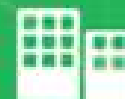
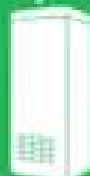
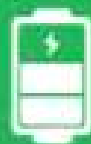


Ledtech

Ledtech Electronics Corporation  
立得电子有限公司



UV LED



## 一、UV products



## 二、Antibacterial products

## — 、 UV products

1. Why choose UV LED
2. UV LED PKG
3. UV application markets
4. Application projects

# Why choose UV LED I

UV LED is a green technology that can be used in many different application fields.

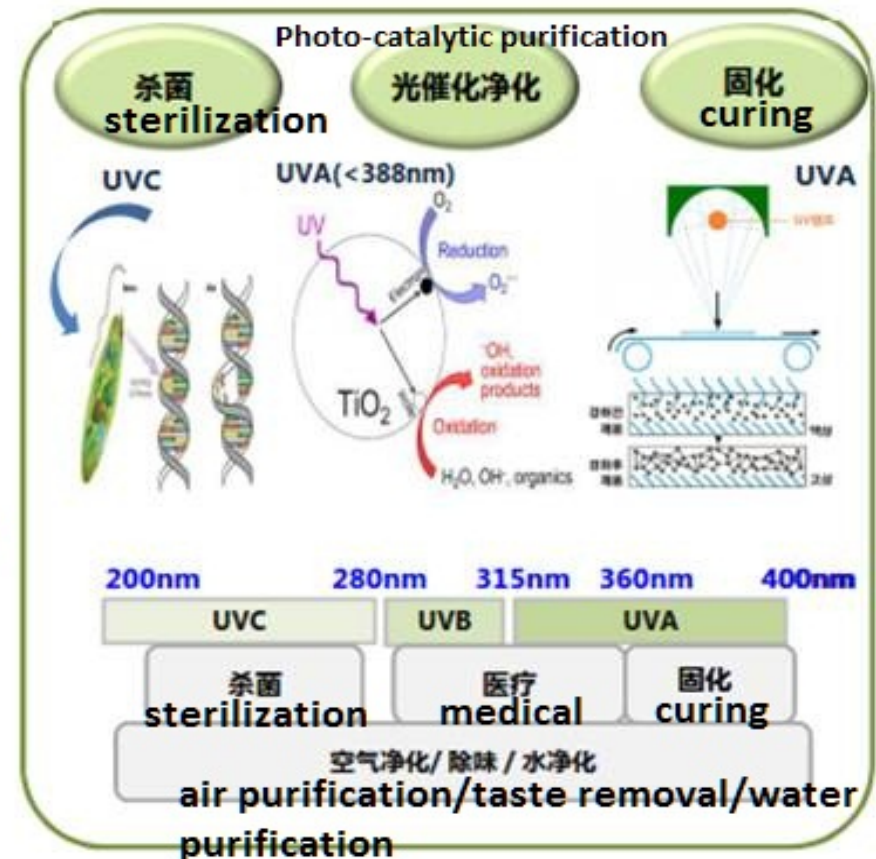
UV LED 是绿色环保的技术  
可适用于很多不同的应用



绿色 / 清洁的净化技术 Green/clean purification technology

- ✓ 节能 energy saving
- ✓ 环境友好 eco-friendly
- ✓ 超长寿命 ultra-long life
- ✓ 设计方案更加灵活 more flexible design
- ✓ 适用于多种应用 multiple applications

✓ 应用 & 功能  
Application & function



# Why choose UV LED II

## UV LED与传统 UV 汞灯的对比 UV LED vs Traditional UV mercury lamp

- UV 紫外线具有长寿命，节能，不需要预热，环境友好 (不含汞)的优点  
UV has the advantages of long life, energy saving, no need for preheating and eco-friendly (Hg free).

| 技术 Technology  | 寿命 Life   | 耗电 Power   |
|--|---|--|
| <p><b>New Light Simple Compact</b> VS <b>Old Heavy Bulky Complex</b></p> | <p>10,000 ~50,000 Hour VS 2,000 ~10,000 Hour</p>                                | <p>Low VS High</p>   |
| <p>预热时间 Preheat time</p> <p>Zero VS Slow</p>                             | <p>UV LED 灯管 VS 传统 UV 汞灯</p> <p>UV LED light tube VS Traditional UV Hg Lamp</p> | <p>友好环境 Eco-friendly</p> <p>No mercury No Ozone VS Mercury used /Ozone Generated</p> |
| <p>预热 Preheat</p> <p>Low VS High</p>                                     | <p>波长 Wavelength</p> <p>Single UV Band Customizable VS Multiple Peaks</p>       | <p>含汞 Hg contain</p> <p>None VS Mercury(20~200mg)</p>                                |

# LEDTECH UV LED



| TYPE | P/N                  | TYPE | Photo | Specification  |                        |                 |                |            |                                |
|------|----------------------|------|-------|----------------|------------------------|-----------------|----------------|------------|--------------------------------|
|      |                      |      |       | Current        | Wavelength             | $\Phi_e$ (mW)   | VF (V)         | PO (W)     | Material                       |
| UVA  | LT5KU3-1Y-M1D2-T01-Z | 3528 |       | 20mA           | 395-404nm              | 7~18            | 3.0-3.6        | 0.07       | PPA                            |
| UVA  | WT3535-U365-4501     | 3535 |       | 500mA          | 365-370nm              | 600 Min.        | 3.2-4.4        | 2          | AlN                            |
| UVA  | WT3535-U400-4501     | 3535 |       | 350mA          | 400-405nm              | 460 Min.        | 3.0-3.5        | 1.2        | AlN                            |
| UVC  | LTFGU3-FG-1M1E1-GAL2 | 3535 |       | 100mA          | 270-285nm              | 5~10            | 5~7            | 0.7        | AlN                            |
| UVC  | LTFGU3-FG-1UDK2-GAL1 | 3535 |       | 100mA          | 270-285nm              | 7~10            | 5~7            | 0.7        | Al <sub>2</sub> O <sub>3</sub> |
| UVC  | LTFG63-FG-2M1E1-GAL4 | 3535 |       | 100mA          | 270-285nm<br>390-410nm | 8~12            | 5~7            | 0.7        | AlN                            |
| UVC  | LTFG63-FG-2M1E6-GAL7 | 3535 |       | 100mA          | 270-285nm<br>390-410nm | 7~10            | 5~7            | 0.7        | Al <sub>2</sub> O <sub>3</sub> |
| UVC  | LTFGU3-FG-2M1E1-GAL3 | 3535 |       | 100mA          | 270-285nm              | 8~12            | 5~7            | 0.7        | AlN                            |
| UVC  | LPHQU3-HQ-1M1D1-GAL5 | 6868 |       | 300mA          | 270-285nm              | 25~45           | 5~7            | 2          | AlN                            |
| UVC  | LPHQ63-HQ-M1D1-GAL6  | 6868 |       | 120mA<br>300mA | 270-285nm              | 35~50<br>90~120 | 18~22<br>20~24 | 2.6<br>7.2 | AlN                            |

# UV application markets

*Ledtech*

## Water sterilization



Ice maker



Water purifier



Water dispenser



Humidifier



UV



Water purification system



New application

# UV application markets

*Ledtech*

## Surface sterilization



Dishwasher



Vacuum cleaner



Toilet lid



Kitchen cutting board sterilizer



Mobile phone sterilizer



New application

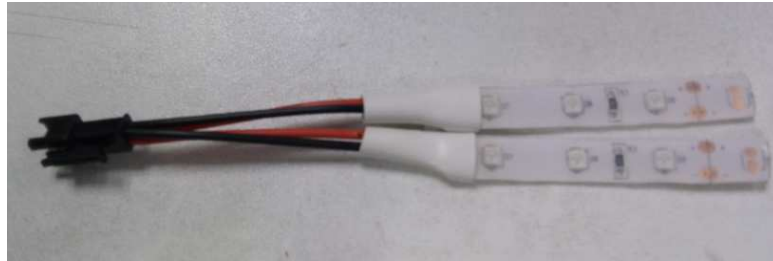


UV LED



## **UVA** Application Projects

# UVA application project refrigerator module



Refrigerator taste removal

UV LED + photo-catalysis + fan

## LED component

- ✓ Package size: 2835
- ✓ Power dissipation : 0.1W
- ✓ Drive current : 20mA,
- ✓ Drive voltage : 3.2v avg.
- ✓ Wavelength: 380-400 nm
- ✓ Radiation intensity : 2.5 mW

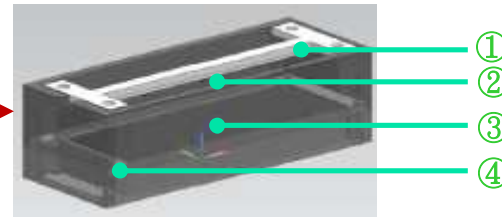
## LED module

- ✓ LED qty. : 3 pcs. UVA
- ✓ Power dissipation : 0.6W
- ✓ Drive voltage : 12V DC
- ✓ Wavelength: UVA 380-400 nm

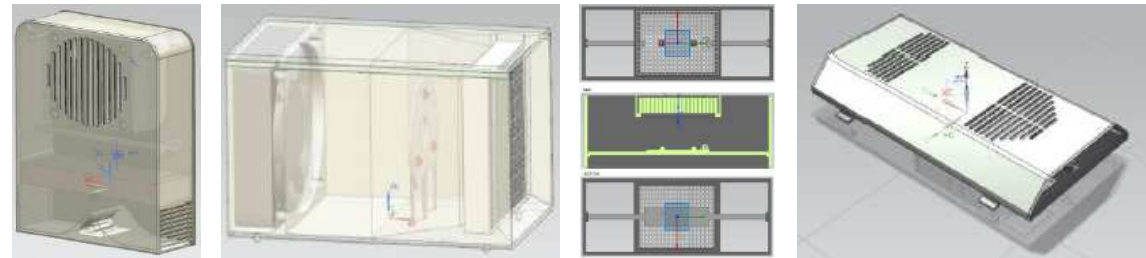




# UVA application project refrigerator module structure



- 1. PCB
- 2. UV-LED
- 3. Photo catalyst
- 4. Housing



Customized



Air disinfection



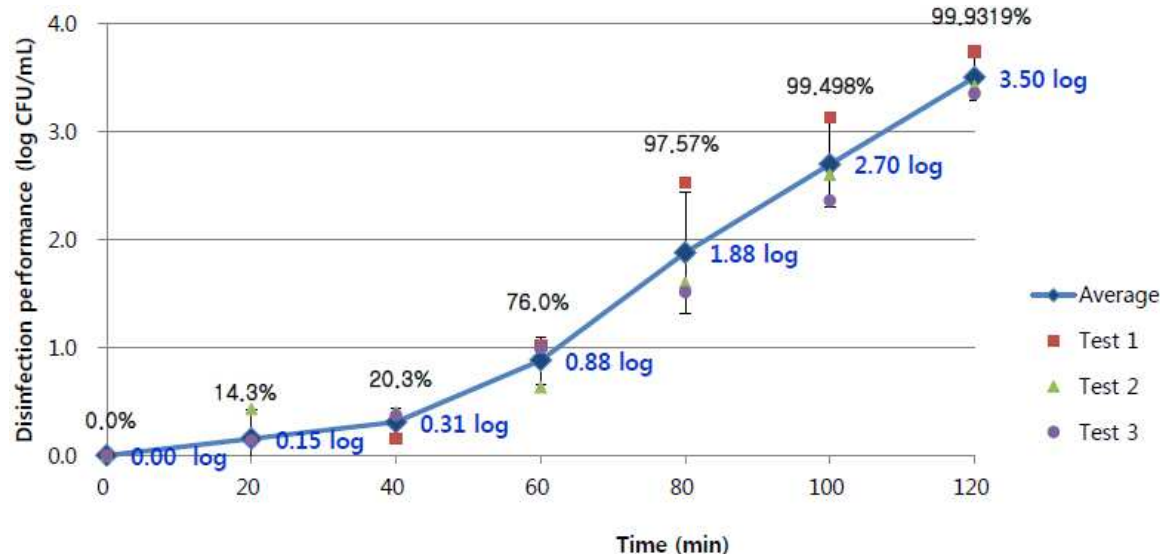
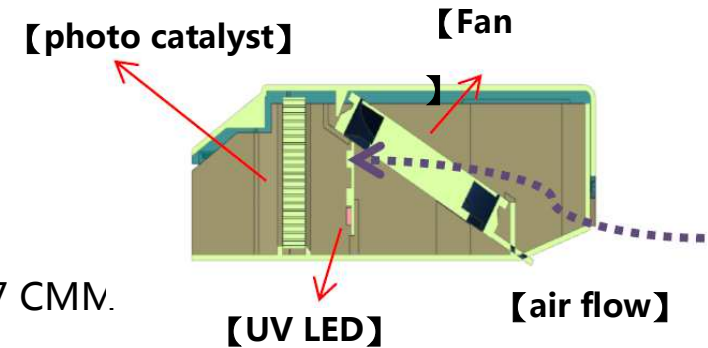
Taste removal

# UVA application project refrigerator module sterilization

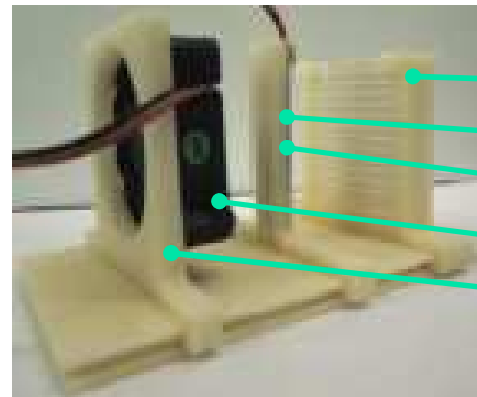
## UV LED refrigerator module" also can kill air bacteria

### 【Test condition】

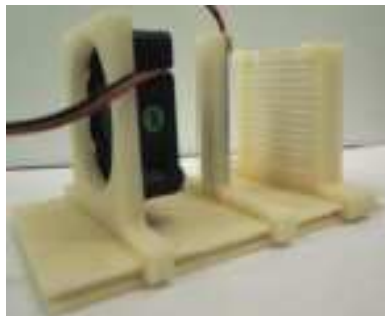
- Test organism : staphylococcus aureus ATCC 6538
- Initial concentration : avg. 10.7 log CFU/m<sup>3</sup>
- Test container : 1m<sup>3</sup> - Test module : UV LED 3 PKG @250mA (exposure intensity: 16.7mW/cm<sup>2</sup>), Photo catalyst size: 55 x 55 x 10mm (D x W x H) air speed 0.17 CMV.



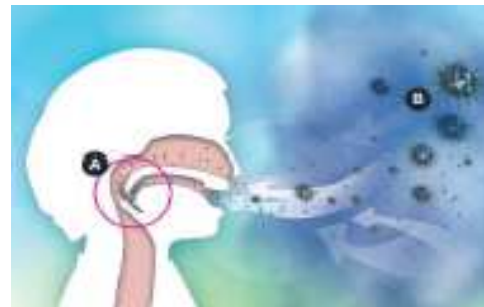
# UVA application project vehicle air conditioner module



- 1. Photocatalyst
- 2. UV-LED
- 3. PCB
- 4. Fan
- 5. Housing



Customized



Air disinfection

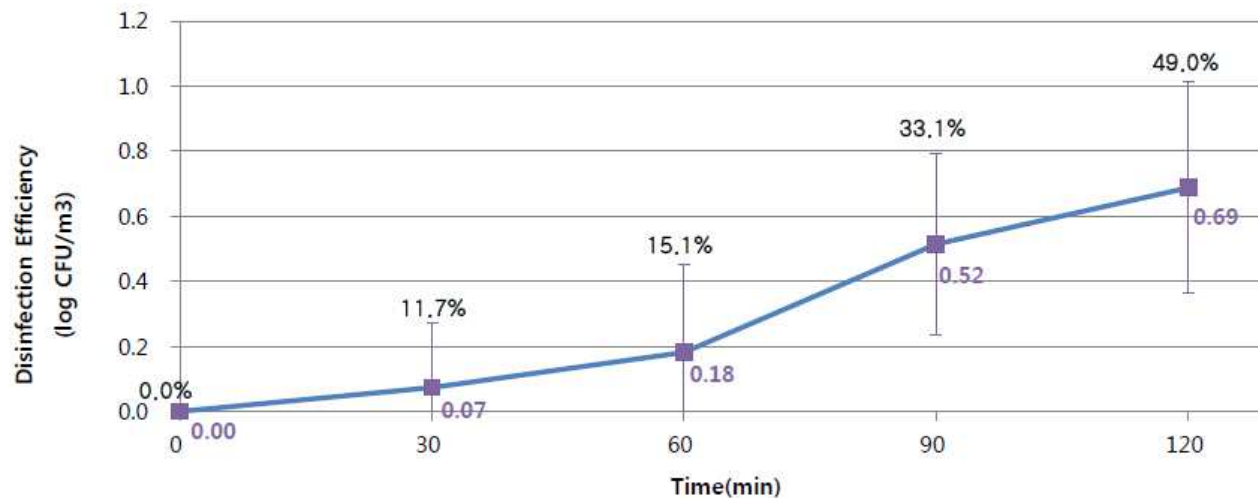
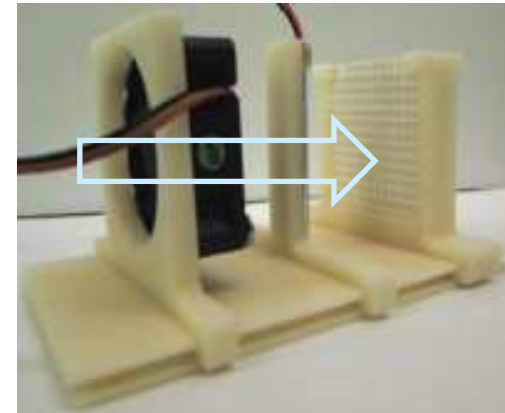


De-odor

## UV LED vehicle module" also can kill air bacteria

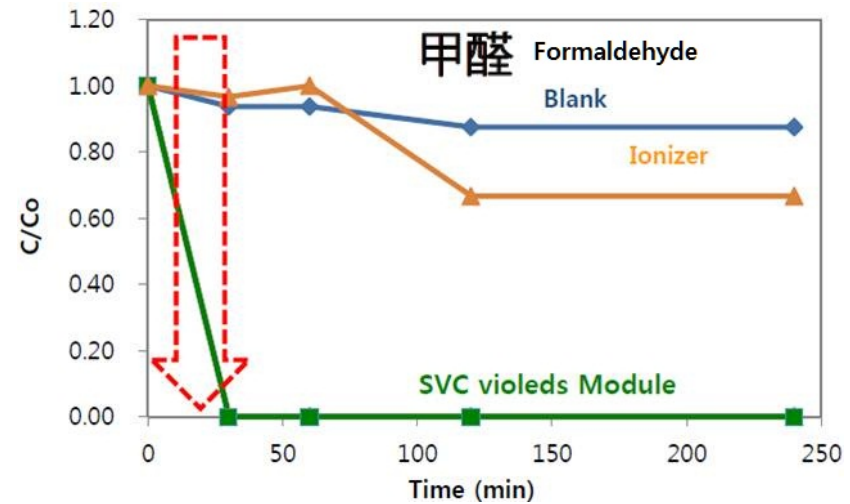
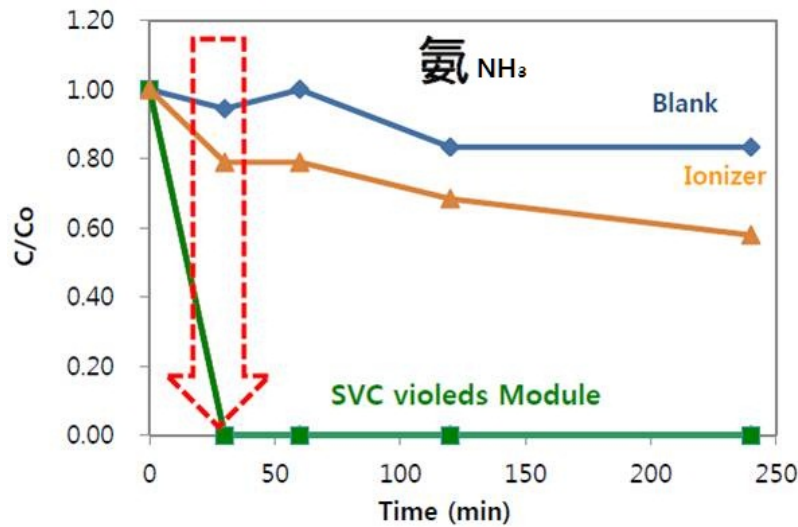
### 【 Test condition 】

- Test organism : staphylococcus aureus ATCC 6538
- Initial concentration : avg. 10.7 log CFU/m<sup>3</sup>
- Test chamber: 4 m<sup>3</sup> - Test module: UV LED 3 PKG @300mA (exposure intensity : 20.5mW/cm<sup>2</sup>), Photo catalyst :33 x 33 x 10mm (D x W x H) air speed 2.9 CMM



Disinfection test with UV LED Module

## Better deodorization performance than anion comes from UV LED module

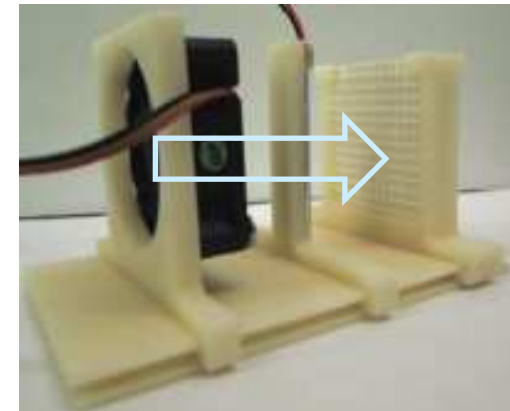


### 規格要求 Specification

: 經4hr後，最終效果必須達到60%以上 After 4hrs, the final effect must be over 60%.

### 實驗條件 Test condition

1. 方法：負離子測試標準 Method: anion test standard
2. 試驗氣體：氨氣，甲醛 Test gas: ammonia, formaldehyde
3. 20 L 泰德拉袋 (Tedlar R)
4. 濃縮試驗氣體：氨氣：15±5 ppm, 甲醛：20±5 ppm  
Concentrated test gas: Ammonia Formaldehyde
5. 數據採集時間：0 / 0.5 / 1 / 2 / 4 (hr)  
Data collection time: Reaction module
6. 反應模組：VP模組(33x33, 10CMH), 可攜式AP模組(55x55, 4.8CMH)  
VP module portable AP module



## UVA application project Mosquito killer lamp module

### LED component 365nm

- ✓ Package size: 3535
- ✓ Power dissipation : 2W
- ✓ Drive current : 500mA,
- ✓ Drive voltage : 4v avg.
- ✓ Wavelength: 365-370 nm
- ✓ Radiation intensity : 750 mW

### LED component 405nm

- ✓ Package size: 3535
- ✓ Power dissipation : 1W
- ✓ Drive current : 350mA,
- ✓ Drive voltage : 3.2v avg.
- ✓ Wavelength: 400-405 nm
- ✓ Radiation intensity : 600 mW

### Mosquito killer lamp

- ✓ LED qty. : 4pcs. 365nm+4pcs. 405nm
- ✓ Whole dissipation : 7.5W
- ✓ Drive voltage : 5V DC
- ✓ Wavelength: UVA 365+405 nm





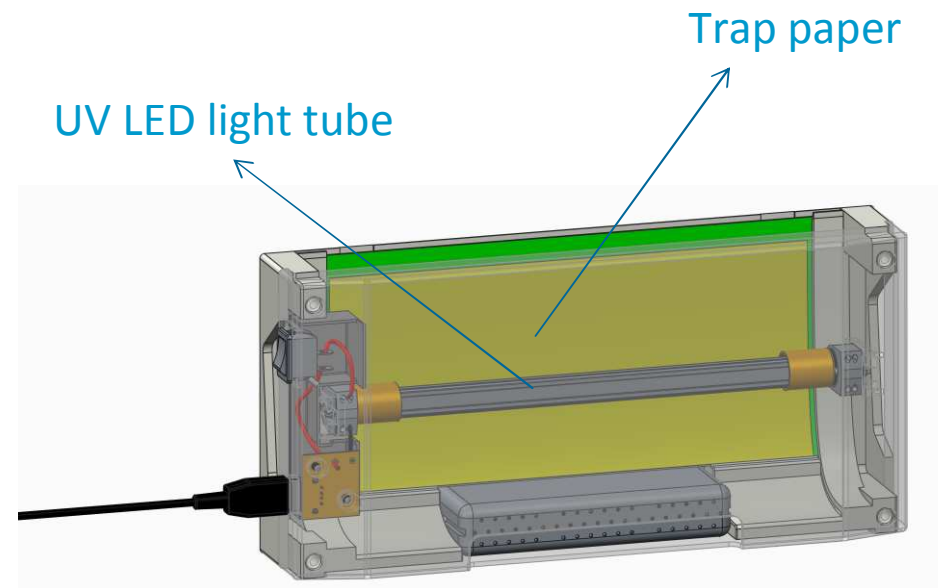
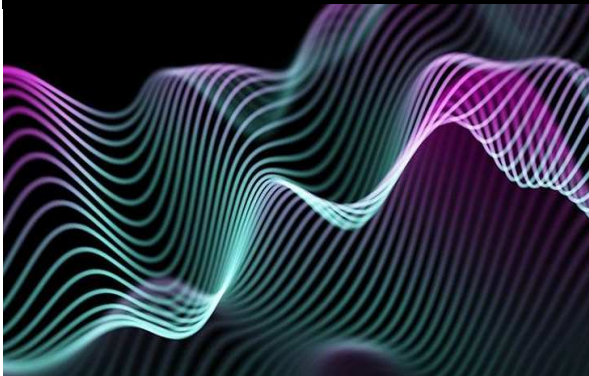
# UVA application project mosquito killer lamp



UV LED+ Trap paper

Multi-frequency  
trap light wave

365nm+405nm



UV LED

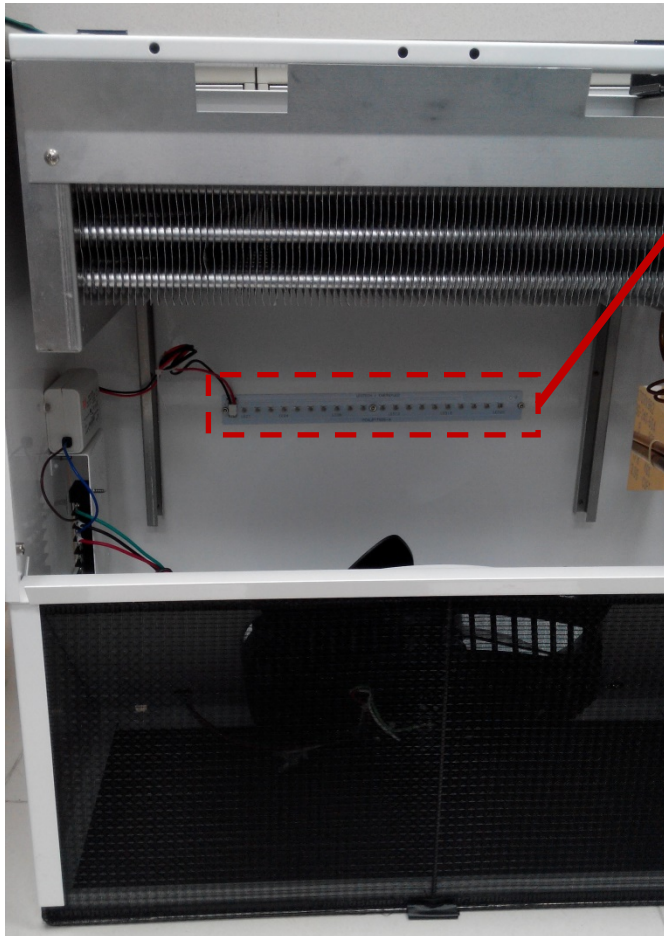


## **UVC** Application Projects

## Air purification & Water sterilization



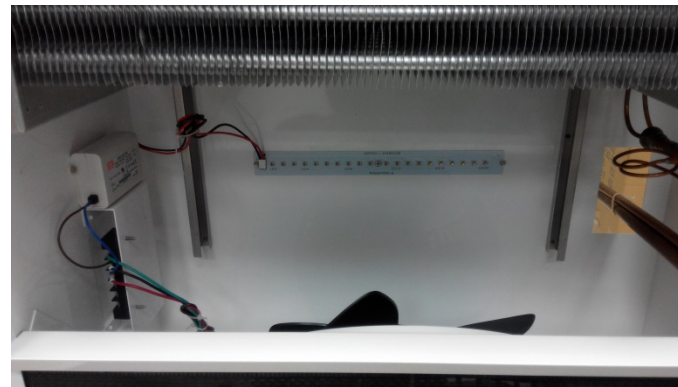
# UVC application project air purification module



Customized



- 1. PCB
- 2. UV-LED



| 測試項目<br>test item                         | 組別<br>group          | original inoculation amount<br>原接菌量<br>(CFU/mL) | 作用時間<br>action time | 樣品作用後之菌數<br>(CFU/m <sup>3</sup> ) | bacteria no.<br>after action |
|---|----------------------|---|---------------------|-----------------------------------|------------------------------|
| 空氣中細菌濃度<br>bacterial concentration in air | 對照組<br>control group | 1.75 × 10 <sup>6</sup>                          | 0小時<br>0 hr         | 8.17 × 10 <sup>2</sup>            |                              |
|   |                      |   | 1小時<br>1 hr         | 5.04 × 10 <sup>2</sup>            |                              |

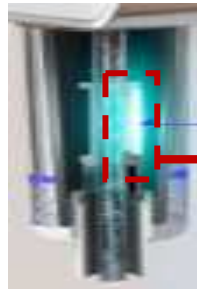
| 測試項目<br>test item                         | 組別<br>group       | 原接菌量 (CFU/mL)          | 作用時間<br>action time | 樣品作用後之菌數<br>(CFU/m <sup>3</sup> ) | 去除率<br>removal rate<br>(%) |
|---|-------------------|------------------------|---------------------|-----------------------------------|----------------------------|
| 空氣中細菌濃度<br>bacterial concentration in air | 實驗組<br>test froup | 1.75 × 10 <sup>6</sup> | 0小時<br>0 hr         | 5.04 × 10 <sup>2</sup>            | 99.04%                     |
|   |                   |                        | 1小時<br>1 hr         | 3.00                              |                            |

Bactericidal efficacy : 99.04% / 1hrs

# UVC application project water purifier module

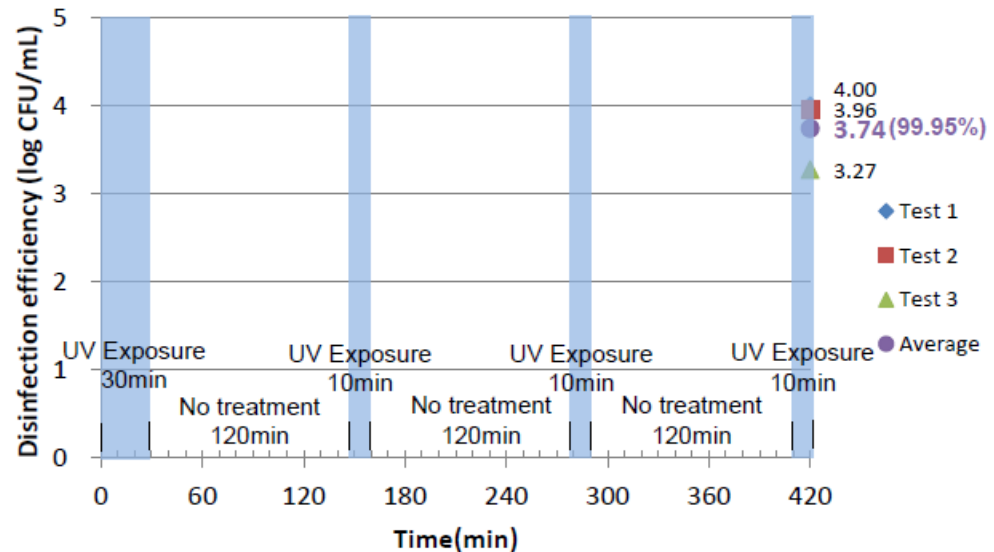


Bacteria removal rate: 99.95%/400min



1. PCB
2. UV-LED
3. Connector

Water Purifier module Test result



## < Exp. 條件 >

- 1) Test organism : *E. coli*
- 2) Water Volume : 1.8mL
- 3) Initial Concentration : over 7 log ( $>10^7$ )
- 4) UV LED  
: AAP (275 nm) x 1 ea  
( $I_F = 20 \text{ mA}$ ,  $P_o = 2.0\text{mW}$ )

## Surface sterilization





# UVC application project cutting board sterilizer module

## Sterilizable UVC LED module



### Kitchen Cutting Boards Contaminated With Drug-Resistant Germs From Foods

Added by Dyanne Weiss on April 24, 2014.  
Saved under Dyanne Weiss, e-coli, Health  
Tags: foods, top



### 6 Surprising Spots in Your Kitchen that Are Filled with Germs

By Good Housekeeping | At Home – Mon, May 19, 2014 3:43 PM EDT

Email Share 144 Tweet 9 G+1 3 Pin it Print



When it comes to your kitchen, germs aren't just hiding out in the sink and on the refrigerator door. In fact, a study by NSF International found that the most gemy places are often the ones you least expect (and don't clean often enough). Participants in the study

# UVC application project

## Sterilization module of stethoscope



UV LED



DEEPER DISINFECTION

2 MINUTES

MICROBES -99%

100% AUTOMATIC

USABILITY

ALWAYS WITHIN REACH



# UVC application project

disinfection cabinet module



## LED component

- ✓ Pkg size: 5050
- ✓ Power : 1.2W
- ✓ Drive current : 100mA,
- ✓ Drive voltage : 7v avg.
- ✓ Wavelength: 265-275 nm
- ✓ Radiation intensity : 10mW



## UVC light tube

- ✓ LED qty. : 10 pcs. UVC
- ✓ Power dissipation : 9W
- ✓ Drive condition : 200mACC 25-45VDC
- ✓ Wavelength: 265-275 nm
- ✓ Dimension:  $\varnothing 16 * 129$ mm T5 Quartz glass tube





# UVC application project disinfection cabinet module Sterilization test

- ✓ E. coli kill rate >99.99%
- ✓ Poliovirus logarithm inactivation value >4.00



KJ20190359 消毒櫃大腸桿?



01011900006328-脊髓灰質t

检测编号: KJ20190359  
 Test No.

广州市微生物研究所  
 GUANGZHOU INSTITUTE OF MICROBIOLOGY

**检测报告**  
 TEST REPORT

收样日期: 2019年03月11日  
 Date Received  
 检测日期: 2019年03月27日  
 Date Analyzed

**食品消毒柜的大肠杆菌消毒效果的试验方法**

1. 试验菌株: 大肠杆菌 8099
2. 培养基: 营养琼脂培养基
3. 载体: 玻片 10mm × 10mm
4. 样机设置: 通电运行
5. 测试步骤
  - 1) 按《消毒技术规范》(2002年版) 2.1.1.2 所示方法制备菌片, 每个菌片回收菌数为  $5 \times 10^7$  cfu/片 ~  $5 \times 10^8$  cfu/片。
  - 2) 将干燥大肠杆菌菌片置无菌平皿内, 每平皿放 2 片, 如重叠, 在消毒柜每层的内、外两个点各放一含菌片的平皿, 打开平皿盖, 关闭柜门, 开启电源, 作用 20min, 作用完后取出平皿, 将菌片移入含 5mL PBS 试管内, 按《消毒技术规范》(2002年版) 2.1.1.3 所示方法进行活菌培养计数。
  - 3) 在上述消毒试验时, 将未消毒菌片放置室温下, 当试验组试验完后, 取该菌片进行活菌培养计数, 作为阳性对照, 另取同批培养基与 PBS 等培养, 作为阴性对照, 试验重复 3 次。

**检测结果:**

| 作用时间 (min) | 试验菌株 | 阳性对照菌落数 (cfu/片)    | 作用点  | 试验菌落数 (cfu/片) | 杀灭率 (%) | 杀灭对数值 |
|------------|------|--------------------|------|---------------|---------|-------|
| 20         | 大肠杆菌 | $2.15 \times 10^8$ | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |
| 20         | 大肠杆菌 | $4.05 \times 10^8$ | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |
| 20         | 大肠杆菌 | $1.95 \times 10^8$ | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第二层外 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层内 | <5            | >99.99  | >3.00 |
|            |      |                    | 第一层外 | <5            | >99.99  | >3.00 |

注: 1) 阴性对照瓶均无菌生长。  
 2) 杀灭率 (%) =  $\frac{\text{阳性对照菌落数 (cfu/片)} - \text{试验菌落数 (cfu/片)}}{\text{阳性对照菌落数 (cfu/片)}} \times 100\%$   
 \*\*\*报告结束/End of report\*\*\*

编制: 庄海洋 审核: 黄永良 签发: 庄海洋 签发日期 (公章):  
 Editor: 庄海洋 Checker: 黄永良 Issuer: 庄海洋 Date Reporte:

广州海关技术中心  
 GUANGZHOU CUSTOMS DISTRICT TECHNOLOGY CENTER  
 国家卫生处理安全及适用性检测重点实验室  
 STATE KEY TESTING LABORATORY OF SAFETY AND APPLICABILITY OF SANITIZATION



## 检测报告

TEST REPORT

正本 ORIGINAL

证书编号: 01011900006328

发证日期: 2020年1月7日

页数: 共3页 第1页

|         |  |       |                       |
|---------|--|-------|-----------------------|
| 样品名称:   | UVC 消毒柜 (LY21-18046 LED 灯管)                        | 样品数量: | 一台                    |
| 样品标记:   | —  | 样品性状: | 定型包装                  |
| 生产单位:   | —  | 收样日期: | 2019.11.25            |
| 委托单位:   | 肇庆市立能电子有限公司  | 检验日期: | 2019.12.06-2019.12.19 |
| 委托单位地址: | 广东省肇庆市端州区玳西路西、桂园路北 (22 区)                          | 检验类别: | 委托检验                  |
| 检验依据:   | 卫生部《消毒技术规范》(2002 年版) 2.1.1.10.3、2.1.1.10.7、2.1.5.4 |       |                       |
| 检验项目:   | 脊髓灰质炎病毒灭活效果试验                                      |       |                       |

(注: 委托样品信息由委托方提供, 并确保其真实性)

### 检测结论:

在空载情况下, 按使用说明要求工作一个周期 (30 分钟), 该消毒柜上层和下层对染于玻片上的脊髓灰质炎病毒平均灭活对数值 > 4.00.



# Antibacterial Module Introduction

- Antibacterial principle
- Product introduction
- Antibacterial test
- Application market

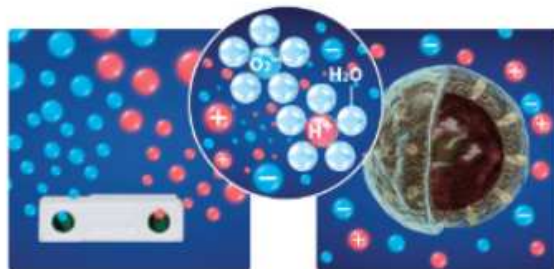


## Antibacterial principle

### Overview

1

As in nature, By plasma discharge, positive ( $H^+$ ) and negative ( $O_2^-$ ) ions are released, which are surrounded by water molecules and released into the air.



2

After attaching to the surface of planktonic microbacteria, the positive and negative ions produce super hydroxyl radical ( $OH$ , which extract hydrogen ( $H$ ) from the surface proteins and then decompose the proteins to destroy the bacterial structure completely.



3

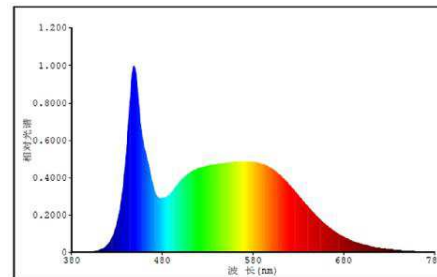
The extracted hydrogen ( $H$ ) is combined with hydroxyl radical ( $OH$ ) to form a healthy water molecule ( $H_2O$ ), which is purified and restored to air.



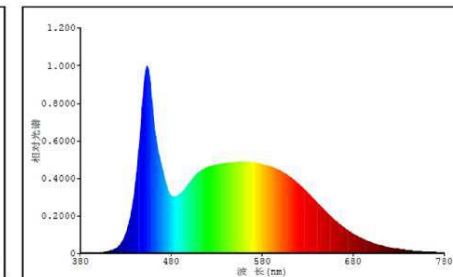
## Product introduction

LED component P/N: LPK5N3-BH-B2002

- ✓ package size: 2835
- ✓ power : 0.5W
- ✓ drive current : 150mA,
- ✓ drive voltage : 3.2v avg.
- ✓ CCT: 5000K
- ✓ Luminous : 63 Lm



Antibacterial LED spectrum



General LED spectrum

**No difference in spectrum for both**

For more information, please refer to specification.



LPK5N3-BH-B2002.pdf

## Antibacterial test

- ✓ T8 light tube had been acted for 1hr, which was used with natural sinking method to detect the removal rate of E. coli bacteria.
- ✓ The result showed that the removal rate was 4% · which could have bacteriostatic effect.

### 測試報告

報告編號： US/2020/30459

日期： 2020年04月17日 頁數： 1 of 2

華能光電科技股份有限公司  
新北市新店區中正路542-4號4樓

以下測試之樣品係由申請廠商所提供及確認：

樣品名稱： LED AC T8抑菌燈管  
申請廠商： 華能光電科技股份有限公司  
樣品型號： 200225-01  
送樣日期： 2020年03月24日  
測試日期： 2020年03月24日 ~ 2020年04月17日

測試項目： 大腸桿菌去除率

測試方法： 本測試依客戶指定方法，取300 $\mu$ L(約 $1 \times 10^7$  CFU)菌液於蓋玻片上，將機器放置在蓋玻片上方約30公分處並開啟機器作用一小時後，取出液體連續稀釋後，各稀釋度取1mL放入培養皿中並加入15~20mL TSA 混勻後於 $32 \pm 2.5^\circ\text{C}$ 培養三天。

| 測試項目    | 作用時間<br>(小時) | 樣品作用後之菌數<br>(CFU) | 抑菌率<br>(%) |
|---------|--------------|-------------------|------------|
| 大腸桿菌去除率 | 0            | $2.5 \times 10^6$ | 4.0%       |
|         | 1            | $2.4 \times 10^6$ |            |

備註：1. 測試報告僅就委託者之委託事項提供測試結果，不對產品合法性做判斷。

2. 本報告不得分離，分離使用無效。

3. 去除效率小於1%則無明顯抑菌效果。

-END-

Signed for and on behalf of  
SGS Taiwan Ltd.

  
Shin-Jyh Chen  
Manager



US\_2020\_30459.pdf

# Antibacterial test



Available for food preservation appliances such as refrigerator  
Effectively prevent the growth of microbe

燈具 - 空氣細菌濃度

燈具 - 黴菌

## 台灣檢驗科技股份有限公司 檢驗報告

報告號碼：  
收樣日期：108 年 07 月 22 日  
報告日期：108 年 08 月 21 日  
頁 數： 1 OF 1

以下測試之樣品乃供應廠商所提供及確認：

委託單位：

產品名稱：

產品型號：

樣本編號：

測試目的： 效能測試

測試方法： 實驗組：將受測產品架設於 2.9m×1.4m×1.9m 之密閉測試空間中，測量開機運轉 1 小時後之空氣中細菌濃度。

對照組：與實驗組相同之執行方式，惟不開啟受測產品，比較實驗組與對照組，以了解受測產品對空氣中細菌之抑菌效果。

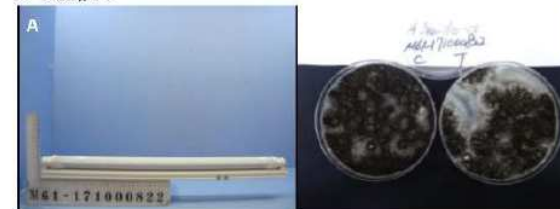
測試結果：

| 檢驗項目    | 單位                 | 對照組  | 實驗組  |
|---------|--------------------|------|------|
| 空氣中細菌濃度 | CFU/m <sup>3</sup> | 4064 | 2528 |

## 台美檢驗科技(檢驗中心) 測試報告

委託單位

3. 試驗結果：



圖一：試驗物質 (M61-171000822) 與巴西黴菌作用 24 小時後之結果

A. 試驗物質外觀。

B. 對照組與試驗物質與巴西黴菌作用 24 小時後之結果。

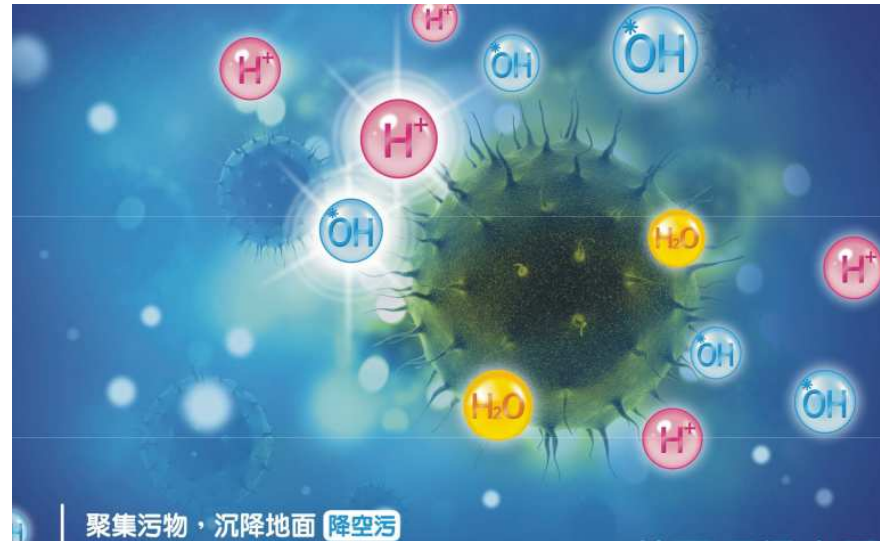
表一：試驗物質 (M61-171000822) 與巴西黴菌作用 24 小時後之結果

| 測試菌株                   | 接種菌量<br>(CFU/mL)    | 反應時間<br>(小時) | 殘留菌量<br>(CFU/mL)    |                     | 抗菌率<br>(%) |
|------------------------|---------------------|--------------|---------------------|---------------------|------------|
|                        |                     |              | 對照組                 | 實驗組                 |            |
| <i>A. brasiliensis</i> | 2.0x10 <sup>5</sup> | 24           | 0.5x10 <sup>5</sup> | 3.0x10 <sup>5</sup> | 53.85      |



## PM2.5 test

- ✓ The tested sample was placed in 2.9x 1.4x 1.9m confined space, injected with a fixed concentration of dust and mixed, and monitored continuously the concentration status for those particles less than 2.5um in air.
- ✓ Result : better ability for cleaning dust in air



### 測試結果：

#### Test result

| Test item 檢驗項目                  | 單位 Unit           | control group 對照組 | test group 實驗組 |
|---------------------------------|-------------------|-------------------|----------------|
| Aerosols 懸浮微粒 PM <sub>2.5</sub> | μg/m <sup>3</sup> | 1103              | 649            |



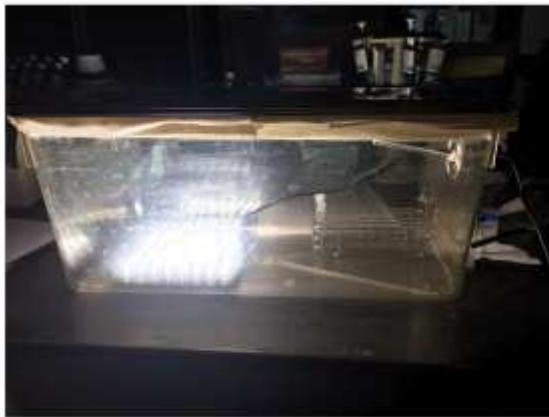
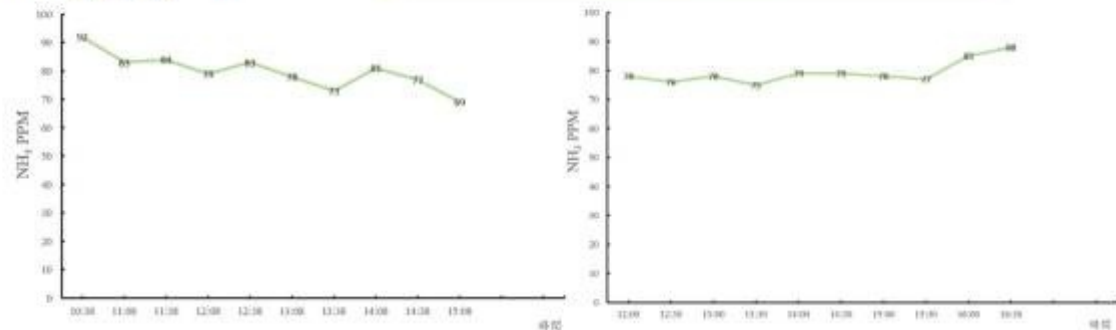
# Odor-fighting test

- ✓ Test item : degradation of ammonia , measured for 4-5hrs , recorded every 30mins
- ✓ Test result : better ability of degradation



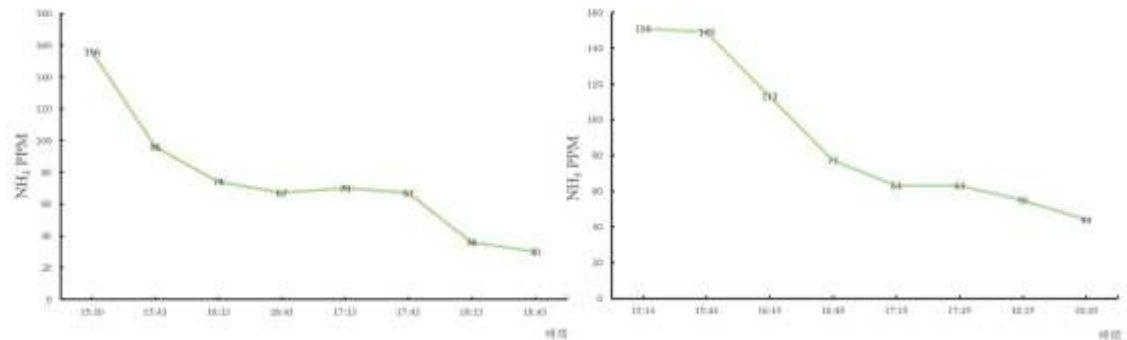
ammonia sampling amount  
tested sample gather time  
氨水取樣量：100 ul  
測試燈具：no light  
採氣時間：50 's

**BEFORE**



氨水取樣量：100 ul  
測試燈具：QT-White light  
採氣時間：50 's

**AFTER**



## Application market

### LED component applications

Module · Light tube · light bulb, etc



### Finish product applications

refrigerator · open style refrigerator ·  
food fresh keeping · anti bacterial





**Lighting Purify Your Life**

**THANK YOU 謝謝聆賞**