

Supplemental Information – LED Fixtures

Two (2) SciWhite® LED tiles per tier are provided which contain dimmable white and non-dimmable red LEDs capable of producing *up to 680 $\mu\text{mol}/\text{m}^2/\text{sec}$ at 6” / 15 cm from the center of the shelf at 25°C.*

Please Note: *Temperatures above 40° C may significantly dim the LEDs. It is recommended that you verify the light intensity using an independent sensor.*

Dimmable Lighting Process:

LED dimming is accomplished in an “open loop” configuration, where set points are entered into the Intellus controller as percentages and the controller scales its output voltage to the LED control modules to correspond with the set point.

Intellus Display and Setup:

The lighting outputs are set up on the Intellus controller as follows:

- Light 1 controls the white and red LEDs on all tiers.

When running manual settings, LED lighting levels are input as percentages, and are set on the Intellus Controller in the Lights menu. To enter the Lights menu so that the lighting set points can be changed, press the **LIGHTS** key on the Intellus Controller. Use the arrow keys to navigate through the menu and select the desired light output (the number of available outputs will vary according to the type of chamber and options ordered). To change a light setting, press the **ENTER** key and use the arrow keys as necessary to change the setting. Press the **ENTER** key a second time to accept the changed setting. To exit the Lights Menu and return to the Main menu, press the **LIGHTS** key.

Lighting levels can be programmed using the programming features of the Intellus controller. For more information on using the Intellus controller to program the lighting levels, please refer to the attached *Intellus Controller Manual*.

NOTE: Running the chamber in Diurnal mode will cause all LED modules to energize at full intensity. Conversely, during the night cycle in Diurnal mode, all light outputs will be de-energized. Only the Manual and Program modes are conducive to the intermediate light intensities available through the dimming option.

On the main display screen, the lighting level for each dimmable lighting output will be displayed as a bar corresponding to the lighting set point (percentage).

Example: A chamber with two dimmable light outputs with settings of 75% and 50% will show two bars in the light outputs portion of the main display, with the first bar 75% full and the second bar half full.

Service and Maintenance:

LED modules not working:

- ✓ **Power plugs:** Check to ensure that the power plugs for the fixture are securely installed in their receptacles.
- ✓ Refer to the electrical diagram provided in the *Associated Diagrams, Schematics, and Miscellaneous Information* section of this manual. Check the DC power supplies for the LED modules. A green LED illuminates on each power supply when the LED modules are programmed on. Each power supply is powered with 115V power and output a signal of 24VDC between each V+ and V- terminal.
- ✓ If other troubleshooting steps do not correct the issue, replace LED interface board.

Individual LED module not working:

- ✓ Replace module with a known working module. If the known working module does not work, check wiring from fixture receptacle to LED module located inside fixture.