Rio Series

LED Road and Street Luminaires

613253

Pelsan

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3310 810

2700K 3000K 4000K 5700K 6500K

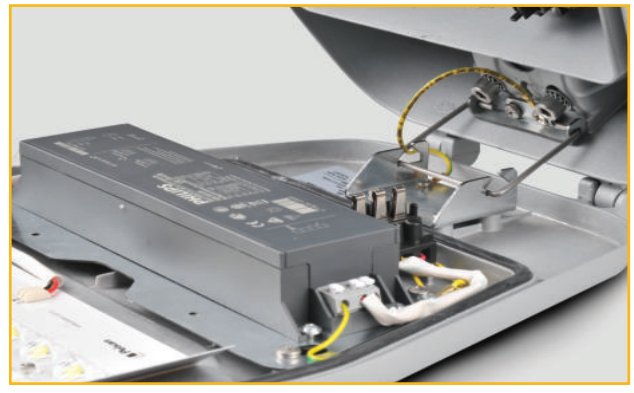
Why Rio?

Energy saving, efficiency, ease of maintenance, traceability, flexible designs, products with long lifetime which are environmentally friendly have increasingly gained importance while taking actions within the scope of energy efficiency in road and street lighting in the process of transformation to LED technology.

We tried to achieve the perfect design during all the processes as from the design phases based on these criteria while we were working on the Rio luminaire.

We have developed user centered products which has luminous intensity distribution curves that can be specially designed for different fields of application and desired power and lumen levels by adding optical design flexibility to flexible design possibilities provided by LED technology instead of conventional product ideas.

Following this phase, we finalized our works for bringing product in compliance with TEDAŞ (Turkish Electricity Distribution Co.) specifications and activating RioSMART system.



Rio luminaire is ready for both new projects and projects for transforming old systems into LEDs with its aesthetic design, environmental friendliness and SMART systems and the benefits such as suitability for utilization in MI, M2, M3, M4, M5 road lighting classes, effective energy savings and ease of maintenance.

Utilization Suitable to All Needs

- *Entry console design suitable for horizontal and vertical mounting types*
- *Modular lenses enabling luminous intensity distribution special to different fields of application in the desired illuminance level.*
- *Optical design with glare control specially designed for the visual comfort of pedestrians and drivers*

Airports

Train Stations

Transportation

Shipping Ports

Intercity Roads

Harbors

Urban Roads

Railways

Highways

Warehouses

Rotary Intersections

Viaducts

Bus Stations

Bicycle Paths

Schools

- *The implementation of fewer luminaires minimizing maintenance costs,*
- *Cost-effective solutions enabling the targeted illuminance levels with lower power values*
- *Traceable, environmentally friendly systems providing high energy savings and remote control with SMART applications*

Gas Stations

Roads in Housing Estates

Dedicated Roads

Shopping Areas

Intersections

Sports Grounds

Stadiums

Rest Areas

Trade Centers

Camping Sites

Playgrounds

Accommodation Sites

Parking Lots

Housing Estates

Squares

Parks

Rio Series LED Road and Street Luminaires

Flexible Lighting Design

Rio luminaries, making it possible to design in the desired power and lumen values in line with user requests with highly efficient LED lighting solutions offer options suitable to needs with the optimum design based on fields of application.

Fixed Lumen Output

With Rio LED Road and Street Luminaires that can be programmed to provide a fixed lumen output, high performance is obtained independent of operating hours, and desired lumen values are maintained for longer operating hours contrary to conventional systems.

Night Mode

The technology having a night mode option that can be added through programming during the production process in accordance with user demands. A high energy-saving system that can be dimmed to 5 different light levels during different time periods of the day for luminaires in which night mode is activated.

1-10V Dim

1-10 V dimming option that enables dimming between 10% and 100% complementing the night mode option, which can be controlled as single-stage or multi-stage through an analogue signal without necessitating any programming.

Different Luminous Intensity Distribution Options

Offers optical diversity in accordance with the customer demands and visual comfort by considering the road type where it will be used, mounting poles, distance between the luminaires, the amount of necessary illuminance level in the area and the standards specified in the lighting regulation. Road and street luminaires suitable for M1, M2, M3, M4 and M5 road lighting classes by using modular lenses having different luminous intensity distribution curves.

High Voltage Protection

A reliable design limiting the mains voltage, protecting LEDs and other electronic components from lighting and transient overvoltage loads that can occur during standard operations. A reliable and safe system that can endure up to 10 kVa of overvoltage.

Rio Smart

Smart city lighting with SMART road and street luminaires! They can be programmed as multiple groups, they enable group control or single luminaire control, their operating status and energy consumption can be remotely monitored, they can be controlled in different light levels during the day, their location and operating status can be tracked via web interface in real-time, and they offer high energy-efficiency and minimize maintenance/failure costs!

Thermal Performance

A high performance and long-lasting design suitable for operating at an ambient temperature of -40°... +65° C with aluminum injection body providing effective thermal dissipation tested in the most challenging conditions during the designing process.

Design Details

Mechanical Specifications

Corrosion resistant, electrostatic powder paint coated, aluminium injection body providing effective heat dissipation even at high temperatures

IK08 impact resistant body and tempered glass

A silicone gasket inserted between the tempered glass and the body providing extra protection designed to protect electronic components from adverse impacts of the external environment in order to meet the requirements of IP66

Aluminium extrusion, anti-corrosion stainless steel closure clip

Application of electrostatic powder coating in different RAL codes (optional)

Body and console design resistant up to wind speeds of 205 km/h

Entry console suitable for horizontal and vertical mounting options adjustable between 42-60 mm angles

Long lifetime and high performance cooling with its original heat sink design

Electrical Specifications

Usage of knife type terminal blocks providing high safety in compliance with the specifications issued by TEDAŞ, automatically disconnecting energy when the cover is opened in order to intervene in the luminaire

European manufactured high efficiency LED driver with constant current output

Short circuit protection with effective power factor correction which is unaffected by the mains voltage fluctuations providing a fixed lumen output and thermal protection integration

Aluminium PCB with high thermal conductivity

Overvoltage protection up to 10 kVa

Ease of integration into the existing system easily with its 1-10 V dim outputs (standard)

Time-adjusted dimming feature when desired with the night option

Its long lifetime performance has been tested by a 100.000 times on/off switching test

Optical Specifications

LED lifetime over 50.000 hours compatible with LM80 and TM21 standards

High color rendering index (Ra>70)

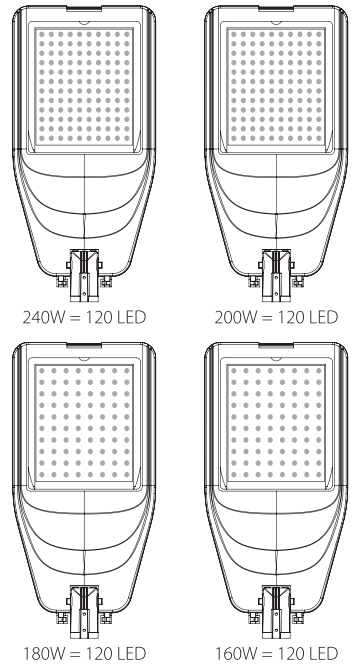
PMMA lenses that offer alternative luminous intensity distribution curve options suitable for different fields of application

Luminaire efficiency over 110 lm/W

Technical Data

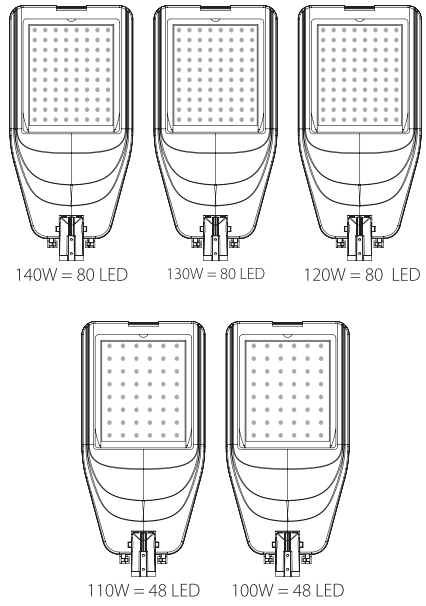
Dimensions (mm) 727x370x131x380

Body	LED	Color Temperature	Optimum Luminous Flux	Optimum Power (AC)	Luminous Efficacy
Large	Power LED	4000/6500 K	26400 lm	240 W	110 lm/W
Large	Power LED	4000/6500 K	23400 lm	200 W	117 lm/W
Large	Power LED	4000/6500 K	21600 lm	180 W	120 lm/W
Large	Power LED	4000/6500 K	20000 lm	160 W	125 lm/W



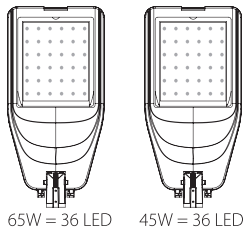
Dimensions (mm) 616x330x124x338

Body	LED	Color Temperature	Optimum Luminous Flux	Optimum Power (AC)	Luminous Efficacy
Medium	Power LED	4000/6500 K	16520 lm	140 W	118 lm/W
Medium	Power LED	4000/6500 K	15600 lm	130 W	120 lm/W
Medium	Power LED	4000/6500 K	15000 lm	120 W	125 lm/W
Medium	Power LED	4000/6500 K	14080 lm	110 W	128 lm/W
Medium	Power LED	4000/6500 K	13200 lm	100 W	132 lm/W



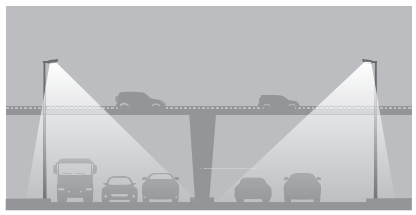
Boyutlar (mm) 476x280x110

Body	LED	Color Temperature	Optimum Luminous Flux	Optimum Power (AC)	Luminous Efficacy
Small	Power LED	4000/6500 K	8515 lm	65 W	131 lm/W
Small	Power LED	4000/6500 K	5445 lm	45 W	121 lm/W

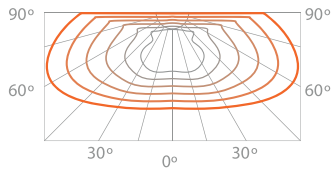


Optical Solutions in line with Different Fields of Application

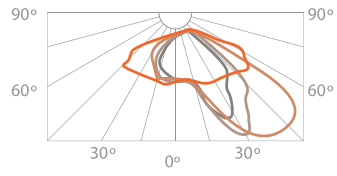
Rio road and street luminaire offers alternative optical solutions in accordance with the specifications of TEDAŞ and lighting classes in different fields of application



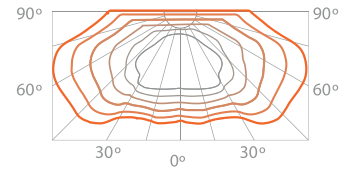
Optical solutions suitable for ME 1-2 class highway illuminations

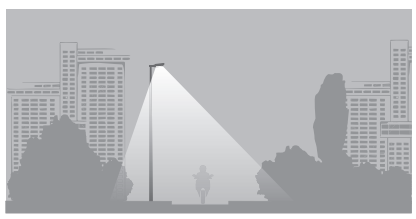


Optical solutions suitable for ME-CE class urban road-street illuminations

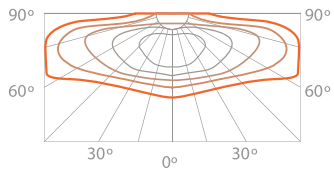


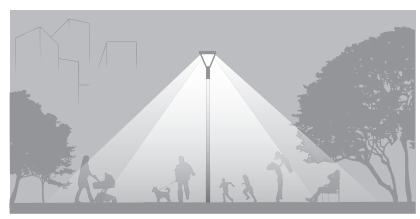
MEW class optical solutions suitable for the lighting of asphalt highways with high luminous reflectivity.



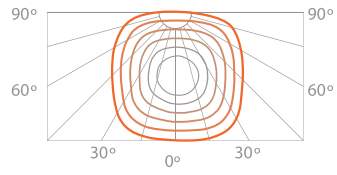


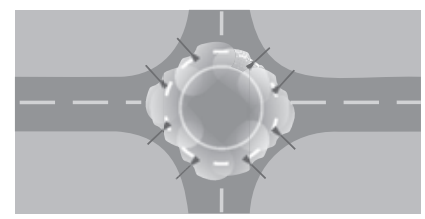
Optical solutions suitable for CE and S class fields of application in cities



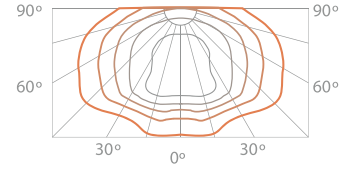


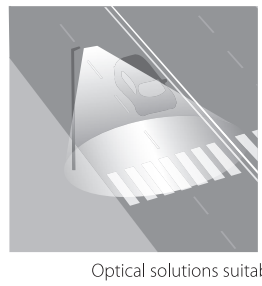
Optical solutions suitable for Square-Environment-General Lighting class

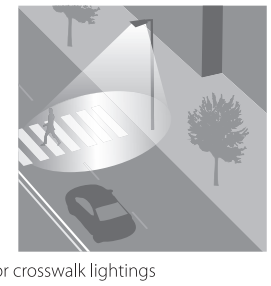




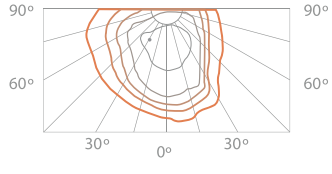
Optical solutions suitable for Rotary Intersection-Environment-General Lighting class

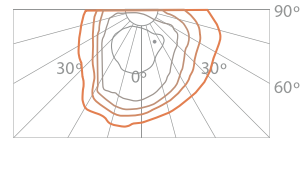






Optical solutions suitable for crosswalk lightings





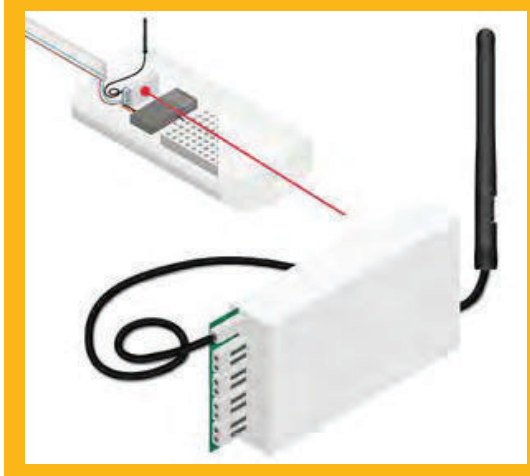
Rio Smart Road and Street Luminaire Control System

The most basic function of Rio Smart system *is that it enables the remote control of luminaires. Light levels of luminaires can be adjusted from anywhere via the web application without requiring additional wiring, a switch or dimmer and without the necessity of reaching the power supply of the system.*

Rio Smart enables ON/OFF control; it can be controlled in groups or individually according to lighting scenarios that are prepared based on the user needs / demands. All luminaires can be real-time monitored, their operating/failure status can be determined, their operating status and consumption reports can be received as feedback in desired time periods via "maps" application on the web interface which also includes real time data transferred via satellite. Luminaires can be controlled and monitored effectively within an 8-10 km area by using an internet provider without the necessity of complex system installation processes and additional costs.

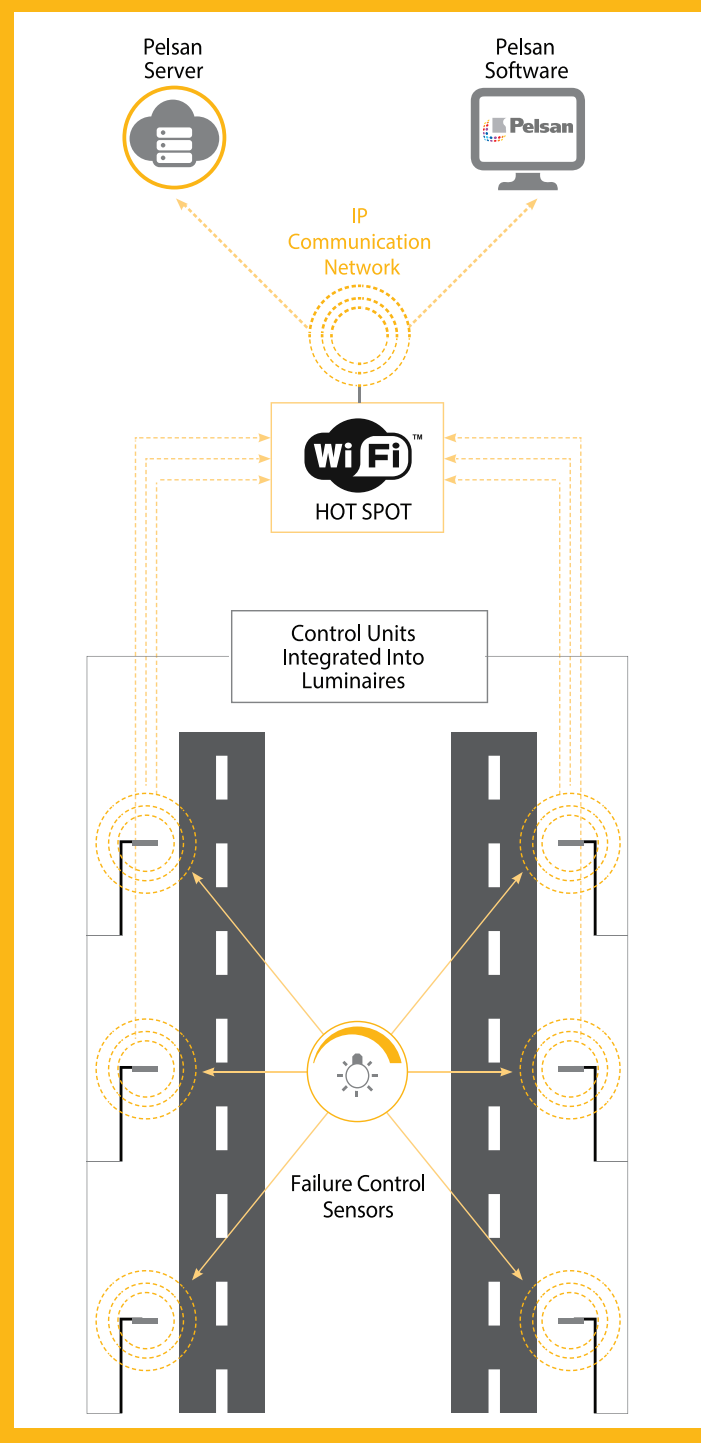
How Does It Work?

1. Wireless Communication
Communication with luminaires can be carried out through Wi-Fi safely, the Wi-Fi coverage area is extended by forming a communication chain from one luminaire to another. As the coverage area expands, luminaires begin to receive the signal from the nearest luminaire instead of receiving the signal from the Wi-Fi provider directly. The system can also be controlled via mobile phones which act as Wi-Fi hotspots if required.



2.SMART Control Unit
Luminaires can be individually controlled, switched on/off thanks to the SMART control unit integrated into each luminaire, there is no need for using an astronomical relay for this. Light level adjustment option has been designed to be compatible with 1-10 V dimming systems that are often preferred in outdoor lighting.

3. Sensors Providing Failure Detection
Smart sensor applications displaying proper operation of luminaires, allowing the transfer of failure reasons into the system via cloud in failure states. These sensor applications can be developed based on the needs of users and fields of application on project basis if requested.



Why Rio Smart System?

Sustainable Energy

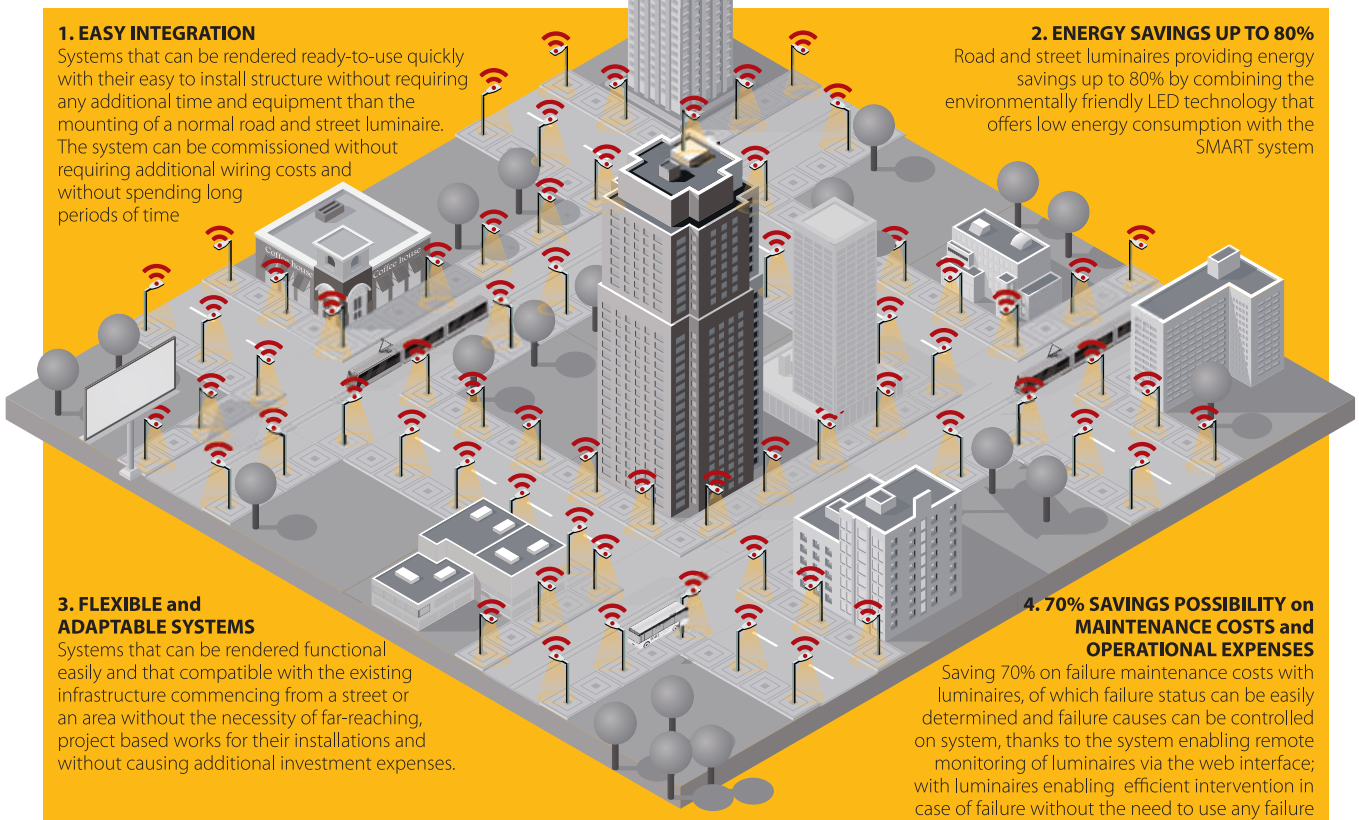
The basic function of the Rio Smart application is to enable the control of road and street luminaires in groups or individually in real-time via web or with predetermined scenarios. It maximizes energy savings while minimizing the process of failure maintenance monitoring and costs via its system solutions. It is a system that has been designed in order to develop environmentally friendly road and street luminaires, which are conventionally responsible for the high rates of annual electricity consumption, to lower application costs and to create smart cities in the future.

Easy Integration and Smart Cities with Low Cost Application

Rio Smart luminaires have been designed to operate within an 8-10 km area by using a single Wi-Fi transmitter. They can be mounted quickly just like the normal road and street luminaires without requiring additional wiring costs and complex installation operations and they can be activated by being identified in the system via web in a short time.

Real-Time Monitoring

Locations of luminaires in the application area can be seen in real-time with the "maps" application that receives data via satellite in the web interface, their operating / failure status can be monitored via web; and it can be determined whether failures stem from the luminaire itself or from the energy supply or internet connection with Rio Smart system solutions. Reports of daily / weekly / monthly consumption analysis of luminaire stacks or individual luminaires can be viewed and reported through the interface.



1. EASY INTEGRATION
Systems that can be rendered ready-to-use quickly with their easy to install structure without requiring any additional time and equipment than the mounting of a normal road and street luminaire. The system can be commissioned without requiring additional wiring costs and without spending long periods of time

2. ENERGY SAVINGS UP TO 80%
Road and street luminaires providing energy savings up to 80% by combining the environmentally friendly LED technology that offers low energy consumption with the SMART system

3. FLEXIBLE and ADAPTABLE SYSTEMS
Systems that can be rendered functional easily and that compatible with the existing infrastructure commencing from a street or an area without the necessity of far-reaching, project based works for their installations and without causing additional investment expenses.

4. 70% SAVINGS POSSIBILITY on MAINTENANCE COSTS and OPERATIONAL EXPENSES
Saving 70% on failure maintenance costs with luminaires, of which failure status can be easily determined and failure causes can be controlled on system, thanks to the system enabling remote monitoring of luminaires via the web interface; with luminaires enabling efficient intervention in case of failure without the need to use any failure detection process and without disconnecting its energy through utilizing the system

5. SAFER CITIES
This is a system designed with the objective to emit higher levels of light on specified areas by real-time controlling luminous intensity of the luminaires, the locations of which can be monitored to make streets safer via utilizing smart systems which achieves the specified illuminance levels at determined hours in areas with security issues or which can be previously programmed with appropriate scenarios

List of Technical Specifications

Parameter	Technical Data
Type	Rio Smart(36 LEDs) , Rio Medium (45-80 LEDs), Rio Large(120 LEDs)
Light Source	Led Module
Color Temperature	4000K - 5700K - 6500K
Sustainable Color Standard	3-5 MacAdam Steps (for all standard LED color temperatures)
Color Rendering Index	>70
Optimum Lumen Output	5400 - 27000 Lumens
Power	45W - 240W
Luminaire Efficacy	Efficiency up to 130 lm/W
Lifetime of Luminous Flux	100.000 hours
Fixed Luminous Flux Output	Standard
Alternative Optical Options	Classes of ME 1-2, ME-CE, MEW, CE and S, general lighting, crosswalks and rotary intersections
Protective Cover / Exterior-Surface	Tempered glass
ULOR	0%
Console Connection	42 mm - 60 mm (60 mm-76 mm for pole top)
Console Angle	(-) 10 Degrees, (-) 5 Degrees, 0 Degrees, + 5 Degrees, + 10 Degrees
Lighting Control	1-10V standard(standard), night mode programming (standard) and rotary intersection lighting classes
Smart Control	45 W - 240W (Optional)
Input Voltage	210-240V/50-60 Hz

List of Technical Specifications

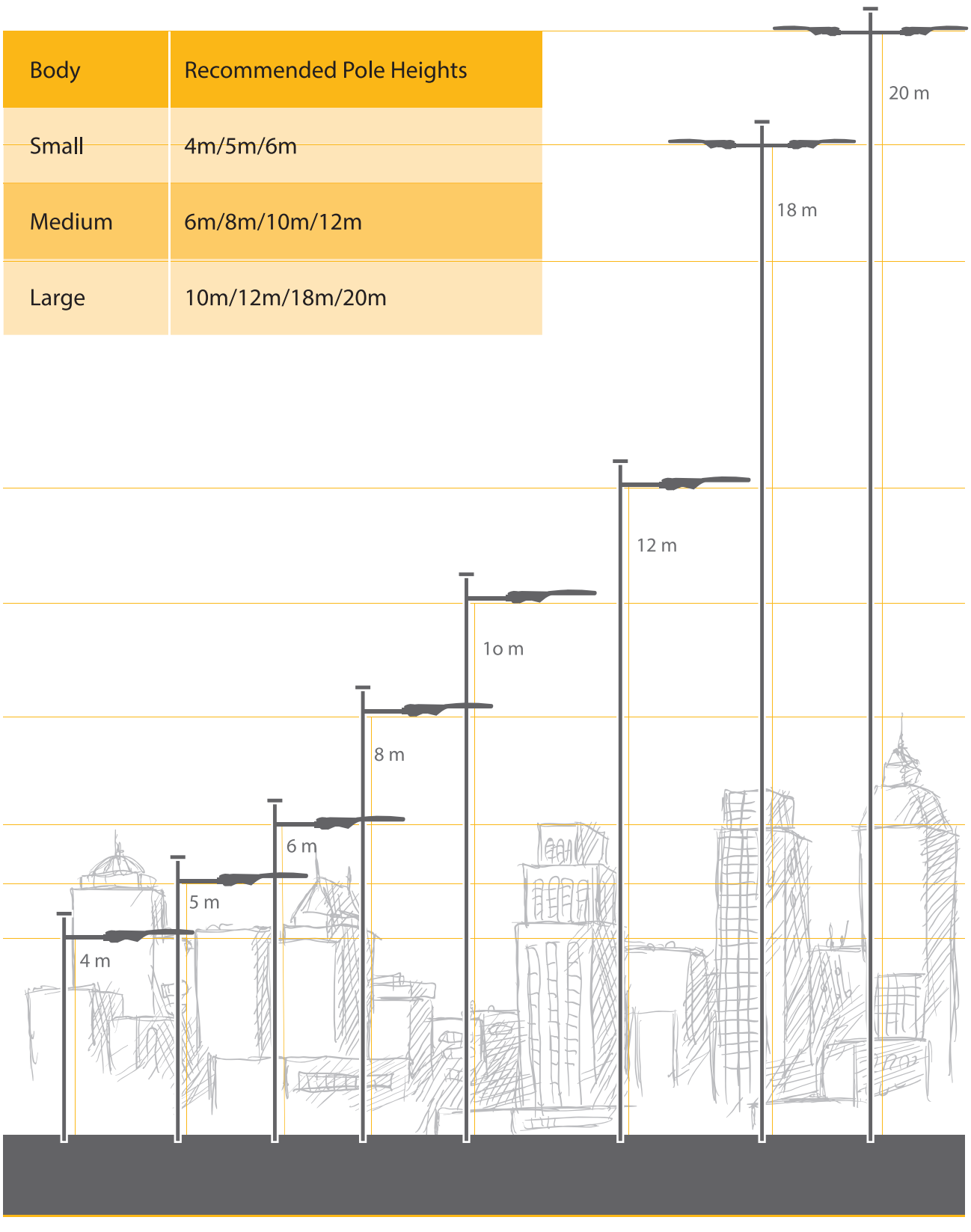
Electrical Classification	Class 1 (EN 60598)
Body Color	RAL 9006
IP Protection Class	IP66
IK Protection Class	IK08
Weight	Rio Small: 6 kg, Rio Medium: 7.5 kg, Rio Large: 10 kg
Operating Temperature Range	(-) 40 Degrees < Ta < (+) 65 Degrees
LED Module Thermal Protection	Yes
Driver Thermal Protection	Yes
High Voltage Protection	5 kV (10 kV - Optional)
Electrical Connection	Fireproof Silicone Cable
Maintenance & Repair	Easy Installation (Knife terminal block enabling the disconnection of energy when the cover is opened)
Certificate	CE Certificate No 613253

Material	Body Kit	: Aluminium Injection
	Console	: Aluminium Injection
	Diffuser (Cover)	: Tempered Glass
	Kit	: Stainless/Metal
	Optics / Lens	: PMMA

Optional Usage Options according to Different Heights

Rio LED road and street luminaires offer alternative options with pole heights between 4-20 m and different power-lumen output choices.

Body	Recommended Pole Heights
Small	4m/5m/6m
Medium	6m/8m/10m/12m
Large	10m/12m/18m/20m



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19.02.2018