

Abstract Submitted  
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**ORION OPTICAL DIAGNOSTIC SYSTEMS Construction and commissioning progress** J.B.A. PALMER, D. DREW, J. FYRTH, M.P. HILL, P. KEMSHALL, K. OADES, E. HARVEY, E.T. GUMBRELL, Plasma Physics Department, AWE, Aldermaston, RG7 4PR, United Kingdom — The Orion facility provides a unique combined long- and short-pulse laser capability. We report on the progress in constructing a comprehensive plasma optical diagnostic suite for the facility, developed for a range of warm dense matter and other materials' properties experiments. The first VISAR imaging line for the suite is due to be commissioned in 2012 and its progress will be reported. The system consists of configurable optical elements mounted on a TIM, relay optics to an optical table, optics to direct the light through a VISAR bed onto an optical streak camera and the infrastructure systems to provide remote control and services. Due to the operational model of Orion the diagnostic must have comprehensive remote control for its set up and alignment. This makes the system design more complicated than otherwise. The sub-systems required to give the degree of remote control required will be described. A modified version of the suite's ASBO imaging line was used in 2011 to support the commissioning of Orion's long- and short-pulse laser beam lines by imaging optical emission from laser targets. The set up of this system and the data it recorded with an optical streak camera during a short pulse experiment will be presented.

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