PLC Buildings
Lighting Control Systems

Specification

S-Series Sensor Based

LC81-B, LC81-BHT

SINGLE LEVEL
Lighting Controller

PROJECT	
LOCATION	

26.09.23 Lighting Control Devices

Part 1 - General

A. Single level Daylight Control Device

1. *Device shall be housed in a NEMA 1 electrostaticly painted enclosure with a hinged door.*
2. *Device shall have 120/277VAC to 24VDC power supply with capacity to support controller and photo sensor.*
3. *Devices shall have an internal low voltage HOA selector switch to override controller's automatic functions.*
4. *Device shall have a single 20A 120/277VAC lighting rated output.*
5. *Device shall be a PLC Multipoint LC81-B or LC81-BHT.*

B. Controller

1. *Controller shall be powered by 24VDC*
2. *Controller shall provide a 24VDC signal to a photodiode photo sensor and receive an analog 0-10VDC signal that is directly proportional to the daylight monitoring range of the photo sensor.*
3. *Setpoints shall be set at startup to turn on or turn off the controller output when sensor return voltage passes its defined setting.*
4. *Controller shall offer an adjustable dead-band by having separate high and low setpoint positions.*
5. *Each setpoint adjustment shall have range indication markings for gross light level adjustment for separate level simulator input for fine light level adjustment.*
6. *Light level simulator shall be a portable device that connects to the controller. This device will be adjusted by a dial and monitored by a digital voltmeter.*
7. *When monitored signal indicates, for 30 seconds, adequate ambient light levels to turn off artificial lights, a Class C pilot relay will energize to open its normally closed output. When ambient light levels fall below target light range for 30 seconds, the pilot relay will deenergize and the normally closed output will again close.*
8. *Device will fail in a 'lights on' condition.*
9. *The controller shall be PLC Multipoint LC8 or approved equal.*

C. Photo Sensor

1. *Photo sensors shall be specifically designed to operate within the environment in which they are placed, and shall provide a 0-10VDC signal to the input of the controller. This signal shall be directly proportional to the amount of daylight entering the monitored area.*
2. *Sensor range shall be from a minimum of 0fc to an adjustable range to 7,500fc maximum. Actual range shall be; a. 0-40fc indoor low light; b. 0-100fc for indoor normal light; c. 0-250fc for outdoor; d. 0-1,000fc for atrium; and 0-2,000fc for skylight operation unless specified on the facility drawings and shall be set at the factory and sealed against tampering in the field.*
3. *All sensor ranges shall be set at the factory with the use of an NIST certified integrating sphere.*
4. *Location of sensor shall be specified on the drawings and placed in such a way to prevent interference from obstacles.*
5. *Sensors shall have an accuracy of +/- 1% at 70°F or +/- 5% over a 100°F temperature range.*
6. *The sensor shall have a focusing lens to provide the proper view for the area being monitored.*
7. *Connection of the sensor to the controller input shall be with a shielded wire stranded cable rated at NEC Class 2 or 2P. It shall be 14AWG or higher. Conductor shall be Beldon type 27082AS or equal. (Colors must match sensor conductors and are Yellow = 1-10VDC signal; red = 24VDC supply; Black = -24VDC Return; Blue = spare conductor)*
8. *The Photo Sensor shall be a PLC Multipoint CES type.*