

## ECO Lighting Solution



LED Spot Light

LED Bulb

LED Down Light

LED Tube (Adapter)

LED Tube (Ballast)

LED Panel Light

LED High Power Ceiling Light

LED Stick Bar

We are determined to become a top-notch company  
in Eco Lighting Solutions.

## HISTORY

- 2000 DNC Technology was established
- 2000 The Business Contract with SUMIDA Japan , for LCD Inverter  
(LG Electronics, LG Philips LCD, Samsung Electronics VD div., Samsung Electronics AMLCD div.)
- 2003 Investment to GUANGDONG FINE ELEC. Ltd. in China
- 2004 Investment to FMS Ltd.  
Investment to SUMIDA KOREA Ltd., Joint venture with Sumida, Japan
- 2005 Changed the company name from DNC to CODES
- 2006 ISO 9001, ISO 14001 Certificate & LED Lighting Products R&D
- 2008 LED Lighting Products' VEGALUX Brand Launch
- 2009 Applying for the certificates of EK, KS, UL, CE, etc.



## Greetings

Codes Co., Ltd. is a pioneer in design, manufacturing and distributing innovative LED lighting products for valuable customers with solid lighting backgrounds stemmed from many years of experiences of display industry.

We are quite sure that the finest LED lighting products only come from several engineering capabilities and those which we have confidences are; design capabilities for the optics, thermal treatment, the electrical circuit and the appliances, verification and validation of the design and development, design of exterior appearances, manufacturing of high-precision molding, and reliability test and product assurance

For the past few years, we have launched VEGALUX series, various LED lightings covering from indoor to outdoor usages including customized specified applications. To be a world leader in LED lighting field, we have been seeking for business partners all over the world and corresponding with present customers for their absolute satisfaction.

As we look to the future we are surely optimistic in our ability to expand our business to yield profits in every aspect to whom we work with. As our slogan, customer satisfaction and value creation, connotes we are trying to do our best to supply state-of-the-art LED lightings to every where they are needed and they will lighten the world.

Finally I would like to express my sincere appreciation to our customers, business partners, and employees. Thank you.

Chief Executive Officer

## **VEGALUX Lighting Products**

Design by Innovation.

Optic Analysis & Simulation Tech.

Evaluation Tech. for Reliability Test.

High Level Circuit Tech.

Thermal Analysis & Simulation Tech.

# **ECO Bridge CODES**

0101010101100101010101000101010101001010101010100101010101

0101010101100101010101010101010101010101010101010101010101

Eco Friendly

Low Power Consumption

Long Life span

0101010001010101010101001010101010100101010101010101010101

0010101010100101010101010101001010101010101010101010101010

# LED Lighting Development & Quality Control

## Development & Quality Testing

Electrical Features

Optical Features

Temperature Features

## Product Reliable Testing

Durability Testing

Low Temperature Start Testing

On/ Off Lifetime Testing

## Strict Work Flow

ISO 9001

ISO 14001

Applying for the certificates of EK, KS, UL, CE, etc.

## Contents

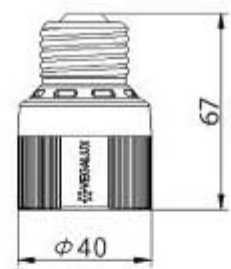
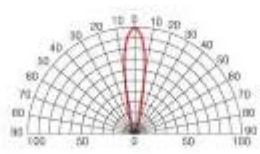


LED Spot Light	6
LED Bulb	11
LED Down Light	13
LED Tube (Adapter)	17
LED Tube (Ballast)	18
LED Panel Light	19
LED High Power Ceiling Light	21
LED Stick Bar	22



**SL-01**

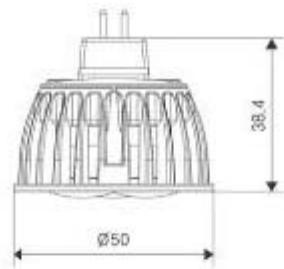
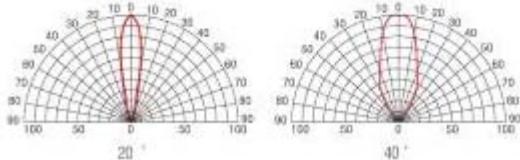
- Superior heat sink structure design
- High brightness & long lifespan
- Great power saving & low power consumption

SL-01	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 40, Height 67	
Weight (g)	56	
Base	E-26 / E-27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	1.2	
Power Factor	N/A	
Luminous Flux (Lumen)	75	
Illuminance (Lux, from 1M)	200	
Luminaire Efficacy (Lm/W)	60	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	20 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



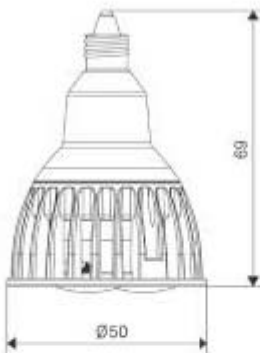
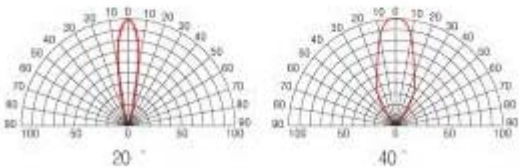
## SL-03A

- Superior heat sink structure design
- High brightness & long lifespan
- Great power saving & low power consumption

SL-03A	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 50, Height 39	
Weight (g)	54	
Base	GU 5.3	
Input Voltage(V)	AC/DC 12V	
Power Consumption (W)	3.3	
Power Factor	N/ A	
Luminous Flux (Lumen)	230	
Illuminance (Lux, from 1M)	670(20 °) / 300(40 °)	
Luminaire Efficacy (Lm/W)	70	
Color Temperature (Kelvin degree)	Warm White : 3,000 Pure White : 5,500	
CRI	80	
Beam Angle	20 ° /40 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	




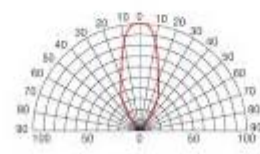
- Superior heat sink structure design
- High brightness & long lifespan
- Great power saving & low power consumption

SL-03C	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 50, Height 69	
Weight (g)	52	
Base	E 11	
Input Voltage(V)	AC 100	
Power Consumption (W)	3.3	
Power Factor	N/ A	
Luminous Flux (Lumen)	230	
Illuminance (Lux, from 1M)	670(20 °) / 300(40 °)	
Luminaire Efficacy (Lm/W)	65	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	80	
Beam Angle	20 ° / 40 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



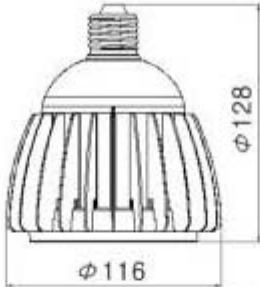
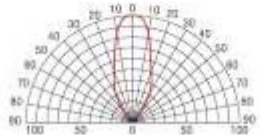
**SL-08**

- Superior heat sink structure design
- High brightness & long lifespan
- Great power saving & low power consumption

SL-08	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 97, Height 91	
Weight (g)	236	
Base	E- 26 / E- 27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	8.5	
Power Factor	0.93	
Luminous Flux (Lumen)	550	
Illuminance (Lux, from 1M)	1070	
Luminaire Efficacy (Lm/W)	65	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	80	
Beam Angle	40 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (℃)	



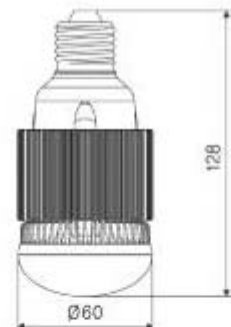
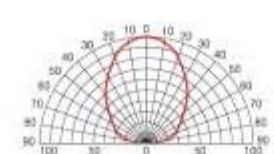
- Superior heat sink structure design
- High brightness & long lifespan
- Great power saving & low power consumption

SL-20	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 116, Height 128	
Weight (g)	460	
Base	E 26 / E27	
Input Voltage(V)	AC 100 – 220	
Power Consumption (W)	20	
Power Factor	0.93	
Luminous Flux (Lumen)	1300	
Illuminance (Lux, from 1M)	2900	
Luminaire Efficacy (Lm/W)	65	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	80	
Beam Angle	40 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



## IL-05

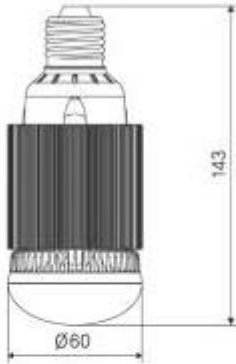
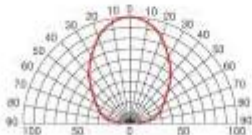
- Slim design & high brightness uniformity
- Superior light source spread cover equipped
- High efficiency power technology adopted
- Great power saving & long lifespan over incandescent lamp

IL-05	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 60, Height 128	
Weight (g)	160	
Base	E- 26 / E- 27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	5	
Power Factor	0.93	
Luminous Flux (Lumen)	300	
Illuminance (Lux, from 1M)	100	
Luminaire Efficacy (Lm/W)	60	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



## IL-08

- Slim design & high brightness uniformity
- Superior light source spread cover equipped
- High efficiency power technology adopted
- Great power saving & long lifespan over incandescent lamp

IL-08	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 60, Height 143	
Weight (g)	165	
Base	E- 26 / E- 27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	7.4	
Power Factor	0.93	
Luminous Flux (Lumen)	450	
Illuminance (Lux, from 1M)	140	
Luminaire Efficacy (Lm/W)	60	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



## DL-08


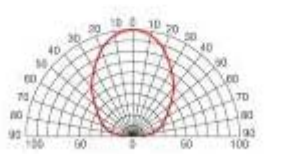
- Superior light source spread cover equipped
- Superior heat sink structure design
- High efficiency power technology adopted
- Great power saving & long lifespan

DL-08	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 112, Height 146	
Weight (g)	340	
Base	E- 26 / E- 27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	8.8	
Power Factor	0.94	
Luminous Flux (Lumen)	530	
Illuminance (Lux, from 1M)	190	
Luminaire Efficacy (Lm/W)	60	
Color Temperature (Kelvin degree)	Warm White : 3,000 Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



## DL-12


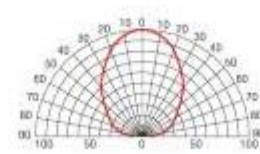
- Superior light source spread cover equipped
- Superior heat sink structure design
- High efficiency power technology adopted
- Great power saving & long lifespan

DL-12	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 112, Height 146	
Weight (g)	340	
Base	E- 26 / E- 27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	11.8	
Power Factor	0.94	
Luminous Flux (Lumen)	730	
Illuminance (Lux, from 1M)	270	
Luminaire Efficacy (Lm/W)	62	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	



## DL-16

- Superior light source spread cover equipped
- Superior heat sink structure design
- High efficiency power technology adopted
- Great power saving & long lifespan

DL-16	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 116, Height 149	
Weight (g)	470	
Base	E-26 / E-27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	15.1	
Power Factor	0.94	
Luminous Flux (Lumen)	930	
Illuminance (Lux, from 1M)	380	
Luminaire Efficacy (Lm/W)	62	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	




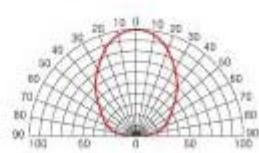
## DL-22

- Superior light source spread cover equipped
- Superior heat sink structure design
- High efficiency ipower technology adopted
- Great power saving & long lifespan

DL-22	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 150, Height 134	
Weight (g)	470	
Base	E-26 / E-27	
Input Voltage(V)	AC 100 / 220	
Power Consumption (W)	21.2	
Power Factor	0.94	
Luminous Flux (Lumen)	1310	
Illuminance (Lux, from 1M)	500	
Luminaire Efficacy (Lm/W)	62	
Color Temperature	Warm White : 3,000	
(Kelvin degree)	Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	


**FL-12A**  
**FL-18A**  
**FL-22A**

- Superior light source spread cover equipped
- Great power saving & long lifespan

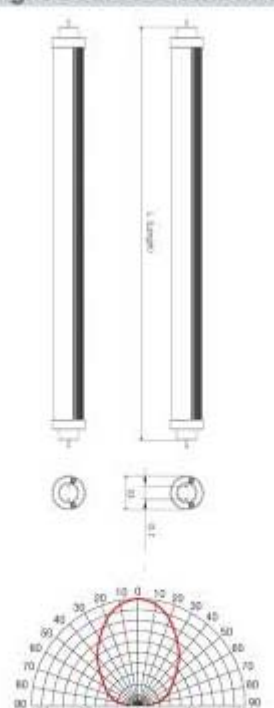
Model	FL-12A	FL-18A	FL-22A	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 30, Length 580	Φ 30, Length 1198	Φ 30, Length 1198	 
Weight (g)	300	528	528	
Base	GU 13	GU 13	GU 13	
Input Voltage(V)	DC 24 (Adapter 36W/1.5A)	DC 24 (Adapter 36W/1.5A)	DC 24 (Adapter 36W/1.5A)	
Power Consumption (W)	11.4	17.1	21	
Power Factor	—	—	—	
Luminous Flux (Lumen)	740	1100	1380	
Illuminance (Lux, from 1M)	270	370	550	
Luminaire Efficacy (Lm/W)	65	65	65	
Color Temperature (Kelvin degree)	Pure White 5,500	Pure White 5,500	Pure White 5,500	
CRI	70	70	70	
Beam Angle	120 °	120 °	120 °	
Water Resistance	IP60	IP60	IP60	
Lifetime (Hours)	50,000	50,000	50,000	
Operating Temperature	-20 ~ 40 (°C)	-20 ~ 40 (°C)	-20 ~ 40 (°C)	

ECO Lighting Solution



## FL-22B

- Superior light source spread cover equipped
- Great power saving & long lifespan

FL-22B	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 30, Length 1198	
Weight (g)	570	
Base	GU 13	
Input Voltage(V)	Ballast Input(Glow,Rapid)	
Power Consumption (W)	22	
Power Factor	—	
Luminous Flux (Lumen)	1360	
Illuminance (Lux, from 1M)	420	
Luminaire Efficacy (Lm/W)	62	
Color Temperature	Pure White	
(Kelvin degree)	5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	

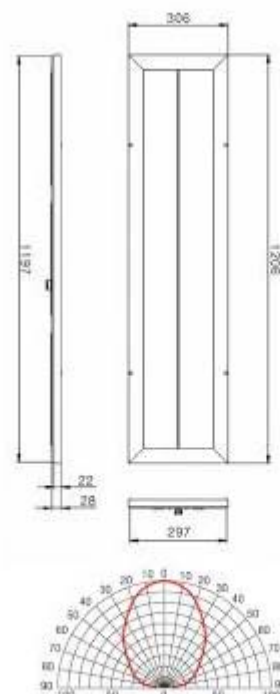
ECO Lighting Solution



## FR-50

- Super slim thickness
- Superior optical efficiency
- Built in power supply
- Well suited for commercial and residential applications
- Customized sizes and color temperatures are available

FR-50	Specifications
Dimensions (mm)	1200X300X31T
Weight (g)	3,000
Base	-
Input Voltage(V)	AC 100 / 220
Power Consumption (W)	46
Power Factor	0.95
Luminous Flux (Lumen)	2800
Illuminance (Lux, from 1M)	1200
Luminaire Efficacy (Lm/W)	61
Color Temperature (Kelvin degree)	Warm White : 3,000 Pure White : 5,500
CRI	70
Beam Angle	120 °
Water Resistance	IP60
Lifetime (Hours)	50,000
Operating Temperature	-20 ~ 40 (°C)

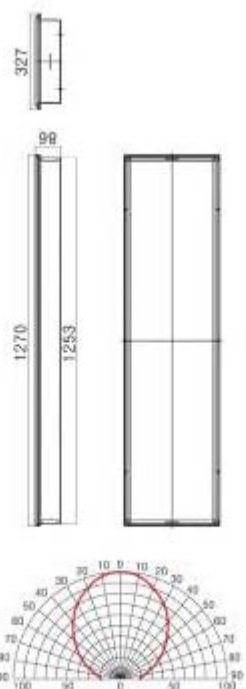


ECO Lighting Solution



## F-FS049

- Great power saving over FL & long lifespan
- Much brightness over traditional fluorescent lamps
- Well suited for commercial and residential applications
- Customized sizes and color temperatures are available

F-FS049	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	W327×L1270×H86	
Weight (g)	6,000	
Base	—	
Input Voltage(V)	AC 110V~220V	
Power Consumption (W)	49W	
Power Factor	0.98	
Luminous Flux (Lumen)	3400	
Illuminance (Lux, from 1M)	1250	
Luminaire Efficacy (Lm/W)	69	
Color Temperature (Kelvin degree)	Warm White : 4,100K Pure White : 5,500K	
CRI	70	
Beam Angle	120°	
Water Resistance	IP40	
Lifetime (Hours)	50,000	
Operating Temperature	-20 ~ 40 (°C)	

ECO Lighting Solution




- Additional three wires are suspended for safety
- High efficiency power technology adopted
- Superior heat sink structure design
- Well suited for warehouse & factory lighting applications

TL-80	Specifications	Outline size & Light Source Distribution Curve
Dimensions (mm)	Φ 280, Height 187.5	
Weight (g)	1,730	
Base	E-39	
Input Voltage(V)	AC 100 - 220	
Power Consumption (W)	80	
Power Factor	0.93	
Luminous Flux (Lumen)	4800	
Illuminance (Lux, from 1M)	1,000	
Luminaire Efficacy (Lm/W)	60	
Color Temperature (Kelvin degree)	Warm White : 3,000 Pure White : 5,500	
CRI	70	
Beam Angle	120 °	
Water Resistance	IP60(Option: IP66)	
Lifetime (Hours)	50,000	
Operating Temperature	-20 - 40 (°C)	



**SB-04/ 08/ 13**  
**16/ 18/ 22**

- Great power saving over FL with low power consumption
- Enable 360 degree rotation for object lighting
- Size of LED bar can be changed according to customer's requirement

Model	SB-04	SB-08	SB-13	Outline size & Light Source Distribution Curve
Dimensions (mm)	L310, W18(mm)	L585, W18(mm)	L861, W18(mm)	
Input Voltage (V)	DC 24	DC 24	DC 24	
Power Consumption (W)	4	8	13	
Illuminance (Lux, from 1M)	105	200	310	
Color	WW: 3,000	WW: 3,000	WW: 3,000	
Temperature	PW: 5,500	PW: 5,500	PW: 5,500	
Luminous Flux (Lumen)	220	440	660	
Operating Temperature	-20 ~ 40 (°C)	-20 ~ 40 (°C)	-20 ~ 40 (°C)	Eco Lighting Solution

Model	SB-16	SB-18	SB-22
Dimensions (mm)	L957, W18(mm)	L1137, W18(mm)	L1413, W18(mm)
Input Voltage (V)	DC 24	DC 24	DC 24
Power Consumption (W)	16	18	22
Illuminance (Lux, from 1M)	410	450	550
Color	WW: 3,000	WW: 3,000	WW: 3,000
Temperature	PW: 5,500	PW: 5,500	PW: 5,500
Luminous Flux (Lumen)	800	880	1100
Operating Temperature	-20 ~ 40 (°C)	-20 ~ 40 (°C)	-20 ~ 40 (°C)

SCIENCE OF EMOTION

**sunwise**  
Multi Function Desk Light

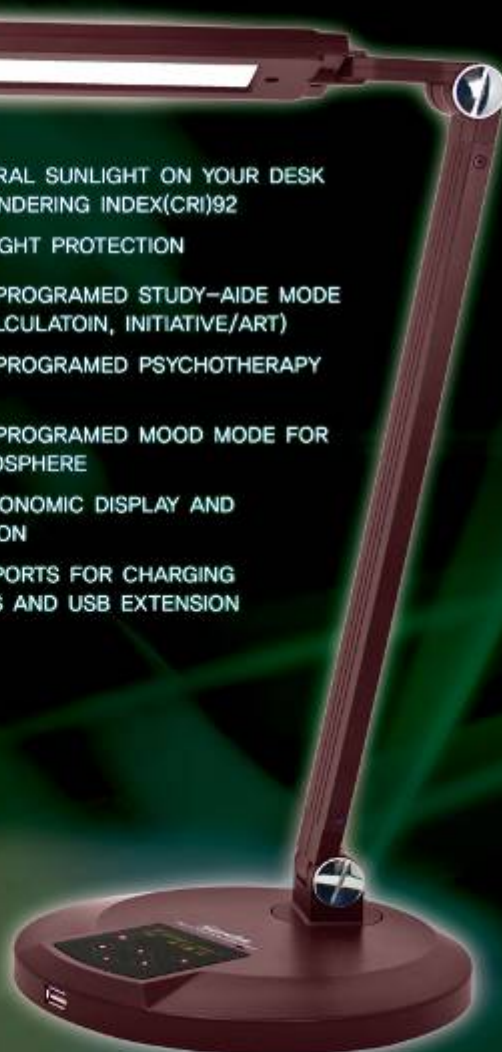
## PREMIUM LED DESK STAND BRINGS YOU NATURAL LIGHT

SCIENCE OF EMOTION

- PROVIDES NATURAL SUNLIGHT ON YOUR DESK WITH COLOR RENDERING INDEX(CRI)92
- PROVIDES EYESIGHT PROTECTION
- PROVIDES PRE-PROGRAMED STUDY-AIDE MODE (LINGUISTIC, CALCULATOIN, INITIATIVE/ART)
- PROVIDES PRE-PROGRAMED PSYCHOTHERAPY EFFECT MODE
- PROVIDES PRE-PROGRAMED MOOD MODE FOR ROMANTIC ATMOSPHERE
- PROVIDES EROGONOMIC DISPLAY AND TOUCH OPERATION
- PROVIDES USB PORTS FOR CHARGING MOBILE DEVICES AND USB EXTENSION



SCIENCE OF EMOTION



# Unique Characteristics of SUNWISE LED STANDS

- Luxurious color and stable slim-type design upgraded the elegance of the LED stand.
- The thinnest - type LED stand in market(12mm).
- Four-articulations structure makes realization of various viewing angles.
- Touch pad and simple GUI are designed to conveniently use.
- Various Learning modes such as Sunrise mode(5000K) for linguistic study, Noon mode(7000K) for calculation study, and Sunset mode(3000K) for creation and rest are designed both for students and for business people
- Therapy mode has Relax mode, Emotion mode, and Active mode based on the theory that colors and lights have psychotherapy effects. This mode is special and unique advantage of SUNWISE.
- Mood mode is designed for changing colors and, consequently, resulting stylish environments
- 44 pieces of White LED and 44 pieces RGB LED are used
- SUNWISE Lighting is most similar to solar lighting compared to a single white LED Lighting. (CRI 92)
- Ultra lighting efficiency with lower power consumption
- 50,000hr Long life cycle
- Fluorescent material are not used and No Ultraviolet emission



## The first LED Stand to adopt LGP(Light Guide Panel)



Present LED Stand Type



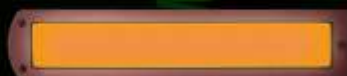
SUNWISE LGP

SUNWISE is the first LED Stand to adopt edge-type LGP and realizing premium indirect illuminating with hidden LED light source. SUNWISE is designed for anti-glaring and for protecting eyesight. SUNWISE is also much helpful for improving learning ability



## Psychotherapy Effect Using Hues

Colors and lights have centrifugal action(from oneself to environment) and centripetal action (from environment to oneself) based on various scientific researches. These actions stimulate muscle activities resulting cheerful mood and, on the contrary, cheerful mood makes people easy to devote emotional working. SUNWISE Stand, therefore, supplies diverse psychotherapy modes by realizing various hues and lights.



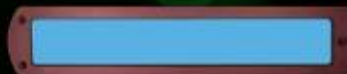
### Active Mode

Try to use this mode when you are lack of appetite or in enervation. This mode will improve your appetite to make you activ



### Emotion Mode

Try to use this mode when you are melancholy or depressed. This mode will make your internal tense emit outward



### Relax Mode

Try to use this mode when you are in uneasiness or when you need calmness. This mode will make your nerve and muscle be mitigated.

## Learning Mode(Linguistics, Calculation, Initiative/Art Modes)

The brainwaves such as alpha wave & theta wave created under the vigilant condition of the brain are said to maximize the amount of data processing, memory capability, and power of concentration of the brain. This vigilant condition is created by appropriate color temperature and brightness(i.e.illumination). SUNWISE is designed to supply optimum color temperature and brightness to maximize learning ability based on scientific researches



### SUNRISE Mode(For Linguistic Study)

SUNRISE Mode suitable for linguistic study which needs high concentration supplies optimum condition for longtime concentration by maintaining color temperature between 4,500K-5,500K.  
(Between AM 10:00-PM 3:00 at the KELVIN Degree Table)



### SUN NOON Mode(For Calculation Study)

SUN NOON Mode suitable for calculation study which needs intellectual dexterity and agile thought supplies optimum condition for application area such as mathematics and science by maintaining color temperature between 6,500K-7,500K.  
(Color temperature of the sunlight at Noon at the KELVIN Degree Table)



### SUNSET Mode(For Initiative/Art Study)

SUNSET Mode suitable for sense of stability and soft mood supplies optimum condition for imagination and initiative by maintaining color temperature between 2,500K-3,500K.  
(Color temperature of Sunrise and Sunset at the KELVIN Degree Table)

## Various Clock Functions

Therapy Cycles?  
AM 12:02

Clock Function

Alarm  
On

Lighting Alarm Function

Alarm along with strong flickering light stimulate afterimage and wake him/her up with refreshment.

Sleep Setting  
120 min

Sleeping Mode

Do not turn the stand off. Just have sound sleep. SUNWISE timer automatically turns on/off whenever you want.

## Brilliant Mood Mode

Brilliant colors using RGB automatically change and realize mood circumstances of the room.





## USB Functions (USB Hub & Mobile Phone Charging)



Using USB port in the front, mobile phones and other digital devices can be charged. USB port in the rear can be connected to the PC(USB to USB) as USB Hub for customers' convenience



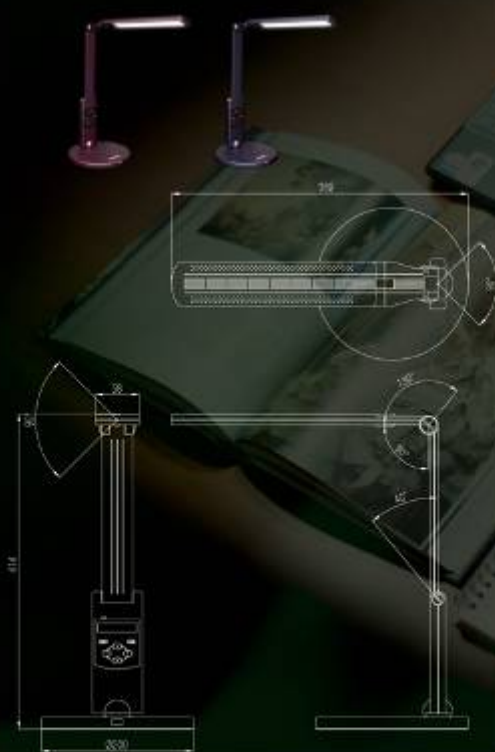
USB port in the front: USB port in the rear

## Specifications

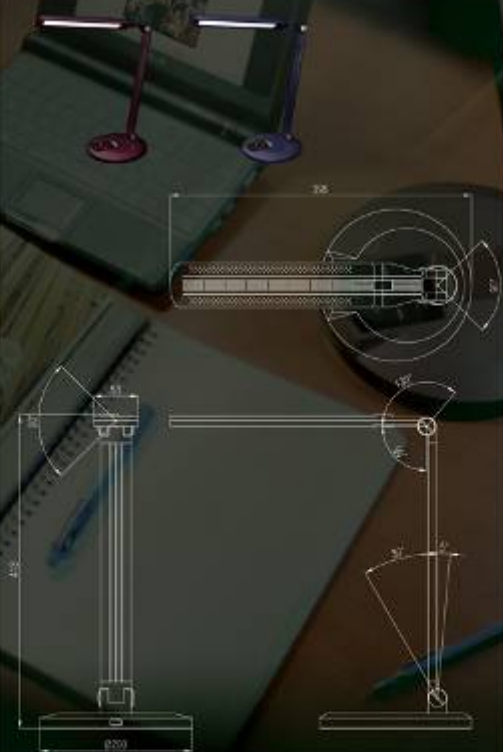
Models : FS-801 / FS-902  
Power Used : DC 12V / 2.5A  
Power Consumption : 15W  
Light Source : LED(RGB/White)

## External Appearances

### FS-901



### FS-902



LED Security Light (Factory)

LED Street Light



Codes Co., Ltd. is committed to supply state-of-the-art LED lightings to everywhere they are needed and they will lighten the world.





[www.vegalux.co.kr](http://www.vegalux.co.kr)



**CODES Co., Ltd.**

203-3, Anyang 7-dong, Manan-gu, Anyang-si, Gyeonggi-do, Korea 430-817

TEL: +82-31-468-0100 FAX: +82-31-468-0101

E-mail: [sales@vegalux.co.kr](mailto:sales@vegalux.co.kr) / [codes@codes.co.kr](mailto:codes@codes.co.kr)