
ACD Engineering Model Report

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Outline

- **BASIC:** The ACD has no full Engineering Model
- **TESTING:** Engineering tests on components and subassemblies
- **FULL ACD:** Complete testing on the flight unit ACD

Component and Subassembly Tests - Examples

- **>300 thermal cycles of a tile with embedded fibers completed to mitigate risk of waveshifting fibers coming loose.**
- **Thermal tests of bare phototubes completed to mitigate risk of damage during large temperature excursions in test or on orbit.**
- **Thermal Test for Tile Detector Assembly that includes the wave shifting/clear fiber connector was completed on 9/27. This is to qualify the TD, Wave Shifting Fiber, and Clear Fiber in extreme temperature condition**
- **Vibration test for PMT Subassembly that includes 4 PMTs plus connectors, its housing, and 4 set of Resistor Networks. This is to qualify the PMT and its housing under launch vibration and acoustic loads. This month.**
- **Vibration tests for Tile Detectors plus connectors between clear/wave shifting fiber, mounted on a composite panel with flexures. This is to qualify the TDA under launch vibration and acoustic loads. This month.**
- **Thermal Vacuum Test for entire Tile Detector Assembly. This is to qualify TDA under orbital operating conditions. This month.**
- **Fit test of ACD mechanical structure with Grid. Mitigate mechanical interface risk.**

Flight Unit Testing

- **Full set of tests on flight unit at protoflight levels – vibration, acoustics, thermal vacuum, mass properties. Scheduled for Spring, 2004.**