

Abstract Submitted
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Results from a high speed pyrometer measuring detonating explosive. JAMES RICHLEY, JAMES FERGUSON, AWE — High speed pyrometry has been deployed on two series of cylinder test experiments in order to investigate its ability to measure the temperature of a detonating explosive. The pyrometer fielded on the first series of cylinder tests consisted of two, three channel systems fed by optical fibres. The optical fibres were placed such that they observed the exposed explosive at the end of the cylinder (through a lithium fluoride window). In addition an optical emission spectrometer was used to capture the emission spectrum from the same area of the explosive. The pyrometer design was then modified to produce a six-channel system, which incorporated detectors with rise times on the order of 1 ns, this was tested on a second series of cylinder tests. Half of the cylinder tests in the second series were performed without a LiF window. Results from the second series of experiments are reported and compared with those from the first series. Initial analysis suggests that the temperature observed was at least 3700 K.

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