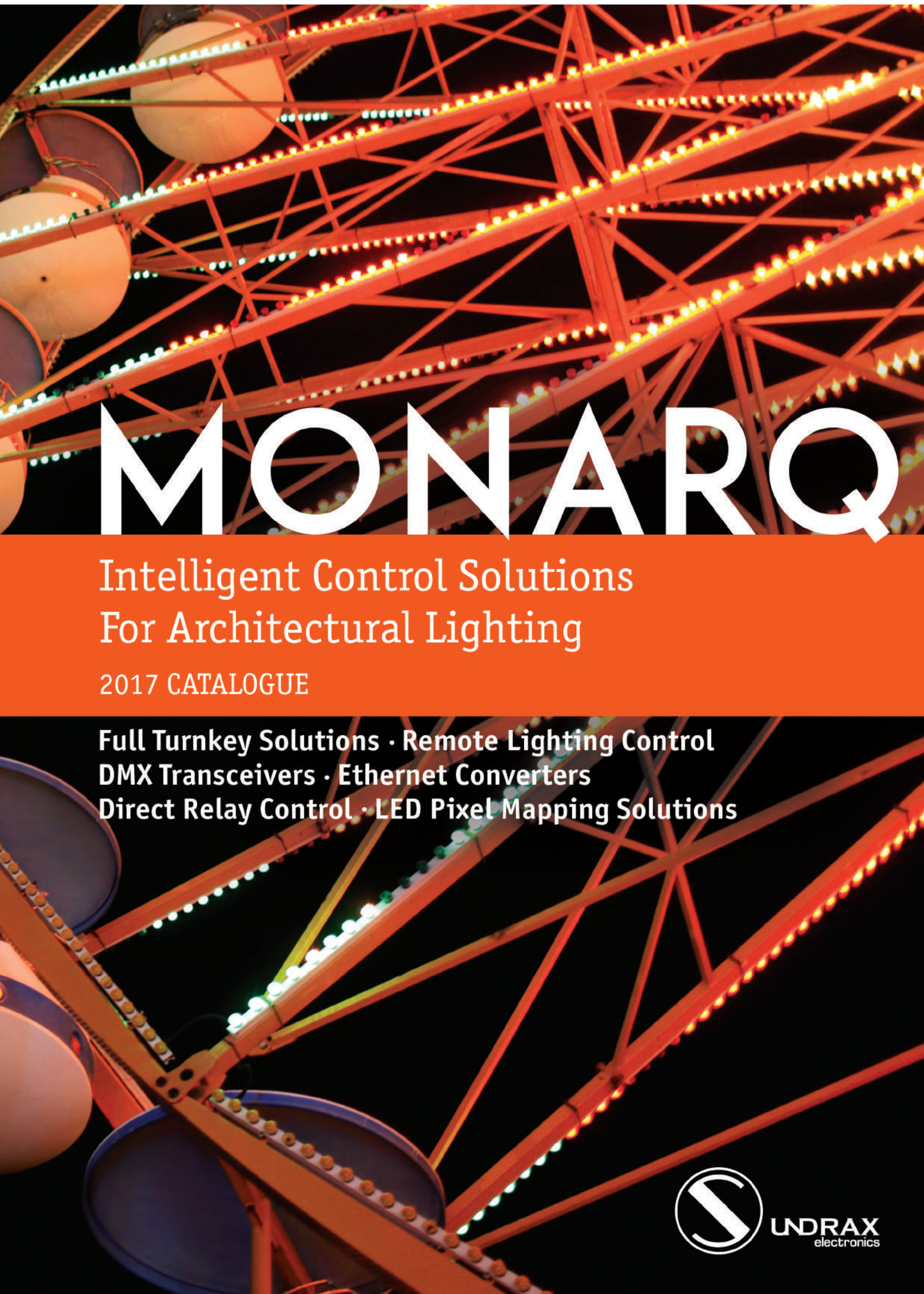


MONARQ

Intelligent Control Solutions For Architectural Lighting

2017 CATALOGUE

Full Turnkey Solutions · Remote Lighting Control
DMX Transceivers · Ethernet Converters
Direct Relay Control · LED Pixel Mapping Solutions

UNDRAX electronics

INTRODUCTION

Sundrax Electronics develops and manufactures professional hardware and software for lighting management. The company's mission is to develop innovative, turn-key, fully integrated solutions for remote lighting management in different areas of the lighting industry.

MONARQ system is Sundrax's recent, state-of-the-art development for fully intelligent remote management of architectural lighting integrated into telemetry systems of the Smart City street lighting network providing perfect IoT compatibility.

While constantly working on functional enhancement of MONARQ, we employ a dedicated and talented group of electronics engineers who work with the latest technologies, using cutting-edge tools to create lighting control systems providing seamless integration and highest reliability in wireless DMX control (Sundrax's BeDMX technology), ArtNet/sACN > DMX converters, LED drivers and individual pixel strip controllers.

Municipalities, maintenance companies, lighting designers, and facility managers will find MONARQ solutions useful to "take command" of all the lighting installations and move forward with timeless style, impeccable quality and passionate craftsmanship together with Sundrax.

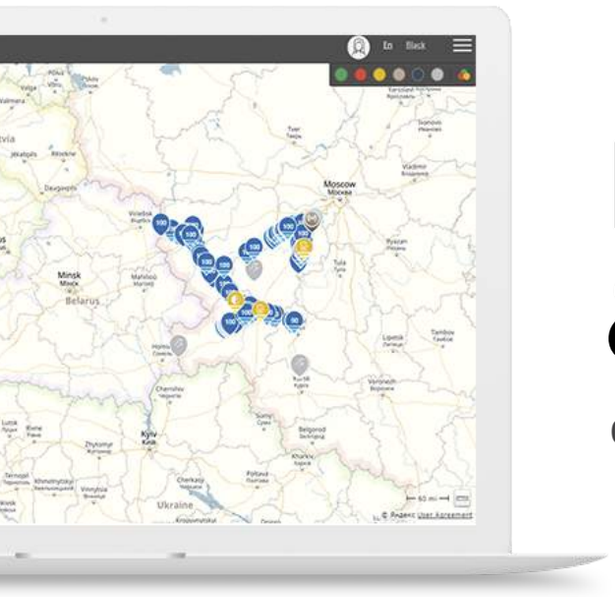
SUNDRAX electronics

Remote Control & Diagnostics

LIVE CONTROL & DIAGNOSTICS FOR ARCHITECTURAL AND STREET LIGHTING WORLDWIDE

Remote control, setup, diagnostic, programming, and scheduling of street lighting behavior through GSM and Ethernet. Real-time switching of lighting installations, power cabinets, individual luminaires or luminaire groups. Display of remote objects and their status on the map.

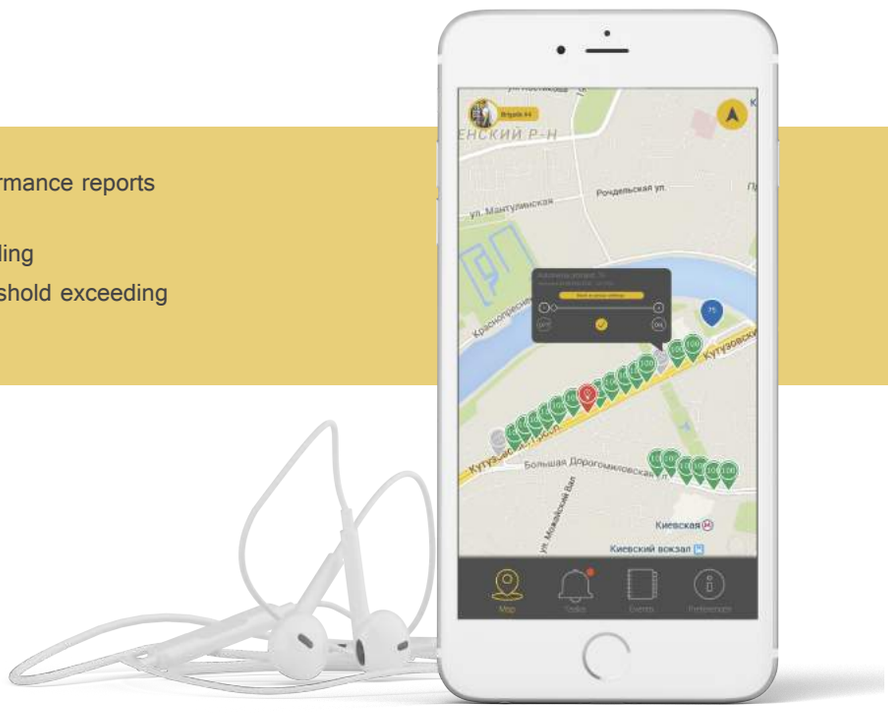
Live control | User management | Integration | Task management | Reporting | Notifications | Scheduling | Configuring



Live monitoring & management

OF YOUR REMOTE LIGHTING INSTALLATIONS

MONARQ supports Google Maps, OpenStreetMap, Yandex, Bing Maps, uploaded map files



View power consumption and system performance reports in tables and graphs

Weekly/daily/monthly email report scheduling

Immediate identification of failures and threshold exceeding

Alarm notifications through SMS and email

Live asset status on the map

Real-time switching and dimming

Remote diagnostics of network behaviour

Create and upload scenes remotely

Advanced scheduling

Triggering (motion sensors, weather stations)

Seamless integration

INTO THIRD-PARTY IoT NETWORKS

Smart City / IoT / M2M

API integration into Smart City networks provides perfect IoT compatibility. MONARQ seamslessly integrates with Smart Infrastructure and Smart Building software suites.

Street Lighting

Integration into Sundrax's QULON system for street lighting management is free. Full city lighting infrastructure in one software.

Sensors and cameras

Event-driven effects are available through motion sensors and weather stations. Snapshot cameras with GSM modules transfer live images of your lighting installations straight into software.

Task Management

COST-EFFECTIVE MAINTENANCE AND PLANNING

Allocate assets to maintenance crews
Plan and manage onsite inspections and maintenance works
Assign tasks automatically based on triggers
Task manager application for field workers
Maintenance costs statistics and reports

Dimensions, mm: 210(W) x 105(H) x 75(D)
Operating Temperature: -40...+70°C
Rating: IP20 (individual waterproof box available)

Serial interface: RS-485, CAN
Radio channel: GSM 850/900/1800/1900
Lan: Ethernet 10/100 Base-TX
Setup: Remote via GSM/GPRS/3G

4 relay outputs
6 voltage control inputs
2 sensor inputs
2 DMX outputs
1x BeDMX output (2.4 GHz)
Ethernet interface
GPS/GLONASS

QULON MONARQ

CENTRAL PROCESSOR FOR REMOTE LIGHTING CONTROL

Full control and administration via GSM

Use GSM connection to upload standard scenarios for onsite lighting management or even control your installations live. Management via GSM adds more flexibility to administer your sites remotely and simplifies network access.

2048 DMX channels

Monitor and control up to 4 DMX universes (wired, wireless, and Ethernet-based) in any project type with no additional splitters or switchers. Use any combination of automatic, manual or scheduled inputs to create complex multi-functional installations.

Ethernet interface

Create Ethernet-based control network to send DMX or ArtNet/sACN data and expand the level of intelligence and incorporate your lighting fixtures into 'Internet of Things' for communication with other systems.

2 sensor inputs

Now your visual spectacles are adjustable to react to the data transmitted from external sensors, i.e. temperature, traffic, atmospheric pressure, wind speed, or sunlight. Let loose and relax.

DIN mounted case
Straightforward design for simple installation saving your time and money.

Key Features

- On/off light scheduling
- Independent control of each phase
- Built-in GSM/GPRS/3G modem
- Access to electric meter data via RS-485
- Identification of electrical faults
- Astronomical clock on board
- Built-in backup power supply
- Built-in AC power supply
- Non-volatile memory for data storage
- Withstand voltage up to 305 V
- GPS/GLONASS onboard

MONARQ Mini

CONTROL YOUR DMX LUMINARIES INDIVIDUALLY THROUGH GSM

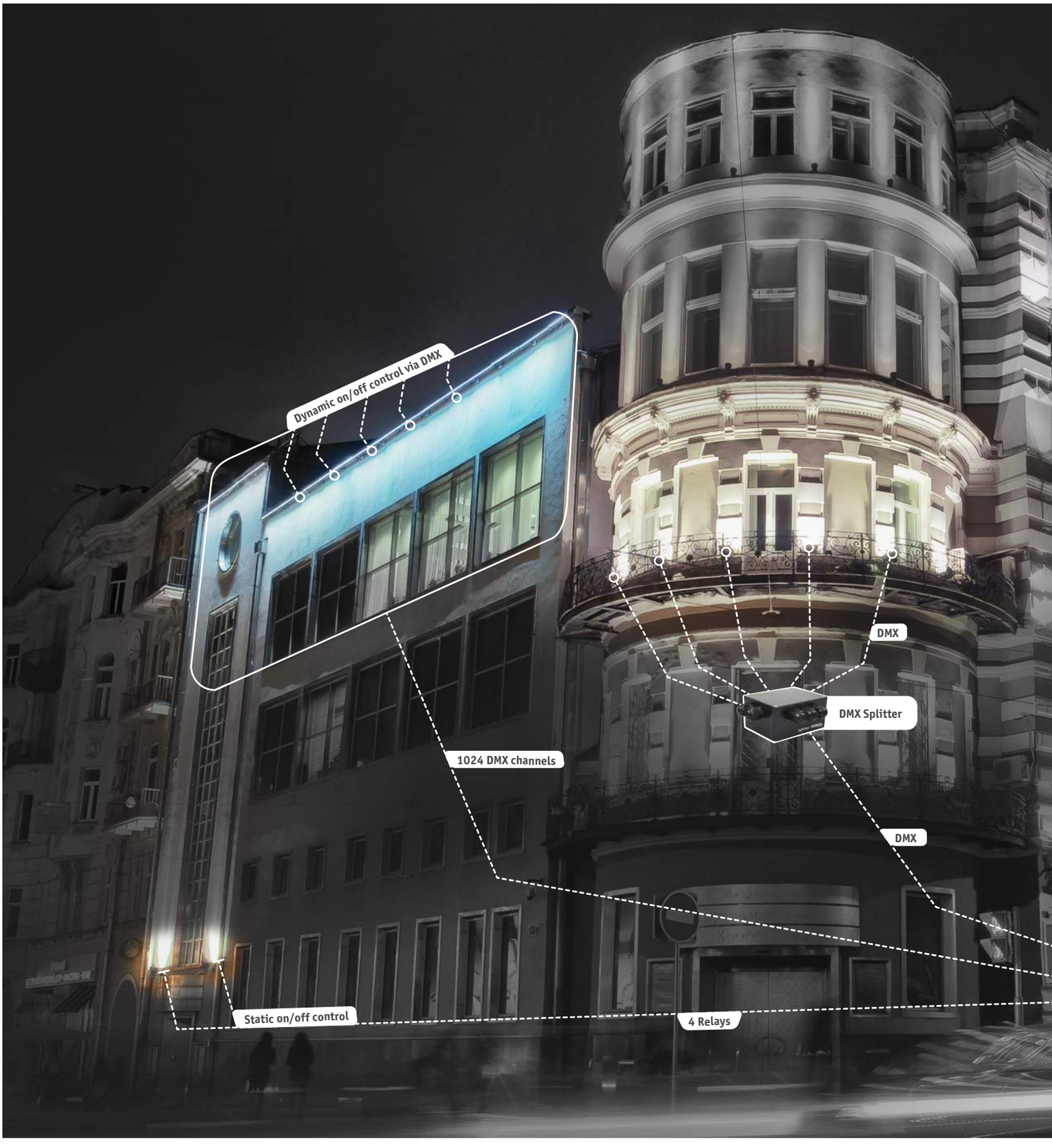
Key features:
Control and synchronize independent DMX luminaries by GSM
Upload scenarios remotely by GSM
Scenarios are stored in memory
No additional wiring

MONARQ Mini is alternative controller for individual DMX luminaries mounted on top of the luminaire through NEMA socket or wiring. Mini connects and communicates directly to software by GSM. Hassle-free installation and no additional wiring makes it perfect solution for lighting of ancient buildings, important historical places, and monuments. Mini's appearance is customizable based on installation requirements.

9

Static & Dynamic

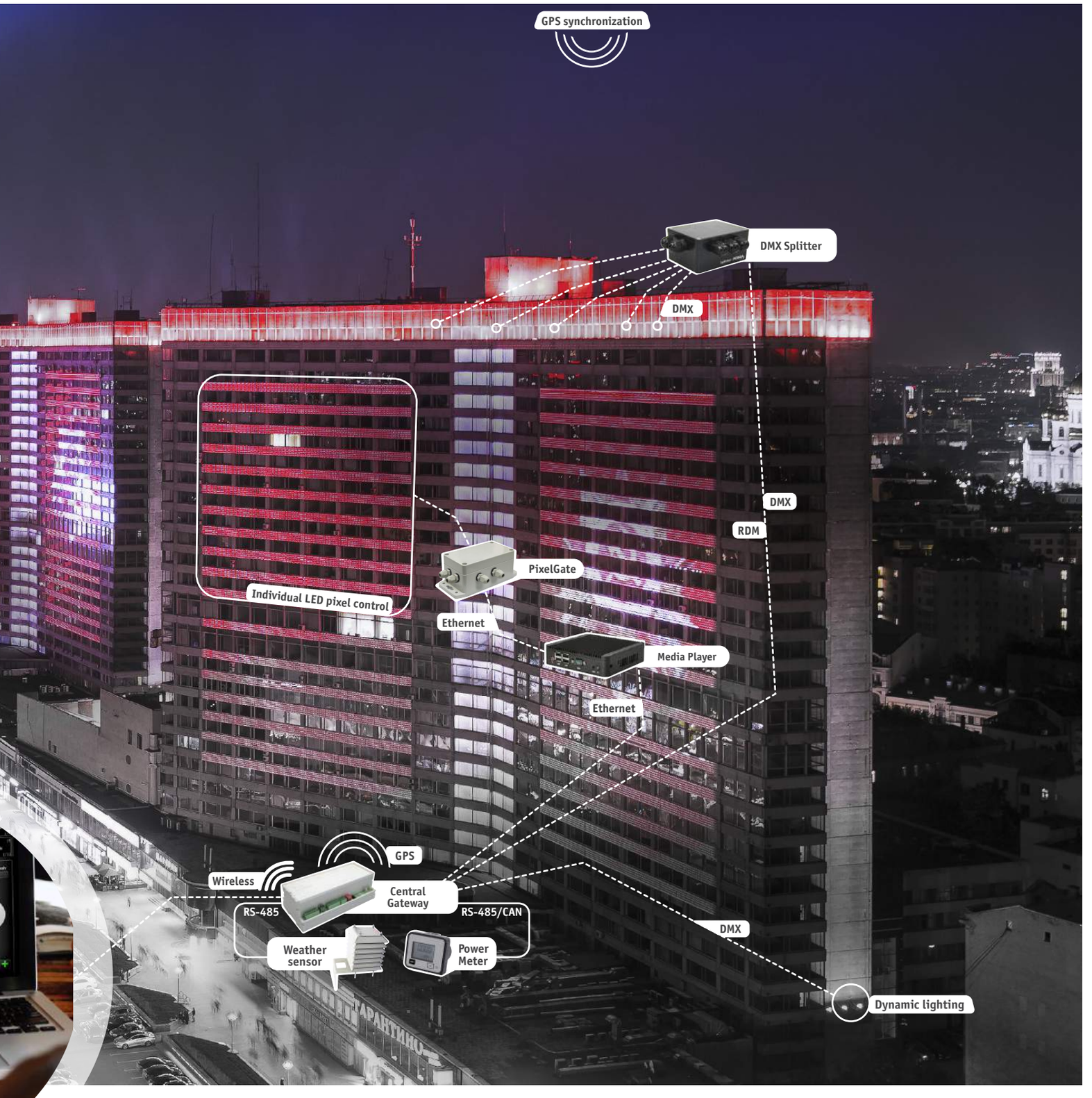
REMOTE ARCHITECTURAL LIGHTING CONTROL FOR MIXED INSTALLATIONS USING WIRELESS TRANSCEIVERS, DMX AND DIRECT RELAY CONTROL




GPS synchronization
DMX
DMX Splitter
1024 DMX channels
Wireless Transceiver
Wireless
3G, GPRS, SMS
Digital Camera
GPS
Wireless
Central Gateway
RS-485
RS-485/CAN
Weather sensor
Power Meter

Full turnkey solution

FOR REMOTE ARCHITECTURAL LIGHTING CONTROL & MONITORING


GPS synchronization
DMX Splitter
DMX
DMX
RDM
Individual LED pixel control
PixelGate
Ethernet
Media Player
Ethernet
GPS
Wireless
Central Gateway
RS-485
RS-485/CAN
Weather sensor
Power Meter
DMX
Dynamic lighting

ArtGate Arma

ArtGate Arma is multifunctional device for bi-directional DMX512-ArtNet/sACN converting. DMX512 data streams received by ArtGate Arma are transmitted through Ethernet LAN in 10/100Base-T mode and vice versa. Carefully crafted “off-track” enclosure is excellent for any outdoor installations under any weather conditions. It is time to relax and be confident that your outdoor installations are well-handled.

- DMX Bi-Direct
- Supports RDM
- UltraStart
- Galvanically Isolated Ports
- Natural Heat Convection
- Highest Ingress Protection
- Double IP
- User-Friendly Web Interface
- Power over Ethernet

Housing: solid metal case
Dimensions, mm: 115(W) x 55(H) x 90(D)
Operating Temperature: -40…+70°C
Power supply: ~100-270 VAC, 50/60 Hz

Supported protocols: ArtNet I, II, III/ sACN, DMX512, RDM
Ethernet: 2 ports, 10/100 Base TX
Setup: Web interface
Indication: LEDs for DMX and Ethernet activity
PoE available

PoE available for stand-alone installations

2 Ethernet ports and internal switcher to chain devices

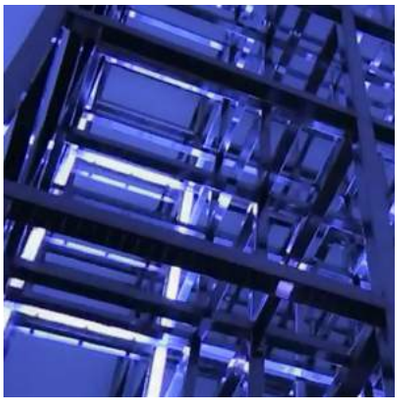
Software-configurable parameters of DMX signal (break, mab, length of frame)

Configurable DMX port direction (input, output, output with loopback)

Ready for severe weather conditions (IP65)

OMNIA

The concept of OMNIA installation in Espoo relies on full interaction with audience. Façade of the building acts as free billboard for personal messages. People send text messages to special number and then enjoy them transmitted letter by letter on the full façade of OMNIA building.











Espoo, Finland

Designed by IDEAFIX

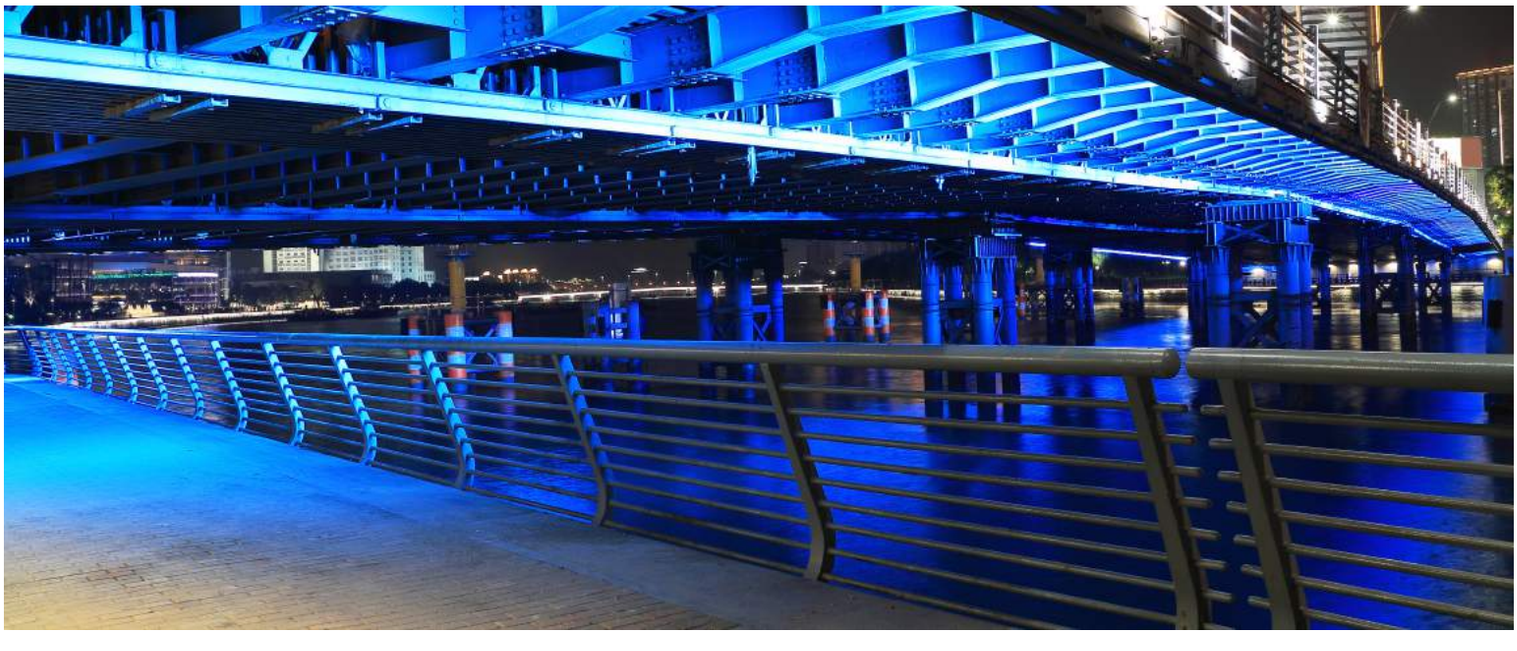
Powered by UNDRAX electronics

>be DMX

WIRELESS CONTROL WITH BE-DMX TECHNOLOGY BY SUNDRAX

BeDMX is a 2.4GHz wireless technology specifically developed by Sundrax Electronics to exchange DMX/RDM or ArtNet/sACN signal with RadioGates transceivers. BeDMX technology provides bidirectional communication with Adaptive Frequency Hopping (AFH) and long-range transmission up to 1500 m. AFH helps to avoid disturbance from any other wireless equipment by a hop rate of 1600 hops per second so you stay calm and sure that your installation works with no surprises.

No need for cabling	Bidirectional communication provides diagnostics	Multiple universes in a network	Unbreakable long range connection	No interference from devices using 2.4 GHz



Dimensions, mm: 115(W) x 55(H) x 90(D)
Operating Temperature: -40...+70°C
Rating: IP65 (outdoor use)

1 or 2 isolated DMX ports
BeDMX wireless channel (2.4 GHz)
Communication protocol: Bluetooth 2.0
Supports DMX512 and RDM
One-button programming

Power supply: ~100-250 VAC or 12-24 VDC
Max current consumption: 0.1 A

RadioGate Arma

WIRELESS DMX TRANSCEIVER

All in one

RadioGates are transceivers meaning that they act as transmitter AND receiver at the same time. No need to guess how many transmitters and receivers you need or to switch between modes. All RadioGates are bi-directional supporting Remote Device Management (RDM) protocol for two-way communication

Easy monitoring and configuration

Simple single button configuration and LED indication save your nerves and time. Create advanced multi-universe installations within seconds and enjoy resistant cable-free connection with RadioGates.

Survives just about anything

RadioGates by Sundrax are manufactured in waterproof solid metal IP65 enclosures, so these little creatures withstand any storm rainfalls, freezing, or extreme humidity. All ports are galvanically isolated

Back-ups within a second

If one of your DMX devices dies in the middle of a show you can seamlessly switch to a backup RadioGate in a second with no interruption to a running show.

DMX Bi-Direct — DMX Bi-Direct

DMX RDM — Supports RDM

ULTRA START — UltraStart

Galvanically Isolated Ports

Natural Heat Convection

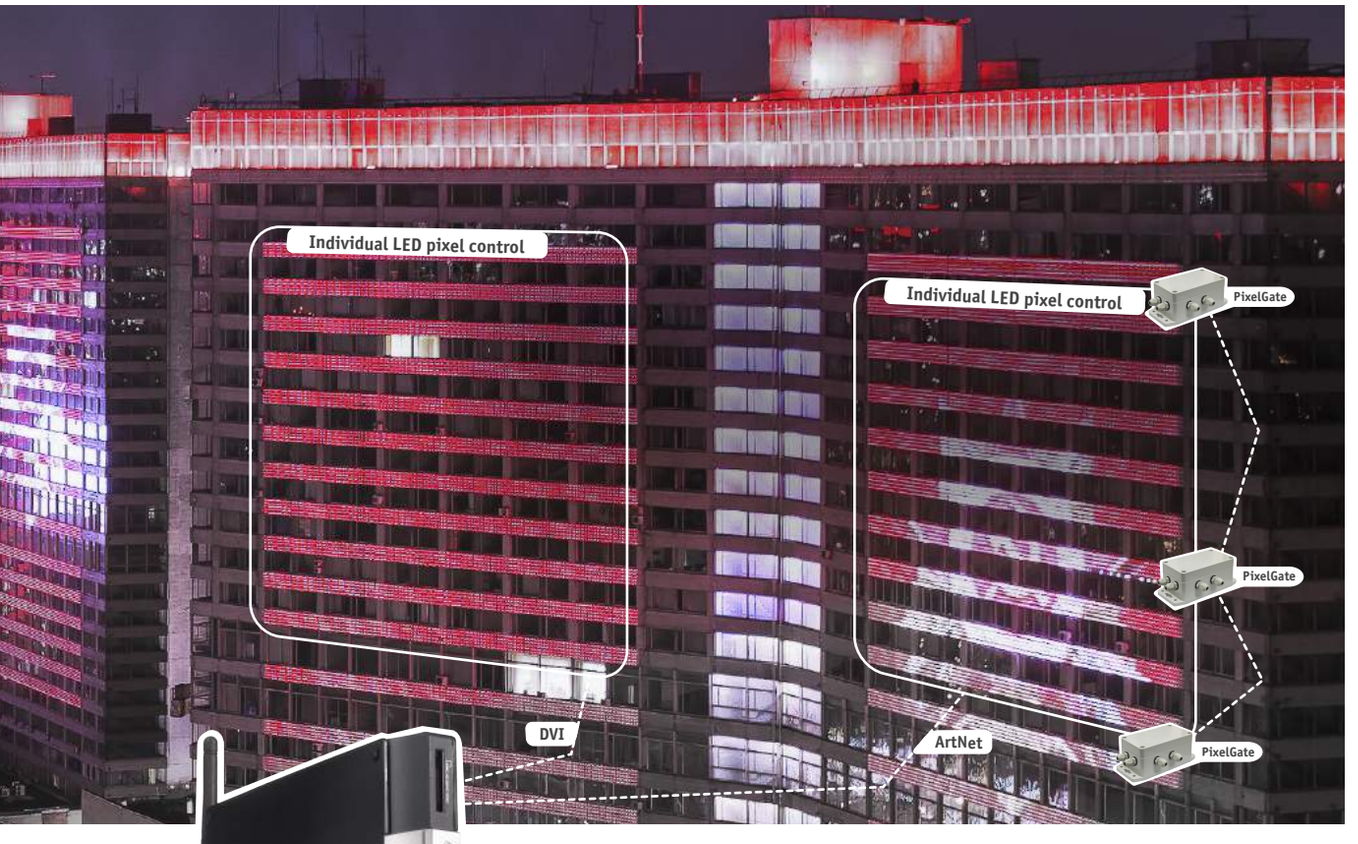
IP65 — Highest Ingress Protection

Back-up Transmitter

Media Player

LED PIXEL MAPPING

Small scale server optimized for cabinet installation. Provides fast connectivity, hosting, remote setup and control for outdoor LED installations and shows with its dual display output via DVI or ArtNet/sACN.



Media Player
Installed in electric cabinet

Supported protocols: ArtNet, sACN
Card Reader: 4-in-1: SD/SDHC/SDXC/MMC

Memory: 2 GB Up to 4 GB DDR3 at 1333MHz
Storage: 320GB Up to 500GB SATA II (5400RPM), up to 32GB SSD

Dimensions, mm: 219(W) x 172.5(H) x 29(D)
Mass: 0.69 kg
Mounting: VESA bracket or surface

PixelGate Arma

INDIVIDUAL LED PIXEL CONTROLLER

Video mapping and live effects on large-scale RGB LED walls of any complexity are now handled by our excellent PixelGates. PixelGate Arma is a pixel strip controller developed for individual pixel control at indoor and outdoor installations when you need to convert ArtNet (DMX over Ethernet) or ACN data to your LED strip protocol.

Each PixelGate Arma carries 8 ports onboard supporting up to 8192 information channels. 2 Ethernet ports and integrated switcher allows chaining of multiple PixelGates to enlarge the number of controlled pixels.

IP65 case makes devices perfectly resistant to water, dust, fog, and smoke which is crucial for LED mapped installations located outdoors.

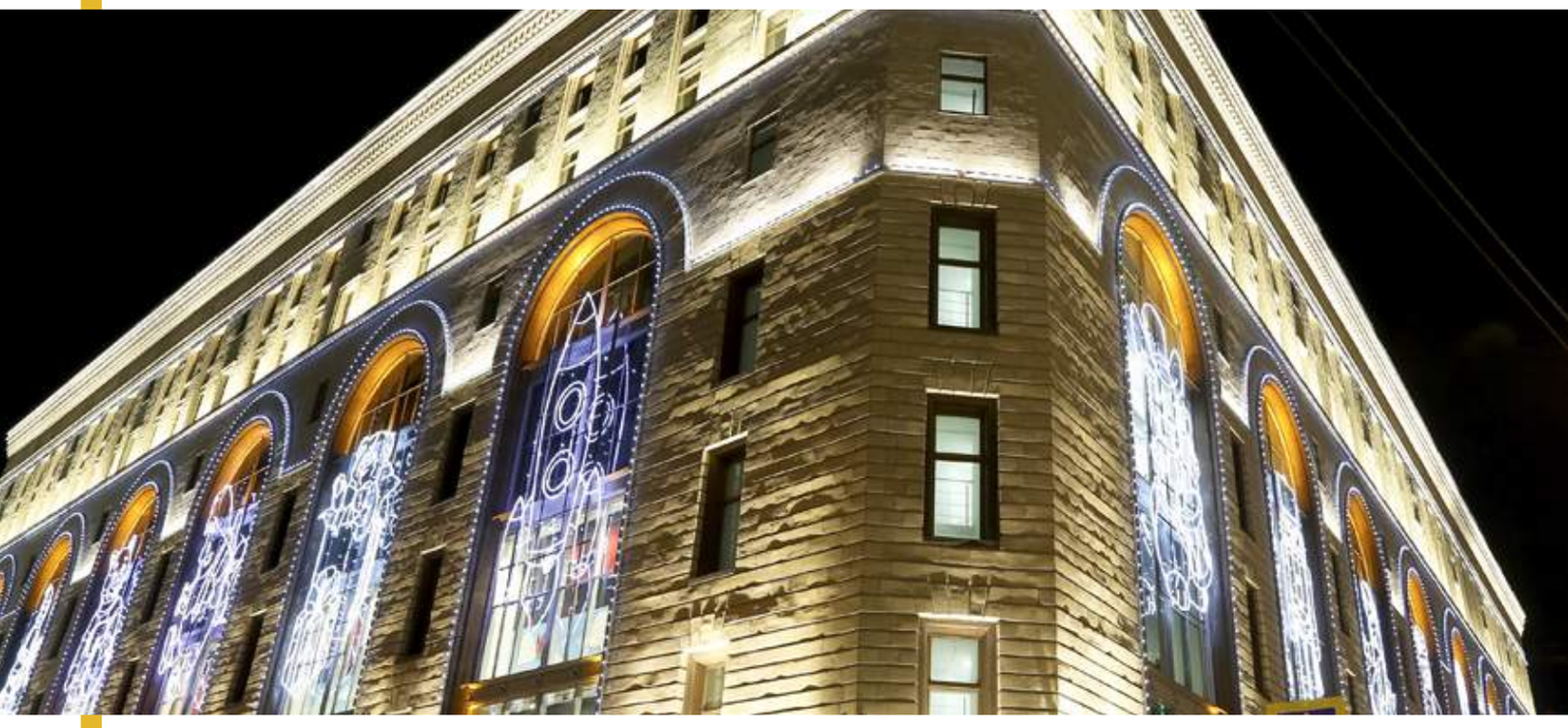
2 Ethernet ports and internal switcher to chain devices	Waterproof metal casing	Supports any ArtNet or sACN controlling software	Seamless pixel mapping for large LED installations	Remote firmware changing to support specific LED strips that you use

User-Friendly Web Interface

UltraStart

Natural Heat Convection

Highest Ingress Protection



Supports RDM for diagnostics | 6 configurable DMX ports (1-to-5 or two separate 1-to-2 splitters) | Ready for severe weather conditions (IP65) | Star topology connection of devices | Increases the number of devices and cable length

Splitter Arma DUO

DOUBLE-INPUT DMX SPLITTER/REPEATER

DMX Bi-Direct | Supports RDM | UltraStart | Galvanically Isolated Ports | Natural Heat Convection | Highest Ingress Protection

Housing: solid metal case
Dimensions, mm: 115(W) x 55(H) x 90(D)
Operating Temperature: -40...+70°C
Power supply: ~100-270 VAC, 50/60 Hz

Supported protocols: DMX512, RDM
DMX input ports: 2 isolated
DMX output ports: 5 isolated
Setup: by DIP switchers
Indication: LED for DMX input

Housing: DIN mounted metal/ plastic case
Dimensions, mm: 142(W) x 105(H) x 75(D)
Operating Temperature: -40...+70°C
Power supply: 12/24 VDC

Control interface: DMX512
Supported protocols: DMX512, RDM
LED outputs: 4 or 8
DMX512 interfaces: 1
Setup: by DIP switchers
Indication: LED for DMX activity

LEDGate DIN

COMPACT LED DRIVER

Supports RDM | UltraStart | Galvanically Isolated Ports | Natural Heat Convection | Permanent Laser Engraving

Smooth stepless light regulation for LED luminaires and strips

Controls and dims 8 output lines via DMX

Supports RDM for diagnostics

ArtGate DIN

Housing: DIN mounted metal/ plastic case
Dimensions, mm: 142(W) x 105(H) x 75(D)
Operating Temperature: -40...+70°C
Power supply: ~100-270 VAC, 50/60 Hz
Supported protocols: ArtNet I, II, III/ sACN, DMX512, RDM
Ethernet port: 10/100 Base-TX
DMX connectors: Terminal blocks 15 EDGV
DMX ports: 2 or 4 isolated
Setup: Web interface
Indication: LED for DMX and Ethernet activity

ArtGate to DMX converter, splitter, booster, intelligent merger with Ethernet input and 4 bidirectional DMX inputs. User-friendly web interface provides remote DMX signal timing setup, port configuration, and other parameters, as well as firmware update. DIN rail enclosure makes the device ideal for fixed architectural installations.

Unlimited quantity of configuration profiles

Controls and dims 4 output lines via DMX

Supports RDM for diagnostics

Supports RDM | UltraStart | Galvanically Isolated Ports | Natural Heat Convection | Permanent Laser Engraving | DMX Bi-Direct | User-Friendly Web Interface | 2 IP adresses per Device

Housing: Solid plastic & metal cover
Dimensions, mm: 91(W) x 64(H) x 34(D)
Mass: 0.2 kg
Mounting: Pole
Operating Temperature: -40...+70°C

Power supply: 10-48 VDC
Input Power (max): 5 W

Serial interface: RS-485 (MODBUS RTU)
Setup: Remote via QULON MONARQ
Connectors: screw terminals

QULON Meteo

TEMPERATURE, HUMIDITY AND PRESSURE SENSOR

Qulon Meteo provides information about air temperature (-40°...+70°C range), relative humidity and atmospheric pressure which can be used as a trigger for architectural lighting scenarios. Easy pole mounting installation. Remote control and monitoring. Integrated into lighting management system. Compact and accurate as a Swiss watch.

QULON Photo

HI-RES POLE MOUNT CAMERA

Housing: Metal thermo cover
Dimensions, mm: 350(W) x 107(H) x 118(D)
Mass: 1.8 kg
Mounting: Pole
Operating Temperature: -40...+70°C

Power supply: ~100-270 VAC, 50/60 Hz
Input Power (max): 5 W

Serial interface: RS-485 (MODBUS RTU)
Setup: Remote via QULON MONARQ
Connectors: screw terminals
Wireless channel

Qulon Photo designed to monitor lighting installations remotely and transmit high-resolution photos to the control room. Snapshots from fully autonomous Qulon Photo are sent via built-in GSM/3G/HSPA modem. Night vision available. Integrated into lighting management system.

Housing: Metal/plastic case
Dimensions, mm: 210(W) x 105(H) x 75(D)
Mass: 0.6 kg
Mounting: DIN-rail in the power cabinet (12 modules)
Num. of inputs: 16
Num. of outputs: 8

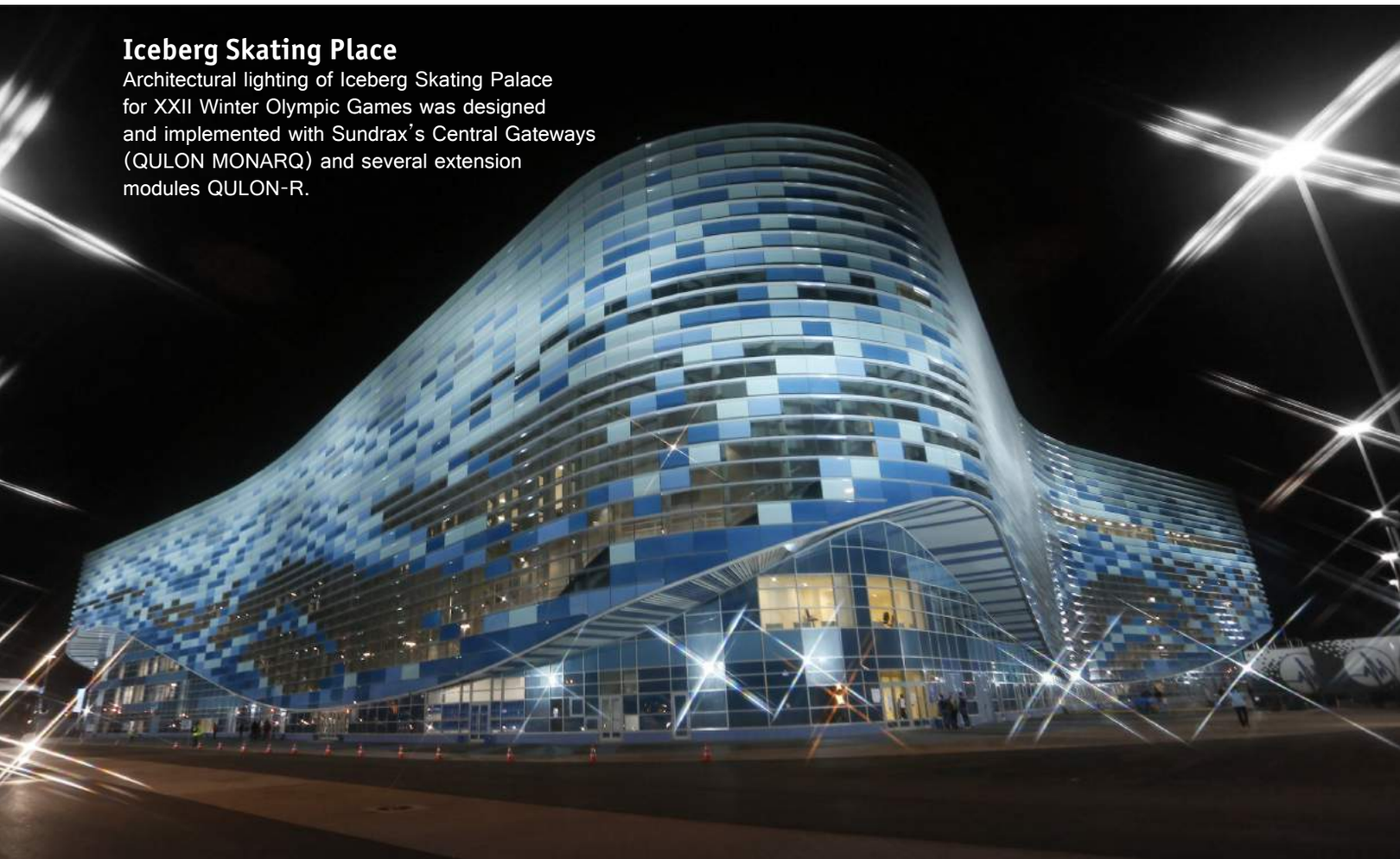
Input Voltage: ~100-270 V, 50/60 Hz
Input Power (max): 5 W

Serial interface: RS-485
Setup: Remote via QULON MONARQ, DIP switchers
Connectors: terminal blocks 15EDGV

QULON-R

EXTENSION MODULE FOR LIGHTING CONTROL

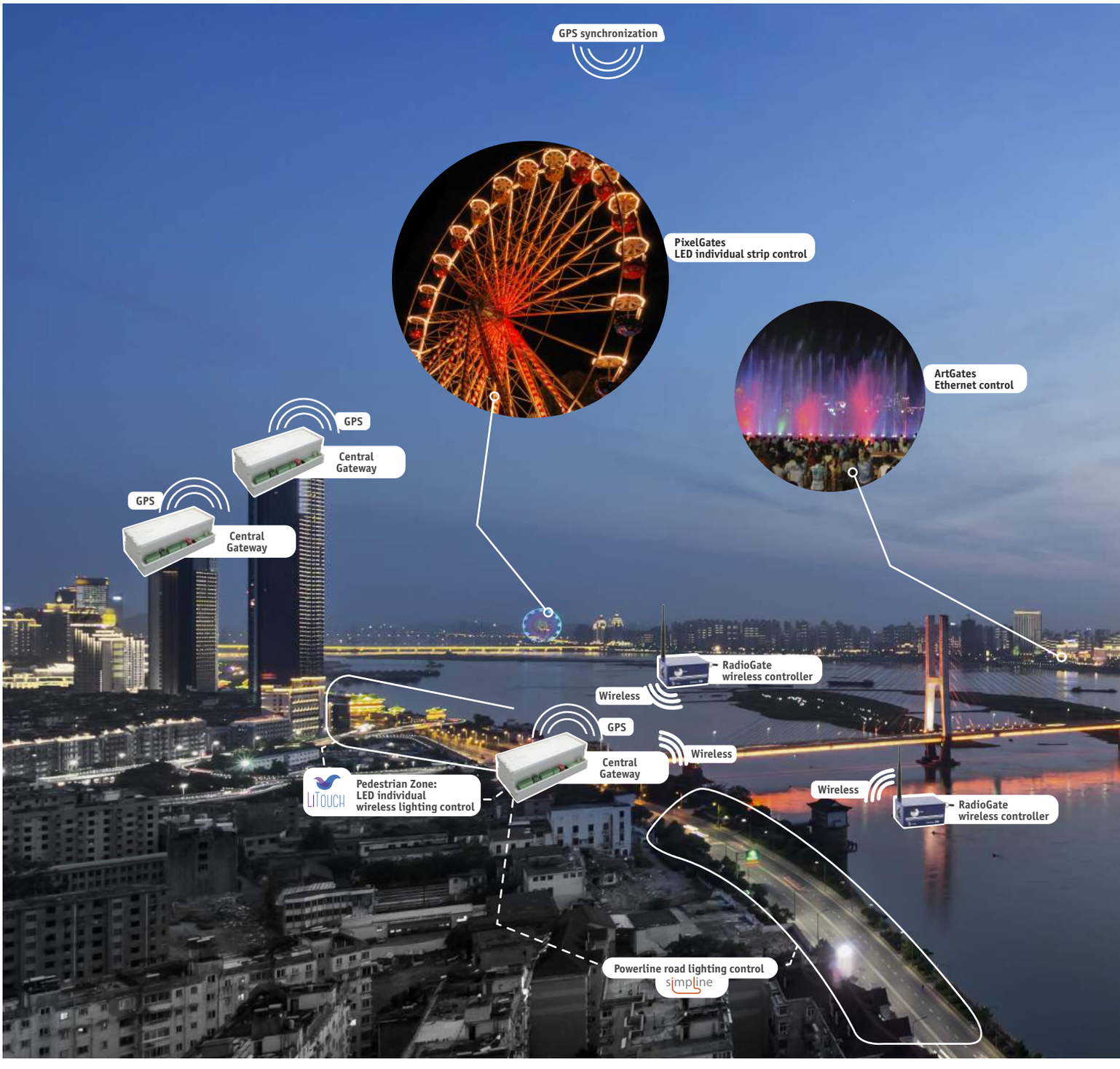
Qulon-R is additional extension module to Qulon Central Control and Monitoring System and MONARQ system for architectural lighting control providing additional 16 independent inputs and 8 relay outputs to the Central Gateway (QULON MONARQ).



Iceberg Skating Place
Architectural lighting of Iceberg Skating Palace for XXII Winter Olympic Games was designed and implemented with Sundrax's Central Gateways (QULON MONARQ) and several extension modules QULON-R.

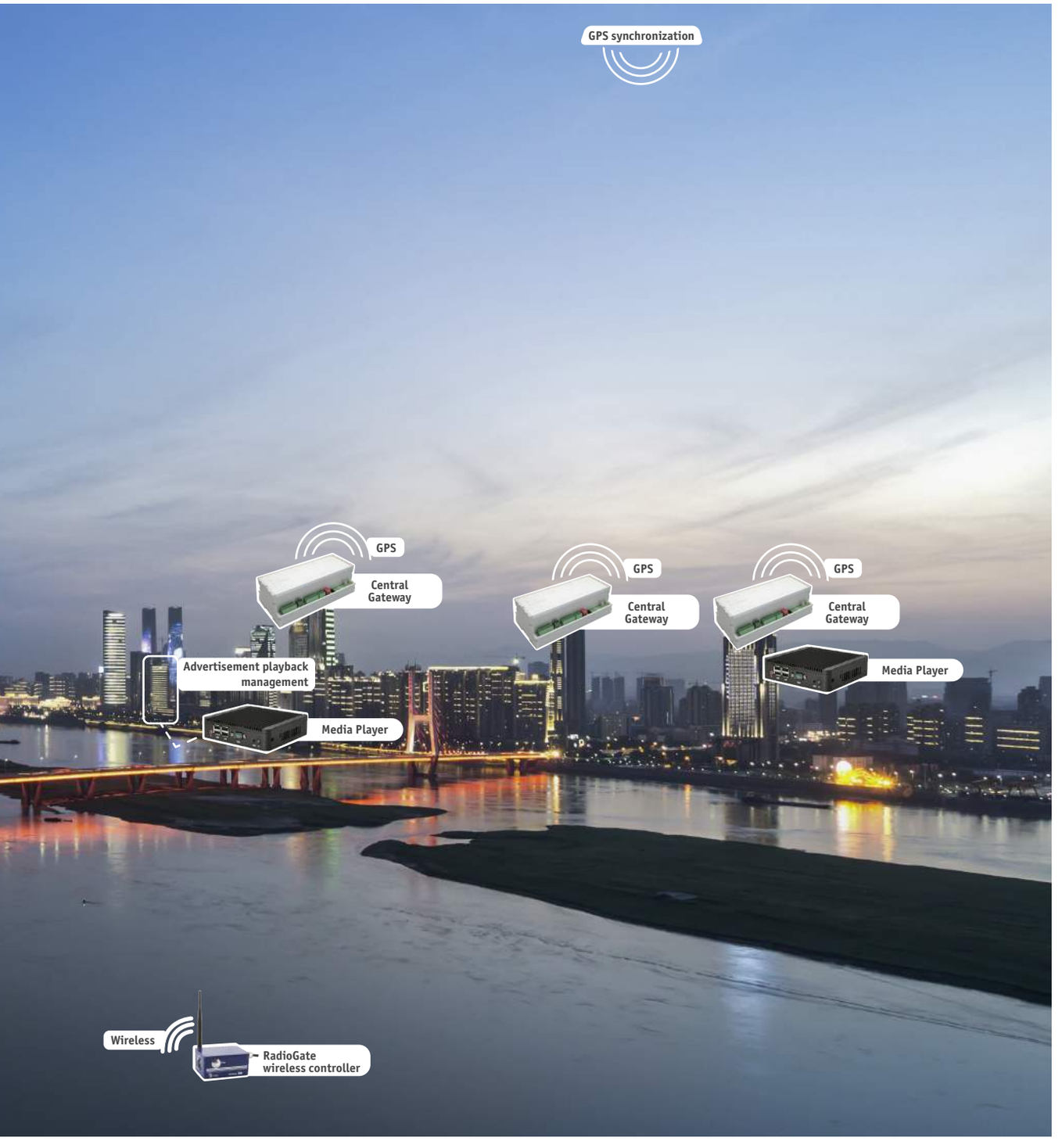
All-In-One Street + Architectural

GAN RIVER LIGHTING MANAGEMENT CONCEPT



Sundrax Electronics is pioneer in street and architectural lighting management integration under one single powerful software and database.

QULON System provides unique opportunity to centralize remote management of road & street lighting while MONARQ System is seamlessly integrated into QULON software to manage your architectural and façade lighting through all-in-one solution.

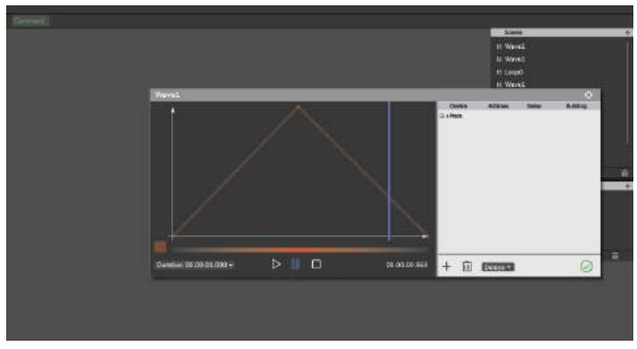


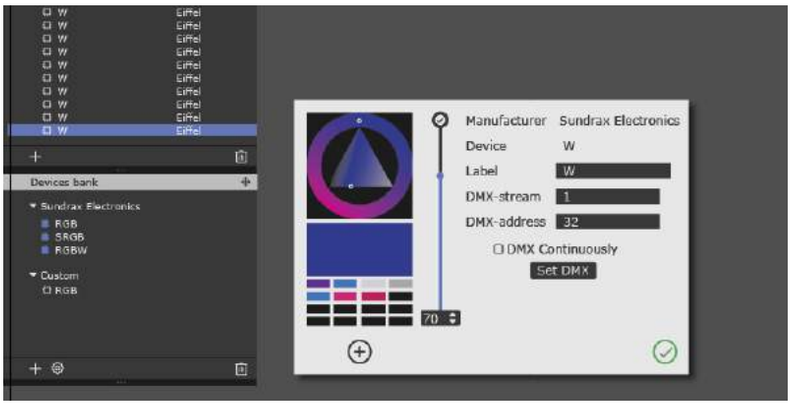
Light Coder

VISUALIZING SOFTWARE FOR ARCHITECTURAL LIGHTING DESIGNERS

Light Coder is special software developed by Sundrax for professional lighting designers to create, edit and play architectural and art lighting scenarios in a quick way. Straightforward design and flexible import/export parameters save your time and nerves for pure creative work. A must have for live lighting design and real-time preview.

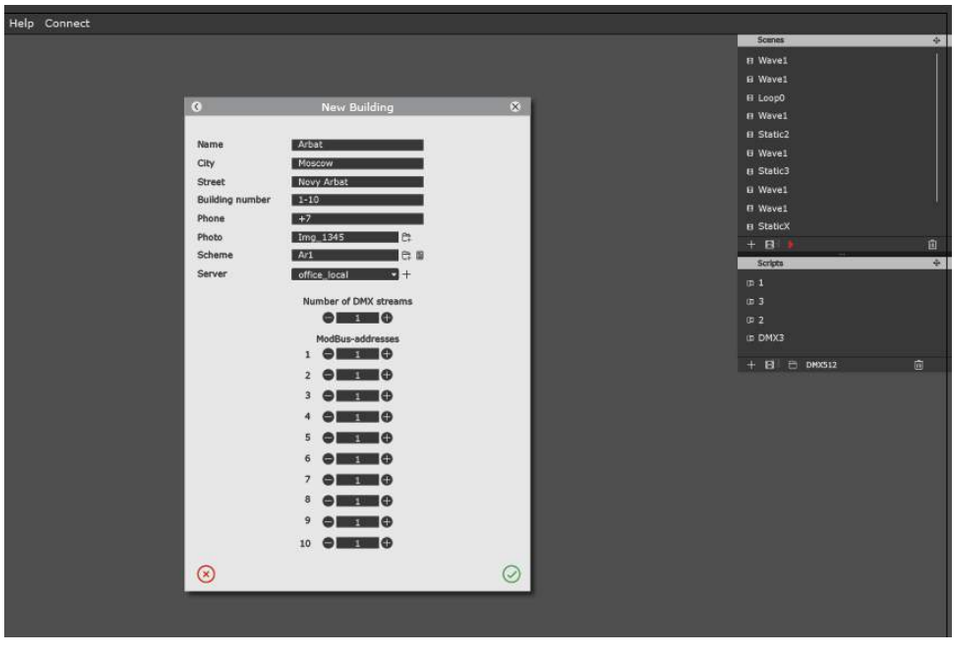
Visual playback and scenario planning

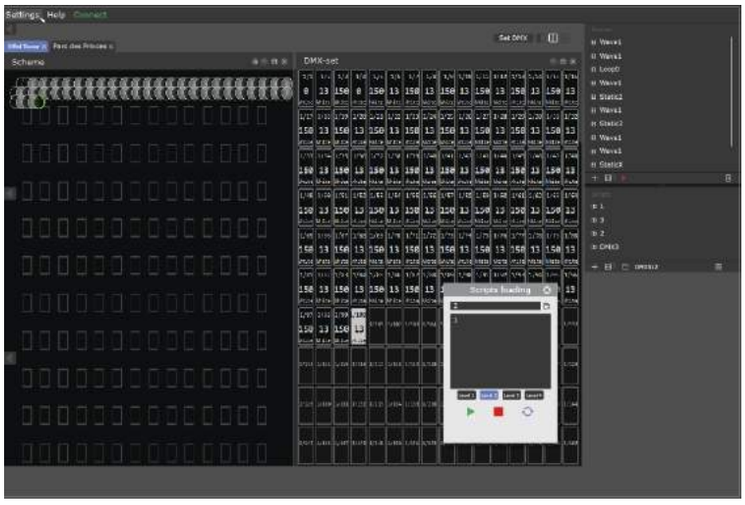




Simple workflow

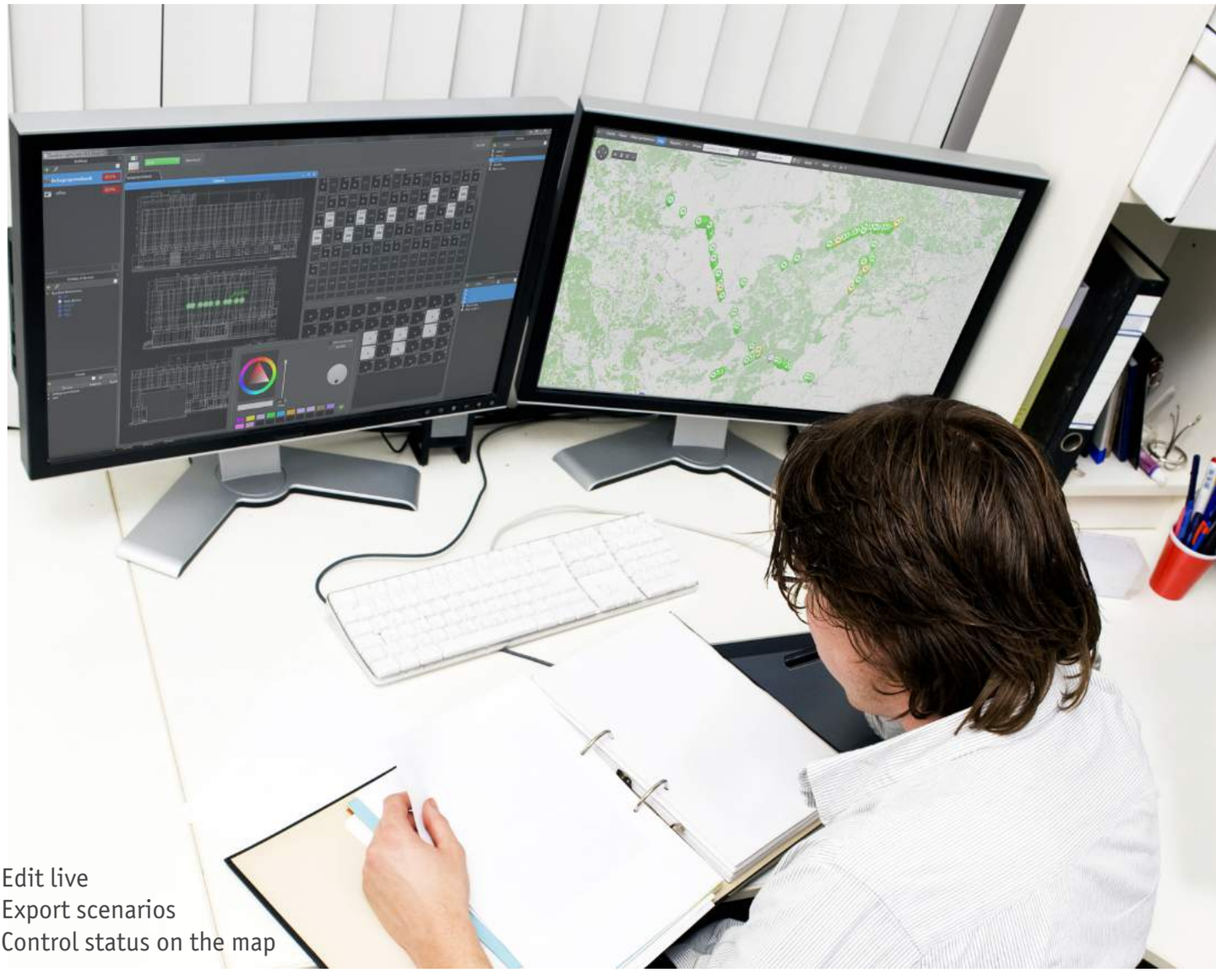
No special prior training required





Real-time editing tools

Full Integration into City Lighting Management System



- Edit live
- Export scenarios
- Control status on the map

SUNDRAX electronics

sundrax.com

office@sundrax.com
+ 44 (0) 208 991 33 19

6008, First Central 200

2 Lakeside Drive, Park Royal, London

NW10 7FQ United Kingdom