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$16.3 \cdot \frac{\text{W}}{\text{m} \cdot \text{K}}$ Thermal conductivity of stainless steel

$$\sqrt{\frac{L}{20 \cdot \text{cm} \cdot \pi}} \cdot 2 \cdot \pi \cdot \frac{20 \cdot \text{cm}}{2 \cdot \text{mm}} \cdot 16.3 \cdot \frac{\text{W}}{\text{m} \cdot \text{K}} \cdot 500 \cdot \text{K} = 204.29 \cdot \text{kW}$$

1 Liter cylinder, 20 cm long. Delta T 500 Kelvin

Maximum thermal power transfer through 2 mm thick steel cylinder (ends excluded) = 204 kW.

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