

52. Let the area of each circular plate be  $A$  and that of the central circular section be  $a$ , then

$$\frac{A}{a} = \frac{\pi R^2}{\pi(R/2)^2} = 4 .$$

Thus, from Eqs. 32-38 and 32-39 the total discharge current is given by  $i = i_d = 4(2.0 \text{ A}) = 8.0 \text{ A}$ .