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HIGH POWER/ENERGY OPTICS

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The advent of the high power/energy laser has placed stringent requirements on the fabrication, performance and quality of optical elements employed within systems for most practical and special applications. Their high power/energy performance is generally governed by three distinct steps, firstly the absorption of incident optical radiation (governed primarily by various absorption mechanisms); secondly, followed by a temperature increase and response governed primarily by thermal properties and finally the element's thermo-optical and thermomechanical response, e.g., distortion, stress, birefringenous fracture, etc. All of which needs to be understood in the design of efficient, compact, reliable and versatile high-power/energy systems, under a variety of operating conditions such as pulsed, continuous wave, highly rep-rated or burst mode of varying duty cycles.