

ENTRY No. 62

NAME OF MACHINE AMERSHAM CP-42 DATE 1981 AUGUST 15
INSTITUTION AMERSHAM INTERNATIONAL
ADDRESS WHITE LION ROAD, AMERSHAM, BUCKS, ENGLAND
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IN CHARGE M.F. FINLAN REPORTED BY M.F. FINLAN

HISTORY AND STATUS

DESIGN, date 1977 Model tests
ENG DESIGN, date
CONSTRUCTION, date 1979-1981
FIRST BEAM, date (or goal) SEPTEMBER 1981
MAJOR ALTERATIONS

COST, ACCELERATOR \$2000000
COST, FACILITY, total
FUNDED BY IN-HOUSE

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS 4 ENGINEERS
TECHNICIANS 2 CRAFTS
GRAD STUDENTS involved during year
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) 120 cm, R extraction 53 cm
R injection cm
GAP, min cm, Field kG }
max cm, Field kG } at
AVERAGE FIELD at R ext kG } Ampere turns
B max/

NUMBER OF SECTORS { compact 3 } Spiral, max deg
SECTOR ANGLE (SSC) { separated } deg

TRIMMING COILS 6 HARMONIC

CONDUCTOR, material and type COPPER
STORED ENERGY (cryogenic) MJ
POWER : main coils max, kW ; current stability
trimming coils max, kW ; current stability

WEIGHT : Fe 50 tons ; coils tons
COOLING system WATER

ION ENERGY (bending limit) E/A = q²/a² MeV/amu
(focusing limit) E/A = q/a MeV/amu

ACCELERATION SYSTEM

DEES, number 2 ; angle 90 deg
BEAM APERTURE 2.5 cm ; DC Bias kV
TUNED by, coarse PLANE fine PLANE
RF to 26.2 MHz, stable ±
Orb F to MHz
HARMONICS, RF/Orb F, used
DEE - Gnd, max kV, min gap cm
STABILITY, (pk-pk noise)/(pk RF volt)
ENERGY GAIN, max 100 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 Torr or mbar
PUMPS, No, Type, Size 4D.Po + CRYO-BAFFLES

ION SOURCES

PENNING H MINUS

INJECTION SYSTEM

EXTRACTION SYSTEM

FOIL

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed m² ; movable m²
TARGET STATIONS in rooms
STATIONS served at same time, max
MAG SPECTROGRAPH, type
COMPUTER model DEC LSI 11-03
OTHER FACILITIES

CHARACTERISTIC BEAMS

PARTICLE	ENERGY (MeV)		CURRENT (µA)	
	Goal	Achieved	Internal	External
H ⁻	42		> 200µA	
H ⁺	42			> 200µA

SECONDARY (part/s)

BEAM PROPERTIES

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

OPERATING PROGRAMS, time distribution
BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS 100%

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS