

ENTRY NO. **CU55** Date **June 17, 1992**
 Name of Machine **Mini cyclotron Model-325 (Sumitomo Heavy Industry)**
 Institution **Kyoto University Hospital**
 Address **54, Shogoin-Kawahara-cho, Sakyo-ku, Kyoto 606, JAPAN**
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 In Charge: **Junji Konishi, MD** Reported by: **Yasuhiko Magata, PhD**

HISTORY

MILESTONE DATES:
 Design **1982** Model Tests **Aug 1982**
 Construction **1982** First Beam **Aug 1982**
DESIGN/CONSTRUCTION BY: Sumitomo-CGR MeV
 in house **other**
COST: Accelerator **Facility**
FUNDED BY: Ministry of Education, Japan

STATUS

STAFF: Machine
 Scientists **1** Engineers
 Technicians **1** Students
 Research (in house/external)
 Scientists **1** / Engineers /
 Technicians **1** / Students
BUDGET: Machine **\$200,000** Funded by **Japan/Ministry of**
 Research **\$35,000** Funded by **Education, etc.**
TIME DISTRIBUTION:
 Basic Research (in house/external) **20** % / %
 Applied Program (in house/external) **70** % / %
 Development % Maintenance **10** %

MAGNET

POLE PARAMETERS:
 Diameter **81** cm $R_{extract}$ **32.5** cm R_{inject} cm
HILL PARAMETERS: Gap (min) **7** cm B_{max} T
 (θ AT) Gap (max) cm B_{min} T
VALLEY PARAMETERS: Gap (min) **12** cm B_{max} T
 (θ AT) Gap (max) cm B_{min} T
AVERAGE FIELD: $\langle B \rangle_{min}$ **1.76** T $\langle B \rangle_{max}$ T
NUMBER OF SECTORS: compact/separated **4** /
 sector angle deg. spiral (max) deg.
FIELD TRIMMING: Trim Coils
 Harmonic Coils **4** pairs
 Other
CURRENT: Main Coils **12.4** Amps Stability
 Trim Coils Amps Stability
 Stored Energy (cryogenic) MJ
WEIGHT: Iron **13** tons Conductor **1** tons
ION ENERGY: Bending Limit $E/A =$ q^2/A^2 MeV/u
 Focussing Limit $E/A =$ q/A MeV/u

ACCELERATION SYSTEM

FUNDAMENTAL ACCELERATION:
 Description: **AVF**
 No. of Gaps/turn $dE/dn(max)$ MeV/q
 Voltage(max) **27.5** kV **MV** Harmonic f_{rf}/f_{ion}
 Freq **26.8** MHz Power in(max) MW
 Stability: Phase Voltage
OTHER CAVITIES (Flattopping or otherwise):
 Description:
 Region of Influence: R_{min} cm R_{max} cm
 No. of Gaps/turn $dE/dn(max)$ MeV/q
 Voltage(max) MV Harmonic f_{rf}/f_{ion}
 Freq MHz Power in(max) MW
 Stability: Phase Voltage

VACUUM SYSTEM

OPERATING PRESSURE: **2×10^{-5}** torr
PUMPS: No. and type **1** diffusion pump **1300** l/sec

ION SOURCE(S)

Type	Intensity (mA)	$\epsilon_n = \beta\gamma\epsilon$ (π mm mrad)	Ion Species
(a) Livingstone-Jones			H_2^+ , D_2^+
(b)			
(c)			
(d)			

INJECTION SYSTEM

Efficiency %

EXTRACTION SYSTEM

Efficiency %

CHARACTERISTIC BEAMS

	Accelerated Ions	E/A (MeV/u)	Current(part μ A)	
			Internal	External
(a)	p	15 MeV		50
(b)	d	8 MeV		50
(c)				
(d)				

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

EXTRACTED BEAM PROPERTIES:

For μ A of MeV/u ions
 $\Delta E/E$ % $\Delta\phi$ °rf
 $\epsilon_n = \beta\gamma\epsilon$ π mm mrad z π mm mrad

FACILITIES FOR RESEARCH

SHIELDED AREA: Fixed **110** m² Moveable m²
 Target Stations: **1** No. Served At Same Time: **1**

MAGNETIC SPECTROMETERS:
OTHER FACILITIES:

REFERENCES/NOTES

(a)
 (b)

PLAN VIEW OF FACILITY, COMMENTS