

## Thomson's $e/m$ experiment

Run #	Your measurements		units	Calculated quantities		units
Determine the radius of the track, $R$	$x$		metres	$R = \frac{x^2 + y^2}{2y}$		metres
	$y$		metres			
Determine the magnetic field, $B$	$I$		Amperes	$B = 4.23 \times 10^{-3} I$		Tesla
Determine the electric field, $E$	$V$		Volts	$E = \frac{V}{0.052}$		Volts/metre
Determine the electron's velocity, $v$				$v = \frac{E}{B}$		metres/s
Determine the electron's charge-to-mass ratio, $e/m$				$e/m = \frac{v}{BR}$		Coulombs/kg

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