Laue X-Ray spectrograph for the 200-TW Trident Laser\textsuperscript{1} NALIN VUTISALCHAVAKUL, Ohio Wesleyan University, JAMES COBBLE, JONATHAN WORKMAN, KIRK FLIPPO, DAVID MONTGOMERY, SANDRINE GAILLARD, Los Alamos National Laboratory — With the 200-TW laser at the Trident Laser Facility, experiments on x-ray backlighting were performed. The sub-ps short pulse laser with energy up to 100 J can be shot on targets with different atomic number. The focused laser beam has intensities up to $10^{21}$ W/cm$^2$. The high energy laser interacted with the targets, producing X rays due to K-shell emission. Among other diagnostic devices, a Laue X-ray spectrograph was used to record the x-ray spectrum, which showed emission lines and bremsstrahlung radiation. The Laue spectrograph uses a LiF(200) crystal to disperse the x-ray spectra with a bandpass of 17-70 keV. The spectra were recorded using Fuji image plates. The Laue instrument was designed to include a tungsten shield in the front, a magnetic trap, and a light trap to reduce background noise. K\textsubscript{o} lines of Mo, Ag, and Sn were observed.

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