

Beam Dimensions In RHIC

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BEAM DIMENSIONS IN RHIC

J. Clausen

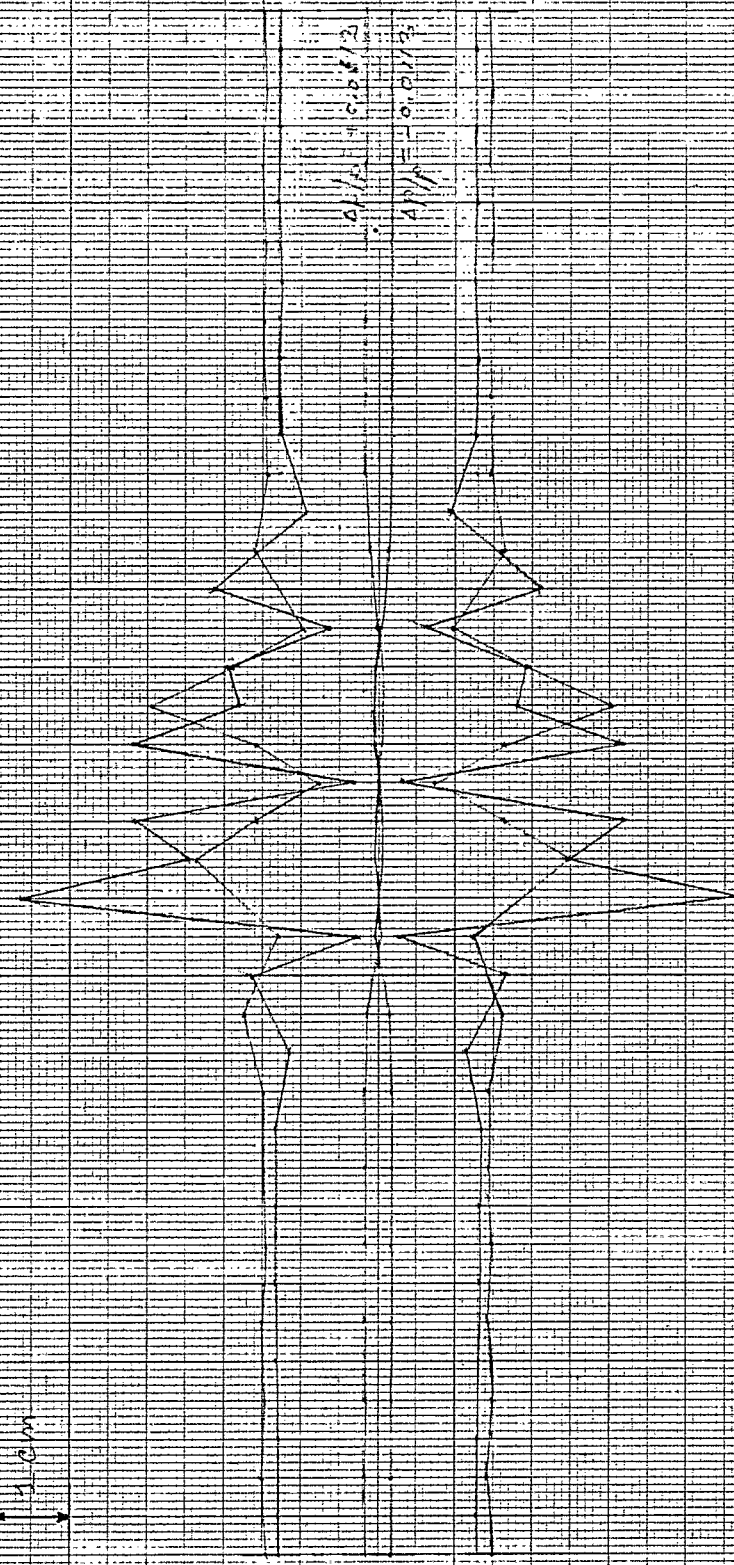
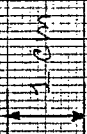
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March 10, 1984

Outer Arc

Q₁ Q₂ Q₃ Q₄ Q₅ Q₆ Q₇ Q₈ Q₉ Q₁₀ Q₁₁ Q₁₂ Q₁₃ Q₁₄ Q₁₅ Q₁₆ Q₁₇ Q₁₈ Q₁₉ Q₂₀ Q₂₁ Q₂₂ Q₂₃ Q₂₄ Q₂₅ Q₂₆ Q₂₇ Q₂₈ Q₂₉ Q₃₀ Q₃₁ Q₃₂ Q₃₃ Q₃₄ Q₃₅ Q₃₆ Q₃₇ Q₃₈ Q₃₉ Q₄₀ Q₄₁ Q₄₂ Q₄₃ Q₄₄ Q₄₅ Q₄₆ Q₄₇ Q₄₈ Q₄₉ Q₅₀ Q₅₁ Q₅₂ Q₅₃ Q₅₄ Q₅₅ Q₅₆ Q₅₇ Q₅₈ Q₅₉ Q₆₀ Q₆₁ Q₆₂ Q₆₃ Q₆₄ Q₆₅ Q₆₆ Q₆₇ Q₆₈ Q₆₉ Q₇₀ Q₇₁ Q₇₂ Q₇₃ Q₇₄ Q₇₅ Q₇₆ Q₇₇ Q₇₈ Q₇₉ Q₈₀ Q₈₁ Q₈₂ Q₈₃ Q₈₄ Q₈₅ Q₈₆ Q₈₇ Q₈₈ Q₈₉ Q₉₀ Q₉₁ Q₉₂ Q₉₃ Q₉₄ Q₉₅ Q₉₆ Q₉₇ Q₉₈ Q₉₉ Q₁₀₀

Inner Arc



Beam dimensions at midpoint:

$$X = 12.5$$

$$EG = \frac{1}{6} \cdot 10 \times 10^6 \cdot 12.5^3$$

$$\Delta I/I = 7 \cdot 0.01/12$$

03/05/84

16.11.89

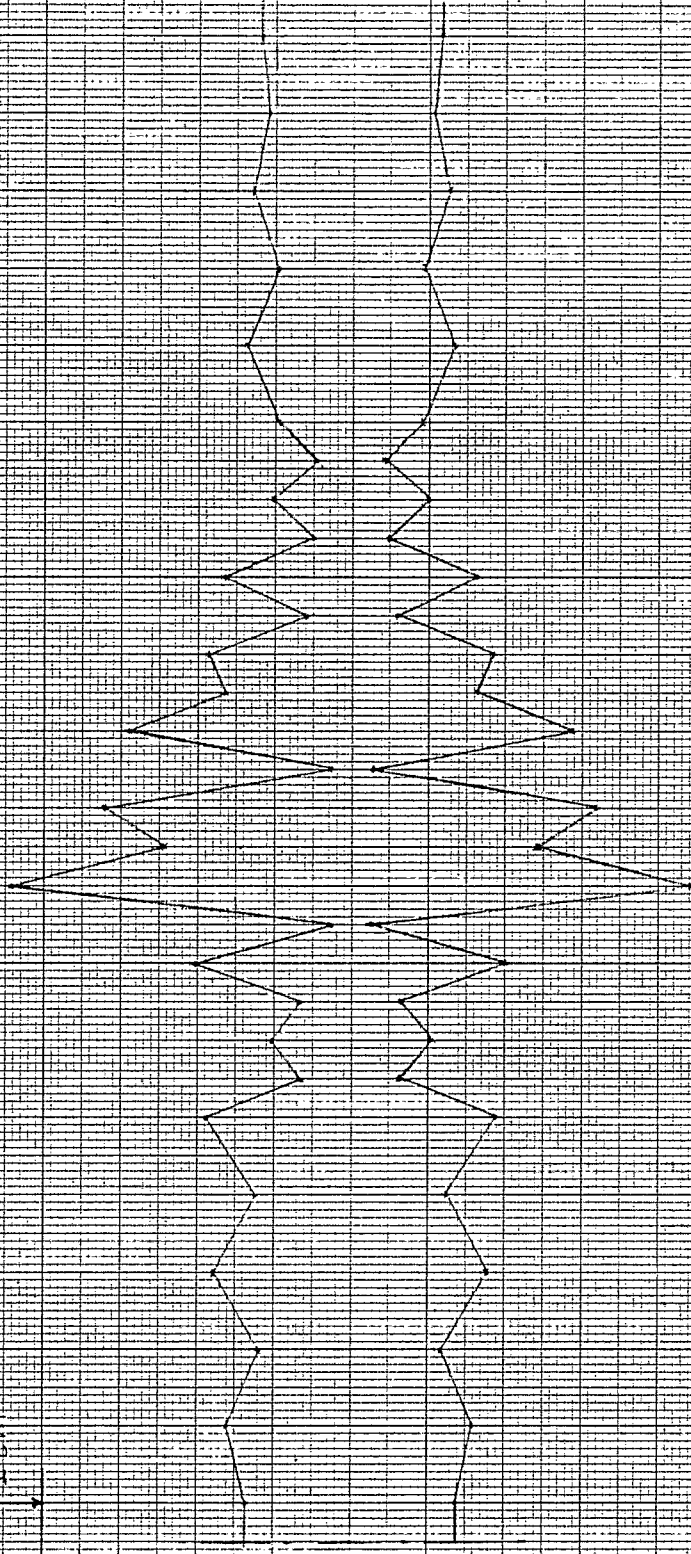
JTC

Outlet Ave

Q₈ Q₇ Q₆ Q₅ Q₄ Q₃ Q₂ Q₁ Q₀

Inlet Ave

2.0m



03/06/84 16.34.47 JRL

Researcher's name

$$y = 6/100 \cdot x$$

$$y = 10 \cdot x$$

$$y = 100 \cdot x$$

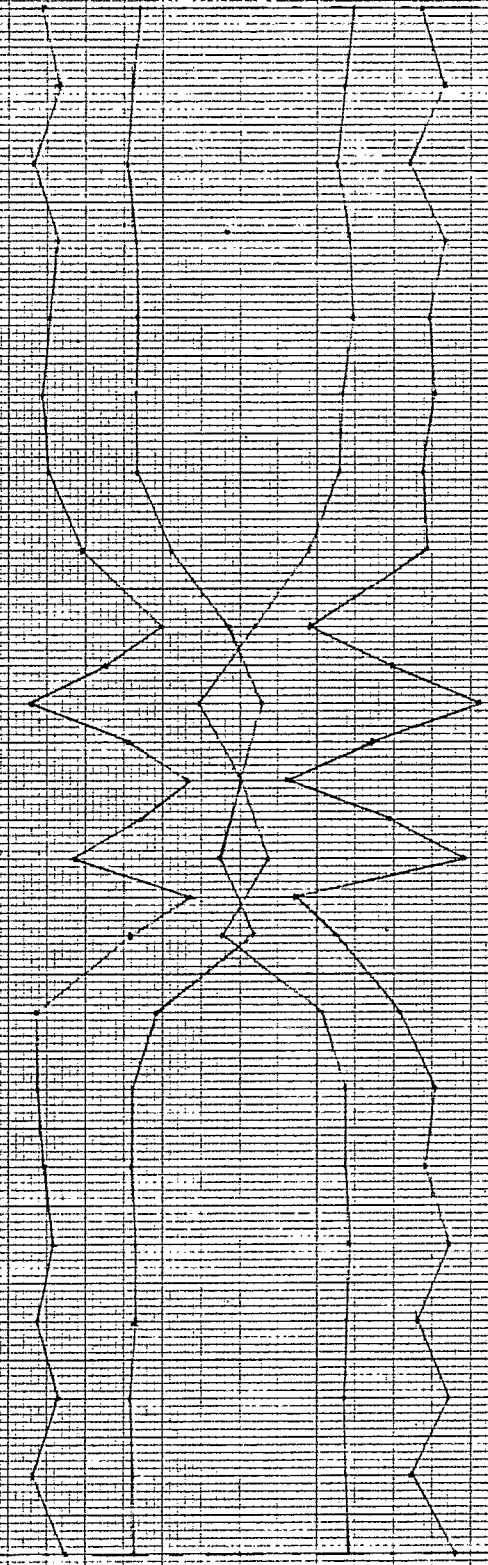
AK/P

Outer Arc

Q₁ Q₂ Q₃ Q₄ Q₅ Q₆ Q₇ Q₈ Q₉ Q₁₀ Q₁₁ Q₁₂ Q₁₃ Q₁₄ Q₁₅ Q₁₆ Q₁₇ Q₁₈ Q₁₉ Q₂₀ Q₂₁ Q₂₂ Q₂₃ Q₂₄ Q₂₅ Q₂₆ Q₂₇ Q₂₈ Q₂₉ Q₃₀ Q₃₁ Q₃₂ Q₃₃ Q₃₄ Q₃₅ Q₃₆ Q₃₇ Q₃₈ Q₃₉ Q₄₀ Q₄₁ Q₄₂ Q₄₃ Q₄₄ Q₄₅ Q₄₆ Q₄₇ Q₄₈ Q₄₉ Q₅₀ Q₅₁ Q₅₂ Q₅₃ Q₅₄ Q₅₅ Q₅₆ Q₅₇ Q₅₈ Q₅₉ Q₆₀ Q₆₁ Q₆₂ Q₆₃ Q₆₄ Q₆₅ Q₆₆ Q₆₇ Q₆₈ Q₆₉ Q₇₀ Q₇₁ Q₇₂ Q₇₃ Q₇₄ Q₇₅ Q₇₆ Q₇₇ Q₇₈ Q₇₉ Q₈₀ Q₈₁ Q₈₂ Q₈₃ Q₈₄ Q₈₅ Q₈₆ Q₈₇ Q₈₈ Q₈₉ Q₉₀ Q₉₁ Q₉₂ Q₉₃ Q₉₄ Q₉₅ Q₉₆ Q₉₇ Q₉₈ Q₉₉ Q₁₀₀

Inner Arc

1 cm



0.5/0.6/0.4 16.20/47
Requisit

$$X = \frac{1}{6} + X_{ep} = \frac{6}{15} = 13$$

$$S_0 = \frac{1}{6} \cdot 20 \times 10 = 33.33$$

$$AP = 1 + 0.51$$

Inner Arc

Q8 Q7 Q6 Q5 Q4 Q3 Q2 Q1 Q0

Outer Arc

10mm

height
width

$\epsilon_0 = 10^{-3}$
 ϵ_{100}
 ϵ_{1000}

Beam dimensions after 2 hrs
at $\gamma = 12.5$

$$\epsilon_0 = \frac{1}{6} = 3.0 \times 10^{-6} \text{ cm}^{-1} \cdot \text{hr}$$
$$\frac{\Delta p/p_0}{\epsilon_0} = \pm 0.003$$

02/28/84 10:21:01

JCL