CPD 4000 (OLC) Features

- Provides reliable ISO/IEC 14908-1 and IEEE 802.15.4 compliant, radio frequency (868 MHz, 916 MHz, 924.5 MHz), two-way communications between lamps and segment controllers in even the harshest environments
- Used with the Echelon Border Router (CRD 4000) and CPD 3000 power line (PL) OLC, provides the only smart street lighting solution that can mix and match wired and wireless devices in one network
- Replaces photocells — acts as a photocell when wireless communication is not possible
- Can be added seamlessly to an existing power line-based smart street lighting network
- Supports standards-based 6LoWPAN, IPv6 stack, and LonTalk services
- Provides vital data to the Lighting Segment Controller for reducing energy use and operating costs
- Optimizes communications with integrated wireless meshing to automatically determine the best communications with any device on the network
- Enables remote command and control at every lamp
- Reduces the total cost of ownership for the lighting network by reducing installation and deployment costs
- Future proofs lighting systems at lower cost with remote firmware update abilities
- Eliminates failure-prone photocells at the luminaires by moving time- and astronomical-based scheduling to the lighting segment controller
- Connects to new ANSI 136.41 photocell socket

Enables Scalable Hybrid Wired/Wireless Lighting Solutions

An integral component in Echelon’s smart street lighting solution, the CPD 4000 Outdoor Lighting Controller (OLC) uses ISO 14908-1 and IEEE 802.15.4 compliant, wireless radio frequency (RF) communications technology to manage outdoor lighting luminaires in street, parking, industrial complex, and other outdoor area lighting systems. When used with the Echelon SmartServer Segment Controller and CRD 4000 Border Router, the CPD 4000 OLC enables cities to implement smart outdoor lighting systems that reduce energy use by 30% or more beyond gains from efficient lamp technologies, cut operating costs by 20% or more, and increase safety and beautify cities through remote monitoring and control of individual lights and segments of lights.
The CPD 4000 offers proven, highly reliable, two-way communications with each lighting fixture, without requiring new wiring. Data from the CPD 4000 devices, consolidated onto the Segment Controller within the outdoor lighting network, allows operators to remotely monitor and control the entire network. One Segment Controller can manage and control up to 250 OLC-controlled luminaires.

The Echelon system architecture — Segment Controllers with an CRD 4000 Border Router, CRD 3000 (PL/RF bridges), and PL and RF OLCs — enables lighting networks to scale to hundreds of thousands of individually controlled and monitored lights. More than 500 cities worldwide have lighting systems based on Echelon’s smart street lighting solution.

**Flexibility in Lighting Control**

Echelon’s system architecture enables the use of multiple lighting technologies and power supplies to suit various use cases and to keep pace with technology evolution.

The CPD 4000 can be added to any lighting fixture in minutes, regardless of lighting technology, to control various types of lighting power supplies including:

- Induction lighting – Electronic ballast/generator
- High-pressure sodium (HPS) lighting – Ballast
- Light-emitting diode (LED) lighting – Driver

The CPD 4000 can use control signals such as 0-10V lighting control (for example, the ESTA E1.3, Entertainment Technology Lighting Control System – 1 to 10V Analog Control Protocol) and DALI.

**Environmental**

- Operating temperature range: -40 °C to +65 °C
- Moisture & Humidity: 5% to 95% RH, non-condensing
- Storage Temperature: -40 °C to +85 °C
- Vibration: 5 Hz to 7.5 Hz @ 0.5” D.A., 5.5 Hz to 200 Hz @ 1.5G
- Shock: 30 g @ 11 ms; 100 g @ 3 ms (half sine)

**EMC**

- FCC Part 15 Class B

**Agency Listings**

- UL 773, E469950
- cUL C22.2 182.2 M1987
- CE Marking (Europe)
- c-Tick-Australia, AS/NZS CISPR 22
- Europe IEC 60068, ISTA, IEC 60721

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**Specifications**

**Input Voltage**

- Range: 100 VAC to 277 VAC (US/AUS/NZ)
- Range: 100 VAC to 240 VAC (EU)
- Frequency: 50 Hz or 60 Hz

**Radio Frequency Communications**

- IEEE802.15.4/AES 128bit Encryption
- IPv6 Stack
- RFC 4944 plus RFC 6282 updates
- 6LoWPAN-ND RFC 6775
- RPL routing RFC 6550
- LonMark – Smart Luminaire Controller profile
- Metering capability with 2% accuracy
- Dimming capability using 0-10V and DALI

**Power**

- Maximum 1000 Watt luminaires
- Switched internal relay for turning

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- Europe IEC 60068, ISTA, IEC 60721
Radio
North America: FCC PART 15, RSS-210
Europe: EN 301 489-1/EN 301 489-3

RoHS Compliant
• The CPD 4000 module is compliant with the European Directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment.

Physical
• Weight: 150 grams
• IP rating: IP 65 for outdoor applications
• Size: 140 x 85 mm (H x D)

Installation Guide
The CPD 4000 Outdoor Lighting Controller can be installed on the top of a lighting fixture by replacing the existing photocell. It supports both NEMA Sockets based on ANSI 136.10 and ANSI 136.41 standards. It can also be embedded in the light fixture with support of external antenna for better communication.

Model and Ordering Information
CPD 4000 Outdoor Lighting Controller
76700R North American (916 MHz)
76710R Europe (868 MHz)
76720R AUS/NZ (924.5 MHz)