

**ENTRY NO:** CU-6  
**Machine Name:** TR13  
**Date:** 6/4/01 4:50:22 PM  
**Institution:** TRIUMF  
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#### HISTORY

**Designed By:** TRIUMF & Ebco Technologies Ltd.  
**Construction Dates:** 1992  
**First Beam Date:** 1993

#### CHARACTERISTIC BEAMS

ions	/ energy(MeV/N)/current(pps)/power(w)
protons	13 100 microAmp

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

typical: 6% - best: %

**tranverse emittance**

**emittance definition:**

vertical:  $\pi$  mm mrad

horizontal:  $\pi$  mm mrad

longitudinal:  $(\Delta) E/E$ %xdeg RF

#### USES

basic research: %	therapy: %
development: %	isotope production: 100%
other: %	maintenance: %
beam tuning: %	Total Time: 600h/year

#### TECHNICAL DATA

a)magnet: type: compact

Kb: MeV/A Kf: MeV/A

average field (min/max): 1.2(1.9/0.55) T

number of magnet sectors: 4

hill angular width: 40-44deg.hill angular width

spiral (max): deg

pole parameters

diameter: 1.14 m

injection radius: m

extraction radius: .44 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: 73.3MHz

harmonic modes: 4

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: multicusp

external injection:

components:

source bias voltage: kV

injection energy: MeV/N

buncher:

injection efficiency: %

d)injector:

e)extraction

carbon foil

efficiency

typical: %

best: %

f)vacuum

pumps: cryo

achieved vacuum: Pa

#### REFERENCES

#### EXPERIMENTAL FACILITIES

#### COMMENTS