

Use of Cold Radiometers in Several Thermal/Vacuum Tests

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We have developed a low cost low temperature broadband radiometer for use with low temperature tests as a diagnostic tool for measuring stray thermal radiation and remote measurement of material properties. So far these radiometers have been used in two large thermal/vacuum tests for the James Webb Space Telescope (JWST) Project. In the first test the radiometers measured stray radiation in a test of part of the JWST sunshield, and in the second test the radiometers were used to measure the reflectivity and specularity of black Z307 painted aluminum walls on a 25 K cooled shroud. These results will be presented as well as plans for future tests to measure the residual energy through a baffled aperture in the shroud and other stray thermal energy measurements.