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Discharging Optics in Vacuum[1] MARK GIRARD, DENNIS UGOLINI, Trinity University — We have studied using UV illumination to remove excess surface charge from fused silica optics. We commissioned and calibrated a commercial Kelvin probe to measure the surface potential of charged optics in vacuum. Using a Xenon light source and a monochromator, we directed UV light at the sample and were able to remove the excess charge. We determined that the discharging rate scaled linearly with the intensity of the light and the charge density on the surface. By varying the wavelength of the light, we saw a peak discharge rate at 215nm in both uncoated and coated optics. The Kelvin probe also allows us to study the sign of the charge carriers and other techniques for charge removal.

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