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Optical Spectroscopy Measurements on Decaying Shocks in Transparent Crystals BRIAN HENDERSON, TOM BOEHLY, MOHAMED ZAGHOO, RYAN RYGG, DANAE POLSIN, XUCHEN GONG, LINDA CRANDALL, MARGARET HUFF, MARY KATE GINNANE, GILBERT COLLINS, University of Rochester, SUZANNE ALI, PETER CELLIERS, MICHELLE MARSHALL, JON EGGERT, Lawrence Livermore National Laboratory, UR/LLE EXPERIMENTAL HEDP GROUP TEAM, LLNL HEDP DIVISION COLLABORATION — In dynamic compression experiments, materials experience dramatic changes in their physical and chemical properties, manifesting in the material's optical emission. For experiments involving high density, temperature is not a well-constrained parameter, requiring sophisticated models to infer thermodynamic properties. To this end, our work developed an optical spectroscopy diagnostic for the OMEGA EP Laser System at the Laboratory for Laser Energetics. This diagnostic measures the time- and wavelength-resolved thermal emission of laser-compressed materials. We present the design of the system, its performance, and experiments on decaying shocks in transparent crystals. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE_NA0001944, the University of Rochester, and the New York State Energy Research and Development Authority. The support of DOE does not constitute an endorsement by DOE of the views expressed in this abstract.

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