

FAQ for EcoLight® T5 Retrofit Fixture

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Q.36) We have a special kind of fixture with a small tombstone or diffuser but your EcoLight T5 having a reflector and which is too big. Are there any other models that fit this kind of fitting?

Q.37) Are the EcoLight T5 series also available without reflector and if so, what is the pricing?

Q.38) If our light fitting hanging on wall vertically, your EcoLight T5 got a reflector, will it face horizontally but not facing downward. In this case, what we can do if using EcoLight T5?

Q.39) What's your production capacity of ECOTUBE and EcoLight T5?

Q.40) We have installed a few units of T5/28FSE inside a fridge unit (cold environment). We find the tube is not bright as fitting in the normal fixtures. Do you know the heat tolerances of the lamps?

Q.41) The savings sound too good to be true. How can the user have such big savings?

Q.42) Why EcoLight T5 can save energy?

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Q.44) How much energy EcoLight T5 can save when compare with T8 and T12

magnetic ballast fittings?

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Q.1) What is EcoLight T5 Retrofit Fixture?

EcoLight® T5 Retrofit Fixtures are new technology of T5 electronic ballast fitted inside the unique aluminium fixtures designed to retrofit the old fluorescent system in result of high saving rate, up to 60%.

They are retrofitted fixture designed to provide a best solution to upgrade conventional system using Electromagnetic Ballast to the very latest T5 electronic ballast technology and T5 florescent lamp technology. **EcoLight® T5 Retrofit Fixture** comply with T8, T9, T10 and T12 fluorescent lamp and provide numerous immediate and lasting benefits including: energy saving, no wiring work, short payback period, quick installation, better light quality, eye protection, high power factor, etc.

Q.2) What does retrofit fixture mean?

Retrofit fixture is an easy-to-install design of lighting products which can fit to the existing fittings instantly without any modification and wiring work. The retrofit fixture concept is to minimize the costs faced by users to achieve energy efficiency.

Q.3) After installation of EcoLight T5 products, does the system require a starter to trigger the light?

NO! EcoLight® T5 products do not require any starter as it is an electronic ballast system.

Q.4) It is mentioned that EcoLight T5 consumes less wattage. Does this mean that the light output will also be less?

Even EcoLight T5 consumes less wattages, the light output is comparable to the conventional T8 tube lights since the efficacy of T5 system is much higher than T8 system. The light output can be measured using a lux meter.

Q.5) The lighting products available in the market are very expensive. Is it the same case with the EcoLight T5?

EcoLight T5 can be sold at zero prices because the prices of the products will eventually payback by the saving of electricity bill. The saving rate of EcoLight T5 can offer an energy saving of approx. up to 50%. The average return of investment therefore is around 1- 2 years.

Q.6) Some fluorescent light systems would encounter end-tube blackening effect in the early stage of operation. Do EcoLight T5 products has same problem?

NO! All of our T5 products are equipped with pre-heating function which is used to warm up the filament before the T5 tube is trigged to light up. Without the pre-heating function, the lifespan of tube will be shortened and blackening effect will occur earlier.

Q.7) What is the different between, FEE model, FSE model and FAU model?

FEE model has Overload protection, Over-heat protection, Pre-heating function, THD<30%, PF =0.95 (application: factory, school, commercial building, super market, etc.) We provide 18 months warranty for FEE model.

FSE model has EMI protection circuit, Overload protection, Over-heat protection, abnormal protection, Pre-heating function, Cut-Off function, THD<20%, PF=0.98 (application: hospital, commercial build, warehouse, etc.) Rohs Comply. We provide 30 months warranty for FSE model.

FAU model has EMI protection circuit, Overload protection, Over-heat protection, Cut-Off function, Abnormal protection, Pre-heating function, Chipset control, Constant power output, THD<10%, PF=0.98 (application: computer room, data center, hospital, etc.) Rohs comply. We provide 40 months warranty for FAU model.

Please refer to our product specification for more details of the difference.

Q.8) What is the average life time of the EcoLight T5 and T5 ECOTUBE?

The life time of T5 tubes is around 20,000 hours and the life time of the built-in ballast is around 30,000 hours to 50,000 hours depending on different class of product.(E mode = 30k hours, S mode = 40k hours and A mode = 50k hours)

Q.9) Is it possible to provide a 3 year warranty on the EcoPower FSE series?

Yes, we can provide 3 year warranty for FSE model but customers have to pay extra cost. Pls deal with our marketing people.

Q.10) What T5 model does build with chipset control in them?

Products with chipset control are:

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- 1) T5/21FSA, T5/28FSA, T5/35FSA
- 2) All FAU model
- 3) All FAH model

Q.11) What advantage does the new chipset give to the client (example longer rated life etc)?

With built in chipset, the product will become more stable during operation. The lifespan of the product will be extended.

Q.12) What are the difference in ICs, ICs Control, Open, Cut-Off, Open - Circuit, Short Circuit, Gas discharge?

- 1) ICs =ICs Control means that product built with chipset control to ensure stable operation.
- 2) Cut-Off is a new electronic ballast control technology which will stop the pre-heating current flowing through the filament after the tube is ignited. The Cut-Off technology will reduce the loading of filament and hence extended the life span of tube. And most of EcoLight T5 series will equip with Cut-Off technology. The specific models with Cut-Off technology are:

T5/14FSE, T5/21FSE, T5/28FSE, T5/35FSE

T5/14FSA, T5/21FSA, T5/28FSA, T5/35FSA

T5/14FSI, T5/21FSI, T5/28FSI, T5/35FSI

All FAU model

All FAH model

- 3) Open-Circuit, Short-Circuit, Gas Discharge, Overload are belonged to the protection function of EcoLight product.

Q.13) Can the T5 retrofit fixture comes with the plastic shaft, and optional diffuser?

Yes, we can provide.

Q.14) Can the "Home Version" come in the 60 Hz/120 volt range (North American residential voltage), I see that it is available in the European voltage, 230V?

The Home Version is only available for 230V.

Q.15) Do the lumen outputs are the same between the tube of 4000K and 6500K?

In general, with the same input power, the lumen output of 2700K results about 5% higher than 6500K. So the lumen output of 4000K will be higher than 6500K by about 2%.

Q.16) What does better quality of light mean?

The colour rendering index (CRI) of T5 tubes is 85. CRI translated in common language means that T5 tubes are 85% close to natural sun light. And we can also provide tube with CRI > 90.

Q.17) What is the difference in light output over the life time between T5 ECOTUBE and T8 fluorescent tubes?

The T5 tubes are designed to last for a longer period of around 20,000 hours. The depreciation of lumen is only around 10% after 10,000 hours compared to 35-40% for standard T8 tubes. This reduces the service and maintenance costs and will give the user additional savings.

Q.18) Does installation of EcoLight T5 product require wiring work?

If the old light fitting built with magnetic ballast, you don't have to by-pass it but only have to remove the starter. Then you only install the EcoLight T5 product onto the light fittings directly. On the other hand, if there is the old fitting built with Electronic ballast, rapid start ballast or instant start ballast, you need to do the wiring work to by-pass it. Please refer to the user manual of EcoLight T5 series for details.

Q.19) What is the advantage of EcoLight T5 Series in term of light output when it is compared with other similar T5 products?

EcoLight T5 product is applying standard T5-electronic ballast to gear the lamp. For example, of T5/35FSE, the system power is 37W. Our ballast provides enough 35W to light up the T5/35W lamp. As a result, the T5/35W lamp will achieve its optimal light output. And the rest of 2 W is the consumption of ballast itself. Together with our aluminum reflector, the lux can be highly increased.

For other brand's adaptors, they are only recorded 32.5W system power. The power to T5/35W lamp is only 30W which is far below the required power consumption. As a results,

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the light output drops. It is sensible that a 35W T5 lamp requires 35W power to achieved its maximum light output

And it should be noticed that the lifespan of T5 fluorescent will be shorten if the supply power is higher or lower than the rated power.

Q.20) What are the advantages of EcoLight T5 product when compare with other similar T5 products?

EcoLight T5 series products are superior for the follow reason:

- 1) EcoLight products comply with all the standard of industrial or commercial application and EcoLight product is certified by the laboratory of SGS which is a recognised globally.
- 2) All EcoLight products come with PTC (Pre-heating function) and protection function. Since the filament of T5 tube is very delicate. Without PTC, the tube will break down in a short period of time. Other products do not have such features.
- 3) Our ECOTUBE T5 tube has some breakthrough on the filament and coating technologies. We will apply a nano-film to the internal glass tube so that the lumen maintenance performance will be highly improved.
- 4) Our T5 tube is always designed to match the e-ballast. The matching of e-ballast and the tube is very critical to the stability of the whole T5 system. Other brand name they design T5 electronic ballast and T5 tube individually.
- 5) EcoLight T5 product concerns the quality of electronics, the design of product, working conditions as well as the matching of tube and electronic ballast.
- 6) We provide full range of products with different class, length, end-cap and supply voltage. EcoLight products are congruent to the demands of the market in many cases.

Q.21) What is the advantages of using aluminum fixture in EcoLight T5 series product?

The aluminium fixture is very good for ventilation. The operation temperatures (Tc) of our T5/FSE or FAU is about 40 - 45°C. Since we a using a long aluminum bracket to embrace the T5 electronic ballast, our running temperature is lower than the normal T5 e-ballast which is using iron-plate as casing. Moreover, the aluminium make the product look classier

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Q.22) What are the advantages of using rotational cap in EcoLight T5 series product?

The rotational cap is a unique design which makes the product can be applied to the fixture with different orientation of lamp holder. The rotational cap is adjustable to a position which is best fitted provide most light output to your environment.

Q.23) I found the end-tube darkening effect will happen early if we use other brand name of T5 tube. What is the reason?

If the T5 tube is not under our brand name which may not perfectly match our electronic ballast. Therefore, it may cause the darkening effect in the earlier stage. Pls be noticed that a small darkening is normal in application.

Q.24) How does the EcoLight T5 react to high voltage fluctuations?

EcoLight T5 has been designed taking voltage fluctuation into consideration. The electronic ballast can withstand voltage fluctuation of $\pm 15\%$.

Q.25) What is RoHS?

RoHS is commonly referred to as the Restriction of Hazardous Substances Directive or RoHS) was adopted in February 2003 by the European Union. The RoHS directive took effect on 1 July 2006, and is required to be enforced and become law in each member state. This directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment.

Q.26) What is WEEE?

The Waste Electrical and Electronic Equipment (WEEE) legislation introduces new responsibilities for businesses and other non-household users of electrical and electronic equipment (EEE). This includes schools, hospitals, and government agencies, when they dispose of their electrical waste. These organisations will need to ensure that all separately collected WEEE is treated and recycled

Fluorescent tubes, Mercury, Halides, HPS and most electronic products contain mercury. Mercury is a very useful and essential element, but is also hazardous if not disposed of correctly.

There is enough mercury in an old 6ft T8 or T12 fluorescent tube or on small computer circuit board to pollute 30,000 litres of drinking water. So it has to be carefully disposed of ensuring that it does not enter water tables through landfill and waste sites.

It is now illegal for businesses to deposit used fluorescent tubes, mercury, discharge lamps and most electronic components in landfill sites.

Q.27) Can we use this EcoLight T5 in T10, T12 old fixtures?

EcoLight T5 can apply to all standard fixtures with different diameter of tube, including T8, T9, T0 and T12.

Q.28) Can the EcoLight T5 be used if there is already an electronic ballast installed in the fitting?

Yes, but some simple wiring work has to be performed. The existing electronic ballast needs to be by-pass. Please refer to our user manual for details.

Q.29) Does EcoLight T5 and ECOTUBE comply with RoHs? And CE?

All of our ECOTUBE (T5 tube) comply with RoHs and CE.

For EcoLight Series products, Only FEE and FCE model do not comply with RoHs. The rest of the models like FSE and FSA comply with RoHs as our product standard.

Q.30) Can you have CE certification if RoHS is not complied?

CE and RoHS are individual standards. There is no influence and conflict to each other. CE is related to safety issues while RoHS is related to environmental issues.

Q.31) We are using Single Bullet Pin, can we use EcoLight T5?

EcoLight T5 has other end-cap designs to be applied in single bullet pin (Fa8). EcoPower also provides EcoLight T5 retrofit fixtures adapted to bi-pin (G13) and recessed (R17d).

Q.32) Besides 5ft, we use 6ft and 8ft? do you have any other models for this kind of fixture?

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Yes, we also provide solution to 6ft and 8ft existing fixture. The 6ft and 8ft is called **Slender Series**, please visit our website for more details.

Q.33) We are using rapid start ballast, can we use EcoLight T5?

Yes. But simply wiring work is required to bypass the rapid start ballast. Please visit our website or refer to our user manual for more details.

Q.34) If there is no ballast in the fitting, can we use EcoLight T5?

Yes. The EcoLight T5 is actually can be regarded as standard T5 fittings with built-in electronic ballast. It can run dividually. Therefore, existing ballast can be either remove or remain inside the luminaries.

Q.35) we are using shared ballast, 1 ballast for 2 tubes, can we use EcoLight T5? If so, what we can do?

Yes. We provide solutions to series (shared) ballast configuration. Pls ask our customer service for more details or refer to our user manual.

Q.36) We have a special kind of fixture with a small tombstone or diffuser but your EcoLight T5 having a reflector and which is too big. Are there any other models that fit this kind of fitting?

Yes. You can either use our T5 product without reflector or EcoLight T5 with special end-cap (taper end) customized for limited installation space. Pls ask our customer service for more details.

Q.37) Are the EcoLight T5 series also available without reflector and if so, what is the pricing.

Yes, we have wingless design (without reflector). They are same in price.

Q.38) If our light fitting hanging on wall vertically, your EcoLight T5 got a reflector, will it face horizontally but not facing downward. In this case, what we can do if using EcoLight T5?

The EcoLight T5 fixture end is connected with rotational caps. The unique design of rotational cap makes the product can be applied to the fixture with different angle of lamp holder. The rotational cap is adjustable to a position which is best fitted to your environment.

Q.39) What's your production capacity of ECOTUBE and EcoLight T5?

Production capacity of EcoLight T5=300,000 / Month and ECOTUBE=600,000 / Month

Q.40) We have installed a few units of T5/28FSE inside a fridge unit (cold environment). We find the tube is not bright as fitting in the normal fixtures. Do you know the heat tolerances of the lamps?

Our product is designed to operate in ambient temperature ranging -15°C to +50°C.

For the lamp, it will dim at low temperature. This is the physical features of lamp. In general, the lamp will achieve maximum light output if the surface temperature of tube is about 40°C. If the ambient temperature decreases to negative like the environment, the light output will decrease.

Q.41)The savings sound too good to be true. How can the user have such big savings?

The additional power losses of T8 and T12 magnetic ballasts are around 30%, whereby the power losses of the EcoLight T5 system including are only around 7%. Furthermore the tube wattages of T8 / T12 are much higher than the tube wattages of T5 tubes. Both together will give the user savings of around 40% compared to T8 and T12 fittings with magnetic ballasts.

Q.42) Why EcoLight T5 can save energy?

The EcoLight T5 is built with a T5 electronic ballast which can achieve high power factor >0.95 and reduce the operation current (I). The magnetic ballast inside the conventional fixture can be regarded as a resistor (R=Resistance) to the current. The power loss (P) of the resistor can be explained by the following formula.

$$P=I^2R$$

By using T5 electronic ballast technology, the current will drop and hence the power loss reduces dramatically. This explains why EcoLight T5 can save energy.

Q.43) How does the switch ON/OFF influence the lifespan of the T5 system?

The life span of fluorescent lamp can be roughly estimated by Switch On-Off experiment. In general, every power on and power off will shorten the life time of a lighting system by about 1.5hours. But this also depends on the design of tube and electronic ballast.

If EcoLight T5 is applied to some critical environment, we highly recommend you use our FSE or FAU model.

Q.44) How much energy EcoLight T5 can save when compare with T8 and T12 magnetic ballast fittings?

Please refer to our T5 product brochure in which you will find the comparison table for energy saving. The T5 product brochure is uploaded in our website.

Q.45) What are the advantages of using T5 electronic ballast (T5 EcoLight Retrofit Fixture) when compare with conventional magnetic ballast?

Advantage of using T5 EcoLight Fixture:

- Energy Saving up to 60%
- Protection functions
- Protection of eye vision
- Enhance color; No lumen loss
- Lamp's lifetime extended
- No wiring cost; No wiring works
- Short payback period
- User friendly
- Quiet Operation
- Immediate Start; No surge current
- Low Harmonic distortion < 20%
- Operation Frequency > 35KHz
- No flickering
- Reversible retrofitting
- Installation only takes 30 seconds
- Comply with T8, T9, T10 and T12 Fixtures
- Wide application voltage
- High power factor > 0.95

Q.46) Is it possible to have installation of the EcoLight Fixture without removing the Power Factor correction Capacitor?

Yes! It is possible for Standard Mode and Advanced Mode Model only.

For example, with the existing capacitor, the pf is 0.85. After fitting with FES fixture, the overall pf will achieve 0.5. By using $P=V \times I \times PF$, where P= System Power, V=Input Voltage, I=Line Current and PF=Power Factor.

Before Retrofit:

$$\text{Without T5/28FSE: } 48W = 240 \times (I) \times 0.85 \Rightarrow I = 0.235 \text{ A}$$

After Retrofit:

$$\text{With T5/28FSE } 30W = 240 \times (I) \times 0.5 \Rightarrow I = 0.250 \text{ A}$$

In the calculation, you will find that the line current will only increase by a small amount 0.015A*

However, the MOSFET and power-control components of the T5 FSE fixtures can withstand 1A input current, over which the T5 FSE ballast will be damaged. The current will only be 0.25A* as above, therefore it is possible to remain the capacitor inside the system.