

Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

A Simple XUV Spectrometer for Z-Pinch Experiments VERONICA EUDAVE, UC San Diego Center for Energy Research — A XUV spectrometer was designed and built in order to measure the spectrum of light emitted from plasma created in Z-pinch experiments. The spectrometer uses a simple and compact design with a conical opening towards the plasma and rectangular enclosure to hold the grating and reduce outside light. It is based on a 1200 grooves/mm grating with a radius of curvature of 5650 mm and a blazing angle of 3 degrees. The grating is placed 237 mm away from the plasma and 235 mm from the detector surface, making this instrument suitable for small vacuum chambers. The detector used is an imaging plate.

The design of the instrument and initial measurements will be presented. The purpose of this device is to study the light emitted in the wavelength range 20-150 nm from Z-pinch plasmas on the recently commissioned CESZAR driver at UCSD, capable of up to 0.9 MA in 150 ns. The measured spectra will provide information on the density and temperature of the plasma, particularly for gas puff Z-pinches with low-atomic-number elements such as hydrogen, oxygen and neon.

Veronica Eudave
UC San Diego Center for Energy Research

Date submitted: 10 Jul 2020

Electronic form version 1.4