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.
The Multi Channel X-ray Pinhole Camera is designed to provide Full-Field X-ray Imaging (FXI) of the laser/target interaction. The pinhole array has twelve 10 or 20 µm holes spaced on a regular grid which allows the recording of 12 images. The delicate pinhole array is protected by a thick collimator which sits in front of the pinholes and has 0.3 mm holes. Eight of the channels can utilise two grazing angle mirrors and all channels can use a separate filter. The design requires a different pinhole array for direct and indirect (using the grazing angle mirrors) imaging. A pointer used for alignment replaces the pinhole array, and sets the magnification at ~8 (S₁=480 mm, S₀=60 mm). Once alignment is complete the pointer is removed and a pinhole pellet is installed.

**Specification**

**TIM based**

**Material:** Aluminium

**Dimensions**

Source to pinhole: 61.53 mm
Pinhole to image plane: 486.85 mm
Pinholes: 10 µm or 20 µm
Magnification: ~8 (S₁=480 mm, S₀=60 mm)
Recording medium: Film
Weight: <10 kg