

# Technical Data Sheet

## Side View LEDs (Height 1.4mm)

**50-215UMC/363901B/TR8**

### Features

- .Side view white LED
- .White SMT package
- .Lead frame package with individual 2 pins
- .Wide viewing angle
- .Soldering methods: IR reflow soldering
- .Pb-free
- .The product itself will remain within RoHS compliant version.
- .Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)



### Descriptions

- Due to the package design, 50-215 has wide viewing angle, low power consumption and white LEDs are devices that are materialized by combing blue chips and special phosphor. This feature makes the LED ideal for light guide application.

### Applications

- LCD Back Light
- Mobile Phones
- Indicators
- Illuminations
- Switch Lights

### Device Selection Guide

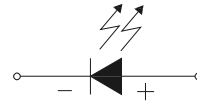
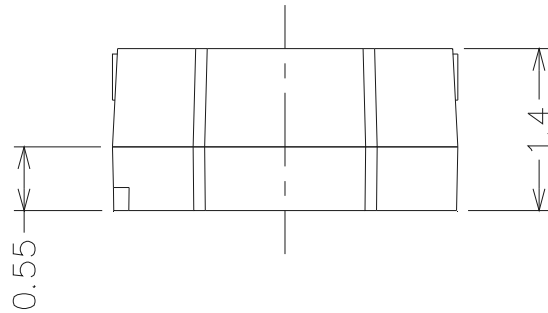
Chip	Emitted Color	Resin Color
Material		
InGaN	Pure White	Water Clear

**Technical Data Sheet**

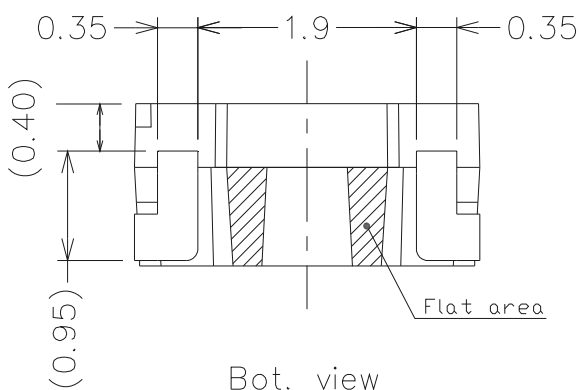
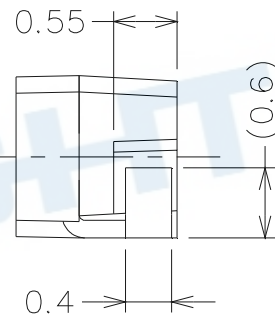
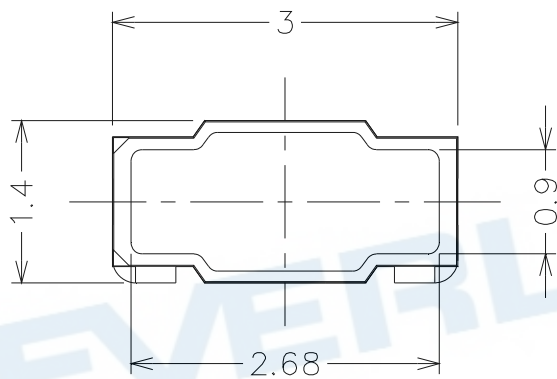
**Side View LEDs (Height 1.4mm)**

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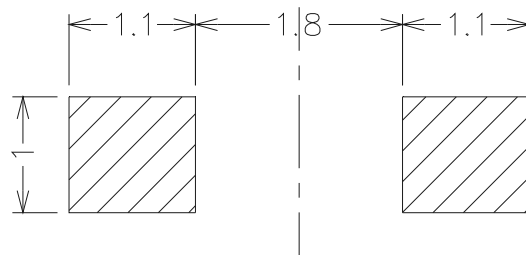
**Package Outline Dimensions**



Polarity



Bot. view



Soldering patterns

Note: The tolerances unless dimensions are  $\pm 0.1\text{mm}$ .

**Technical Data Sheet****Side View LEDs (Height 1.4mm)****50-215UMC/363901B/TR8****Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Unit
Reverse Voltage	V <sub>R</sub>	5	V
DC Forward Current	I <sub>F</sub>	30	mA
Pulse Forward Current (Duty 1/10 @1KHz)	I <sub>FP</sub>	100	mA
Electrostatic Discharge(HBM)*1	ESD	2000	V
LED Junction Temperature	T <sub>j</sub>	125	°C
Operating Temperature	T <sub>opr</sub>	-30 ~ +100	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C
Soldering Temperature	T <sub>sol</sub>	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	

Note\*1:

The products are sensitive to static electricity and must be carefully taken when handling products.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	2300	---	2450	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	---	120	---	deg	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	2.90	---	3.50	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	---	---	50	μA	V <sub>R</sub> =5V

Notes:

1. Tolerance of Luminous Intensity: ± 11%
2. Tolerance of Forward Voltage: ± 0.05V



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**Bin Range of Luminous Intensity**

Bin Code	Min.	Max.	Unit	Condition
44	2300	2350	mcd	I <sub>F</sub> =20mA
45	2350	2400		
46	2400	2450		

Note: Tolerance of Luminous Intensity: ±11%

**Bin Range of Forward Voltage**

Bin Code	Min.	Max.	Unit	Condition
5-2-3	2.90	3.00	V	I <sub>F</sub> =20mA
6-1-3	3.00	3.10		
6-2-3	3.10	3.20		
7-1-3	3.20	3.30		
7-2-3	3.30	3.40		
8-1-3	3.40	3.50		

Note: Tolerance of Forward Voltage: ± 0.05V

**Technical Data Sheet**

**Side View LEDs (Height 1.4mm)**

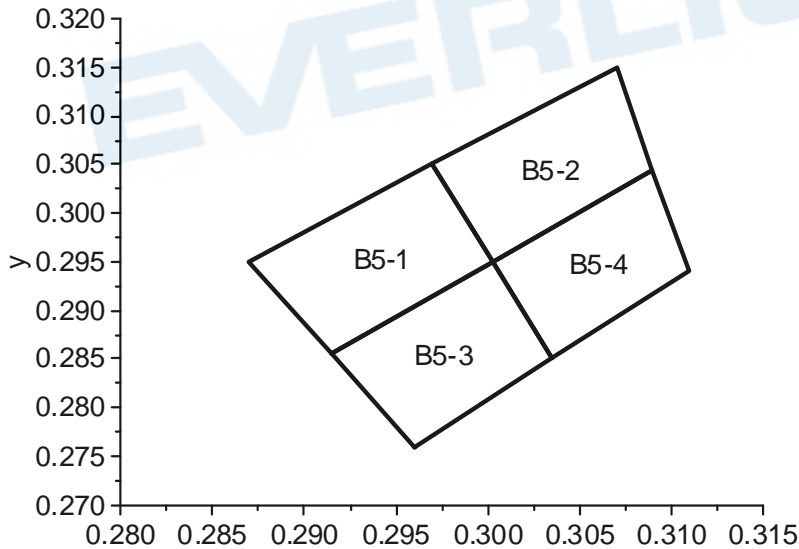
**50-215UMC/363901B/TR8**

**Bin Range of Chromaticity Coordinates Block (I<sub>F</sub>=20mA)**

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
B5-1	0.2915	0.2855	B5-3	0.2960	0.2760
	0.2870	0.2950		0.2915	0.2855
	0.2970	0.3050		0.3003	0.2950
	0.3003	0.2950		0.3035	0.2850
B5-2	0.3003	0.2950	B5-4	0.3035	0.2850
	0.2970	0.3050		0.3003	0.2950
	0.3070	0.3150		0.3090	0.3045
	0.3090	0.3045		0.3110	0.2940

**Note:** Tolerance of Chromaticity Coordinates: ±0.01

**The C.I.E. 1931 Chromaticity Diagram**

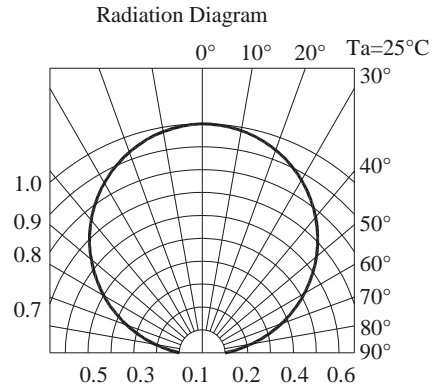
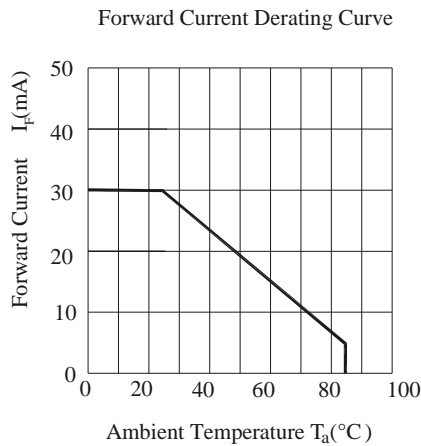
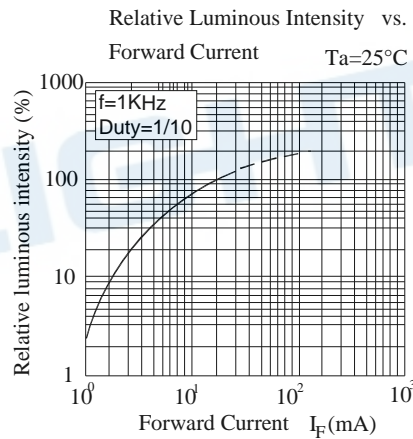
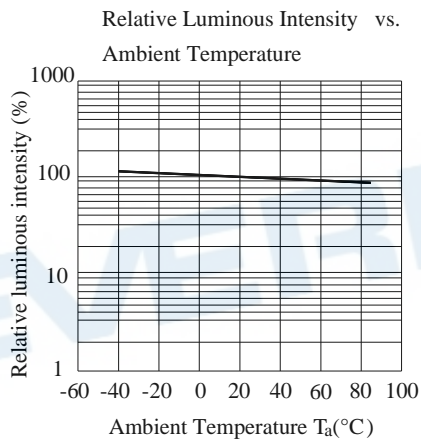
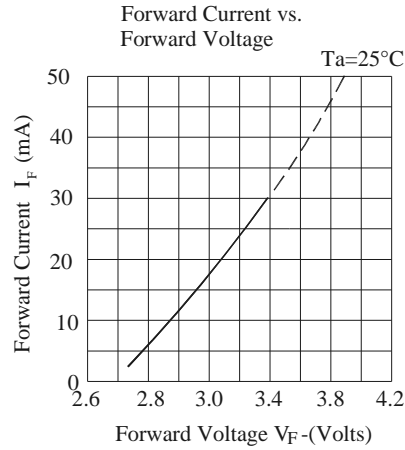
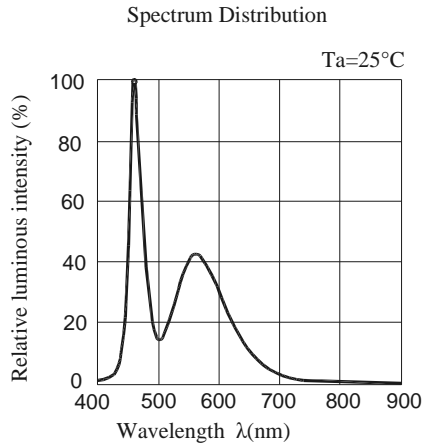


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### 50-215UMC/363901B/TR8

#### Typical Electro-Optical Characteristics Curves





LIGHTING FOREVER

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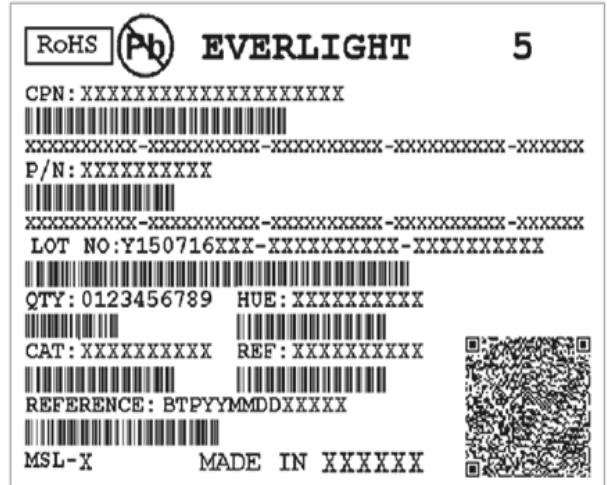
50-215UMC/363901B/TR8

Label Explanation

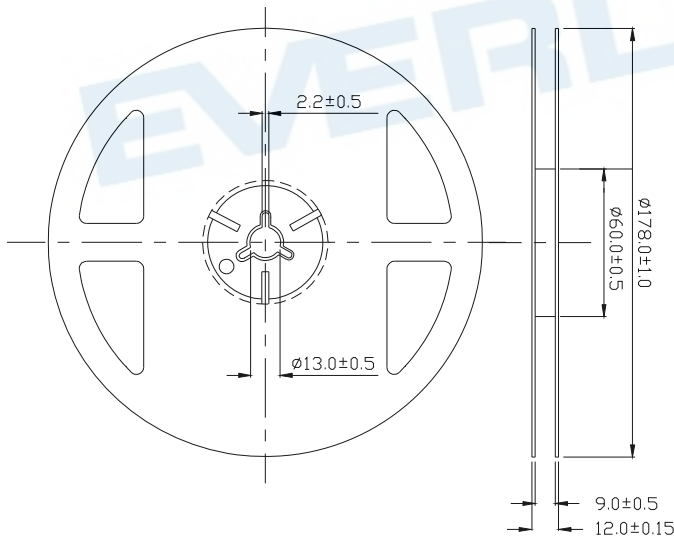
CAT: Luminous Intensity Rank

HUE: Chromaticity Coordinates

REF: Forward Voltage Rank



Reel Dimensions



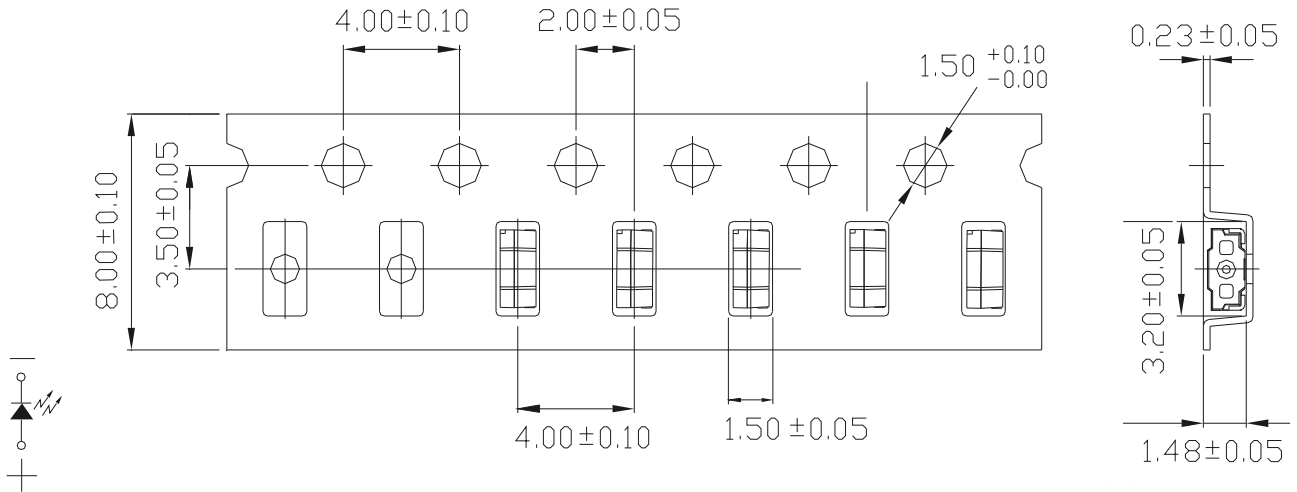
Note: The tolerances unless dimensions are ± 0.1mm.

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**Side View LEDs (Height 1.4mm)**

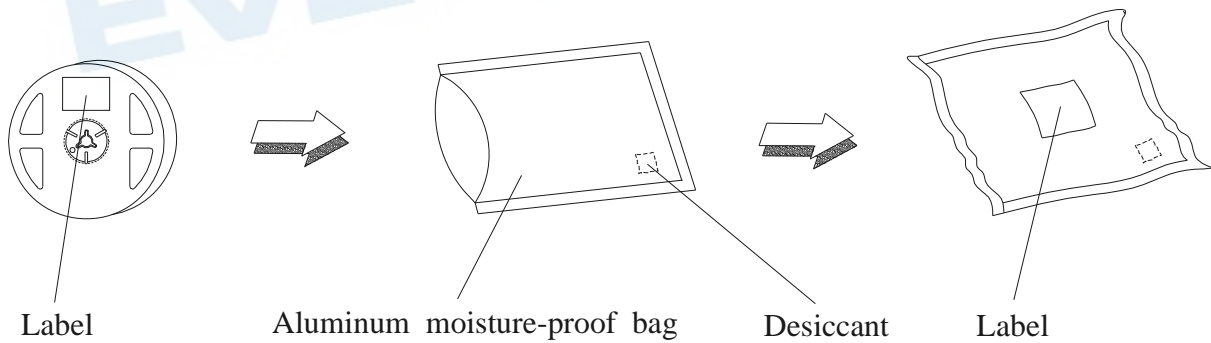
**50-215UMC/363901B/TR8**

**Carrier Tape Dimensions: Loaded Quantity 2000 pcs. Per Reel**



Note: The tolerances unless dimensions are  $\pm 0.1\text{mm}$ .

**Moisture Resistant Packaging**



**Technical Data Sheet****Side View LEDs (Height 1.4mm)****50-215UMC/363901B/TR8****Reliability Test Items and Conditions**

The reliability of products shall be satisfied with items listed below.

Confidence level: 90%

LTPD: 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Qty'	Ac/Re
1	Reflow Soldering	Temp.: 260°C±5°C Min. 5 sec.	6 Min.	22 pcs.	0/1
2	Temperature Cycle	H: +100°C 15min. ↓ 5 min. L: -40°C 15min.	300 cycles	22 pcs.	0/1
3	Thermal Shock	H: +100°C 5min. ↓ 10 sec. L: -10°C 5min.	300 cycles	22 pcs.	0/1
4	High Temperature Storage	Temp.: 100°C±5°C	1000 hrs.	22 pcs.	0/1
5	Low Temperature Storage	Temp.: -40°C±5°C	1000 hrs.	22 pcs.	0/1
6	DC Operating Life	I <sub>F</sub> = 20 mA / 25°C	1000 hrs.	22 pcs.	0/1
7	High Temperature / High Humidity	85°C±5°C / 85%RH	1000 hrs.	22 pcs.	0/1

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### Precautions for Use

#### 1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

#### 2. Storage

2.1 Don't open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

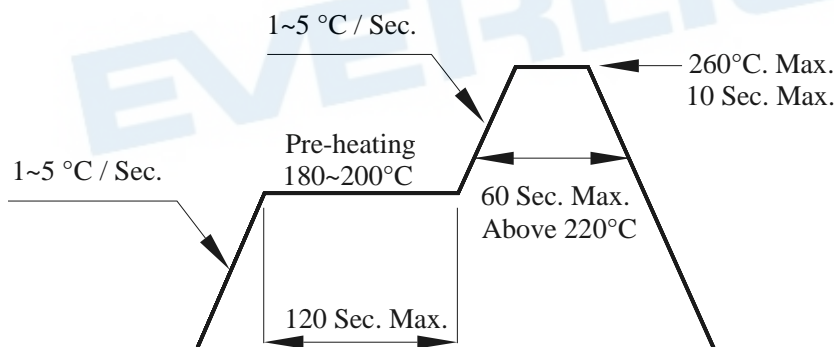
2.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

2.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

baking treatment: 60±5°C for 24 hours

#### 3. Soldering Condition

##### 3.1 Pb-free solder temperature profile:



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

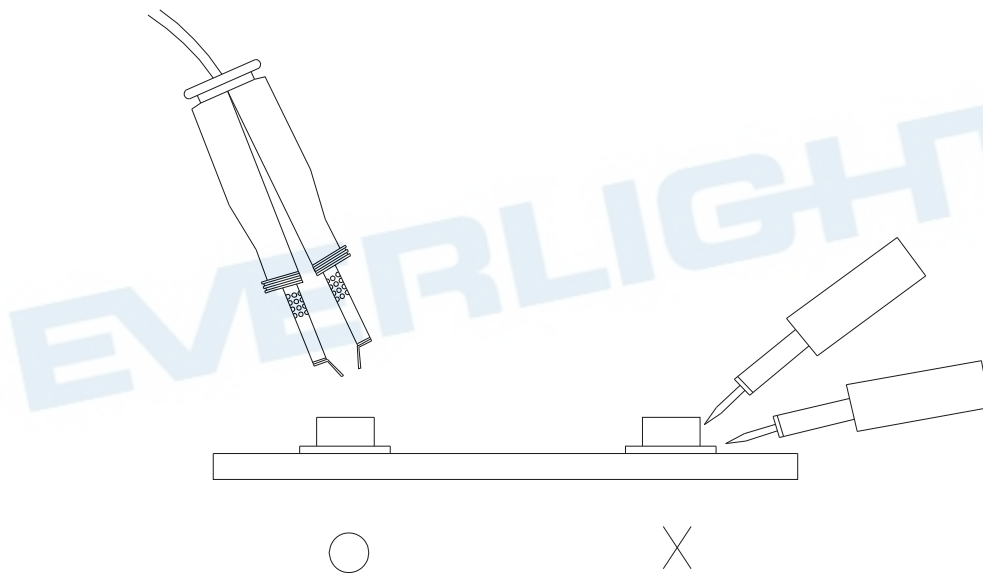
3.4 After soldering, do not warp the circuit board.

**Technical Data Sheet****Side View LEDs (Height 1.4mm)****50-215UMC/363901B/TR8****4. Soldering Iron**

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

**5. Repairing**

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



**EVERLIGHT ELECTRONICS CO., LTD.**  
Office: No 25, Lane 76, Sec 3, Chung Yang Rd,  
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936  
Fax: 886-2267-6244, 2267-6189, 2267-6306  
<http://www.everlight.com>