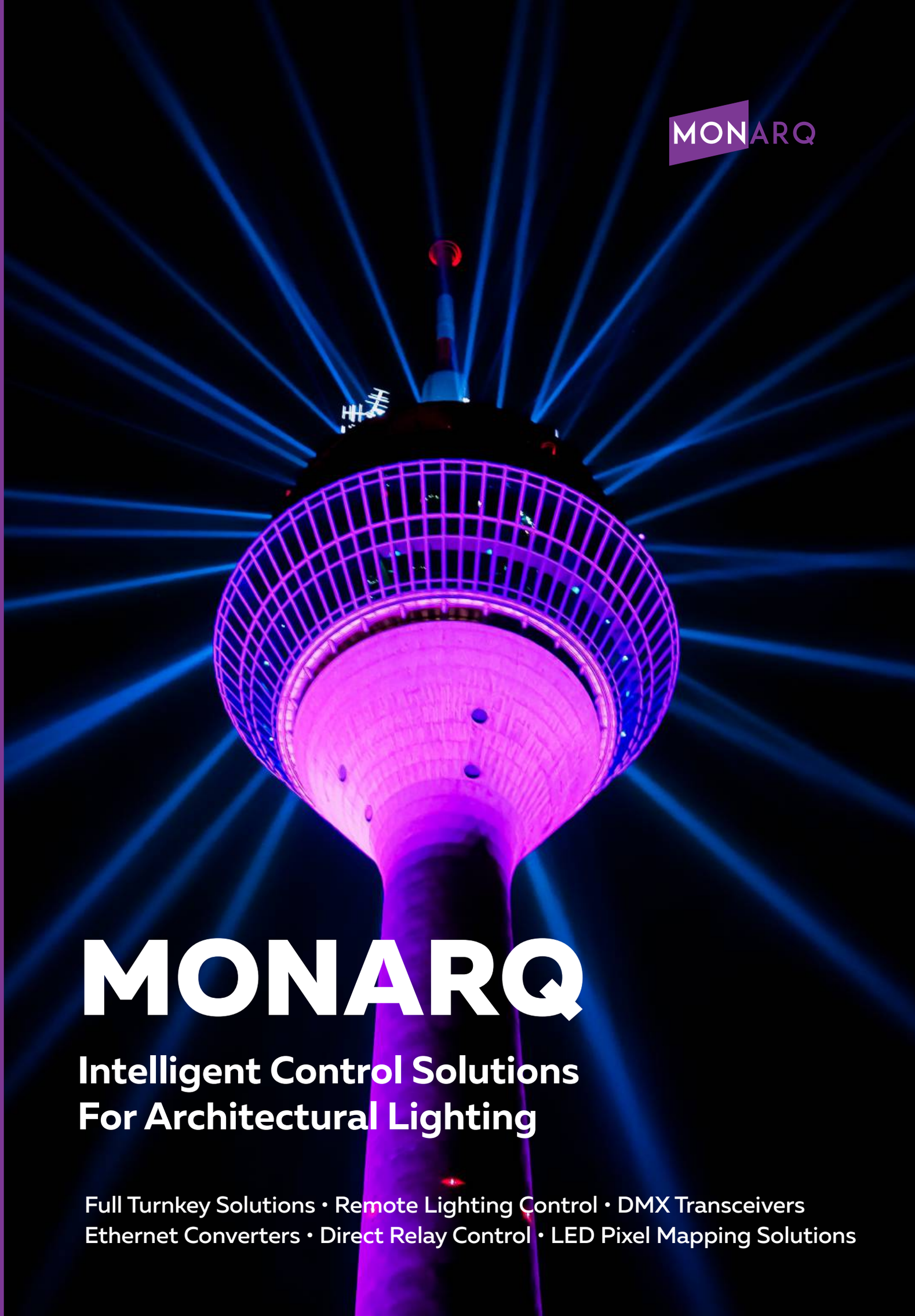


MONARQ

Intelligent Control Solutions For Architectural Lighting

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

Marble arch, london

Introduction

London-based Sundrax is a pioneering developer and manufacturer of hardware and software for smart city lighting control. Working in the field for more than 14 years, Sundrax has grown to become an industry leading and internationally recognized manufacturer of smart lighting products.

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.

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

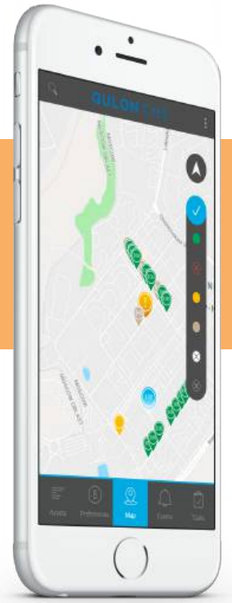
Configuring

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

Live monitoring & management

Of your remote lighting installations

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)

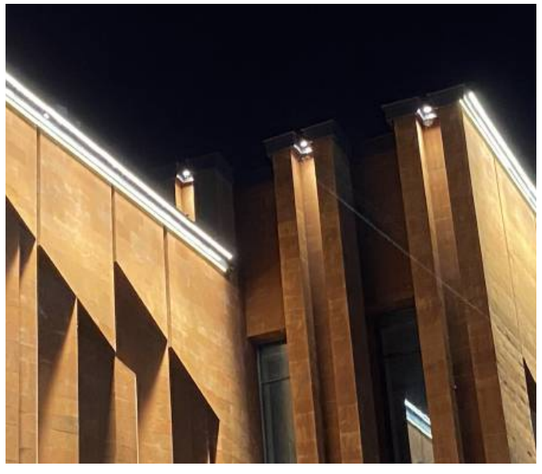
Seamless integration

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.

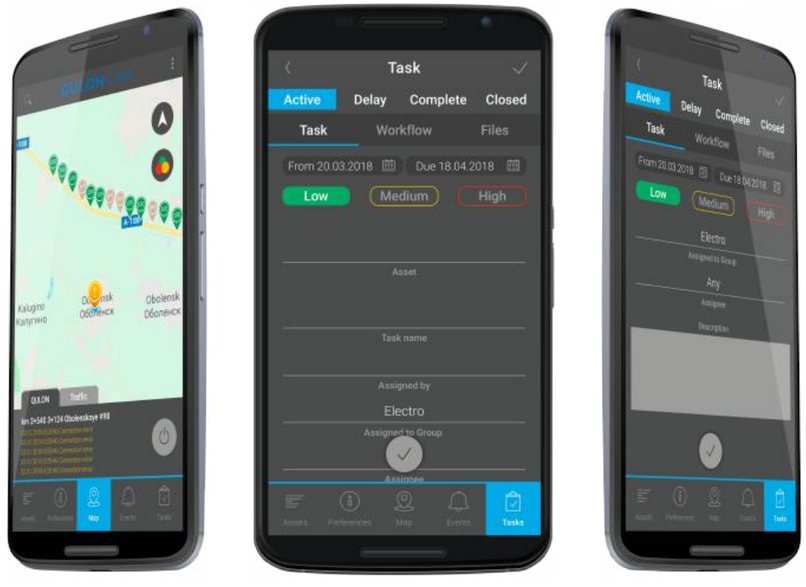
Sensors and cameras
Event-driven effects are available through motion sensors and weather stations. Snapshot cameras with GSM modules transfer live images of your lighting installations straight into software.



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



QULON MONARQ

Central processor for remote Lighting control

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
7 voltage control inputs
2 sensor inputs
2 or 4 DMX outputs
1x BeDMX output (2.4 GHz)
Ethernet interface
GPS

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 2G/3G/4G 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 onboard

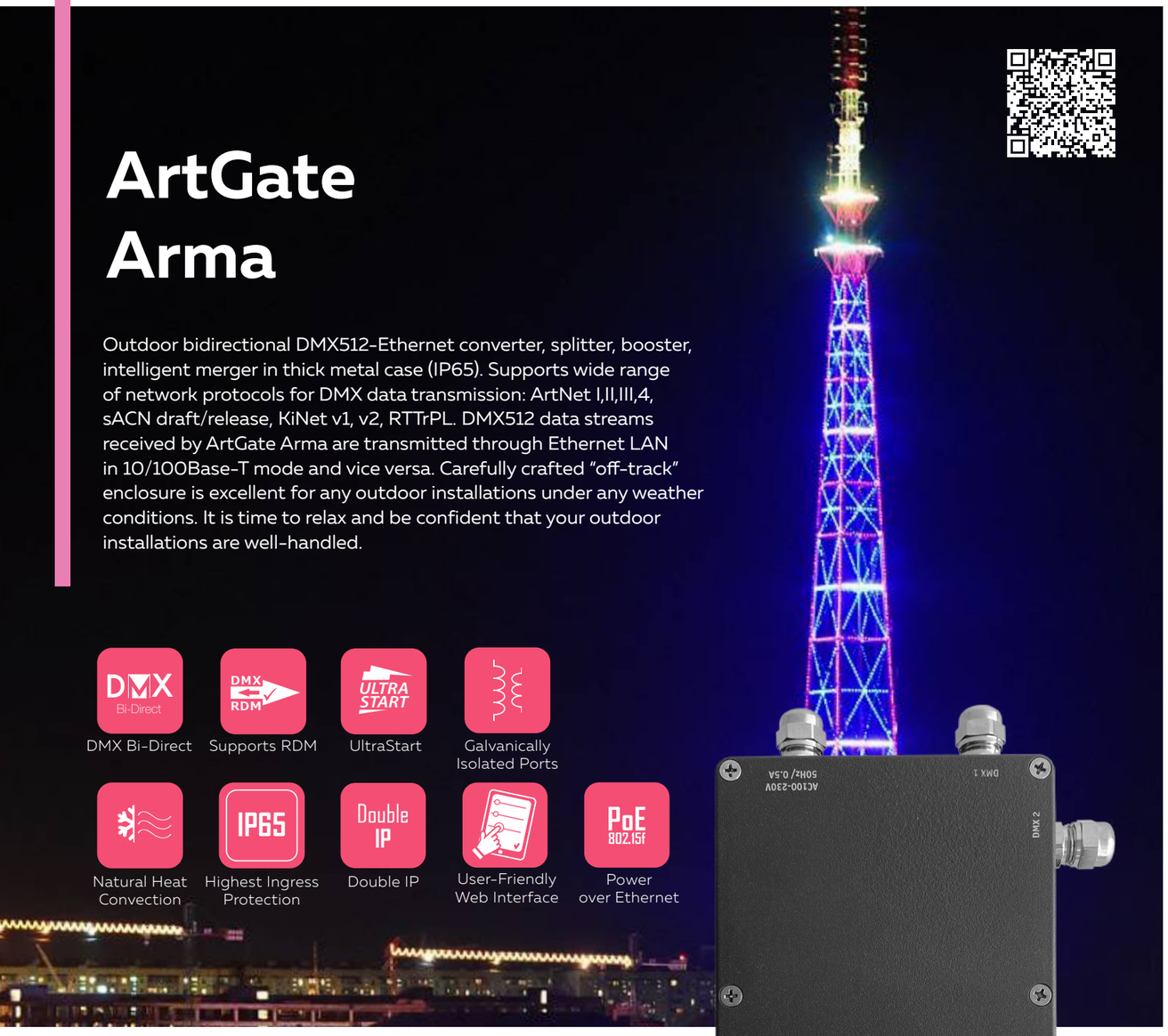
MONARQ Mini is a controller that is designed to control and diagnose static and dynamic architectural lighting.

The unit controls lighting using a single DMX512 stream with RDM support.

MONARQ Mini is designed to be mounted on street lighting poles cabinet or power cabinet with a wired connection. The enclosure is sealed and has an IP66 dust and moisture protection rating. The unit operates over a wide temperature range.

ArtGate Arma

Outdoor bidirectional DMX512-Ethernet converter, splitter, booster, intelligent merger in thick metal case (IP65). Supports wide range of network protocols for DMX data transmission: ArtNet I,II,III,4, sACN draft/release, KiNet v1, v2, RTTrPL. 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.



Housing: solid metal case
Dimensions, mm: 171(D) x 55(H) x 71(W)
Operating Temperature: -40...+70°C
Power supply: ~100-270 VAC, 50/60 Hz

Supported protocols: DMX512, RDM, ArtNet I,II,III,4, sACN draft/release, KiNet v1,v2, RTTrPL
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)

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.

OMNIA











Espoo, Finland

Designed by IDEAFIX

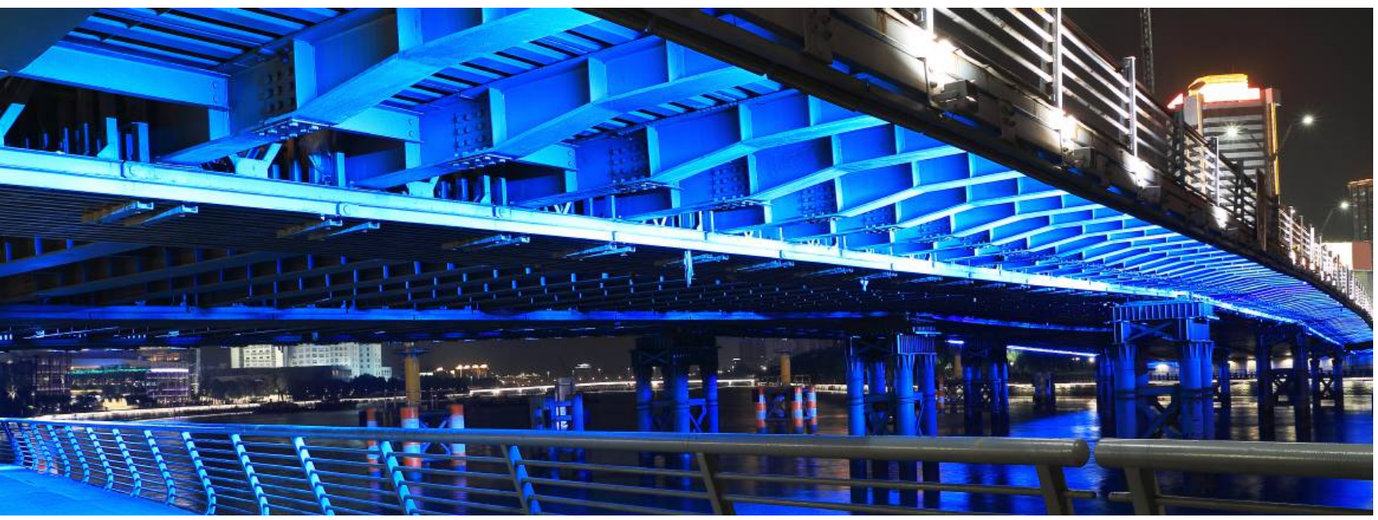
Powered by MONARQ

>be DMX

Wireless control
With be-dmx technology by sundrax

BeDMX is a 2.4GHz wireless technology specifically developed by Sundrax 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, 2 or 4 isolated DMX ports
BeDMX wireless channel (2.4 GHz)
Communication protocol: Bluetooth 5.0
Supports DMX512 and RDM
One-button programming

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

RadioGate Plus Arma only:
Supports ArtNet I, II, III, IV, sACN draft, release, KiNet v1, v2, RTTrPL
Ethernet port
Simple web interface

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.

Support of Ethernet protocols
RadioGate Plus Arma supports many DMX-Ethernet communication protocols such as ArtNet (1,2,3,4), sACN (Draft, Release), KiNet (v1,v2), RTTrPL. Integrated Ethernet converter and merger lets you create complex installations with multiple send-convert-and-receive combinations. In addition to AC power RadioGate Plus Arma has PoE power supply and optional DC modification.

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.

RadioGate Plus Arma

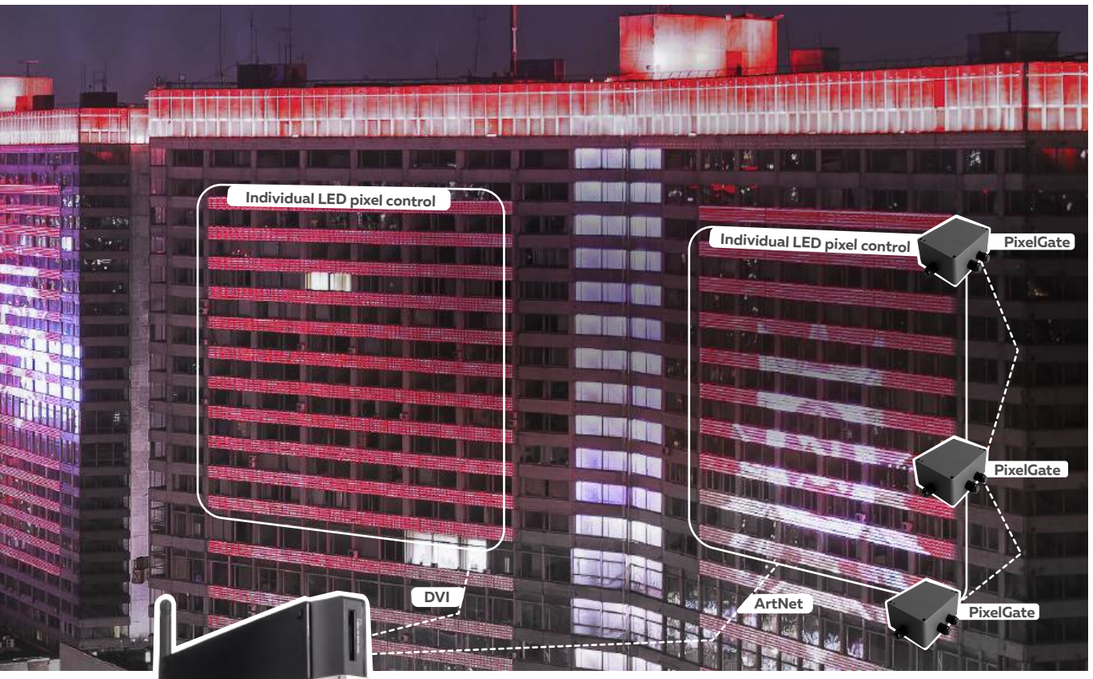
Wireless dmx transceiver + ethernet node

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
PoE 802.3af — Power over Ethernet

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 directly converts up to 16 DMX universes into SPI to control 2,730 RGB pixels supporting up to 8 separate LED outputs. 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 DUO Arma

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

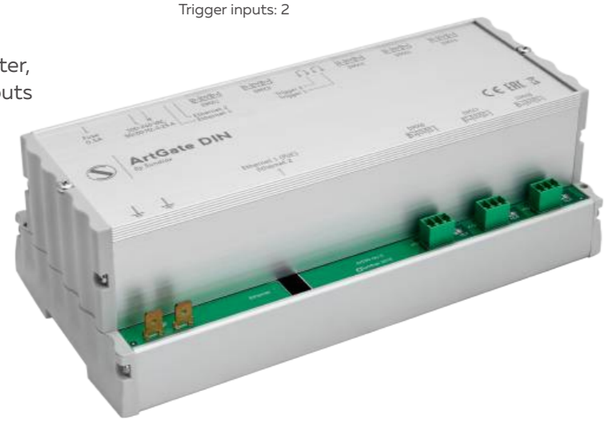
Supports RDM | UltraStart | Galvanically Isolated Ports | Natural Heat Convection | Permanent Laser Engraving

Smooth stepless light regulation for LED luminaires and strips | Controls and dims 8 output lines via DMX | Supports RDM for diagnostics

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: DMX512, RDM, ArtNet I,II,III,4, sACN draft/release, KiNet v1,v2, RTTrPL
Ethernet port: 1 or 2 10/100 Base-TX
DMX connectors: Terminal blocks 15 EDGV
DMX ports: 4 or 8 isolated
Setup: Web interface
Indication: LED for DMX and Ethernet activity
Trigger inputs: 2

ArtGate DIN

DIN-rail mount bidirectional DMX512-Ethernet converter, splitter, booster, intelligent merger with 2 Ethernet inputs and 8 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 | 2 Ethernet ports with PoE to enable cascadability | Trigger inputs for external events and alarms

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

QULON Meteo

aTemperature, 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.

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

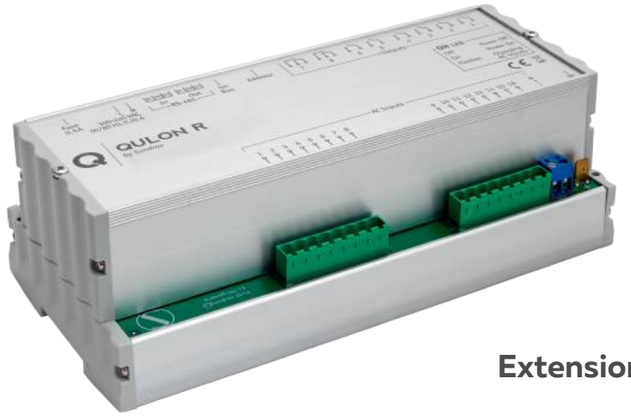
Housing: Metal thermo cover
Dimensions, mm: 350(W) x 107(H) x 118(D)
Mass: 1.8 kg
Mounting: Pole
Operating Temperature: -40...+70°C
Power supply: ~100-270 VAC, 50/60 Hz
Input Power (max): 5 W
Serial interface: RS-485 (MODBUS RTU)
Setup: Remote via QULON MONARQ
Connectors: screw terminals
Wireless channel

Luminance Sensor

Wireless Luminance sensor and camera

Luminance Sensor designed to monitor lighting installations remotely and transmit high-resolution photos to the control room. Snapshots from fully autonomous Luminance Sensor 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 is pioneer in street and architectural lighting management integration under one single powerful software and database.

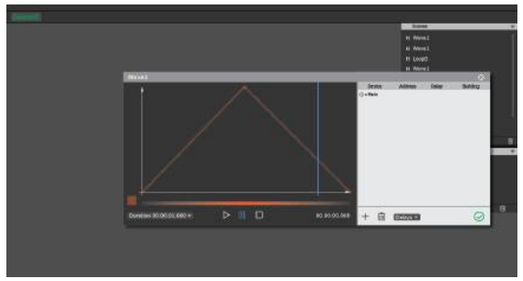
QULON System provides unique opportunity to centralize remote management of road & street lighting while MONARQ System is seamlessly integrated into QULON software to manage your architectural and façade lighting through all-in-one solution.

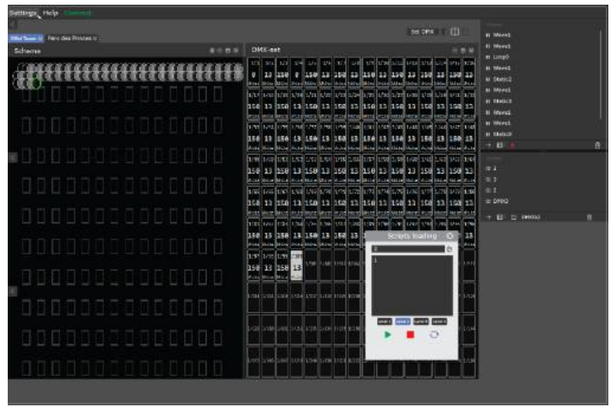
Light Coder

Visualizing software for architectural lighting designers

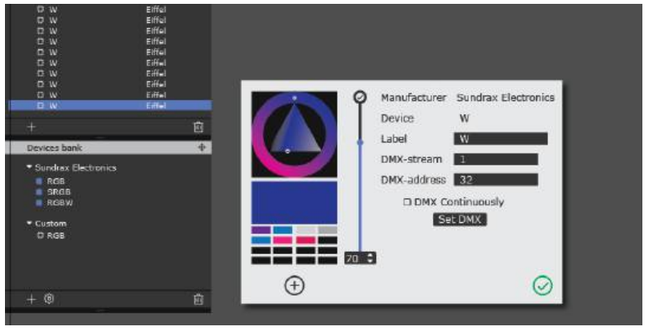
Light Coder is special software developed by Sundrax for professional lighting designers to create, edit and play architectural and art lighting scenarios in a quick way. Straightforward design and flexible import/export parameters save your time and nerves for pure creative work. A must have for live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

Visual playback and scenario planning



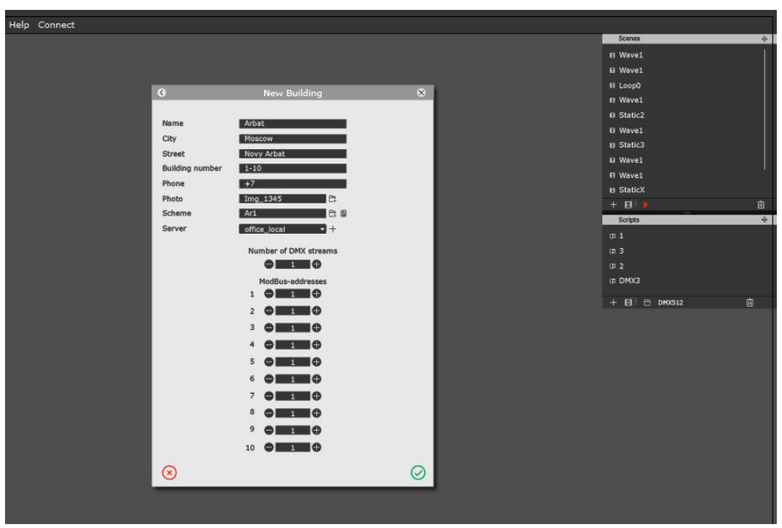


Real-time editing tools



Simple workflow

No special prior training required



Full Integration into City Lighting Management System

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

Light Coder

MONARQ

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