

ENTRY NO. CM28 Date
 Machine Name CP-42
 Manufacturer The Cyclotron Corporation (a)
 Address 950 Gilman St., Berkeley, CA 94710 USA
 Tel (510) 524-8844 Telex 910-366-7116
 Fax (510) 527-9336 EMAIL
 In Charge: n/a Reported by: F. Ramsey

HISTORY AND STATUS
 DATES: Design 1978 First Machine 1980
 SALES: No. Sold/Operational 5 / 4(b) Currently Available no
 COST: Accelerator Facility

MAGNET
 POLE PARAMETERS:
 Diameter 120 cm R_{extract} 28-52 cm R_{inject} cm
 HILL PARAMETERS: Gap (min) 5 cm B_{max} 24 T
 (@ AT) Gap (max) cm B_{min} T
 VALLEY PARAMETERS: Gap (min) 11.4 cm B_{max} 16 T
 (@ AT) Gap (max) cm B_{min} T
 AVERAGE FIELD: < B >_{min} 14 T < B >_{max} 22 T
 NUMBER OF SECTORS: compact/separated 3 /
 sector angle deg. spiral (max) 64 deg.
 FIELD TRIMMING: Trim Coils
 Harmonic Coils 2 sets: inner and outer
 Other
 CURRENT: Main Coils 350 Amps Stability 1 x 10⁻⁵
 Trim Coils n/a Amps Stability
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron 35 tons Conductor 3 tons
 ION ENERGY: Bending Limit E/A = q²/A² MeV/u
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM
 FUNDAMENTAL ACCELERATION:
 Description: Two 90° dees
 No. of Gaps/turn 4 dE/dn(max) MeV/q
 Voltage(max) 0.035 MV Harmonic f_{rf}/f_{ion}
 Freq 27 MHz Power in(max) 0.090 MW
 Stability: Phase Voltage

VACUUM SYSTEM
 OPERATING PRESSURE: 6 x 10⁻⁶
 PUMPS: No. and type Four oil diffusion pumps

ION SOURCE(S)

Type	Intensity (mA)	Q (π mm mrad)	ε _n = βγϵ	Ion Species
(a) Penning			not available	H ⁻
(b)				

INJECTION SYSTEM
 Radial Efficiency %

EXTRACTION SYSTEM
 H⁻ stripping foil Efficiency 100 %

CHARACTERISTIC BEAMS

Accelerated Ions	E/A (MeV/u)	Current(part. μA)	
		Internal	External
(a) H ⁻	11-42	200	200 (H ⁺)
(b)			

EXTRACTED BEAM PROPERTIES:
 For μA of MeV/u ions
 ΔE/E % Δφ °rf
 ε_n = βγϵ x πmm mrad z πmm mrad

REFERENCES/NOTES
 (a) CCI Cyclotron Systems, 950 Gilman St., Berkeley CA 94710
 (b) Status of machine #5 unknown, presumed functional

ENTRY NO. CM29 Date
 Machine Name RDS-112
 Manufacturer CCI PET Systems/Siemens
 Address 810 Innovation Drive, Knoxville, TN 37932 USA
 Tel (615) 966-7539 Telex
 Fax (615) 966-8955 EMAIL
 In Charge: Dr. T. Douglass Reported by: F.A. Ramsey

HISTORY AND STATUS
 DATES: Design 1985-1986 First Machine 1987
 SALES: No. Sold/Operational 21 / 21. Currently Available yes
 COST: Accelerator Facility

MAGNET
 POLE PARAMETERS:
 Diameter 72 cm R_{extract} 27 cm R_{inject} cm
 HILL PARAMETERS: Gap (min) 6 cm B_{max} 2.5 T
 (@ AT) Gap (max) cm B_{min} T
 VALLEY PARAMETERS: Gap (min) cm B_{max} T
 (@ AT) Gap (max) cm B_{min} T
 AVERAGE FIELD: < B >_{min} 1.8 T < B >_{max} T
 NUMBER OF SECTORS: compact/separated 3 /
 sector angle deg. spiral (max) deg.
 FIELD TRIMMING: Trim Coils n/a
 Harmonic Coils none
 Other
 CURRENT: Main Coils 270 Amps Stability 1 x 10⁻⁵
 Trim Coils n/a Amps Stability
 Stored Energy (cryogenic) MJ
 WEIGHT: Iron 20 tonnes TOTAL Conductor
 ION ENERGY: Bending Limit E/A = q²/A² MeV/u
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM
 FUNDAMENTAL ACCELERATION:
 Description: 2 dees
 No. of Gaps/turn 4 dE/dn(max) 0.100 MeV/q
 Voltage(max) 0.035 MV Harmonic f_{rf}/f_{ion} 1
 Freq 27 MHz Power in(max) 0.030 MW
 Stability: Phase Voltage

VACUUM SYSTEM
 OPERATING PRESSURE: 3 x 10⁻⁶ torr
 PUMPS: No. and type Two oil diffusion pumps

ION SOURCE(S)

Type	Intensity (mA)	Q (π mm mrad)	ε _n = βγϵ	Ion Species
(a) Penning	0.250		not available	H ⁻
(b)				

INJECTION SYSTEM
 Radial Efficiency %

EXTRACTION SYSTEM
 Carbon foil Efficiency 100 %

CHARACTERISTIC BEAMS

Accelerated Ions	E/A (MeV/u)	Current(part. μA)	
		Internal	External
(a) H ⁻	11		100 (H ⁺)
(b)			

EXTRACTED BEAM PROPERTIES:
 For μA of MeV/u ions
 ΔE/E % Δφ °rf
 ε_n = βγϵ x 50 πmm mrad z 50 πmm mrad

REFERENCES/NOTES
 (a)
 (b)