

**ENTRY NO:** C12  
**Date:** 07 Feb 2005 11:59:30  
**Machine Name:** SSC2  
**Institution:** GANIL  
**Address:** BP 5027 14076 CAEN CEDEX 5 FRANCE  
**Telephone:** 33 02 31 45 46 47  
**Fax:** 33 02 31 45 46 65  
**Web Address:** www.ganil.fr  
**Person in Charge of Cyclotron:** Eric Petit  
**Person Reporting Information:** A. Savalle  
**E-mail Address:**  
 savalle@ganil.fr, bertrand@ganil.fr

#### History

**Designed by:** in house  
**Construction Dates:** 1976-1982  
**First Beam Date:** nov 82

#### Characteristic Beams

ions	energy(MeV/N)	current(pps)	power(w)
C12	95	2e13	3800
U238	24	1e10	10

#### Transmission Efficiency (source to extracted beam)

**Typical (%)**: 90  
**Best (%)**: 98

#### Emittance

**Emittance Definition:** 90%  
**Vertical (pi mm mrad):** 5  
**Horizontal (pi mm mrad):** 5  
**Longitudinal (dE/E[%] x RF[deg.]):** 0.2\*4

#### USES

**Basic Research (%)**: 65  
**Development (%)**: 10  
**Therapy (%)**: 0  
**Isotope Production (%)**: 0  
**Other Application (%)**: 5  
**Maintenance (%)**: 5  
**Beam Tuning (%)**: 15  
**Total Time (h/year)**: 5000

#### TECHNICAL DATA

##### (a)Magnet

**Type:** separated sectors  
**Kb (MeV):** 380  
**Kf (MeV):** 380  
**Average Field (min./max. T):** 0.95/0.39  
**Number of Sectors:** 4  
**Hill Angular Width (deg.):** 52  
**Spiral (deg.):**  
**Pole Diameter (m):**  
**Injection Radius (m):** 1.2  
**Extraction Radius (m):** 3  
**Hill Gap (m):** 0.01  
**Valley Gap (m):**  
**Trim Coils**  
**Number:** 10x2  
**Maximum Current (A-turns):**  
**Harmonic Coils**  
**Number:** 1xNsectorsx2  
**Maximum Current (A-turns):**  
**Main Coils**  
**Number:** 4x2  
**Total Ampere Turns:**  
**Maximum Current (A):**  
**Stored Energy (MJ):**  
**Total Iron Weight (tons):** 1700  
**Total Coil Weight (tons):** 14  
**Power**  
**Main Coils (total KW):** 950  
**Trim Coils (total, maximum, KW):** 140  
**Refrigerator (cryogenic, KW):**

##### (b)RF

##### Acceleration

**Frequency Range (MHz):** 7-13.45

**Harmonic Modes:** 2

**Number of Dees:** 2

**Number of Cavities:**

**Dee Angular Width (deg.):**34

##### Voltage

**At Injection (peak to ground, KV):** 160

**At Extraction (peak to ground, KV):**

**Peak (peak to ground, KV):**

**Line Power (max, KW):** 100

**Phase Stability (deg.):** 0.1

**Voltage Stability (%)**: 0.01

##### (c)Injection

##### Ion Source:

**Source Bias Voltage (kV):**

**External Injection:** radial

**Buncher Type:** harmonic 4

**Injection Energy (MeV/n):**

**Component:** 4 mag. Channels

**Injection Efficiency (%)**: 100

**Injector:** SSC1

##### (d)Extraction

**Elements, Characteristic:** 1 electrostatic deflector 4 magnetic channels

**Typical Efficiency (%)**: 90

**Best Efficiency (%)**: 98

##### (e)Vacuum

**Pumps:** 8 cryopumps and 4 turbopumps

**Achieved Vacuum (Pa):** 6 10<sup>-6</sup>

#### REFERENCES

#### EXPERIMENTAL FACILITIES

9 experimental rooms 2 of them provided with beam in time sharing

#### COMMENTS

