

Application Note: Tc Specification – High Output Tunable Color ORB APT-CV5-VA/RGBWW

Thermal Specification

LoDA	LED Array Surface Temperature
L515D-RGB1840	145°C

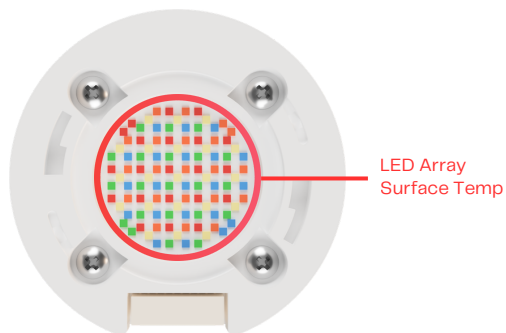


Figure 1 – To measure LED array surface temperature, use thermal camera with diffuser removed after system reached thermal equilibrium

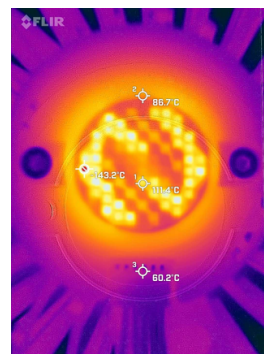


Figure 2 – Example thermal capture of LED array surface temperature

Test Setup and Procedure

1.DMX Configurations:

LoDA	To maximize the LED array surface temperature:
L515D-RGB1840	- Set DMX personality to RGBWW - Configure DMX addresses as follows: Address 1: 120 (47%) Address 2: 0 (0%) Address 3: 0 (0%) Address 4: 255 (100%) Address 5: 255 (100%)

2. Controller Operation:

- Run the controller for at least one hour or until thermal equilibrium is reached.
- Operate the system in the intended application environment, including the proper diffuser and reflector.

3. Data Recording:

- After the one hour warm-up, remove the diffuser and immediately capture a thermal image of the LED module, as it will begin cooling.
- Caution:** The LED module will be very hot at thermal equilibrium. If the thermal measurement exceeds the ratings provided in the Thermal Specification table, consider improving the thermal transfer material or heat sink, or derating the max intensity of the controller.

Measurement Methods

LED Array Surface Temperature Measurement:

- Use a thermal camera.
- Record the temperature at the hottest point on the LED array (typically an LED near the center of the module).
- Ensure the thermal camera's readings are not influenced by visible light.

Temperature Rating Compliance

For Higher Ambient Temperatures:

- Test the system at the desired ambient temperature and verify that the LED array surface temperature does not exceed the rated limit.
- If the temperature exceeds the rated limit, reduce the maximum intensity using the APT Programmer and repeat the test.
- If testing at higher ambient temperatures is not possible, apply a derating by reducing the LED array surface temperature by the number of degrees the ambient temperature exceeds **25°C**.

This procedure ensures that the LED controller operates within safe temperature limits under various conditions while maintaining performance in its intended application environment.