



## All-in-one solution

Meet the future of modern street lighting! The EV Charging Smart Pole is an innovative, all-in-one street light. It incorporates a charger for electric vehicles, video surveillance camera, Wi-Fi, parking payment solution and intelligent LED street lighting. These elements are combined to fit into any modern light pole, creating the world's smartest and most convenient street lighting solution.

The perfect solution for cramped and environmentally friendly city centers. Available as both a complete street light and as a separate installable unit for existing street lighting poles.

No more fear of being stranded without power. Electric car owners can now charge their electric vehicle at anytime, in every street. Installation within existing street lamps is simple and the smart interface makes it extremely easy to use. Just plug in and charge.

Operators are also able to offer Wi-Fi access, safety monitoring through HD camera's, remote lighting management, and payment support.



**“What’s required is a standardized, easily accessible and vendor independent charging infrastructure. A good example of how a development could succeed, the idea is to integrate charging points in the streetlights.”**



*President of the German Car Industry  
Matthias Wissmann*



Lightmotion launch in Rotterdam 2015



# Specifications



**Comexys Security Lighting = Secure City WiFi protection system including live camera feed.**

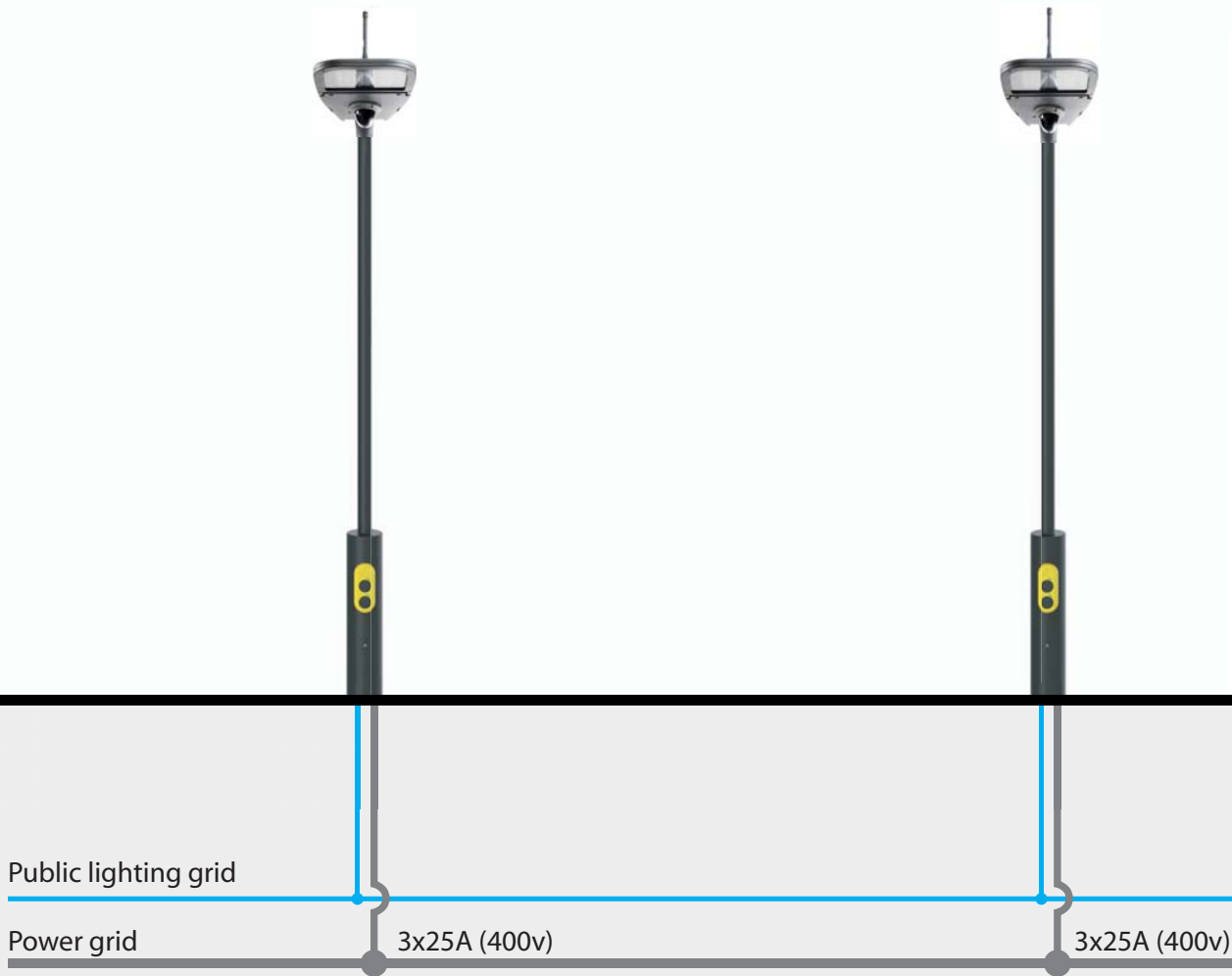
## Camera

Image Sensor	1/2.8" 2M CMOS
Maximum Resolution	1920 x 1080p
Lens	Optical 10x Mega Pixel Zoom Lens
Focal Length	5.1mm (F1.6) ~ 51mm(F1.8)
Pan/Tilt Range/Speed	Pan: 360 (Endless), Tilt: 0 ~ 180°
FOV	Horizontal: 54°(Wide) ~ 4.9°
Minimal Illumination	Color: 0.5 lux, B/W 0.1 lux
Alarm	1 Input, 1 output
Audio	1 Input, 1 output
Image Compression	H.264/H.264(true H.264 dual streaming), H264/MJPEG(simultaneous Dual Stream) Image Quality: 6steps(Lowest, Low, Medium, High, Highest, Low Compression)
Protocol	HTTP, RTP/RTSP(Unicast/Multicast), TCP/IP, ARP, ICMP, telnet, ftp, NTP, SMTP, DHCP, PPPoE, UPnP
Web Browser	Internet Explorer, safari, VLC, Firefox, Chrome, Quicktime, CMS(FW-manager, smart NVR, DVM)
Security	Password Protection, HTTPS, IP port filtering for access level

## WiFi

Frequency Range	IEEE802.11 a/n: 5.150GHz ~5.350GHz, 5.470GHz ~ 5.725GHz, 5.725 ~ 5.850GHz (US & Canada) IEEE802.11 a/n: 5.150GHz ~5.350GHz, 5.470GHz ~ 5.725GHz, 5.725 ~ 5.875GHz (Europe)
Receiving Sensitivity	-95dBm@MCS0
Radio Transmission Output	17dBm@5GHz
Wireless Transmission Standard	IEEE 802.22a/m, ad-hoc
Transmission Speed	3T3R. Maximum 450Mbps @HT40
Security/QoS	802.1xAuthenticator(EAP-TLS, EAP-TTLS, PEAP), MAS Based wireless connection, 64/128bit WEP, 802.11i 802.11eWMM/QoS, Cos/ maimum 8 virtual SSID
LAN/WAN	802.1q VLAN / Wireless VLAN for each SSID / MAC Filtering LAN 2-Port(1 Gbps), WAN 1 Port(1Gbps)

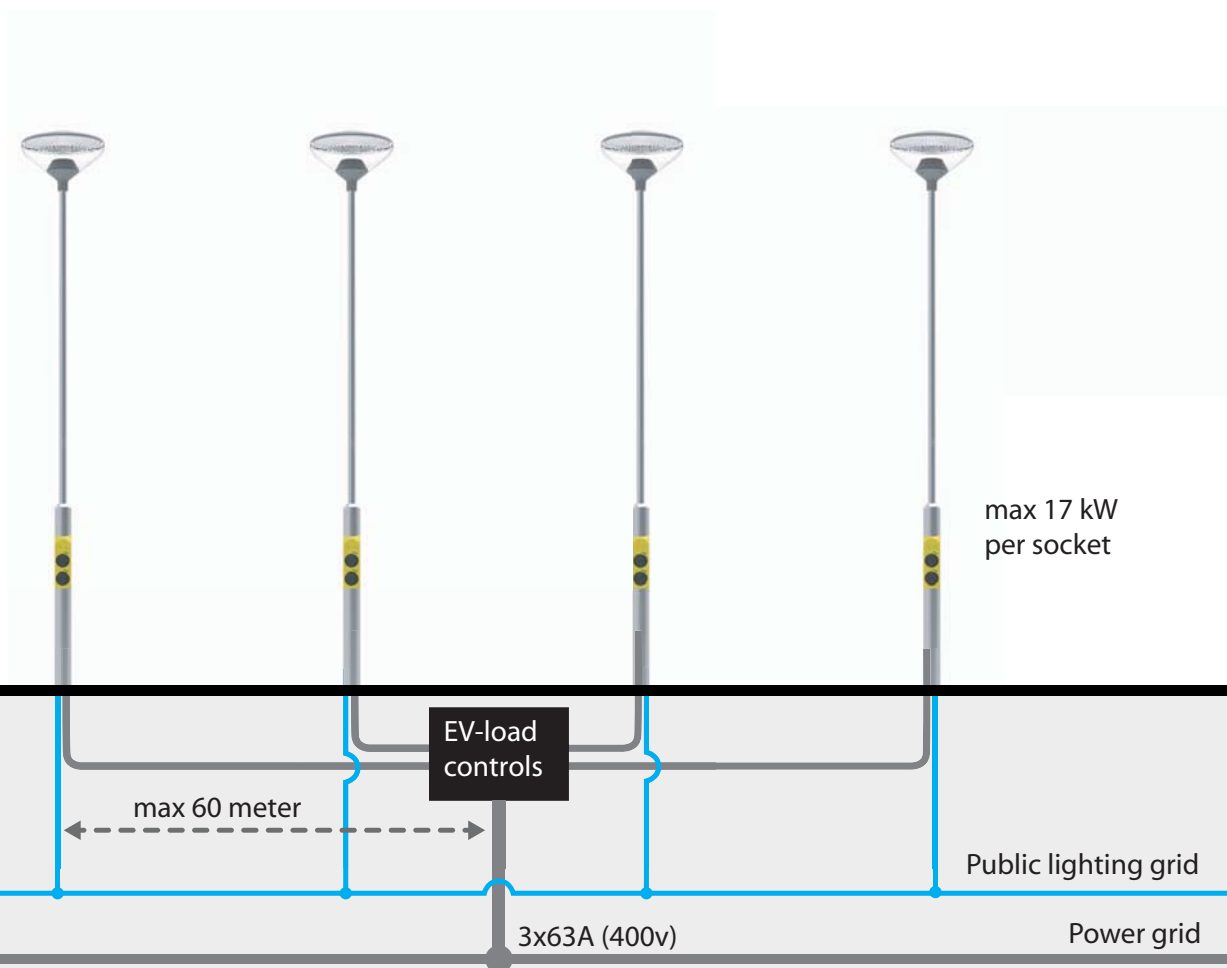
# Charging setup



## Stand alone

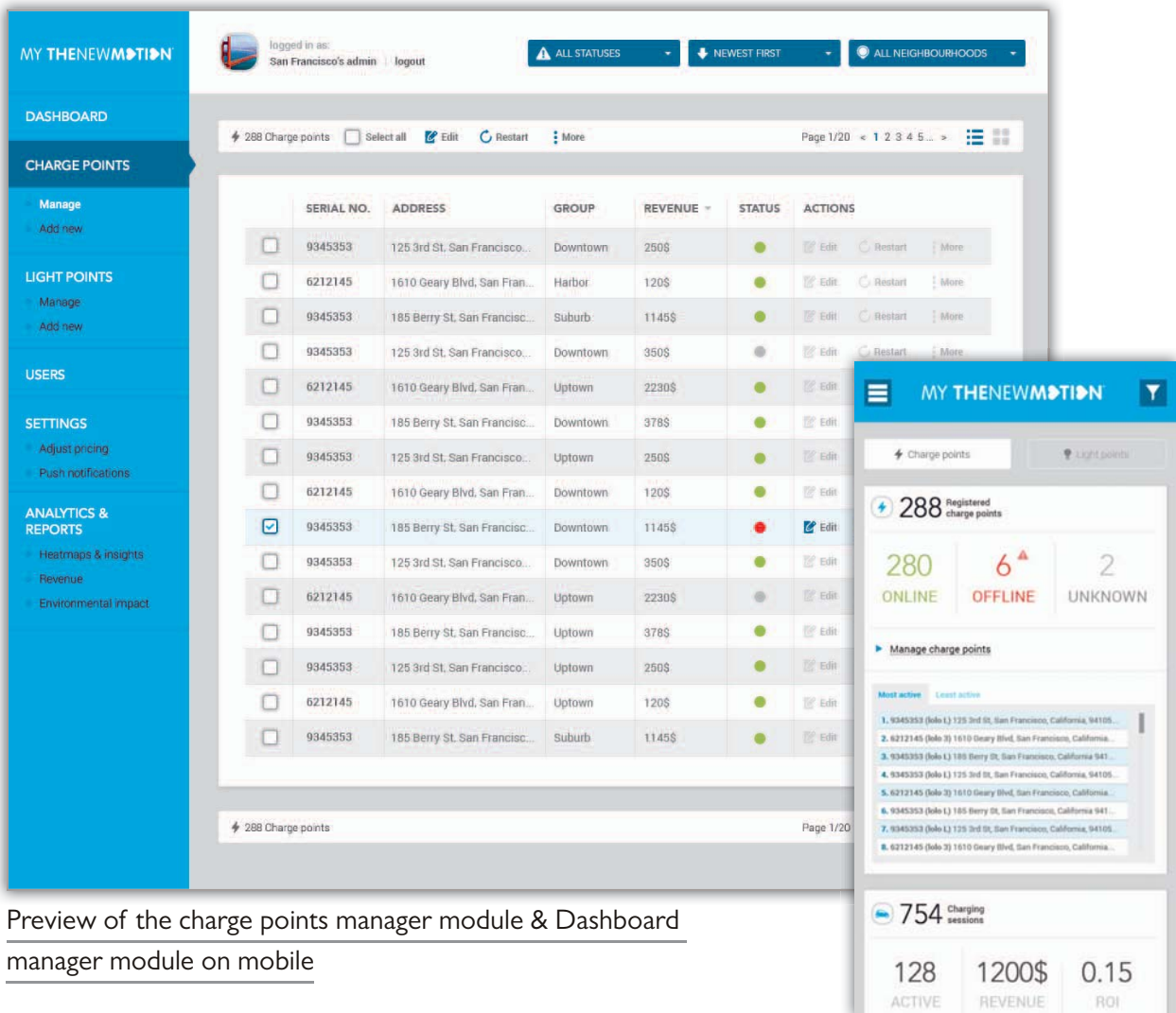
Charging mode	Mode 3
Configuration	Dual Sockets type 2 / Dual female plugs type 2
Max. Loading power	25A (17 kW) 32A (22kW)
Grid connection	I6A to 32A, 400v (3Phase), 50 Hz
Communication protocol	OCCP (1.2, 1.5, 1.6, 2.0 Ready)
Communication	Standard: GPRS; Ethernet; RS485 Optional: UMTS;WiFi
Interface	RFID Mifare 13.56 MHz
Addition safety features	Power failure backup; internal temperature sensor; tilt switch (optional)

Dimensions	Bottom Diameter: 320 mm Height: 6, 8 or 10 meter
Color	Loader: Standard RAL 7021. Pole: Galvanized steel or RAL
Protection	IK08 - IP54
Operating temperature	-20°C to 55°C
Operating humidity	5% to 95%
Safety class	Class I
Max installation altitude	2000 m
Kwh meters	MID certified MOD-BUS (Class B)
Designed according to	IEC6185-1; IEC61851-22; EN60439-1; EN60204-1; Kema Keur; DEKRA seal



## Clustered version

Charging mode	Mode 3	Dimensions	Bottom Diameter: 120 mm Height: 6, 8 or 10 meter
Configuration	Dual Sockets type 2 / Dual female plugs type 2	Color	Loader: Standard RAL 7021. Pole: Upon request
Max. Loading power	25A (17 kW)	Protection	IK08 - IP54
Grid connection	63A, 400v (3Phase), 50 Hz	Operating temperature	-20°C to 55°C
Communication protocol	OCCP (1.2, 1.5, 1.6, 2.0 Ready)	Operating humidity	5% to 95%
Communication	Standard: GPRS; Ethernet; RS485 Optional: UMTS;WiFi	Safety class	Class I
Interface	RFID Mifare 13.56 MHz	Max installation altitude	2000 m
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Preview of the charge points manager module & Dashboard manager module on mobile

## The smart charge and streetlight solutions by LightMotion, LightWell & Comexys are a perfect fit for Smart Cities:

- > Excellent business case: low investment and operational costs, incomparable to 'normal' public charge points, 2 in 1 installation - both streetlight and charge point.
- > Grip on the behavior of charge point users through the data cloud. Signaling you when an additional point can be placed. No more need for tedious approval processes.
- > Additional ways to motivate charging cars to leave after two hours at popular spots by creating time-frames with various prices in dashboard.
- > Automatic insights and reports on the impact of EV driving and charging in your city, plus the possibility to run behavioral studies on the big data.
- > Reliable network. Your charge points will join an existing network of 16,000 connected chargers. The back office keeps track of the 'heartbeat' of every charger and signals potential issues. Preventative asset management is possible through algorithmic analysis.
- > The streetlight indicates whether the charge point is available, which saves cars driving for miles to find an available charger.
- > Possibility to offer specific groups of drivers (like citizens of districts) specific privileges through one card.



- > Future proof: subscriptions come with regular software updates, offering your charge point users more and more functionalities they'd appreciate.
- > Retrofitting: the charger is also a plug-in option for existing light poles. Already in-place chargers can be added so the entire charge network can be monitored via one system.
- > No need to fear energy-shortages or broken fuses: the 22 kW chargers are kitted with load-balancing, allowing the charger to adjust over the phases to the power requested by the specific car-type.

## Available administrative modules

- > Comprehensive **dashboard** with statistics of usage and recommendations
- > **Charge and light points** management with remote actions
- > **User management**
- > **Settings** - pricing, notifications and platform preferences
- > **Analytics and reports** - heat maps and insights, revenue, environmental impact

Preview of the manager dashboard module

The image displays two overlapping screenshots of the 'MY THENEW MOTION' manager dashboard. The top screenshot is the 'San Francisco's admin' view, featuring a sidebar menu with sections like DASHBOARD, CHARGE POINTS, LIGHT POINTS, USERS, SETTINGS, and ANALYTICS & REPORTS. The main dashboard area includes cards for '288 Registered charge points' (with sub-cards for 280 ONLINE, 6 OFFLINE, and 2 UNKNOWN), '754 Charging sessions' (with 128 ACTIVE, 1200\$ REVENUE, and 0.15 ROI), and '16.5 tons CO2 EMISSIONS SAVED'. A 'DAILY GOAL MET!' notification is also visible. The bottom screenshot shows the 'San Francisco's resident' view, which includes a map of San Francisco with a search bar for 'Search by charge point location'. A detailed view of a charging station is shown, including a photo of the station, a car icon, and text: '8 km drive', 'Status: AVAILABLE', 'Power output: 22 kW', 'Price: 0.50\$ per kWh', and 'Availability: [icons]'. The sidebar menu in this view includes 'MAP', 'Favorites', 'Fast chargers', 'View all', 'CHARGE POINTS', and 'CHARGE CARDS'.

# About LightMotion

LightMotion is a joint development by two experienced partners - The New Motion and Lightwell. The New Motion is European market leader in charge point hardware and services. Lightwell's expertise lays in innovative lighting solutions. LightMotion offers an integrated solution that addresses many of the problems that modern cities are struggling with, like parking pressure, cluttered pavements and air quality.



In 2009 The New Motion started operating in the Netherlands and quickly became market leader in both hardware and software solutions. Our mission is to eradicate fossil fuels by stimulating electric cars and its infrastructure. Today - on an average evening - around 9,000 cars are charging at the same time in our network. Our charge-pass can be used across the continent and automatically takes care of the payment for every charge session.

## The best back office services for electric charging available



Comexys is an innovative company dedicated to R&D, production and sales of advanced solutions responding to Smart & Safe city challenging requirements, based on municipal & national street light infrastructure.

We convert standard street light columns into INTELLIGENT columns enabling various applications such as street light management, RF communication, Wi-Fi coverage, HD CCTV, CO2 sensors, advertisement panel, SOS intercom, charging of electrical cars and more, all based on the ability to provide the columns with 24/7 electricity and communication.

Comexys develop advanced management software & gateways that enables full management of all IOT sensors such as parking, metering (water, gas), traffic, events and more

## The most innovative smart net of Things



Lehavim, Israel

# What we offer

- > An interoperable network - the infrastructure connected to the back office is part of the continental charge network so all MSPs can use it
- > Settlement and billing - flexible pricing model on time and kWh, flexible timing possible
- > Access management - charge point owners can decide who has access and who doesn't (select groups of drivers to have access), access with card and smartphone (spontaneous charging)
- > Asset management - remotely managing network - incl. load management, configuring settings, remote start/stop/reset etc. Real-time monitoring and alarms (get notifications when issue occurs). Fault diagnosis: remotely understanding what goes wrong, get corrective actions done, send people to site only if needed
- > Role management - ordering of the connected charging infra, so that some users can only access a limited part of the infrastructure. Differ administrative rights (e.g. only information about infrastructure; information and remote management features)
- > Maintenance and support - incl. contract management and ticketing system
- > Dashboard/insight - into uptime/ type and amount of issues/ use / kWh charged, etc.
- > Main CP providers integrated - now connected: Schneider, Alfen, EVTEC, Efacec, Circontrol, ABB, Siemens. In progress: Lafon, EVbox, Tritium, KEBA, Veniox

## Service package

### monthly subscription

- > Interoperability
- > Settlement / billing (incl. flexible pricing module)
- > Access Management (incl. limiting of access)
- > Asset Management
- > Dashboard/ Insight
- > Advertisement in app
- > Maintenance and Support tool

\* The services include at least 4 times per year remote functional updates

# UNIQUE SELLING POINTS

- > All-in-one; intelligent street light solution.  
(EV Charger, Wi-Fi, Surveillance camera, parking payment solution, intelligent, energy saving street lighting)
- > Established network of 16.000 chargers in Europe
- > Seamless integration of EV charging and street lighting in any urban area
- > Easy installation in existing street lamps
- > Low investment and operational costs
- > Excellent 24/7 back office support
- > Data reports for insight into energy usage, EV driving patterns and behavioral studies
- > Real time performance monitoring and management
- > Possibility to offer specific privileges to pass holders
- > Future proof investment with regular software updates and innovation
- > Cradle to cradle; with minimal energy loss and maximum energy efficiency



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