Calculation and Unit Exchanges

$H\,(Oe) = \frac{0.4 \times 3.14 \times N \times I}{l}$ N: wire winding turns I: current (A) l: mean magnetic path length (in cm)	$L\,(H) = \frac{4 \times 3.14 \times N^2 Ac \times \mu \times 10^{-9}}{l}$ μ: permeability (Gs/Oe) Ac: core section area (in cm^2) l: mean magnetic path length (in cm)
l = (OD+ID)π /2 OD: core out diameter (in cm) ID: core inner diameter (in cm)	Ac = (OD-ID)*HT*d /2 HT: core height (in cm) d: strip stacking factor (0.78 ~ 0.88)
X_L (Ω) = 2 π f L	AL= L / N^2
1A/cm = 1.2566 Oe	1 Tesla = 10000 Gs
1 Kg = 2.25 pound	1W/kg = 7.30 mW/cm3