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**QUALIFICATION OF THE SETUP TO SIMULATE THE EXTERNAL
THERMAL BALANCE TEST OF THE CBERS-2B SATELLITE USING A
INFRARED LAMP TECHNIQUE**

Abstract

This paper deals with the project and manufacturing of a model setup to simulate the external thermal loads in the radiators of the CBERS-2B satellite. The setup comprises with aluminum baffles, support for lamps, tungsten lamps, energy sources with wattage digital control and radiometers. These radiometers are made by aluminum in cylinder format with a copper black sensor, which is isolated from the main body. The Infrared Lamp Technique will be used in this model. The tests will be carried out in a 1 x 1 m thermal vacuum chamber at the Integration and Testing Laboratory (LIT) of National Institute of Space Research (INPE). In order to guarantee that the thermal loads emanated only from the lamps, the chamber shroud will be kept at a cryogenic temperature, and the baffle external surface will receive a black paint to keep in low temperature too. The main goal of the experiment is to obtain a uniform heat flux distribution for the range from zero to solar constant. With the results obtained for the model qualification, the next step will be the manufacturing of the seven IRA's (Infrared Arrays) for each radiator of CBERS-2B. Then, it will be made the TBT tests, where each IRA will impose the main predicted external thermal loads to provide required conditions to qualify the satellite to fly.