

# P13571 D3 Ruggedized Camera System: Heat Dissipation Test

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## Heat Dissipation Test

This test consists of mounting a PCB with a single resistor, which is capable of dissipating a certain amount of heat, into the enclosure to test the enclosure's capabilities to dissipate heat under certain conditions. The resistor will produce 1 to 2 Watts of heat to simulate the heat produced by the major electrical components, which the enclosure must dissipate. The conditions under which the test will be conducted are: high temperatures (105°C), low temperatures (-40°C), and room temperature (20°C). An *Omega Thermocouple Data Logger*, or similar, will be used to record the temperatures inside the enclosure and on its outside surface.

**Start Date:** \_\_\_\_\_

**Finish Date:** \_\_\_\_\_

**Engineer conducting test:** \_\_\_\_\_

**Assistant:** \_\_\_\_\_

### Equipment:

- Omega Thermocouple Data Logger
- If other, please specify: \_\_\_\_\_

### Tests:

#### 1. High Temperature Test

- a. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_

- b. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_

#### 2. Low Temperature Test

- a. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_

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- b. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_

### 3. Room Temperature Test

- a. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_
  
- b. Resistor (W): \_\_\_\_\_
  - i. Ambient Temperature: \_\_\_\_\_
  - ii. Temperature Inside Enclosure: \_\_\_\_\_
  - iii. Temperature On Surface of Enclosure: \_\_\_\_\_
  - iv. Comments: \_\_\_\_\_