

ENTRY NO. C48 Date February 14, 1996
 Name of Machine CI-100
 Institution Joint Institute for Nuclear Research, Laboratory of Nuclear Reactions
 Address JINR, Head Post Office, P O Box 79, Moscow, USSR
 Tel Telex MSK Dubna 412621 Fax E-MAIL
 In Charge: R. Ts. Oganessian Reported by: R. Ts. Oganessian

HISTORY

MILESTONE DATES:

Design 1974 Model Tests 1984
 Construction 1984-1985 First Beam May, 1985

DESIGN/CONSTRUCTION BY:

in house other

COST: Accelerator Facility

FUNDED BY:

STATUS

STAFF: Machine

Scientists Engineers

Technicians Students

Research (in house/external)

Scientists / Engineers /

Technicians / Students /

BUDGET: Machine Funded by

Research Funded by

TIME DISTRIBUTION:

Basic Research (in house/external) % / %

Applied Program (in house/external) % / %

Maintenance % Development %

MAGNET

POLE PARAMETERS:

Diameter 105 cm R_{extract} 46 cm R_{inject} cm

HILL PARAMETERS: Gap (min) cm B_{max} T

(@ 0.17 10^6 AT) Gap (max) 2 cm B_{min} 2.5 T

VALLEY PARAMETERS: Gap (min) cm B_{max} T

(@ AT) Gap (max) 1.1 cm B_{min} 1.1 T

AVERAGE FIELD: $\langle B \rangle_{\text{min}}$ T $\langle B \rangle_{\text{max}}$ T

NUMBER OF SECTORS: compact/separated 4 / -

sector angle 66 deg. spiral (max) 0 deg.

FIELD TRIMMING: Trim Coils

Harmonic Coils

Other

CURRENT: Main Coils 110kW Amps Stability 10^{-4}

Trim Coils Amps Stability

Stored Energy (cryogenic) MJ

WEIGHT: Iron 43 tons Conductor 0.7 tons Cu

ION ENERGY: Bending Limit E/A = 40 q^2/A^2 MeV/u

Focusing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:

Description: Two 34° dees

No. of Gaps/turn $dE/dn(\text{max})$ 0.2 MeV/q

Voltage (max) 0.07 MV Harmonic f_H/f_{ion} 4

Freq 20.4 - 20.9 MHz Power in(max) 0.025 MW

Stability: Phase Voltage $\pm 10^{-5}$

OTHER CAVITIES (Flattopping or otherwise):

Description:

Region of Influence: R_{min} cm R_{max} cm

No. of Gaps/turn $dE/dn(\text{max})$ MeV/q

Voltage (max) MV Harmonic f_H/f_{ion}

Freq MHz Power in(max) MW

Stability: Phase Voltage

VACUUM SYSTEM

OPERATING PRESSURE: $(5 - 10) \cdot 10^{-6}$ mbar

PUMPS: (No. and type) 3 oil diffusion pumps

one 4000 ℓ/s , two 500 ℓ/s (each)

ION SOURCE(S)

Type	Intensity (mA)	@ $\epsilon_n = \beta\gamma\epsilon$ (π mm mrad)	Ion Species
(a) Arc type with heated cathode			
(b)			
(c)			
(d)			

INJECTION SYSTEM

Efficiency %

EXTRACTION SYSTEM

dc electrostatic and stripping Efficiency 50 %

CHARACTERISTIC BEAMS

Accelerated Ions	E/A (MeV/u)	Current (part μA)	
		Internal	External
(a) $^{12}C^{2+}$	13	12	5
(b) $^{16}O^{3+}$	20	1	1
(c) $^{22}Ne^{4+}$	27	1	0.5
(d) $^{40}Ar^{7+}$	46	0.5	0.25

Secondary Particles	E (MeV)	part/sec
(a)		
(b)		
(c)		

EXTRACTED BEAM PROPERTIES:

For μA of MeV/u ions

$\Delta E/E$ % $\Delta\phi$ °rf

$\epsilon_n = \beta\gamma\epsilon$ x π mm mrad z π mm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed: m^2 Moveable m^2

Target Stations: No. Served At Same Time: 1

MAGNETIC SPECTROMETERS:

OTHER FACILITIES:

REFERENCES/NOTES

(a)
 (b)

PLAN VIEW OF FACILITY, COMMENTS