# Interact Pro

Wireless gateway
Interact Pro

LCN1840

## Specification Sheet

# LCN1840/05
# Wireless Gateway

The Wireless Gateway (WG) is the basis of the lighting

system and connects the system to the cloud via the

internet. The IP backbone between the WG enables

communication between the luminaires and the cloud.

The wireless gateways connect with the luminaires by

means of ZigBee.

## LCN1850/05

### Product description

The WG features an easy commissioning process during initial installation and is ready for later expansions.

The WG is powered by a 5 Vdc Class 2/SELV power adapter. The system is easily scaled up by connecting multiple WGs over Ethernet.

Wireless communication complies with the ZigBee Pro standard (IEEE 802.15.4, WPAN) in the 2.4 GHz frequency band. The WG must be placed within 10 m (33 ft.) from one or more of the ZigBee luminaires to form a mesh network. Communication between Philips Lighting wireless devices and the WG is encrypted, as well as the communication between the WG and the devices on the Interact Pro network.

The WG establishes a secure wireless ZigBee connection with at average 150 end points. The wireless connections allows for bidirectional control and sensor data exchange between the end points and the Interact Pro network.

### Dimensions



### Features and benefits

- White enclosure, mounting bracket
- 3 LED indicators for feedback on power, connectivity, and communication
- Has unique QR code for install and commissioning
- Controls associated end points without access to cloud (lighting behavior)
- Lighting behavior of end devices remains operational upon failure
- Can be remotely managed, upgraded, and controlled
- The underlying lighting network will implement graceful degradation upon failures
- Secure wireless communication based on the ZigBee PRO standard (IEEE 802.15.4, WPAN) operating at 2.4GHz radio frequency (RF).
- Functions for the WG and all connected devices can be modified with software configurable settings.
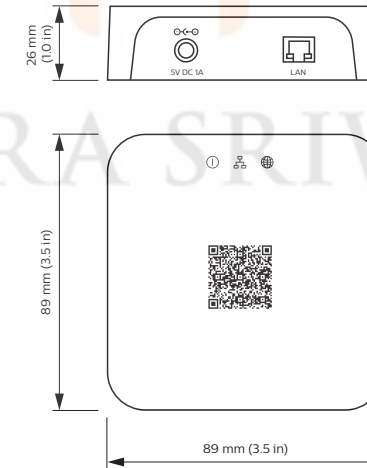
## Wireless communication

The Wireless network is based on the ZigBee PRO standard (IEEE 802.15.4, WPAN) which is targeted at radio-frequency (RF) applications and operates at 2.4 GHz. The ZigBee protocol enables fully distributed peer-to-peer communication models. This means no master/ slave relationship whereby the application is divided over the devices in the network. Every device knows how it functions within the network. The result is that if one device does not function (removed or defect), the remaining devices keep functioning as intended.

The network is based on a mesh network, so devices pass on the received commands. The distance between the devices should not exceed 10 m (33 ft.). The advantage of a mesh network is the capability for self-healing routing, enabling automatic route discovery over the mesh network. ZigBee has tolerance for a large number of co-located networks due to use of multiple communication channels and CSMA-CA channel access. The commands have network security according to AES 128-bits network encryption. Other connected lighting wireless devices like the kinetically-powered ZigBee Green Power (ZGP) Switches make use of the same protocol so they can be combined to interact in a seamless way. The WG supports encrypted and secure wireless network communication. Third party ZigBee devices can only join the ZigBee network if their unique identifiers are explicitly enabled in the Interact Pro system.

### Note
Wireless signals may be subject to radio frequency interference.

## Application area



Cloud
Connecting infrastructure
Lighting network

## Electrical diagram
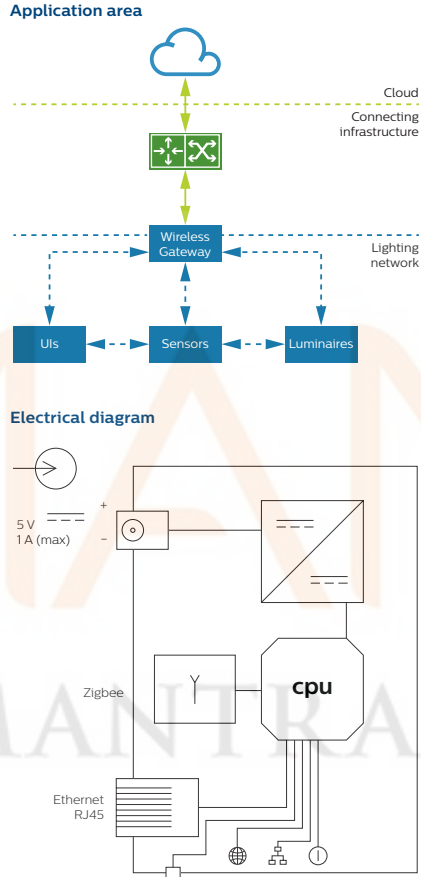


# Specifications

## Controller LCN1840

### General Characteristics

#### Supply options

| | |
|---|---|
| Commercial grade regulated power supply | In: 100-240 Vac, 50/60 Hz Out: 5 Vdc Class 2/SELV; 1 A |
| Allowed supply ripple | Max. 0.5 Vpp |
| Power consumption | Max. 2.5 W |
| Communication ports | 10/100BaseT Ethernet port ZigBee port |
| Supported Ethernet protocols | IPv6, TCP, UDP |

#### Environmental conditions operating

| | |
|---|---|
| Ambient temperature range | -20 to 45 °C (-4 to 113 °F) |
| Relative humidity range | 0 to 80%, non-condensing |

#### Environmental conditions storage

| | |
|---|---|
| Temperature range | -40 to 80 °C (-40 to 176 °F) |
| Relative humidity range | 10 to 90%, non-condensing |

#### Connector type

| | |
|---|---|
| Supply in | 1x DC plug 5.5 mm (0.2 in) |
| Ethernet | RJ45 |
| Wireless Communication | ZigBee PRO standard (IEEE 802.15.4, WPAN) |

#### Housing

| | |
|---|---|
| Material | ABS |
| Color | Signal white (RAL9003) |
| Dimensions (length, width, height) | 91 × 91 × 26 mm (3.6 × 3.6 × 1 in) |
| Weight | 95 g (0.21 lb) (incl. mounting bracket) |

| | |
|---|---|
| Power Adapter | Power Plug SELV/Class2 Exchangeable Plugs for EU & NA mains socket Universal Mains 100-240 VAC 50/60 Hz Length of cable 1.5m |

#### Mounting bracket

| | |
|---|---|
| Material | ABS |
| Color | Signal white (RAL9003) |
| Dimensions (length, width, height) | 97 × 97 × 34 mm (3.8 × 3.8 × 1.3 in) |
| User Controls | Reset Push Button, Status LEDs (Power, Network, Portal) |

### Regulatory compliance

| | |
|---|---|
| Certifications | UL, CE, FCC, IC |

#### Approbation (Europe)

| | |
|---|---|
| R&TTE RF | ETSI EN  300 328 EN 62331 |
| R&TTE EMC | ETSI EN  301 489-1/17 EN 55022 EN 55024 EN 55032 |
| Approbation (US & Canada) | FCC Part 15.247; 15.107; 15.109 IC RSS-247 ICES-003 |
| Safety | EN 60950-1 (UL60950-1 & CAN/CSA-C22.2 No. 60950-1-07) |
| Immunity | IEC 61000-4-2, 3, 4, 5, 6, 8, 11 |
| Reliability | IEC60068 |
| Environmental standard | ROHS/Reach |

## Packing Data

| Type | Dimensions | Qty/Box | Material | Weight (net) | Weight (gross) |
|------|-----------|---------|----------|--------------|----------------|
| LCN1850 | 110 × 80 × 110 mm (4.3 × 3.1 × 4.3 in) | 1 | Cardboard | 0.18 kg (0.40 lb) | 0.31 kg (0.68 lb) |

## Ordering data

### EU version

| Type | MOQ | Ordering number | EAN code level 1 | EAN code level 3 | EOC |
|------|-----|-----------------|------------------|------------------|-----|
| LCN1840/05 Wireless gateway IA Pro L | 1 | 9137 010 37703 | 8718696 775790 | 8718696 775806 | 775790 00 |

### US version

| Type | MOQ | Ordering number | UPC code level 1 | UPC code level 3 | Catalog code |
|------|-----|-----------------|------------------|------------------|--------------|
| LCN1840/05 Wireless gateway IA Pro L NA | 1 | 9137 010 37713 | 046677 476335 | 50046677476330 | LCN1840/05 |

## FCC/IC compliance statement

This device complies with part 15 of the FCC rules for the United States and Industry Canada (IC) license – exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by Philips could void the user's authority to operate this equipment. This product is intended for commercial use only.

## FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## IC Compliance Statement

This device complies with Industry Canada license–exempt RSSs. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Any changes or modifications not expressly approved by Philips could void the user's authority to operate this equipment. This equipment is intended for commercial use only.

## FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

## IC Radiation Exposure Statement

This equipment complies with IC RSS–102 radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

## Open source statement

This product contains open source software. The acknowledgements, license texts and the written offer can be retrieved from the product after installation using a web browser by opening the following web page https://interact.lighting.com/lightopensource/. This link allows you to enter the mac address that can be found on the label at the back of the product. This web service will subsequently retrieve the acknowledgments, license texts and written offer from the device with that particular mac address, providing you with the information corresponding to the then current open source software in the device.