Laser Output Characteristics

Module 2-2

Of

Course 2, *Laser Systems and Applications*

2nd Edition

National Center for Optics and Photonics Education
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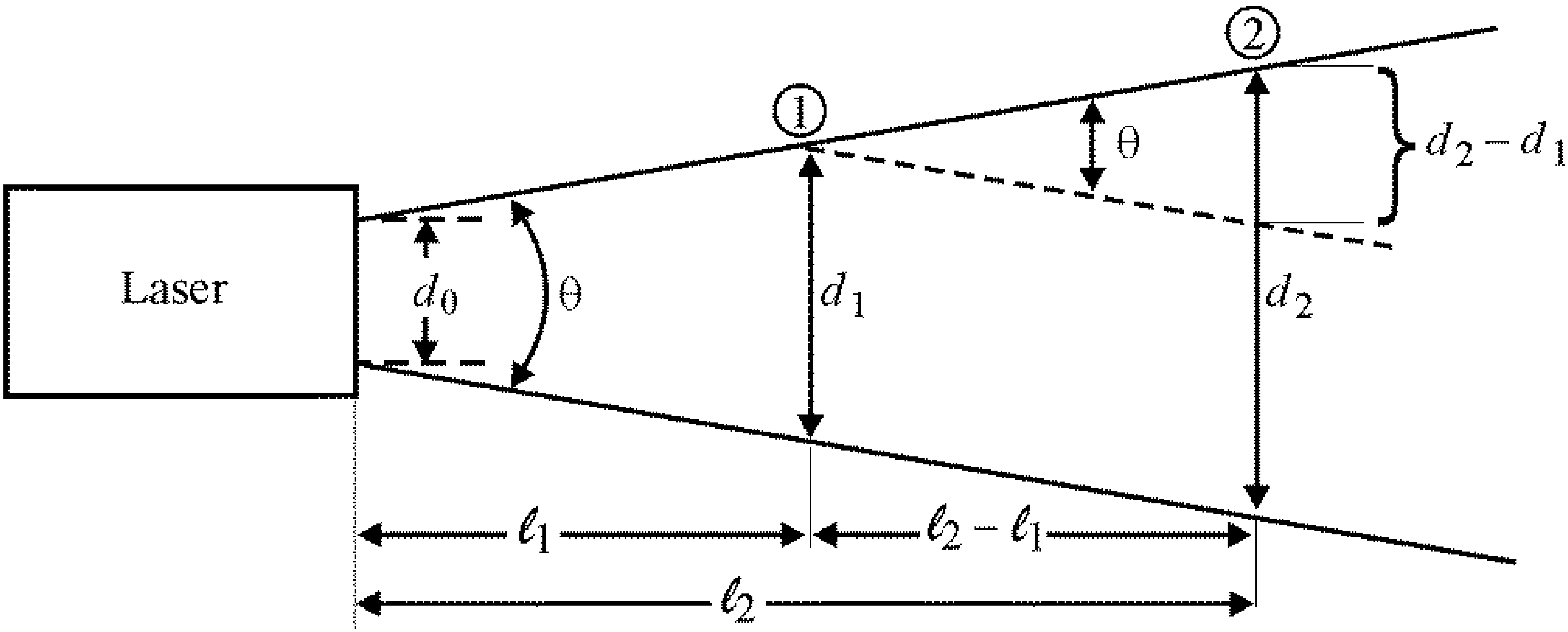

Figure 2-1 *Beam divergence of a laser beam*

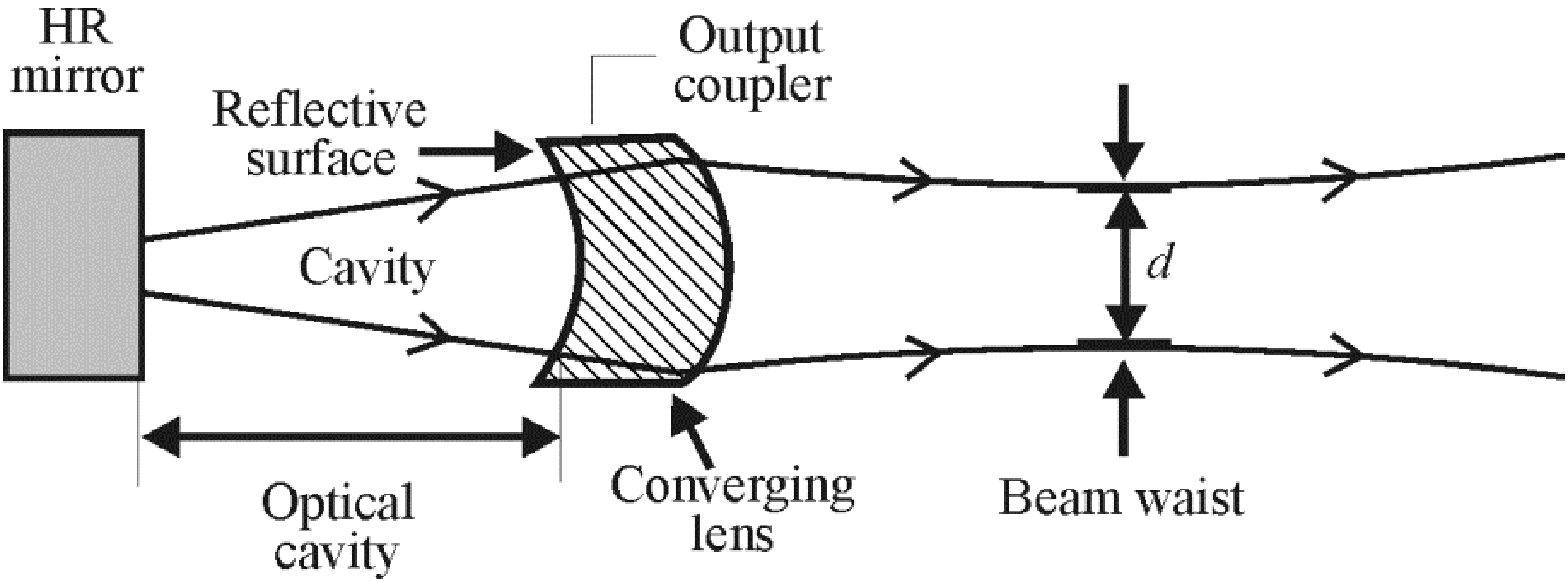

Figure 2-2 *Collimation of a laser beam by a mirror/lens output coupler*

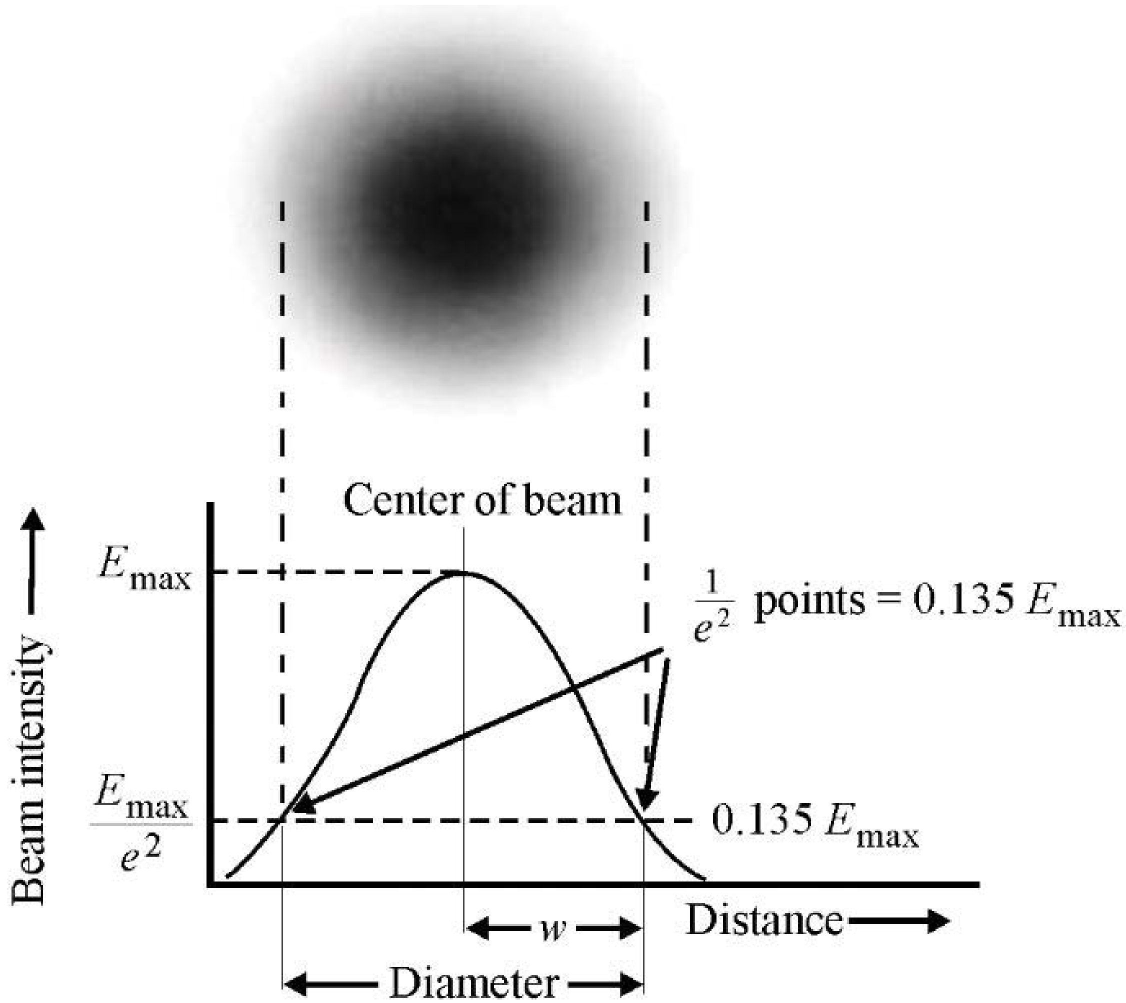

Figure 2-3 *Width of a TEM_{00} laser beam at the 1/ e^2 points*

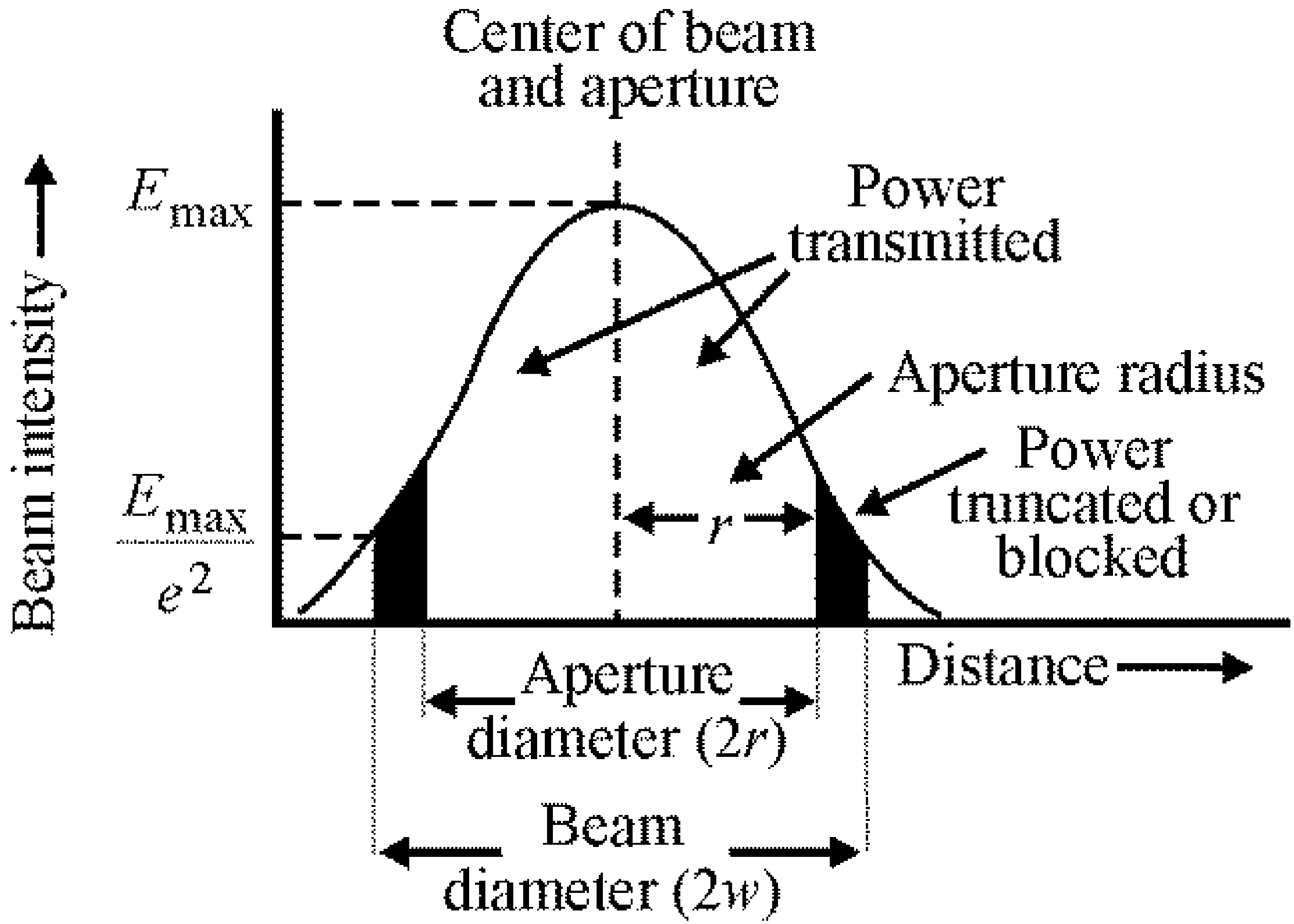

Figure 2-4 *Transmission of a TEM_{00} laser beam through an aperture smaller than the beam diameter.*

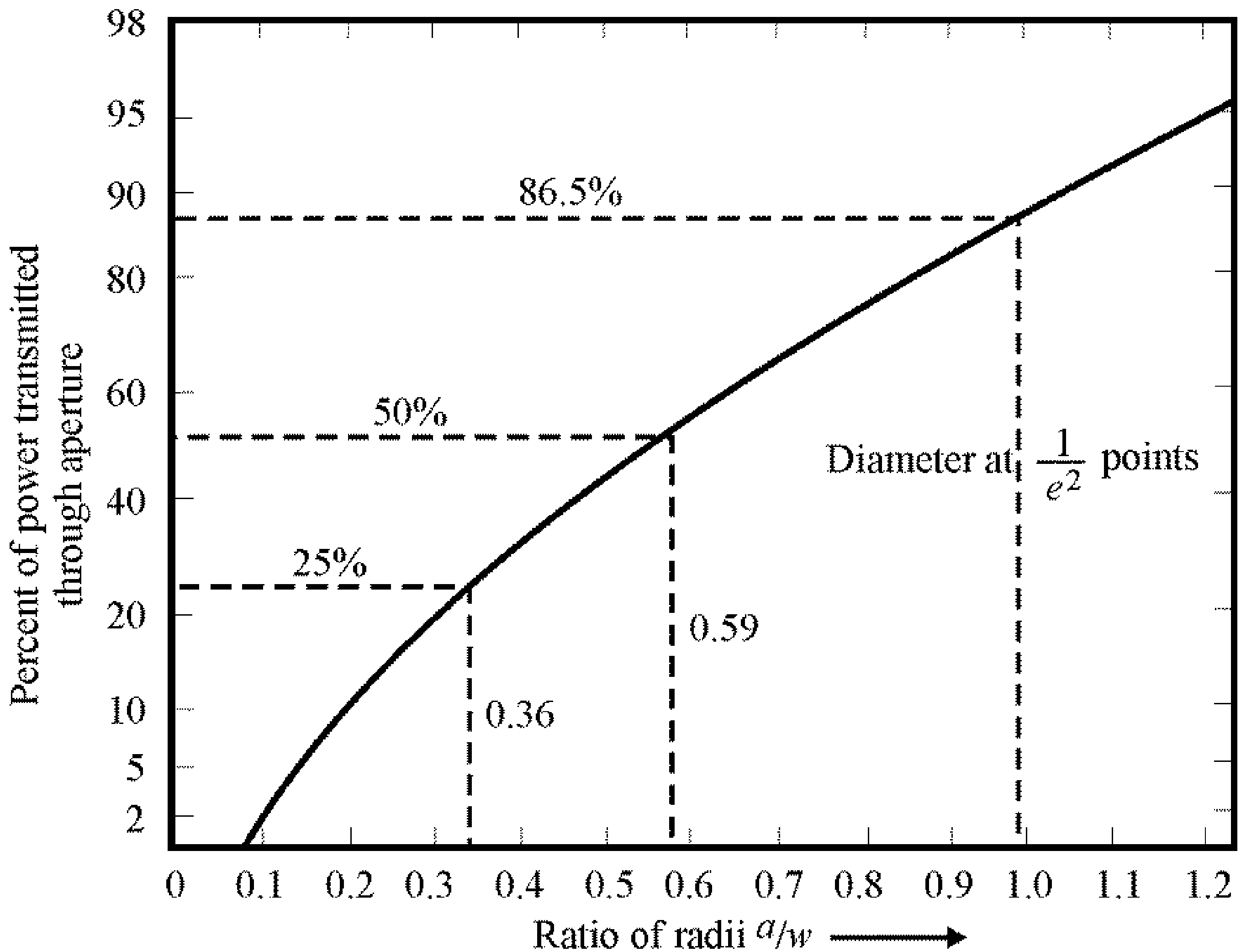

Figure 2-5 *Graph showing percent of beam power transmitted versus the ration of aperture radius to beam radius for a TEM_{00} beam*

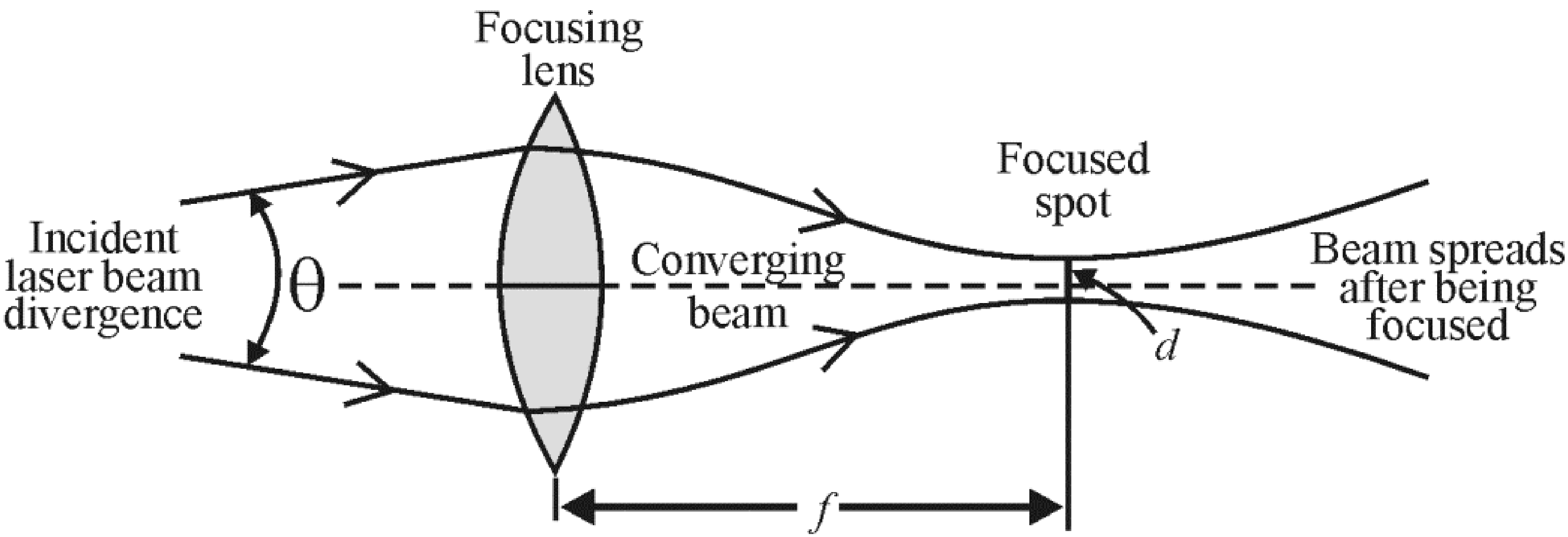

Figure 2-6 *Focusing a laser beam*

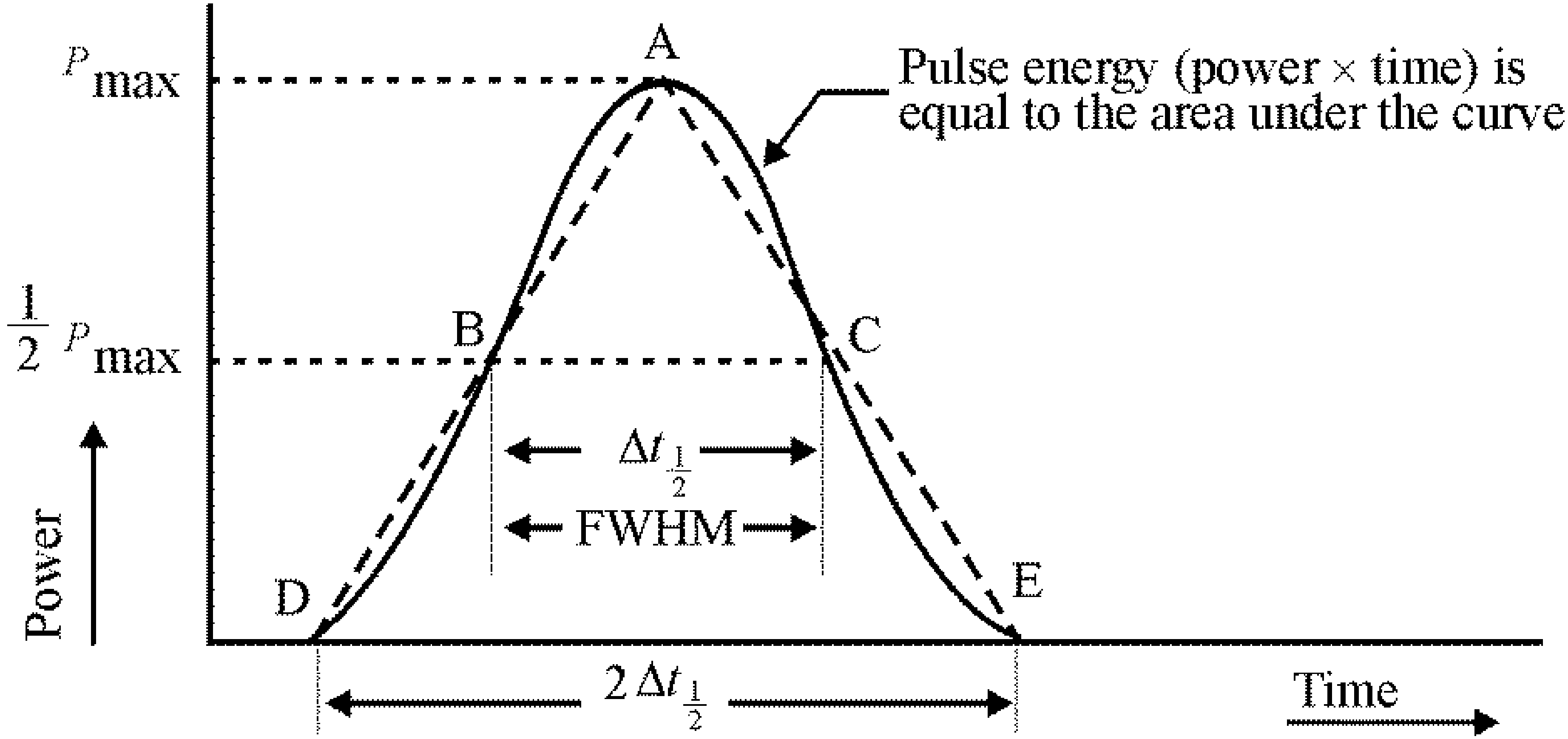

Figure 2-7 *Energy in a laser pulse*

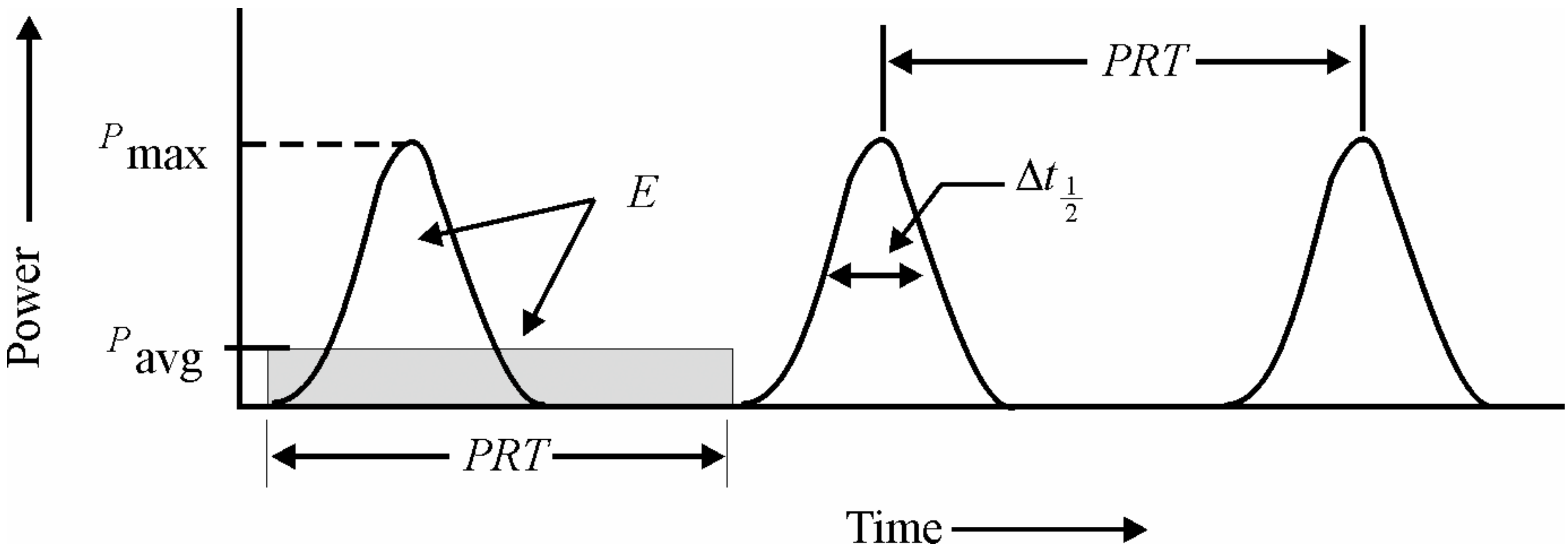

Figure 2-8 *Average power and pulse repetition time of a pulse in a pulse train*

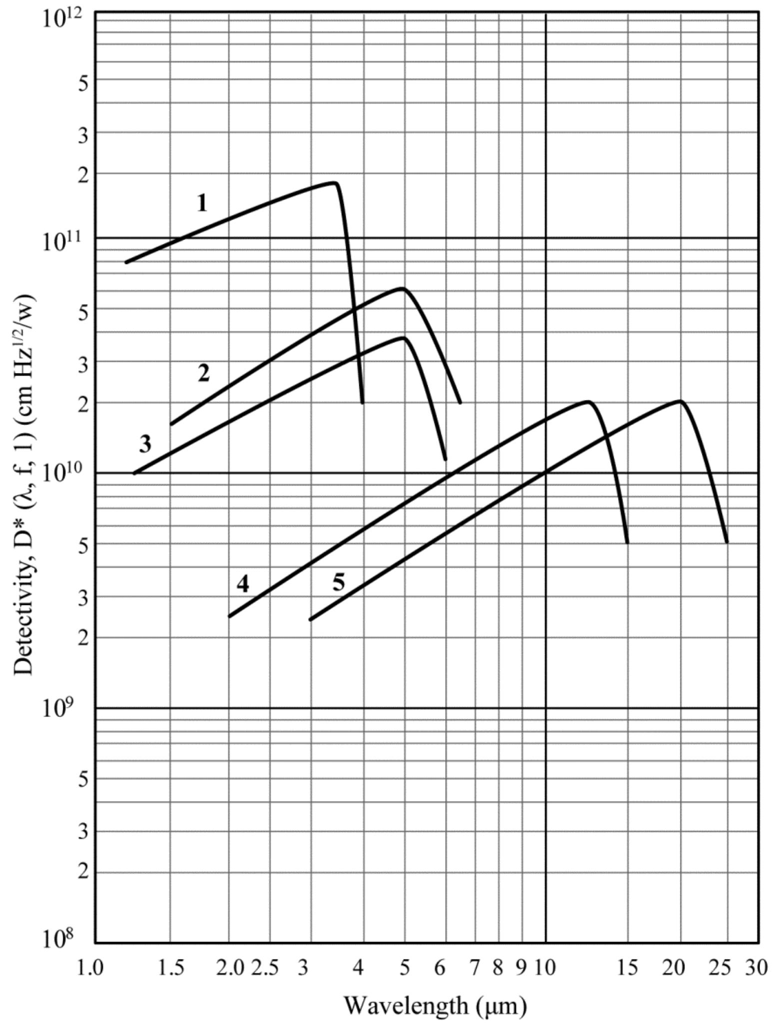

Figure 2-9 *Detectivity of photoconductive detectors as a function of wavelength 1. PbS,77K. 2. InSb, 77K. 3. PbSe, 77K. 4.* $Hg_{0.8}Cd_{0.2}$*Te, 77K. 5. Ge:Cu, 4K.*

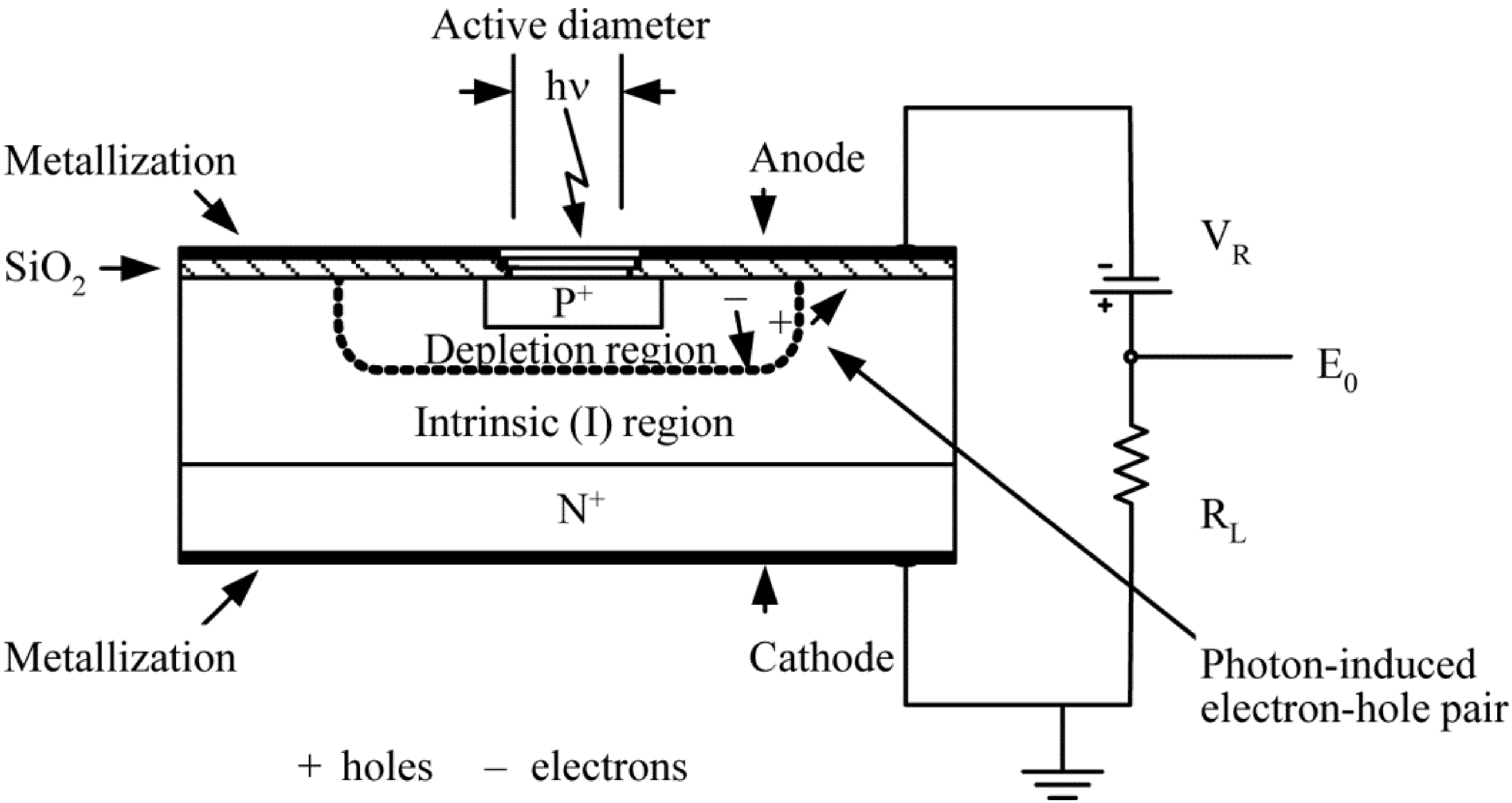

Figure 2-10 *Cross section of PIN diode*

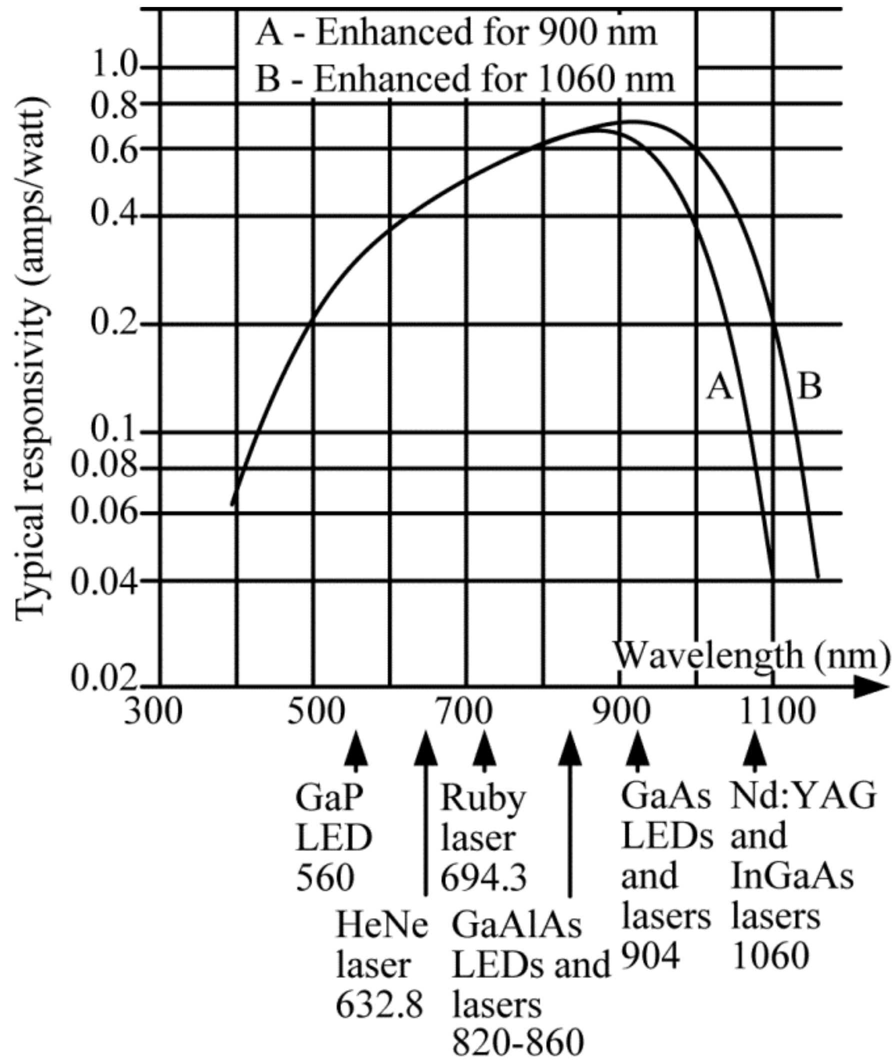

Figure 2-11 *Spectral responsivity of PIN photodiodes*

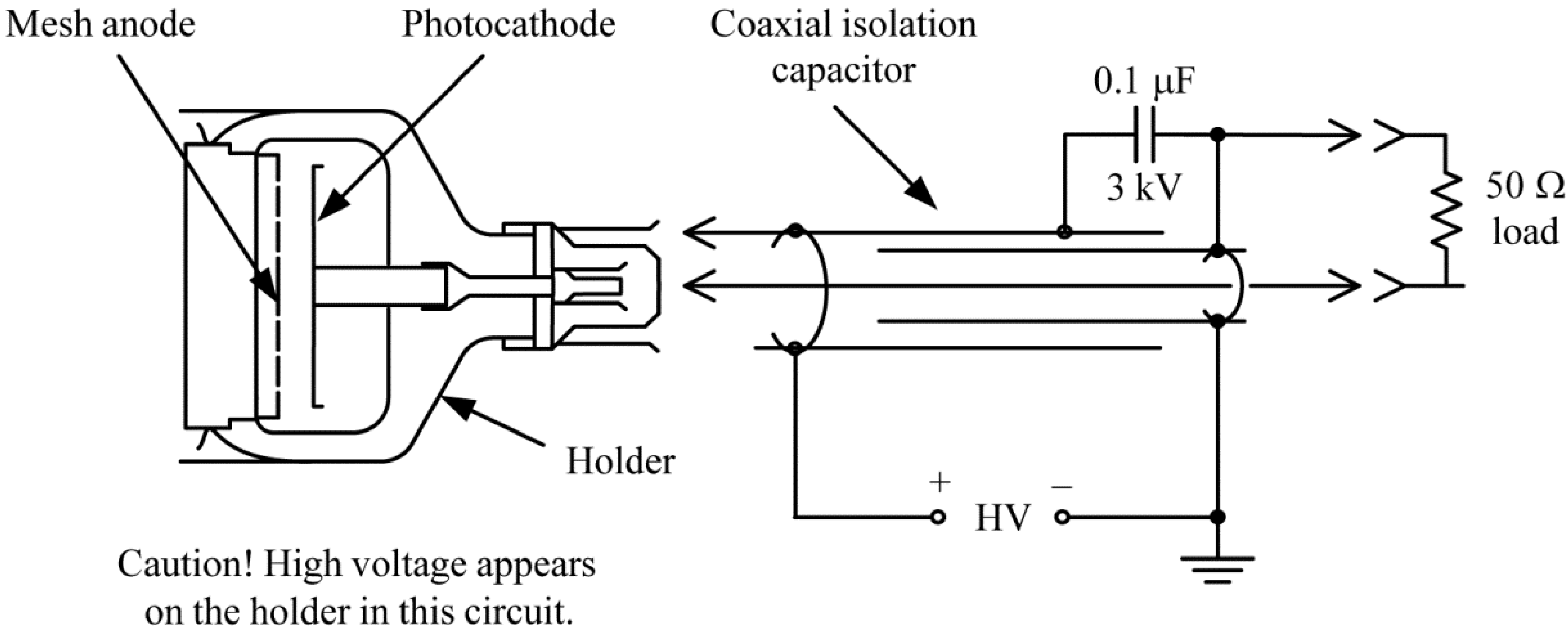

Figure 2-12 *Basic vacuum photodiode*

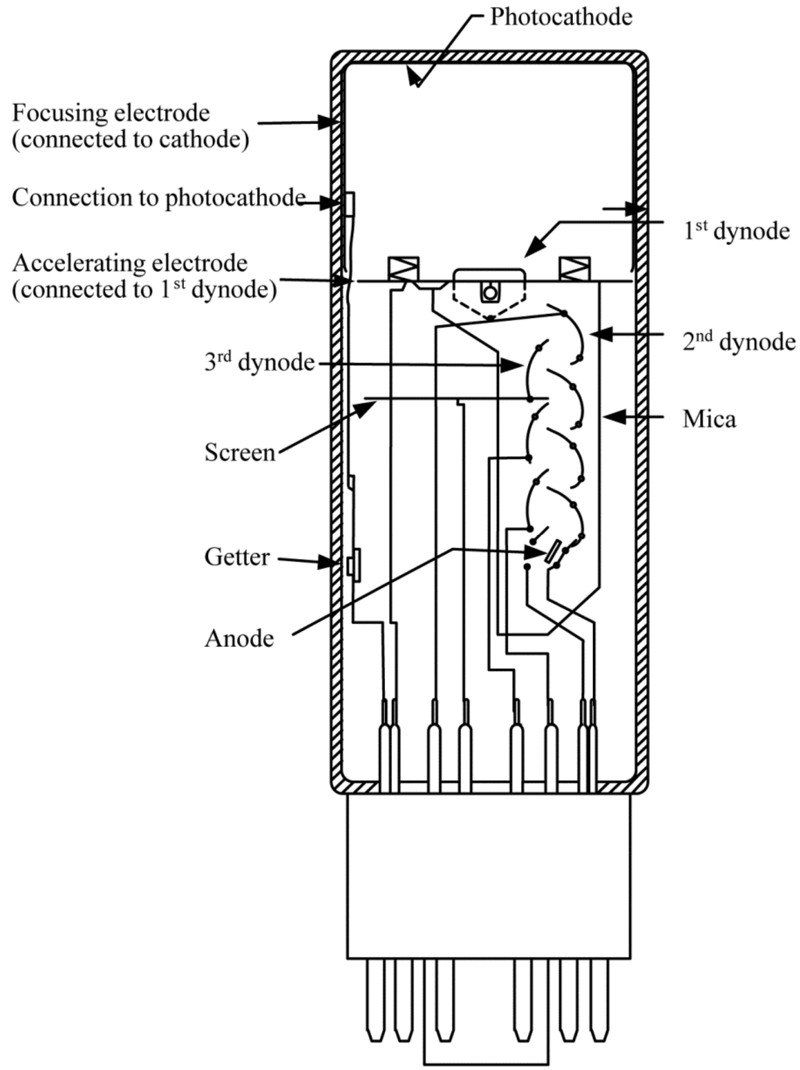

Figure 2-13 *Photomultiplier structure*

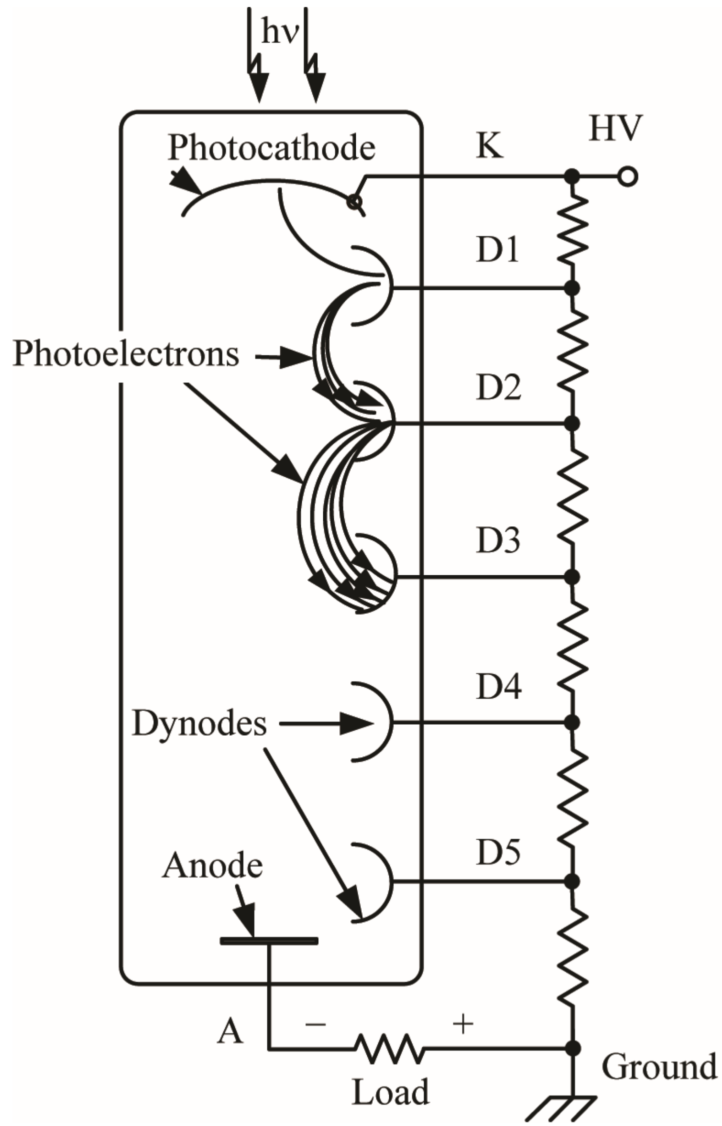

Figure 2-14 *Photomultiplier tube in principle*

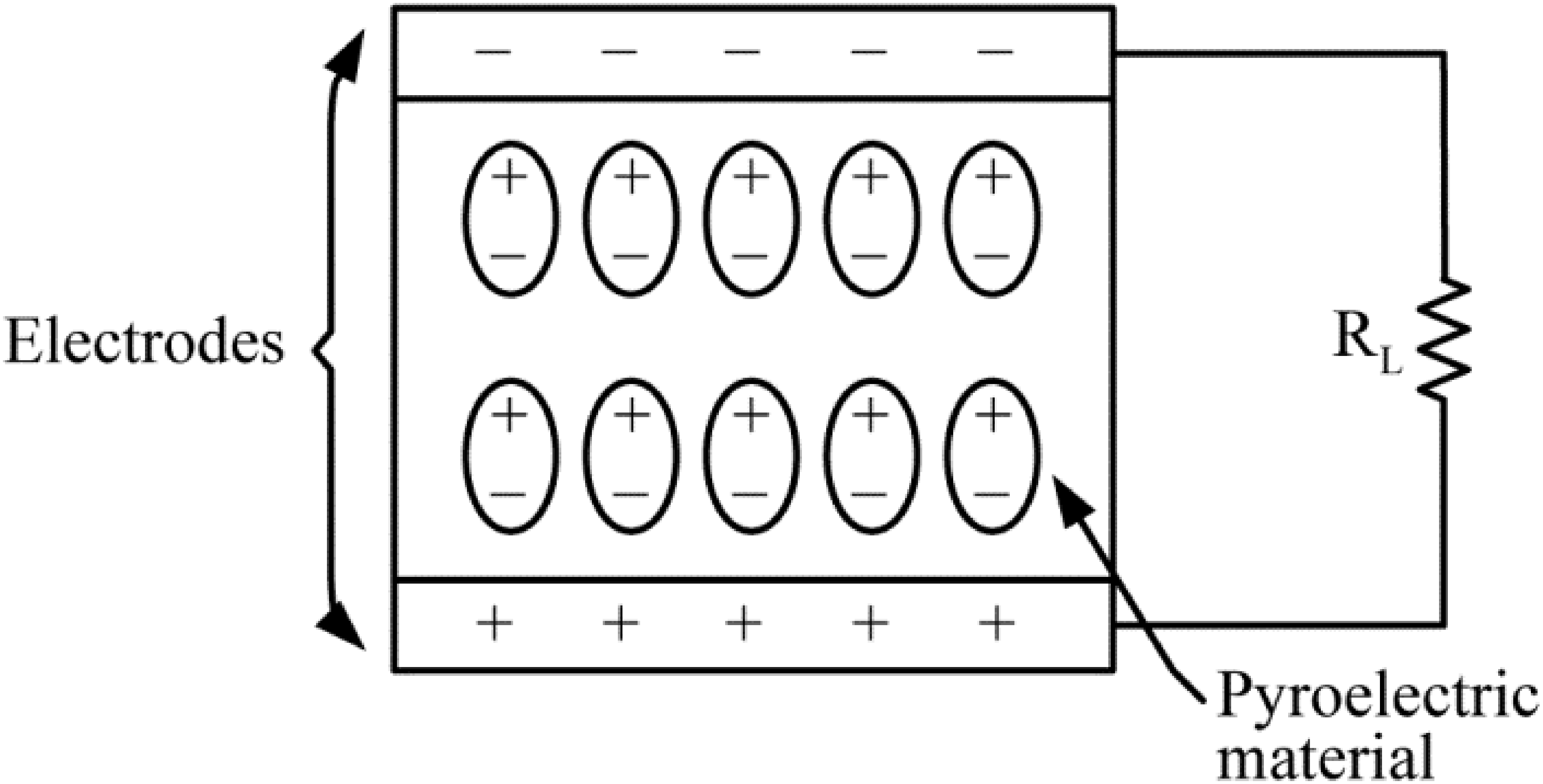

Figure 2-15 *Basic construction of a pyroelectric detector*

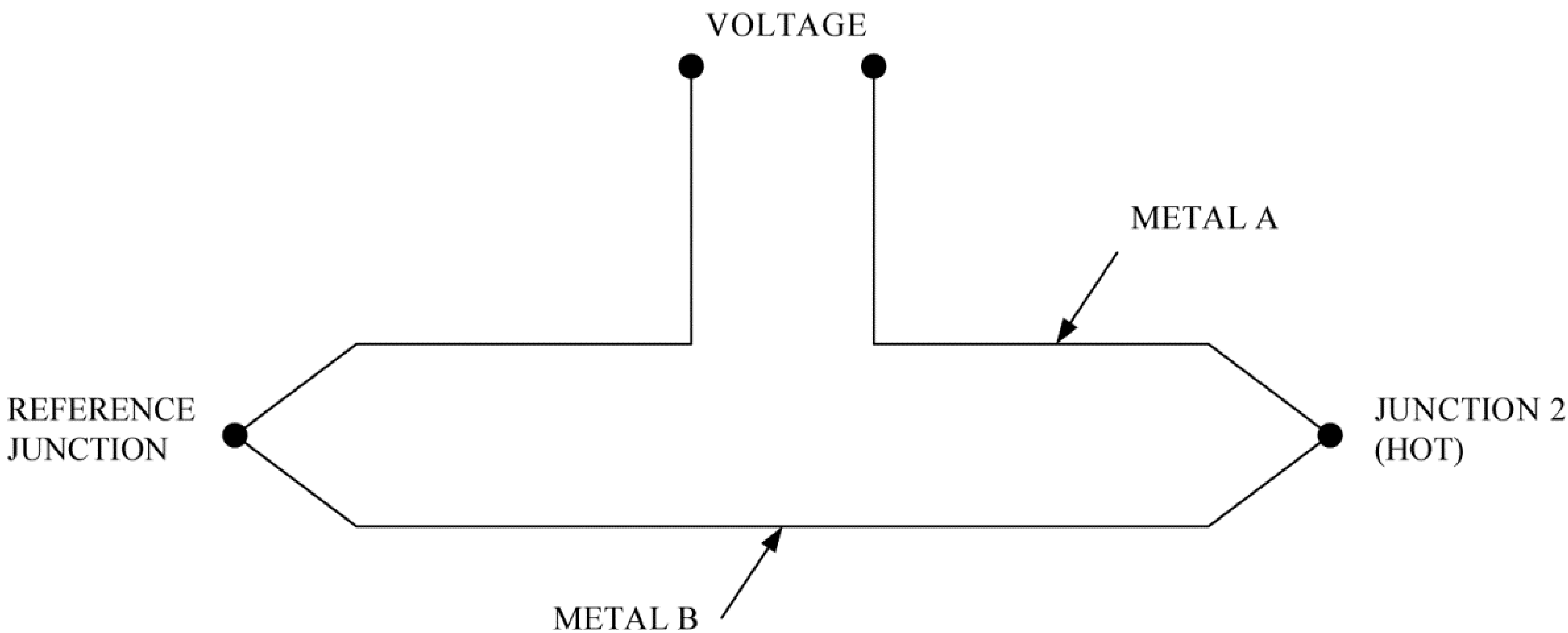

Figure 2-16 *A thermocouple*

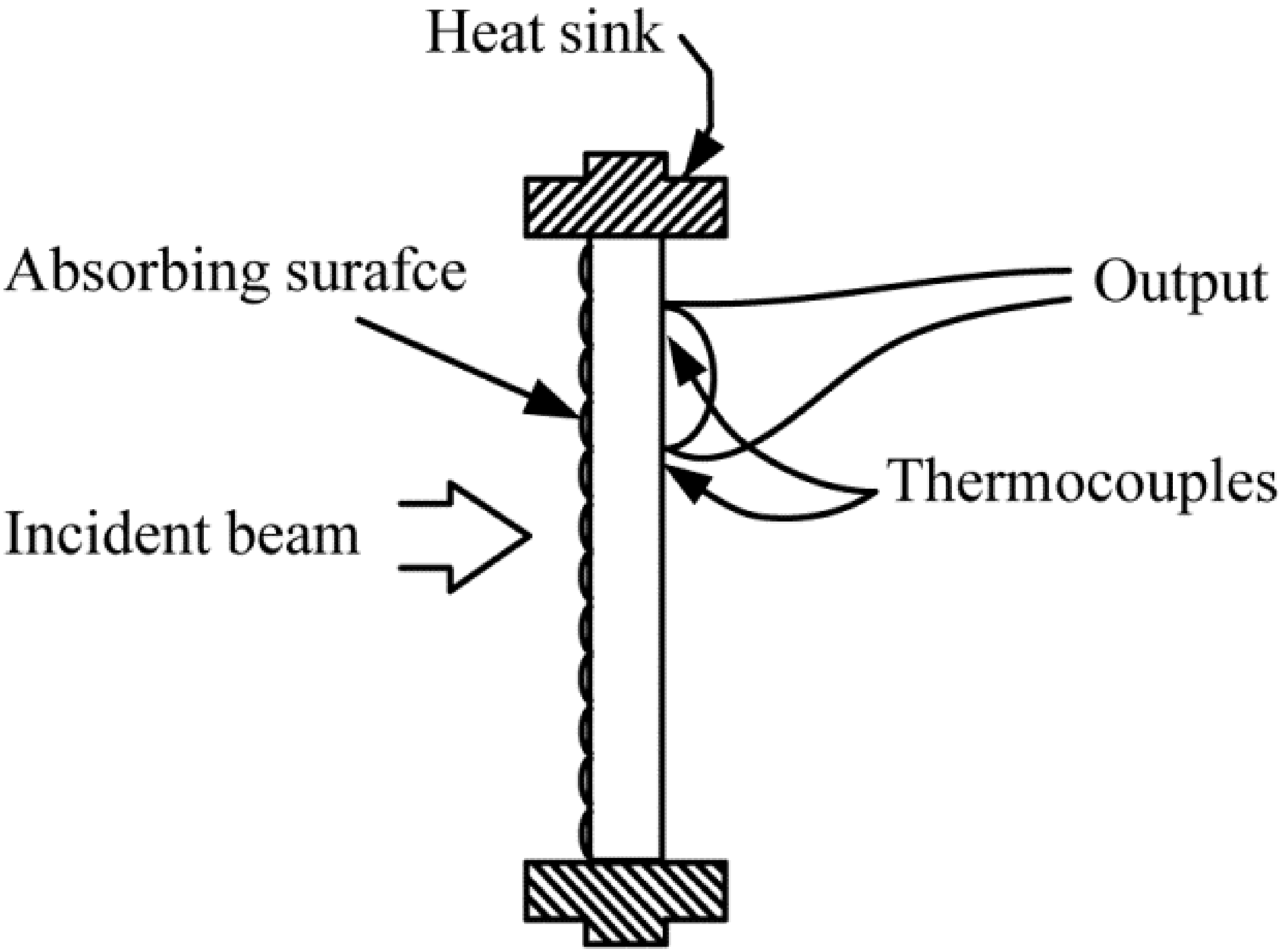

Figure 2-17 *Thermopile for CW power measurement*

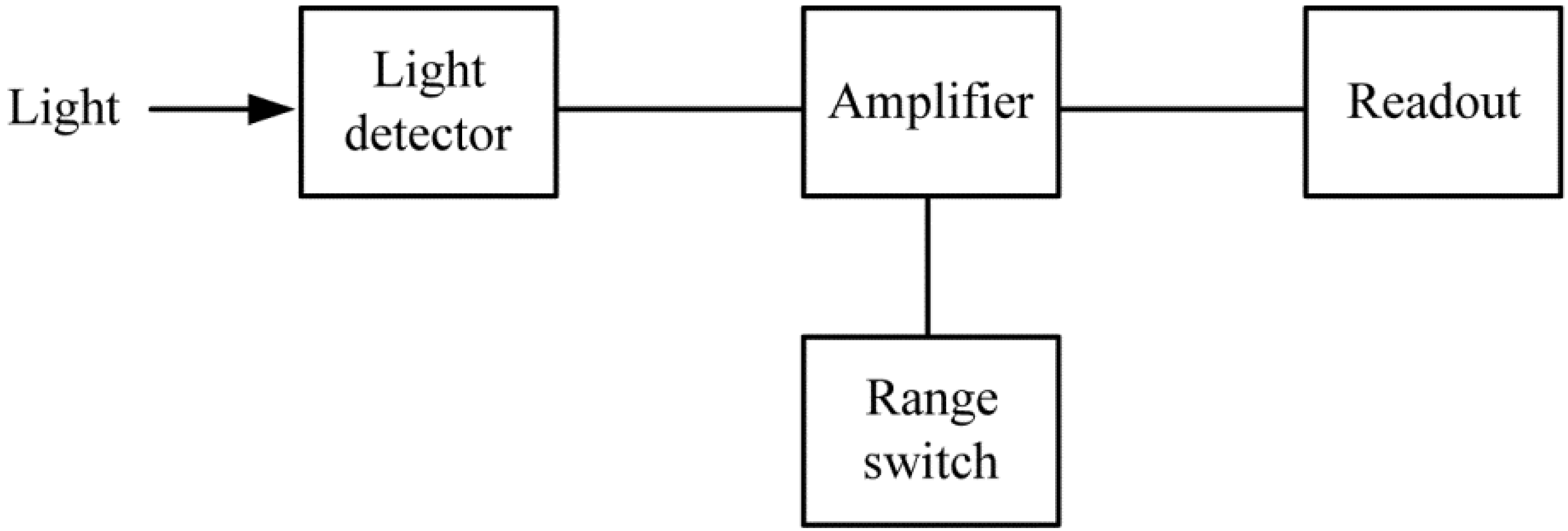

Figure 2-18 *Basic components of an optical power meter*

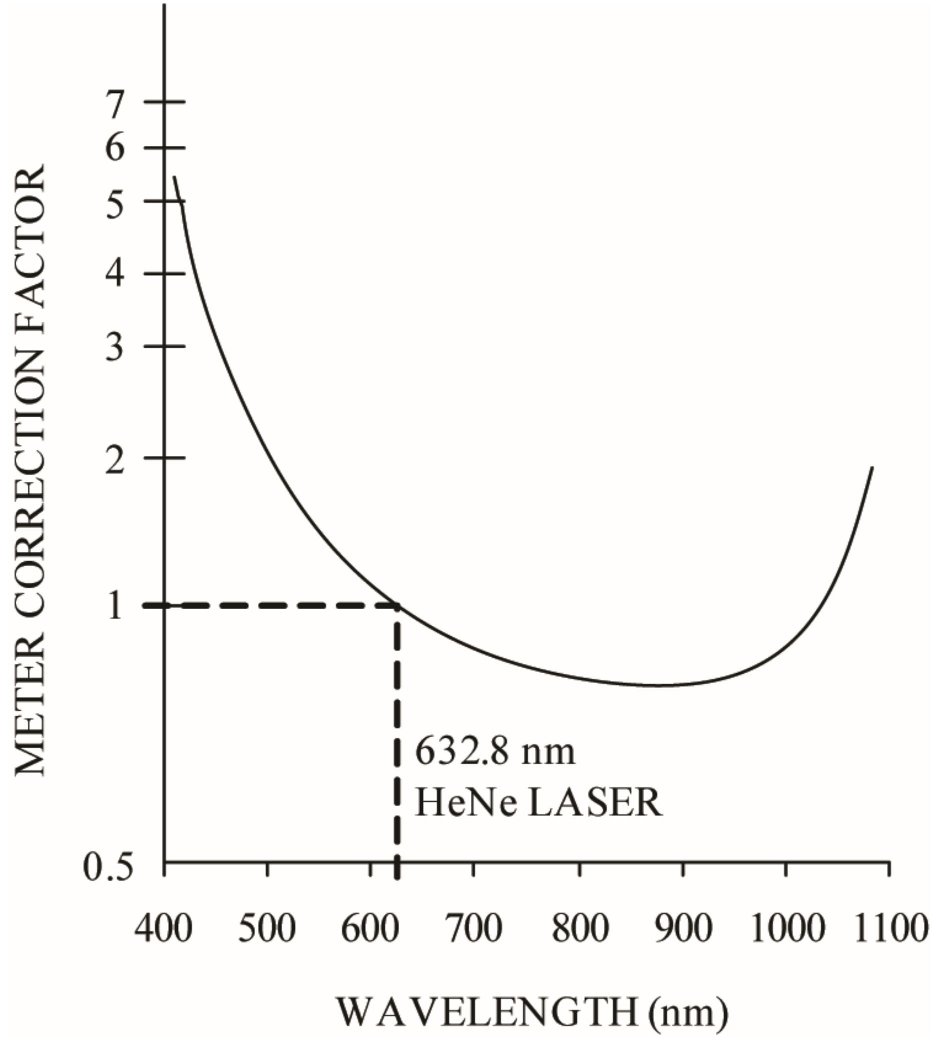

Figure 2-19 *Meter calibration curve for a typical silicon-based photoelectric power meter*

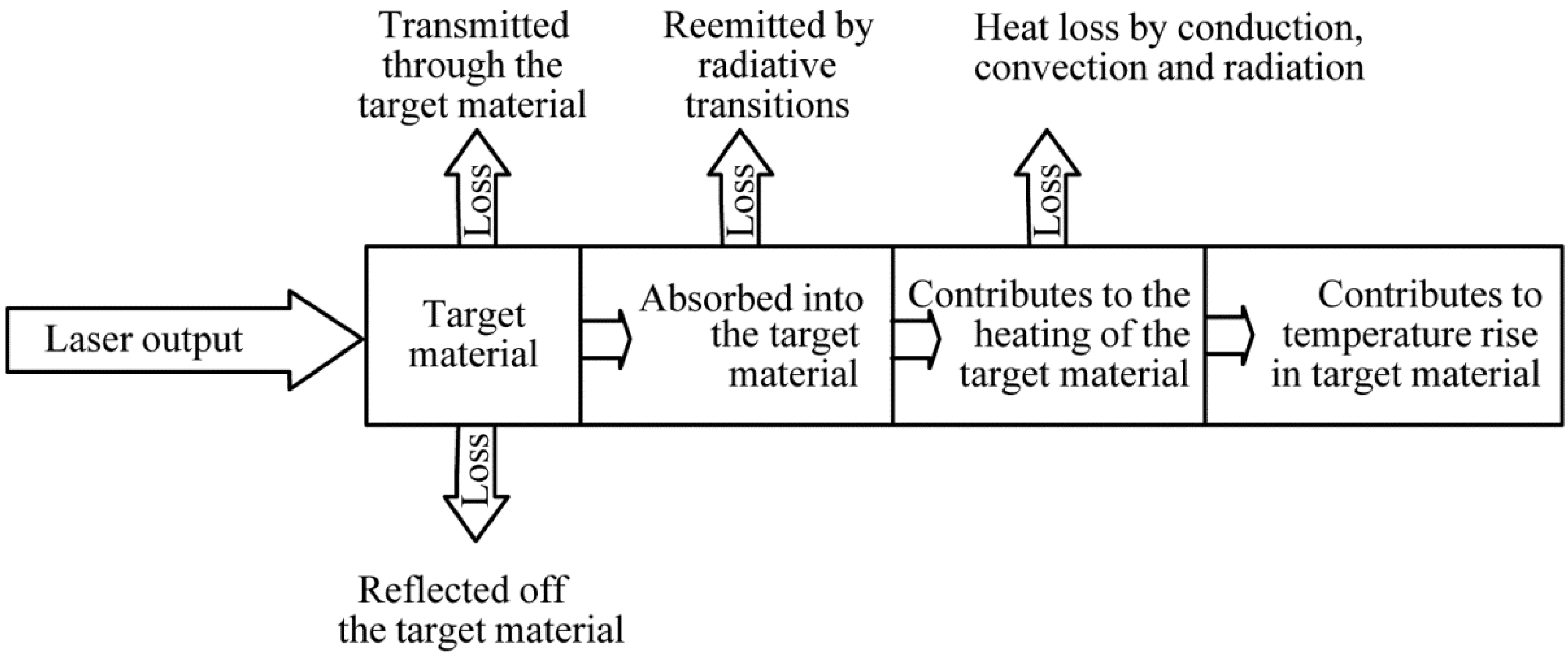

Figure 2-20 *"Flow" diagram showing how laser energy incident on a target material causes a temperature rise in the target material*

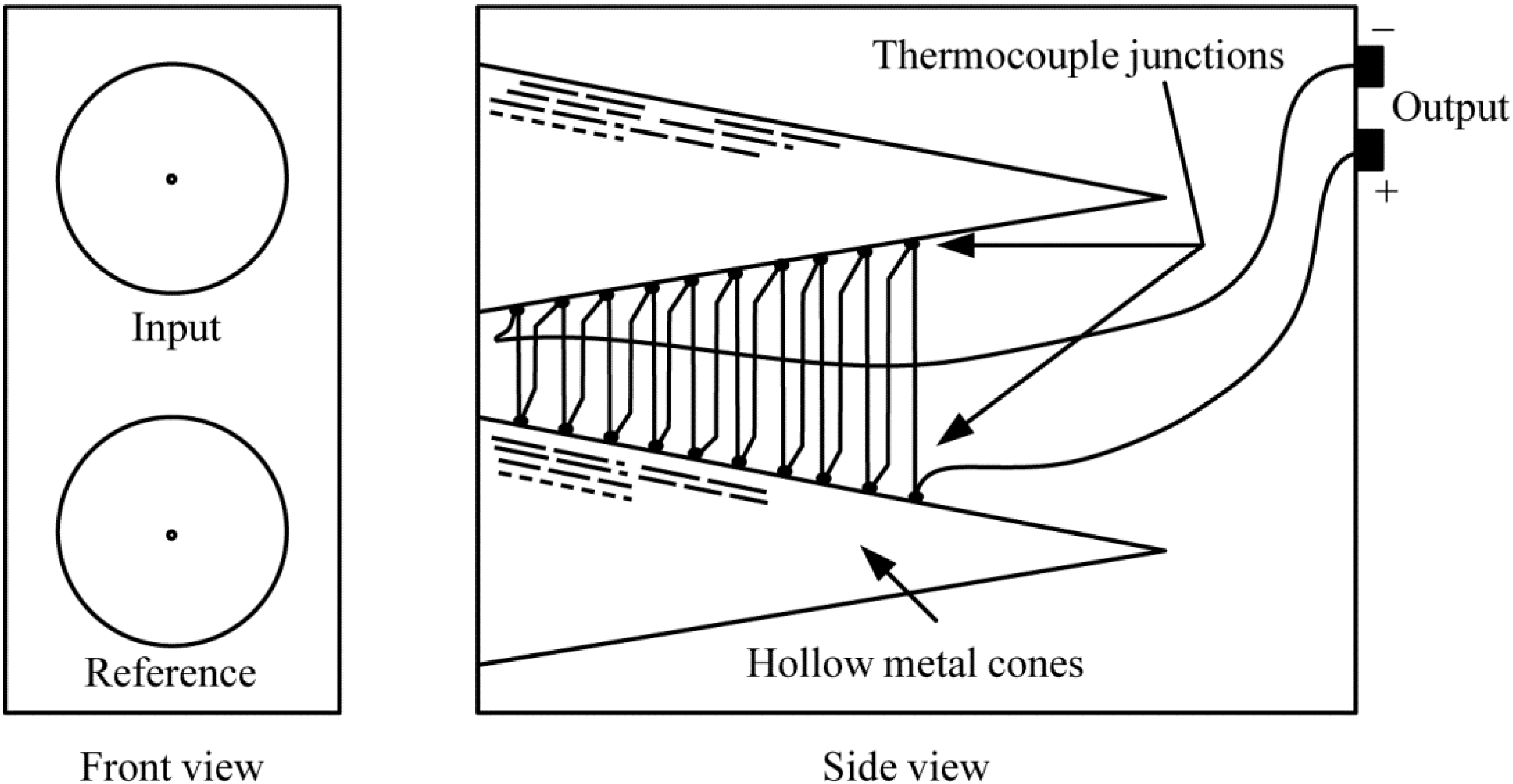

Figure 2-21 *Diagram of a thermoelectric calorimeter*

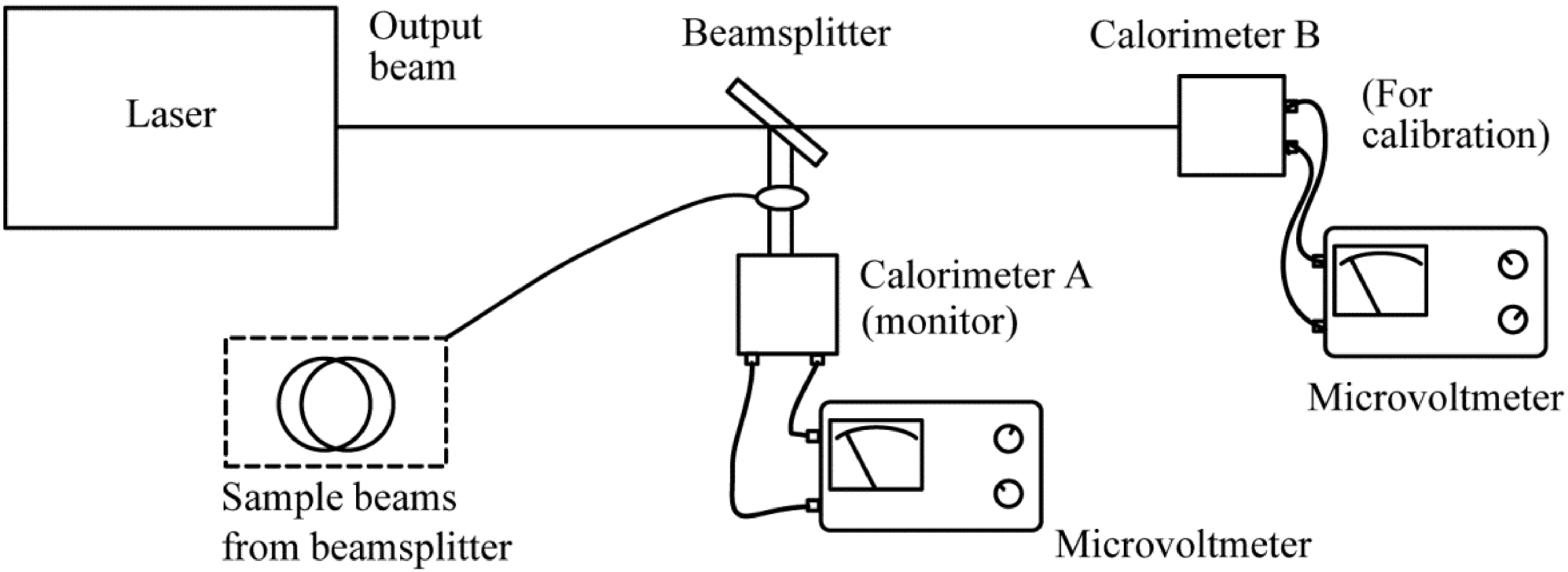

Figure 2-22 *Experimental arrangement for calibration of an energy or power monitor (top view)*

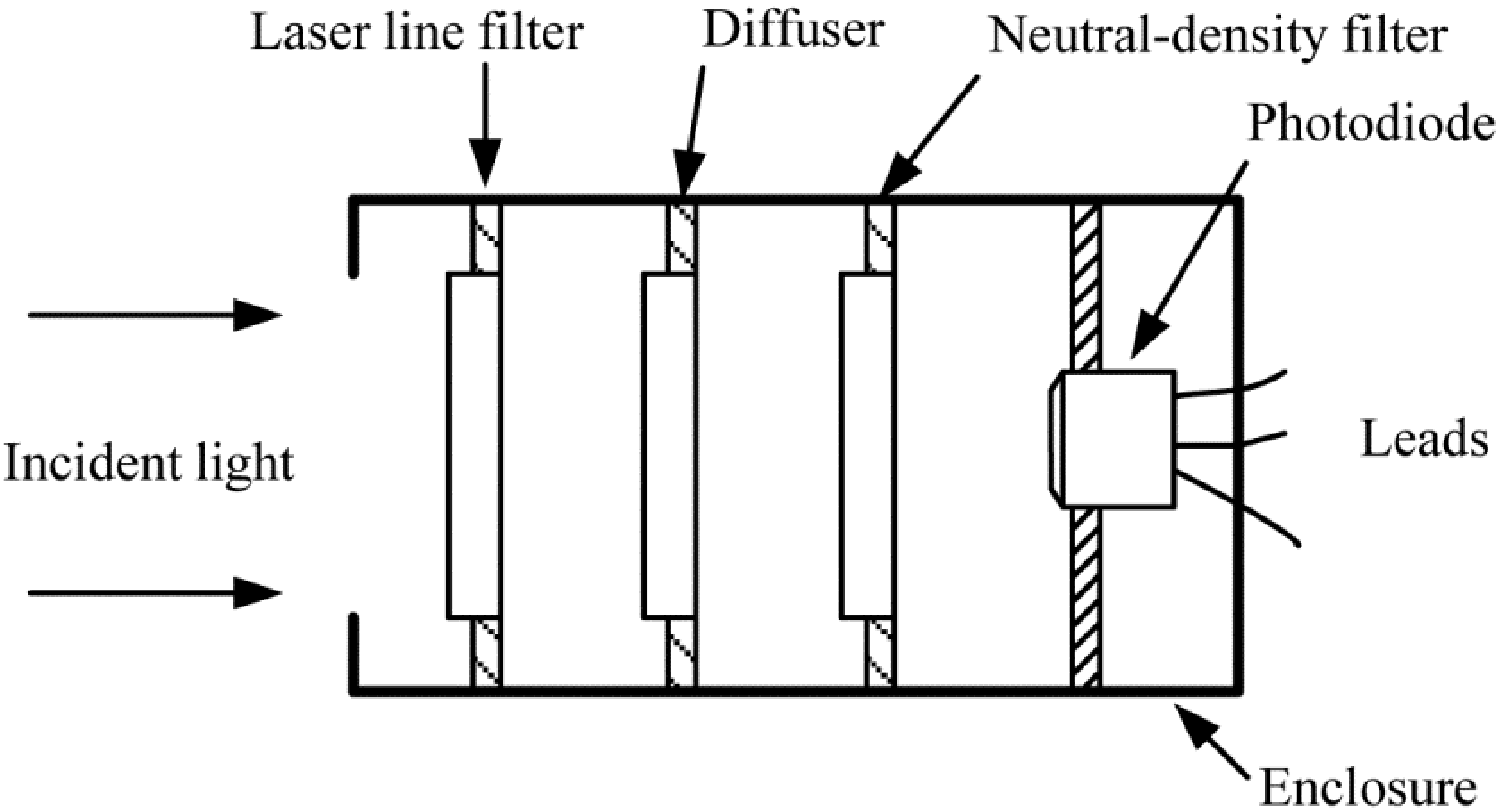

Figure 2-23 *Optical components used with photodiodes*

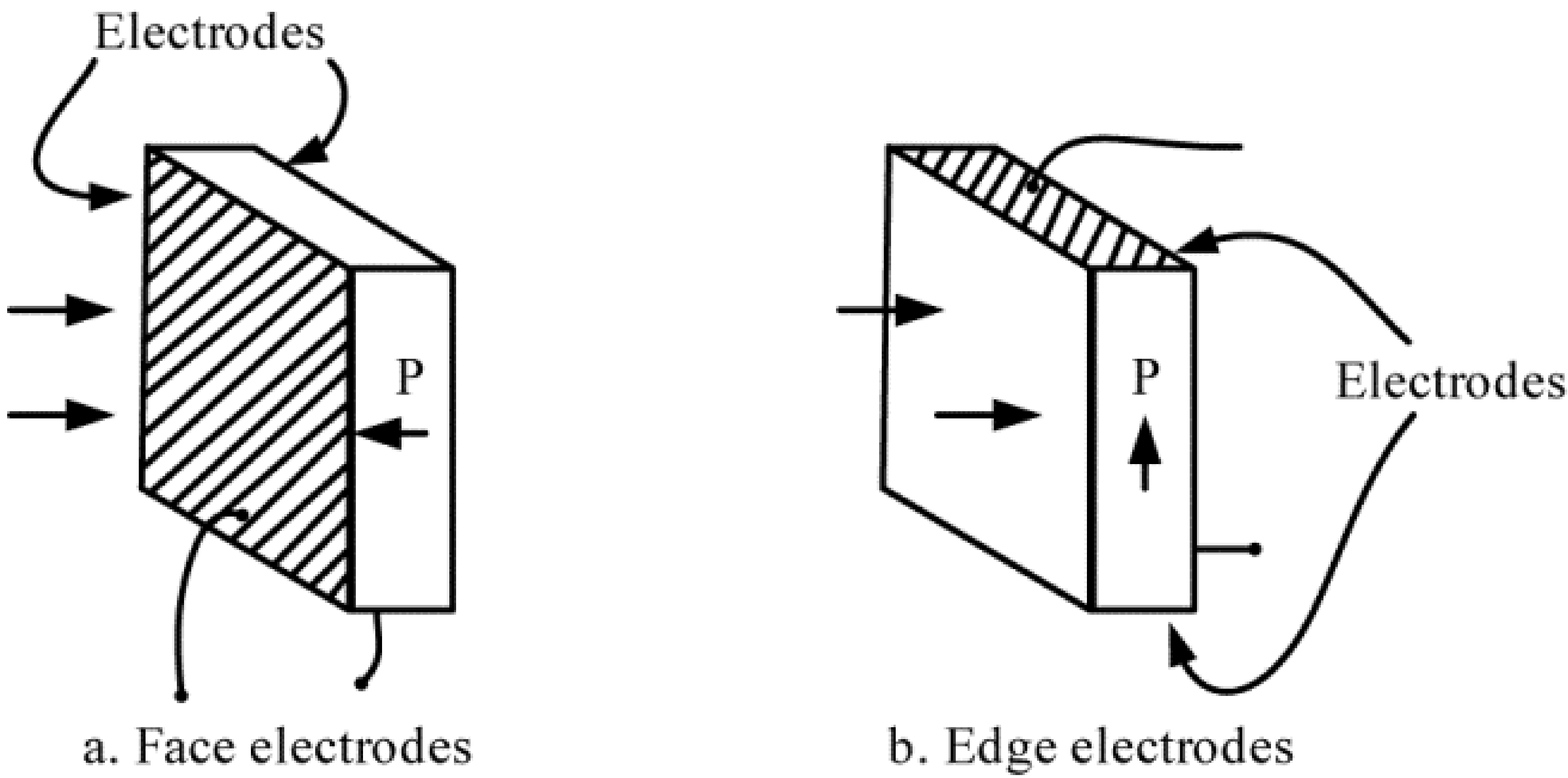

Figure 2-24 *Pyroelectric detector types. P is the polarization vector.*

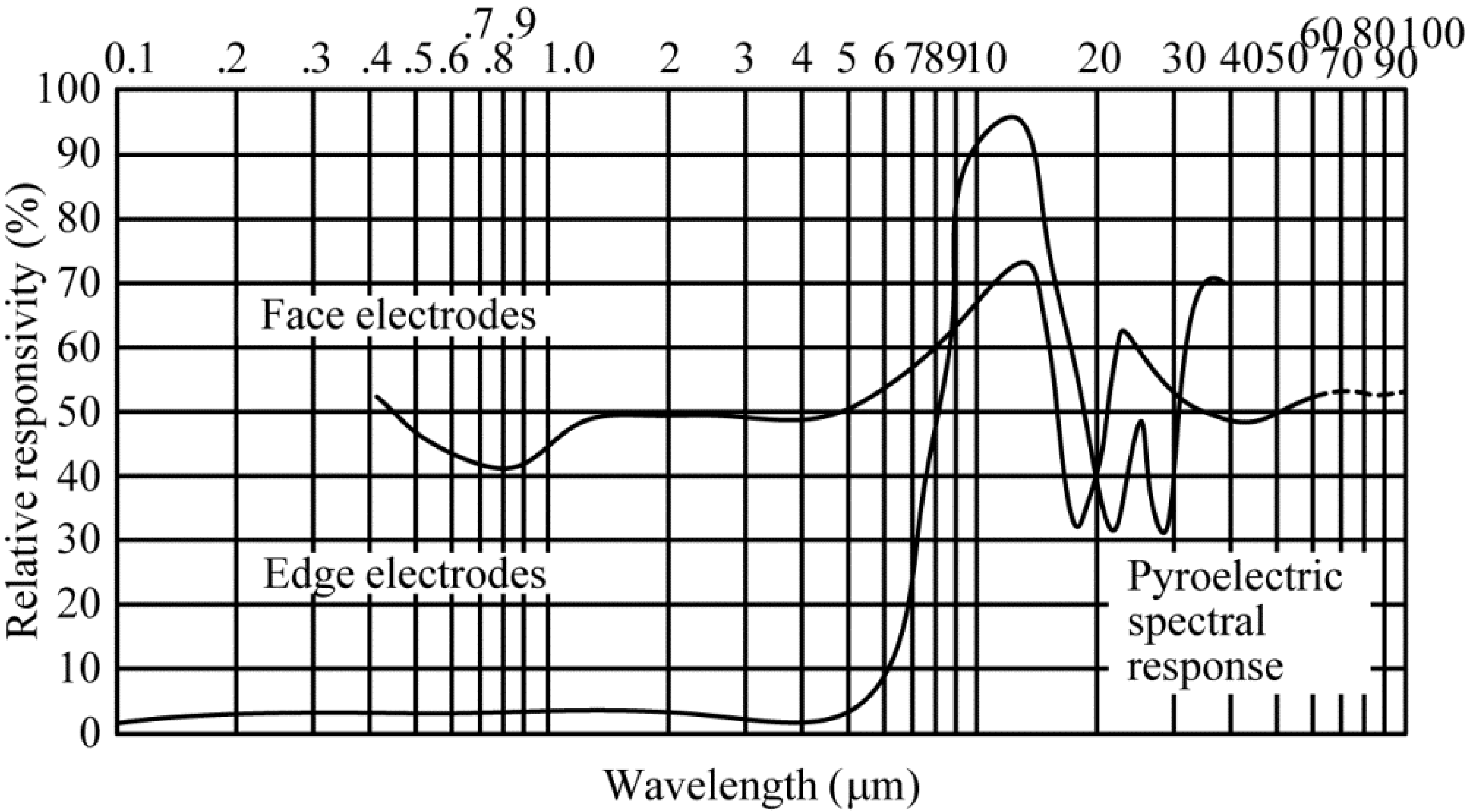

Figure 2-25 *Pyroelectric detector spectral response*

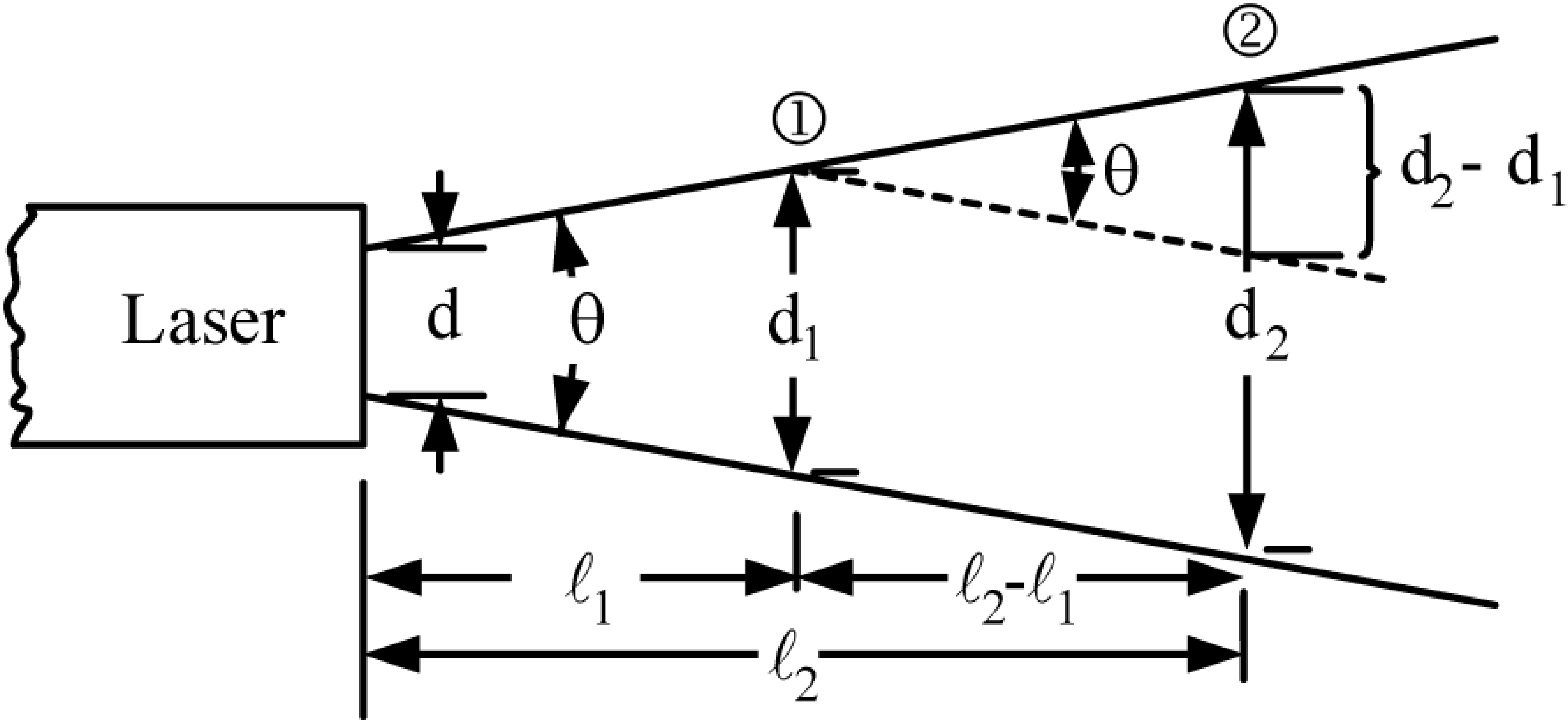

Figure 2-26 *Diffraction of light through a transmission grating*

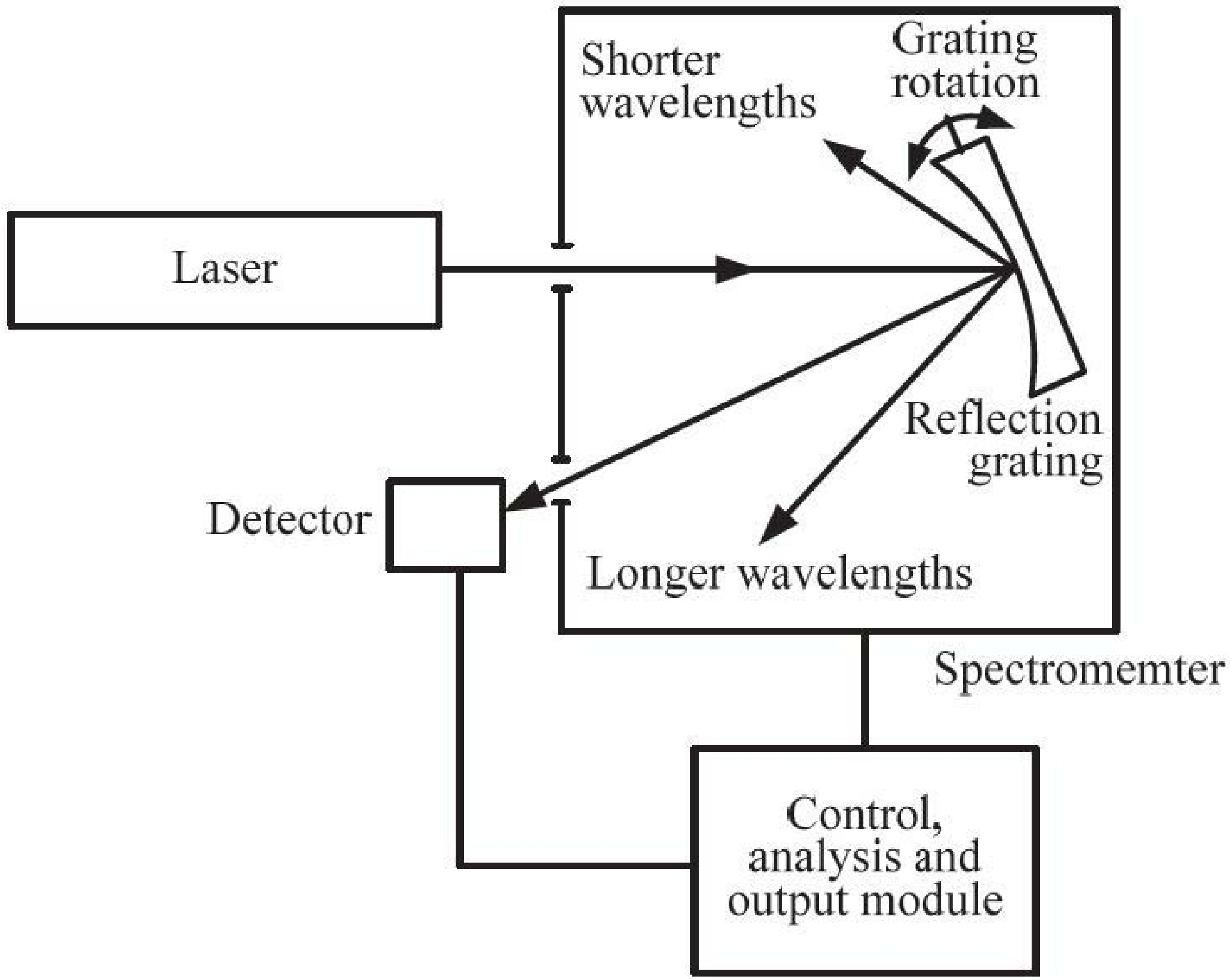

Figure 2-27 *Schematic of spectrograph that uses a reflection grating*