSTEM

Axial Probe ion source

EXTRACTION SYSTEM

Electro Static/Electromagnetic

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed m^2; movable m^2
TARGET STATIONS in rooms
STATIONS served at same time, max
MAG SPECTROGRAPH, type
COMPUTER model
OTHER FACILITIES

CHARACTERISTIC BEAMS

Table with columns: PARTICLE, ENERGY (MeV) Goal, Achieved, CURRENT (pA) Internal, External. Rows for Proton with values like 70, 230, 65, 30, 250, 100.

SECONDARY

(part/s)

BEAM PROPERTIES

MEASURED CONDITIONS
PULSE WIDTH RF deg pA of MeV ions
PHASE EXC, max RF deg pA of MeV ions
EXTRACT eff 80% 65 pA of 70 MeV P. ions
RESOL ΔE/E % pA of MeV ions
EMITTANCE
(π mm. mrad) {30 axial}
{50 rad} pA of MeV ions

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS .. SOLID STATES PHYSICS ...
BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS only

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS

Computer controlled with fiber optic control link and data link