

ENTRY NO. CM20 Date  
 Machine Name MC35, 40  
 Manufacturer Scanditronix  
 Address Husyborg, S75229, Uppsala, Sweden  
 Tel 46 18 18 07 00 Telex  
 Fax 46 18 53 72 76 EMAIL  
 In Charge: Reported by: Jonas Modéer

HISTORY AND STATUS  
 DATES: Design 1976-78 First Machine 1979  
 SALES: No. Sold/Operational 12 / 11 Currently Available Y  
 COST: Accelerator Facility

MAGNET  
 POLE PARAMETERS:  
 Diameter 130 cm R<sub>extract</sub> 48 cm R<sub>inject</sub> cm  
 HILL PARAMETERS: Gap (min) 10 cm B<sub>max</sub> T  
 (@ AT) Gap (max) cm B<sub>min</sub> T  
 VALLEY PARAMETERS: Gap (min) 18 cm B<sub>max</sub> T  
 (@ AT) Gap (max) cm B<sub>min</sub> T  
 AVERAGE FIELD: < B ><sub>min</sub> 0.85 T < B ><sub>max</sub> 1.78 T  
 NUMBER OF SECTORS: compact/separated 3 /  
 sector angle deg. spiral (max) 50 deg.  
 FIELD TRIMMING: Trim Coils 8  
 Harmonic Coils 4  
 Other  
 CURRENT: Main Coils 900 A Amps Stability 10<sup>-5</sup>  
 Trim Coils Amps Stability  
 Stored Energy (cryogenic) MJ  
 WEIGHT: Iron 69,000 kg Conductor  
 ION ENERGY: Bending Limit E/A = q<sup>2</sup>/A<sup>2</sup> MeV/u  
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM  
 FUNDAMENTAL ACCELERATION:  
 Description: Driven System  
 No. of Gaps/turn 4 dE/dn(max) 0.1 MeV/q  
 Voltage(max) 0.035 MV Harmonic f<sub>rf</sub>/f<sub>ion</sub> 1.2  
 Freq 14.265 MHz Power in(max) 0.060 MW  
 Stability: Phase Voltage

VACUUM SYSTEM  
 OPERATING PRESSURE: 10<sup>-5</sup>, 10<sup>-6</sup>  
 PUMPS: No. and type 2 x 4000 l/sec diff. pump

ION SOURCE(S)  
 Type Intensity @ ε<sub>n</sub> = βγϵ Ion Species  
 (mA) (π mm mrad)  
 (a) Hot filament 0.2 - 0.5 p, d, He<sup>3</sup>, α  
 (b)

INJECTION SYSTEM  
 Efficiency %

EXTRACTION SYSTEM  
 Efficiency 60-85 %

CHARACTERISTIC BEAMS  
 Accelerated Ions E/A (MeV/u) Current(part. μA)  
 Internal External  
 (a) p, d 10-40, 5-20 300 75  
 (b) He, α 13-53, 10-40 150 65

EXTRACTED BEAM PROPERTIES:  
 For μA of MeV/u ions  
 ΔE/E % Δφ °rf  
 ε<sub>n</sub> = βγϵ x π mm mrad z π mm mrad

REFERENCES/NOTES  
 (a)  
 (b)

ENTRY NO. CM21 Date  
 Machine Name MC50  
 Manufacturer Scanditronix  
 Address Husyborg, S75229, Uppsala, Sweden  
 Tel 46 18 18 07 00 Telex  
 Fax 46 18 53 72 76 EMAIL  
 In Charge: Reported by: Jonas Modéer

HISTORY AND STATUS  
 DATES: Design 83 First Machine 89  
 SALES: No. Sold/Operational 2 / 2 Currently Available Y  
 COST: Accelerator Facility

MAGNET  
 POLE PARAMETERS:  
 Diameter 143 cm R<sub>extract</sub> 58 cm R<sub>inject</sub> cm  
 HILL PARAMETERS: Gap (min) 11 cm B<sub>max</sub> 2.05 T  
 (@ AT) Gap (max) cm B<sub>min</sub> T  
 VALLEY PARAMETERS: Gap (min) cm B<sub>max</sub> T  
 (@ AT) Gap (max) 20 cm B<sub>min</sub> T  
 AVERAGE FIELD: < B ><sub>min</sub> 1.05 T < B ><sub>max</sub> 1.75 T  
 NUMBER OF SECTORS: compact/separated 3 /  
 sector angle deg. spiral (max) 55 deg.  
 FIELD TRIMMING: Trim Coils 10  
 Harmonic Coils 4  
 Other  
 CURRENT: Main Coils 900 A Amps Stability 10<sup>-5</sup>  
 Trim Coils Amps Stability  
 Stored Energy (cryogenic) MJ  
 WEIGHT: Iron 93,000 kg Conductor  
 ION ENERGY: Bending Limit E/A = q<sup>2</sup>/A<sup>2</sup> MeV/u  
 Focussing Limit E/A = q/A MeV/u

ACCELERATION SYSTEM  
 FUNDAMENTAL ACCELERATION:  
 Description: Driven System  
 No. of Gaps/turn 4 dE/dn(max) 0.1 MeV/q  
 Voltage(max) 0.035 MV Harmonic f<sub>rf</sub>/f<sub>ion</sub> 1.2  
 Freq 15-27 MHz Power in(max) 0.06 MW  
 Stability: Phase Voltage

VACUUM SYSTEM  
 OPERATING PRESSURE: 10<sup>-5</sup>, 10<sup>-6</sup>  
 PUMPS: No. and type 2 x 4000 l/sec diff. pump

ION SOURCE(S)  
 Type Intensity @ ε<sub>n</sub> = βγϵ Ion Species  
 (mA) (π mm mrad)  
 (a) PIC 0.1 p, d, He<sup>3</sup>, α  
 (b)

INJECTION SYSTEM  
 Efficiency %

EXTRACTION SYSTEM  
 Efficiency 60-85 %

CHARACTERISTIC BEAMS  
 Accelerated Ions E/A (MeV/u) Current(part. μA)  
 Internal External  
 (a) p, d 18-50, 9-25 > 200 30  
 (b) He, α 24-66, 18-50 60 30

EXTRACTED BEAM PROPERTIES:  
 For μA of MeV/u ions  
 ΔE/E % Δφ °rf  
 ε<sub>n</sub> = βγϵ x π mm mrad z π mm mrad

REFERENCES/NOTES  
 (a)  
 (b)