

LIGHTCONNECT™



LIGMAN

SOLUTIONS

LIGMAN provides customers with solutions for their lighting installations which are future proofed.

LIGMAN delivers over 300,000 luminaires and 10,000 poles annually to its customers. All of these product have the ability to be adapted to be "smart city" ready.



LIGMAN works closely with its partners to provide customers with solutions based on their lighting and environmental requirements.

Our partners provide products and services which complement and enhance the range of lighting products available from LIGMAN at the same time as delivering an intelligent smart city.

FOUNDATIONS FOR A SMART CITY

LIGHTING is considered as the first and most widely adopted smart city application. It has been deployed at scale with over 13 Million intelligent streetlights operational globally. Using luminaires as a platform for adding intelligence for smart city applications has long well proven itself effective and able to deliver a real return on investment. The smart city depends upon infrastructure to support the sensors and the street lighting poles provide the perfect location for this.

From this starting point a city can add numerous sensors and through dashboards analyse the data received from them.

LIGHTING

LIGMAN works with its partners to deliver control and monitoring solutions to meet customer requirements. Using the LIGMAN range of luminaires and poles equipped with Nema 7 and / or Zhaga book 18 sockets the light becomes intelligent.



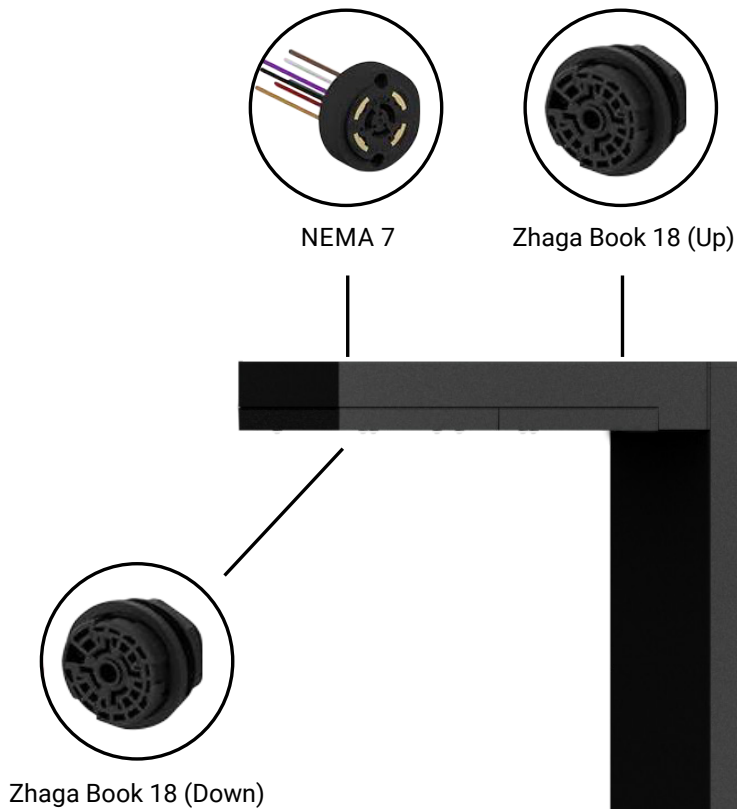
NEMA socket

The addition of an industry standard NEMA 7 socket allows for dimming and control to be added to the luminaire. Dimming can be either 0-10V or DALI.



Zhaga Book 18

The Zhaga Book 18 socket provides the interface for local control of the luminaire when combined with a photocell or standalone dimming device.



SMART CITIES

A smart city is a city that uses the information collected through sensors to increase operational efficiency, share information with its citizens and improve the quality of services it provides and its citizens welfare.

Smart cities sensors

The sensors which gather and provide the information to assist in the decision-making process of a city include:



Lighting - Central management systems

Central Management Systems (CMS) provide the end users (cities, municipalities and utilities) with the ability to monitor and control their lighting infrastructure remotely. CMS gives them the means by which to make informed decisions on time of use, level of lighting required and respond to faults quickly and efficiently.

Benefits:

- Reduction in energy consumption through dimming, trimming and providing the correct level of light for the type and time of use.
- Increased operational efficiency through pro-active maintenance.
- Increased customer satisfaction.
- Providing the backbone for further smart city sensors.



Sensor

Sensors provide the data from which informed decisions can be made to enhance and improve the cities services and its citizens use of the built environment.



Cameras

Cameras can be used to monitor activities and provide insights into the use patterns of traffic and pedestrians which through analytics provide the basis for informed decisions.

Benefits:

- People counting
- Vehicle counting
- Car Park monitoring
- Road Surface Temperature



Environmental Sensors

SENSORS can be used to monitor and analyse a variety of gases and other environmental parameters including:

- Ammonia – NH3
- Carbon Dioxide – CO2
- Carbon Monoxide – CO
- Hydrogen Sulphide – H2S
- Methane – CH
- Molecular Oxygen – O2
- Nitrogen Dioxide – NO2
- Nitrogen Oxide – NO
- Ozone – O3
- Sulphur Dioxide – SO2
- Particles (Dust)
- Temperature
- Humidity
- Pressure



Analytics

Having collected the data it is vital to be able to analyse and display this data for the benefit of the city and its citizens.



EV Charging

Cities are evolving into much greener and pedestrian friendly environments and as such Electric Vehicles are much more common the need to incorporate the facilities to charge these vehicles without increasing street clutter is very important. LIGMAN poles can have EV charging points installed on them to reduce this clutter.



Digital Signage

DIGITAL SIGNAGE can be used to keep citizens informed or as a means of revenue generation through advertising.

L-COLUMN



LIGMAN luminaires and poles have been future proofed to allow all of these smart city applications to be installed now or in the future.

EVOLUTION

EVOLUTION available through LIGMAN Evolve has been designed to meet the demanding requirements of the Telecommunication industry and the need for 3G, 4G and 5G mini, macro and small cell deployment in the suburbs and rural areas.



STRATEGIC PARTNERS



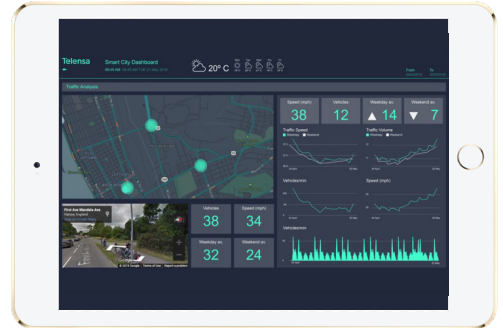
[ui!]

urban lighting innovations

Urban Lighting Innovation is part of the [ui!] GROUP who is active around the globe and advises municipalities, cities and metropolitan regions on strategic planning for the realization of ambitious smart city objectives, including climate change impact mitigation, traffic and parking management, infrastructure upgrades and new energy strategies for even smarter cities. [ui!] customers and partners include governments, energy providers and public as well as private companies.

Telensa

Telensa makes wireless smart city applications, helping cities around the world save energy, work smarter and deliver more joined-up services for their citizens. Telensa PLANet is the world's most deployed smart streetlight solution, with a footprint of 1.8 million lights. Urban IQ builds on the compelling business case for smart street lighting to provide cities and utilities with an open, low-cost platform to add multiple sensor applications. Working with Microsoft and Samsung in the Urban Data Project, Telensa is helping cities to build future-proof operations driven by data intelligence, trust and transparency. Telensa is based in Cambridge in the UK, with regional operations in the USA and Australia.



RECOMMENDED PARTNERS

Our Partners include

Telensa

[ui!]
urban lighting innovations

CIMCON
Lighting

Itron

westire
TECHNOLOGY

YOTTA
FROM DATA TO DECISIONS

NOKIA

TAOGLAS

Lucy zodion



VAISALA

MOBOTIX

legrand

OSRAM
DEXAL



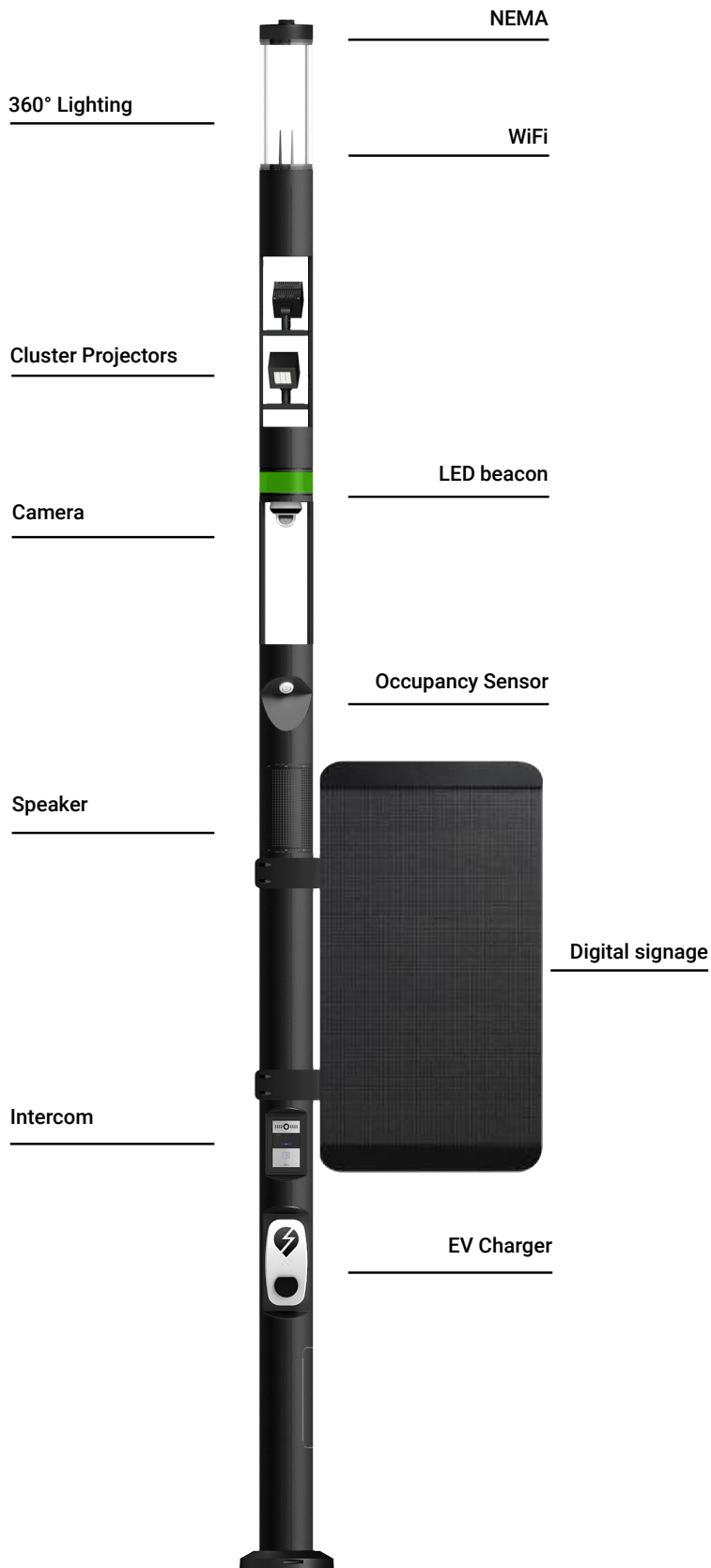
urbancontrol
a living network

L-COLUMN

Intelligent light column



A sleek configurable smart lighting column system offering unlimited options for urban and public realm illumination. With a suite of smart city technology options and infinite configuration possibilities, LIGMAN's L-COLUMN is the most powerful and adaptable smart city solution in the marketplace.



Luminaire colour code

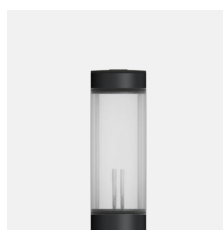
| | | | | |
|----------|-----------|----------|-------------|----------|
| -01 | -02 | -03 | -05 | -06 |
| Black | Dark Grey | White | Matt Silver | Bronze |
| RAL 9011 | RAL 7043 | RAL 9003 | RAL 9006 | RAL 6014 |

SMART CITY OPTIONS



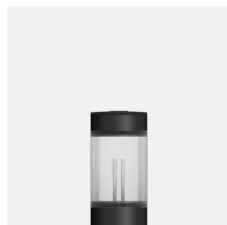
LCO-20013 360° Lighting (80W)

- Up to 8000 lm
- 24 LED
- 129°x49°, 112°x80°, 89°x60°, 30°, 56°, 99°x102°, 122°x50° options
- 3000K or 4000K



LCO-20014 360° Lighting (80W) + WiFi

- Up to 8000 lm
- 24 LED
- 129°x49°, 112°x80°, 89°x60°, 30°, 56°, 99°x102°, 122°x50° options
- 3000K or 4000K



LCO-20041 WiFi

- 2.4GHz and 5GHz world approved frequencies
- Dual-band 2x2 MIMO 802.11N/A with 100m coverage
- PoE (Power Over Ethernet)
- 128 clients (Maximum number of active connections)
- Dual-band, high speed



LCO-20021 360° Camera

- High definition 1/2.5" progressive scan CMOS Image sensor
- Low-level lighting mode, 0 Lux with IR
- Video compression H.265+
- Ultra high definition 2560x1440 pixels at 30fps
- Video bitrate up to 16384 Kbps
- 3 axis on-site adjustment
- API ONVIF
- Multiprotocol HTTP, HTTPS, PPPoE, SMTP
- OPTIONAL: Point, tilt, zoom versions, higher 4 MP



LCO-20023 180° Camera

- High definition 1/2.9" progressive scan CMOS Image sensor
- Low-level lighting mode, 0 Lux with IR
- Video compression H.264/5+
- Ultra high definition 2944x1656 pixels at 20fps
- Video bitrate up to 32kbps
- 3 axis on-site adjustment
- API ONVIF
- Multiprotocol HTTP, HTTPS, PPPoE, SMTP
- OPTIONAL: Point, tilt, zoom versions, higher MP



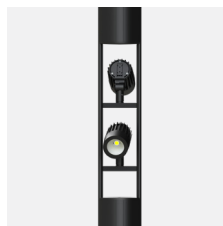
LCO-20024 2 x 180° Camera

- High definition 1/2.9" progressive scan CMOS Image sensor
- Low-level lighting mode, 0 Lux with IR
- Video compression H.264/5+
- Ultra high definition 2944x1656 pixels at 20fps
- Video bitrate up to 32kbps
- 3 axis on-site adjustment
- API ONVIF
- Multiprotocol HTTP, HTTPS, PPPoE, SMTP
- OPTIONAL: Point, tilt, zoom versions, higher MP



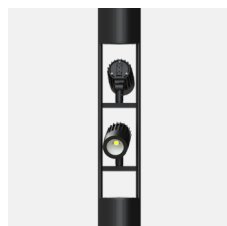
LCO-20051 NEMA Zhaga Book 18

- Wireless control of lighting fixture
- Supports all common wireless protocols



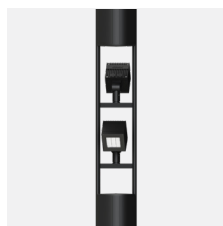
LCO-20067 Cluster projectors-ODESSA (2)

- Adjustable: Tilt 60° (Up) & 70° (Down), Rotation 20°
- Up to 1688 lm per projector
- 3000K, 4000K
- 23°, 32°, 47°



LCO-20067-VN Cluster projectors-ODESSA (2) - Very narrow

- Adjustable: Tilt 60° (Up) & 70° (Down), Rotation 20°
- Up to 816 lm per projector
- 3000K, 4000K
- 8°



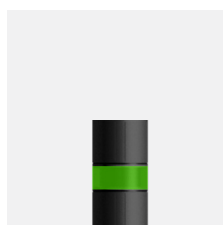
LCO-20068 Cluster projectors-LADOR (2)

- Adjustable: Tilt 60° (Up) & 70° (Down), Rotation 20°
- Up to 1975 lm per projector
- 3000K, 4000K
- 10°, 19°, 33°, 41°x14°, 71°



LCO-20068-RGB Cluster projectors - LADOR RGB (2)

- Adjustable: Tilt 60° (Up) & 70° (Down), Rotation 20°
- Up to 1016 lm per projector
- RGBW30, RGBW40
- 8°, 17°, 26°, 43°x11°, 65°



LCO-20081 LED beacon

4 colour RGBW LED beacon that works in combination with the intercom. Flashing or static, the LED beacon can change colour when the intercom is used. This alerts any patrol that the intercom has been used and allows for a quick response.

* Only available with Intercom (LCO-20092, LCO-20094, LCO-20096)



LCO-20071 Speaker

- 10-80 W wide power
- 4 Ohm low impedance
- 20 Hz - 20 kHz (wide audio range)



LCO-20091 Column



LCO-20101 Post top luminaire base

SMART CITY OPTIONS



LCO-20121 Occupancy Sensor

- 24-hour daylight monitoring dawn/ dusk sensor
- Tri-level dimming control based upon occupancy
- Programmable detection area 30°-150°
- Programmable light level activation 2-50 lux
- Programmable hold time 5s - 30 minutes
- Cluster projector activator



A91591 Round power socket

Multi usage lockable power sockets. Aluminium general purpose outlet containing up to 2x electrical sockets.
EU 2 pin socket CEE 7/3 with exterior earth connection and IP55 protection. Max power 250V AC, 16A. Other sockets available on request.



A92191 Digital signage

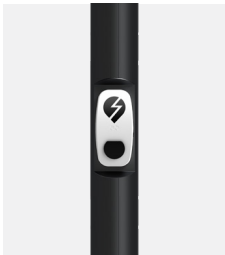
Full-colour digital signage for outdoor usage. Specially designed for streets, shopping malls, commercial centres, parking etc. With wireless connection and cloud control system for easy monitoring and updates. Maximum impact with high resolution and brightness for outdoor environments. Waterproof and durable for a long lifetime.

- 500x1000 mm digital signage
- 3.9 mm pixel pitch, 128x256 pixels
- Viewing distance 4-100 m
- High brightness > 5000 nits for daytime viewing
- Waterproof IP65
- Steel cabinet dimensions 640x1480x120 mm
- Single and double sided displays
- Cloud control for remote management with license
- 52 kg cabinet weight
- 3 year warranty
- Option to connect with L-COLUMN speaker



LCO-20092 Intercom

- Stainless steel vandalism protected
- Single-button direct to controller alert
- Built-in camera and speaker
- IP communication
- LED Beacon (LCO-20081) is available



LCO-20093 EV Charger

- EO Genius, a worldwide service provider
- OCPP protocol for multi-service providers
- Single-phase 7.2kW, multi-phase up to 22kW
- Socket only
- Type 2 connector
- Easy to download and use App on any mobile device
- All in one system: charger, payment and monitoring through one cloud portal



LCO-20094 EV Charger + Intercom

- EV Charger
- EO Genius, a worldwide service provider
 - OCPP protocol for multi-service providers
 - Single-phase 7.2kW, multi-phase up to 22kW
 - Socket only
 - Type 2 connector
 - Easy to download and use App on any mobile device
 - All in one system: charger, payment and monitoring through one cloud portal
- Intercom
- Stainless steel vandalism protected
 - Single-button direct to controller alert
 - Built-in camera and speaker
 - IP communication
 - LED Beacon (LCO-20081) is available



LCO-20095 EV Charger (Integrated GSM SIM card)

- EV meter, service provider
- Self-reliant EV Charger with integrated 4G antenna
- Easy to use payment with any credit card
- No app needed
- Single-phase or triple-phase AC charging, up to 22kW depending on infrastructure and vehicle
- 4 m cable



LCO-20096 EV Charger (Integrated GSM SIM card) + Intercom

- EV Charger
- EV meter, service provider
 - Self-reliant EV Charger with integrated 4G antenna
 - Easy to use payment with any credit card
 - No app needed
 - Single-phase or triple-phase AC charging, up to 22kW depending on infrastructure and vehicle
 - 4 m cable
- Intercom
- Stainless steel vandalism protected
 - Single-button direct to controller alert
 - Built-in camera and speaker
 - IP communication
 - LED Beacon (LCO-20081) is available



A21591 Top cover



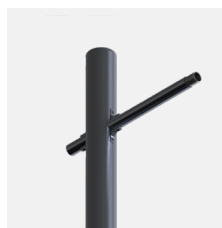
A21181 Bracket projectors



A21281 Banner arm



A22291 Root mount kit for LCO-20112



LCO-20131 Luminaire mount arm



LCO-20132 Adjustable luminaire mount arm



LIGHTCONNECT™ Outdoor

Whilst all new products will be IoT ready, there are many luminaires within the existing LIGMAN range that have already been adapted to support the LIGHTCONNECT™ concept.

The LIGMAN range of LIGHTCONNECT™ products is a perfect example of how easy it is to integrate new drivers and multiple sockets, allowing clients to benefit immediately from smart city initiatives or in the future as more and more options become available.

STREET & AREA LIGHTING LUMINAIRES



BILLUND



LIGHT LINEAR PT



STEAMER



HAMILTON

POST TOP LUMINAIRES



ABERDEEN

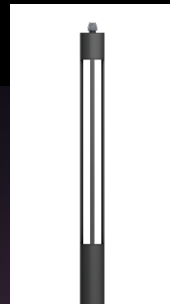


MACARON

LIGHT COLUMN



ARIZONA



BENTON



VANCOUVER

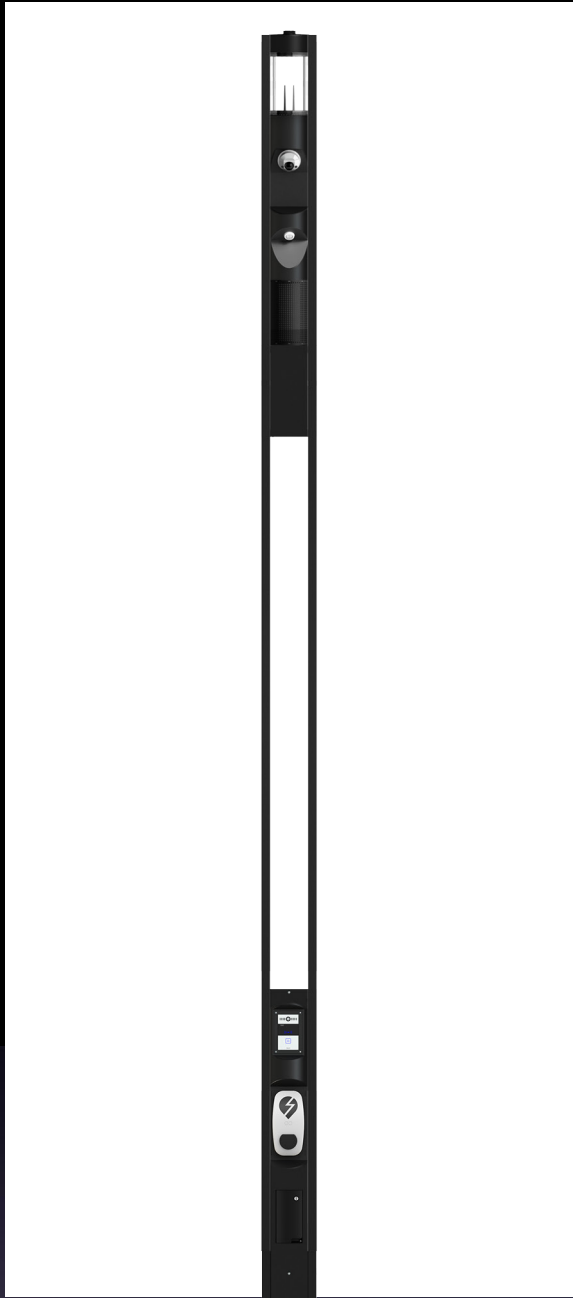


L-COLUMN



VANCOUVER

with smart city equipment



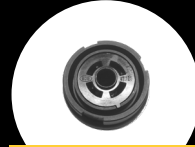
Accessories



A90891
NEMA



A90991-D
Zhaga Book 18
(Down)



A90991-U
Zhaga Book 18
(Up)



A91691-L7
Motion Sensor
(Up to 12 meters)



A91691-L2
Motion Sensor
(Up to 3 meters)



A91091
WiFi



A91191
Camera



A91291
Speaker



A91391
Intercom



A91491-EOG
EV Charger
(EO Genius)



A91991
EO Hub



A91491-EVM
EV Charger
(EV meter)



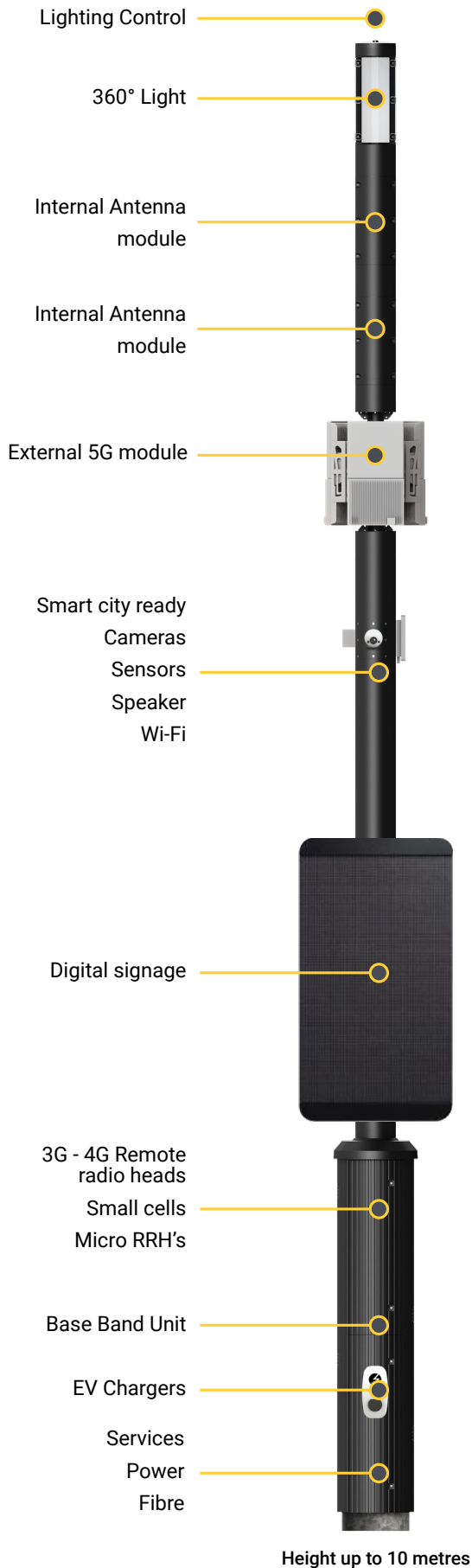
A91491-EVM
EV Charger
(EV meter)



A91791
Square Power Plug



EVOLUTION



EVOLUTION available through LIGMAN Evolve has been designed to meet the demanding requirements of the Telecommunication industry and their need for 3G, 4G and 5G mini, macro and small cell deployment in the city. For further information please visit www.ligmanevolve.com.au

Application areas:

- City Centres
- Shopping Malls
- Airports
- Train Stations
- Private networks



Photo credit - Jake Henry



1,2 or 3 podiums provide space for multiple telecommunication companies to co-locate in the same Evolution.

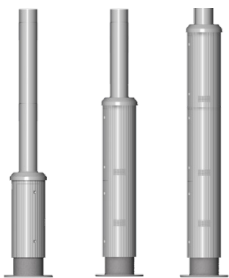
EVOLUTION ECO



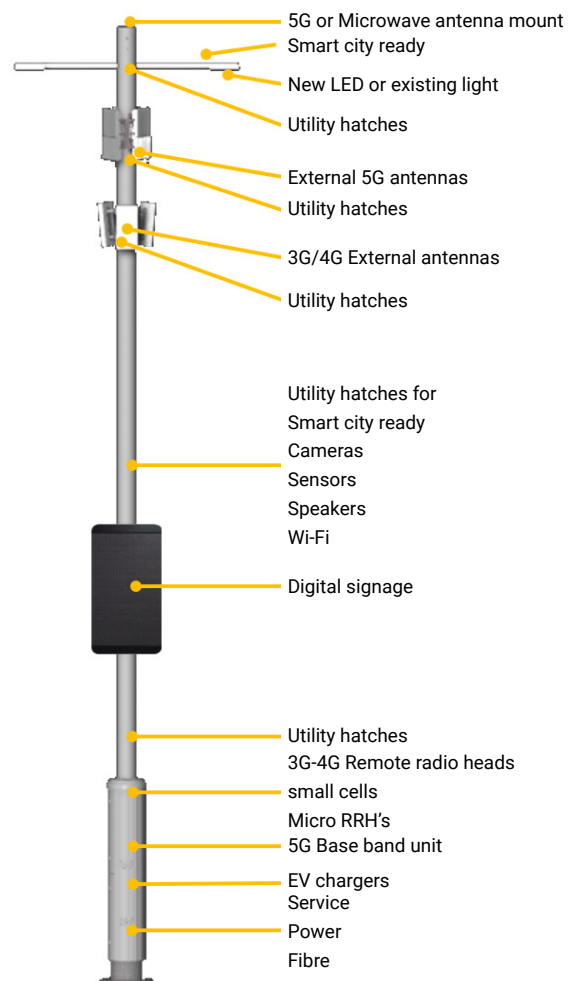
EVOLUTION Eco has been designed predominantly for rural areas. Whilst having the same capabilities as EVOLUTION it has larger antenna options. For further information please visit www.ligmanevolve.com.au

Application areas:

- Suburbs
- Industrial
- Rural
- Remote
- Private networks
 - Military
 - Police
 - Gas
 - Mining
 - Ports
 - Airports
 - Developments



1,2 or 3 podiums provide space for multiple telecommunication companies to co-locate in the same Evolution.



Height up to 14 metres



LIGMAN

www.ligman.com



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