

# Nd:YAG Lasers and Their Applications

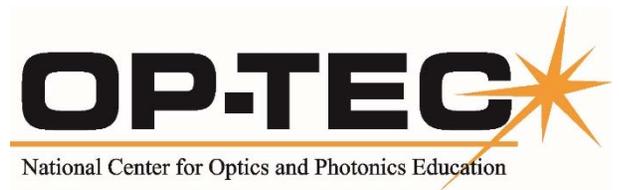
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Module 2-8

Of

Course 2, *Laser Systems and Applications*

*2<sup>nd</sup> Edition*



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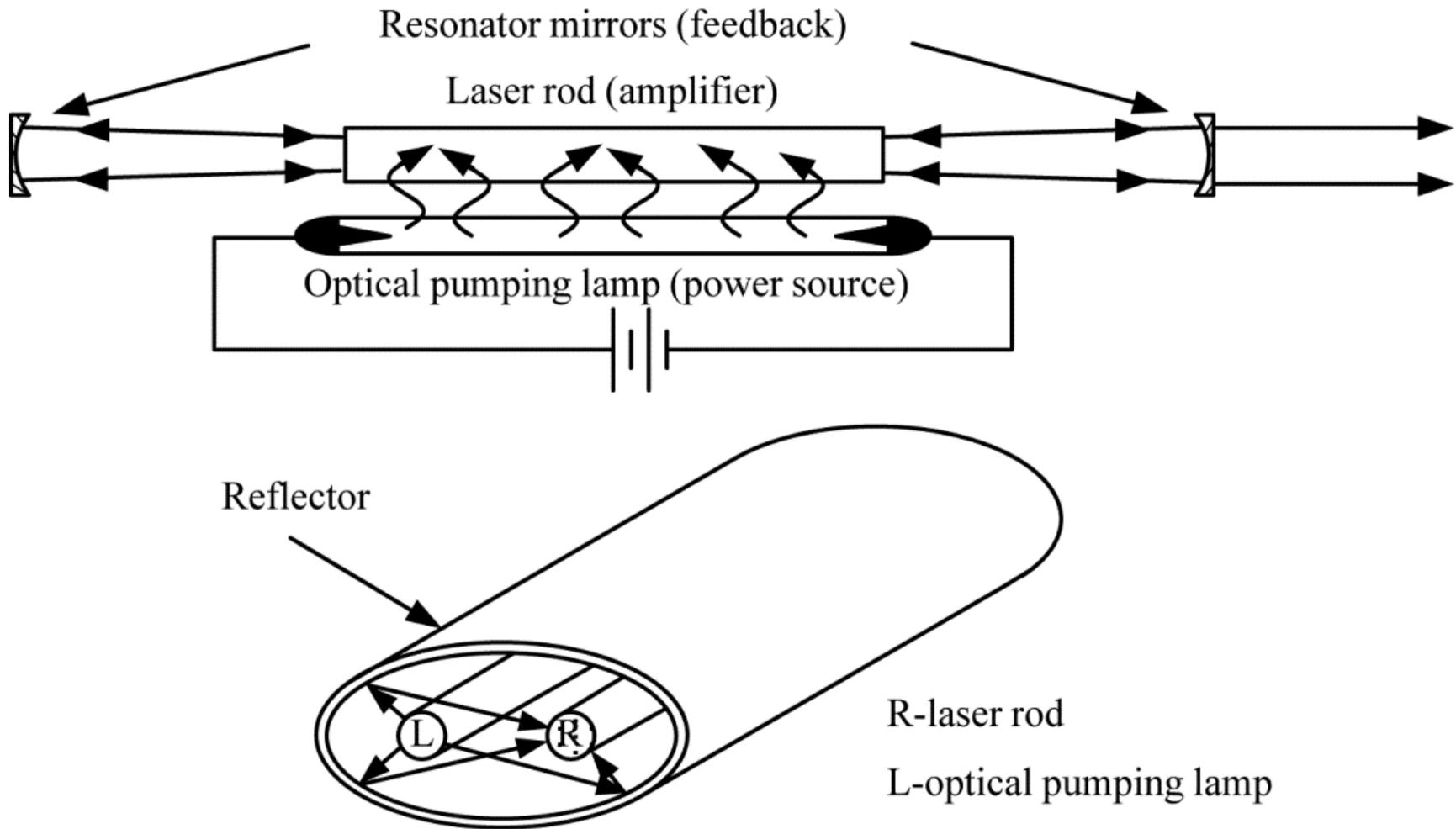
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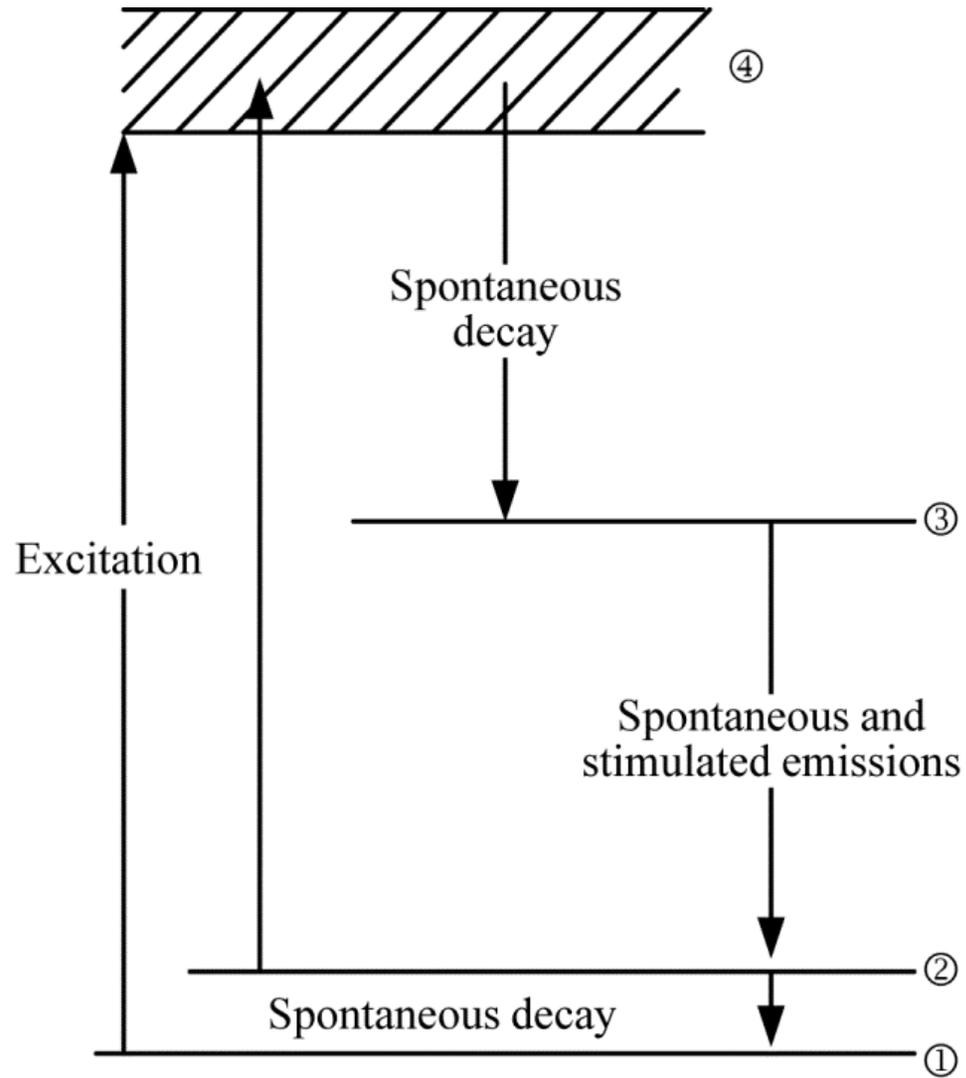
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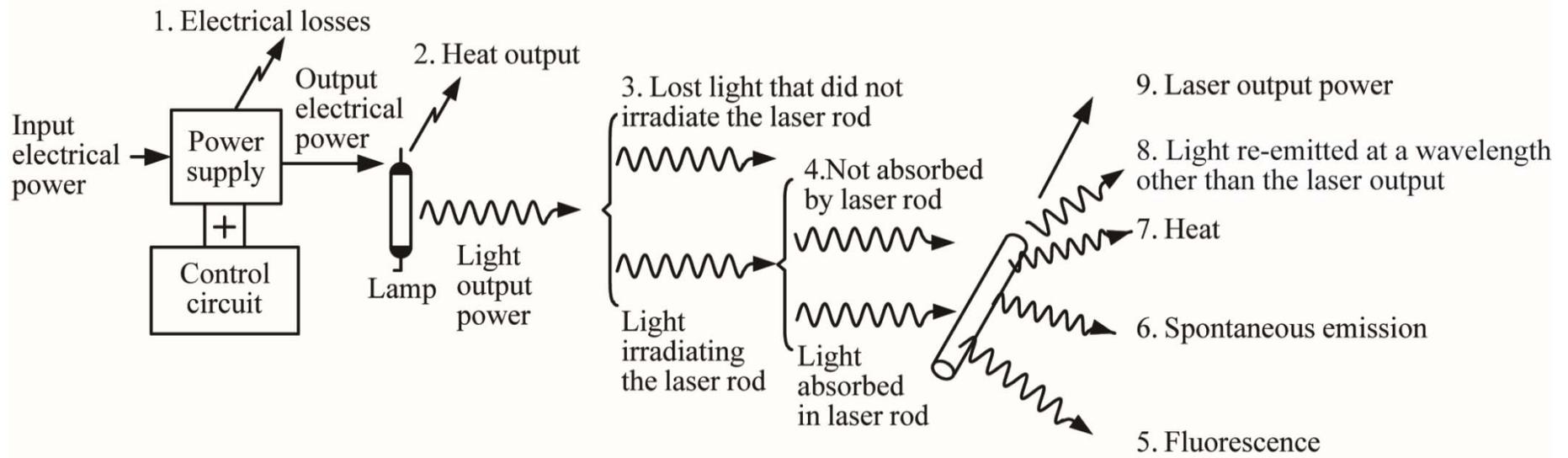
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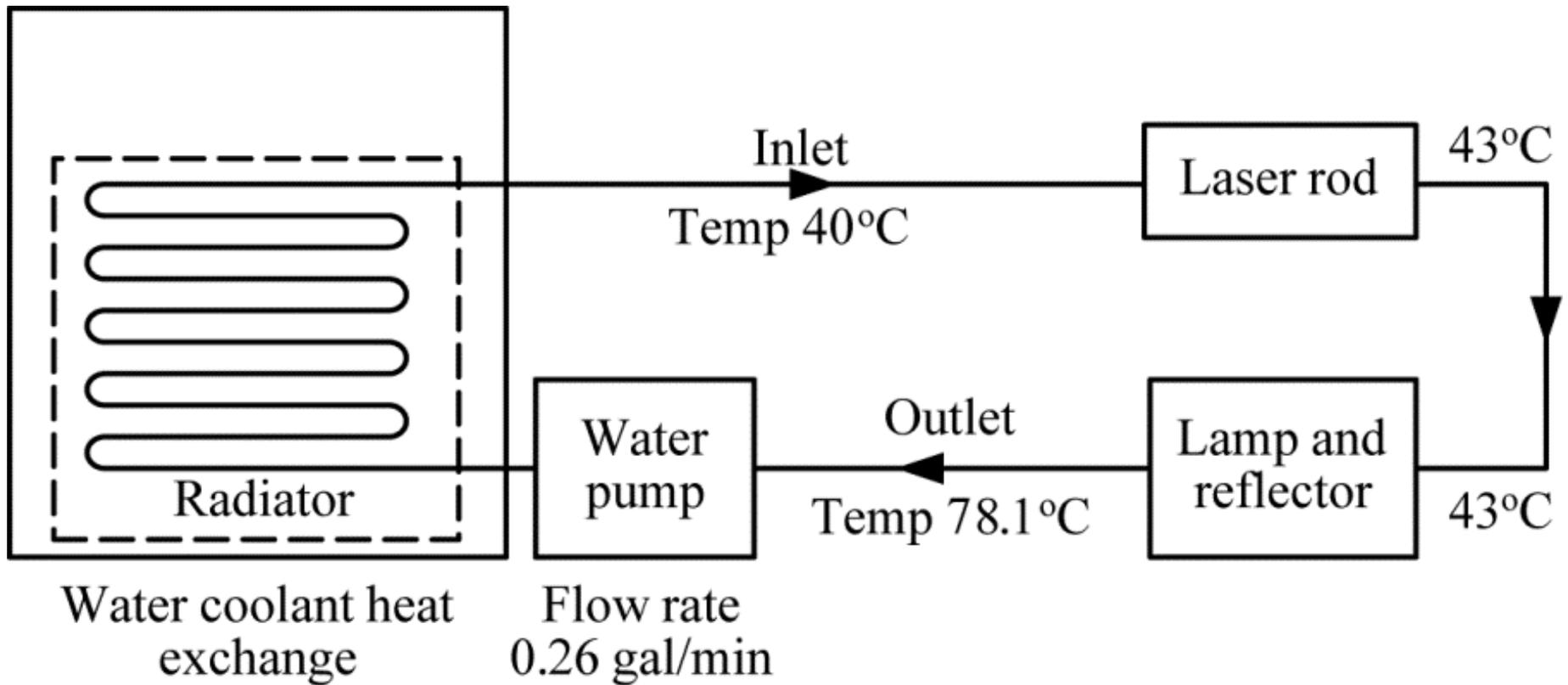
**Figure 8-1** *Basic design of CW Nd:YAG lasers with elliptical reflector*



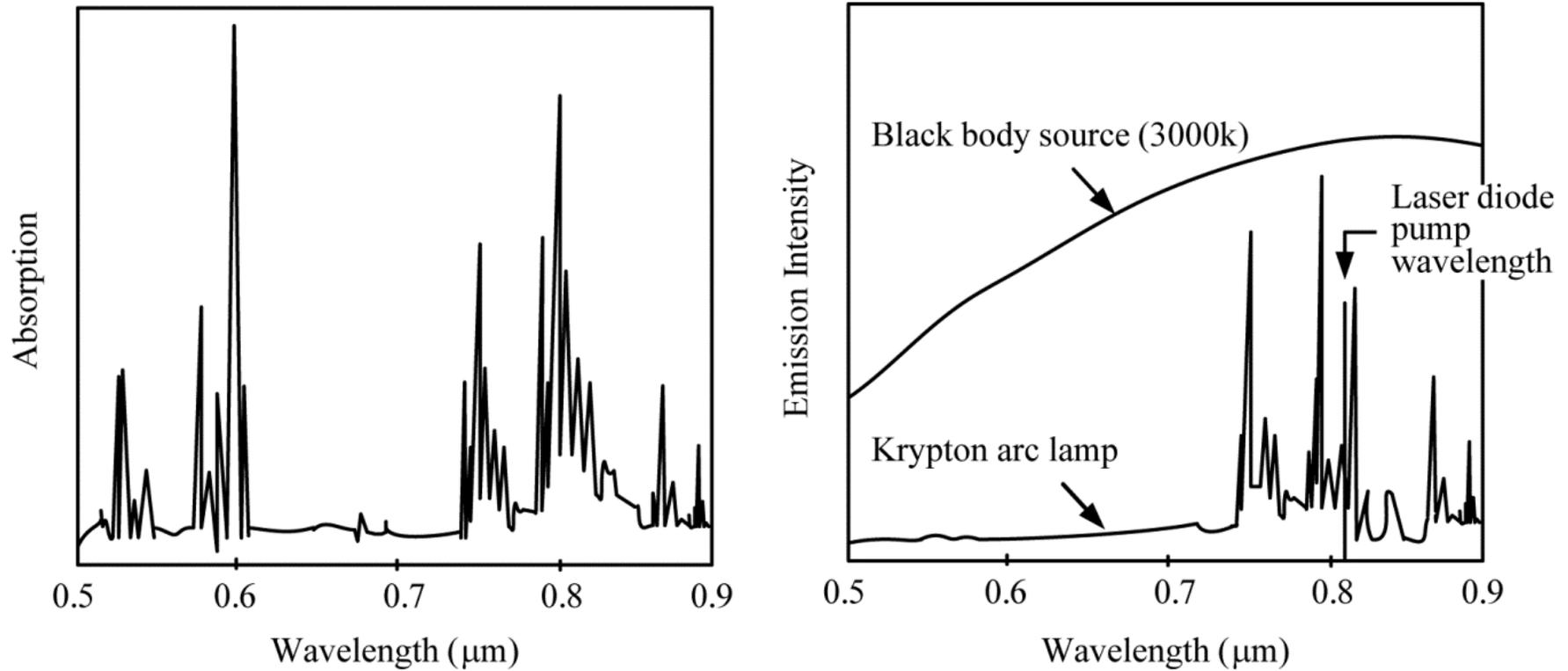
**Figure 8-2** *Energy Levels of the Nd:YAG laser*



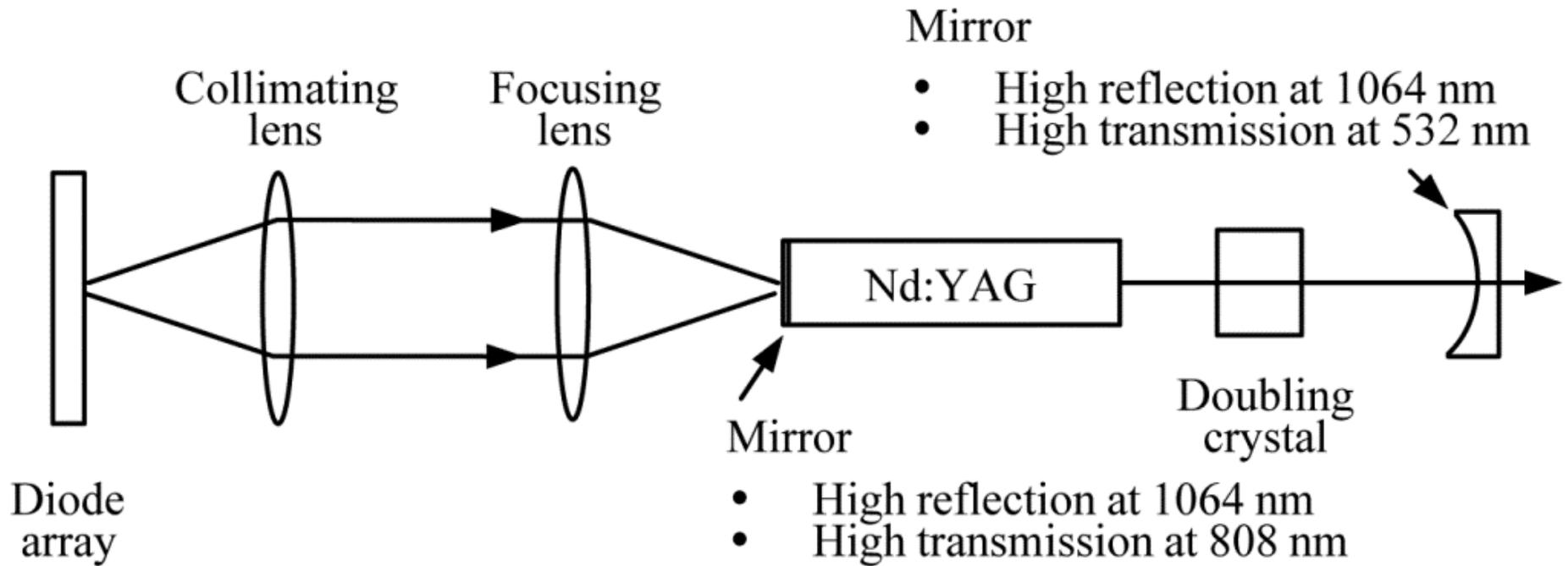
**Figure 8-3** *CW solid state laser efficiency diagram*



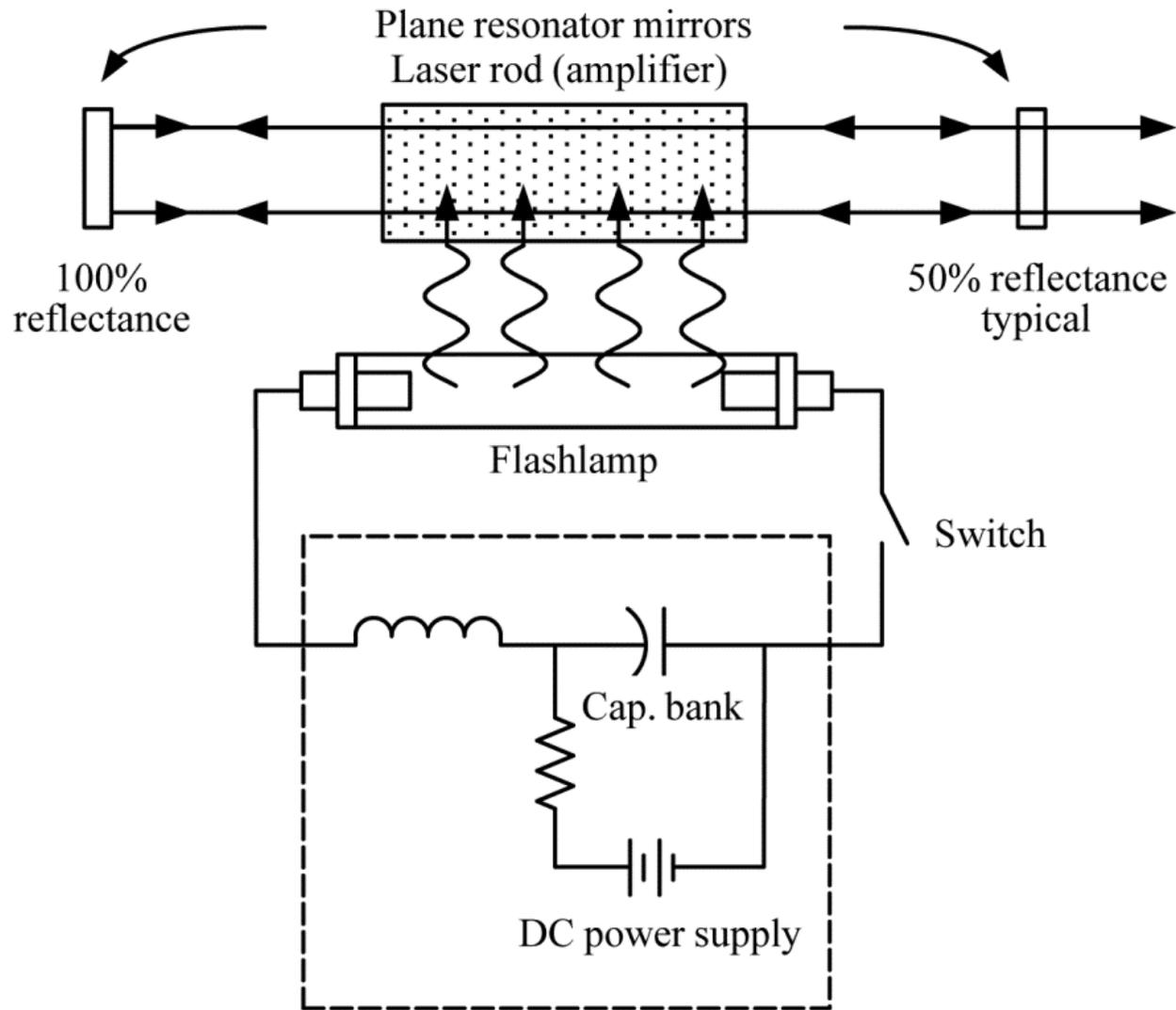
**Figure 8-4** CW laser coolant flow diagram (parameter values obtained from Example 1)



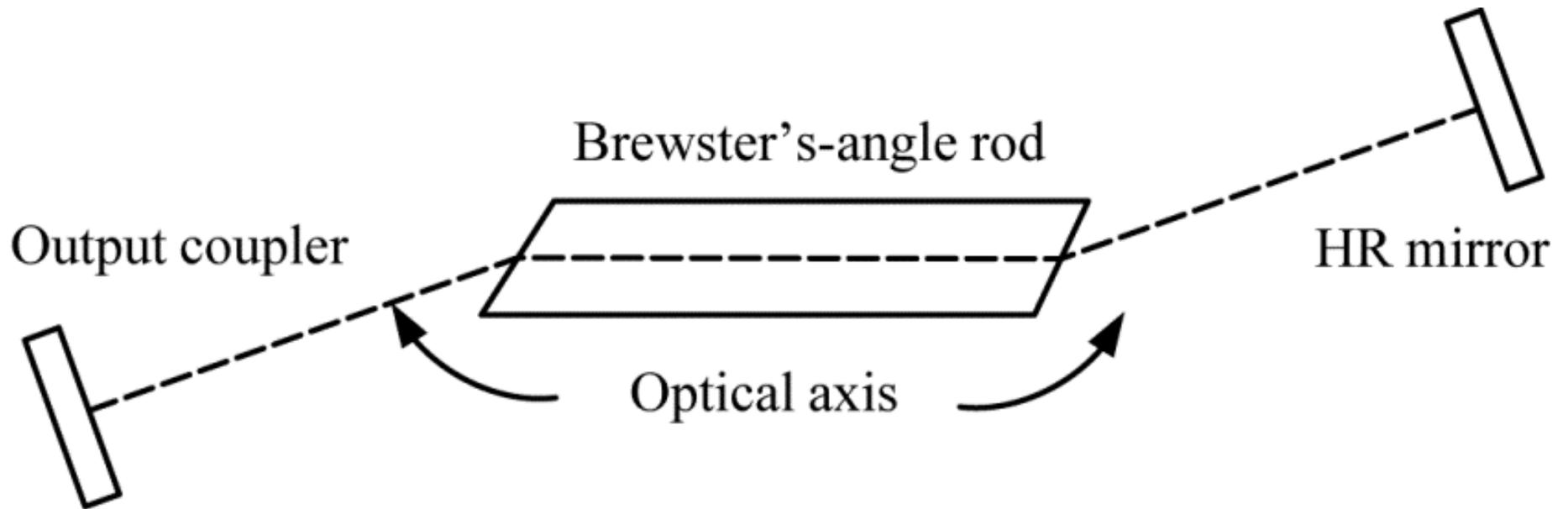
**Figure 8-5** *Left: Absorption spectrum of Nd:YAG. Right: Emission spectra of some pump sources*



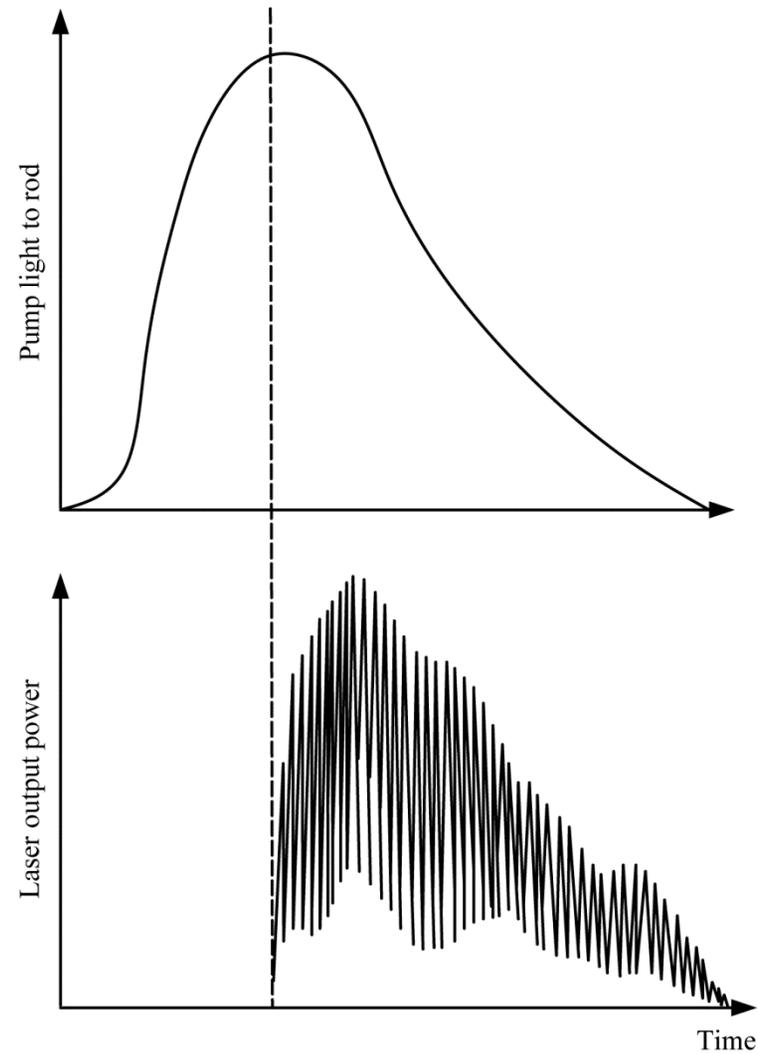
**Figure 8-6** *End-pumped configuration for a diode pumped Nd:YAG laser*



**Figure 8-7** *Simplified schematic of a pulsed Nd:YAG laser*



**Figure 8-8** *Optical axis of a cavity with a Brewster's-angle rod*



**Figure 8-9** *Output of typical pulsed Nd:YAG laser compared with input pump light as a function of time*