# LED Codex Arundo Power

# 2020

**Arundo Power Limited** 

# **Arundo Power Limited**

IoT Solutions for: Urban Industry High tower Sport infrastructure

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# LED Solutions for Urban Industry High-tower Sport infrastructure

**Company Introduction** 

IoT Solutions for Urban Industry High tower Sport infrastructure

### It's time to safe energy!

Arundo Power Limited is known for controlling every technical detail. Through this way of working, we succeed in producing lighting that works flawlessly for years.

In 2020 we will aim for high efficiency (total efficiency minimum 160 lm / W) ... because this is the only way for your end customer to save on the energy bill!

Our projectors received a thorough upgrade: much higher efficiency, drivers at distance, easier installation, no side light, ...

Furthermore, we focus on urban lighting with intelligence. Smart City is closer than ever. Cities want to control and monitor their energy consumption to reduce the Total Cost of Ownership. As an extra important function, data mining becomes important and that's what it's all about: big data ...

We believe that reducing energy consumption and producing your energy will become increasingly important in the near future!

As always - you as our preferred customer - you can count on implicit quality and service.

The Arundo Power Team

### Warranty:

All our products have a guarantee of 5 years. This means that in the event of a failure, we will replace or repair the product at our cost. We will provide repair service, technical support and supply all necessary spare parts.

### **Preferenced partners:**





	Eagle T serie
	General product features:ClassIP 66IK 10CRI >80160 Im/W
	PF >0.95Tmin -30°CTmax 50°CLumi leds5050 chip
100W per module	CE RoHS UL 5 years guarantee

#### **Product description:**

This stadium light has modules of 100W. Each module can be rotated in horizontal and vertical direction to adjust the angle to create a maximum light uniformity. The beam angle of each individual module can be changed between 15° and 120°. Available angles are: 15°, 25°, 30°, 45°, 60°, 90°, 120°. The efficiency of the total fixture is the highest on the market. Integration of an intelligent module to control, monitor and measure is optional.

Applications: soccer fields, baseball fields, cricket court, tennis court, ice hockey playing field and high tower for hippodrome, ...

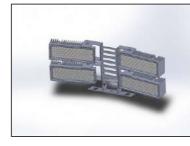
#### **Product features:**

Input voltage range: 90-305 VAC / 50-60 Hz Power factor >0.95 Lumileds chips Color temperature from 2700K to 6500K, standard CCT: 5700K and 4000K Total luminous efficiency fixture: 160 lm/W Light beam angle: 15° - 25° - 30° - 45° - 60° - 90° - 120° Safety class II IP 66 - IK 10 Working temperature: -30°C to 50°C Driver on fixture or on distance (maximum 30m) Dimmable with IoT module (and APP) as option 3 5 years guarantee





### Stadium lighting > Modular





Power consumption: 600W Lumen output: 96 000 lm Width: 730 mm Length: 100 mm Height: 470 mm Weight: 17.0 kg Article: 1010600

#### Eagle T800

Power consumption: 800W Lumen output: 128 000 lm Width: 730 mm Length: 100 mm Height: 615 mm Weight: 22.3 kg Article: 1010800

#### Eagle T1000

Power consumption: 1 000W Lumen output: 160 000 lm Width: 730 mm Length: 100 mm Height: 760 mm Weight: 27.4 kg Article: 1011000

### Eagle T1200

Power consumption: 1 200W Lumen output: 192 000 lm Width: 730 mm Length: 100 mm Height: 905 mm Weight: 32.7 kg Article: 1011200

### Eagle T1400

Power consumption: 1 400W Lumen output: 224 000 lm Width: 730 mm Length: 100 mm Height: 1 045 mm Weight: 44.5 kg Article: 1011400

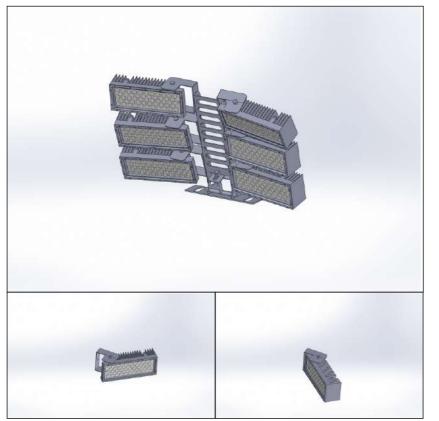
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#### Eagle T400

Power consumption: 400W Lumen output: 64 000 lm Width: 730 mm Length: 100 mm Height: 326 mm Weight: 11.6 kg Article: 1010400

#### Eagle T600



Each individual module can be rotated to focus on the theoretical point of the light study.

This method guarantees a uniform luminosity on the projected area.

Turning angle: -45° to +45°

Turning angle: 150°









### Stadium lighting > Modular



Power consumption: 300W Lumen output: 48 000 lm Width: 80 mm Length: 450 mm Height: 470 mm Weight: 9.9 kg Article: 1020300

#### Eagle T400 bis

Eagle T300

Power consumption: 400W Lumen output: 64 000 Im Width: 80 mm Length: 615 mm Height: 470 mm Weight: 16.3 kg Article: 1020401

#### Eagle T500

Lumen output: 80 000 lm Width: 80 mm Length: 774 mm Height: 470 mm Weight: 24.3 kg Article: 1020500

#### Efficiency

(due to under driving each chip).

Investment!

#### Drivers

distance (maximum 30m) while losing less than 3% power. much easier.

#### IoT module

We care about the future... Therefore we created our own Intelligent Module which has the possibility to switch ON/OFF, dimming, measure power consumption, ... free APP.

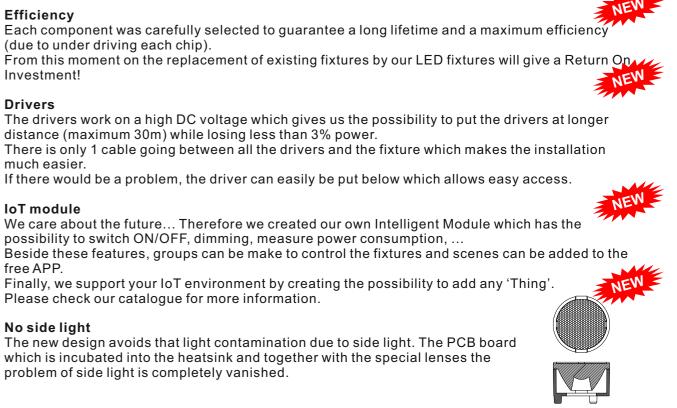
Finally, we support your IoT environment by creating the possibility to add any 'Thing'. Please check our catalogue for more information.

#### No side light

The new design avoids that light contamination due to side light. The PCB board which is incubated into the heatsink and together with the special lenses the problem of side light is completely vanished.

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Power consumption: 500W



	Eagle E serie
	General product features:
	Class IIIP 66IK 10CRI >80160 Im/W
	PF >0.95Tmin -30°CTmax 50°CLumi LEDS5050 chip
100W per module	CE RoHS UL 5 years guarantee

#### **Product description:**

This stadium light has modules of 100W. The beam angle of each individual module can be changed between 15° and 120°.

Available angles are: 15°, 25°, 30°, 45°, 60°, 90°, 120° The efficiency of the total fixture is the highest on the market.

Integration of an intelligent module to control, monitor and measure is optional.

Applications: soccer fields, baseball fields, cricket court, tennis court, ice hockey playing field and high tower for hippodrome, ...

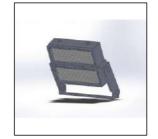
#### **Product features:**

Input voltage range: 90-305 VAC / 50-60 Hz Power factor >0.95 Lumileds chips Color temperature from 2700K to 6500K, standard CCT: 5700K and 4000K Total luminous efficiency fixture : 160 lm/W Light beam angle: 15° - 25° - 30° - 45° - 60° - 90° - 120° Safety class II IP 66 - IK 10 Working temperature: -30°C to 50°C Driver on fixture or on distance (maximum 30m) Dimmable with IoT module (and APP) as option 3 5 years guarantee

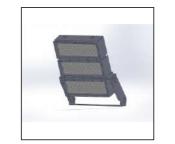




# Stadium lighting > Fixed modules



# Width: 90 mm Weight: 7.9 kg



Eagle E200 Power consumption: 200W Lumen output: 32 000 lm Length: 346 mm Height: 290 mm Article: 1030200 Eagle E300 Power consumption: 300W Lumen output: 48 000 lm Width: 90 mm Length: 346 mm Height: 390 mm Weight: 10.0 kg Article: 1030300 Eagle E400 bis Power consumption: 400W Lumen output: 64 000 lm Width: 90 mm Length: 346 mm Height: 545 mm Weight: 15 kg Article: 1030400 Eagle E400 Power consumption: 400W Lumen output: 64 000 lm Width: 90 mm Length: 654 mm Height: 325 mm Weight: 14.6 kg Article: 1030401 Eagle E500 Power consumption: 500W Lumen output: 80 000 lm Width: 90 mm Length: 346 mm Height: 655 mm Weight: 15 kg Article: 1030500







#### No side light

The new design avoids that light contamination due to side light. The PCB board which is incubated into the heatsink and together with the special lenses the problem of side light is completely vanished.

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### Stadium lighting > Fixed modules





#### Efficiency

Each component was carefully selected to guarantee a long lifetime and a maximum efficiency (due to under driving each chip).

From this moment on the replacement of existing fixtures by our LED fixtures will give a Return On Investment!

#### Drivers

The drivers work on a high DC voltage which gives us the possibility to put the drivers at longer distance (maximum 30m) while losing less than 3% power.

There is only 1 cable going between all the drivers and the fixture which makes the installation much easier.

If there would be a problem, the driver can easily be put below which allows easy access.

#### IoT module

We care about the future... Therefore we created our own Intelligent Module which has the possibility to switch ON/OFF, dimming, measure power consumption, ...

Beside these features, groups can be make to control the fixtures and scenes can be added to the free APP.

Finally, we support your IoT environment by creating the possibility to add any 'Thing'. Please check our catalogue for more information.

### Stadium lighting > Fixed modules



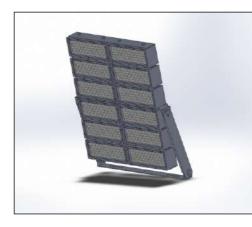
Power consumption: 600W Lumen output: 96 000 lm Width: 90 mm Length: 654 mm Height: 390 mm Weight: 19.0 kg Article: 1030600



Power consumption: 800W Lumen output: 128 000 lm Width: 90 mm Length: 654 mm Height: 550 mm Weight: 23.9 kg Article: 1030800



Power consumption: 1 000W Lumen output: 160 000 lm Width: 90 mm Length: 654 mm Height: 652 mm Weight: 28.7 kg Article: 1031000



Power consumption: 1 200W Lumen output: 192 000 lm Width: 90 mm Length: 654 mm Height: 775 mm Weight: 33.2 kg Article: 1031200



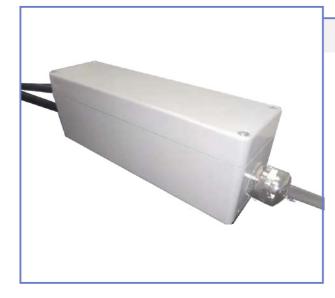
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#### Eagle E600

#### Eagle E800

#### Eagle E1000

#### Eagle 1200



### **Inagrit - Stadium**

#### General product features:

The intelligent module consist of a UV resistant box (with an internal or external antenna) IP67 protected, which will be mounted on a lighting fixture.

Each project will have minimum 1 gateway module and several nodes which can be controlled through an APP on android or Iphone.

#### **Product description:**

An intelligent system gives the possibility to do monitoring, controlling and data mining. It is connected to any of our lighting fixtures and has several standard features like smart metering (monitor power consumption), dimming control (manual or by shuffle bar), LoRa device (communication with other devices and gateway), WiFi (to stream camera images), motion control input (to control the light), audio input on the gateway(to trigger the light through sound).

All these functions are controlled through an APP and/or through a monitoring platform.

The sky is the limit if it comes to the possibilities. Any kind of sensor can be connected with the CAN bus and be monitored from distance.

#### **Product features:**

Modem connection demon (able to connect and reconnect to network) Routing between Ethernet port and 3G/4G network Cloud agent to connect to device cloud (MQTT protocol) Input voltage range: 100 - 240 VAC / 50-60 Hz (on grid) or 9 - 36 VDC (for off grid) Maximum switching power: 2kW Output signal dimming: 0 - 10 VDC Communication range with internal antenna: 1 km or external antenna: between 3 and 5 km







System description:

The most standard configuration is a gateway (which works like a concentrator) and one or more groups of nodes.

The gateway is connected to the cloud through a local WiFi, a local WiFi hotspot or on request through 3G/4G network, POE connector. A WiFi Manager makes it possible to switch to the network of choice.

Each node is scanned and connected through LoRa network with the gateway. During operations, the measured information can be requested or a command can be given through the gateway.

#### Application (short description)

14.58	7.0599	8-4 8 A 8 C
Devi	ices	÷
¥	AMS_C861_G3 May 6, 2019, 2:58 16 PM	anline
ų	Gateway Light Fair May 6, 2019, 2:58:15 PM	online
¥	AMS_807D3A51F175	offline
¥	Briano 90 Apr 28, 2019, 8:05:06 PM	offline
÷	Node 24 lora address: 190	active
۰	Node 23 Jora address: 166	active
¢	Node 21 lora address: 210	active
		1

installed in a specific project. up and running.

Each node can be monitored regarding to energy consumption in real time by measurement of voltage, current, cos phi and wattage.

A node can be remotely dimmed with a shuffle bar or giving in a value. In addiction, the power can be switched on or off.

minutes.

In a later phase, "Scenes" will be added to select a preset configuration by a predefined user (for example: a dimming value for a football court for a trainer).

<b>00</b>			
← Node 23			
*	•		
Power Relay			
Power Consumption			
Active Power (W)			
Voltage (V)	24		
Surrent (A)	0.10		
Apparent Power (VA)			
Power Factor (%)			
lgg. energy (Ws)	1050240		
ш	±		
Devices	Account		

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The application gives an overview of the gateway(s) and the nodes

With a color notification, a user can see clearly if a gateway or node is

A group of devices can be created to control several nodes at the same time. Setting up or changing these settings can be done in

### Industrial lighting > Flood light serie (warehouse solution)

#### Ceto General product features: CRI Class 180 IP 66 IK 10 >80 Im/W Ш 5050 Lumi PF Tmin Tmax LEDS -30°C 50°C chip >0.9 5 years CE RoHS UL guarantee

#### **Product description:**

This modular flood light has a power range of 90W and 180W and is used to replace traditional discharge lamps and fluorescent tubes on high ceilings. Due to the high lumen efficiency of 165 lm/W, it has a short payback time. The fixture is available in 7 angles: 15° - 25° - 30° - 45° -60° - 90° - 120° and has a standard 3 in 1 dimmable driver (1-10VDC, 10V PWM or resistance). With an intelligent module as option, the light fixture can be switched ON/OFF or dimmed from distance. Groups can be made and Scenes can be selected.

Applications: warehouse, high tower, high ceiling shopping malls, churches, gyms

#### **Product features:**

Input voltage range: 95 - 305 VAC / 50-60 Hz Power factor >0.95 3 in 1 dimmable driver (1-10VDC, 10V PWM or resistance) Color temperature: 3000K - 4000K - 5000K - 6000K, standard CCT: 4000K Total luminous efficiency (without lens 120°): 180 lm/W- efficiency with lens: 160 lm/W Light beam angle: 15° - 25° - 30° - 45° - 60° - 90° - 120° Safety class II IP 66 - IK 10 Working temperature: -30°C to 50°C Intelligent module (optional)

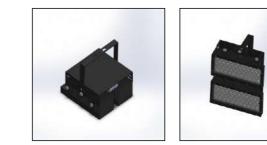
5 years guarantee





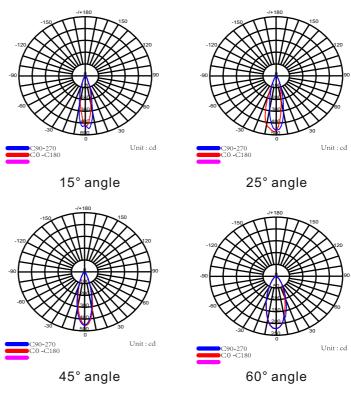








#### Light distribution curves



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#### Ceto 90

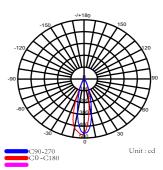
Power consumption: 90W Lumen output: 16 200 lm Width: 130 mm Length: 288 mm Height: 128 mm Weight: 3.0 kg Article: 2080090

#### Ceto 180 square

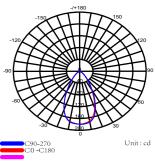
Power consumption: 180W Lumen output: 32 400 lm Width: 246 mm Length: 288 mm Height: 128 mm Weight: 6.5 kg Article: 2080180

#### Ceto 180 rectangular

Power consumption: 180W Lumen output: 32 400 lm Width: 130 mm Length: 575 mm Height: 128 mm Weight: 6.6 kg Article: 2080181

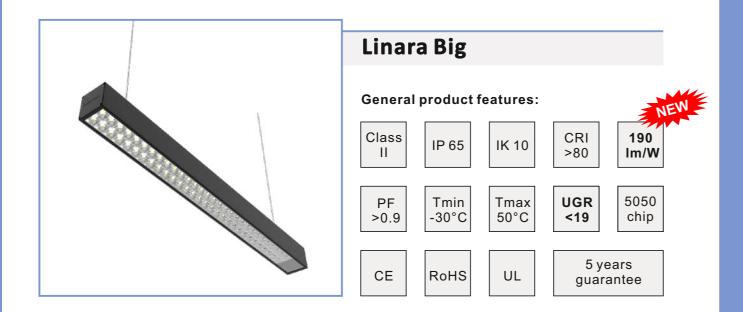


30° angle



90° angle

### Industrial lighting > Linear High bay serie (rack solution)



#### Product description:

This linear high bay has a power range of 75W or 150W and is used to replace traditional lighting on heigh ceilings in racks. Due to the high lumen efficiency of 180 lm/W, it has a short payback time.

The fixture can be mounted against a surface (wall or ceiling) with a bracket or pending from the ceiling with a cable. As extra feature it can be fitted with a KBA or KBB profile of Schneider Electric.

The fixture has an asymmetric angle of 40°/65° and a special structure reflector to avoid glare which can be a crucial issue in a corridor of racks. UGR is lower than 15.

The Linara a standard 3 in 1 dimmable driver 0-10VDC which is controlled by an IoT module. This intelligent module can through an APP group fixtures and turn them off or dim them from distance through LoRa technology.

Applications: warehouse, high ceiling shopping malls, churches, gyms.

#### **Product features:**

Input voltage range: 95 - 305 VAC / 50-60 Hz Power factor >0.95 3 in 1 dimmable driver (0-10VDC) IoT module inside to connect motion sensor or other sensors through CANBUS APP available to control group or individual dimming and on/off Power metering inside

Color temperature: 3000K - 4000K - 5000K - 6000K Total luminous efficiency: >180 lm/W (the chip set is 230 lm/ Light beam angle: 40° flood (190 lm/W) - 60° flood (190 lm/W) - 55° square (180 lm/W) -40°/65° rectangular (180 lm/W)



Safety class II IP 65 - IK 10 Working temperature: -30°C to 50°C Color housing:black structure coating (other colors on demand)

5 years guarantee

### Industrial lighting > Linear High bay serie (rack solution)



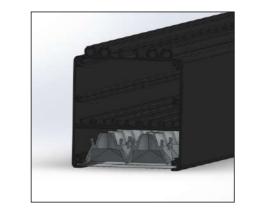
Power consumption: 65W Lumen output: 11 700 lm Width: 80 mm Length: 1 280 mm Height: 85 mm Weight: 3,8 kg Article: 2090065

Linara Big 65

#### Linara Big 130



Power consumption: 130W Lumen output: 23 400 lm Width: 80 mm Length: 2 200 mm Height: 85 mm Weight: 5 kg Article: 2090130

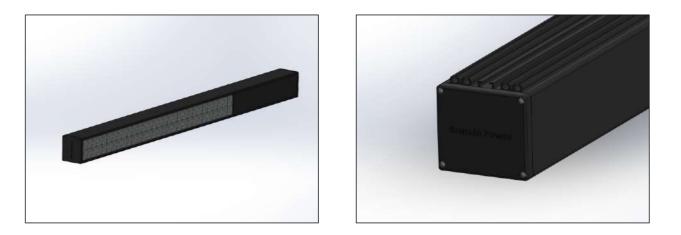


PCB.

Any kind of suspension of clamp holder can be integrated according to customer request. Standard clips for Canalis system KBA and KBB of Schneider is available.



These special reflectors have the capability to reduce the glare to minimum level while the total lumen efficiency stays high.

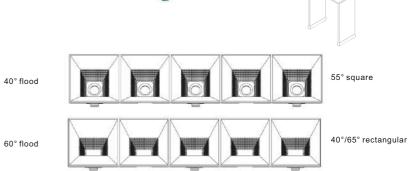


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The profile extrusion has a separate level for the driver to avoid contact with the heat dissipation surface of the

Sealed tempered glass and a cover with rubber ring assure the IP rating.



### Industrial lighting > Linear High bay serie (rack solution)



#### Product description:

This linear high bay has a power range of 75W or 150W and is used to replace traditional lighting on heigh ceilings in racks. Due to the high lumen efficiency of 180 lm/W, it has a short payback time.

The fixture has to be pended from the ceiling with a cable. As extra feature it can be fitted with a KBA or KBB profile of Schneider Electric. The idea is to create an endless light line.

The fixture has an asymmetric angle of 40°/65° and a special structure reflector to avoid glare which can be a crucial issue in a corridor of racks. UGR is lower than 15.

The Linara has a standard 3 in 1 dimmable driver 0-10VDC which is controlled by an IoT module. This intelligent module can through an APP group fixtures and turn them off or dim them from distance through LoRa technology.

As extra option the line can be tunable white on request.

Applications: warehouse, shopping malls, churches, ...

#### **Product features:**

Input voltage range: 95 - 305 VAC / 50-60 Hz Power factor >0.95 3 in 1 dimmable driver (0-10VDC) IoT module inside to connect motion sensor or other sensors through CANBUS APP available to control group or individual dimming and on/off Power metering inside

Color temperature: 3000K - 4000K - 5000K - 6000K or tuneable white: 2700 to 6500K Luminous efficiency: 180 lm/W (chip set is 235 lm/W) Light beam angle; 40° flood - 60° flood - 55° square - 40°/65° rectangular

NEW UĞR < 19 🜙

Safety class II IP 44 - IK 10 Working temperature: -30°C to 50°C Color housing: white structure coating (other colors on demand)

5 years guarantee

### Industrial lighting > Linear High bay serie (rack solution)



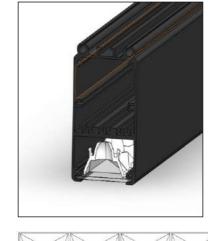
Power consumption: 40W Lumen output: 7 200 lm Width: 48 mm Length: 1 200 mm Height: 85 mm Weight: 2,7 kg Article: 2091040

#### Linara Small 80

Linara Small 40



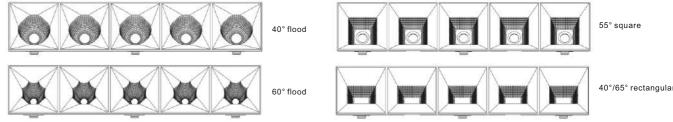
Power consumption: 80W Lumen output: 14 400 lm Width: 48 mm Length: 2 400 mm Height: 85 mm Weight: 5,4 kg Article: 2071080



The tempered glass avoid early contamination of the high efficiency reflectors.

Schneider is available

The joint piece to close the junction and the holder can connect 2 profiles to create an endless light line. There is no limit to the amount of fixtures which can be connected. Suspension cable needed every 3 meter.



lumen efficiency stays high.





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The profile extrusion has a separate level for the driver to avoid contact with the heat dissipation surface of the PCB.

Any kind of suspension of clamp holder can be integrated according to customer request. Standard clips for Canalis KBA of

#### These special reflectors have the capability to reduce the glare to minimum level while the total

### Industry > Low bay > Scoop light (Shop window lighting)

	Scopi
	General product features:Class IIIP 44IK 08CRI >94170 Im/W
Contraction of the second second	PF >0.9Tmin -30°CTmax 50°CLumi LEDSchip 5050
	CE RoHS UL 5 years guarantee

# Industry > Low bay > Scoop light (Shop window lighting)



#### Scopi 90

Power consumption: 90W Lumen output: 15 300 Im Width: 415 mm Length: 245 mm Height: 130 mm Weight: 4.1 kg Article: 6020090

# Without cover plate:

Width: 355 mm Length: 180 mm Height: 128 mm

#### Product description:

This light fixture is designed to use in a shopping mall. Especially in the shop window, these lights burn day and night (for advertising purposes and safety). The cover plate can be a customised dimension to cover the cut out hole in the ceiling completely. Standard color is white but other colors are optional. The color rendering is from very high importance and is higher than 90.

Applications: shopping mall, shop window

#### **Product features:**

Input voltage range: 100 - 240 VAC / 50-60 Hz Power factor >0.98 Color temperature: 3000K - 4000K - 5000K - 6000K Total luminous efficiency (without lens): 170 lm/W - with lens: 150 lm/W Light beam angle: 15°, 25°, 30°, 45°, 60°, 90°, 120°

Safety class II IP 44 - IK 08 - CRI>94 Working temperature: -30°C - 50°C Controlled with an IoT module as option

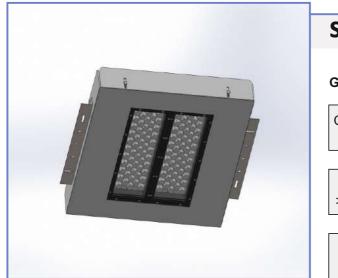
5 years guarantee







### Industry > Low bay > Canopy light



### Scalo

General	General product features:				EW
Class II	IP 66	IK 10	CRI 80	180 Im/W	
PF >0.98	Tmin -30°C	Tmax 50°C	Lumi LEDS	chip 5050	
CE	RoHS	UL	5 ye guara		

#### **Product description:**

This tile is commonly used in the ceiling of a fuel station. The power range is 90W or 180W. There are different angles available depending on the height of the ceiling: 15°, 25°, 30°, 45°, 60°, 90°, 120°.

There are 2 models: recessed (with cover plate) or mounted (with box). The standard color of the framework is white other colors are optional.

Applications: Fuel stations, shelter

#### **Product features:**

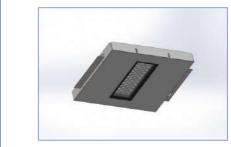
Input voltage range: 100 - 240 VAC / 50-60 Hz Power factor >0.98 Color temperature: 3000K - 4000K - 5000K - 6000K Total luminous efficiency: 180 lm/W (without lens) - 160 lm/W (with lens) Light beam angle: 25° - 60° - 90° - 160° Safety class II IP 66 - IK 10 - CRI>80 Working temperature: -30°C - 50°C

5 years guarantee





## Industry > Low bay > Canopy light



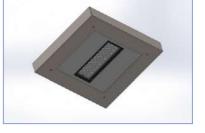
#### Scalo 90 recessed

Power consumption: 90 W Lumen output: 16 200 lm Width: 400 mm Length: 400 mm Height: 82 mm Weight: 7.4 kg Article: 6010090

#### Scalo 180 recessed

Width: 400 mm Length: 400 mm Height: 82 mm Weight: 9.6 kg Article: 6010180

#### Scalo 90 mounted





#### Scalo 180 mounted

Power consumption: 180W Lumen output: 32 400 lm Width: 480 mm Length: 480 mm Height: 84 mm Weight: 12.9 kg Article: 6010181



Power consumption: 180W Lumen output: 32 400 lm

Power consumption: 90W Lumen output: 16 200 lm

	Briano
	General product features:ClassIP 66IK 09CRI >70200 Im/W
1 4 C	PF >0.95Tmin -30°CTmax 50°CCree chipchip 5050
	CE RoHS UL 5 years guarantee

#### Product description:

This street light fixture has a bracket to be mounted horizontal or vertical. The power range of this model varies from 30W to 180W. Optional is a dimmable driver (1-10VDC or DALI) and an intelligent module to control the light. Together with this comes a (microwave) motion sensor

Applications: street poles, parking places, parks, pedestrian paths

#### Product features:

Input voltage range: 90-305 VAC / 50-60 Hz Power factor >0.95 Color temperature: 3000K - 4000K - 5000K - 6000K Toital uminous efficiency: 190 to 200 lm/W (depending on the wattage) Light beam angle: asymmetric light beam (all types available) Spigot connection: 60 mm - 0° to 90° adjustable

Safety class II IP 66 - IK 09 - CRI>70 Working temperature: -30°C - 50°C

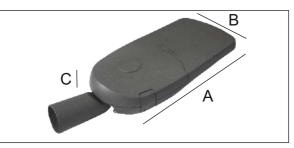
Options: - 3 in 1 dimmable driver (1-10VDC, DALI)

- 10kV surge protection

- intelligent module with LoRa or 3G/4G

5 years garantee





### Street light > On grid

#### Product dimensions:

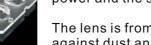
		Dimensions			Deuron	<b>F</b> fficien en	Lunchara
Article	А	В	С	Chips	Power	Efficiency	Luminous
	(mm)	(mm)	(mm)		(W)	(lm/W)	(lm)
4060040	535	200	120	32	40	190	7600
4060060	620	235	125	48	60	190	11400
4060080	620	235	125	96	80	200	16000
4060100	620	235	125	96	100	200	20000
4060120	690	260	130	96	120	190	22800
4060150	810	320	135	160	150	200	30000
4060180	810	320	135	160	180	200	36000

#### Modular lenses (efficiency 92%)



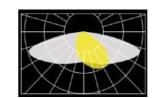


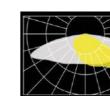
Each fixture has a number of modular lenses to achieve the power and the specific angle.



The lens is from polycarbonate material (PC) and is protected against dust and humidity by a glass cover.

#### Light Distribution Curve:





Type II - S

Type III - M





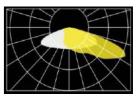
Type V - M

Type IV - S

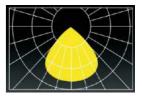
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Type IV - M



Type V - M

### Intelligent Module > Street lighting



### Inagrit - Urban

#### General product features:

7 pin NEMA socket to attach to the top of the street light.

3 central bajonet pins hold the intelligent module on its position with a click and turn system.

There are 2 different modules: one for on grid solutions (running on 240 VAC) and one for off grid solutions (running on 5 to 36VDC) The communication can be asked for 3G or 4G networks.

#### **Product description:**

Intelligence results in monitoring, controlling and data mining

An intelligent module is connected to any of our lighting fixtures and has several standard features like smart metering (monitor power consumption), accelerometer (theft detection), dimming control, LoRa (communication with other devices and gateway), WiFi (to stream camera images), motion control input (to control the light), audio input (to trigger the light through sound).

All these functions are controlled through an APP or though a monitoring platform

Next to these functions the sky is the limit. Any kind of sensor can be connected with the CAN bus and be monitored from distance. With the CPU module, wide band video can be streamed through WiFi or a GPRS network.

#### **Product features:**

Modem connection demon (able to connect and reconnect to network) Routing between Ethernet port and 3G/4G network Cloud agent to connect to device cloud (MQTT protocol) Input voltage range: 100 - 240 VAC / 50-60 Hz Maximum switching power: 2kW Output signal dimming: 0 - 10 VDC





### Intelligent Module > Street lighting



#### System description:

The communication is made directly through the existing 3G or 4G network. This means a very secure communication which runs extremely fast and creates the possibility to upgrade -if needed- the firmware. A disadvantage is that each access point will consume a very small amount of data per month. The standard WiFi connection can be used for streaming of video images.

Each module is connected to the cloud and can be used for controlling, monitoring or data mining purposes.

There are a standard amount of functions which are slightly different for off grid and on grid. On grid will monitor the (online) energy consumption while the off grid application will focus on monitoring the battery parameters (charging, decharging, temperature, ...)

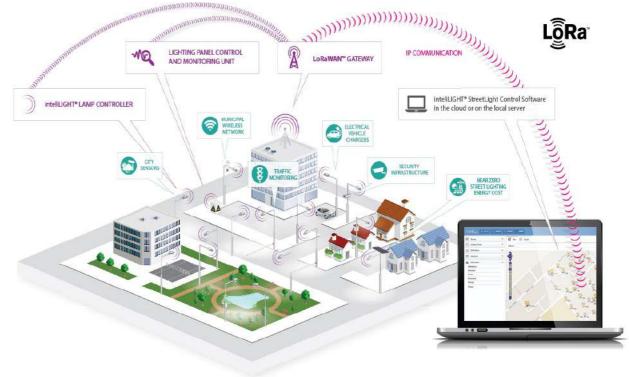
All intelligent modules can dim or power on/off the street light. Some extra nice features are the possibility to make groups (families) who will light up together based on an event (like a trigger from a motion sensor).

Another feature is the integration of an accelerator sensor which can detect theft while creating abnormal vibrations on the pole...

The extra input from a CAN bus gives the possibility to link an external 'thing' while there is a DC voltage connector available to supply power when needed.

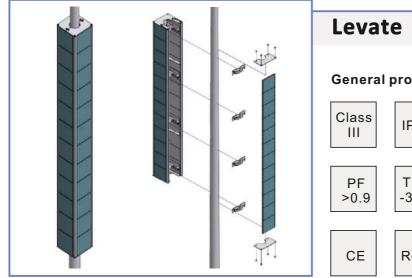
A standard GP I/O is available to connect a PIR or MW motion sensor.

# **Smart City Network**

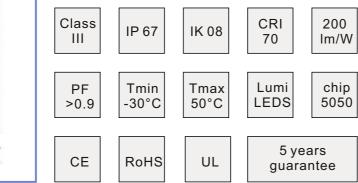


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### Solar street lighting > Solar panels around the pole



#### General product features:



#### **Product description:**

Off grid Intelligent Street lighting (OIS) is efficient street lighting where the energy is delivered from a battery pack which is charged during the day.

The system is controlled and monitored through an intelligent module. By preset values in time or with a motion sensor the light is switched on/off and dimmed.

Each light pole is connected directly through 4G with the cloud and the network of poles is communicating through LoRa protocol over long distance (min. 3 km). This loT module can be used to monitor any sensor.

The system contains: the street light, the intelligent module with motion sensor and I/O to add any sensor, solar panel structure, MPPT to convert sun energy, battery pack and BMS to assure a long battery lifetime.

#### Advantages are:

- all poles are master and work on their own
- the system can be mounted on an existing pole
- the lighting power can be higher than a solar panel mounted on the top
- the number of possibilities with the IoT module are endless

Applications: Locations where there is no grid and where the grid is unstabile, places where the solar energy is high and the demand of lighting is also high during the night

#### **Product features:**

Isolar powered light on 24VDC battery pack Lithium ion battery cells: 5 years guarantee

LED modules Any color temperature from 3000K to 6000K Luminous efficiency: 200 lm/W - CRI 70

Safety class III IP 67 - IK 08 Working temperature: -30°C to 50°C RH%: till 95%

Dimmable and time controlled light output Microwave sensor integrated

### Solar street lighting > Solar panels around the pole

#### Levate 40

Power consumption: 40W Lumen output: 8.000 lm Pole height: 6m Battery capacity: 37,5 Ah - 24V DC Article: 4030040

#### Levate 80

Power consumption: 80W Lumen output: 16.000 lm Pole height: 8m Battery capacity: 50 Ah - 24V DC Article: 4030080



#### Levate 120

Power consumption: 120W Lumen output: 24.000 lm Pole height: 10m Battery capacity: 75 Ah - 24V DC Article: 4030120

#### Levate 160

Power consumption: 160W Lumen output: 32.000 lm Pole height: 12m Battery capacity: 100 Ah - 24V DC Article: 4030160



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