

## **ADDENDUM # 1- EXHIBIT B**

**AUGUST 12, 2014**

### **LED LIGHTING SPECIFICATIONS (INTERIOR)**

This is an Energy Savings Project and the approved system must be able to achieve the following energy reduction.

#### **2x4 Troffer:**

- When replacing 2-32W Fluorescent tubes with LED retrofit kit, the new system must not exceed 22W with a single driver
- When replacing 3-32W Fluorescent tubes with LED retrofit kit, the new system must not exceed 28W with a single driver
- When replacing 4-32W Fluorescent tubes with LED retrofit kit, the new system must not exceed 36W with one or two drivers

#### **2x2 Troffer:**

- When replacing 2-32W Fluorescent U bend tubes with LED retrofit kit, the new system must not exceed 18W with a single driver

#### **1x4 Troffer:**

- When replacing 1-32W Fluorescent tube with LED retrofit kit, the new system must not exceed 12W with a single driver
- When replacing 2-32W Fluorescent tubes with LED retrofit kit, the new system must not exceed 22W with a single driver

#### **Open Strip fixtures:**

- When replacing 1-32W Fluorescent tube with LED retrofit kit, the new system must not exceed 12W with a single driver
- When replacing 2-32W Fluorescent tubes with LED retrofit kit, the new system must not exceed 22W with a single driver

#### **Bi-Level Switching:**

- If Bi-level switching is required the system must allow the use of two drivers per fixture to power individual strips to achieve multi-level switching.

#### **Dimmable Drivers**

- When dimming is required, the system must be able to operate on a 0-10V dimming driver.

All LED Strips must be securely mounted to an aluminum extrusion to ensure proper heat dissipation and include integral diffusers to assist with light distribution and eliminate glare.

- Efficacy rate : >135 LM/W as measured with the 28 watt single driver powering either 4 or 6 of the 2'strips installed in a 2'X4' parabolic test fixture in an LM79 test
- Color Rendering Index: (CRI) >82 (+/-0.5)
- Color Temperature: 4100K (+/- 200K)
- Color Temperature: 5000K (+/- 200K) (when required)
- LEDs must have an LM70 point > 220,000 hours as calculated using the LM80 test data and the TM21 algorithm provided by the DOE

- In-Situ Temp Test (ISTMT) results shall not exceed 35°C when measured with a 20 watt driver powering two of the 2' strips installed in a 2'X4' parabolic test fixture for an ISTMT conducted in accordance with "Energy Star Program Requirements for Luminaires – Version 1.2".
- Voltage: 110-277VAC 50-60 Hz
- Power Factor: (PF) >0.98; Measured at 120 Vac
- Total Harmonic Distortion (THD) <5% ; Measured at 120 Vac
- Printed Circuit Board that carries the LEDs must be an aluminum core PCB design to provide optimal thermal management for the LEDs
- LED count per 2' strip: Must have a minimum of 140 LED's to ensure proper light distribution.
- Must be cULus listed
- Must be DLC Qualified
- 10 year Warranty on Driver and LEDs (product replacement only)
- Must have a manufacturer rated lifetime of 100,000 hours
- Must provide LM79, ISTMT and LM80 by NVLAP accredited testing laboratory approved by the DOE and DLC at the time of submittal