Optical Limiting Based on Huygens Metasurfaces

Austin Howes[1†], Zhihua Zhu[2†], David Curie[1], Jason R. Avila[3], Virginia D. Wheeler[3], Richard F. Haglund[1], and Jason G. Valentine[4]*

[1]Department of Physics and Astronomy, Vanderbilt University, Nashville, TN 37212, USA
[2]Department of Electrical Engineering and Computer Science, Vanderbilt University, Nashville, TN 37212, USA
[3]U.S. Naval Research Laboratory, Washington, DC 20375, USA
[4]Department of Mechanical Engineering, Vanderbilt University, Nashville, TN 37212, USA
[†]These authors contributed equally to the work
[*]Corresponding author: jason.g.valentine@vanderbilt.edu

SUPPLEMENTARY INFORMATION:

Table 1: Thermal properties of materials in the Huygens metasurface-based optical limiter design.

Material	Density (g/cm^3)	Thermal Cond. W/K $\cdot$ m	Heat Capacity (kJ/K $\cdot$ kg)
Si	2.328	1.5	0.71
SiO$_2$	2.4	1.4	0.75
VO$_2$ (25℃)	4.57	3.5	0.656
VO$_2$ (85℃)	4.64	6	0.78