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D-alpha Probe Investigation on the Helicon Plasma Experiment (HPX)[1] JACKSON KARAMA, ROYCE JAMES, JUSTIN SHERMAN, ERIC PAGE, CARTER SCHLANK, BROOK STUTZMAN, OMAR DUKE-TENSON, United States Coast Guard Academy, COAST GUARD ACADEMY PLASMA LABORATORY TEAM — Now that reproducible plasmas have been created on HPX at the Coast Guard Academy Plasma Laboratory (CGAPL) we are starting to set up a spectral probes to help verify plasma mode transitions to the W-mode. These optical probes will utilize movable filters, ccd cameras and diodes, to gather data at selected spectral frequency bands. Data collected will be used to investigate the plasma's structure and behavior during experiments. The spectral probes will take advantage of HPX's magnetic fields to define and measure the plasma's radiation temp as a function of time. A d-alpha filter will allow for the collection of neutral density fluctuations for different plasma behaviors. In d-alpha mode, the probe may also provide some information on the internal plasma structure and perhaps reveal some global plasma interactions. The spectral probe will add to HPX's data collection capabilities and be used in conjunction with the particle probes, and Thomson Scattering device to create a robust picture of the internal and external plasma parameters on HPX. Progress on the construction of the probe will be reported.

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