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The feasibility of using noncontact measurement devices in oxy-acetylene torch ablation testing for UHTCs has been investigated. UHTCs are candidate materials for use in hypersonic and atmospheric re-entry vehicles for their oxidation resistance and thermal capabilities and an oxy-acetylene torch rig is being used to screen materials that show promise for these applications. Non-contact temperature measurement devices have been used for similar testing, but there are some potential issues regarding their use, such as changing emissivity of the UHTCs and combustion interferences. The feasibility of using non-contact temperature measurement devices will be evaluated through the use of thermocouples and a two-color pyrometer to measure sample surface temperature for the duration of the experiment. The reliability of non-contact temperature measurement devices can be measured in comparison to thermocouples and comparison of the results will indicate if these non-contact measurement devices are reliable and practical for use in oxy-acetylene torch ablation testing.

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