



2025

Solar System LED Lighting

Make your Light be True !

CYAN HOLDINGS,

Change the energy world !

CYAN HOLDINGS
Company Profile
2025

1. Vision

2. Company Over View

Organization

System Portfolio

Business Model

LED Lighting

LED Outdoor Light 1

LED Outdoor Light 2

LED Outdoor Light 3

LED Indoor Light 1 -5

Light Installation

3. Solar Street Light for ECO Plane

Features

PV Module

LED Street Light

Light Intensity Distribution Curve

Controller

Battery

We, CYAN HOLDINGS Co., Ltd., are a leading company in Korea manufacturing LED lighting & Solar system for indoor and outdoor application products. , CYAN HOLDINGS Co., Ltd. was founded by Chul Soo - Kim in 2015, based in the Korea.

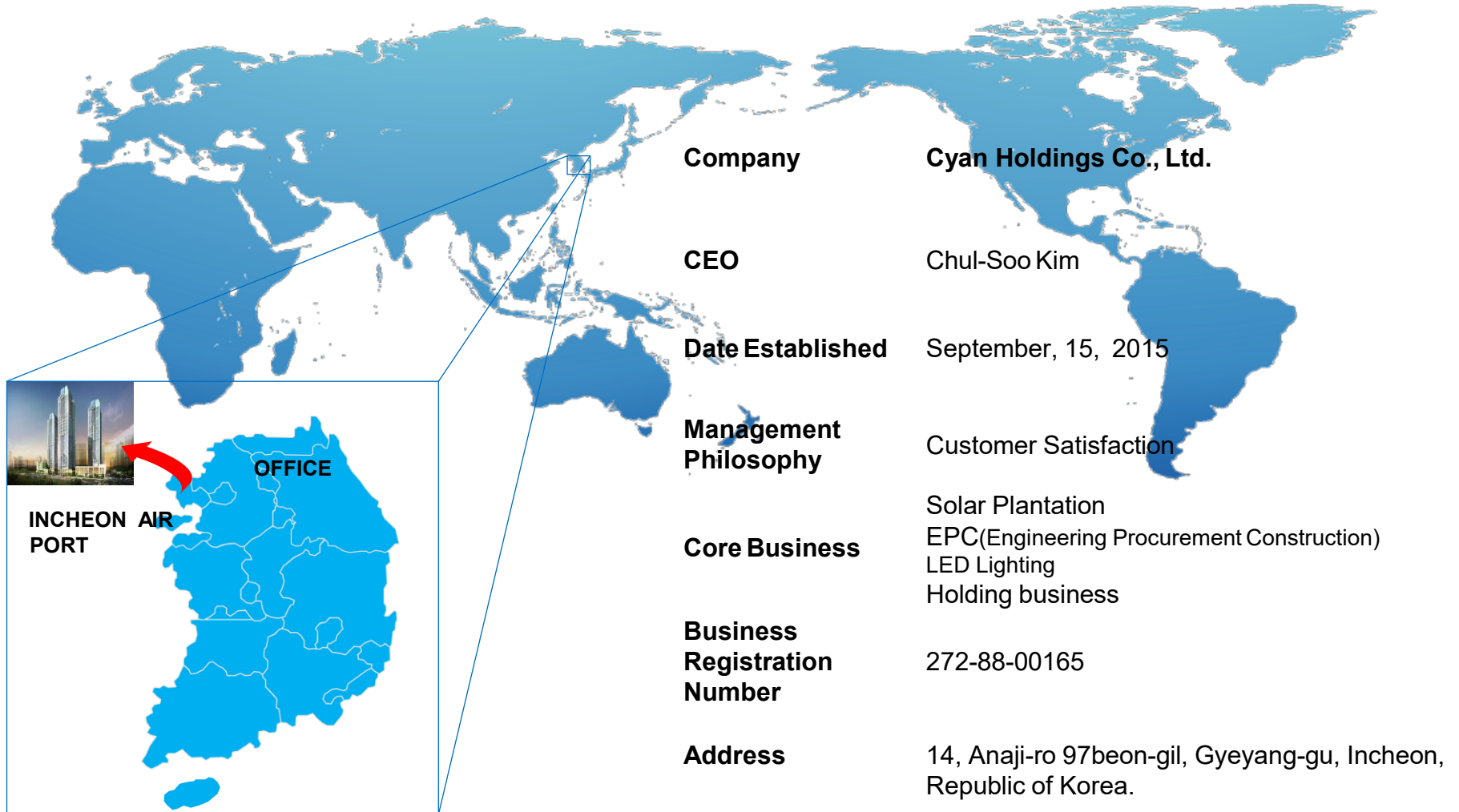
The development of renewable energy sources to replace sources of energy is one of the most important challenges of upcoming decades.

Our mission is to be the premier developer of alternative and renewable energy source that will include Light, Wind and Solar Energy. Our goal is to be the leader in product line of energy saving devices and systems that will fit our clients by offering them an alternative choice over standard lighting and high energy consuming products. Our primary focus is on LED lighting, Windmill and Solar Power system products and intelligent energy saving devices.

CYAN HOLDINGS Co., Ltd., fulfills this mission by delivering the best green energy systems in the business. Not satisfied with those achievements, all our executives and staff are doing our best to provide the best quality products and services to our customers under a rapidly changing technology environment. We are grateful for your interest in our company and you can get further information about us on our web site, <http://www.cyanholdings.co.kr>



Company Overview



Company	Cyan Holdings Co., Ltd.
CEO	Chul-Soo Kim
Date Established	September, 15, 2015
Management Philosophy	Customer Satisfaction
Core Business	Solar Plantation EPC(Engineering Procurement Construction) LED Lighting Holding business
Business Registration Number	272-88-00165
Address	14, Anaji-ro 97beon-gil, Gyeyang-gu, Incheon, Republic of Korea.

2003

10 Established Private Company → **Ornics**

2004

- 01 developed POGO Type Mainboard for **Samsung Electro-Mechanics**
developed V420 camera module driver board for **Samsung Electro-Mechanics**
developed PH-2500, WPH-S2500 camera module driver board for **Curitel**
developed I8900, L8900 Round-Header Board for **LG Electronics**
developed EG911 camera module driver board for **E to M**
developed TWC-2050 camera module driver board for **Telson**
- 02 developed E700 camera module driver board for **Samsung Electro-Mechanics**
developed SKTTu4 camera module driver board for **SK Telecom**
- 03 developed D430, 1505, M500, SLPS camera module driver Board for **Samsung Electro-Mechanics**
developed LED driver board for **Cammsys**
developed H885 driver board for **Cammsys**
- 04 developed SCH-A670 camera module driver board for **Samsung Electro-Mechanics**
- 05 developed ER Header Board for **Cammsys**
- 06 developed EG911, TD5C, TDI55 camera module driver board for **Cammsys**
- 07 developed ER24P, ER36P header Board for **Cammsys**
developed E-800 camera module driver board, mega type for **Samsung Electro-Mechanics**
- 08 developed M13-SKTT camera module driver board for **SK Telecom**
- 11 developed Micron-3,2M M MT9T001 camera module driver board for **3M**
developed SY103, SY104 camera module driver board for **Cammsys**



2005

- 01 developed Micron 2M OL-1126 carmer module driver board for Cammsys
- developed MTV9V112 camera module driver board for Mtekvision
- 02 developed SCH-E330 camera module driver board for Samsung Electro-Mechanics
- 04 developed SGH-E300 camera module driver board for Samsung Electro-Mechanics
- 08 developed Street block for blind(Patent)

2007

- 01 developed SMPS 200W in casino LCD monitor for ROGITEL
- 02 developed radar VME BUS for FOCUSSYSTEM
- 03 developed a nuclear power plant Solenoid controller(400W) for Smart Valve Company
- developed street light electric shock protector for Shinwoo Electric Industrial Controls co., Ltd.
- 06 developed LED display demo kit for ExpoView, Inc
- developed LED Street light SMPS 13.5V for PATRA co., Ltd.
- developed ORNICS LED Street light
- 07 developed LED Street Light SMPS for Shinsung-Lux Technology Co., Ltd.
- developed Smart Fan sesor & Controller for SD System Co., Ltd.
- developed Tunnel Emergency LED Panel Light for Chongbo Electric Co., Ltd.
- developed Acriche Demo Kit for Seoul Semiconductor
- developed infrared Sensor LED Driver for Seoul Optodevice
- 08 developed ATX, computer sub board, for ROGITEL
- developed Z-power LED Driver Module for Seoul Semiconductor
- developed LED Emeryg Taxi Light for Hyorim Industrial Inc.
- 11 developed Natural White Demo Kit for Seoul Semiconductor
- developed HBMGFRT722 Demo Kit for Seoul Semiconductor
- 12 developed Casino Bill Acceptor Sub Board for ROGITEL
- developed 120W LED Flood Light for Bandilux
- developed Detector of Tracks Disconnection for BooYoung Industrial Electronic Co., Ltd.



2008

- 01 developed AW2211 Demo Kit for **Seoul Semiconductor**
- 03 developed LED Lens Demo Kit for **Seconix Co., Ltd.**
- developed SFT825N PCB for **Seoul Semiconductor**
- 04 developed Top LED2, CWT722, CAW 722-S, for **Seoul Semiconductor**
- 05 developed P7 Driver Board for **Seoul Semiconductor**
- developed LT520 Driver Board for **Seoul Optodevice**
- 06 developed SFT722N-S, SFT825N-SB, SFT825Z-SB Driver for **Seoul Semiconductor**
- 07 developed 30W LED Flood Light for **Lumicomm, Inc.**
- developed 70W LED pedestrian Light for **Banilux**
- developed SFT825N-SA, SFT825N-SC Driver Board for **Seoul Semiconductor**
- developed Z-Power W7240CO Driver Board for **Seoul Semiconductor Japan**
- 08 developed SFT8211N-BS-A and B Driver Board for **Seoul Semiconductor**
- 10 developed LED Solar Emergency Taxi Light for **Pyrotec Technology**



2009

- 01 developed 8W LED Lamp for **Bandilux**
- 02 developed SMPS SE-600-24V for **Bandilux**
- 03 developed Full Color LED Bar 50 for **Bandilux**
- 04 developed 22W LED fluorescent light 1200mm for **Bandilux**
- 05 developed CIMG Type LED Down Light for **ERGO German**
- 06 developed 1M 14W LED Purchase Type Light for **Bandilux**
- developed 60W LED Flood Light for **IUS Co., Ltd.**
- 07 developed 25W LED Fluorescent Light Module for **Bandilux**
- 09 developed Roo Screen LED Bar for **SP Data**



2010

- 03 developed LED Solar Light and Solar Home Light for **India**
- 04 developed 60W Solar Type LED Street Light for **Hi-Energy Korea Co., Ltd**
- 05 developed 4.5W LED Downlight for **NoxTech Co., Ltd.**
- 06 developed LED Factory Light for **India**
- 10 developed LED Plant Cultivation Equipment for **Hyunjin Lighting Co., Ltd**
- 11 developed LED GU10 and MR16 for **ERGO LED German**
- 12 developed 60W LED Movie Light for **GTEKMedia USA**



2011

- 03 developed LED Solar Light and Solar Home Light for **India**
- 04 developed 60W Solar Type LED Street Light for **Hi-Energy Korea Co., Ltd**
- 04 JVA Russia Amuro region **Agreement**
- 05 developed 4.5W LED Downlight for **NoxTech Co., Ltd.**
- 06 developed LED Factory Light for **India**
- 10 developed LED Plant Cultivation Equipment for **Hyunjin Lighting Co., Ltd**
- 11 developed LED GU10 and MR16 for **ERGO LED German**
- 12 developed 60W LED Movie Light for **GTEKMedia USA**



2014

- 01 LED Flat Light 50W for **Suan Havy Ind. Co., Ltd**
- 02 LED Hi-bay Light 120W for **Mando Co., Ltd**
- 03 LED Street Light and Tube Light for **Saeron Automotive Co., Ltd.**
- 04 LED Factory Light for **Metaldyne Co., Ltd.**
- 04 LED Hi-bay Light 120W for **SBC-enertech Co., Ltd**
- 05 LED Tube Light 20W **Wooju Elec. Co., Ltd.**
- 09 LED Downlight, Par30, LED HQI 45W **Bupyong station**



2015

- 06 TISI Approved for LED Street Light **Thailand**
- 09 **Establishment of CYAN HOLDINGS Co., Ltd**
- 11 **CYAN HOLDINGS Co., Ltd. with PTS3 JVA Philippine**
- 12 **Philippine Air port Bidding for CCTV (BOC)**



2016

- 05 developed 25W LED Module
- 06 developed LED street Light 25W to 200W
- 07 developed LED Solar street 25W to 75W



Company Overview (History)

2016

- 11 Installed Vietnam 80W LED Street Light for solar Vietnam
- 11 developed LED Hi-bay aging tester Parlux

2017

- 06 Installed Vietnam 3KW solar system Vietnam

2018

- 06 Installed Vietnam 3KW solar system Vietnam
- 08 developed Smart led safety floor controller sung won
- 12 Landscape lighting references Bupyeong city

2019

- 12 developed ice cream dispenser Gela World



2020

- 02 developed hi efficiency le street light 150w
- 03 developed Pedestrian crossing work A1 Traffic light R&D
- 07 developed Pedestrian crossing work demo kits A1 Traffic light R&D



2021

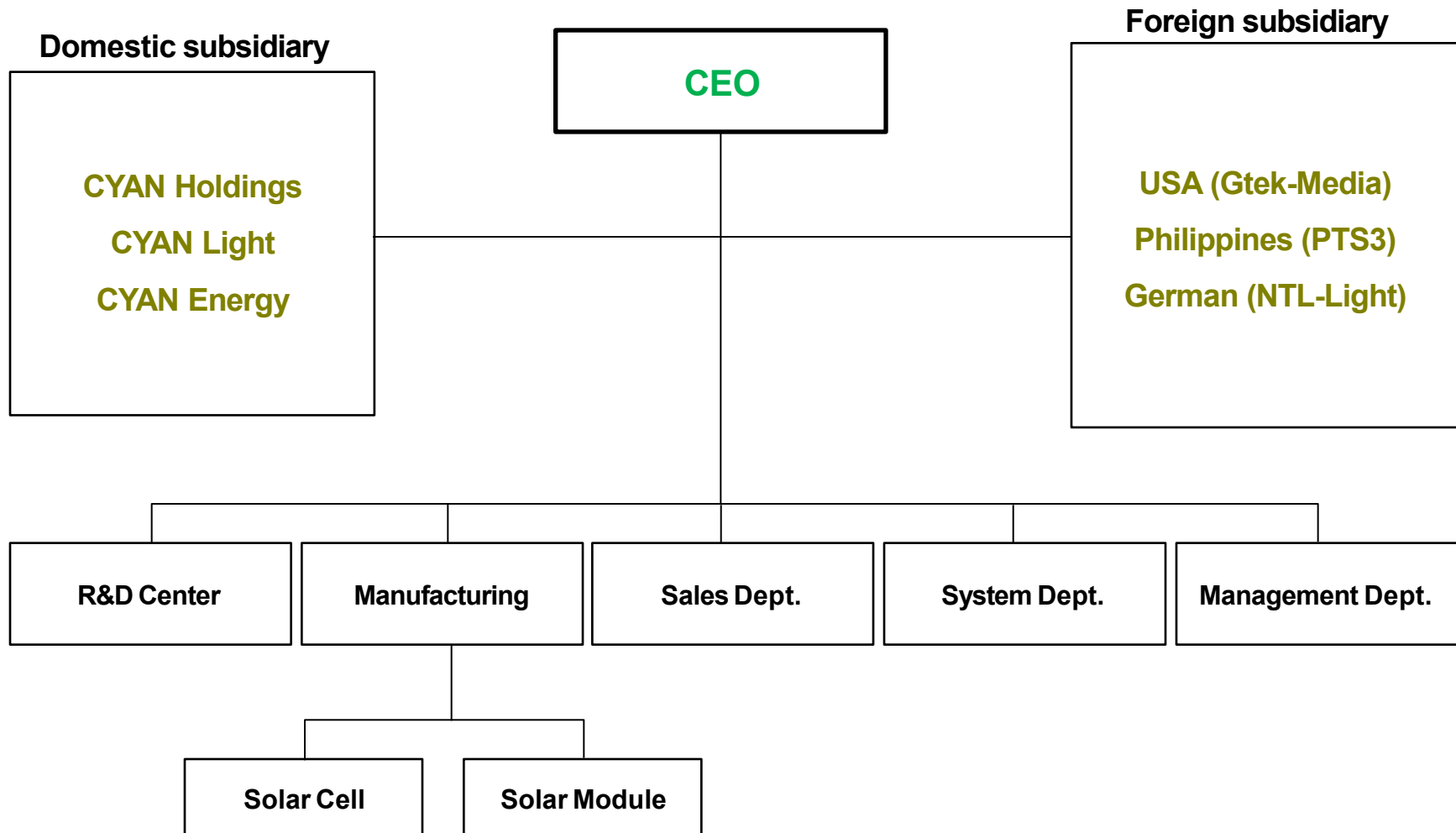
- 06 developed plasma and ionizer 4,5KV 5,5KV AHA
- 11 developed plasma 7,5KV AHA



2022

- 08 Patent ROAD-CONDITION WARNING DEVICE
- 09 Patent ROAD INFORMATION DISPLAY DEVICE
- 11 Patent NOTIFICATION SYSTEM FOR TURNING VEHICLE
- 12 Indonesia Siak city for solar power plan for 100MW





System Portfolio







Integrated Solar Street Light 80W

Life(hrs) : 50,000 ~ 60,000(5 years if using 12hours per day)

Energy Save : 70 ~90%

Application : Park, Room, Ceiling, Spot lighting

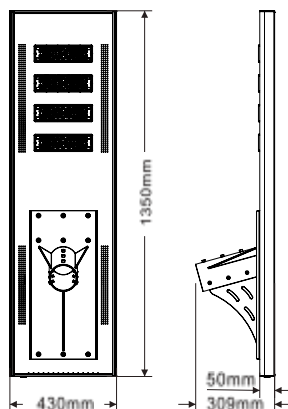
Color Rendering : >Ra80

Model : CY-ISSL-80W

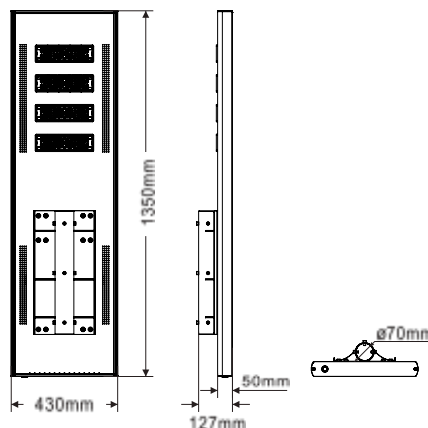
Power Consumption	80W
CRI	> 80
Efficiency (lm/w)	150-160
Luminous Flux (lm)	12,400
Dimension W x H x D (mm)	1350 x 430
Battery	Li-ion 3.7V 100Ah



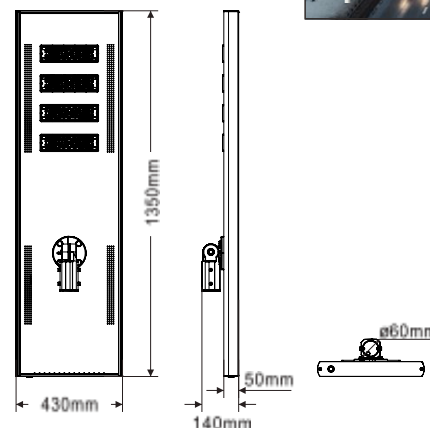
Vertical Adapter



Horizontal Adapter



Adjustable Adapter



Integrated Solar Street Light 80W

Life(hrs) : 50,000 ~ 60,000(5 years if using 12hours per day)

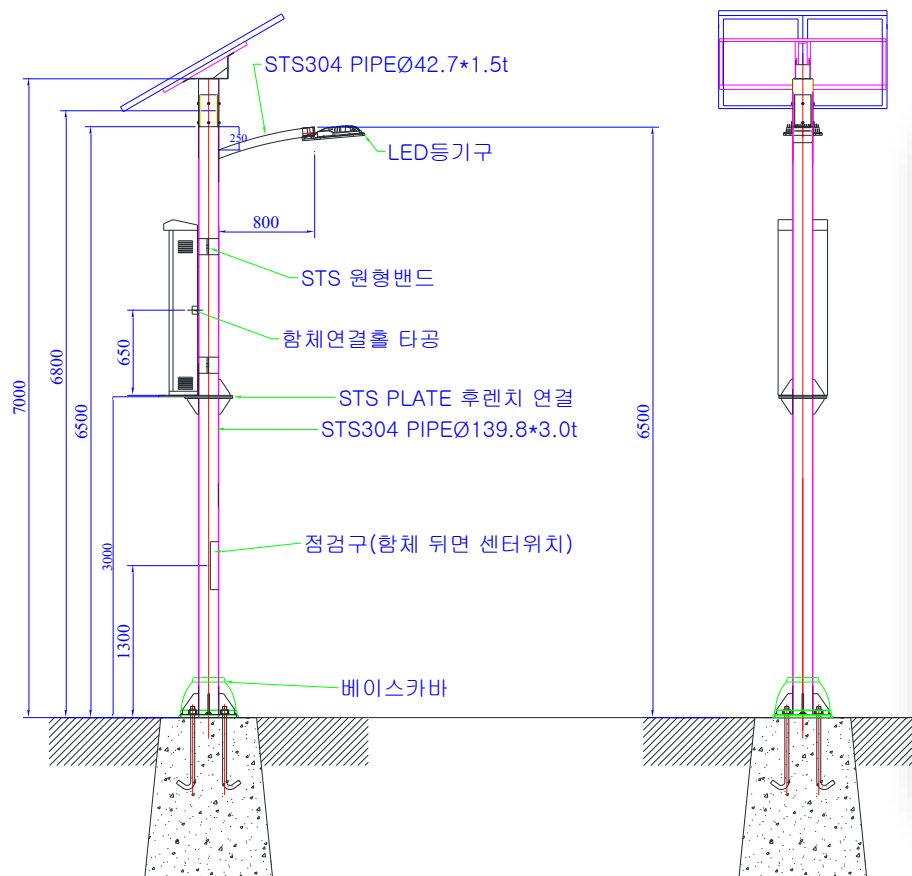
Energy Save : 70 ~ 90%

Application : Park, Room, Ceiling, Spot lighting

Color Rendering : >Ra80

Model : CY-ISSL-80W

Power Consumption	80W
CRI	> 80
Efficiency (lm/w)	150-160
Luminous Flux (lm)	12,400
Dimension W x H x D (mm)	1350 x 430
Battery	Li-ion 7.4V 100Ah



Adjustable dapter



Integrated Solar Street Light 60W

Life(hrs) : 50,000 ~ 60,000(5 years if using 12hours per day)

Energy Save : 70 ~90%

Application : Park, Room, Ceiling, Spot lighting

Color Rendering : >Ra80



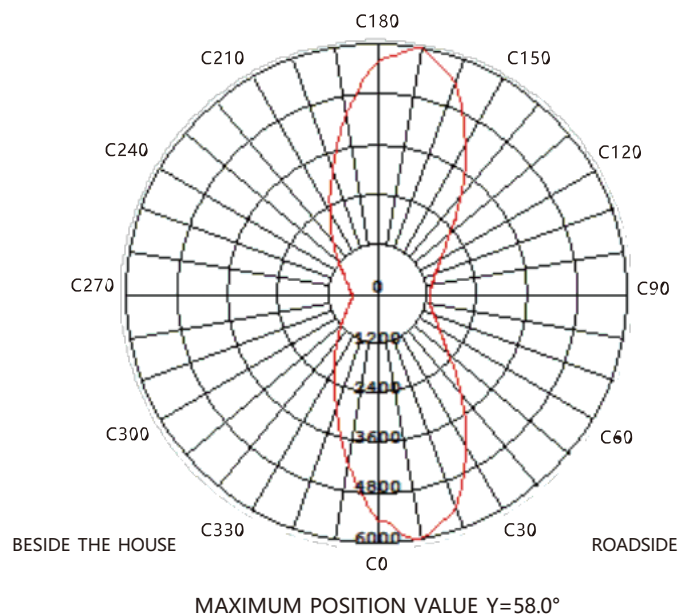
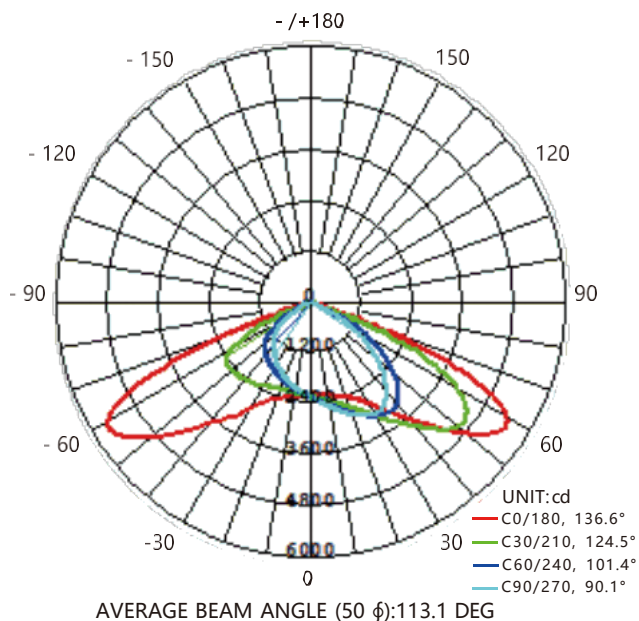
CY-SL120A (40W)



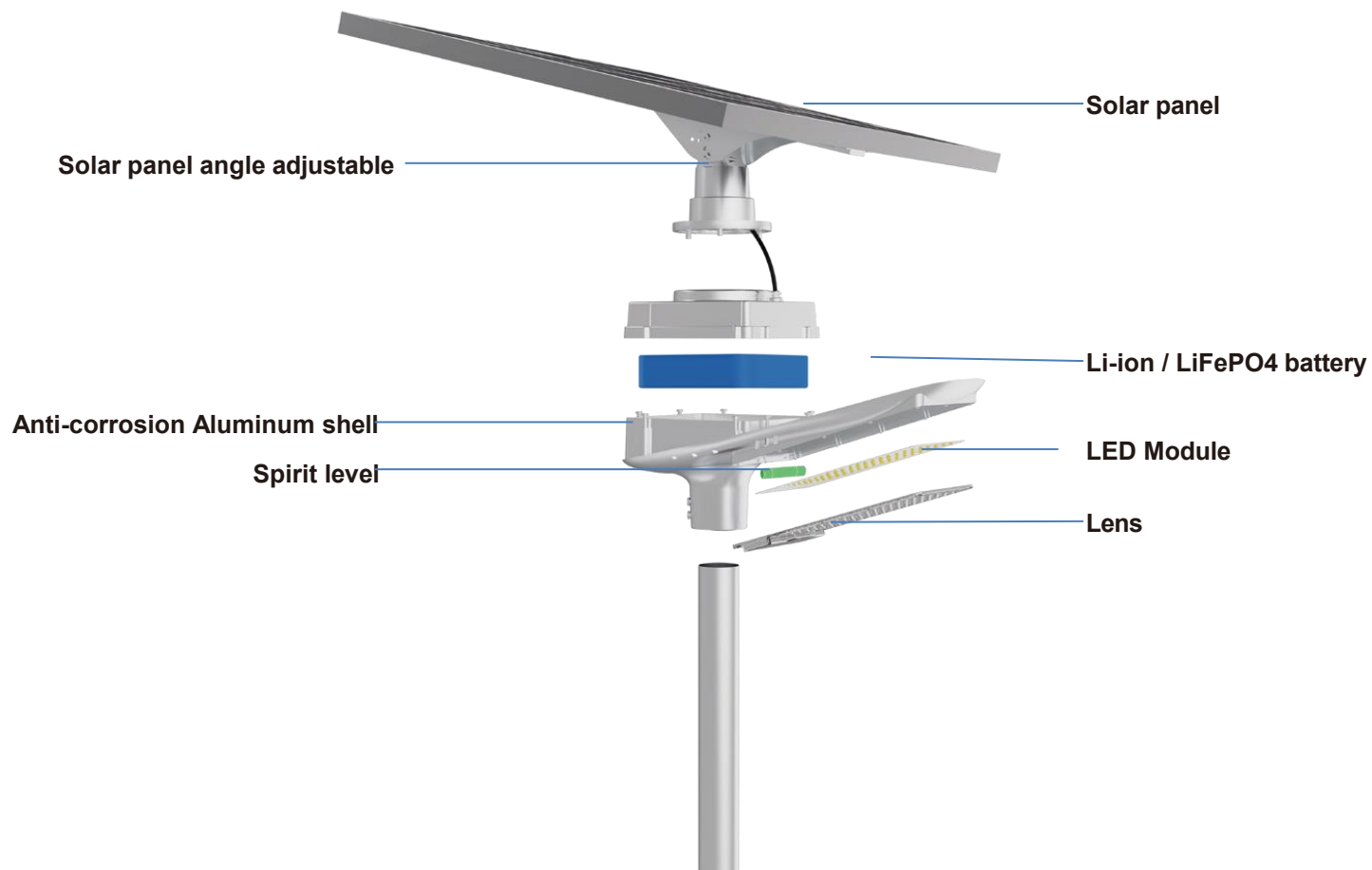
CY-SL300P (60W)

Luminous intensity distribution curves

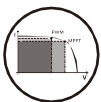
Luminous intensity distribution curves



Assembly

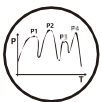


Core Technologies



MPPT Technology

MPPT is an advanced charge mode whose full name is Maximum Power Point Tracking function which can increase the energy utilization rate by 15% to 20% than the PWM controller.



Multi-Peak MPPT

Cyan new products solar controller adopts multi-peak MPPT technology, which can timely track the maximum power point and improve the conversion efficiency of solar panels.



IPC 5.0 Technology

Through 10years' experience, Cyan upgraded highly precise 5.0 version IPC technology (intelligent power control 5.0). It will intelligently detect recent weather conditions, reasonably plan the discharge power to achieve more rainy days.



Dual Low-power Consumption

4pins plug technology to enables transportation power consumption less than 0.05mA, and circuit protection technology to enables the sleep power consumption in long-term transportation of storage will be at uA level, realizing worry-free storage for two years.

Core Technologies



ICD Technology (Intelligent Charge and Discharge)

Using Grade A LiFePO₄ battery with excellent safety performance. Cyan's unique current equalization and dual protection (software and hardware) enable the battery's capacity remains at 90% after 2000 cycles. Lifetime is 4 times longer than that of lead-acid batteries.



High Efficiency LED Chips

Using high efficiency 140pcs of 5050 LED chips, optimized brightness, single lumen value >190lm/w, with the aluminum chip base makes excellent heat dissipation.



Battery Program Upgraded

Embedded single string control technology. More stable and longer lifespan.

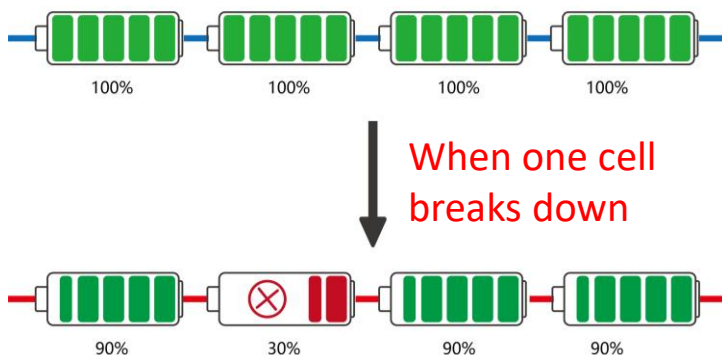


Intelligent Power Control

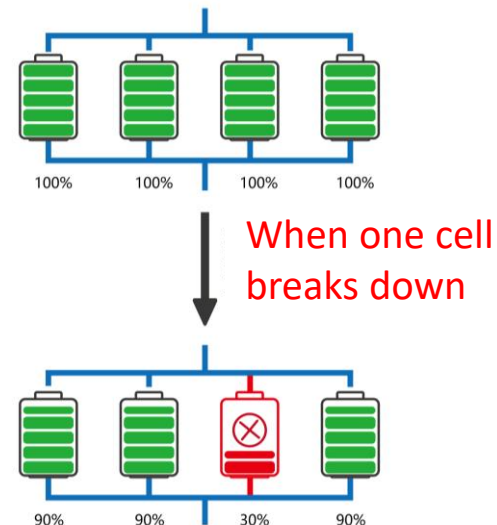
Embedded intelligent monitoring 5.0 system, AI intelligently detecting recent weather conditions, reasonably plan the discharge power to achieve more rainy days.

Charge system

Multi-string connection



Parallel connection

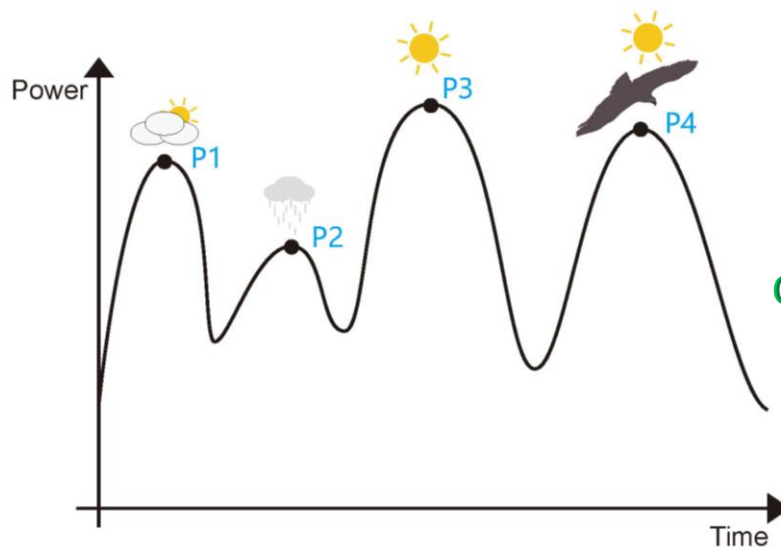


3.2V MPPT Technology up to 160W

Battery cell have consistency differences in capacity, internal resistance and voltage. When use the 12V or 24V multi-string technology, the lifetime of the entire battery pack will be affected if there is a problem with one battery cell.

While 3.2V MPPT technology can realize that even one battery cell has problem, the lifetime of the entire battery pack will not be affected. The 3.2V MPPT reduces the probability of battery problems by **75%** than that of 12V system, effectively improved the overall product stability and lifetime 3 times.

Multi-Peak MPPT

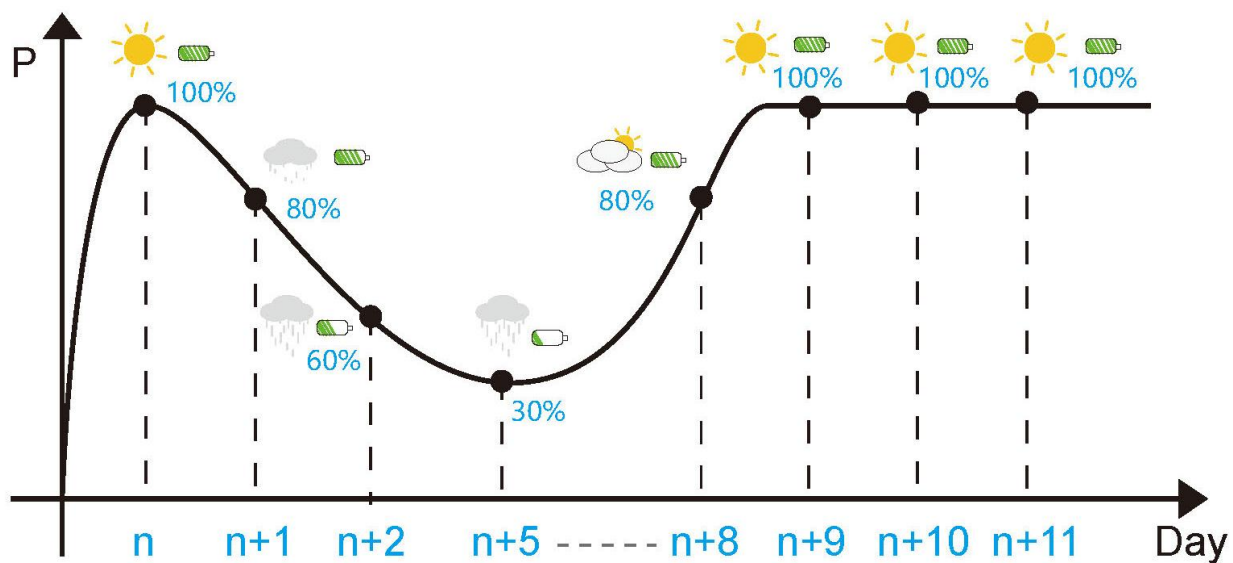


Charge efficiency increase 20%

When there is something covering the solar panel such as dust, tree shadows and bird droppings or part of the panel is damaged, the IV curve will have multiple peaks power.







However, the traditional single-peak MPPT technology cannot track accurately the maximum power point. Cyan new products solar controller adopts **multi-peak MPPT (maximum power point tracking technology)**, which can timely track the maximum power point and improve the conversion efficiency of solar panels.

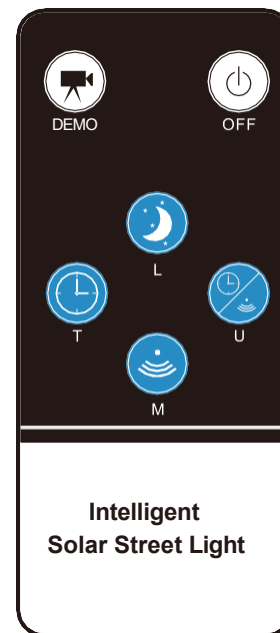
Power Control



Remote Control

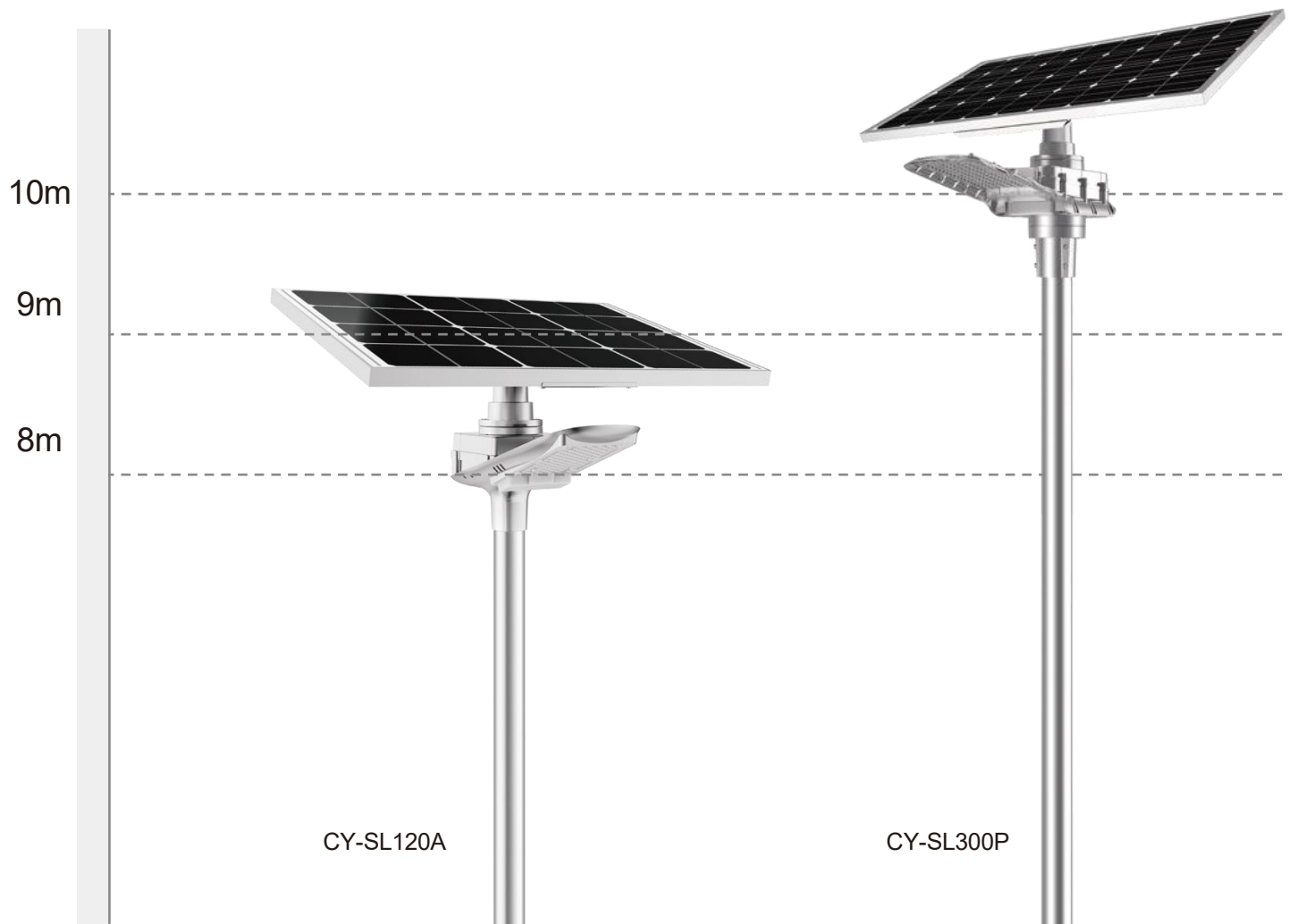
6 working modes

-  DEMO: No matter day or night, light "on" for 1 minute.
Only for test use
-  OFF: Light "off", no matter day or night
-  L: At night, 100%-2hrs, 60%-3hrs, 20%-dawn
-  T : At night, 100%-3hrs, 50%-3hrs, 30%-2hrs:
-  M: At night, 100%-3hrs, 50%-3hrs
-  U: At night, 100%-3hrs, 50%-3hrs(Highlight mode)



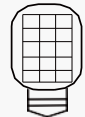


- Note:
1. Default is L mode, can choose best mode according to different sunshine condition.
 2. The three LED indicator lights will twinkle if modes changing successfully.
 3. Once a certain mode was set successfully, it will be reserved until you change other modes with remote control.
 4. U Highlight mode: Increase 30% on the original basis, mean 3H-130%, 3H-80%.

Light Post Installation Height Recommendation

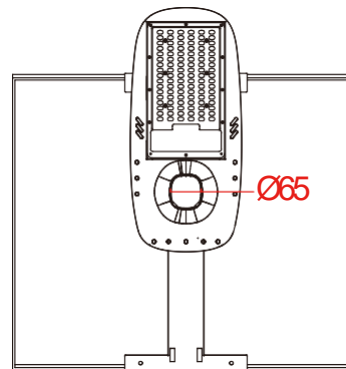
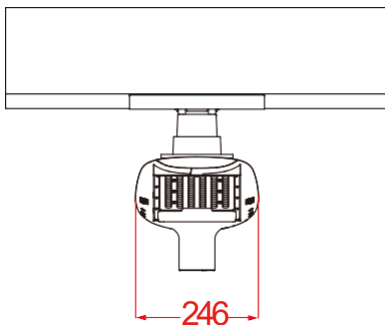
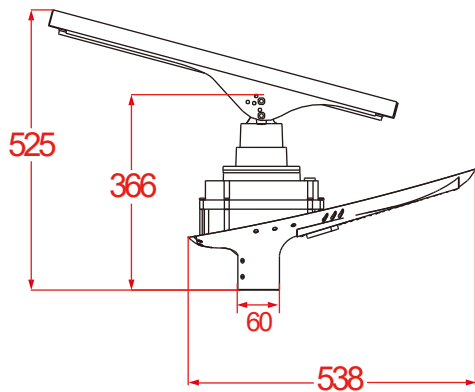


Indicator light status instructions

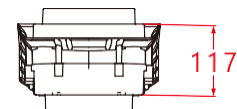
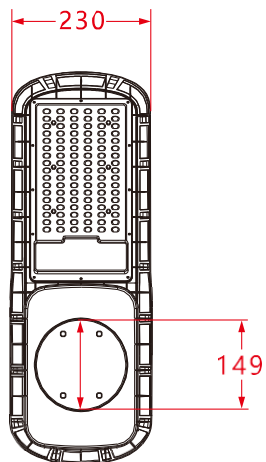
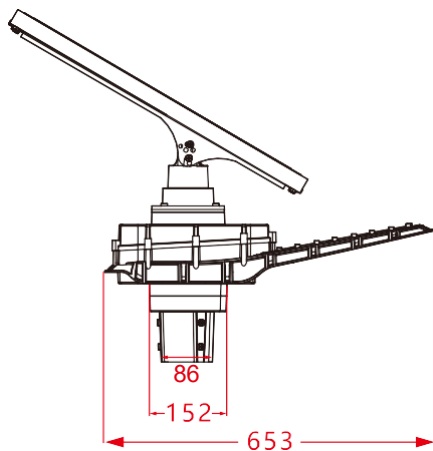
LED	Indications	Status	Functions
<div>● Blue</div> 	Charging indication	Long-term On	During the day, it's not charging
		Slow twinkling	Be charging
		Long-term Off	Night
<div>● Red</div> 	Battery indication	Long-term On	Battery works normally
		Long-term Off	Battery is not connected/No power
		Fast twinkling	Battery is over discharged
		Slow twinkling	Battery full charged
<div>● Green</div> 	Load indication	Long-term On	Load is on
		Long-term Off	Load is off

Lamp Dimension

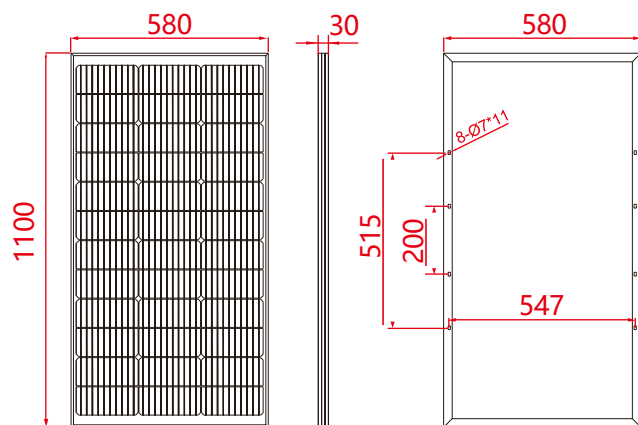
CY-SL20A



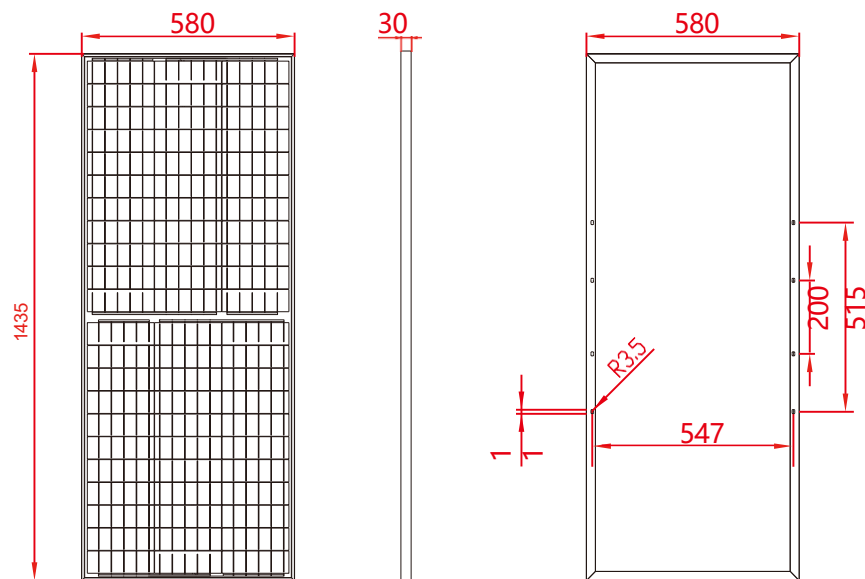
CY-SL300P



Solar Panles



120W / 18V



150W / 18V

Product Installation



Solar panel



lamp holder



Sleeve



Bracket



1: Solar panel assembly and fixation with 4 screws



2: Install and fix the solar panel bracket with 4 screws



3: Connect the solar panel to the lamp body with 3 screws



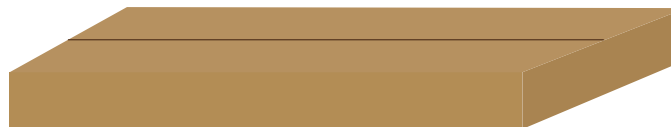
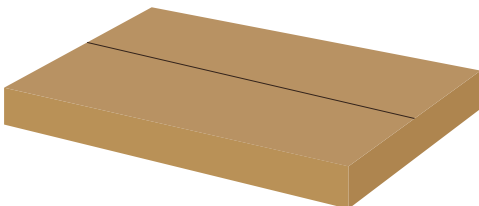
4: The lamp body and the lamp pole are connected and fixed with 4 screws

Packing

The packaging as shown below is for reference only, the actual packaging is subject to the specific product.



Lamp body packing



Solar panel packing(120W/150W)

Model Name	Carton Size	1 set/ CBM	1*40HQ Quantity	CBM	1set weight(kg)	1*40HQ(goods weight(kg)
CY-SL120A	680x410x280mm, 2pcs/ctn 1,190x660x80mm, 2pcs/ctn	0.067	1,000	67	14,75	14,750
CY-SL300P	720x310x280, 1pc/ctn 1,525x660x65mm, 1pc/ctn	0.127	530	67.31	21,9	11,607



Save electricity and reduce light pollution

Automatically or remotely control the brightness of streetlights depending on time zone and vehicle movement



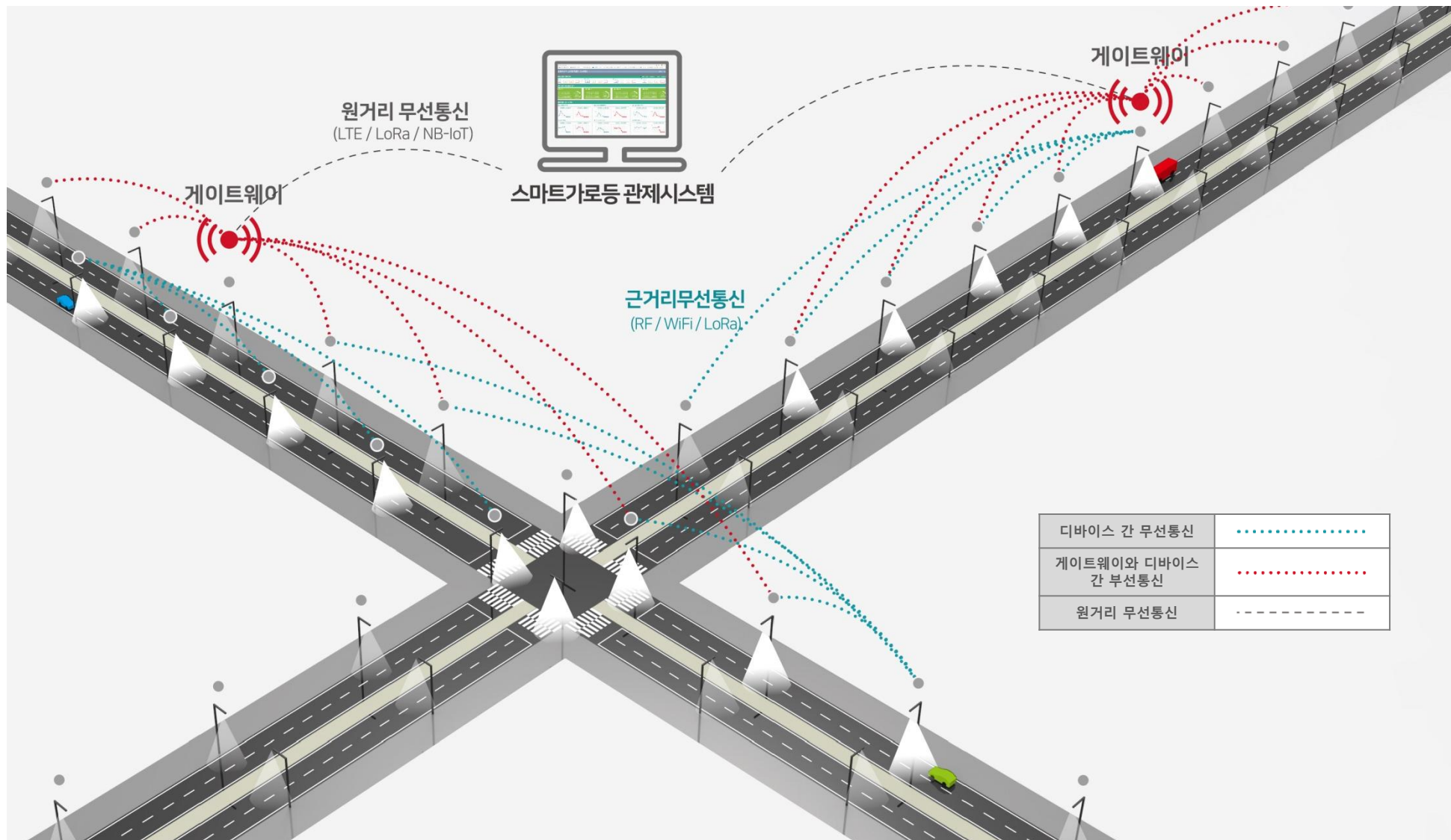
safe road lighting

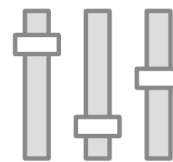
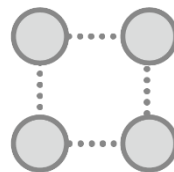
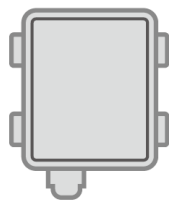
Remotely monitor road lighting conditions with fault detection sensors



road information collection

Traffic volume detection sensor provides traffic volume and speed information
Provides streetlight electricity usage information





**Vehicle movement direction
and speed detection**
스마트디바이스 Radar 센서

무선 양방향 통신
RF(LoRa)

조명제어
Dimming up & Down

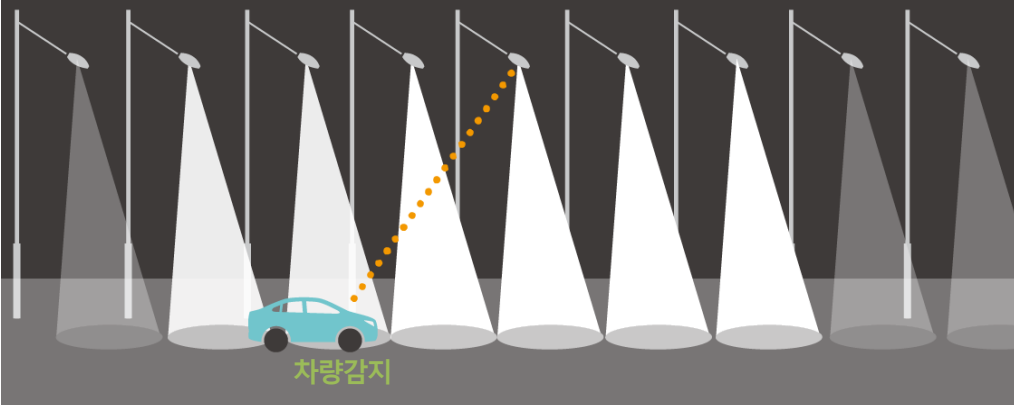
차량 이동방향과 속도에 반응하여 가로등 조명의 다이내믹 디밍 ➡ 라이팅존 형성

- 차량속도 감안하여 최대 100m 전방에서 감지하고, 속도에 따라 조명제어(100% 밝기 조절)
- 후속 차량 없을 시 기본디밍으로 밝기 자동제어

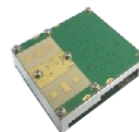
50% 디밍

100% 디밍 (라이팅존)

50% 디밍

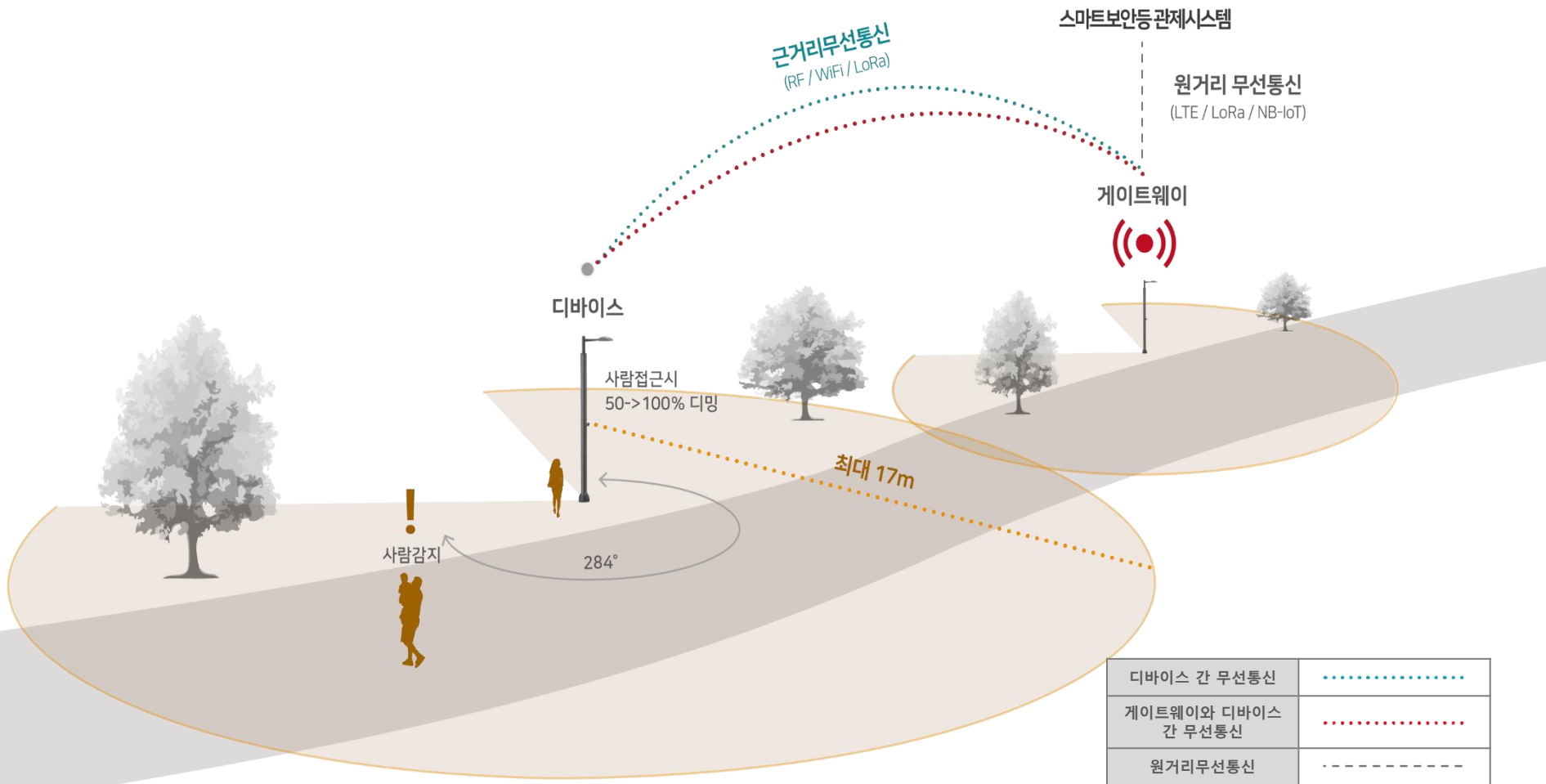


Radar Sensor



Doppler Rader Sensor

구분		Specfication
Frequency		24.05~24.25 GHz
Beam Area		(Hori.)60° , (Ver.)35°
Detection Area		Max. 200km/h
Detection Distance		Ma. 60m (6Lane)
Install High		Pole Type 5~8m
Dimension	Doppler	50 x 45 x 10 mm
	FMCW	80 x 60 x 30 mm
Voltage		+5 VDC
Power		1~2 W
Storage Temperate		-40 °C ~ +85 °C
IP		IP68
Certification		KC Certification



Traffic signal controller



Standard "A" Type



Standard "A" Type
(LSU 8slot)



Slim "B" Type

- Product features

- Compatible with other Korean companies
- On / Off line control
- Loop detector / Option board (Special function)
- Children's safety zone
- User define color

LED TRAFFIC LIGHT

LED Traffic light 300mm (12")



- Embossed lens
- Weather Proof



- Clear lens
- Weather Proof

TECHNICAL SPECIFICATIONS								
	VEHICLE SIGNAL LAMP			ARROW SIGNAL LAMP			PEDESTRIAN LAMP	
	RED	YELLOW	GREEN	RED	YELLOW	GREEN	RED	GREEN
Luminance Intensity	≥ 400cd	≥ 400cd	≥ 400cd	≥ 200cd	≥ 200cd	≥ 200cd	≥ 100cd	≥ 100cd
Power Consumption	10W ≥	10W ≥	10W ≥	6W ≥	6W ≥	6W ≥	6W ≥	6W ≥
No.of Diodes(pcs)	≥ 144	≥ 144	≥ 132	≥ 48	≥ 48	≥ 48	≥ 80	≥ 80
Power Factor	> 0.9			> 0.9			> 0.9	
THD	< 20%			< 20%			< 20%	
Transformer	built-in			built-in			built-in	
Input Voltage	85V AC ~ 285V AC (Free volt)			85V AC ~ 285V AC (Free volt)			85V AC ~ 285V AC (Free volt)	
Output Voltage	13V±1V			13V±1V			13V±1V	
Operating Frequency	60Hz			60Hz			60Hz	
Operating Temperature	-30°C ~ 70°C			-30°C ~ 70°C			-30°C ~ 70°C	
Lens Material	Polycarbonate			Polycarbonate			Polycarbonate	
Lens Type	Clear / Embossed / Weather Proof			Clear / Embossed / Weather Proof			Clear / Embossed / Weather Proof	
Ingress Protection Rating	IP 66			IP 66			IP 66	
Warranty Period	5 Years			5 Years			5 Years	
Environmental Aspect	Environmental Friendly			Environmental Friendly			Environmental Friendly	

Integrated Pedestrian Lamp



- Clear lens
- Weather Proof

TECHNICAL SPECIFICATIONS				
	PEDESTRIAN LAMP 300mm(12")		PEDESTRIAN LAMP 200mm(8")	
	RED & GREEN	GREEN & RED	RED & GREEN	GREEN & RED
Luminance Intensity	≥ 200cd	≥ 200cd	≥ 100cd	≥ 100cd
Power Consumption	15W ≥	15W ≥	15W ≥	15W ≥
No.of Diodes(pcs)	≥ 240	≥ 240	≥ 180	≥ 180
Power Factor	> 0.9		> 0.9	
THD	< 20%		< 20%	
Transformer	built-in		built-in	
Input Voltage	85V AC ~ 285V AC (Free volt)		85V AC ~ 285V AC (Free volt)	
Output Voltage	13V±1V		13V±1V	
Operating Frequency	60Hz		60Hz	
Operating Temperature	-30°C ~ 70°C		-30°C ~ 70°C	
Lens Material	Polycarbonate		Polycarbonate	
Lens Type	Clear / Embossed / Weather Proof		Clear / Embossed / Weather Proof	
Ingress Protection Rating	IP 66		IP 66	
Warranty Period	5 Years		5 Years	
Environmental Aspect	Environmental Friendly		Environmental Friendly	

Assembly

Full set



Red



Yellow



Arrow



Green



Pedestrian



Cross



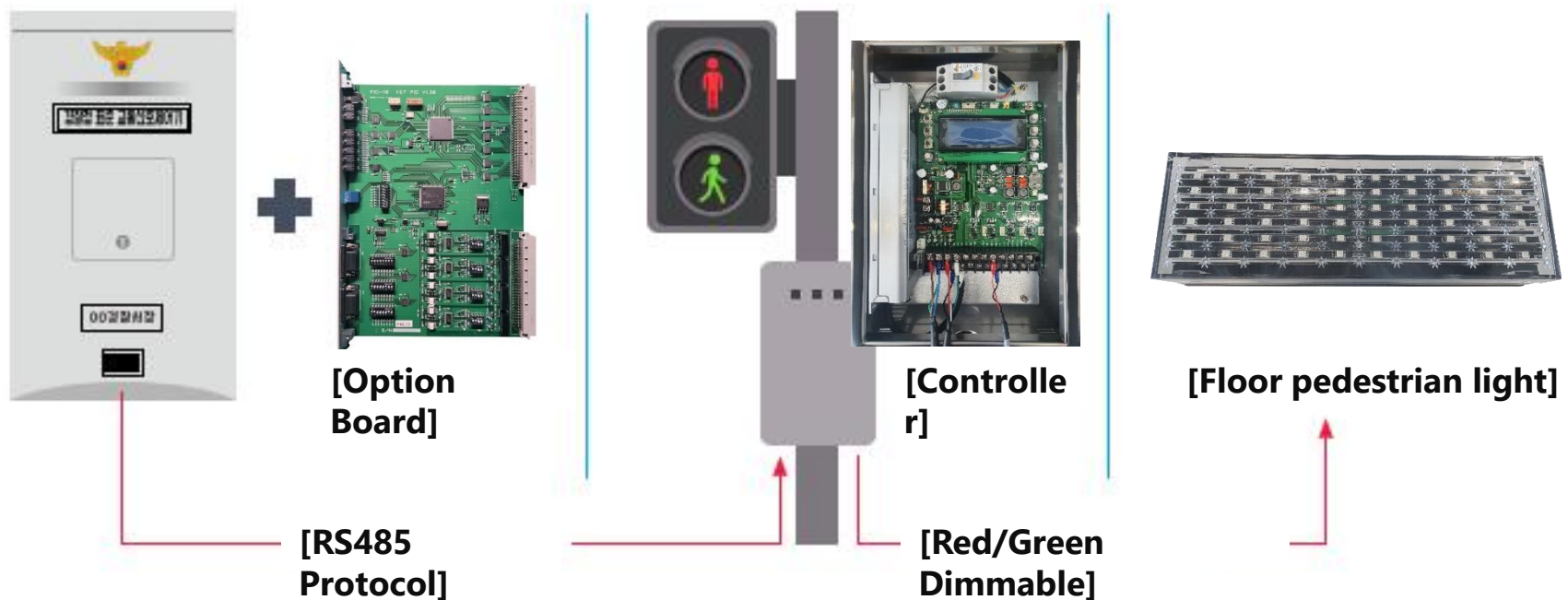
Red & Green
Timer



Bicycle

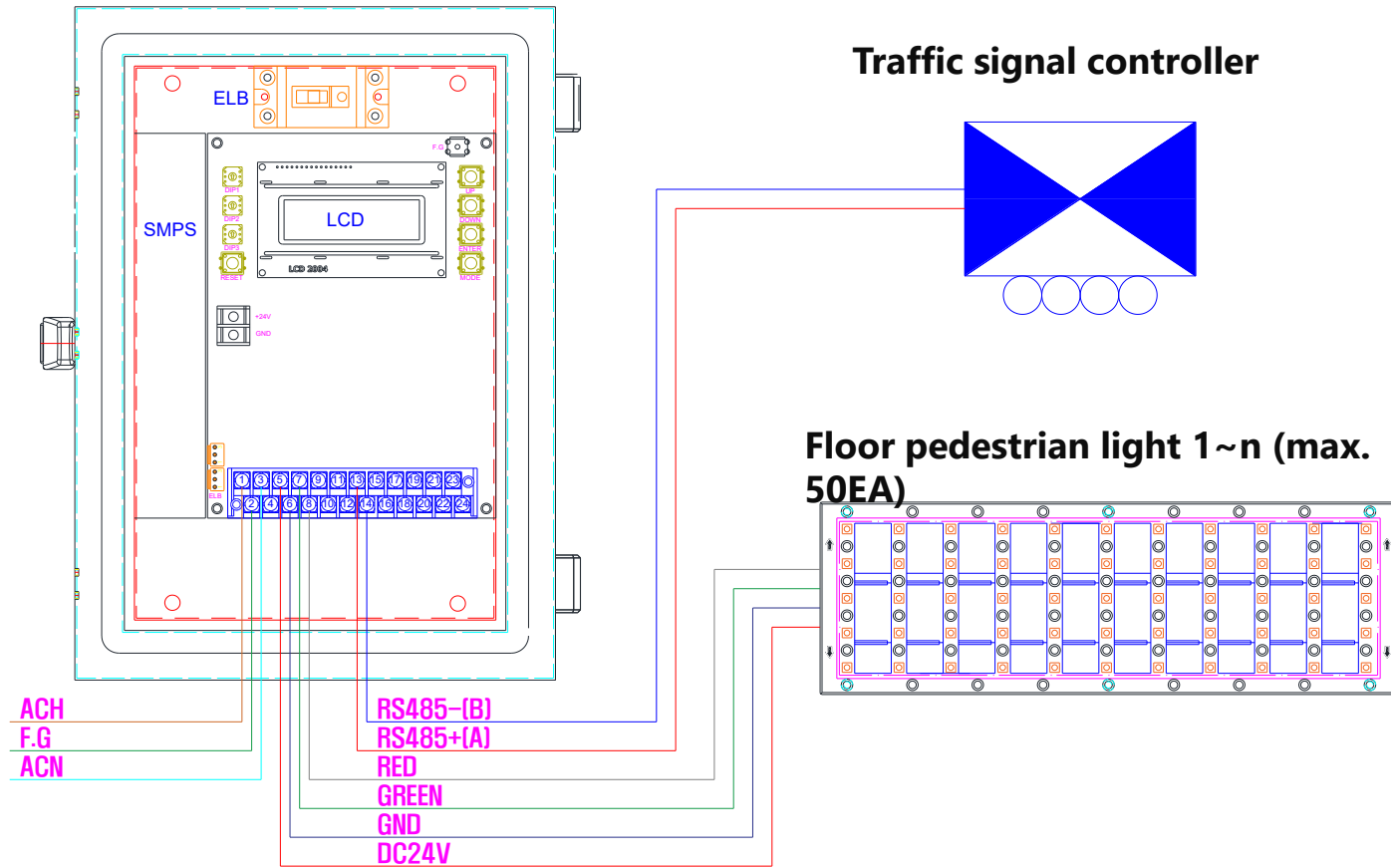


Integrated Pedestrian Lamp – Block diagram 1

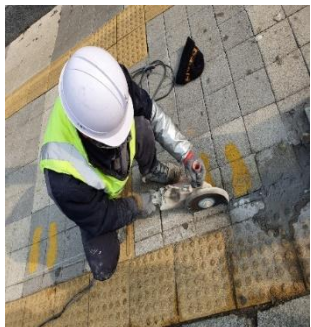


- Option Board : It is inserted into the traffic signal controller and reports signal status, etc. to the control unit. device that transmits
- Controller : pedestrian signal lights from the option board inserted into the traffic signal controller. Collects the status and monitors display unit equalization control, dimming control, and abnormal operation. device to control
- Floor pedestrian light :Installed on the floor, the walking signal status is green, flashing, and red. device that expresses

Integrated Pedestrian Lamp – Block diagram 2



Integrated Pedestrian Lamp – Installation process



Block cutting



Block rebalancing



Fixture connect



Buried in the ground



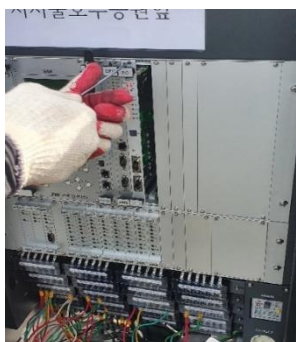
Filling the gaps with silica sand



Power supply line connection



Controller installation

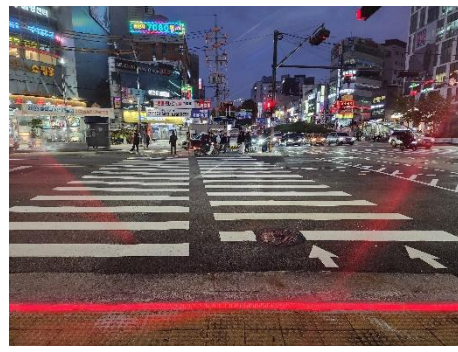
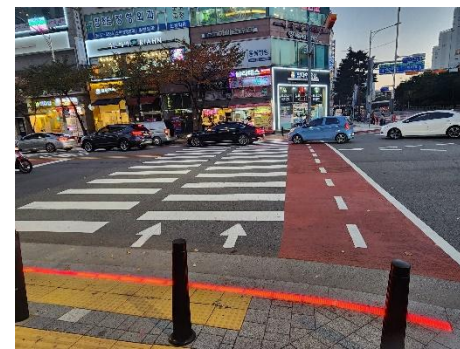


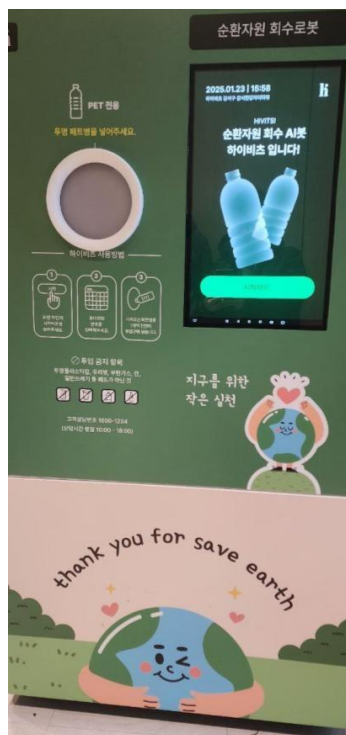
Insert Option Board



Operation test

Integrated Pedestrian Lamp – Installation site





포인트 환전 신청방법 [앱]으로 신청하기



①

휴대전화에 하이비츠 앱을 다운로드 해주세요



②

신규 회원은 회원가입을 기존 회원은 로그인을 진행 해주세요



③

[환전하기] 버튼을 눌러주세요
1,000P 이상 신청 가능



④

환전신청이 완료되면 신청일 기준으로 돌아오는 월요일에 다이소 상품권이 도착합니다.



사용방법



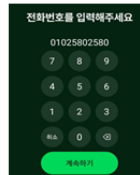
1

깨끗한 투명 페트병이 준비되었다면 [시작하기] 버튼을 누릅니다.



2

적립할 전화번호를 입력 후 [계속하기] 버튼을 누릅니다.



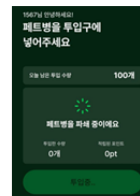
3

투입구가 열리면 페트병을 넣어주세요



4

AI카메라가 페트병을 검사 후 페트병을 파쇄합니다.



5

적립된 포인트를 확인하시고 [종료하기] 버튼을 누릅니다.



Cogging-free Permanent Magnet Technology

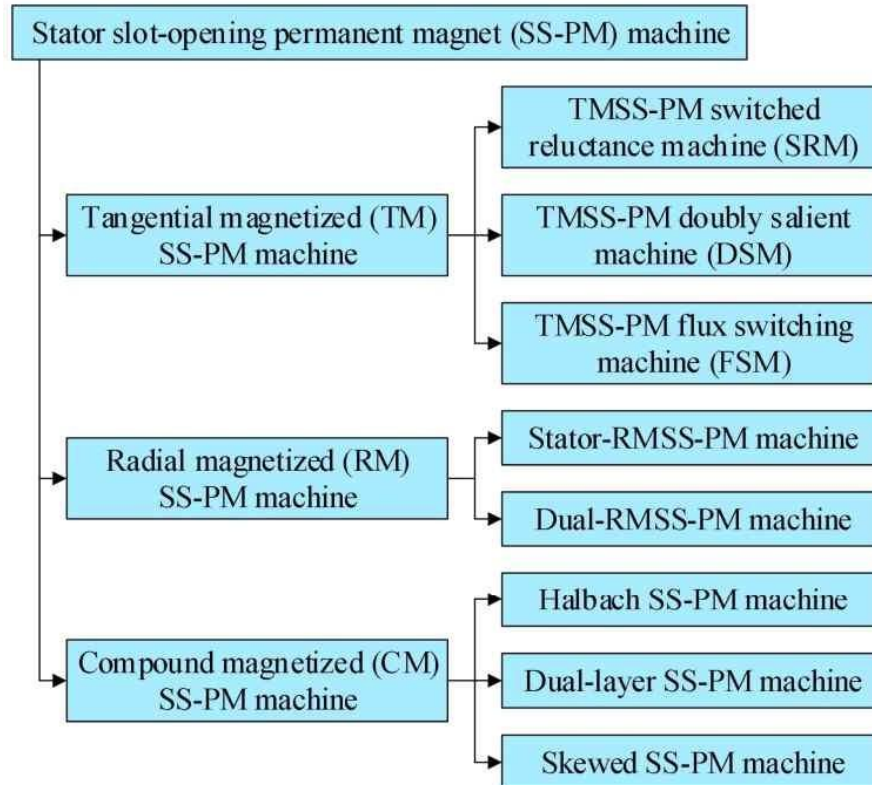


Cogging-free Permanent Magnet

Sustainable Emerging Technology ?

AHSRM(Stator-PM)

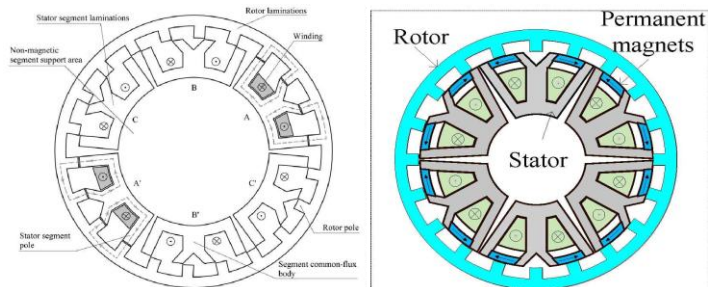
AHSRM (KOREA)
(PCT 특허 출원)



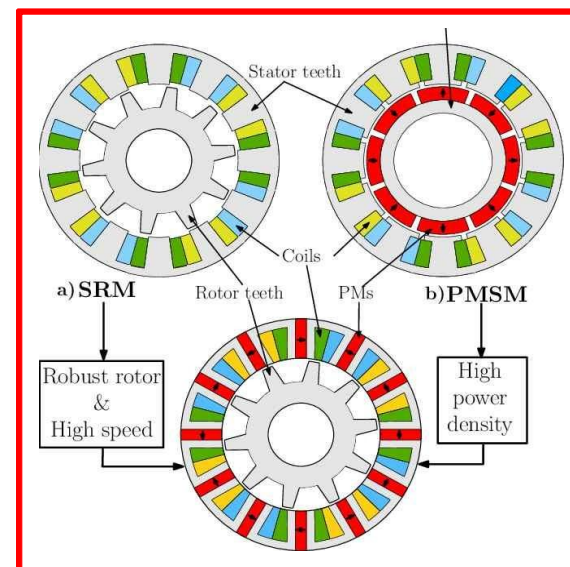
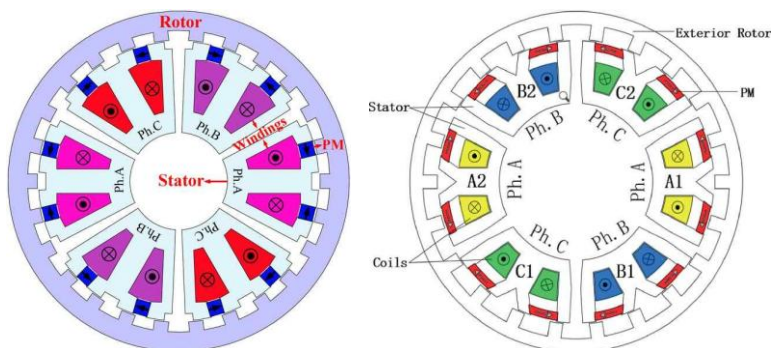
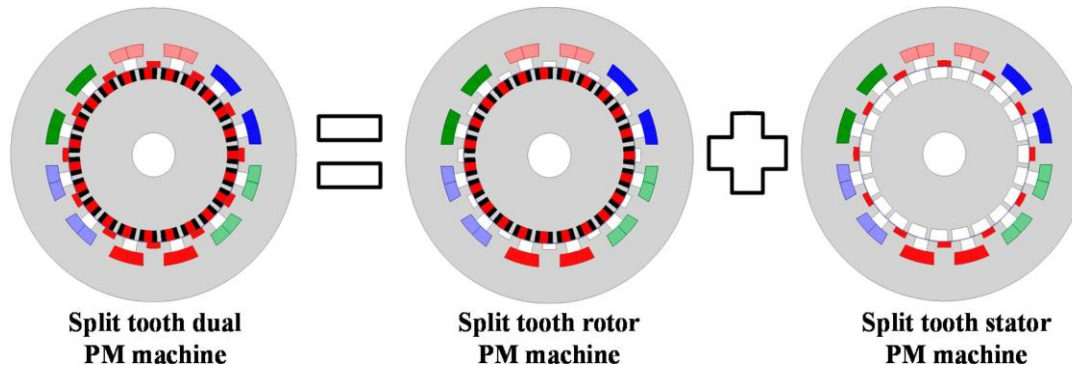
AHSRM (Stator-PM) is inherently operable because it has magnets in the rotor, so no back EMF voltage is induced (no back EMF voltage) and overvoltage protection of the converter is required.

Cogging-free Permanent Magnet

Technology for AHSRM(Stator-PM)



Sustainable Emerging Technology ?

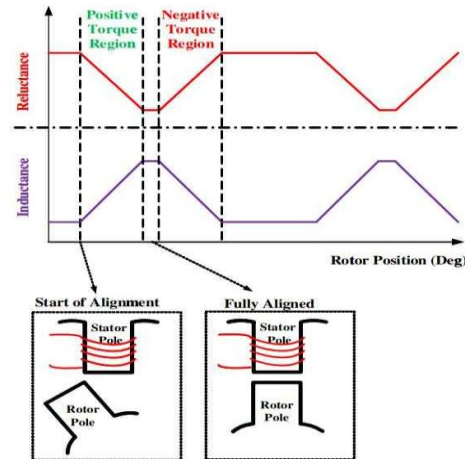
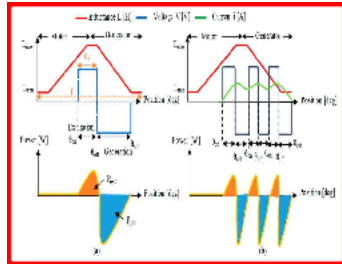
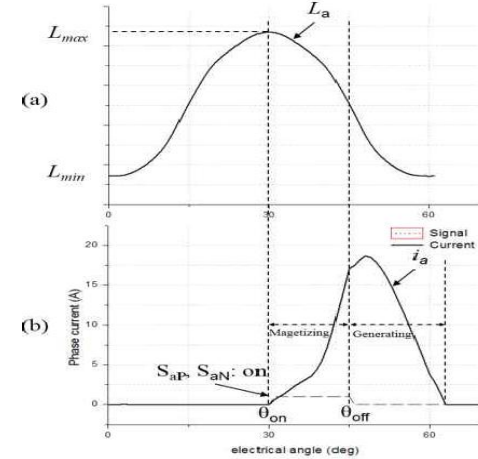
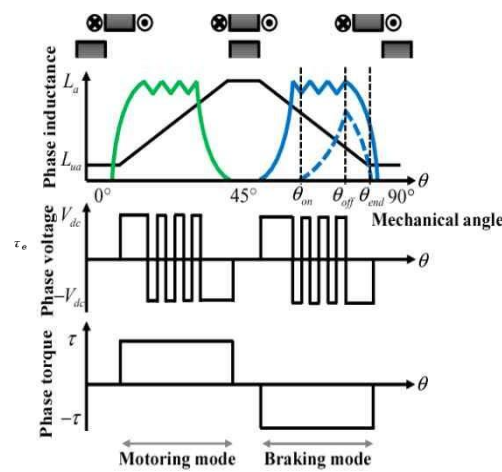
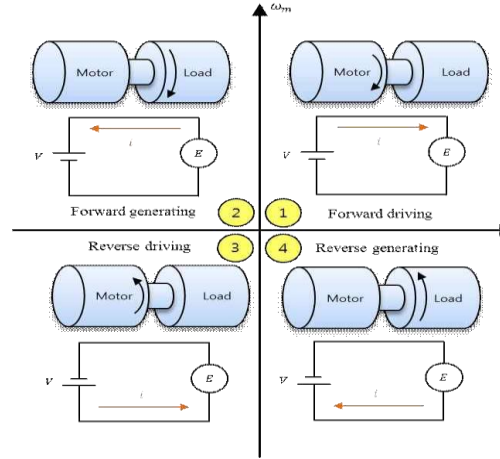


Cogging-free Permanent Magnet

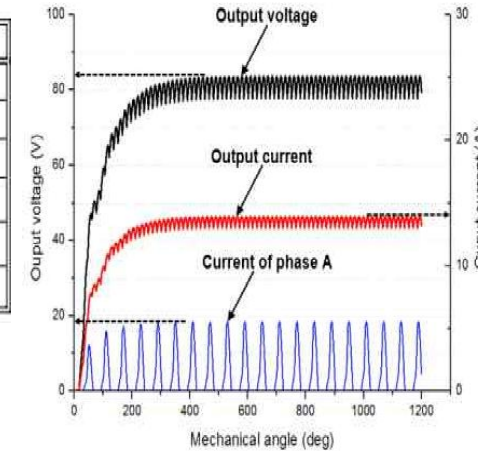
SRM "reverse + recovery (generation)" system

At the maximum inductance position θ_{on}

Current is applied to create magnetic flux, and then at the $\frac{3}{4}$ position θ_{off} , the generated magnetic flux and counter electromotive force are added to create the maximum generation current.

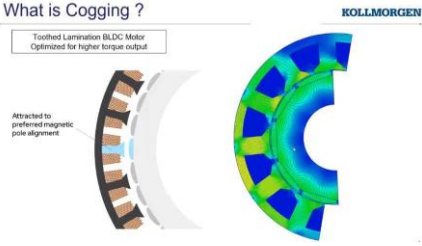
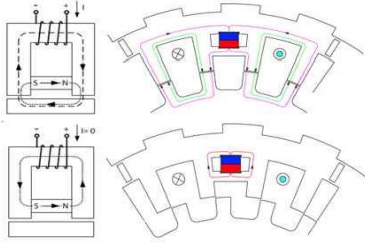
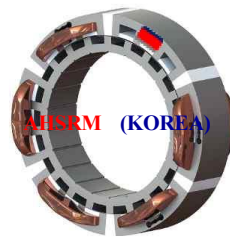
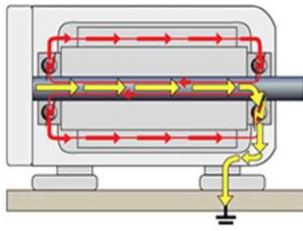


항목	시뮬레이션	실험	단위
기계적 입력 전력	1039.34	1014.6	W
전기적 입력 전력	256.55	251.3	W
정격 출력 전력	1062.5	1029.12	W
정격 전류(rms)	12.95	12.8	A
정격 전압(rms)	79.62	80.4	V
효율	81.98	81.29	%



Cogging-free Permanent Magnet

AHSRM(Stator-PM)

<p>What is Cogging ?</p>  <p>TOOTHED LAMINATION BLDC MOTOR Optimized for higher torque output</p> <p>Attracted to preferred magnetic pole alignment</p>		 <p>AHSRM (KOREA)</p>	
Cogging Torque	Stator-PM	AHSRM(Korea)	bearing Current
<p>Cogging Torque ?</p> <p>1. Strong magnetic attraction between the permanent magnets of the rotor and the stator slots</p>	<p>Cogging Torque(Free)</p> <p>1.The armature flux does not pass through the PM, so the reluctance of the armature magnetic path is reduced, and the armature current does not pose a risk of demagnetization of the magnet</p> <p>2.Reverse Bias Magnetic Field Design</p>	<p>1. High density high efficiency</p> <p>2.No power generation voltage, no energy consumption due to field weakening control</p> <p>3.Easy disassembly and assembly of the rotor, like an induction motor</p>	<p>bearing Current(Free)</p> <p>1.Since the windings are symmetrically distributed, no shaft current is generated.</p> <p>2.no neutral point, so there is no voltage imbalance.</p>

Thank You



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