

Product Information

General Description

The LumenController LuCo-P7 is a luminaire controller that monitors and controls LED-Drivers or HID-Ballasts. Due to its built-in GPS module the LuCo-P7 supports auto commissioning. The LuCo-P7 offers a sensor power supply and input, compatible with a wide range of presence, movement or traffic detectors to adjust the light levels on demand.

The LuCo-P7 controls the driver/ballast by switching the mains and dim by the means of either DALI or 1-10V interface. A built-in utility grade meter offers one of the highest metering accuracy available on the market today, better than 1% over the complete dimming range. The LuCo-P7 offers an ambient light detection ensuring dusk/dawn operation in unswitched power grids as a failsafe function in case of disruption of the control network or the dusk/dawn switching in uncommissioned installations.

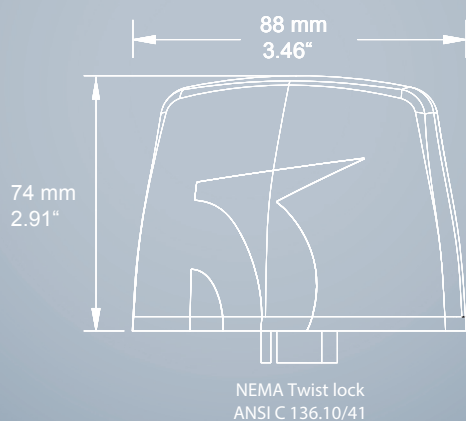
Due to its built-in sensor input the LuCo-P7 is able to switch the light on demand receiving detection information from a wide variety of presence, movement or traffic detectors. In case of a sensor attached the LuCo-P7 is able to share the event information through the RF mesh net.

The controller monitors and stores electrical characteristics from the Led-Driver/Ballast. The LuCo-P7 replaces a standard photocell using a standard NEMA twist-lock receptacle (ANSI C136.10/136.41).

Based on the wireless industry standard ZigBee, the LuCo-P7 forms together with a Segment Controller SeCo a robust and reliable mesh network which ranges from a couple of luminaires to tens of thousands of luminaires.

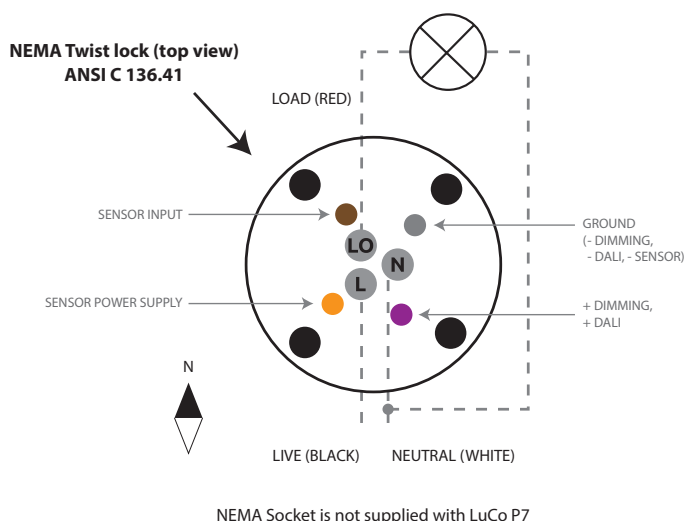


Lumen Controller
Photocell NEMA



Application

The LuCo-P7 controls LED-Driver/Ballast units according to the wiring diagrams below. It is designed for use instead of standard NEMA twist-lock photocell (7-pin) for residential, road and urban applications.



General operation

The LuCo-P7 is designed to perform three major tasks.

1. Controlling and sensing

The LuCo-P7 receives the incoming commands (group commands, manual override, detection events) from the segment controller SeCo, neighbor controllers in the mesh network or connected local sensor and acts accordingly to regulate the light output of the luminaire using its 1-10V or DALI interface (ON, OFF; 0-100%). In case of a sensor attached the LuCo-P7 is able to share the event information through the RF mesh net. **Fail-safe:** In case of a disrupted RF communication the LuCo-P7 falls back to dusk/dawn switching based on ambient light conditions.

2. Energy Saving

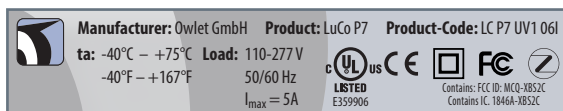
The LuCo firmware has two built-in energy savings algorithms: Constant Lumen Output (CLO) compensates the luminance depreciation over time according to the maintenance factor of the luminaire/lamp/LED assembly and Virtual Power Output (VPO) equalizes wattage jumps in a luminaire range to prevent over lighting.

3. Monitoring

The monitoring function in the controller measures mains voltage, current, power factor, burning hours and accumulative energy consumption of a full luminaire assembly and transmits its value on request to the SeCo.

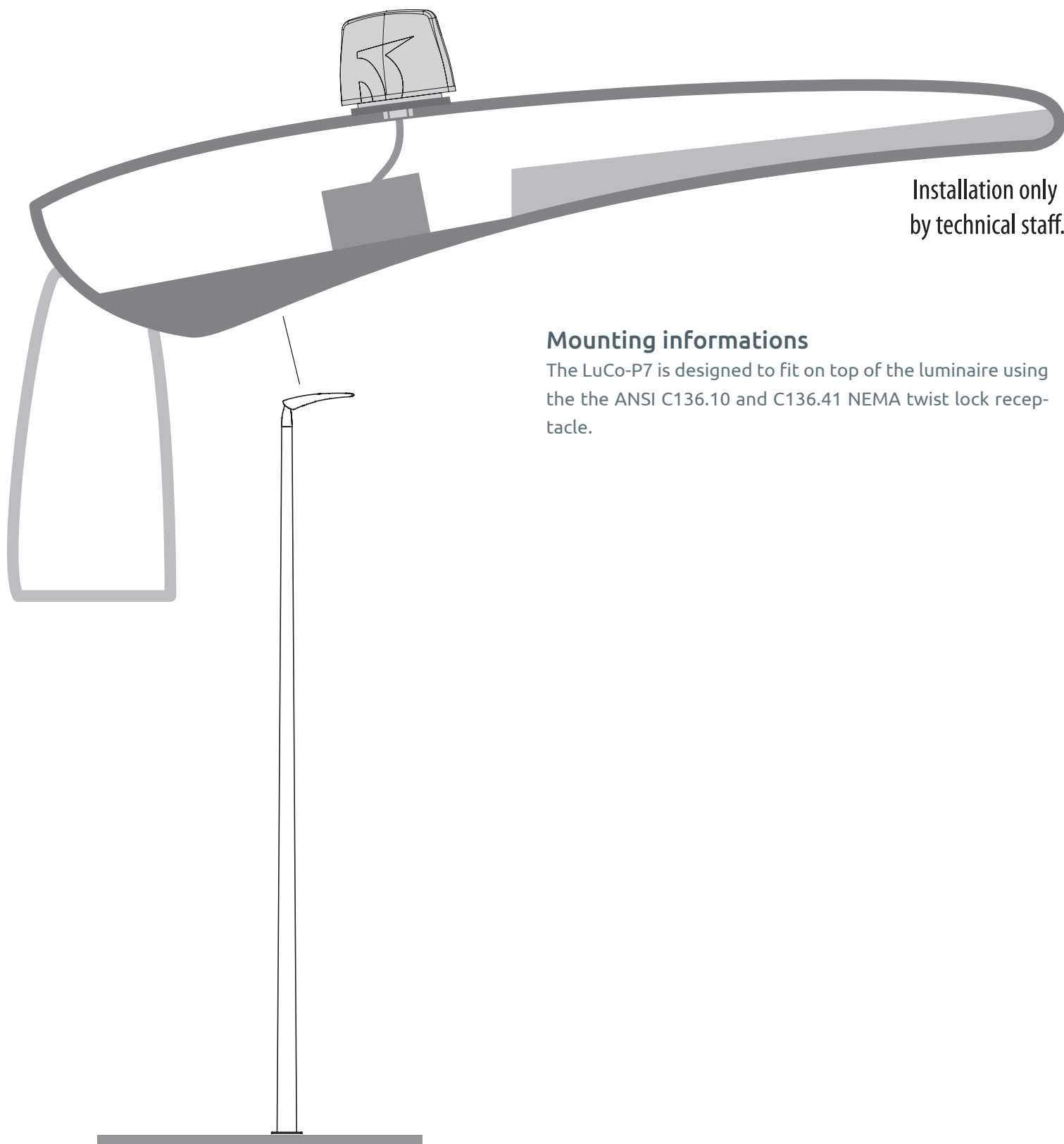
4. Reporting

Based on its own measurements and/or the information received through DALI the controller determines if the luminaire/lamp/LED assembly is operating in the expected limits.



The LuCo-P7 is able to drive up to eight DALI or 1-10V drivers with a maximum load current of 5 A (600VA@120V, 1,2kVA@240V, 1,38kVA@277V).

An un-commissioned LuCo-P7 will operate in dusk/dawn switching based on ambient light conditions.



**Installation only
by technical staff.**

Mounting informations

The LuCo-P7 is designed to fit on top of the luminaire using the the ANSI C136.10 and C136.41 NEMA twist lock receptacle.

Owlet Wireless Outdoor LumenController LuCo-P7 Datasheet



LuCo-P7 Auto Commissioning

Due to its inbuilt GPS module the LuCo-P7 supports auto commissioning. Owlet controllers with GPS will automatically imported and located in the nightshift system. The ZigBee address and GPS location are automatically applied. Allocation to a SeCo is automatic. If the Lucos are pre-configured, this data is also applied.



Operating conditions	
Ambient temperature (ta)	-40°C to +75°C -40°F to 167 °F
Relative humidity	10% to 90%

Non-operating conditions	
Temperature	-30°C to +80°C -22°F to 175 °F
Relative humidity	5% to 90%

Mains connection	
Mains voltage	110-277VAC ±10%
Mains frequency	50/60 Hz ± 5%
Maximum load current	5 A
Maximum power at 5A	600VA@120V, 1,2kVA@240V, 1,38kVA@277V
Required external fuse	≤ 10A

Power consumption	
Stand-by wattage	< 0,8W
Operating wattage	< 0,9W
Integrated powermeter accuracy	1% (between 0% and 100% dimming)

Radio Frequency	
Protocol	IEEE802.15.4 / ZigBee Pro Meshnet
Frequency band	2,4 GHz (2400,0...2483,5 MHz)

Housing	
Material	PC, UV stabilized
Color	RAL 7042 translucent light grey
Protection class	IP66 (installed condition for controller side only in combination with TE PN: 2213362)

Mounting	
Push	+/- 45 N (10.1 Lb.)
Rotation	2.7 Nm (2 Lb.ft)

Standards & Legislation	
Approvals	R&TTE directive 1999/5/EC EMC directive 2004/108/EC LV directive 2006/95/EC RoHS directive 2002/95/EC
EMC	EN 301 489-17 V2.2.1:2012-09 EN 301 489-1 V1.8.1:2008-04 EN 301 489-3 V1.6.1:2013-08 FCC part 15B, ICES-003
Radio	EN 300 328 V1.8.1:2012-06 EN 300 440-2 V1.4.1:2010-08 FCC 47 CFR Part 15 Subpart B
Safety	IEC 61347-1 IEC 61347-2-11 EN 60950-22:2006+AC:2008 EN 60529:1991+A1:2000+AC:1993+A2:2013 UL 773 (E359906) UL 244A C22.2 No. 182.2-M1987 CSA C22.2 No. 205-12
Connector	ANSI C136.41, ANSI C136.10

DALI output Interface	
DALI Compliant to IEC62386 part 101, 102, 201, 203, 207	
Load capacity	8 DALI lampdrivers
Protection	Interface is short circuit proof
DALI voltage	12.0 to 20.5Vdc
DALI supply current	max. 16 mA

1-10V interface	
Compliant to 1-10VDC IEC60929 (Annex E)	
Load capacity	eight 1-10V lampdrivers
Load current	Interface is current sinking, max. 16mA

GPS Capabilities	
Supports GPS system (L1C/A signals provided at 1575.42 MHz).	
Supports SBAS, Satellite Based Assist System	
Position accuracy upto 2.5m (with > 6 satellites)	

Sensor Power Supply	
12 Vdc ± 0,5 V, 2 mA max.	

