

ENTRY No. 26

NAME OF MACHINE M E D I C Y C DATE May 1989
INSTITUTION CYCLOTRON LABORATORY, CENTRE ANTOINE LACASSAGNE
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HISTORY AND STATUS

DESIGN, date 1983-1984 Model tests
ENG DESIGN, date 1984
CONSTRUCTION, date 1984-1987
FIRST BEAM, date (or goal) Internal Beam 1988
MAJOR ALTERATIONS

COST, ACCELERATOR
COST, FACILITY, total
FUNDED BY CENTRE ANTOINE LACASSAGNE, NICE (FRANCE)

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT
SCIENTISTS 1 ENGINEERS 2
TECHNICIANS 12 CRAFTS 4

GRAD STUDENTS involved during year 2
OPERATED BY Research staff or Operators
OPERATION hr/wk, On target hr/wk
TIME DISTR. in house %, 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) 160cm, R extraction 68 cm
R injection 2.5 cm
GAP, min 13 cm, Field 17.0 kG
max 27 cm, Field 21.5 kG at 5 x 10^5
AVERAGE FIELD at R ext Ampere turns
B max/ < B >

NUMBER OF SECTORS compact 4 separated 4 Spiral, max deg
SECTOR ANGLE (SSC) deg
TRIMMING COILS 10 circular

CONDUCTOR, material and type copper
STORED ENERGY (cryogenic) MJ
POWER: main coils max, kW; current stability
trimming coils max, kW; current stability
WEIGHT: Fe tons; coils tons
COOLING system
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 75 deg
BEAM APERTURE 2 cm; DC Bias kV
TUNED by coarse fine
RF 25 to MHz, stable +/-
Orb F MHz
HARMONICS, RF/Orb F, used 1, 2, 3
DEE - Gnd, max 55 kV, min gap 0.8 cm
STABILITY, (pk-pk noise)/(pk RF volt)
ENERGY GAIN, max kV/turn
RF PHASE, stable to +/- deg
RF POWER input, max kW
FREQUENCY MODULATION, rate /s
modulator, type
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 10^-6 Torr or mbar
PUMPS, No, Type, Size Turba + Cryogenics

ION SOURCES

multicusp H-

INJECTION SYSTEM

Axial

EXTRACTION SYSTEM

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. Row: Protons, 65 MeV, 64.8 MeV, 20.

SECONDARY

Neutrons for neutrontherapy (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 % pA of MeV ions
RESOL ΔE/E % pA of MeV ions
EMITTANCE

(π mm. mrad) axial rad pA of MeV ions

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
BIOMEDICAL APPLICAT. 40 ISOTOPE PRODUCTIONS
Radiobiology 5

REFERENCES/NOTES

Proceedings of the XIIth International Conference on Cyclotrons and their applications - BERLIN, 1989

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS

