IMPLANTATION

10/23/74

7.6336 × Dose = Machine Setting (2×10^{-6})

$\times 10^{11}$

$$\text{DOSE} \times 1.6 \times 10^{-19} \times \frac{10^{11}}{2 \times 10^{-6}} \times \frac{6.45}{.54} \times 67.25 \times \frac{1.1}{2.2} = 763.422\text{E-2}$$

$$= 7.63 \times \text{DOSE}$$

7.6336 × DOSE = Integrator Setting for DOSE (in 10")

and

Full Scale Reading of 2×10^{-6} a.

Also assumes full carousel

$$7.6336 \times \frac{2.2}{67.25} = .2497$$

.2497 × DOSE = Integrator Setting for DOSE (in 10")

and

Full Scale Reading of 2×10^{-6} a.

Assumes 1 wafer at a time

$\frac{\text{Dose} \times q \times \text{area}}{\text{full scale amps}}$ ← 954.2 cm²

↳ rest. to 20v6

L = 67.25" } Hybrid Mode (Hyb. Pro)
H = 2.2"

Y Defl. Plate only

Spin carousel to get X dimension

We run this mode.

MP - Multiple Proc.

Hyb & Step. 2.2×2.2

X & Y Deflection

We have

Our experiment would use step mode.

$i = \frac{Q}{t} = d\,q\,e\,A$

i	coul./sec.
Q	~~coul~~ - total charge hitting carousel in t sec.
t	time, sec.
d	dose in ions/cm²
q	ion charge ($P^{+}_{+} = 2.$)
A	area hit by beam during exposure cm²
e	1.602E-19 coul.

$$\text{Number total ions into integrator} = \frac{\text{Dose} \times 1.6\times10^{-19} \times \overbrace{2.45 \times 2.54}^{6.452} \times \underset{\text{Scan width (")}}{D} \times \underset{\text{Scan Height}}{SC}}{\text{full scale amps}}$$

e.g. D = 2" Dose = 3E14
SC = 2" Scale = 20E-6
↳ = 6.197

↳ $\frac{\text{ions}}{\text{cm}^2} \frac{\text{coul}}{\text{coul}}$ ~~amps~~

ions - sec.

(019A)

	DOSE	ENERGY	FSA	SETTING
Implant & IB ~~5.67E11 35 KeV.~~	5.67E11	35	2E-6	43.28
IIB	1.02E11	35	2E-6	7.786
IIIP	3.82E11	95	2E-6	29.16

(020A)

IB	3.76E12	35	2E-6	287
IIB	—			
IIIP	6.38E11	95	2E-6	48.70

X Y Z

Dry Wet Dry