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**Electron Beam Design and Calibration for the Solid/Liquid Lithium Divertor Experiment** MICHAEL JAWORSKI, R. FLAUTA, T.K. GRAY, J. KIM, C.Y. LAU, M.B. LEE, M.J. NEUMANN, V. SURLA, D.N. RUZIC, University of Illinois at Urbana-Champaign — An electron beam has been developed as part of the Solid/Liquid Lithium Divertor Experiment (SLiDE) at the University of Illinois at Urbana-Champaign. The purpose of the SLiDE apparatus is to examine the motion of liquid lithium under fusion relevant heat loads and magnetic fields. To mimic the heat fluxes present in the divertor of a fusion machine, a linear sheet beam is utilized which can operate over a range of applied magnetic fields and power levels. With steady state operation up to 15kW input power, the beam can produce peak heat fluxes of  $10 \text{ MW/m}^2$  and heat flux gradients comparable to those found in fusion experiments. The design of the electron beam was developed using commercial beam transport codes and the final design is diagnosed with a two-lead Faraday cup. Beam performance and characteristics are presented.

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