

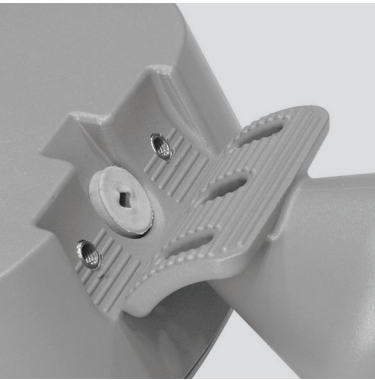


STREETRAY L I T P A



Pole installation bracket

The pole mounting apparatus made of aluminum injection material. The stainless-steel tightening screws are fixing to the top of the pole or arm in the best possible way.



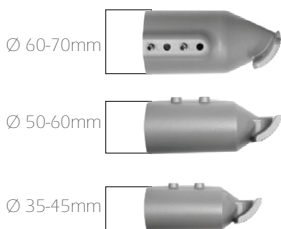
Clamping groove system to prevent slipping

Adjustment grades have been placed at 2.5 degrees to facilitate the angling of the fixture as well as to prevent the distortion of the angle.



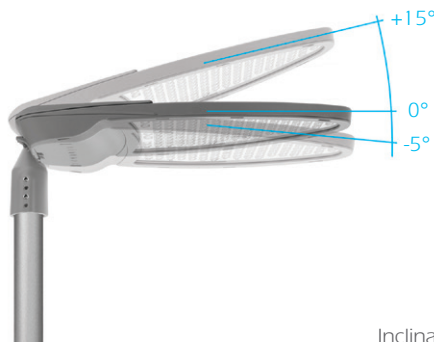
Pole mounting brackets available in three different diameters. Different assembly apparatus are available on the basis of the post or arm of the pole type used.

Pole Bracket Diameters:

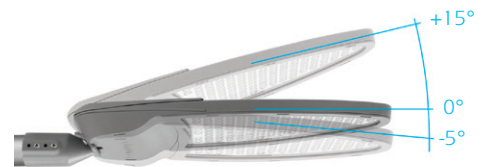


M10 Hex-screws are used on the brackets

Pole installation:



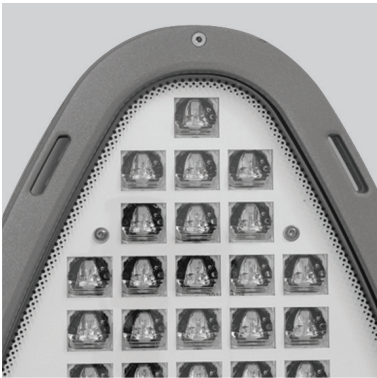
Console installation:



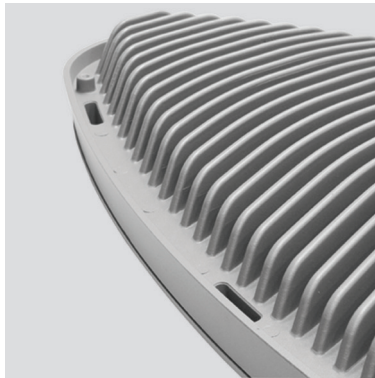
Inclination angles with mounting bracket from +15 to -5°



A polyurethane liquid cast gasket applied by robot provides equal load bearing thickness at each and every point ensuring uniform compression force between the glass and the body and for maximum assurance of IP66 ingress protection.



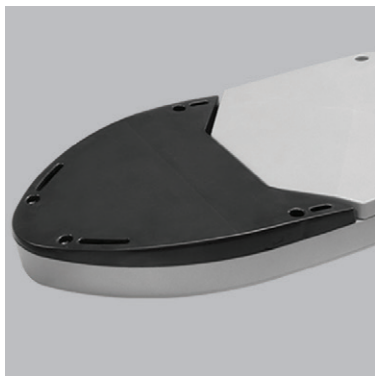
Water discharge vents



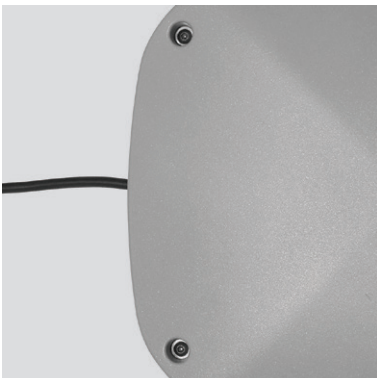
Water management channels



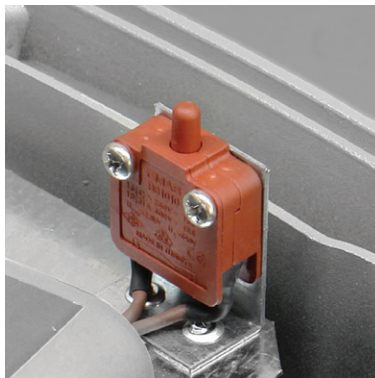
Installation points for spikes to prevent bird droppings which can cause serious corrosive effect on the fixture.



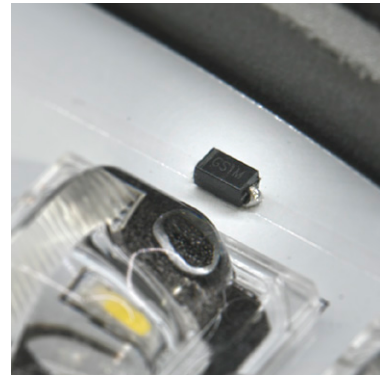
Protective cover (optional)



Special cable endures temperatures up to 200°C, solar radiation and grease.



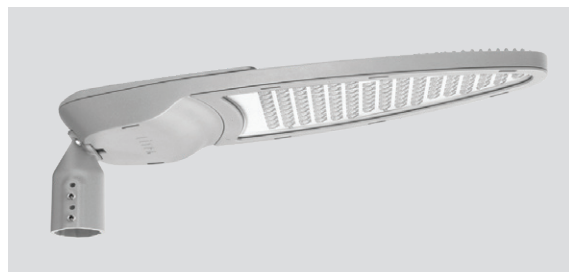
A safety cut-out system automatically switches off the fixture electronics when the cover is opened.



The electronic cards used in Streetray are protected against reverse polarization.



LYS 100

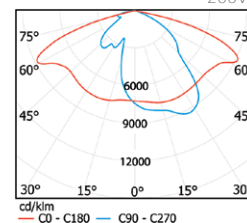


In particular, LYS100 fixtures that are planned to be used for M1 and M2 type roads are easily capable of providing the illumination standard required for these types of roads. Thanks to the special optical lens, the distances between the poles can be arranged without distortion of the uniformity. The diversity of the assembly apparatus ensures problem free renewals for retrofitting. These are the best alternatives in the illumination of the subject matter roads thanks to their elegant bodies, excellent thermal performance and superior optical properties.

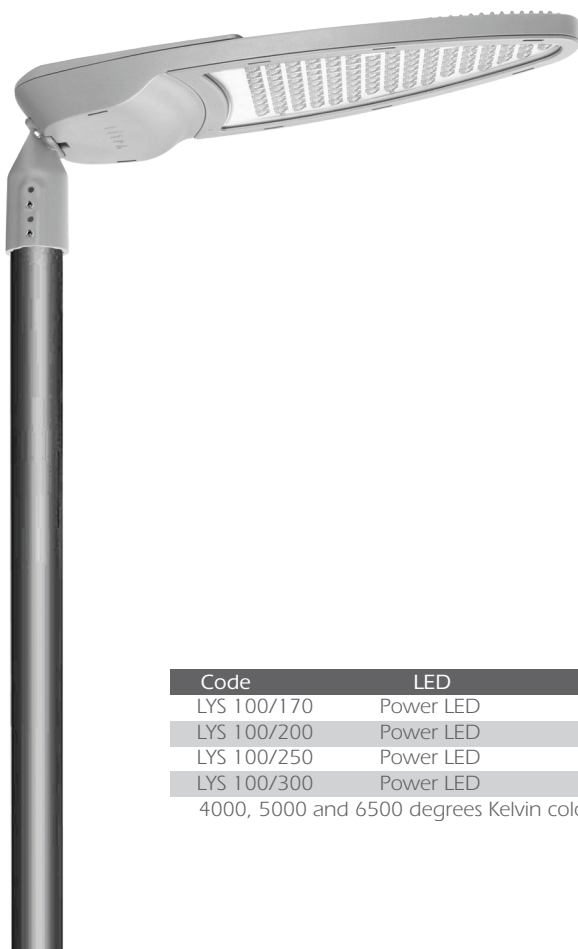
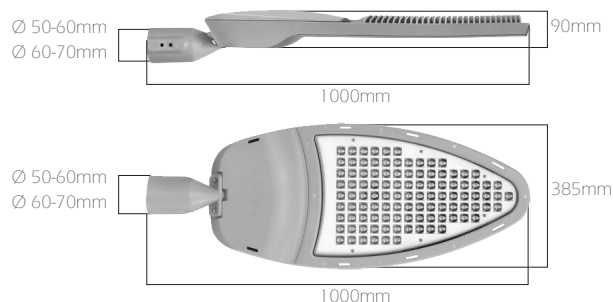
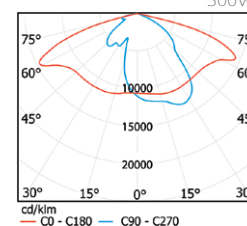
Body: Injected aluminium
 LED: High efficient Power LEDs
 Glass: 5 mm thick and tempered, ground with serigraphic printing

IP66

200W



300W

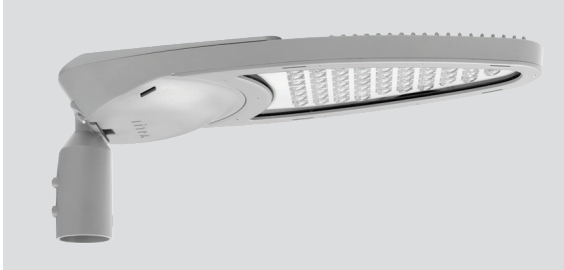


Code	Weight	Box Dimensions
LYS100	15.2 kg	1020 x 400 x 120 mm

Code	LED	Light Output	System Power	Colour Temp.
LYS 100/170	Power LED	21,000 lm	170 W	4000-5000-6500 K
LYS 100/200	Power LED	26,000 lm	200 W	4000-5000-6500 K
LYS 100/250	Power LED	30,720 lm	250 W	4000-5000-6500 K
LYS 100/300	Power LED	35,690 lm	300 W	4000-5000-6500 K

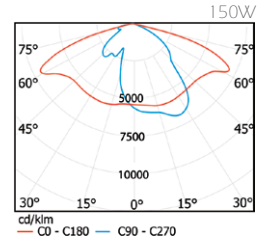
4000, 5000 and 6500 degrees Kelvin colour temperature models available

LYS 50

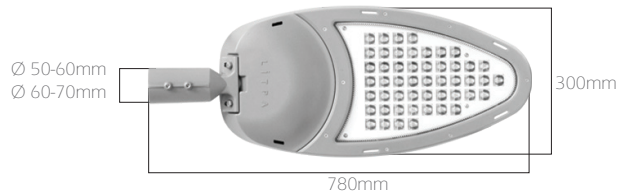
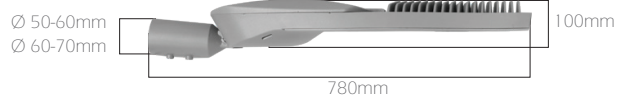


Body: Injected aluminium
 LED: High efficient Power LEDs
 Glass: 5 mm thick and tempered, ground with serigraphic printing

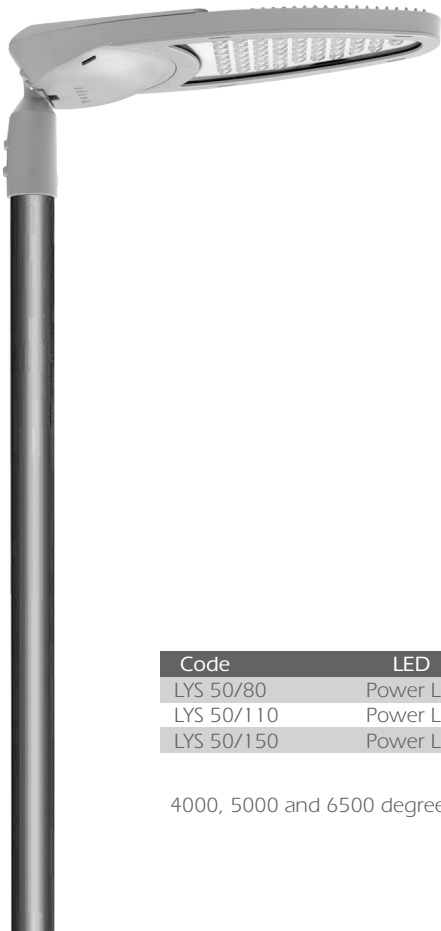
IP66



LYS50 type of fixtures that are planned to be used for M2, M3, M4 types of roads, easily provide the values required for roads concerned. The level of the superior optical performance ensures that all quality dimensions are met.



Code	Weight	Box Dimensions
LYS 50	9.8 kg	800 x 320 x 120 mm



Code	LED	Light Output	System Power	Colour Temp.
LYS 50/80	Power LED	10,150 lm	80W	4000-5000-6500 K
LYS 50/110	Power LED	13,200 lm	110W	4000-5000-6500 K
LYS 50/150	Power LED	17,250 lm	150W	4000-5000-6500 K

4000, 5000 and 6500 degrees Kelvin colour temperature models available

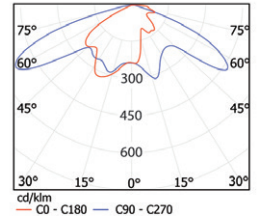


LYS 20

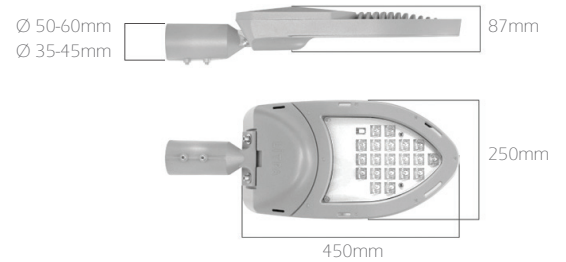


Body: Injected aluminium
 LED: High efficient Power LED
 Glass: 5 mm thick and tempered, ground with serigraphic printing

IP66



LYS20 has been developed by Litpa to be used on M3, M4 types of roads and for all other illumination needs of the environment is a fixture that provides a complete solution. It is an excellent alternative that can be used in all areas, superior thermal performance, optical efficiency and low energy consumption.

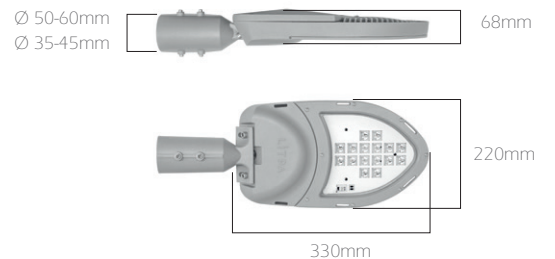
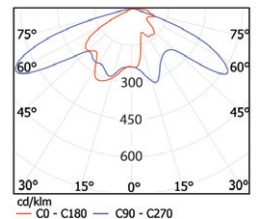


Code	Weight	Box Dimensions
LYS 20/45-72	5.7 kg	620x260x120mm

Code	LEDs	Light Output	System Power	LED Current	Colour Temp.
LYS 20/45	High Efficient Power LEDs	5,200 lm	45 W	700mA	4000-5000-6500 K
LYS 20/72	High Efficient Power LEDs	7,500 lm	72 W	1.050mA	4000-5000-6500 K

4000, 5000 and 6500 degrees Kelvin colour temperature models available

LYS 15



Code	Weight	Box Dimensions
LYS 15/20-27-35	4.8 kg	600x270x100mm

Code	LEDs	Light Output	System Power	LED Current	Colour Temp.
LYS 15/20	Power LED	2,080 lm	20 W	350mA	4000-5000-6500 K
LYS 15/27	Power LED	3,000 lm	27 W	500mA	4000-5000-6500 K
LYS 15/35	Power LED	4,000 lm	35 W	700mA	4000-5000-6500 K

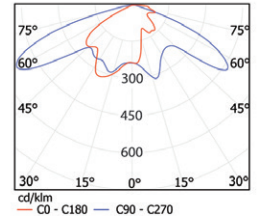
4000, 5000 and 6500 degrees Kelvin colour temperature models available

LYS 20/DC



Body: Injected aluminium
 LED: High efficient Power LED
 Glass: 5 mm thick and tempered, ground with serigraphic printing

IP66



LYS 15/DC

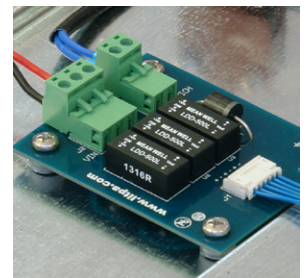


DC version is available upon on request



Code	Weight	Box Dimensions
LYS 20/DC	5.7 kg	620x260x120mm

- Input Voltage: 24VDC
- There is a protection against reverse polarization
- Mean Well brand LDD series current limiters used.
- Via an light sensor or time automation relay it could be controlled.
- There is an emergency switch, if the cover of the luminaires is on there is no more energy in the luminaire.



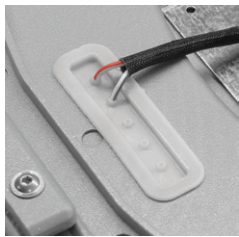
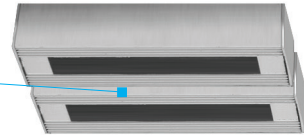
Code	LEDs	Light Output	System Power	Voltage	Colour Temp.
LYS 20/30/DC	High Efficient Power LEDs	3,630 lm	30 W	24V	4000-5000-6500 K
LYS 20/40/DC	High Efficient Power LEDs	4,840 lm	40 W	24V	4000-5000-6500 K
LYS 20/50/DC	High Efficient Power LEDs	6,050 lm	50 W	24V	4000-5000-6500 K

4000, 5000 and 6500 degrees Kelvin colour temperature models available

A polyurethane liquid cast gasket applied by robot provides equal load bearing thickness at each and every point ensuring uniform compression force between the cover and the body and for maximum assurance of ingress protection.

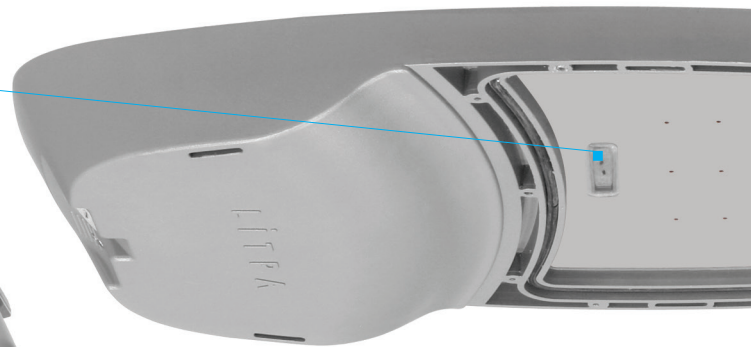


High efficient certified drivers have a power factor of $\cos \phi \geq 0.95$.

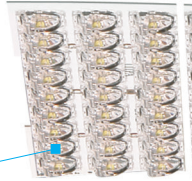


A silicon joint seals the inner cable connections of the fixture, its flexibility eliminates damage to the joint and cables.

Termination and seal within upper cover

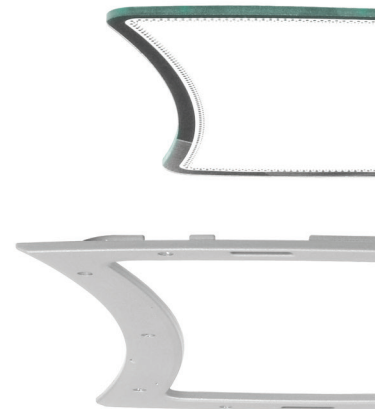
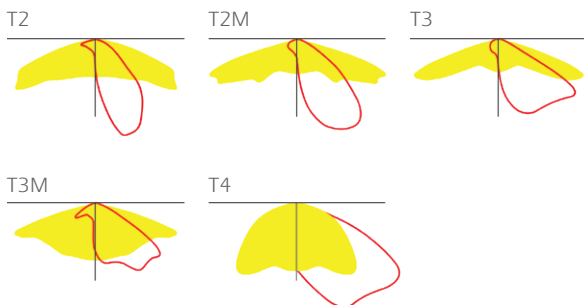


Pole installation brackets are manufactured by aluminium injection and are available in 3 different diameters to suit different poles sizes.



High efficient LEDs are used in STREETRAY fixtures. These LEDs each produce at least 160 lumen with a colour temperature of 4,000 K at a drive current of 350 mA. The economic life-cycle of the LEDs when driven at 700 mA with a junction temperature of 85 degrees is 50,000 hours. This life-cycle is certified by LM80 testing procedures.

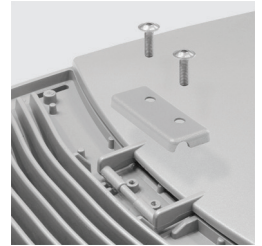
Light distribution, lens types



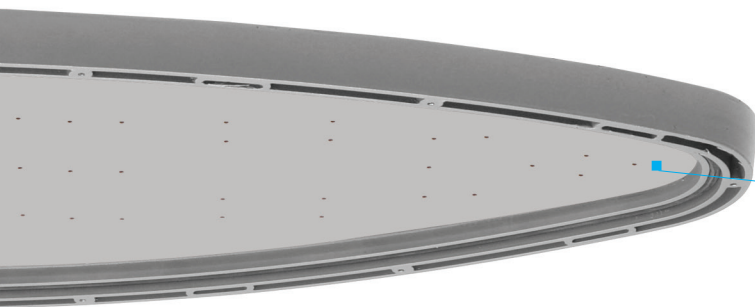
The injected aluminium cover is designed to be easily opened if access to the power and electronic driver systems is required.



The cover opens easily with a secured hinge.



The aluminium injected main body has a integral heat sinking structure and incorporates drainage channels to drain rain water efficiently. A polyurethane liquid cast gasket applied by robot provides equal load bearing thickness at each and every point ensuring uniform compression force between the cover and the body and for maximum assurance of ingress protection.



Lenses are utilized on the modular PCB and have a high efficiency of 95%.



DKP sheet painted with white colour



The tempered and ground, 5 mm thick front optic with serigraphic printed edges is manufactured from shatter-proof glass and does not produce sharp pieces if broken for reasons of road safety.



Aluminium injected front frame bezel.



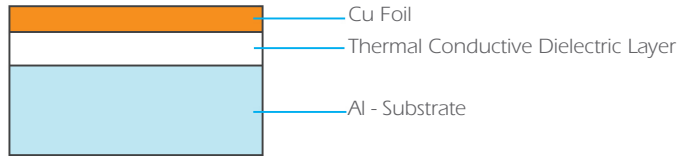
All aluminium parts are finished with electrostatically applied powder coating.

PCB

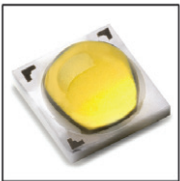


LITPA STREETRAY fixtures feature PCBs that are designed to allow for flexible LED population in order to give varying power configurations from just two types of PCB module. These modules are used in the LYS100 and LYS50 STREETRAY luminaires.

- Excellent thermal conductivity
- Excellent breakdown voltage
- RoHS and CE compliance
- Excellent solder heat endurance
- Excellent electromagnetic shielding
- High thermal conductivity
- With connector

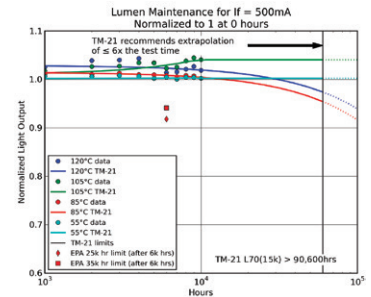


LED



High Efficient LED specifications:

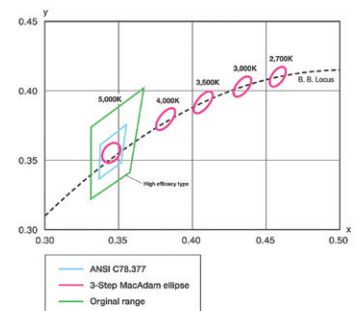
- Minimum heating with special design ($3^{\circ}\text{C}/\text{W}$)
- Different colour temperatures (4000K-5000K-6500K)
- High colour rendering (70-80%)
- @350mA @4000K minimum 160 lm
- @85°C LM 80-08 test report
- $\geq 50,000$ hrs economical life as IESNA TM-21
- 120° viewing angle
- Exceeds ENERGY STAR® lumen maintenance requirements
- Max. driver current of 2A
- 3-step MacAdam Ellipse

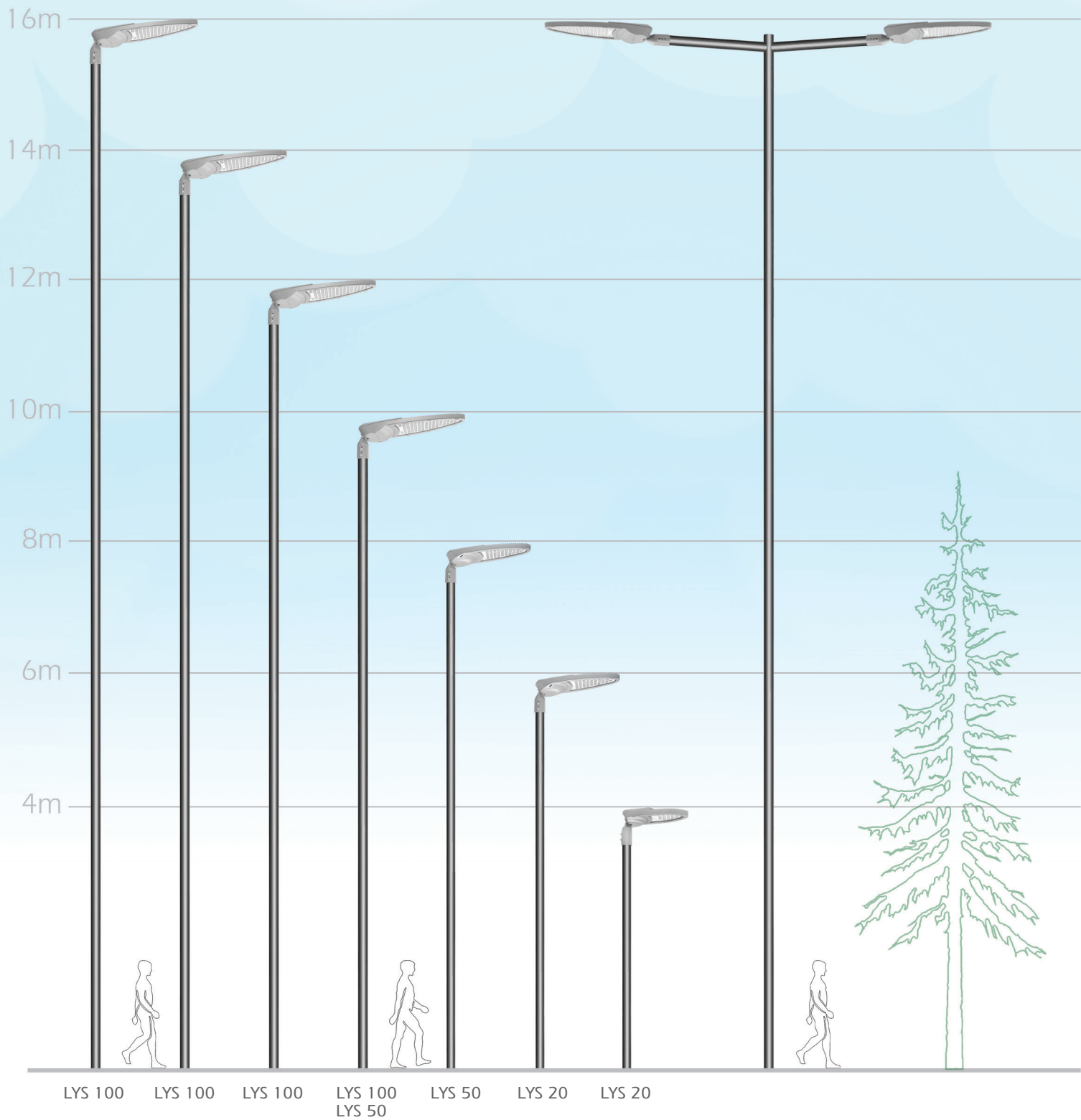


DRIVER



- 220-240 VAC
- Power factor $\text{Cos } \Phi > 95$
- $\text{EFF} > \%92$
- $\text{THD} < 10$ (<150W), $\text{THD} < 20$ (>150W)
- High surge protection: up to 10kV/8kV
- Class I and II
- Short circuit, open circuit, overload, over-heating protected
- 4DIM (StepDIM, AstroDIM, DALI, MainsDIM)
- control system: 1-10V another wireless communications

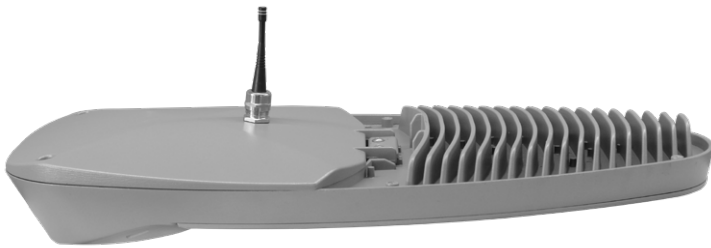






LITPA CITY

LC is a wireless automation system that has been designed to provide energy efficiency where street and road illumination is concerned. The system consists of an antenna and a control card that are integrated in the fixture as well as a gateway and a centralized control system. Through this centralized control system, the fixtures can be individually controlled and the pre-configured scenarios can be implemented. Interfaces suitable for computerized control have been developed for the use of the Customers like, Municipalities and Electricity distribution companies.



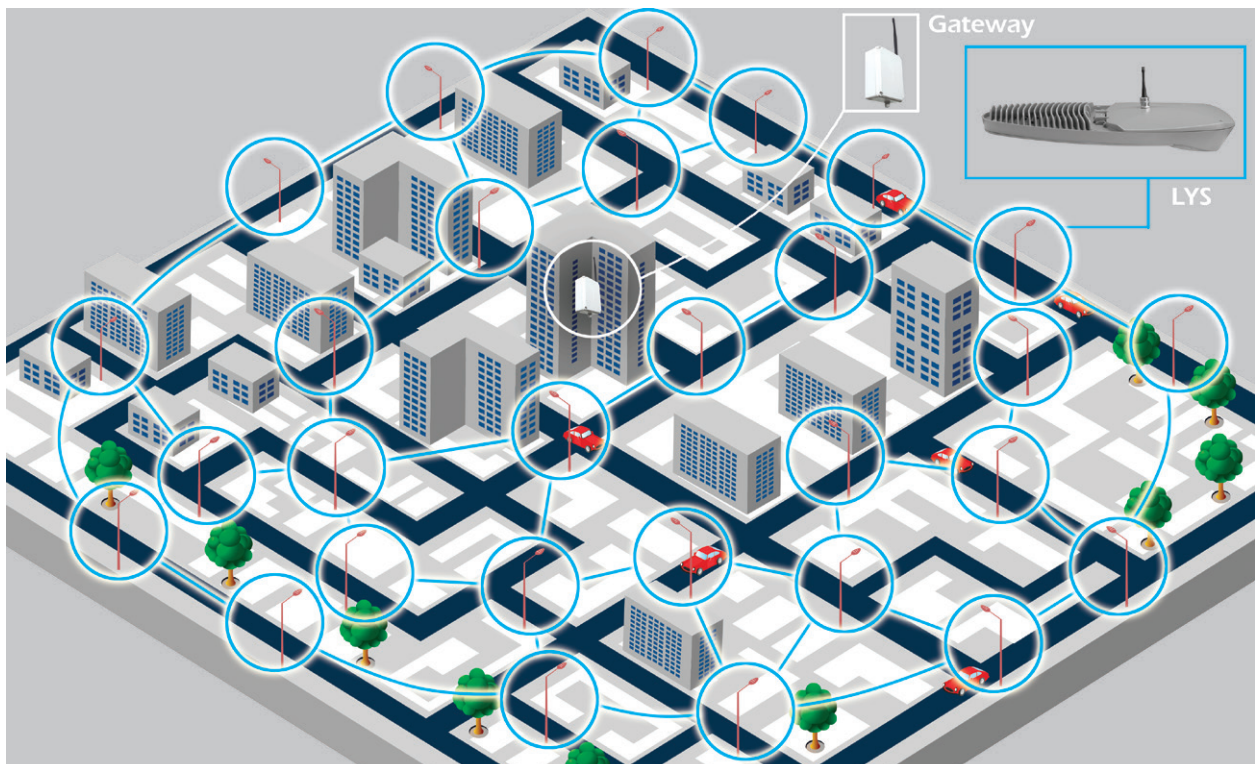
Fixture with STRETRAY LC system for wireless control



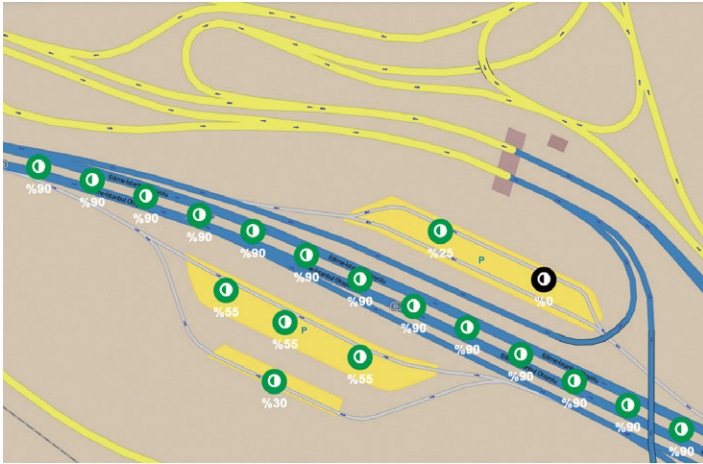
Control card imbedded in the body of the fixture



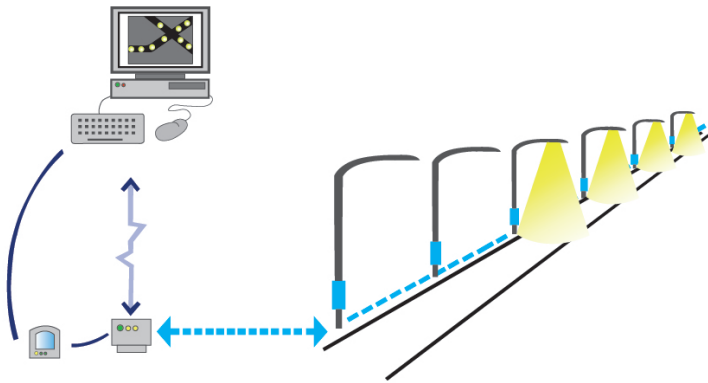
Gateway



WIRELESS AND ZIGBEE SYSTEM



PLC SYSTEM



Static Automation

Achieving Energy Savings by Lighting Automation and Control:

Our current usage of light in road lighting and the projected usage with LED application are seen in the table:

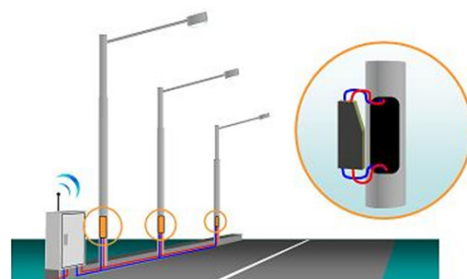
One of the biggest advantages of LEDs is the fact that they are easily controlled and dimmed. The ability to dim according to traffic density at night is highly important with respect to energy savings. According to the table, LEDs stay active for only 9.3 hours whereas classical lighting fixtures are required to stay active for 13 hours on average. Energy savings up to 28% can be obtained as a result of this advantage.

		CLASSIC LIGHTING	LED LIGHTING
1-SUNRISE	05:00-06:00	% 100	% 80
2-DAY TIME	06:00-16:00	% 0	% 0
3-SUNSET	16:00-17:00	% 0	% 80
4-EVENING	17:00-20:00	% 100	% 100
5-NIGHT	20:00-01:00	% 100	% 70
6-MIDNIGHT	01:00-03:00	% 100	% 10
7-DAY BREAK	03:00-05:00	% 100	% 50

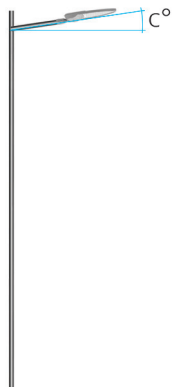
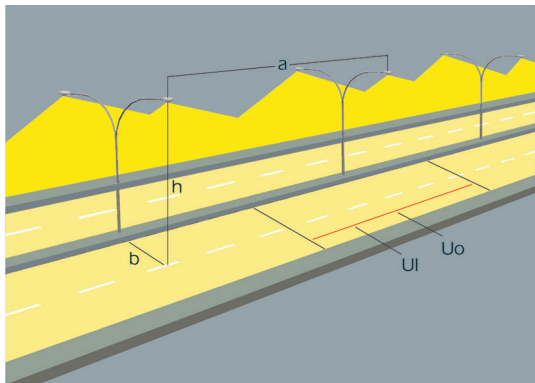
Dynamic Automation

Another advantage of LEDs is the ability to control the vehicle movements and light on the road, which depends on sunset and atmospheric conditions, by the use of sensors placed at specific intervals on the road. The communication between armatures, sensors and control devices is achieved over Wi-Fi and from post to post. In this way, all communication is provided without causing any EMG pollution by using low-emissive sources. A minimum amount of 28% of savings can be achieved with this smart system. Some countries have already begun to implement it, and it will be profitable in our country as well.

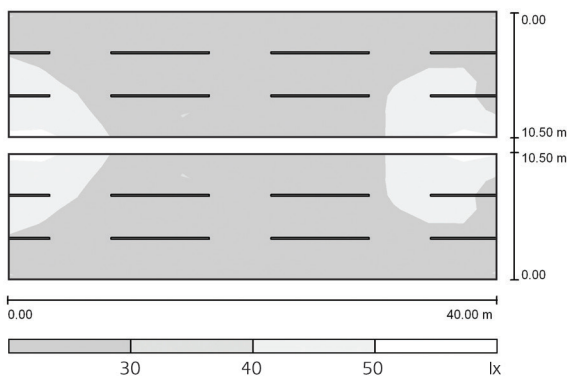
Another function of road lighting automation systems is the ability to monitor the lamp conditions. A significant source of cost in road lighting systems, apart from energy consumption costs, is caused by maintenance works. In order to monitor the performance of lamps, the streets must be patrolled in dark hours and the lamp must be revisited in daylight hours for repairs. When automation systems are used, a better service can be provided and maintenance costs can be reduced.



DOUBLE SIDED APPLICATION



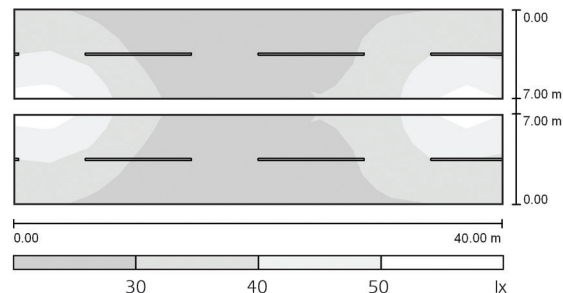
M1 (Triple Lane h=15m)



Lm [cd/m ²]	U0	UI	SR
2.09	0.45	0.70	0.85
≥2.00	≥0.40	≥0.70	≥0.50
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS100/214	15	40	1	5

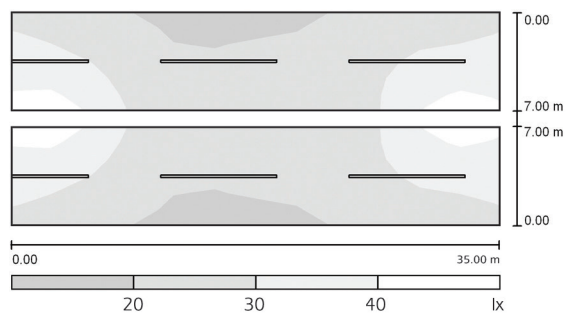
M1 (Dual Lane h=12m)



Lm [cd/m ²]	U0	UI	SR
2.20	0.55	0.70	0.90
≥2.00	≥0.40	≥0.70	≥0.50
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS100/170	12	40	0.5	0

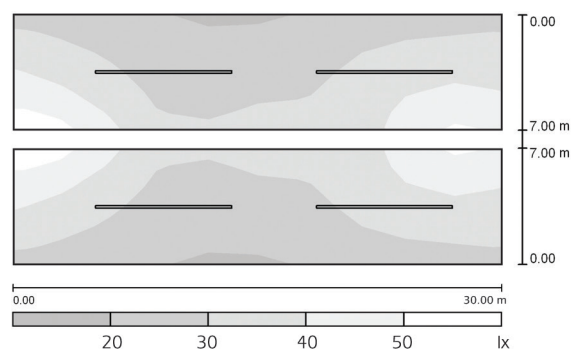
M2 (Dual Lane h=10m)



Lm [cd/m ²]	U0	UI	SR
1.68	0.46	0.70	0.87
≥1.50	≥0.40	≥0.70	≥0.50
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS50/110	10	35	0.5	0

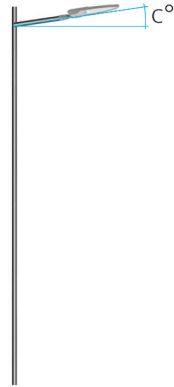
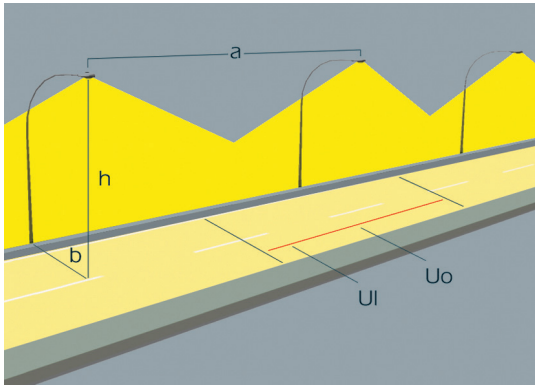
M2 (Dual Lane h=8m)



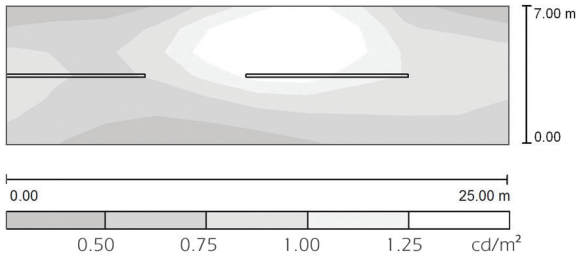
Lm [cd/m ²]	U0	UI	SR
1.50	0.41	0.70	0.59
≥1.50	≥0.40	≥0.70	≥0.50
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS50/80	8	30	1	0

SINGLE SIDED APPLICATION



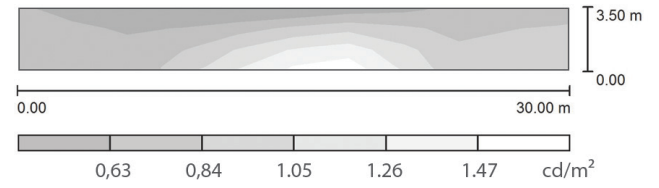
M3 (Dual Lane h=6m)



L_{av} [cd/m ²]	U0	U1	TI[%]
0.87	0.47	0.62	5
≥0.75	≥0.40	≥0.60	≤15
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS20/72	6	25	1.1	0

M4 (Single Lane h=6m)



L_{av} [cd/m ²]	U0	U1	TI[%]
0.86	0.57	0.53	14
≥0.75	≥0.40	≥0.50	≤15
✓	✓	✓	✓

Code	h (m)	a (m)	b (m)	c (°)
LYS20/30	6	30	0.5	0

L İ T P A

LİTPA LIGHTING

Haraççı - Hadımköy Yolu Cad.
No:15 HaraççıMah. 34281
Arnavutköy - İstanbul / TURKEY
Phone : +90 212 683 09 87
Fax : +90 212 683 09 92

www.litpa.com