



LEADING COMPANY FOR **SMART STREET LIGHT**

CREATIVE ENERGY TECHNOLOGY
Patented Heat Pipe and Fin Tech Solution

GREEN WORLD

:made with Life Enhancing LED and Creative Energy Technology

APACK, We Create Lights for Every Walk of Life

Founded in 1999, APACK has grown as a global company specializing in LED lighting with its application of an unrivaled thermal solution based on patented heat pipe technology. APACK provides optimized solutions to various application such as golf courses and port facilities, and industrials.



Electronics & Telecom Research Institute
Spin-off Company

CEO **Song Kyusop**
Foundation **July 16, 1999**
Capital **2.1 Mil US\$**
Sales Revenue **9.0 Mil US\$**
Employees **30**

Affiliates

Germany Theodor-Heuss-Alle 11, D-60486
Frankfurt/Main, Germany

Korea 333 CheomdanGwagi-ro, Buk-gu,
Gwangju, 61008, Korea

Vietnam #303 Toserco Bldg., Van Phuc, 2 Nui
Truc, Ba Dinh, Hanoi, Vietnam

Russia #506 5st. 26 Bakinskikh Komissarov,
Moscow, Russia 119571

| 1999

APACK, INC. Founded

| 2007

LED Lighting Installed
@ National Assembly
Hall, Korea

| 2014/2015

Harbor & port
@ DB Schenker,
Stuttgart, Germany

| 2001/2002

MP started for LGE/PC cooler
MP started for SEC/Printer
Heating roller

| 2008

5M USD export
Monument Prize

| 2016

Harbor & port
@ Alaska, US

| 2003

ISO9001:2000
ISO14001:1996

| 2011

G70L, High Efficient
Energy Green Company
selected

| 2018

Warehouses
@ Biebesheim, Germany

| 2006

Intel capital investment
(USD 3M)

| 2012

TS16949 Certificate

| 2019

Soccer field
@ Euskirchen, Germany

LED LIGHTING (Sports / Horticulture)

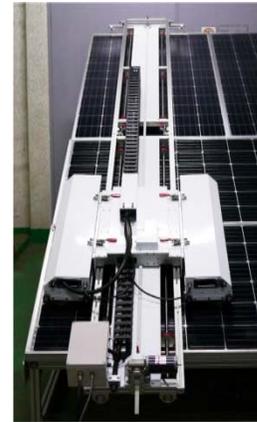


"High Efficient Lighting"

- Industrial lighting
- Sports lighting
- LED Headlight
- Horticulture lighting



SOLAR ENERGY



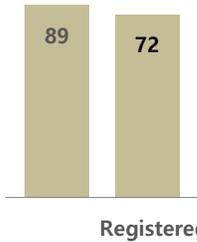
"Leading Green Energy Solution Provider"

- Photovoltaic panel cleaner
- Solar A/C & heating system
- Solar hot water heater
- Solar desalination

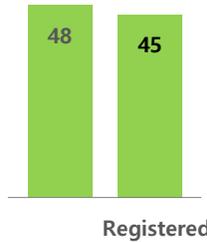




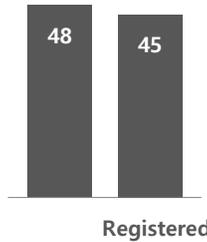
Patent



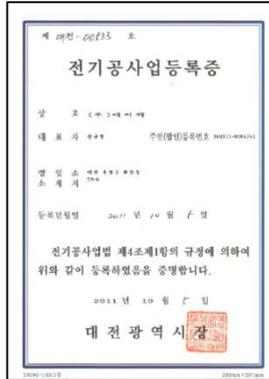
Design



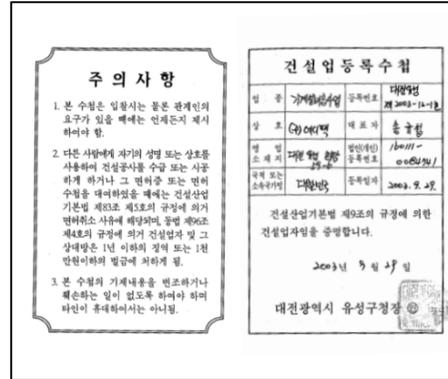
Utility Model



Trade Mark



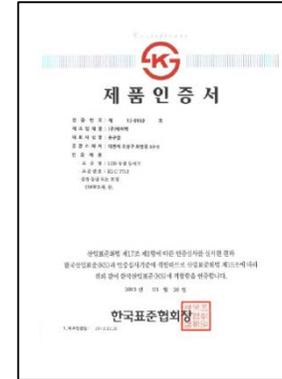
Electrical Service



Mechanical Equipment Construction



Direct Production



Korean Standard



Certified under ISO 9001 / ISO 14001

Global Leader in GREEN Technology

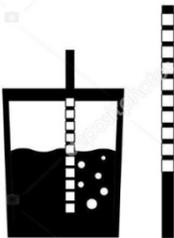
<p>PRODUCTION</p> 	 <p>Cell Line</p>	 <p>Pallet Conveyor</p>	 <p>Clean Room</p>	 <p>High Temp. Aging Room</p>
<p>EQUIPMENT</p> 	 <p>Integrating Sphere</p>	 <p>3dimensional measurement</p>	 <p>Spectrometer</p>	 <p>Optical performance measurement</p>
<p>RELIABILITY</p> 	 <p>Sprinkling Test Chamber</p>	 <p>Dustproof Chamber</p>	 <p>High Temp. and Humidity Chamber</p>	 <p>Waterproof Test</p>

TEST BED



YUSEONG Bio Science Technology School

MEASUREMENT



Photosynthetic Measurement

SMART Control for LED Street Light

The Range of IoT Business

IoT solution in urban infrastructure, building, utilities, and transportation



Building

- SMART Skin & EMS
- Zero-Energy Building
- Energy Cloud



Utility

- Electrical Energy and Water
- Supply **Smart Remote Detect**



Infra

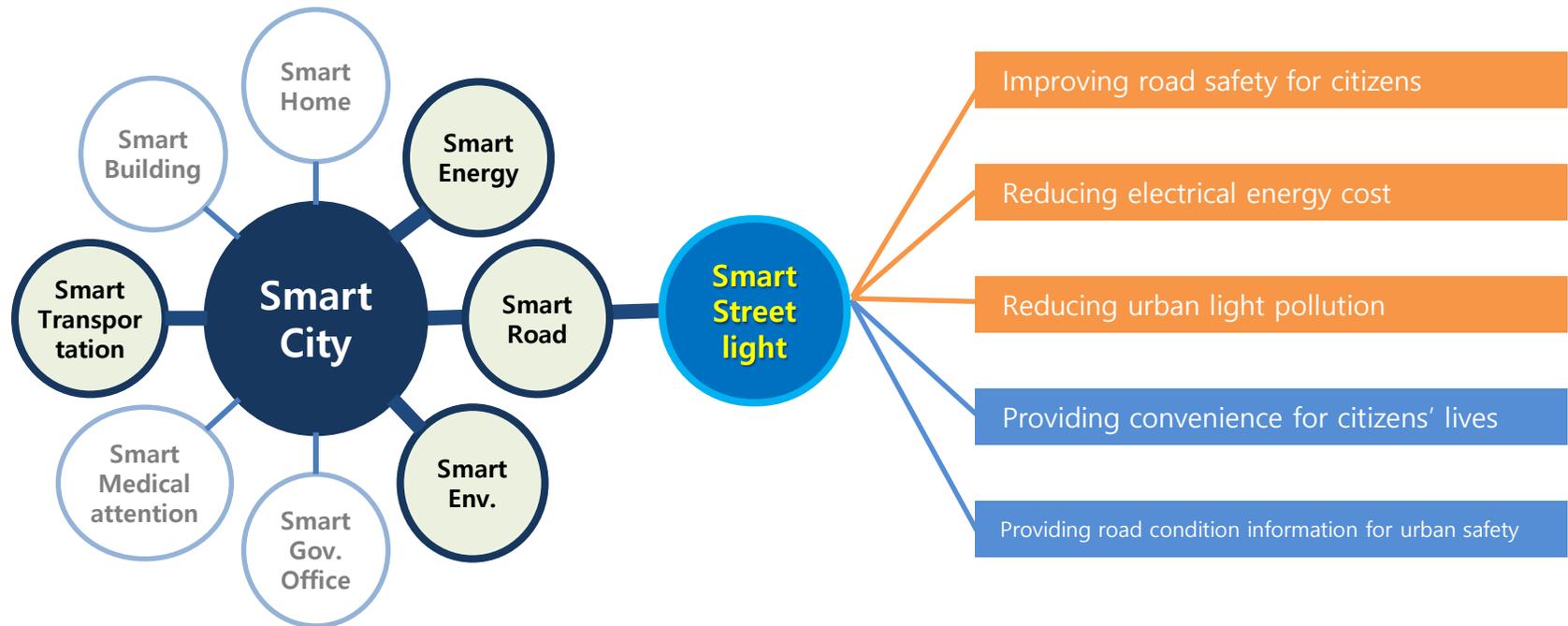
- **SMART Streetlight**
- **SMART Pole**
- SMART Bridge Health Assessment and Safety Management System



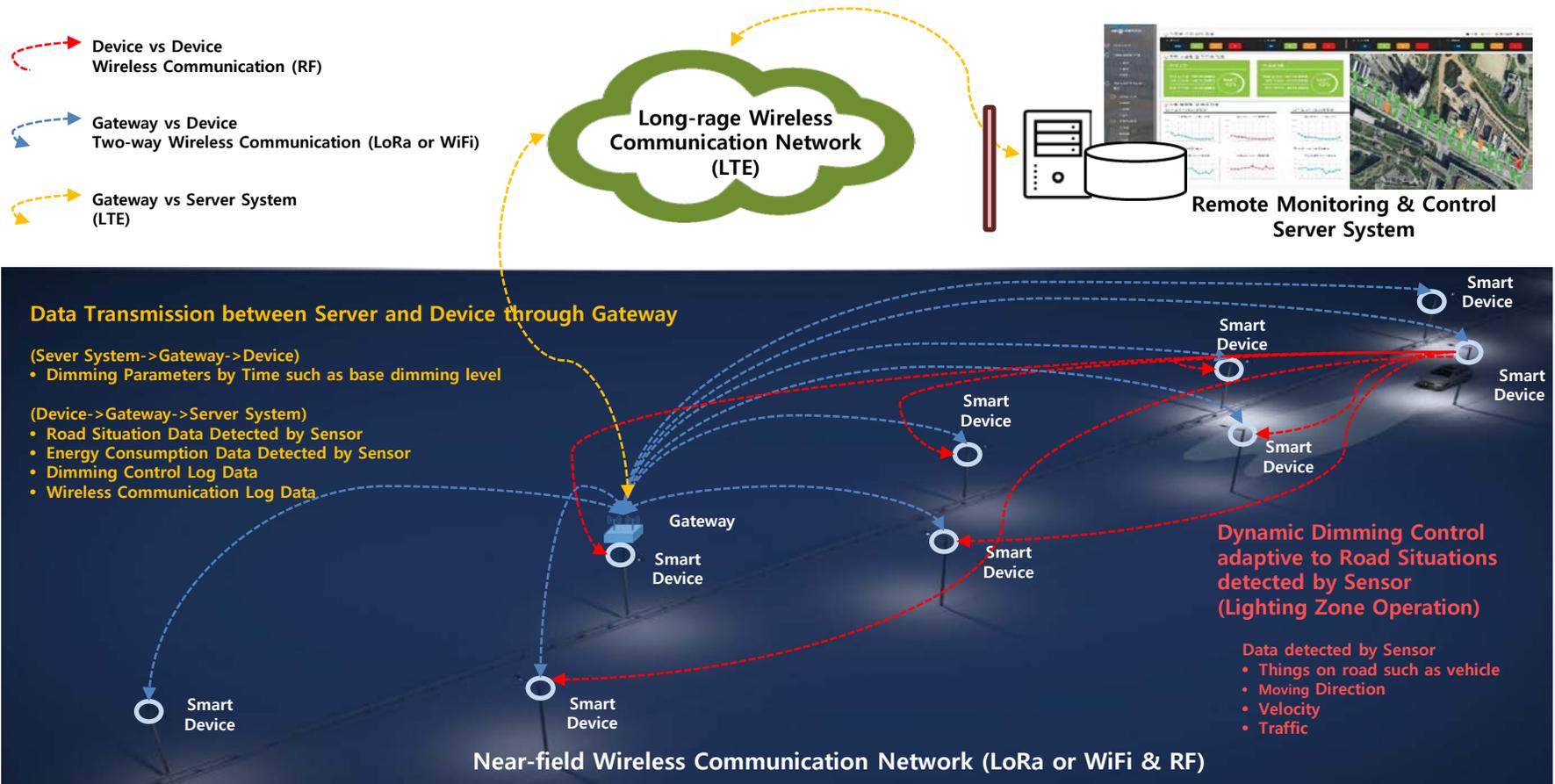
Transport

- **Vehicle Detection System**
- Based on SMART Sensor**

Core infrastructure for Smart City



Smart Street Light as the core infrastructure for Smart City



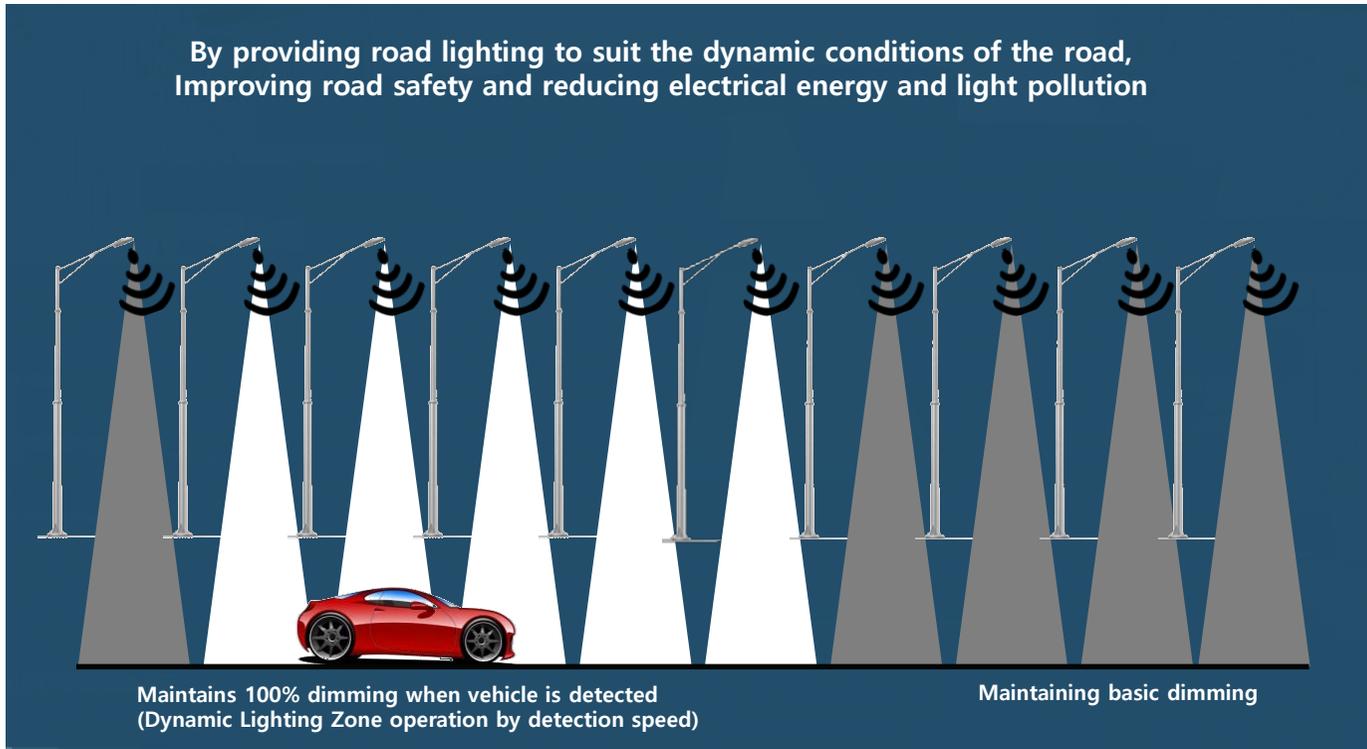
Major IoT Technology of Smart Streetlight

Remote Control Technology

By providing road lighting to suit the dynamic conditions of the road, Improving road safety and reducing electrical energy and light pollution

Sensor Technology

Control Technology

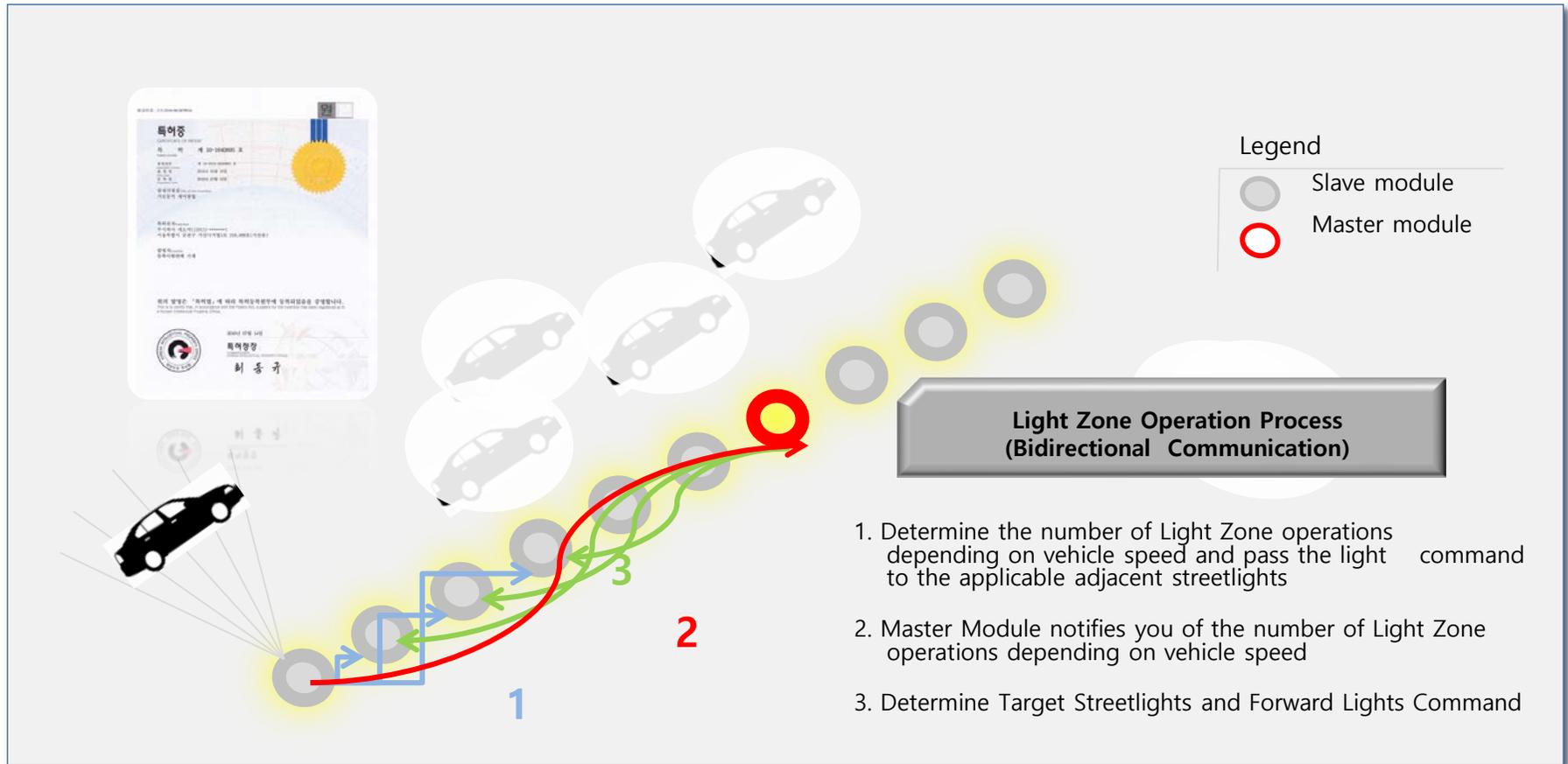


Maintains 100% dimming when vehicle is detected (Dynamic Lighting Zone operation by detection speed)

Maintaining basic dimming

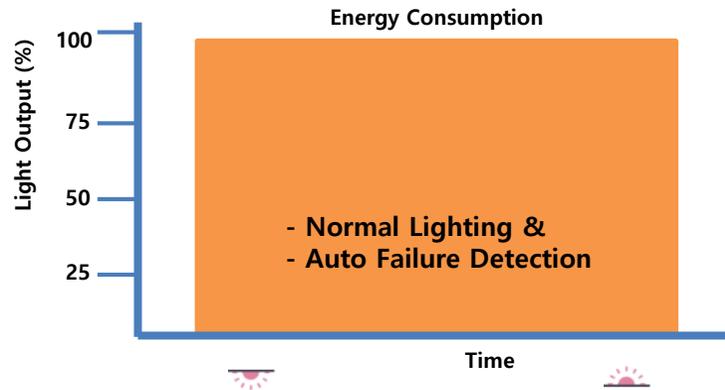
Wire/Wireless Communication Technology

Key Function_ Light zone operation technology

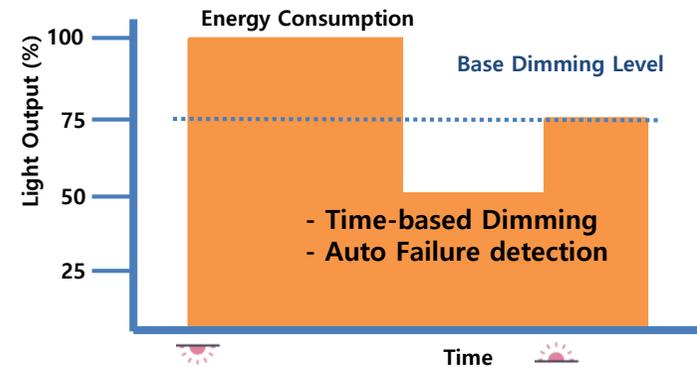


Key Function_ Energy saving by control technology

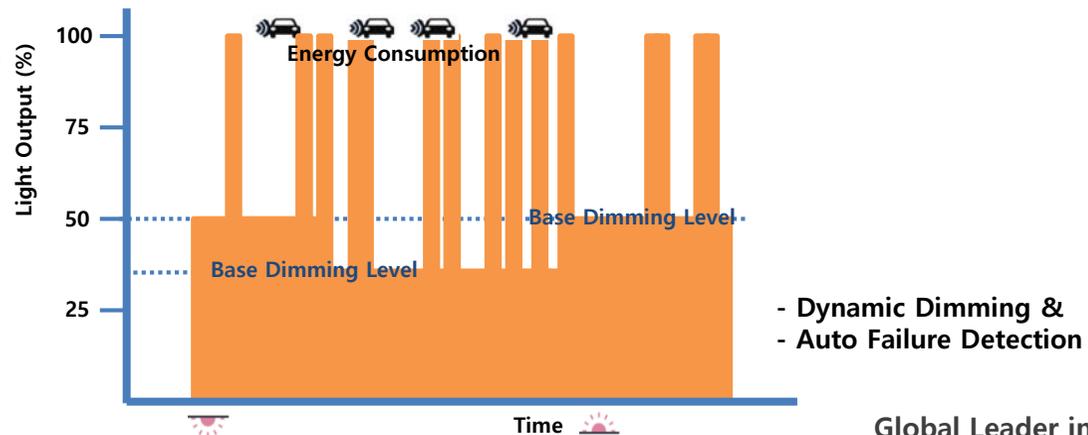
No. 1



No. 2



No. 3



Key Function_ Road condition detection by radar sensor

Section	Technical Specifications
Frequency	24.05 – 24.25 GHz
(Antenna) Beam radiation width	H. 60degree V. 35degree
Detection speed	Max. 200km/h
Detection range	50m for vehicles (6lane road)
Installation	on pole
Size	100mm x 100mm
Supply power	DC
Power consumption	2W
Operating Temp.	-40 ~ +85degree
IP rating	IP68

Doppler Radar Sensor
(Object and speed detection)

FMCW Radar Sensor
(Object, speed, traffic detection)

Max. 6개 차선

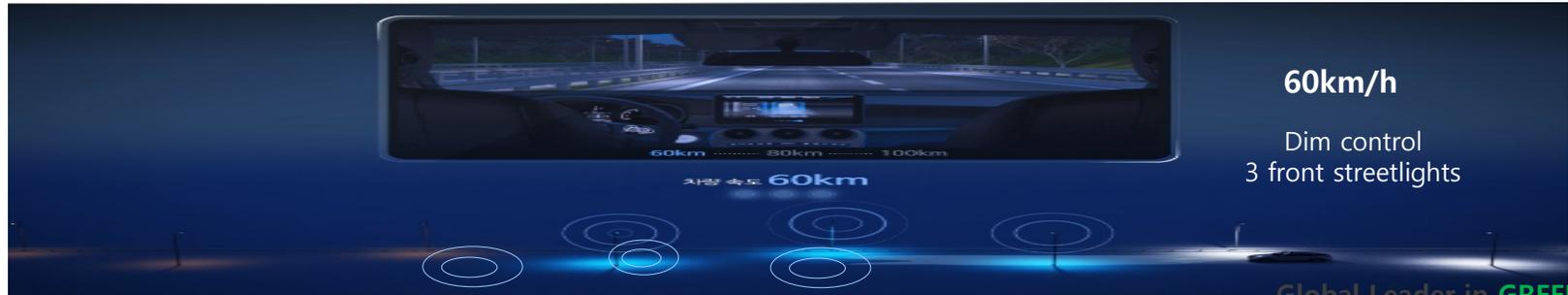
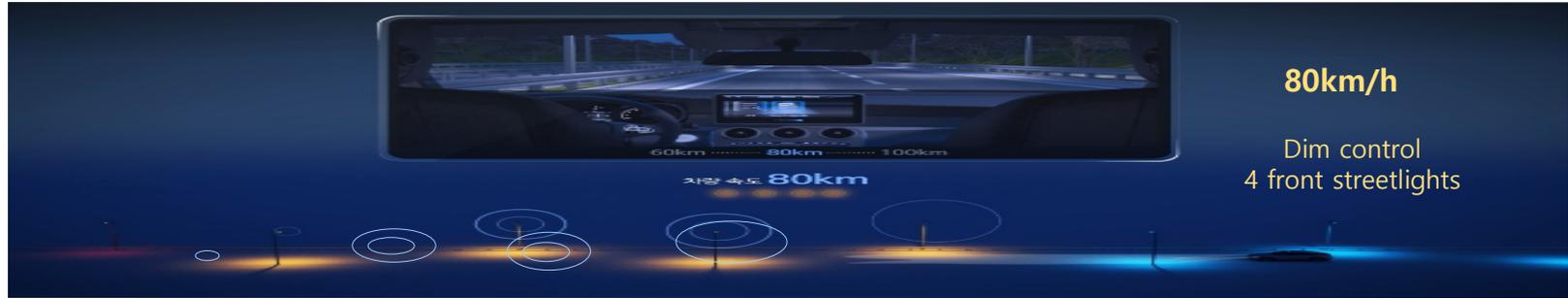
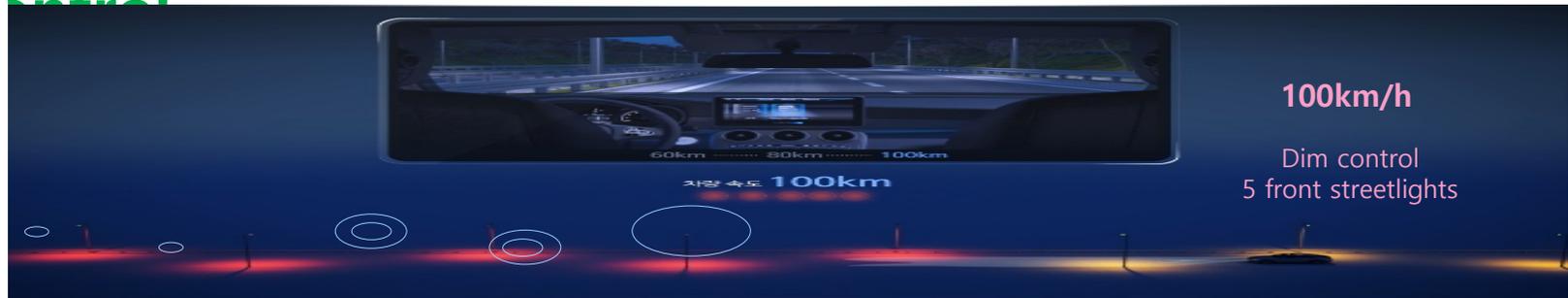
Max. 200km/h

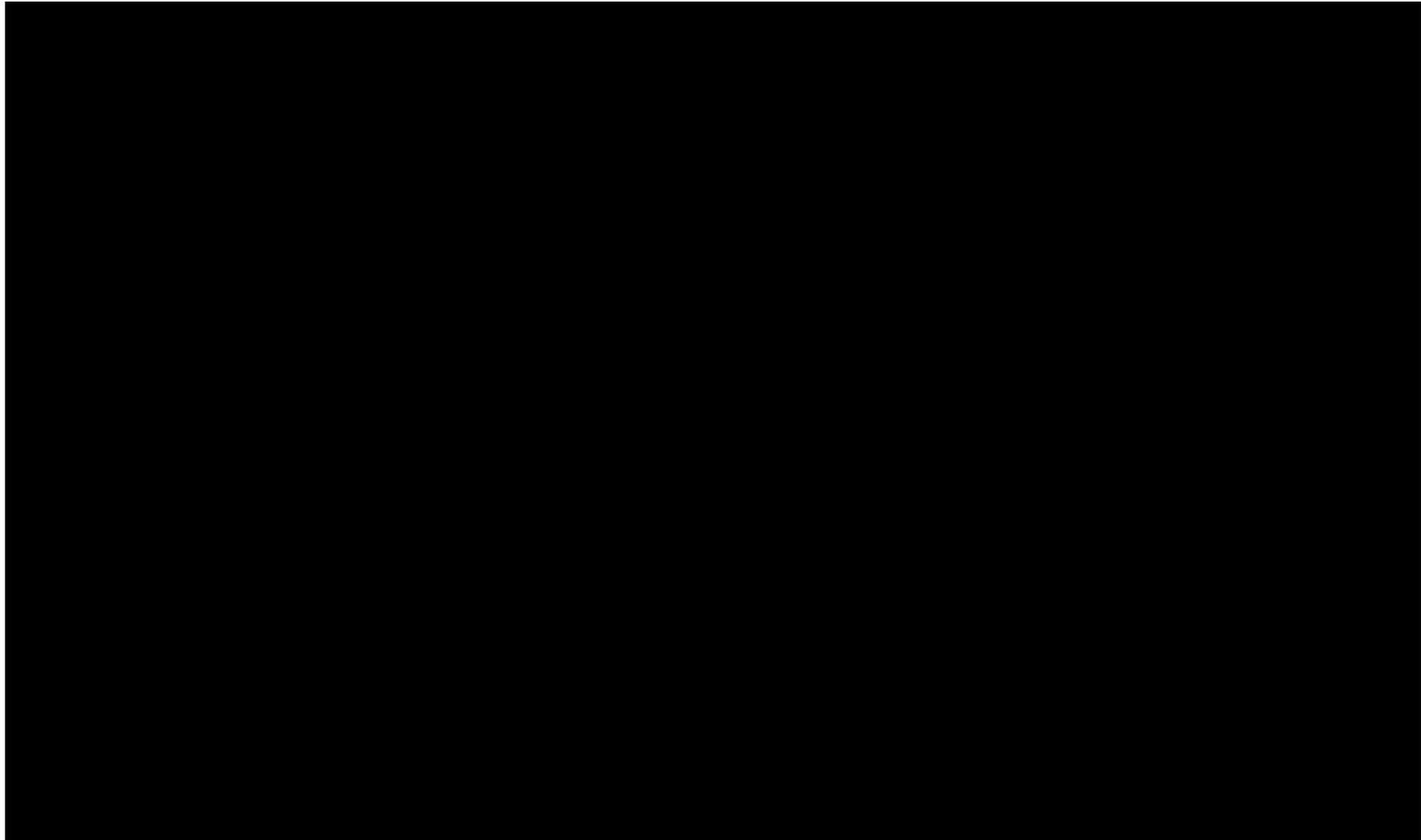
전방. 50m

양방향

- 1 Lights and apparatus signal type
- 2 Light Pillar attached type

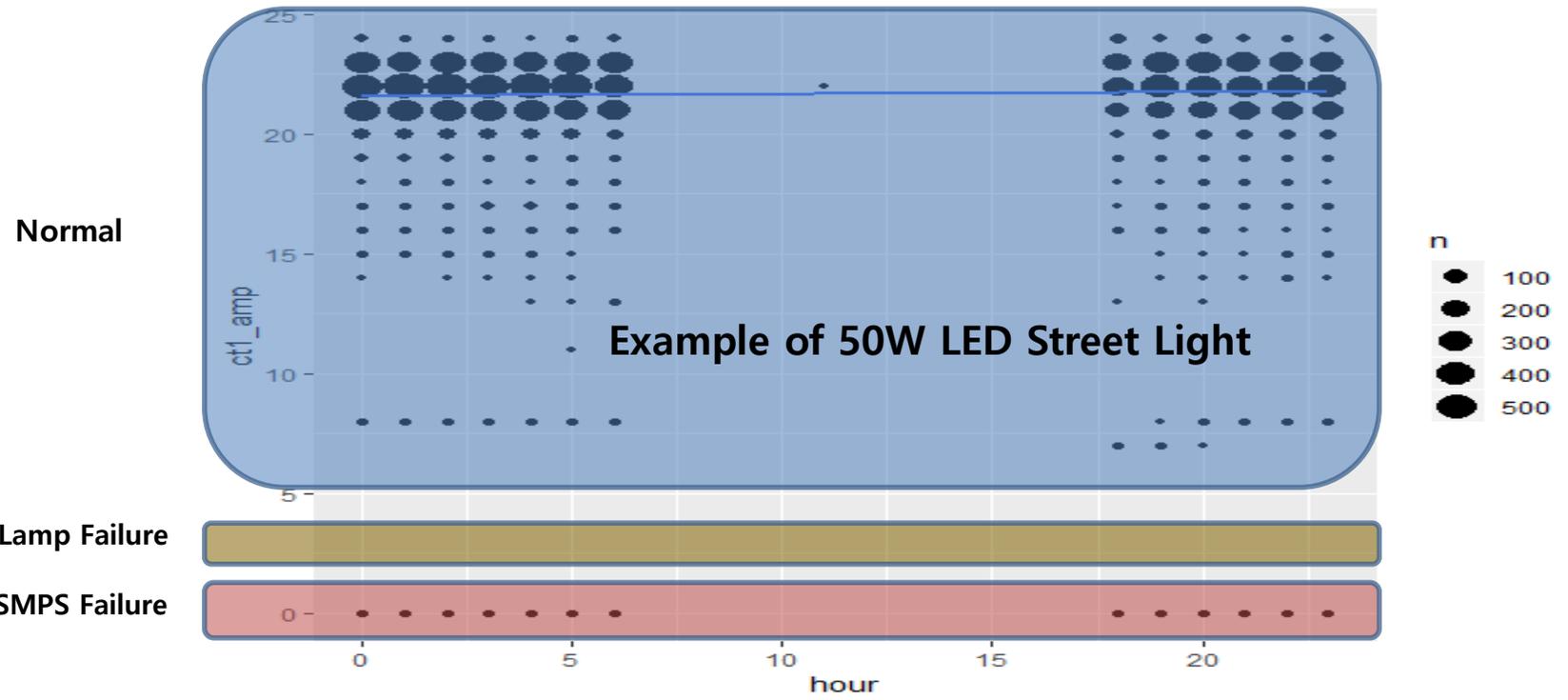
Key Function_ **Dynamic lighting zone setup /dimming**





Key Function_ Power consumption detection and monitoring

Electricity consumption data

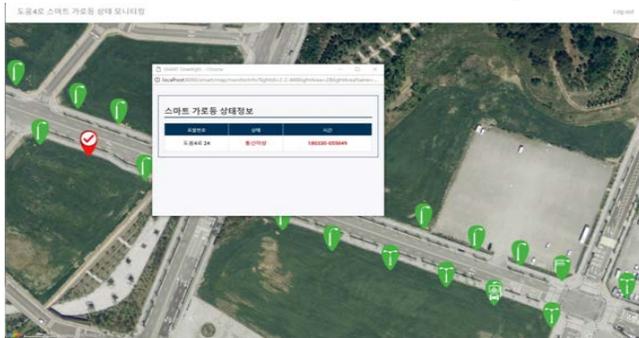


Control Server System_ Operating dashboards



Control Server System_ Operating dashboards

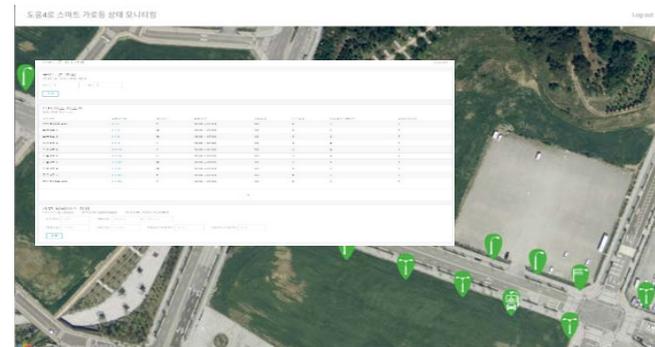
Location based Failure Monitoring



Traffic Information Monitoring



Energy Consumption Monitoring & Report



Dimming Parameter Setup & Monitoring

System Group

Smart Streetlights are currently operated with High-range, Mid-range, Low- range

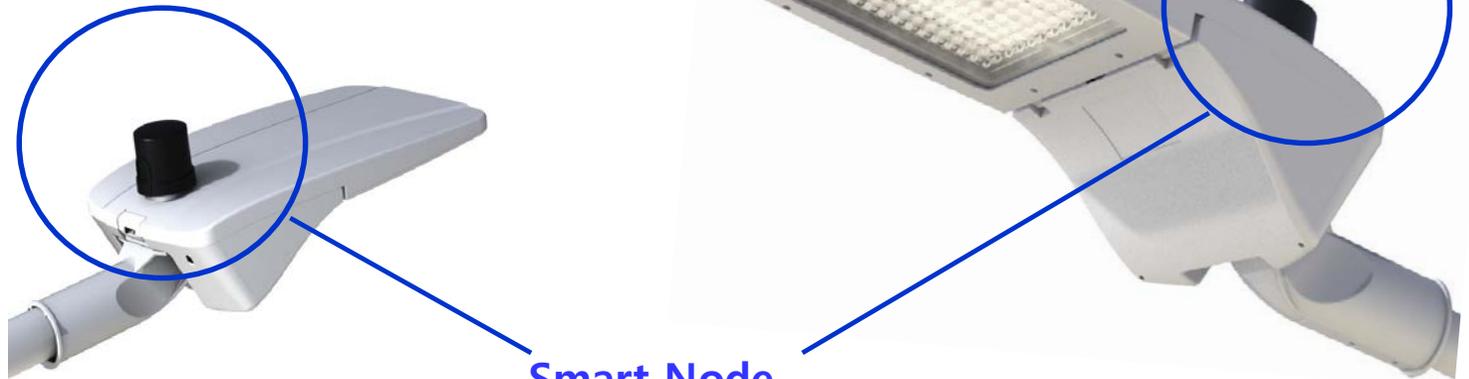
Product	Product Description(Feature)	Related Model Images
High End	High End Lights Pillar attached type (Connecting the devices with the LED light)	 G/W Device  Streetlights Device  Park Lights Device 1
	High End Lights and apparatus integral type (ANSI C136.41 integrated devices with LED lights)	 ANSI C136.41 integrated Device  Integral Device  Integral Device 2
Mid. Range	Middle Range Lights Pillar attached type (Connecting the devices with the LED light)	 G/W Device  Streetlights Device  Park Lights Device 3
	Middle Range Lights and apparatus integral type (ANSI C136.41 integrated devices with LED lights)	 ANSI C136.41 integrated Device  Integral Device  Integral Device 4
Low End	Low End Lights and apparatus integral type (ANSI C136.41 integrated devices with LED lights)	 ANSI C136.41 integrated Device  Integral Device 5

Note 1 3 → Be of the same appearance but of different functions
2 4 5 → Be of the same appearance but of different functions

LED STREET **SD Series**

Variable Wattage 50,80,100W

- Main Features**
- Die-casted Aluminum
- Type -II, Type-III
- Corrosion resistance
- Built-in 10KV surge protector
- 1-10V Dimming
- IK09 / IP66



Smart Node

LED STREET

Specification

Model (Part No.)		-	S50D	S80D	S100D
Classification		Unit	SPECIFICATIONS		
General	Power Consumption	W	50	80	100
	Dimension	mm	599(L) X 329(W) X 145(H)		
	Weight	kg	8.2 (With installation Bracket)		
	Working Temp.	°C	-30 ~ +50		
Optical	Temp.				
	Humidity				
	Humidity				
	Flux		7,500		15,000
	Temp.				
Electrical	CRI	ra		70	
	Beam Angle			Type-II	
	Voltage Range	Vac		100-277	
Electrical	Frequency Range	Hz		50 - 60	
	Power Factor	PF		>0.9	
Usage		-	Street		

효율
150lm/W

배광.
Type-II
Type-III

방수
IP66

APACK
LIFE ENHANCING
LED TECHNOLOGY

LIFE ENHANCING Meaning: It's modern meaning is: to make greater, increase in value, to improve, to raise up and to augment. Adding value to your **life**. So something is '**Life Enhancing**' if it increases, augments or adds value to your **life**.

“APACK, We Create Lights for Every Walk of Life”



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