



FIG. 4.16 (a) Optimum wire diameter for a single copper wire conducting current I from a region of the cryostat at temperature T_{upper} to a temperature T_{lower} . (We assume that the copper wire has a typical residual resistance ratio of 100 and no heat transfers to evaporating helium gas.) L is the length of the conductor between the upper and lower temperatures, and A is the optimum cross-sectional area. (From McFee 1959.)