



## **Orion:** Target diagnostic

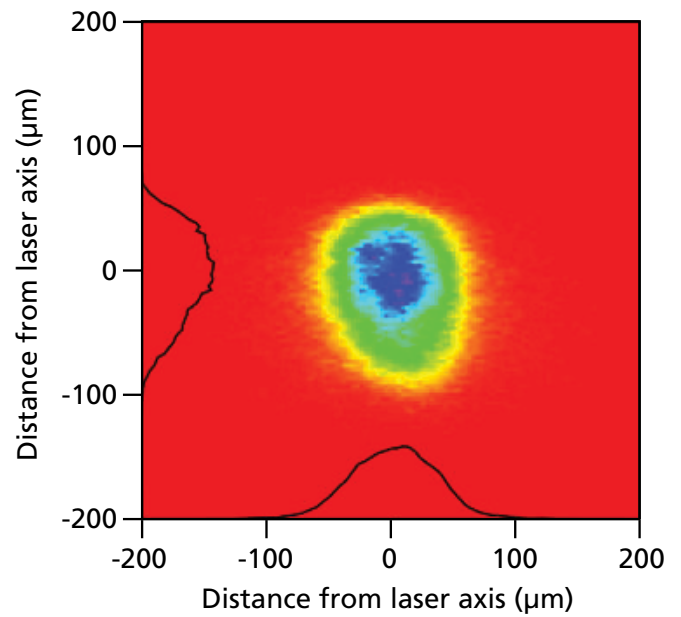
A photograph of the Orion laser facility building at AWE Aldermaston. The building is a large, modern structure with a prominent, curved, metallic facade. It is set against a clear sky. The image is overlaid with a semi-transparent teal and blue gradient.

# Single Channel X-ray Pinhole Camera

The Orion laser facility at AWE Aldermaston, one of the largest scientific capital investments in the UK, houses a large neodymium glass laser system and a target chamber in which the high energy density physics experiments are performed. This is necessary to support certification of performance and safety of the UK deterrent.

[www.awe.co.uk](http://www.awe.co.uk)

The Single Channel X-ray Pinhole Camera is deployed in one of the Orion Ten Inch Manipulators (TIMs) and is designed to record an X-ray image of the laser/target interaction. The pinhole is a 10  $\mu\text{m}$  or 20  $\mu\text{m}$  in diameter which allows the recording of a single image onto film located in a holder at the rear of the camera. A pointer used for alignment replaces the pinhole pellet, and sets the magnification at  $\sim 30$  ( $S_i=300$  mm,  $S_o=10$  mm). Once alignment is complete the pointer is removed and a pinhole pellet is installed.



### Specification

TIM based

Material: Aluminium

Dimensions: Length: 950 mm  
(including mounting frame)  
Width: 220 mm,  
Height: 130 mm

Magnification:  $\sim 30$

Recording medium: Film

Weight:  $< 10$  kg