

The lighting for Thailand with Japanese technologies.



www.siamsolana.com



siam solana (Thailand) Co.,Ltd.

Manufacturer



siam solana (Thailand) Co.,Ltd.

TEL : +66(0)-2-332-9600 FAX : +66(0)-2-331-5553

E-mail : info@siamsolana.com

Website : www.siamsolana.com

35 soi On Nut 36,SuangLuang,SuangLuang,Bangkok 10250

Marketing partner



บริษัท กลอรี อินเตอร์เนชั่นแนล บิสซิเนส จำกัด
GLORY INTERNATIONAL BUSINESS CO., LTD.

TEL : +66(0)-2-138-9576 FAX : +66(0)-9-766-4435

E-mail : info@gloryib.com(Thai,English,Japanese)

Website : www.gloryib.com

139/76 Pattanachonnabod 3 Rd, Klongsongtonnun, Ladkrabang Bangkok 10520

Sales agent

Born in Japan. Manufacturing in Thai.

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for Thailand

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Vol. 03

SOLANA

Model born in Japan for environment.
Next-generation energy saving
CCFL illumination /LED illumination.

solana



T8 CCFL TUBE



siam solana
siam solana

Developed in Japan where energy-saving conscious is increasingly on the rise, **solana** is bringing its proven track record and high customer acclaim to Thailand.



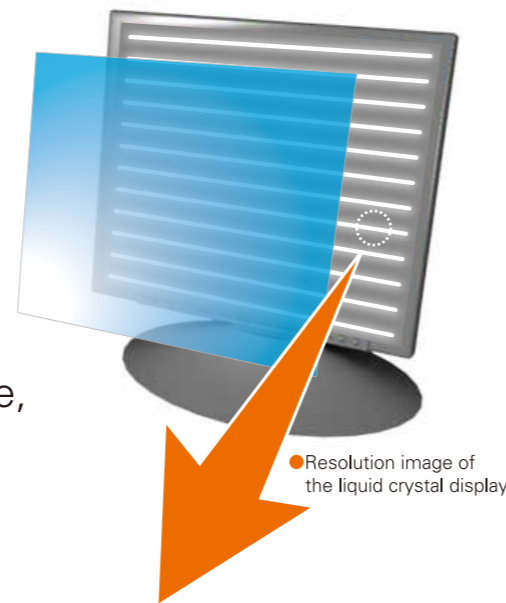
The local corporation Siam Solana Company was established in November, 2012.

Q What is solana?

solana is a product brand name of Hohkohsya Corporation developing and selling LED light and the CCFL illumination for environment model (Japan).

Q What is CCFL?

CCFL stands for Cold Cathode Fluorescent Lamp. They look like thin, like fluorescent tubes-about the size of the ballpoint ink cartridge. Although most people have never actually seen one, they are used a variety of every day consumer electronics such LCD TVs and monitors. They are 30years for experience.



Resolution image of the liquid crystal display

Thin!!

It is very thin and the diameter is ϕ 1.8-5.0 with a common thing.

Colors are various!!

It can make in total various colors in the scene.

Light!!

It is lightweight so that can pick it up lightly with a finger-tip and lifted.

Light spreads!!

Light spreads through the 360 degrees direction.

Can bent!!

Normally is an alignment, but it is possible to process it in conformity to a product (process). For example: Spiral, Circle style.

Q The feature of the CCFL illumination?

CCFL illumination has six big good points.

because it is a polycarbonate type and

not broken

UV cut

insect does not come

The reduction of the CO2 discharge, and energy saving with

the longer life of **50,000 hours**

The light that is near to natural light with an RGB3 wavelength type

Color rendering preeminence

Wide light density angle perfect for indoor lighting, providing

Uniform Illumination with No Irregularities

Linear light source for

No Glare or Flickering

solana is Japan product with performance and experience.

The MOU conclusion with the Thai company

(Kitakyusyu environmental technology seminar in Bangkok)

On January 23, 2013 in Bangkok international trade exhibition center (BITEC) of Bangkok, with "Kitakyuushuu Asia low carbon center" of Kitakyuushuu-shi (Japan), The Kitakyusyu environmental technology seminar that "JETRO" sponsored was hold. For the seminar that represented by Kitakyuushuu-shi, next-generation illumination maker Hohkohsya Corporation together with local subsidiary "Siam Solana company" and sale partner "GLORY INTERNATIONAL BUSSINES Corporation" of Thailand side concluded MOU of the mutual cooperation about the energy saving illumination for the next generation in Southeast Asia.

This will be the first step to aggressive alternating mainly on the environmental technology being performed between Japan and the Kingdom of Thailand for future, They were made TV broadcasting in Thailand and Japan and received very high attention as a model. In the case of an investment to Southeast Asia of the SME business.

Kitakyusyu environmental technology seminar in Bangkok
Sponsorship: JETRO, Kitakyuushuu-shi Asia low carbon center
Co-sponsorship: Kingdom of Thailand industry factory station (DIW), The Thai Board of Investment (BOI)



Representative of Siam Solana Company limited
Mr. Hiroshi Kuramitsu



HOH KOH SYA Co., Ltd. (JAPAN)

To energy saving demand
for the rising within Thailand

The mutual
cooperation of
Japan and Thailand

Technology of the
Japanese SME



บริษัท กลอรี่ อินเตอร์เนชั่นแนล บิสิเนส จำกัด
GLORY INTERNATIONAL BUSINESS CO., LTD.



siam solana siam solana (Thailand) Co., Ltd.

The Japan media pays attention to solana very much by Japan TV program (NHK), newspaper, magazine, Web news and the exhibition.

● Introduce in TV



February 2, 2013 broadcast / Good Job!



February 2, 2012 broadcast / NHK News!

● Even as for the Exhibition in Tokyo Big Sight Exhibition Center



June 15, 2012
Yomiuri Newspaper

February 24, 2012
Yomiuri Newspaper



October 12, 2011
Nishinon Newspaper

September 28, 2011
Asahi Newspaper

Kitakyuushuu-shi eco-authorized product

Not only the Private company but also the evaluation from the governmental organization such as from Kitakyuushuu-shi, It was authorized as the first of "the environmental business development support project in Asia".

Other Awards and Grants

- 2010 year Kitakyuushuu-shi Eco premium Eco-Premium receiving a prize
- The fourth Kitakyuushuu-shi trial ordering system authorization new product
- 2011 year Kitakyuushuu-shi Small and Medium-sized Enterprise Asia Environment business development business, authorization business
- 2010 year Authorize a market reclamation support project.



Good point of LED and CCFL



Do you know that merit, demerit place are in each?

CCFL lighting

CCFL is most suitable for the place where a person is resident.



Office



Apartment



Commercial facilities



Hospital



School



Convenience store



Poultry farming

and more

LED lighting

LED is most suitable for the place where a person is not resident.



Backyard



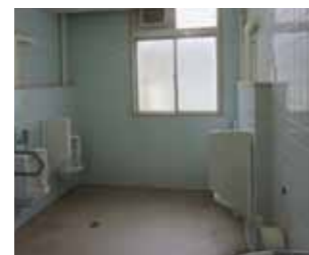
Corridor



Warehouse



Signboard



Restroom



Streetlamp



Parking lot

and more

Why can we say so?

We will explain the good point and weak point between CCFL and LED.

	CCFL lighting	LED lighting	The details
Price	○	× △ ○ ◎	The LED's price and quality are not stability
Product quality stability	◎	× △ ○ ◎	
Light distribution of the light	○	×	Go to P.08- ①
Quality of the light	◎	△	Go to P.08- ②
Temperature properties	◎	△	Go to P.08- ③
Gentleness of eyes	◎	×	Go to P.09- ④
Flicker protection	◎	△	Go to P.09- ⑤
Glare	○	×	Go to P.09- ⑥
Performance	○	△	_____
The popularity	×	◎	_____

The influence of illumination gives in human feelings and sense. It is the best to put CCFL together with LED for achieve energy saving.

Why can we say so?

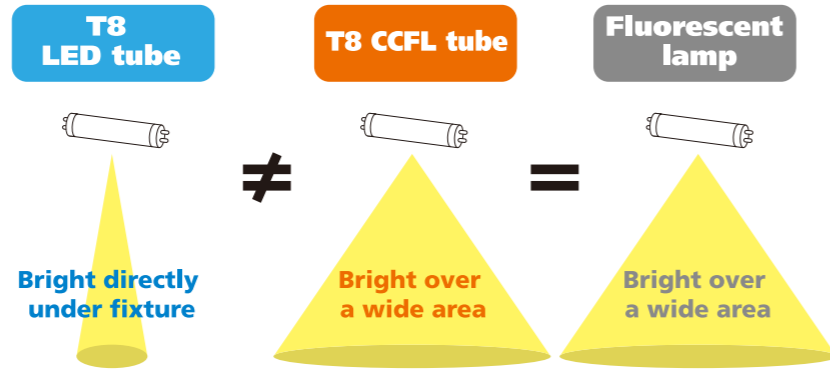
There is various and difference between CCFL and LED.

FEATURE

1

Light distribution

LED lamps emit light in mostly one direction. Because of this, the illuminance (lx) is strong directly under the fixture, but it does not illuminate a wide area. Therefore, placing it in the same way as a common fluorescent light for indoor lighting will produce shadows and unbalanced lighting. This is why LED lights give the impression that they are somehow "glaring but dark..."



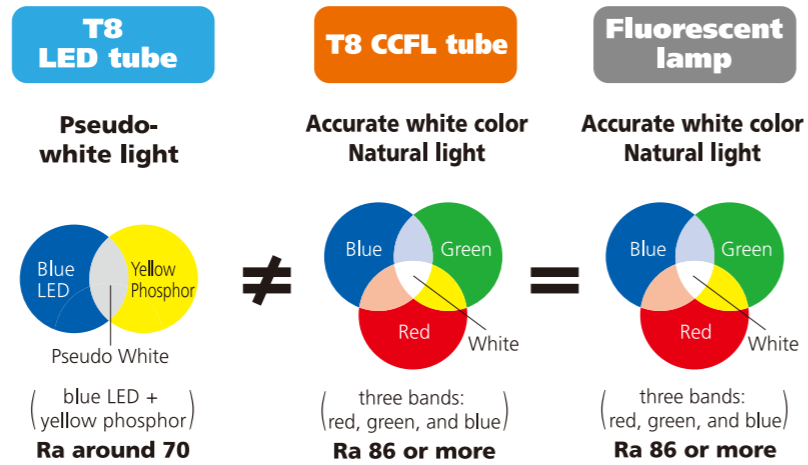
There is no point in having it bright only under the fixture for indoor lighting. What you need is a wide, uniform light distribution.

FEATURE

2

Natural light

Most lights that use LED lamps produce a "pseudo-white" color, which is created by combining a blue LED with yellow phosphor. That is why the color looks yellowish and unnatural. The color rendering index (Ra) is poor (around 70), which means that there are some colors that LED cannot reproduce. CCFL on the other hand is a 3-band light source just like fluorescent lights and is used for backlights in LCD TVs. It is acknowledged worldwide for its ability to reproduce color accurately. And its high color rendering index (86 or more) means that it produces no glare and does not irritate the eyes.



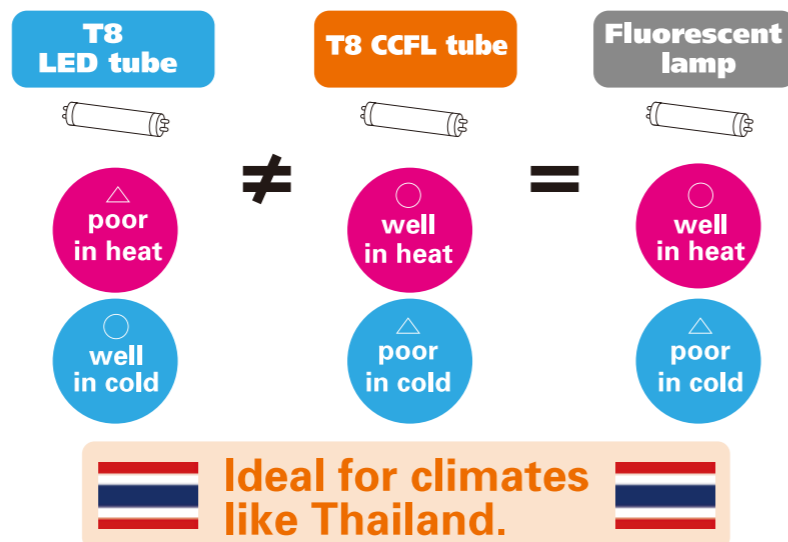
For lightning used daily in the office or living space, a natural light that causes no irritation is ideal.

FEATURE

3

Temperature

LED brightness can be increased by boosting the amount of power supplied; however, this also increases the amount of heat generated. And this buildup of heat can shorten the lifespan of LEDs. Therefore, to prevent this, a heat sink or external power supply is needed, and care needs to be taken when using them under high temperature conditions. CCFLs generate no more than 70-80° C of heat, lower than LEDs. Because no special heat management measures are needed, it provides a stable light even in high temperature environments.



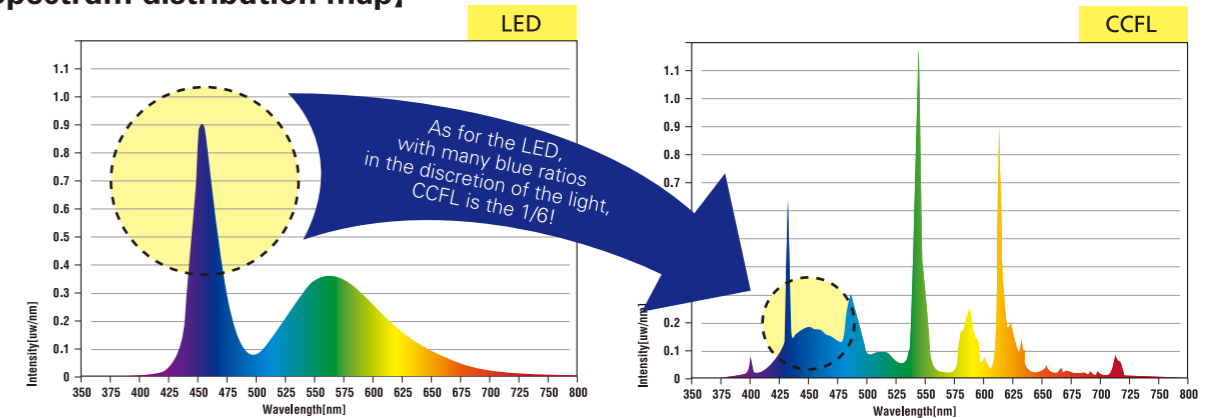
FEATURE

4

Do you know blue light hazard?

By the penetration that LED light is rapid recently, blue-light hazard "The risk of the blue visible light" is the world that attracts attention. The inexperienced light a wavelength in 380-495 nanometers and a visible ray, a wavelength is the shortest, and more energy. As for the inexperienced light to be emitted from LED, approximately 450 nanometers has a peak. That cause with eyes become easy to be tired and hurt retina. In addition, it might cause macular degeneration that retina goes bad with age, and eyesight decreases. For increase by the spread of PC and smartphones, people watching an LED LCD screen in a short distance.

[Spectrum distribution map]



FEATURE

5

Flickering protection

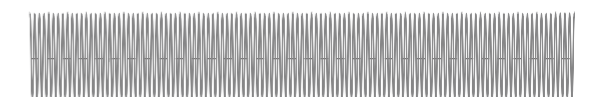
The current waveform of the normal LED light as a right figure, to repeat 100 times of lighting, lights out during one second. it may cause flickering with eyes. (It possible to took measures with LED for protect a flicker) Because the CCFL illumination uses high frequency inverter, there cannot be feeling a flicker to eyes.

Current waveform of LED which is easily feel flickering



The LED has a sharp distance of lighting, lights off and it is easy to feel flickering.

Current waveform of CCFL which does not feel flickering



For CCFL has a repeat lighting and lights out of 40,000 times for one second.

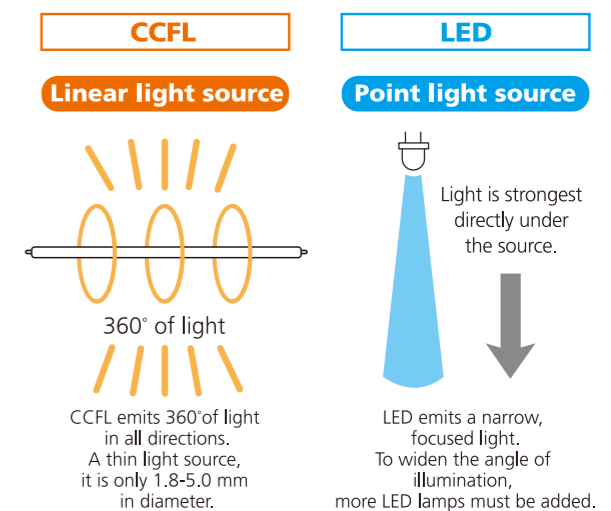
So it does not feel flickering.

FEATURE

6

Light source

LED (light emitting diode) is a semiconductor device. The light source is a point light source—like a highly linear beam. CCFL (cold cathode fluorescent lamp) looks like a thin glass tube. It is a linear light source and, along with fluorescent lamps, belongs to the electric discharge lamp family. Its internal structure is very similar to fluorescent lamps.



Why can we say so?

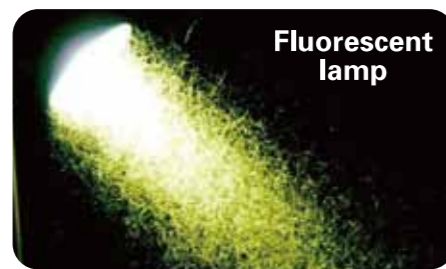
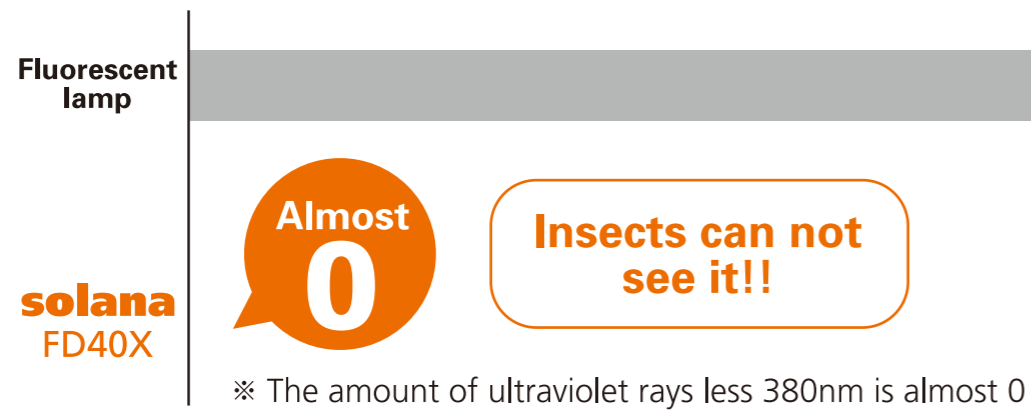
There is various and difference between CCFL and LED.

FEATURE

7

An insect does not come

As for the CCFL lamp, UV (ultraviolet rays) is approximately 0 sources of light. Because UV does not come out, they did not affect the cover irradiation thing either. Furthermore, they adopt polycarbonate to a decoration pipe and have a characteristic to absorb UV, so the light that is hard to be seen by insect and insect will not come. The polycarbonate is most suitable for use the half outdoors!



An insect **comes near** to the fluorescent lamp



An insect **does not come near** to solana

FEATURE

8

Not broken

The fluorescent tube type of Solana adopts polycarbonate. In the cause of drop and glass is not scattered like a fluorescent lamp. Even if step on with a car and it cannot break it.



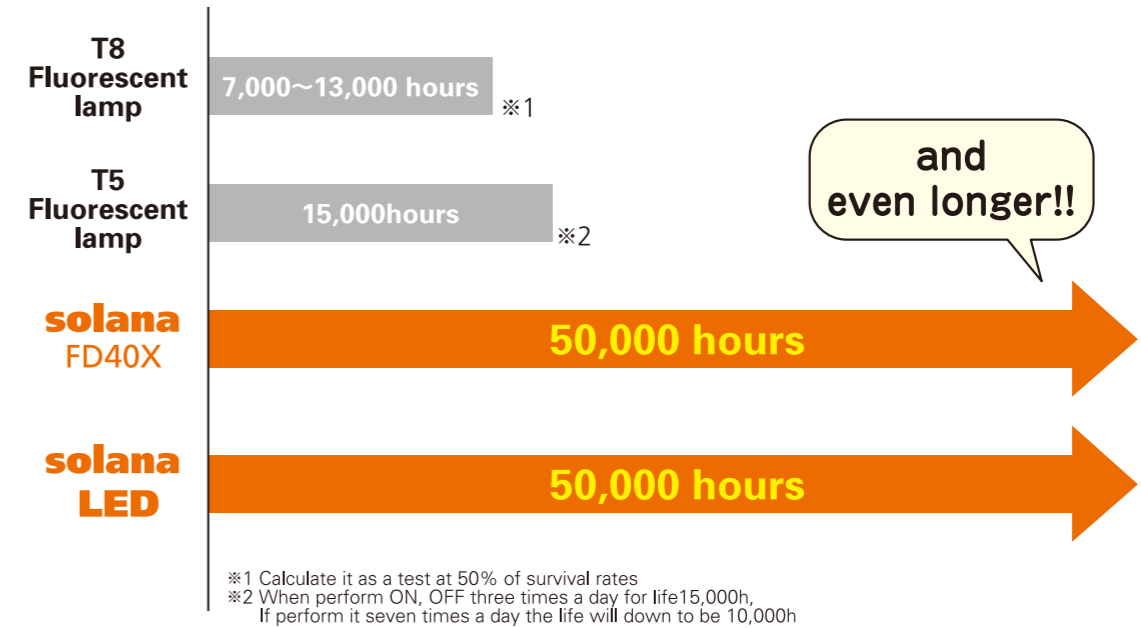
※That only part of polycarbonate moiety of the crystal pipe of Solana not to be broken. However it will not cover to CCFL inside.

FEATURE

9

Lifespan

CCFL illumination /LED illumination lamp has longer lifespan more than 5 times from fluorescent lamp.



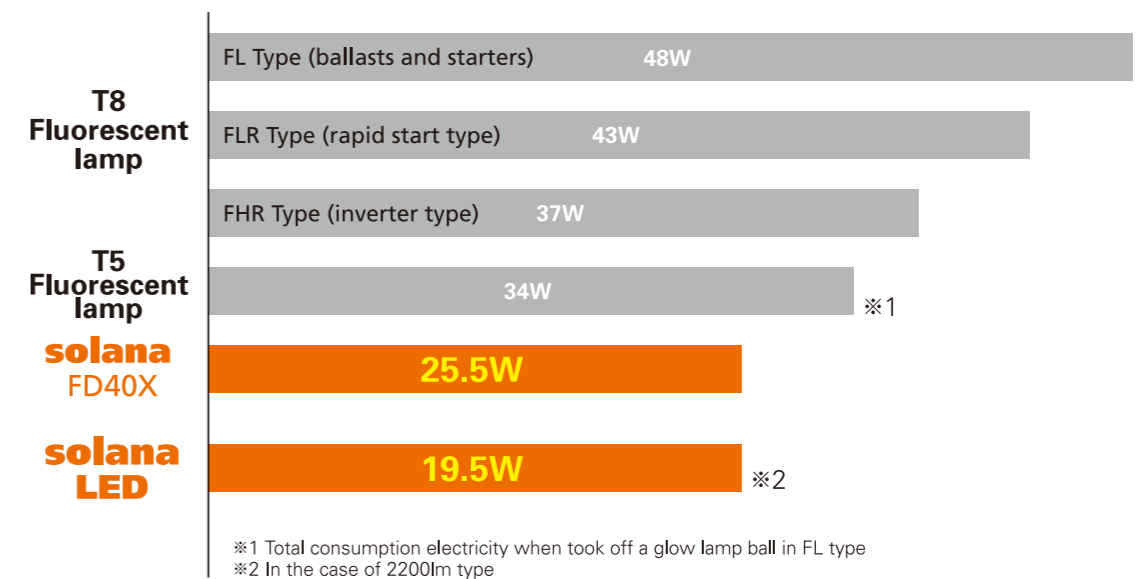
FEATURE

10

Energy saving

When comparison with a fluorescent lamp up to 53-25% of energy saving!

[Total consumption electricity when compare it with electrical ballast including the inverter]



Introduction example

Example of Thai



and more

We already have many satisfied customers in Japan.

A month after we installed solana lights, our ¥50,000/month electric bill dropped by half.

The earthquake last year made us more conscious of saving energy, so we tried installing some solana lights as a test. Even at the simulation stage, it was clear that the lights would save energy, but I had no idea that it would cut our electrical expenses in half. And it was the middle of summer! I thought, "Hey, we'll make our money back in three months!" We'll save almost ¥3 million a year, ¥30 million in 10 years! In terms of profits, that's pretty big figure. That's why when someone asked me if I knew of any good lighting systems, I immediately recommended solana.



Asia Giken Co., Ltd.
Representative Director
Junichi Mizoguchi

They are not simply on par with LED lights, they outstrip them in several areas.

We had thought that LEDs were the most ecological lighting available, so we asked for an expert's opinion on CCFL. We learned that solana CCFL has four features that make them superior to LEDs: they are very energy-efficient, last far longer than LED lights, are cheaper than LEDs, and generate little heat. The fact that it is environmentally friendly is of course a major reason why we chose solana, but we also selected solana because we wanted to support a local company.

I hope that more local government offices and private enterprises chose solana as well.

Office for Environmental Future City Promotion, Environment Bureau, Kitakyushu
Manager of Environmental Industry Promotion
Masataka Hibino

I have nothing but praise for solana. Not only did we save ¥100,000 in electricity costs, we were featured on TV and the newspaper.

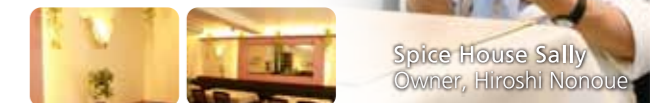
We cut our electric bill by over ¥100,000 in one month. Moreover, the market is nearly twice as bright as before. And the money we save on electricity every month covers what we spent on installation. After installing solana lights, reporters from TV stations and newspapers came to do stories on the new lights—so using solana has had the added benefit of improving our image! A well-lit shopping district has the psychological effect of making people feel more at ease. The City of Kitakyushu puts forth a lot of effort into environmental initiatives and we are of the same line of thought. solana is bright, affordable, and energy efficient. Our association is recommending that shops in our district install the lights as soon as they can.



Uomachi Shopping District Promotion Association
Director, Hiroaki Seguchi

Electricity costs have dropped, and our customers stay nearly 20 minutes longer.

We used to think that LED was the best solution to our lighting needs. We thought we'd just be happy if we could bring our electricity costs down. But when we actually tried out LED lights, the light just didn't seem natural. Then I saw solana lights on TV. It peaked my interest, so I paid the company a visit. And when I say the real thing... I made up my mind right then and there. It's no exaggeration to say that I was completely blown away when I saw it—it was like being enveloped in a soft, gentle light. LED lights seemed like spotlights in comparison. When we switched to solana, our electric bill dropped, and, I don't really want our competitors to hear this, but the average length of time that customers spend in our restaurant has increased by 20 minutes. I could hardly believe it myself.

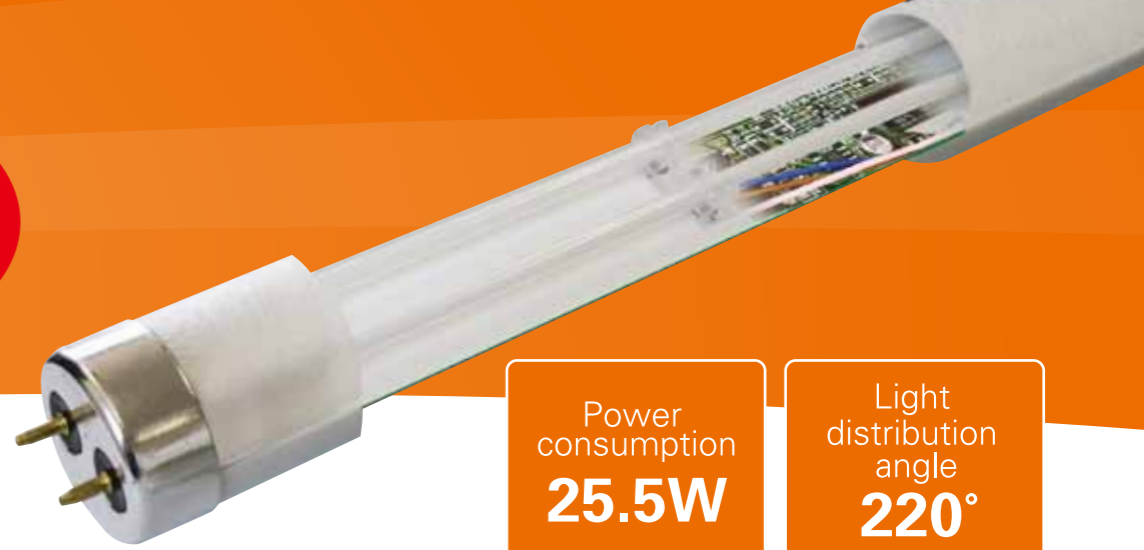


Spice House Sally
Owner, Hiroshi Nonoue

T8 CCFL fluorescent tube type (international model)

SOLANA-FD40X

June, 2013
NEW
ON SALE



AC100~240V(50/60Hz)

A power supply and inverter incorporation



Power consumption
25.5W

Light distribution angle
220°

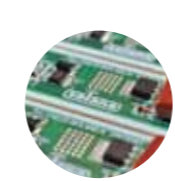
Total luminous flux
2100lm

The maker guarantee
2 years

Main features

- 1** 50,000-hour lifespan that means no replacement costs for 10 years.*1
- 2** Power consumption is only 25.5W that is 25-53% more energy efficient than fluorescent lamps.*2
- 3** It has a light distribution angle of 220°, making it perfect for indoor lighting.*3
- 4** Illuminance is nearly the equal to that of fluorescent lamps
- 5** Radiates less UV rays, reducing the attraction of insects.
- 6** Uses high quality CCFL utilized in LCD products to provide a gentle, natural light with no glare.
- 7** Uses RGB three-band CCFL with an Ra of 86 for a clear, natural light.
- 8** Uses improved polycarbonate "crystal tubes".
- 9** Ultra-lightweight. Including the power supply unit and inverter, it weighs only 330 g.

*1. Assuming 10 hours/day of use. *2. Depends on the type of fluorescent lamp. *3. Light source is 360°.



⊙ Inverter, power supply incorporation

Exclusive inverter, power supply circuit, safety circuit, for all are our company self developed with super lightweight.



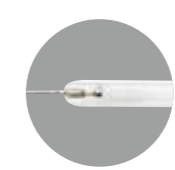
⊙ Crystal pipe

(polycarbonate improvement product)
Not broken even if step on with a car and prevention of scattering.



⊙ G13 clasp

Clasp diameter (metal) φ 30 which is a clasp same as a fluorescent lamp



⊙ CCFL lamp

Adopt high-performance CCFL from Japan

SOLANA-FD40X Specifications

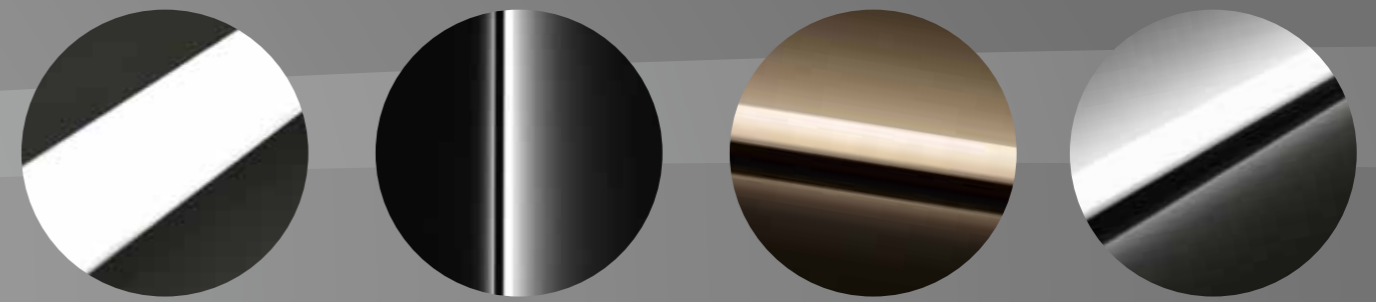
Product name	SOLANA-FD40X
Base	G13
Shape	φ29 straight tube
Outer material	Improved polycarbonate
External dimensions	φ=29mm L=1198mm
Weight	330g
Light source	2 φ4 CCFLs
Rated lifespan	50,000 hours
Total luminous flux	2100lm ±10% *1
CRI	Ra86
Light distribution angle	220°
Power consumption	25.5W ±1%
Rated voltage	AC 100~240VV (50/60Hz)
Recommended temperature range	0~40°C *2

*1 Number applies to light source. Total luminous flux of the actual product is about 10% less.
*2 Can be used within a temperature range of -20 to 60° C; however, continuous use in temperatures below freezing or above 40° C may adversely affect its lifespan.

Emission color line up

Cool white 7,000K SOLANA-FD40X-70		A crisp white light perfect for hospitals and schools.
Natural white 5,500K SOLANA-FD40X-55		The closest color to fluorescent lights.
Warm white 2,600K SOLANA-FD40X-26		Great for lighting in restaurants and shops.

T8 LED fluorescent tube SOLANA-LED40J



Main good point

1 The most high level luminous efficiency (lm/w) of the industry.

Brightness 2200lm
Consumption electricity 19.5w
Industry most high level of 113lm/w
(Include the consumption electricity of the power supply by the bundle of rays of the LED source of light)
※In case of an LED lamp 129lm/w only (reference level)
※There are 2700lm, and the high-power version of 23.5W too.

2 LED adoption from the Japanese maker

It is LED adoption made from Japanese Nichia Kagaku Kogyo. We purchase direct to a maker.



3 Development and production of Japan

The production, inspection and secure a high quality in Japan. For all other development and production will produce in Japan local (board implementation, assembling, inspection)



4 Use the constant power supply adoption from the highest standard industry

86-88% of AC → DC conversion efficiencies, PSE acquisition, IP66 is same level with EMI clear. In addition, there is not a flicker job.



What is the flicker?
Affect flicker by the change of the voltage

5 Dazzle reduction from the new type. Polycarbonate light pipe adoption



By special shape slit and diffusion materials combination, make it top-class for light distribution properties. We do not have to worry about broken like a fluorescent lamp.

6 The customization is possible

The custom menu which made by our factory. Feel free to contact us
Custom example
Clasp angle change
Other color except the standard color
High output model (2600lm model)

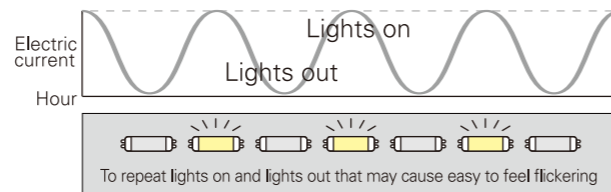
7 Various examinations and insurance

SOLANA-LED is confirmed safety by carry out an EMI check and various examinations voluntarily. In addition, the PL insurance has been joined just in case.

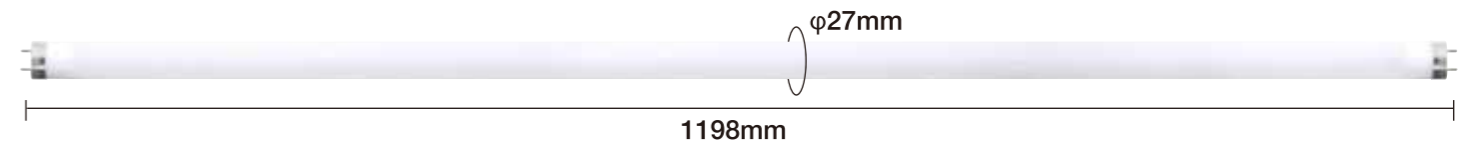
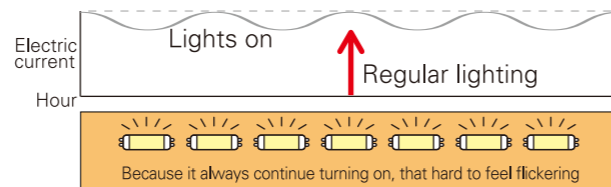
8 Flicker has been taken measures

Because SOLANA-LED always turns on, and it may not feel flickering same as the normal LED

◎ Current waveform of the LED which is easy to feel flickering



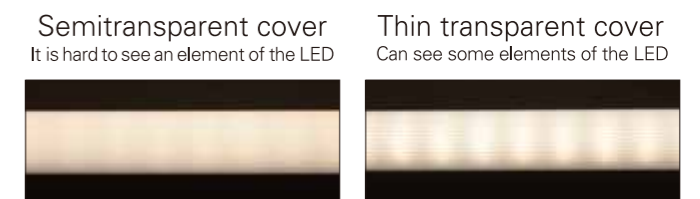
◎ Current waveform of Solana which is hard to feel flickering



Emission of light lineup



Cover lineup



LED fluorescent tube SOLANA-LED40J-N / SOLANA-LED40J-NH lamp specifications

Model	SOLANA-LED40J-N / SOLANA-LED40J-NH
Clasp	G13
External form dimensions	φ27mm L1198mm (Not include a tang)
Weight	Approximately 255 g
Source of light	LED made from Nichia Kagaku Kogyo Co., Ltd.
Rating life	50,000 hours
Illumination underneath (straight under 1m)	430 Lux / 500 Lux
Total flux	2200lm / 2700 lm ※1 ※2
Color rendering	85
Light distribution angle	220°
Consumption electricity (included power supply)	19.5w±1w efficiency113lm/w / 23.5w±1w efficiency115 lm/w
Recommended temperature range	0~40℃ ※3

※1 In the case of 5000K, when color temperature is different, it fluctuates.
※2 Bundle of rays of the source of light. Approximately 3% decrease from thin transparent cover and approximately 10% from semitransparent cover
※3 Please refrain from the use out of the recommended temperature range because they have an influence on the product life.

The maker guarantee
Two Years

Super lightweight
aluminum alloy frame adoption

Free mercury command by RoHS order



LED fluorescent tube SOLANA-LED40J-N / SOLANA-LED40J-NH Power supply specifications

Model	LED40J-P2(Two tubes lighting power supply) / LED40J-P1(One tube lighting power supply)
Weight	420g / 280g
External form dimensions	135mm(Full length162mm)×47mm×37mm / 96mm(Full length119mm)×48.6mm×32mm
Rating input voltage	AC100V-240V
Power factor	AC100V:0.95 AC200V:0.9More than 0.9 / AC100V:0.93 AC200V:0.9More than 0.9
Movement ambient temperature	-20~50℃

It has been examined by JET (testing institution). It has been authorized by PSE (the electrical equipment security method). EMI Standard conformity. IP66 equivalency (JIS C 0920)

Viewpoint of the model	SOLANA-LED40J-N501	① Lumen N...2200 lm NH...2700 lm	② Color temperature 50...5000K 35...3500K	③ Cover 1...Thin transparent cover 2...Semitransparent cover
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The LED assembles in full force

Product lineup of the LED light



LED bulb



LED bulb



LED bulb



LED PAR Lamp



LED meta stomach lamp



LED street light



LED tube



LED tube



LED tube



LED panel



LED panel



LED panel



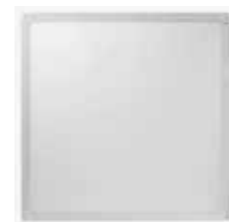
Cerameta



Cerameta



Cerameta



LED panel

We provide various kinds of other LED lights

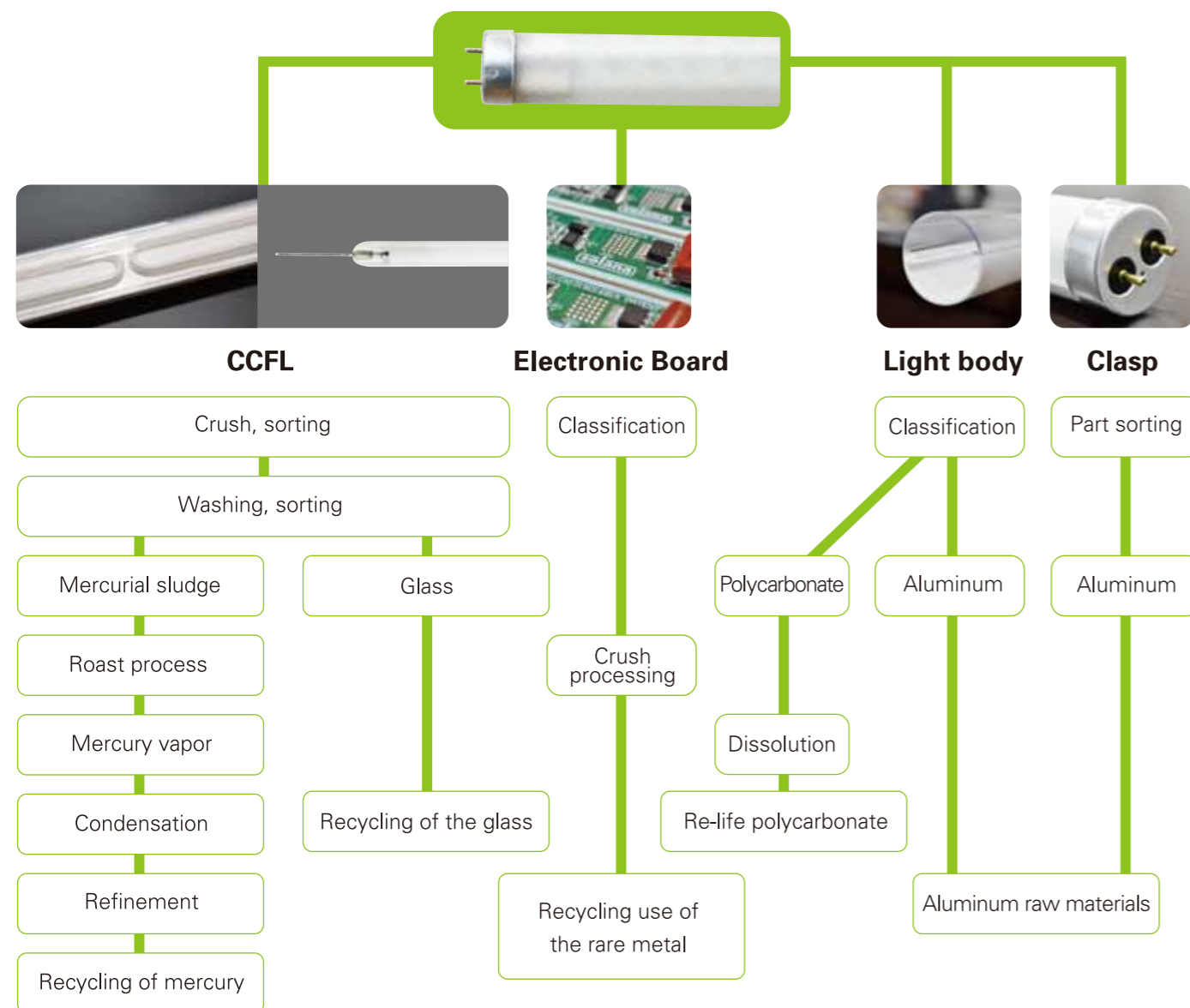
Please contact us

3R is Reduce , Reuse and Recycle.
2L is Low Environmental load substance and Low cost substance



How to recycle the CCFL illumination?

The CCFL illumination is made from lamp (CCFL), Electric board (a circuit, power supply), light body, four points of the clasp greatly. When destroy it, please ask for the industrial waste to handle it as same as general fluorescent lamp.



1 The prosperity era of liquid crystalline TV

For many years, CCFL has played an active part as positioning of the industrial instrument source of light not to appear on the face. As a backlight source of light for particularly liquid crystalline TV, it spread widely all over the world. In 2001, a backlight source of light that a home-appliance maker started, we know liquid crystalline TV mainly on product made in AQUOS(Sharp) was adopted is CCFL(cold cathode pipe). Then liquid crystalline TV needed backlight including transmissivity of the liquid crystal having been bad, so they used a lot of CCFL in one.

- ▶▶ **CCFL was adopted in liquid crystalline TV use in large quantities, and there was not capacity who turned for the production at that time. At that time, production capacity 3 times as many as a fluorescent lamp, and there was more demand.**

2 Three turning points after the Lehman shock

Getting chilled of the liquid crystal TV volume	Rise of the LED as the backlight source of light for TV	Surge of the interest in Eco for the CO2 reduction of the Kyoto Protocol
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- ▶▶ **The element of three above, to show how to use CCFL except the backlight.**

3 CCFL as the illumination

Enough results and performance	Super longer lifespan	Good color rendering	Slim line source of light
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LED and coexistence and co-prosperity	← Illumination	Industrial instrument
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A new source of light and coexistence and co-prosperity such as the LED are possible and can appeal for a characteristic only in CCFL. Light includes right position proper light.

To use an embodiment model and longer life.

FAQ about CCFL

Q. I heard CCFL is a new type of light source. Is it safe?

A. CCFL (Cold Cathode Fluorescent Tube) used in the product is a liable light source which was developed for liquid crystal devices about 25 years ago and has been used as back lights of notebook PCs and liquid crystal display TVs around the world.

With a special protection circuit installed on, it automatically breaks the circuit and turns off the light at time of troubles.

Q. How energy-saving and earth-friendly is it?

A. Compared to T8 fluorescent light bulbs, it saves approximately 25-53% energy and lowers your electricity charges. With an astonishing lifespan of 50,000 hours, the product will require no cost for bulb replacement for this time period. It also realizes an approximately 25-53% CO2 reduction compared to conventional fluorescent light bulbs. In addition, the low heat from the luminous lamp (CCFL) keeps air-conditioning to the minimum and saves electricity costs.

Q. Please inform me about its life cycle.

A. With regard to CCFL (solana), it has adopted the circuit component that can operate for 50,000 hours or more while keeping high temperature. The CCFL tube, which is its light source, gradually decreases in brightness over time. When 50,000 hours have passed, it maintains about 60 – 65% of illumination intensity.

Q. Please tell me about the warranty period.

A. A two-year warranty period is available after the purchase date as standard. In the case of troubles during normal use, the product will be replaced free of charge. However, in the case of breakage caused under the responsibility of users, it is not covered by warranty.

Q. Please let me know about the safety standards.

A. The product has cleared the standard value indicated in "Regulation about radio disturbance caused by the lighting equipment within the TIS standards over other equipment". In addition, we have obtained the TIS1995-2551. In case of any trouble, it is covered by the PL insurance.



TIS 1995-2551

Q. Can plants grow with solana?

A. Plants can grow without problem. Thanks to the low-heat-generating, it can be brought closer physically to plants. It contains the wavelength that is considered to be necessary for growth of plants. The products with special wavelength to grow plants are also available.

Q. How can I install the fluorescent tube type?

A. Please refer to the page on the bottom-right.

Q. How can I check the lighting system of my lamps?

A. Please check the model name printed on the fluorescent tubes you are using.
 - FL type — Glow Starter type
 - FLP type — Rapid Start type
 - FHF type — High-frequency Lighting (Inverter) type

Q. Do you use any mercury?

A. Same as the general fluorescent lamp, mercury is used. However, it passed the content (below 5mg) of exit mentioned materials based on European Directive.

Q. About mercury used in CCFL.

A. The amount of mercury used in CCFL is in accordance with RoHS (The European Standard), and its amount is very small and below 5mg. In addition, used mercury is an inorganic metal, and it tends to bond with water-soluble proteins containing surfur.

As a result, the unneeded heavy metals become hard to get absorbed, and if it is absorbed, the liver and others generate "Metallothionein" which is a protein for protection, so toxicity will become less. Also, this mechanism is also present originally in nerve cells.

Organic Metal...Compounds having direct covalent bonds between metal and carbon.

Inorganic Metal...Compounds having ionic bonds between metal and other compounds.

Q. Where this product is manufactured?

A. This is manufactured in Japan and Taiwan. In Thai, the local production is taken place in On Nut factory.

Q. Where do you do designing of your products?

A. In Hohkoh's headquarters in Japan. We are supplying safe and high quality products by making use of our design technologies based on our long-year experience on our main business as a substrate manufacturer.

Q. Are you insured against PL?

A. Yes.

Q. Is there minimum quantity order requirement for custom products or OEM development?

A. We can accept orders from 1 piece. Please contact to our sales representatives.

Q. Is it water-proof?

A. We can get water-proof lamps ready for you separately.

Q. Is it explosion-proof?

A. No, but actually the polycarbonate prevents scattering of bits of glass. We can put it in an explosion-proof case.

Q. Is it possible mounting in any lighting systems?

A. Yes. In addition, we ask you to install by any of the following ways from the consideration of the safety and performance of the solana.

1. Perform a bypass construction. (Page on the bottom right)
2. Use the lamp which finished direct connection construction. (Please contact us.)

Q. Is there any patent?

A. We are using the parts and circuits which have patentability, and we have expertise in internal inverter parts and CCFL lamp.

Q. What kind of places is suitable for CCFL?

A. Since it can make the light source thin and long (a line light source), it can illuminate the wide area uniformly. Also, it is preferred to use in difficult maintenance locations taking advantage of the long life.

FAQ about LED

Q. Are there any features in comparison to the LED fluorescent lamp of other companies?

A. Body of lamp and power part is placed separately. It adopts industry's highest quality "constant-current power source" and "NICHIA's LED", and it realized the industry's highest class luminous efficiency.

Q. How long does a LED lamp last?

A. It depends on operating conditions, but our LED lamp is designed to last for 50,000 hours. It lasts five times longer than traditional lamps. Unlike traditional lamps, switching on and off does not shorten its life.

Q. Don't they heat up when used for a long time?

A. A LED element itself is heat sensitive, so heat has to be released from the heat-releasing board behind the lamp. SOLANA-LED uses aluminum alloy frame for this. It heats up, but would not become too hot to touch like traditional lamps.

Q. Would it break if the lamp comes off the equipment?

A. Its exterior tube is made of high-strength polycarbonate (PC) and aluminum alloy. So, it would not break even if it drops to the floor.

Q. Can I use it on instruments with dimming function?

A. It is not compatible with instruments with light control function.

Q. Do you have products with any other emission colors than introduced here?

A. We currently have two standard types of colors: Neutral white (5,000k) and warm white (3,500k). Please inquire us about other colors if necessary.

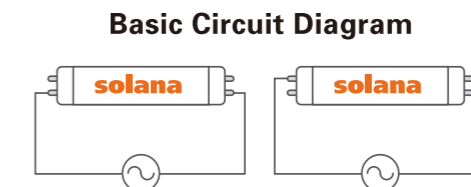
Q. How long is the warranty period?

A. The standard warranty period by the manufacturer is two (2) years. Some troubles due to customers' responsibilities may not be covered by the free replacement plan.

How to Install

Please contact a professional to install solana lights.

SOLANA-FD series lamps will turn on when voltage is applied to the pins on each side of the tube. The following diagram illustrates the basic circuitry.



Be sure not to apply voltage to pins on the same side. It may damage the lamp.

