

**LC81**  
**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 electrostatically painted enclosure with a hinged door enclosure.
2. Device shall have 120/277VAC to 24VDC power supply with capacity to support controller and photo-sensor.
3. Devices shall have an internal or door mounted low voltage HOA selector switch to override controller's auto-matic functions.
4. Device shall have a single 20A 277VAC lighting rated output.
5. Device shall be a PLC LC81-B or LC81-S. The LC81, LC82 controllers are available in a Basic (B) model as well as a Standard (S)

**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 and an access port for separate level simulator input for fine light level adjustment.
6. Light level simulator shall be a portable device that connects to the controller through the simulator access port. 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 LC8 or approved equal.

**C. Photo-Sensor**

1. Photo sensors shall be specifically designed to operate with 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. 1-1,000fc for atrium; and 10-2,000fc 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 integration sphere.*
4. *Location of sensor shall be specified on the drawings and placed in such a way to prevent interference from obstacles.*
5. *Sensors must 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 Sensors CES type.*