

APPENDIX C-3 – TABLE 3 (ANSI Z136.1)

**Simplified Method for Selecting Laser Eye Protection for Small-Source Viewing
(Wavelengths Between 0.400 and 1.400 μm)[†]**

Q-Switched Laser (10^{-9} - 10^{-2} s)		Non-Q-Switched Lasers (0.4×10^{-3} - 10^{-2} s)		Continuous-Wave Lasers Momentary (0.25 - 10 s)		Continuous-Wave Lasers Long-Term Staring (< 1 hr)		Attenuation	
Maximum Output Energy (J)	Max Beam Radiant Exposure ($\text{J}\cdot\text{cm}^{-2}$)	Max Laser Output Energy (J)	Max Beam Radiant Exposure ($\text{J}\cdot\text{cm}^{-2}$)	Max Power Output (W)	Max Beam Irradiance ($\text{W}\cdot\text{cm}^{-2}$)	Max Power Output (W)	Max Beam Irradiance ($\text{W}\cdot\text{cm}^{-2}$)	Attenuation Factor	OD
10	20	100	200	10^5 *	2×10^5 *	100 *	200 *	10^8	8
1	2	10	20	10^4 *	2×10^4 *	10 *	20 *	10^7	7
10^{-1}	2×10^{-1}	1	2	10^3 *	2×10^3 *	1	2	10^6	6
10^{-2}	2×10^{-2}	10^{-1}	2×10^{-1}	100 *	200 *	10^{-1}	2×10^{-1}	10^5	5
10^{-3}	2×10^{-3}	10^{-2}	2×10^{-2}	10	20	10^{-2}	2×10^{-2}	10^4	4
10^{-4}	2×10^{-4}	10^{-3}	2×10^{-3}	1	2	10^{-3}	2×10^{-3}	10^3	3
10^{-5}	2×10^{-5}	10^{-4}	2×10^{-4}	10^{-1}	2×10^{-1}	10^{-4}	2×10^{-4}	10^2	2
10^{-6}	2×10^{-6}	10^{-5}	2×10^{-5}	10^{-2}	2×10^{-2}	10^{-5}	2×10^{-5}	10	1

[†] Use of this table may result in optical densities (OD) greater than necessary. See 4.6.2 for other wavelengths.

* Not recommended as a control procedure at these levels. These levels of power could damage or destroy the attenuating material used in the eye protection. The skin also needs protection at these levels.