



## Smart pole

The basic pillar of a Smart City



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## Editorial



Jiří Konečný

Founder and CEO of the ELKO EP Holding



“ When people ask me, “You started in a garage like Steve Jobs?” I answer yes, but I - like him - had no idea where my hobby would lead me. Basically, I had no other choice. My father’s garage, where he was repairing cars, was the ideal place to be. As an electronics graduate, When people ask me, “You started in a garage like Steve Jobs?” I answer yes, but I - like him - had no idea where my hobby could lead me. Basically, I had no other choice. The father’s garage, where he was repairing the cars, was the ideal place to be. As electronics graduate, from my youth I had tried to plug in electronic circuits, build guitar amplifiers and much more. This has survived to this day.... but I am not

alone now, over 300 associates and colleagues from different disciplines help me. I like to say, we are a kind of “exotic” company. We invent, develop, sell, and service everything ourselves. As a result, we compete with the large industry colossuses, although for many we manufacture OEM products. With our own dedication and tenacity, we have developed and reached the forefront of the industry - whether in the field of relays or in smart systems. For more than a quarter of a century of our hard work, we have received countless awards, among others we have become the Company of the Year of the Zlín Region 2012 and we were second in the national competition. We won the

prestigious Golden Ampere, a number of innovation prizes, the Global Exporter of the Year title, I was among the five finalists of the Entrepreneur of the Year myself, I am a Smart City personality and supposedly a Visionary of the Year. Yes, I am happy for all these awards, but believe me, we are not doing it to collect prizes, but to satisfy our customers and that’s why we always drive onwards, invent and innovate. The strength of our development is characterized not only by products with excellent parameters, but also by their interconnection. This means that they understand each other and are not difficult to integrate. An important factor (criterion) is the sustainability and quality of production, which is

underlined by the extended 5-year warranty. We always strive to offer our customers the perfect product that is one step ahead. It must be versatile, multifunctional, attractive and above all smart - to be the reasons for the customer to buy it. It’s not easy, but we do all we can to achieve it. The result is 13 branches 66 export countries and more than 3000 satisfied customers.

Thank you!



Jiří Konečný

# Smart pole - the basic pillar of a Smart City

Public lighting is a sign of a developed civilization. Whether they illuminate highways, roads, villages, towns, parks, or public spaces some lights are placed on jibs, a few of them on buildings, but most of them stand on the top of poles. The use of the pole is thus only a light spot carrier, a few of them wearing a loudspeaker. But even just a pole brings the ideal infrastructure for extended use. That's why we asked the question, why not use it? Thanks to IoT, we have integrated a lot of the available urban service technologies. So the Smart Pole was created. A comprehensive solution with an intuitive, easy-to-use user interface that features 4 characteristics, basic features: modularity, information, security and communication. A solution, which will make city inhabitants feel safer.



Charger

Kiosk

City

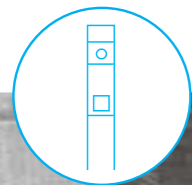
Street

Modularity

Informations

Safety

Communication



# Solution for every city

A Smart Pole is an oasis in the tangle of big city systems. A central charger for everything - phones, laptops, electric cars, bicycles and scooters. Quality wireless Internet coverage. The camera evaluates any danger and can automatically call for help along with a press of the SOS button. The Pole may also include a public radio, timetable information board, or an interactive touch panel with apps suitable for residents or visitors to the city. The air quality module can continuously monitor air purity and notify it directly to citizens and / or authorities.

## Charger

- Electric vehicle charge socket
- Charge socket 230 V
- USB charge socket
- SOS button
- Wireless phone-charger
- Contactless card reader



## Kiosk

- Electric vehicle charge socket
- Charge socket 230 V
- USB charge socket
- SOS button
- Wireless phone-charger
- Contactless card reader
- Touch panel
- Intercom loudspeaker
- RGB status light



## City

- Electric vehicle charge socket
- Charge socket 230 V
- USB charge socket
- SOS button
- Wireless phone-charger
- Contactless card reader
- Touch panel
- Backlit infopanel
- Intercom loudspeaker
- Public address loudspeaker
- Camera
- RGB status light



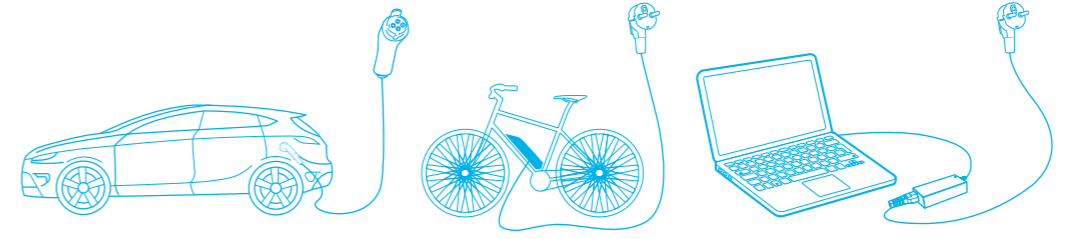
## Street

- Electric vehicle charge socket
- Charge socket 230 V
- USB charge socket
- SOS button
- Wireless phone-charger
- Contactless card reader
- Touch panel
- Backlit infopanel
- Intercom loudspeaker
- Public address loudspeaker
- Air quality sensor
- Camera
- RGB status light
- Main street light
- WiFi hotspot
- Communication hotspot



# Charger

Charging made quick and easy



# Charger

Charging station for all battery devices - be it a portable device like phone, tablet, notebook, camera or vehicle: electric cars, bicycles, scooters ...

Phones can be recharged both wirelessly and via a USB socket. The two main rechargeable slots allow them to be fitted with a 230V or 22kW socket for AC charging electric vehicles.

All recharged outputs can be controlled and therefore charged. Whether using the touch panel app (part of the Kiosk variant), an external app on your smartphone or just attaching a pre-charged or credit card to the reader, which can also be part of a pole.



## Contactless card reader

MIFARE (Classic, Ultralight C, Plus, Desfire, Smart-MX), EMV (PayPass, PayWave). NFC, RFID chips.



## Wireless Phone Charger

Wireless recharging of Qi phones with output power up to 5 W.



## USB charge socket

The 5V / 2A USB socket enables quick charging of all devices via cable. Green LED backlight and anti-vandal design with IP65 protection.



## SOS button

In addition, the backlit button in the anti-vandal design is equipped with a protective cap. It is possible to set „where it will ring“. It can also include a two-way communication system - in the Kiosk variant.



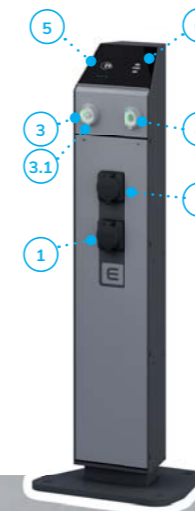
## Charging socket 230V

Controlled socket 230V / 5A with IP54 protection for connection of any charger of corresponding power (max. 1 kW). Adjustable overcurrent protection (0.8 - 8 A).



## Electric vehicle charge socket

EU Type 2 / Mode 3 standard socket for AC charging electric cars up to 22 kW / 32A.

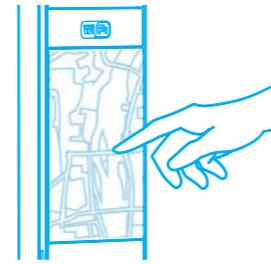


- 16 Communication hotspot
- 15 WiFi hotspot
- 14 Main street light
- 13 Camera
- 12 Air quality sensor
- 11 Public address loudspeaker
- 10 Backlit infopanel
- 9 RGB Status light
- 8 Intercom loudspeaker
- 7 Touch panel
- 6 Contactless card reader
- 5 Wireless phone-charger
- 4 USB charge socket
- 3 3.1 SOS button / EV button (Charger only)
- 2 Charge socket 230 V
- 1 Electric vehicle charge socket

# Kiosk



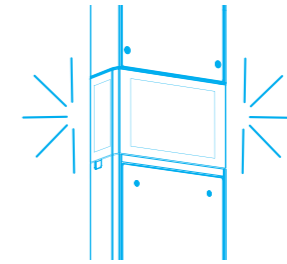
Informations on a palm of your hand



Touch panel



Intercom loudspeaker



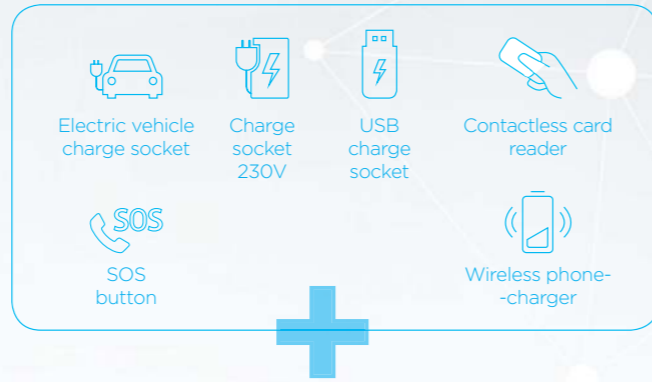
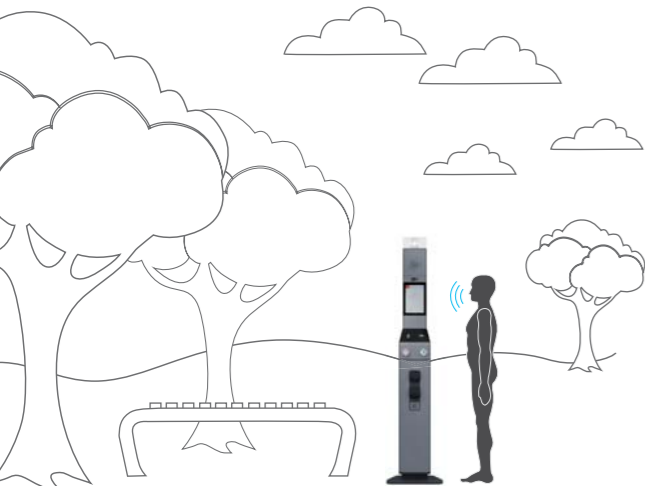
RGB Status light





# Kiosk

The Kiosk serves as an information portal for parks, campuses or other public spaces. It is designed for communication, information, security and navigation of the city's inhabitants or visitors. At the same time, it can also incorporate Charger features to recharge battery devices, e-bikes, and e-scooters. It includes a touch panel on which applications can be launched. This panel can be used to display important phone numbers, city maps, restaurants and other places of interest as needed. The status light can serve as a positional illumination or a status indicator of the column technology. Thanks to the integrated intercom, it is possible to contact the dispatching centre or information centre.



## RGB status light

By varying colours, it can signal the various states associated with the column functions and thus supply simple information to the surrounding area (e.g., free recharging slots, electric vehicle charge status, or fault condition).



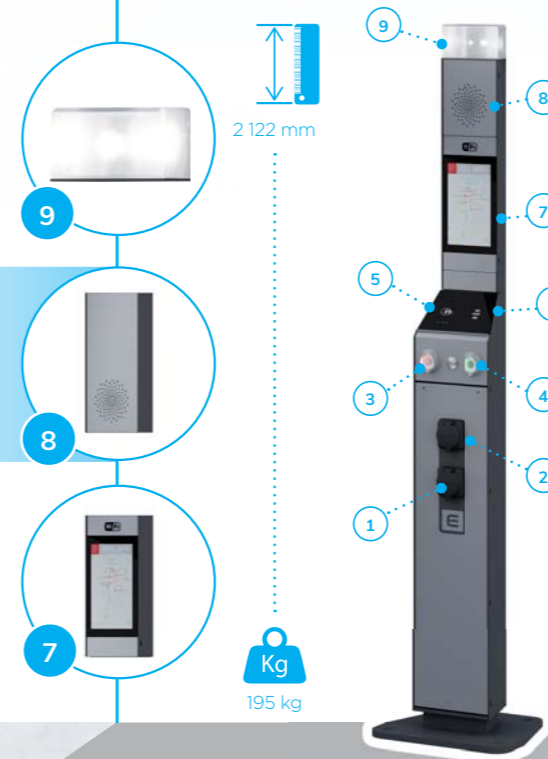
## Intercom loudspeaker

The two-way communication system is used for voice communication with the operator, whether for information or in case of danger.



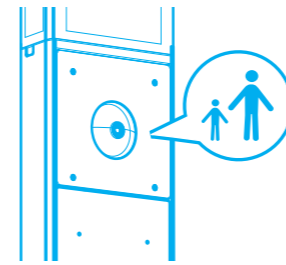
## Touch panel

It offers a variety of applications through optional applications: maps, navigation, information, guides, and advertising.

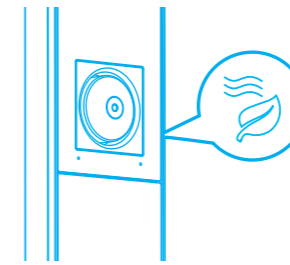


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- 5 Wireless phone-charger
- 4 USB charge socket
- 3 SOS button
- 2 Charge socket 230 V
- 1 Electric vehicle charge socket

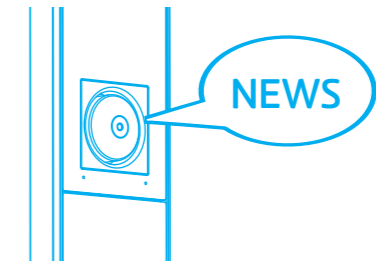
Proud guardian of your city square



Camera



Air quality sensor



Public address  
loudspeaker

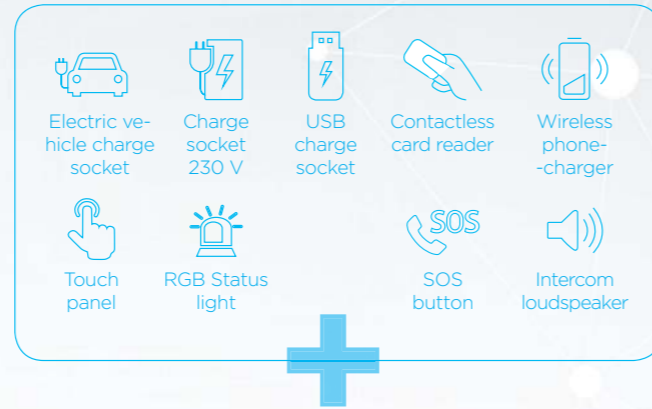
city



# City

The design fits into the concept of a modern square, park or pedestrian zone. It not only provides orientation lighting, but all features from previous versions of Charger and Kiosk. In addition, this option can be equipped with Camera, Air Quality, Public Radio or Backlit Info-panel.

A smart City pole can thus become not only the information centre of the place. Residents or tourists can find the information they need, quickly recharge their phone (even wirelessly), the camera and other devices or contact the dispatching centre. On the contrary, thanks to the camera, it can give an overview of the events in the area.



## Camera

A 5-megapixel camera with a 180-degree viewing angle provides a perfect picture of what is happening around the column and underneath it. All this even with reduced visibility.



## Air quality sensor

The sensor measures both harmful substances in the air and meteorological variables. Values can be displayed on the information panel screen, but can also be notified to the city system.



## Public address loudspeaker

It is a substitute for public radio and its performance covers the desired area perfectly. Each Pole can be assigned and addressed separately to provide territorial reporting.



## Backlit infopanel

A place to display information that changes frequently: timetables, lockout information, or can be used to serve ads.



3 786 mm

13

12

11

10

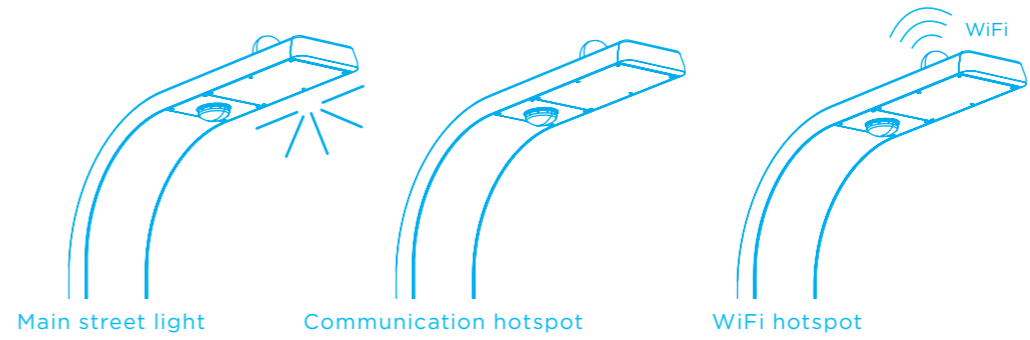
Kg  
245 kg



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# street

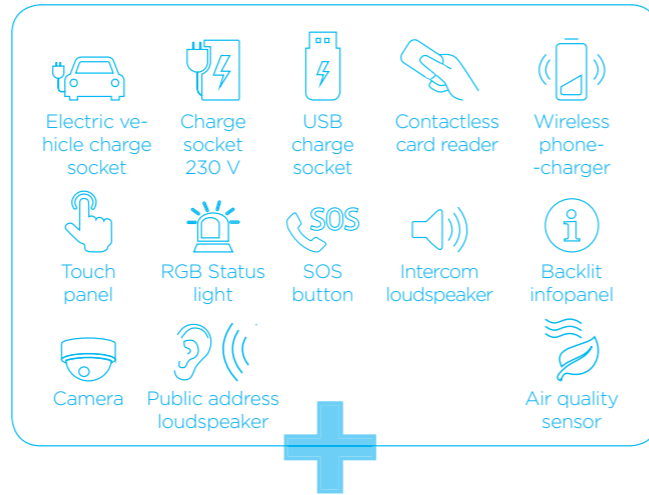
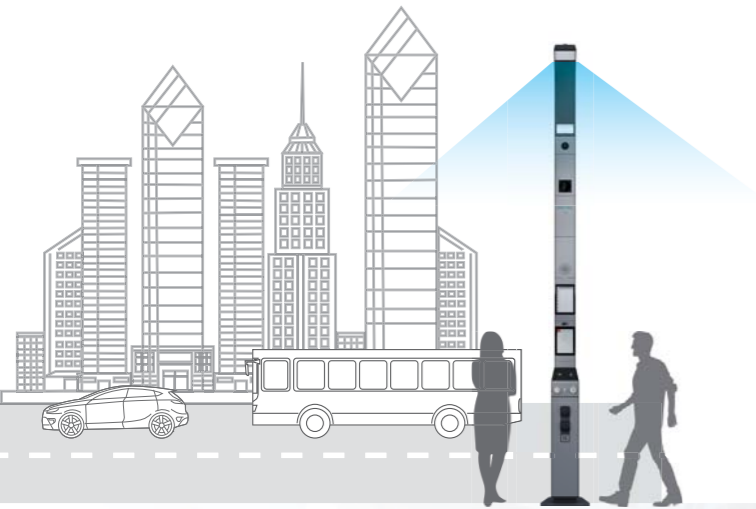
More than a smart street lighting



# Street

The full-featured smart pole includes all the elements and technologies from previous versions of Charger, Kiosk and City. In addition, it is finished with a luminaire for purpose-built road lighting, which regulates its brightness through proximity sensors and pre-set scenarios, resulting in significant savings. These are multiplied by the use of an energy-saving LED lamp.

The body of the luminaire is equipped with a communication hotspot for connection to IoT networks. This device receives signals from all sensors and transmits them to the Platform where the data is evaluated. Wi-Fi hotspot then provides Internet coverage up to 250 m.



### Communication hotspot

It is used for connection to the IoT network (LoRA, NB-IoT) for information transfer and Pole control (see the table „Communication“). Cap design with Lumawise cap.



### WiFi hotspot

It is used for WiFi signal coverage in the 250 m band in the 2.4 GHz band (802.11 b / g / n) and 5 GHz (802.11 a / n standard). Max. the output power is 22 dBm and operates at a transmission rate of up to 150 Mbps.

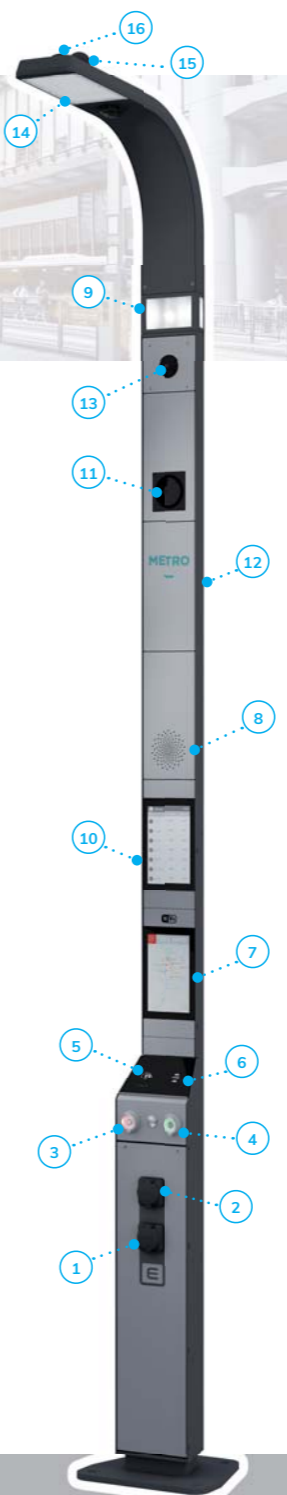


### Main street light

The headlight body features a 100W LED module and an optional 3000K / 4000K / 5000K color temperature. The driver provides smooth 0-100% brightness control.

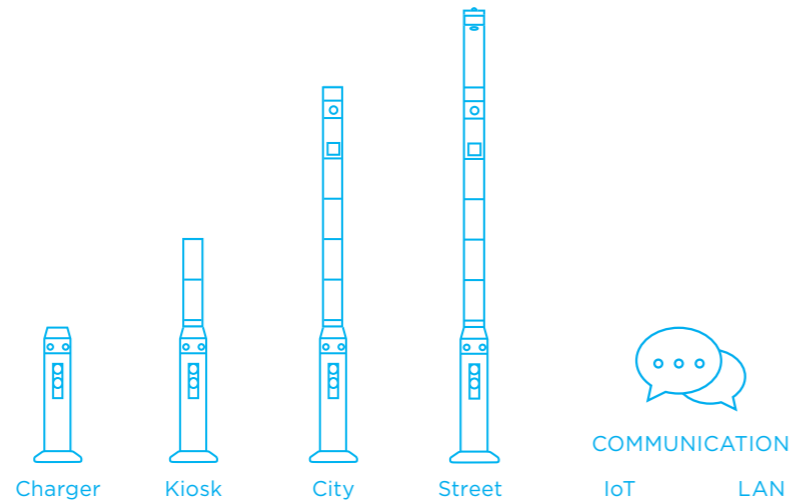


Kg  
280 kg



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# Smart pole

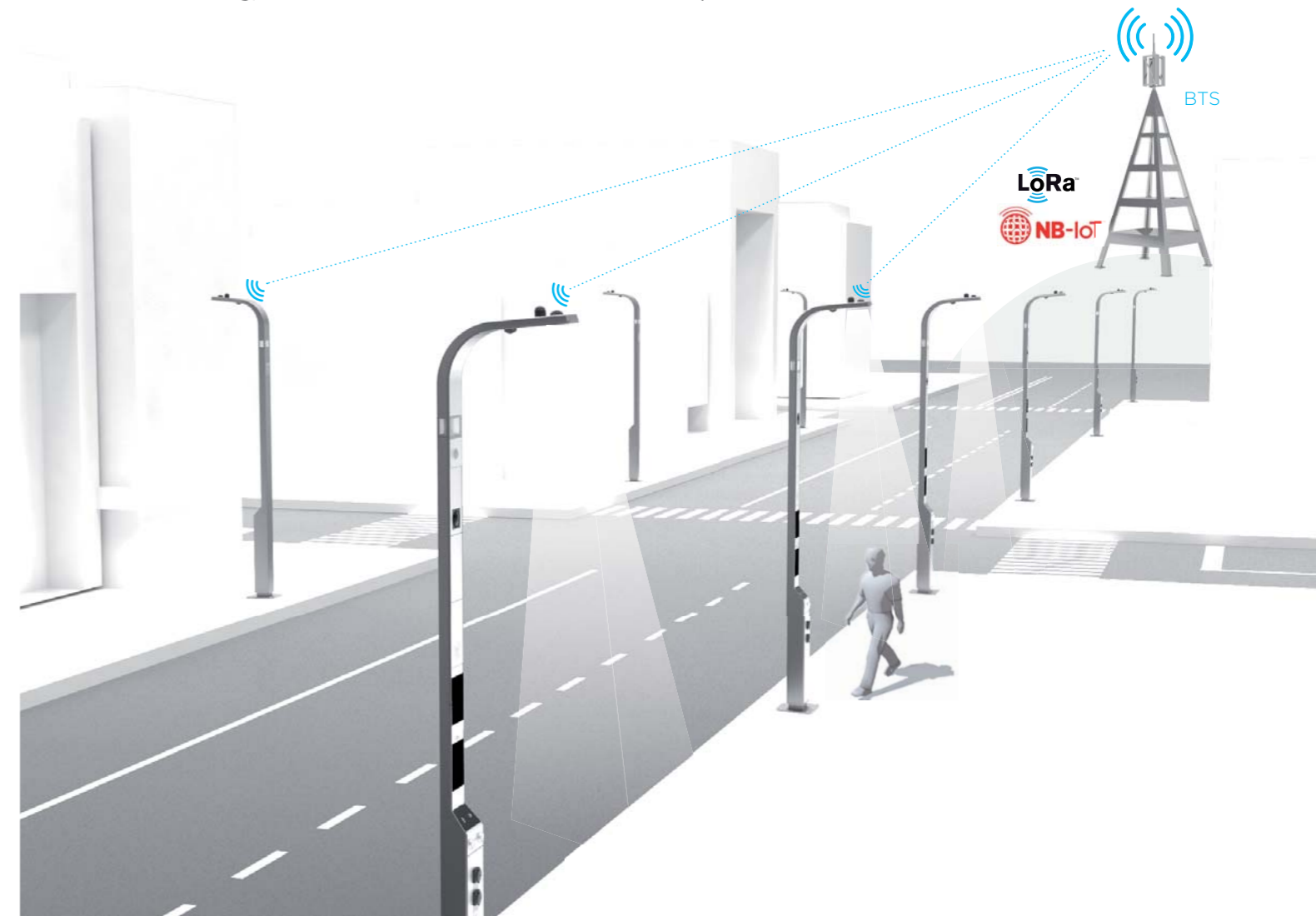


	Charger	Kiosk	City	Street	IoT	LAN
Electric vehicle charge socket	●	●	●	●	✓	✓
Charge socket 230 V	●	●	●	●	✓	✓
USB charge socket	●	●	●	●	✓	✓
SOS button	●	●	●	●	✓	✓
Wireless phone-charger	●	●	●	●	✓	✓
Payment card reader	●	●	●	●	-	✓
Touch panel	●	●	●	●	-	✓
Backlit infopanel	●	●	●	●	-	✓
Intercom loudspeaker	●	●	●	●	-	✓
Public address loudspeaker	●	●	●	●	-	✓
Air quality sensor	●	●	●	●	✓	✓
Camera	●	●	●	●	-	✓
RGB Status light	●	●	●	●	✓	✓
Main street light	●	●	●	●	✓	✓
WiFi hotspot	●	●	●	●	✗	✗
Communication hotspot	●	●	●	●	✗	✗

# IoT communication

BTS (Base Transceiver Station) receives commands from the backend server and sends them wirelessly to the individual light actuators. They process and execute the command (ON/OFF or the desired brightness setting).


The actuators are also equipped with sensors that detect the ambient parameters or input activation and send this information via the BTS back to the server, which evaluates, displays and can trigger the appropriate action.



# Information and management platform - SSLP (Smart Street Light Platform)

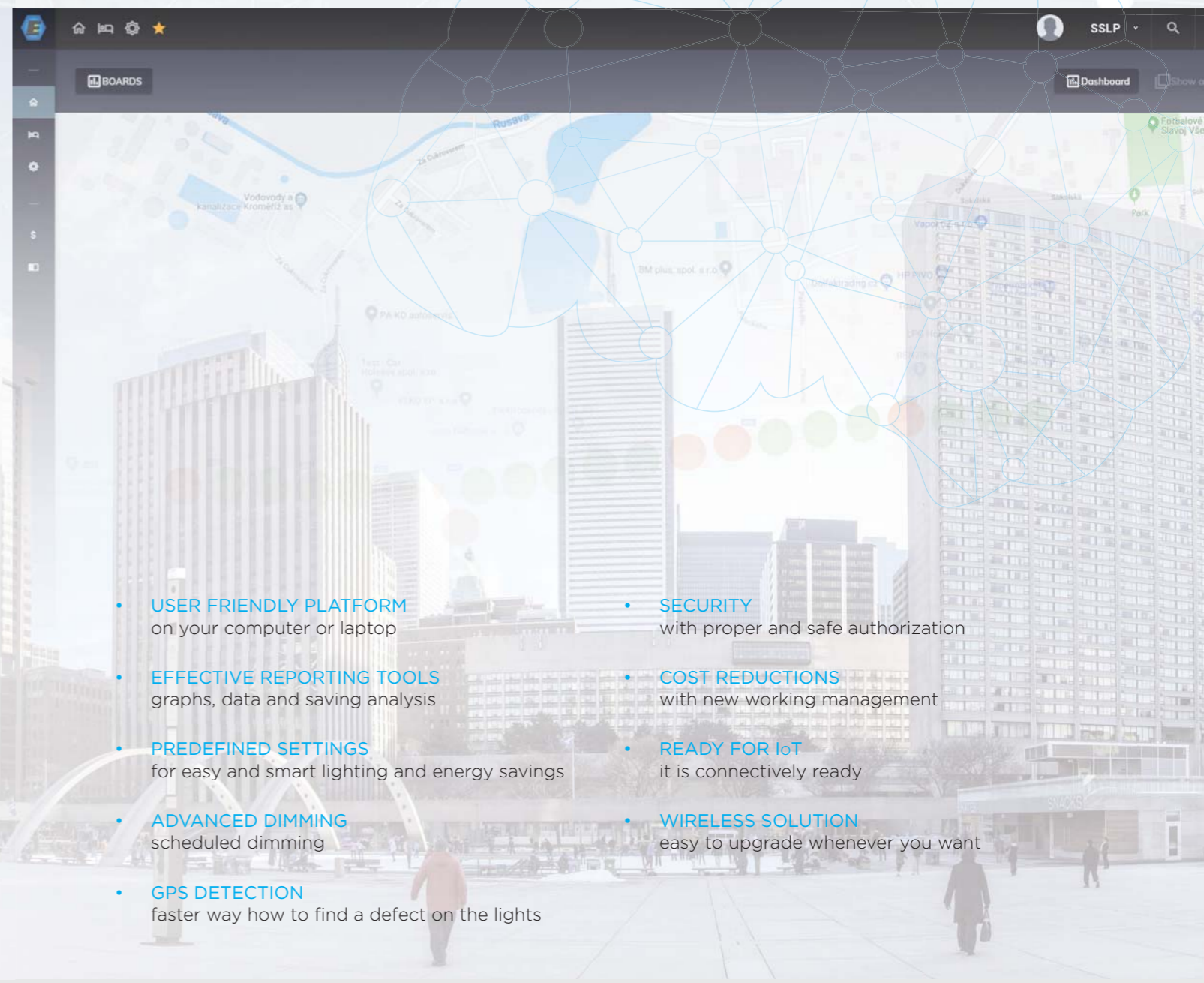
All smart pole technology (ies) communicates with the SSLP. This is a cloud application for desktop or desktop web browser. Displays current and historical data - in tables, dashboards, maps, and charts. It also allows you to control the devices in the pole, create basic actions and scenes. Through a defined API, it provides links to third party systems (parent platforms, urban systems or applications).

All smart lights are connected to the platform wirelessly. It provides that the way to control lights in the city is as simple as possible.

 System cooperation

 Reporting

 Functions



- **USER FRIENDLY PLATFORM**  
on your computer or laptop
- **EFFECTIVE REPORTING TOOLS**  
graphs, data and saving analysis
- **PREDEFINED SETTINGS**  
for easy and smart lighting and energy savings
- **ADVANCED DIMMING**  
scheduled dimming
- **GPS DETECTION**  
faster way how to find a defect on the lights
- **SECURITY**  
with proper and safe authorization
- **COST REDUCTIONS**  
with new working management
- **READY FOR IoT**  
it is connectively ready
- **WIRELESS SOLUTION**  
easy to upgrade whenever you want

# Configurator

Each city is different, so is the pole, that will serve its inhabitants. That's why we've created this configurator to let you choose exactly what you need the pole to have. Whether the pole will be used for car charging only or will be lighting the city roads, you can be sure that it will be a great addition in your city.

[smartpole.inels.com](http://smartpole.inels.com)

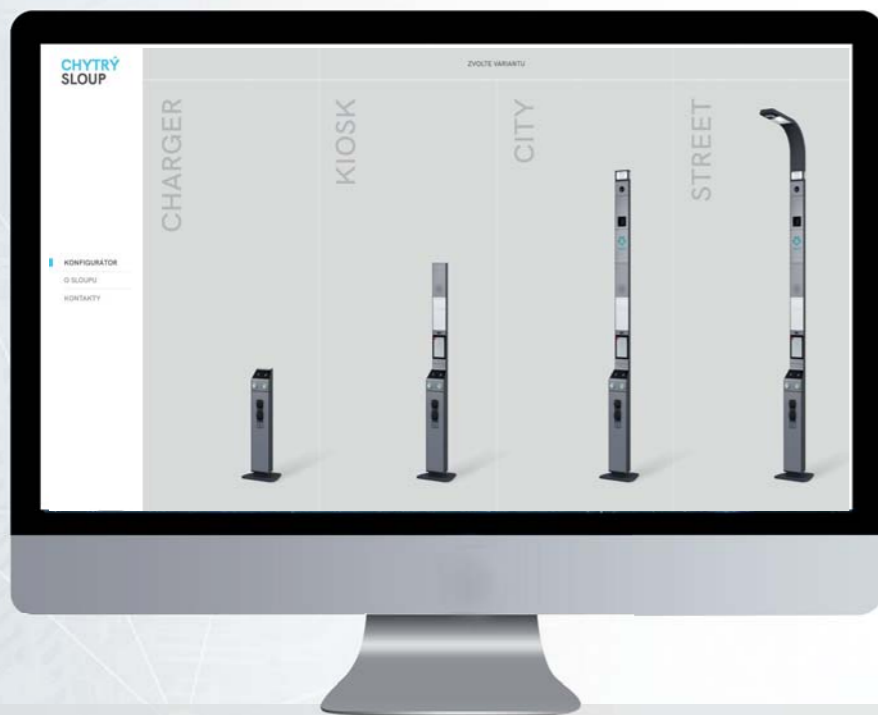


Smart street lighting catalogue  
[elkoep.com/catalogs-and-brochures](http://elkoep.com/catalogs-and-brochures)



## SMART POLE

- CONFIGURATOR
- POLE INTRODUCTION
- CONTACT



CHOOSE THE POLE

CHARGER



KIOSK



CITY

CONFIGURE







## Smart pole



The Smart Pole is a multifunctional assembly designed for installation in cities, municipalities, various agglomerations, shopping, public and information zones, where the combined use of modern smart technologies is required.

The clever Pole has several possibilities for use, such as close-proximity monitoring via an integrated camera, and the pole is equipped with an emergency call SOS button for communication with an integrated rescue system.

It can be equipped with charging module points for bicycles, scooters and for charging via USB, Qi wireless smartphone charger, touch info-panel for finding information on the Internet, WI-FI hotspot to connect to the internet. The smart pole also has the possibility to use it as a solution for a local information system as well as local radio.

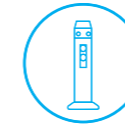
The Pole can be fitted with several types of sensors for environmental quality monitoring in its vicinity.

The Smart Pole is available in four basic versions Charger, Kiosk, City and Street. Individual parts and assembly modules of the entire pole solution can be selected using a configurator to create the Smart Pole to suit your needs.

The body of the Pole is made of a steel frame with an anticorrosive outdoor coating which is resistant to weather conditions. For safe installation of the pole the building requirements are determined according to type.

The Smart Pole is equipped with input overvoltage protection (varistor arrester in combination with a power surge arrester). The overvoltage protection is used to reduce the voltage and current waves generated by the line due to atmospheric influences, to provide equipotential bonding and to eliminate switching overvoltage. Surge protection in a Smart Pole is used to protect internal electronics, connected appliances (electric vehicles, electric bikes,...), power lines and living entities from the effects of a surge.

Technical parameters	with charger	without charger
Supply voltage:	3x230 V AC (50/60 Hz)	1x230 V AC (50/60 Hz)
Consumption (max.):		
- Charging station:	22 000 W / 32 A	x
- Control electronics		100 W
- Main Street light:		80 W
Supply voltage tolerance:	-15 %; +10 %	
<b>Overvoltage protection</b>		
Type of protection:	overvoltage limiter	
Type of surge arrester:	Type 2	
Number of poles:	3+N	
Discharge current In (8/20) µs:	40 kA	
Max. Work. voltage:	280V AC	
Max. Protection level at pr. :	1.4 kV	
Current protector:	YES AC, DC for electric vehicles	
<b>Other information</b>		
Operating temperature:	-25 to 55 °C	
Mounting:	On a concrete pedestal	
Protection degree:	IP54	
Mechanical durability:	IK10	
Base material of the column:	steel 11 375 ČSN	
Surface treatment:	galvanized	
Colour:	Komaxit	
<b>Dimensions and weight</b>		
<b>CHARGER</b>	Dimensions:	1305 x 460 x 400 mm
	Weight:	135 kg
<b>KIOSK</b>	Dimensions:	2122 x 460 x 400 mm
	Weight:	195 kg
<b>CITY</b>	Dimensions:	3786 x 460 x 400 mm
	Weight:	245 kg
<b>STREET</b>	Dimensions:	4288 x 460 x 935 mm
	Weight:	280 kg



## Smart pole

### Luminaire

It has a spine structure with sheathing and plates, which provides us with a consistent holding and fixing the luminaire to the rest of the pole.

### Centre section

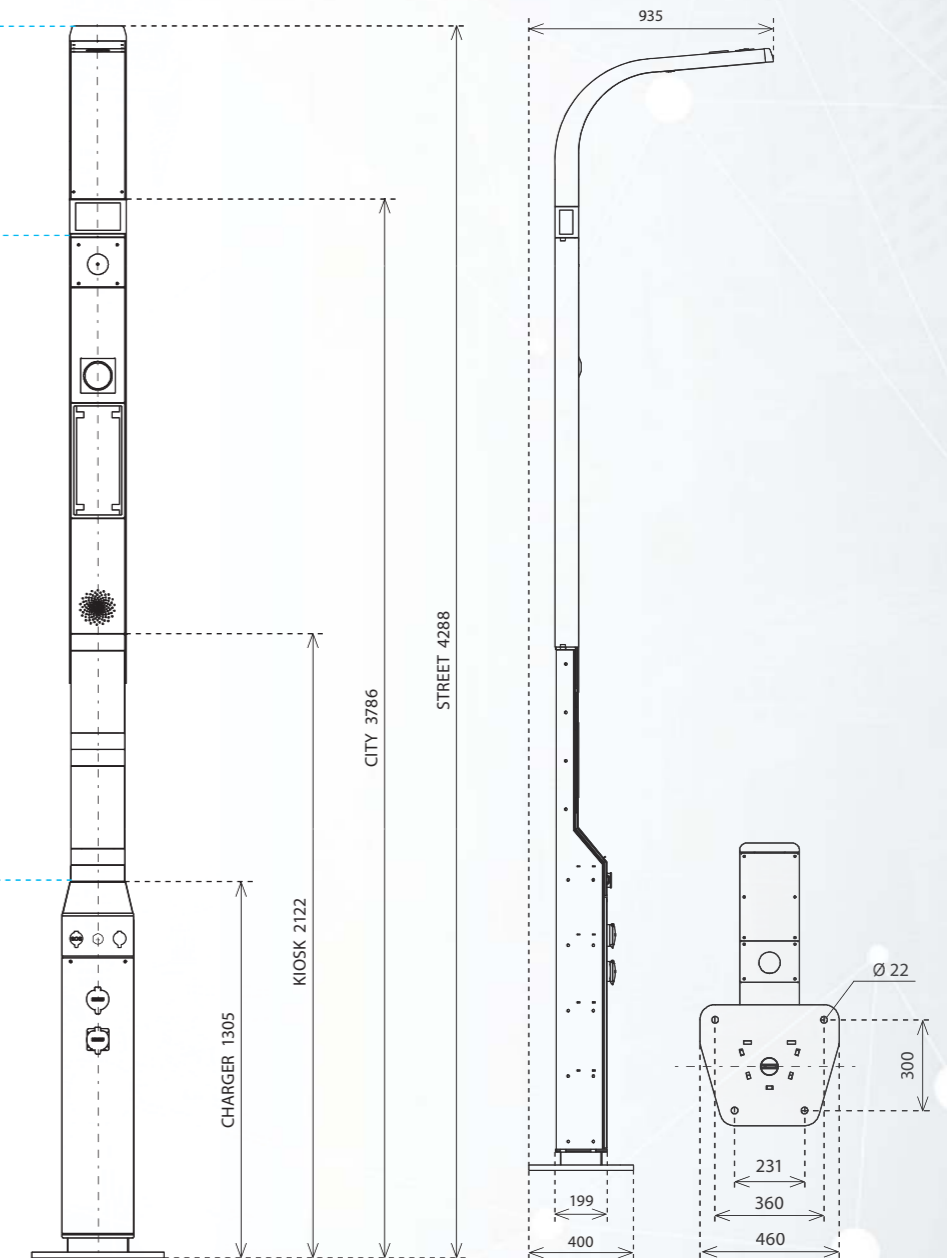
Its outer shell is made thick-walled profiled sheet used to fix the covers of accessories and shield cabling for lighting.

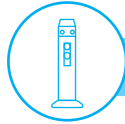
### Base

The outer shell is formed by thick-walled profiled metal sheet and plate for connecting the superstructure is designed to be utilized with two other possible embodiments (kiosks and charger).

In the base there is the main space for access and installation of the main accessories.

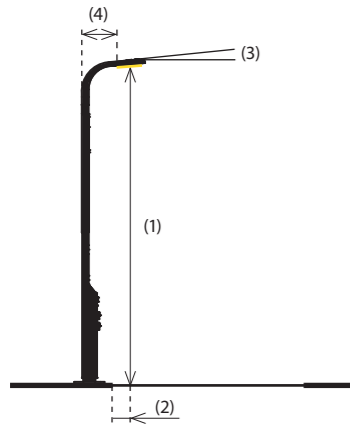
The base has a condensate drain, to remove any condensation from the interior.





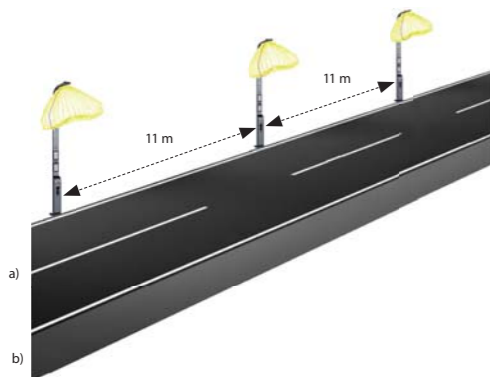
## Smart pole

Luminaire Arrangements (U1 9k0 740 LED luminaire for multifunctional pole).



### Street Profile:

- Bicycle path: width: 7 m, number of lanes: 2, tarmac: R3, q0: 0.070
- Pedestrian zone: width: 2 m
- Selected Lighting Class: ME4a



In the case of the requirement for greater lighting intensity in the required area, it is necessary to reduce the distance between the Poles or increase the performance of the integrated luminaire in the devices.

### Technical parameters

Luminous flux (Luminaire):	7625 lm
Luminous flux (Lamps):	9000 lm
Luminaire Wattage:	64 W
Arrangement:	Single row, top
Pole Distance:	11 m
Mounting Height (1):	4.2 m
Height:	4.153 m
Overhang (2):	0.6 m
Boom Angle (3):	20.0 °
Boom Length (4):	0.45 m

### Maximum luminous intensities

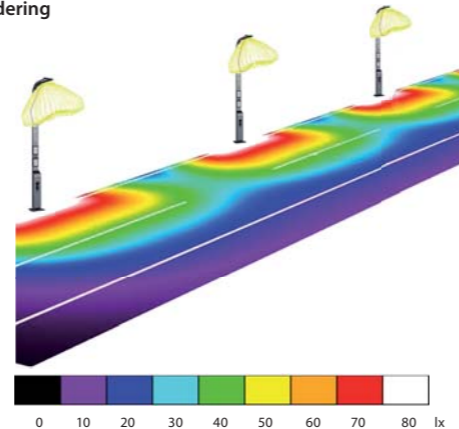
- at 70°: 236 cd/klm
- at 80°: 101 cd/klm
- at 90°: 35 cd/klm

Any direction forming the specified angle from the downward vertical, with the luminaire installed for use.

Arrangement complies with luminous intensity class G1.

Arrangement complies with glare index class D.6.

### False Colour Rendering



## Electric vehicle charge socket



IEC 61851-1  
Type 2 Mode-3

- Z EU TYPE 2 socket, charging according to IEC 61851-1 MODE3 standard.
- Max. Output power 22 kW.
- Control:
  - Free charge - charging automatically.
  - Using the application - QR code and applications.
  - Payment - Charging enabled by the payment terminal.
- The socket for power is blocked. Locked.
- It has:
  - Overvoltage protection against DC and AC leakage current
  - Flow consumption meter
  - Information display and signal light
  - Control system for proper switching of the contactor
  - Blocking system against accidentally pulling the plug
  - Identification of the connected cable
  - Possibility to unlock the connected cable in the event of a power failure
  - Use in unlimited mode
  - Network traffic.

### Technical parameters

Charging mode:	AC
Output voltage:	3x 230 V AC
Charging voltage:	3 x 230/400V / 50Hz (TNS)
Output power:	22 kW / 32 A
Socket Type:	EU TYP2 (EV-T2M3SE12-3AC32A-0,7M6,0E00)
Calibrated meter:	YES
Protection degree:	IP54
Dimensions socket:	85 x 93.7 x 32.5 mm
Connection option:	charging station terminated by socket
Socket lock during charging:	YES
Charging status indicated:	on LCD, status indication - status RGB light
Charging:	Standard IEC 61851-1 MODE3
Charging Equipment:	Phoenix Contact EEM-350-D-MCB



## Charge socket 230 V



- The charging socket can be operated in the following modes:
  - Permanently on
  - From the amount of electricity consumed. Energy
  - From charging time
- Current limiter
- Setting current limit 0.8 - 8 A.
- The device is equipped with an electrical current meter.
- The amount of power measured can be read / displayed remotely.
- Weatherproof enclosure, IP54.

### Technical parameters

Output voltage:	230 V AC, -15 %; +10 %
Output power:	1.15 kW / 5 A
Current limiter:	adjustable 0.8-8 A
Socket Type:	Typ E, French
Measurement energy:	1 phase, digital
Protection degree:	IP54
Dimensions socket:	85 x 85 x 32.5 mm



## SOS button



- It is designed to ensure safety in public areas.
- Pressing the button activates the connection with the information system (e.g. the city police, the security agency ...)
- SOS button covered to protect against accidental pressing.

### Technical parameters

Connection:	using encrypted VoIP calls
<b>SOS button</b>	
Backlight:	LED red (permanently)
Anti-vandal design:	YES, IK10
Protection degree:	IP65
Cover material:	aluminium + polycarbonate
Dimensions:	Ø 68 x 16 mm



## Intercom loudspeaker



- It is designed for communication with the information system (e.g. city police, security agency ...). It is activated by pressing the SOS button.
- Its advanced communication technology enables instant emergency calls.
- Two-way voice communication.
- Built-in microphone.
- Integrated Echo Canceler.
- Intercom features a microphone and speaker.

Technical parameters	
<b>Microphone</b>	
Sensitivity:	-40 dB
Monitoring range:	6 m
Anti-vandal design:	YES
Protection degree:	IP65
Material:	aluminium
Dimensions:	Ø 40 mm
<b>Speaker</b>	
Output power:	20 W
Frequency range:	100–13000 Hz
Average sound pressure level:	90 dB (1 W/1 m)
Module size:	400 x 200 x 95 mm



## Wireless phone-charger



- Wireless charging according to the Standard Qi.
- The mobile phone storage area is equipped with a non-slip edge.
- The charger is permanently switched on.

Technical parameters	
Output voltage:	5 V DC
Output power:	up to 5 W (1 A)
Charging:	inductive Qi
Dimensions:	130 x 200 mm



## Backlit infopanel



- It serves to display advertising space, timetables, information leaflets, etc.
- Images displayed in a time loop.
- Fast remote update of snapshots.
- Option:
  - Display 10", RES 1280x800 TFT LCD Panel - Color 16.7M
  - Backlit glass
  - Backlit glass with pictographs or customer graphics.

Technical parameters	
Diagonal:	10.1"
Resolution:	1280x 800 pixels
Luminosity:	1 000 cd/m <sup>2</sup>
Colour:	16.7 M colors
Module size:	400 x 200 x 95 mm



## Touch panel



- It is connected to the Internet to search for general and local information (such as maps, timetables, tourist information of the site ...).
- Screen: 10", RES 1280x800 TFT LCD Panel - Color 16.7M
- System: capacitive dual-touch panel CPU DUAL-Core 1,9 GHz RAM DDR3L 4 GB

Technical parameters	
<b>Display</b>	
Diagonal:	10.1"
Resolution:	1280x 800 pixels
Luminosity:	1000 cd/m <sup>2</sup>
Colour:	16.7 M colors
<b>PC</b>	
CPU:	Intel Atom quad-core 1.91 GHz
RAM:	4GB DDR3
Internal storage:	64GB SSD HDD
Operating system:	Linux
Application framework:	Qt
Application:	proprietary
<b>Touch layer</b>	
Current number of presses:	2 (DualTouch)
Water resistance:	YES
Anti-vandal design:	YES, Double glazed laminated glass
Protection degree:	IP65
Module size:	400 x 200 x 95 mm



## Camera



- It serves to monitor the space and area with an angle of view of 180 ° (360 °) from the front of the pole to a distance of 20m.
- The „Fish eye“ lens provides panoramic and spatial viewing.
- Camera does not have PTZ.
- Option to store audio / video streams.

Technical parameters	
Resolution:	5-Megapixel 1920x 1920
Sensor type:	CMOS
Frame rate:	30 fps
Lens type:	1.47 mm Fisheye - 180°/360°
IR-cut filter for day and night operation:	YES
WDR For Technologies:	YES
Intelligent Stream II:	YES
Sensitivity:	in day mode 0.18 lux / 0.001 Lux in night mode
Software Motion Detection:	YES, 5-windows
Module size:	200 x 200 x 95 mm



## Public address loudspeaker

- Serves for municipalities and towns (local radio broadcasting, etc.).
- Remote control capability:
  - Recorded audio loops
  - Set the playback time
  - Real time transmission of reports.



Technical parameters	
Type:	Pressure loudspeaker
Output power:	10 W
Acoustic pressure:	620–5000 Hz
Average acoustic pressure level:	100 dB (1 W / 1 m)
Module size:	200 x 200 x 95 mm



## RGB Status light

- An indicator light (beacon) that displays the state of the pole technology in the RGB colour spectrum.
- Function setting options:
  - Positional lighting
  - Display the charging status
  - Localization when SOS button is pressed
  - Fault condition
  - Availability of charging slots.



Technical parameters	
Signalling type:	RGB LED
Color Mix:	pomocí PWM modulace
Control:	autonomně (status nabíjení, SOS...)
Colour:	7 druhů barev (RGB)
Luminous flux:	až 150 lm na každou stranu
Module size:	120 x 200 x 95 mm



## USB charge socket

- The USB output has a short-circuit protection.
- The USB output is protected by a weatherproof enclosure.
- The cover is backlit during the function.



Technical parameters	
Output voltage:	5 V DC
Output power:	10 W (2 A)
Charging mode:	USB A socket
Backlight:	green (permanently)
Anti-vandal design:	YES, IK10
Protection degree:	IP65
Button cover material:	aluminium + polycarbonate
Dimensions:	Ø 68 x 16 mm



## Main street light

- Integrated outdoor lighting.
- Designed for outdoor lighting such as pavements, car parks, park, bicycle paths ...
- Minimum Colour Tolerance: 3MacAdam (3SDCM).



Technical parameters	
Light source:	LED
Performance:	64 W
Efficiency:	up to 179 lm / W
Life:	> 100 000 hours
Possibility of regulation:	YES, 0-100%, ballast DALI
Distribution of light:	direct
Colour temperature:	optional in configurator: 3 000 K / 4 000 K / 5 000 K
Colour rendering index:	Ra > 70, Ra > 80
Protection degree:	IP54
Dimensions:	603 x 200 x 835 mm

LED module:



	CCT	Flux tc 25°C	Efficacy tc 25°C
SLM 8x2 224/50H16	3000 K	2x 6868 lm	136 lm/W
	4000 K	2x 7328 lm	145 lm/W
	5000 K	2x 7328 lm	145 lm/W



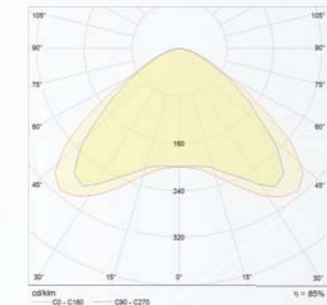
## Air quality sensor

- Monitor temperature, pressure, humidity, dust particles (PM2.5), etc.



Technical parameters	
Sensed quantities:	Range
CO	0...500 ppm (0...617 mg/m <sup>3</sup> )
NO <sub>2</sub>	0...20 ppm (0...40,5 mg/m <sup>3</sup> )
SO <sub>2</sub>	0...50 ppm (0...141 mg/m <sup>3</sup> )
O <sub>3</sub>	0...20 ppm (0...42,3 mg/m <sup>3</sup> )
Temperature	-40...125 °C
Pressure	260...1260 hPa
Humidity	0...100 %RH
Light (VIS, UVA, UVB)	0...100 %
Dust particles (PM2.5)	25...500 µg/m <sup>3</sup>

Photometry:



Light surface for light:  
Double symmetry, max. Gamma angle of 180°, the flow measurement 9000 lm, power of 64 W.



## WiFi hotspot



- Internet access point.
- Is designed for outdoor mounting.
- Location on the top of the main light.
- Protection degree IP66, Weather-resistant.

Technical parameters	
Baud rate:	up to 150 Mbps
Output power (max.):	22 dBm
Sensitivity:	-96 dBm
Beam angle - H:	360 °
Coverage:	up to 250m
Design:	integrated MikroTik router with external antenna
Frequency:	2.4 GHz
Standard:	802.11b/g/n
Frequency:	5 GHz
Standard:	802.11a/n
Working position:	vertical
Antenna mounting:	fixed
Protection degree:	IP66
Dimensions:	Ø 84 x 98 mm



## Communication hotspot



- IoT communication hotspot is used to remote control the main light in the absence of an Internet connection column.
- Design LUMAWISE Endurance S base (2213837-1).
- Location in ZHAGA socket.

Technical parameters	
IoT:	LoRa, SIGFOX, NB-IoT
GSM:	GSM/GPRS, UMTS, HSPA, HSPA+, LTE GPS
Working position:	vertical
Mounting:	in socket 2213837-1 (ZHAGA)
Protection degree:	IP65
Dimensions:	Ø 80 x 40 mm



## Contactless card reader



- Ready for EMV PayPass, PayWave) and MIFARE (Classic, Ultralight, etc) contactless standarts including NFC-capable mobile phones and werable RFID devices.
- Ideal solution for low value payments, no PIN entry is required.
- Optional external card reader for additional acceptance of contact chip or magnetic stripe cards.
- Innovative secure remote key management.

Technical parameters	
Contactless interface:	ISO 14443-3/4
Cart Type:	MIFARE Classic, Ultralight / Ultralight C, Plus, DESFire, SmartMX
Dimensions:	130 x 200 mm



# ELKO EP Holding



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