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Investigation of LLD Test Sample Performance Under High Heat Loads[1] TYLER ABRAMS, PPPL, M.A. JAWORSKI, UIUC, R. KAITA, J. KALLMAN, PPPL, E. FOLEY, Nova Photonics, T. GRAY, ORNL, H. KUGEL, PPPL, F. LEVINTON, Nova Photonics — A small prototype sample of the NSTX Liquid Lithium Divertor (LLD) was exposed to a MSE-LIF diagnostic neutral beam at a power of $\sim$10 MW/m^2 for 1-3 seconds. Calibrated infrared measurements of front face temperature and thermocouple measurements of bulk sample temperature were obtained. Predictions of temperature evolution were derived from a simple 1D heat flux model and compared with experimental data. These results demonstrated the effective heat load handling of a thin stainless steel liner with porous Mo coating on a copper heat sink, suggesting usefulness as NSTX-Upgrade PFCs. A novel method of measuring the resistance of the lithium films inside NSTX was also developed, the initial results of which will be presented.

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