

目标: $P_w = \frac{h n A G T V}{n_{\text{折}} d}$

约束 $n_{\text{折}} \geq 401$

已知

(S
L
h)

$$h/L = 1.35$$

$$S \geq 10 \text{ mm}$$

$$h n = 851.8014$$

$$\Delta T = 60$$

$$V = 0.1$$

$$d = 1$$

$$A = 0.5\pi + \frac{12L}{L+S} \times \pi + \frac{12S}{L+S} \times (1-2h)\pi + \frac{2 \times 12}{L+S} (h+n^2)\pi$$

$$n_{\text{折}} = \frac{12}{\underbrace{0.4826}_{L_1}} \times \left(\frac{2\sqrt{(0.5-h)^2 - \left(\frac{0.525}{2}\right)^2}}{0.04445} \right)$$

$$+ \frac{\sqrt{(0.5-h)^2 - \left(\frac{0.125}{2}\right)^2 - \frac{0.525}{2}}}{0.04445}$$

$$L_1 = 0.4826$$

$$L_2 = 0.525$$

$$L_3 = 0.04445$$

$$n_{\text{折}} = \frac{12}{L_1} \times \left(\frac{2\sqrt{(0.5-h)^2 - \left(\frac{L_1}{2}\right)^2}}{L_3} + \frac{\sqrt{(0.5-h)^2 - \left(\frac{L_2}{2}\right)^2 - \frac{L_2}{2}}}{L_3} \right)$$