

Application of IR thermography for quantitative temperature measurements in a Thermal-Vacuum Space Simulator.

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Abstract

This paper presents the work and progress made through the introduction of infrared thermography to determine surface temperature during thermal-vacuum tests on spacecrafts. Such tests cover a wide range of temperature, from -100°C to 80°C , and concern materials with low emissivity. The difficulties encountered when undertaking these measurements are assessed through two series of tests, from which recommendations in the experimental set-up to quantify the temperature measurement are given as well as an evaluation of the uncertainty.

Due to the second series of tests having been postponed at the time of writing, this provisional article is incomplete and only presents results from the first test campaign, featuring the Medium Wavelength Infrared camera only.

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