

**ENTRY NO:** CU-5  
**Machine Name:** Radio Isotope Delivery System (RDS) 112  
**Date:** 5/23/01 3:16:29 PM  
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West  
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#### HISTORY

**Designed By:** Cyclotron Corporation  
**Construction Dates:** 1989  
**First Beam Date:** 1989  
**CHARACTERISTIC BEAMS**

ions / energy(MeV/N)/current(pps)/power(w)  
Negative ion Proton 10 MeV 150 uA

**transmission efficiency(source to extract beam)**

typical: 70% - best: 96%

**transverse emittance**

**emittance definition:**

vertical:  $\pi$  mm mrad

horizontal:  $\pi$  mm mrad

longitudinal:  $(\Delta) E/E) \% \times \text{deg RF}$

#### USES

**basic research:** 10%      **therapy:** 0%  
**development:** 10%      **isotope production:** 90%  
**other:** %      **maintenance:** %  
**beam tuning:** %      **Total Time:** 300h/year

#### TECHNICAL DATA

a)magnet: type:

Kb: MeV/A Kf: MeV/A

average field (min/max): T

number of magnet sectors:

hill angular width: hill angular width

spiral (max): deg

**pole parameters**

diameter: m

injection radius: m

extraction radius: m

hill gap: m valley gap: m

**trim coils**

-number: x2

-current(max): A-turns

**harmonic coils**

-number: xNsectorsx2

-current(max): A-turns

**main coils**

number: x2

total ampere-turns: A-turns

current: A

stored energy: MJ

weight - iron: t coils: t

**power**

main coils (total): kW

trim coils (total max): kW

refrigerator (cryogenic): kW

b)RF

acceleration

**frequency range:** MHz

**harmonic modes:**

**number of dees:**

**number of cavities:**

**dee angular width:** degrees

**voltage**

at injection: kV(peak to ground, max)

at extraction: kV(peak to ground, max)

peak: kV(peak to ground, max)

**line power(max):** kW

**stability**

phase: deg

voltage: %

**injection**

c)ion source:

**external injection:**

components:

source bias voltage: kV

injection energy: MeV/N

**buncher:**

**injection efficiency:** %

d)injector:

e)extraction

**efficiency**

typical: %

best: %

f)vacuum

**pumps:**

achieved vacuum: Pa

**REFERENCES**

#### EXPERIMENTAL FACILITIES

#### COMMENTS