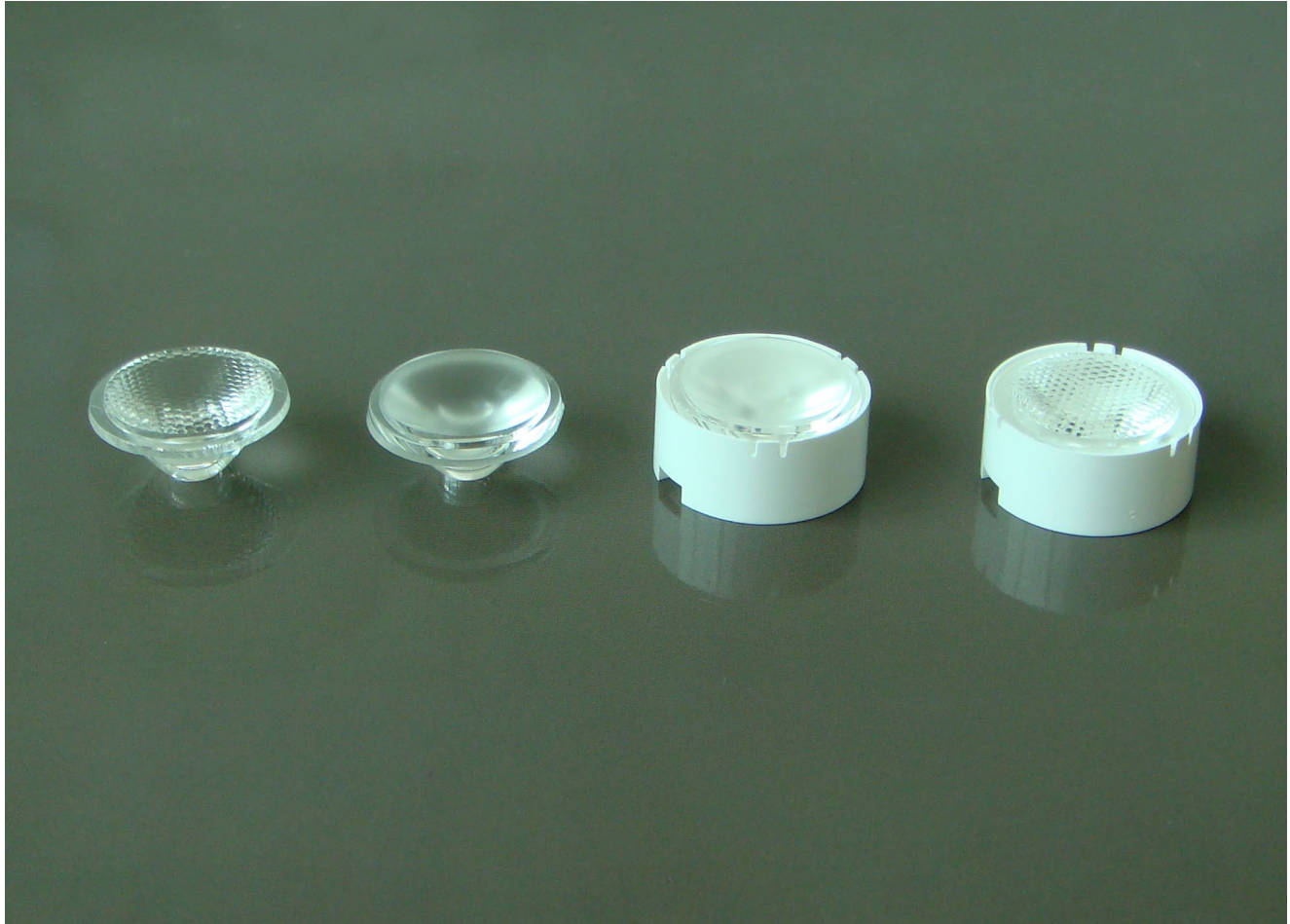


# LL01ZZ-EXxxL-Mx Data Sheet

*For CREE Multi-Color and Single-Color LEDs*



## Features:

- High efficiency
- Available in 5 beam Patterns
- Optimized for uniform effects
- Lens with Housing

## Typical applications :

- Stage Lighting
- Street Lights
- Decorative Light
- Architectural Lighting
- Down Light

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## General Information

- **Compatible Led Type :**

The LL01ZZ-EXxxL-Mx Single lens are optimized for both Multi-Color R.G.B CREE LEDs and Single-Color Cree LEDs (Cree XP-E White)from Cree Opto.<sup>(1)</sup>

- **Beam Angle Type :**

An optimized profile integrate different front shape enable the generation of five different lens models : smallest beam (10deg);medium beam (25-40deg);biggest beam (60deg) and ovel beam(30\*65deg)<sup>(2)</sup>

- **The Way to Assembly :**

The Lens should be assembled to the PCB board or MCPCB upon LEDs which provides the most appropriate related position, so as to achieve the best uniform results

- \* Manually installation or if necessary thermal glue are recommended.**

- **Function :**

LL01ZZ-EXxxL-Mx provides exceptional color mixing result with the highest efficiency through careful engineering and precision manufacturing process.

\*Lens holders are available in Black, white and clear.

## General Specifications

- Lens Material                                      Optical Grade PMMA    PC
- Operating Temperature range                -40°C ~ + 70°C (upper limit +80°C)
- Storage Temperature range                  -40°C ~ + 70°C (upper limit +80°C)

\*Average transmittance in visible spectrum 400nm~700nm > 90%

Notes:

(1) Cree XP-E is a trademark of Cree,Inc , for technical information on LEDs, please refer to Cree,Inc, www.cree.com/xlamp.

(2) Typical beam divergence will be affected by different color of LEDs.

## Optical Specifications [ Typical beam Angle and intensity (cd/lm) of LL01 lens ]

• CREE XP-E LED

| Typical Cone Angle (degree) <sup>(3)</sup> with CREE XP-E |          |            |           |
|---|----------|------------|-----------|
| Part Number   | Red LEDs | Green LEDs | Blue LEDs |
| LL01ZZ-EX10L-M2   | --       | --         | --        |
| LL01ZZ-EX25L-M2   | --       | --         | --        |
| LL01ZZ-EX40L-M2   | --       | --         | --        |
| LL01ZZ-EX60L-M2   | --       | --         | --        |
| LL01ZZ-EX3065L-M2   | --       | --         | --        |

The typical cone angle measures where the luminous intensity is 90% of the peak value of intensity. This typical cone varies with LED color due to different chip size and chip position tolerance.

| Typical on axis intensity (cd/lm) <sup>(4)</sup> with CREE XP-E |          |            |           |
|---|----------|------------|-----------|
| Part Number   | Red LEDs | Green LEDs | Blue LEDs |
| LL01ZZ-EX10L-M2   | --       | --         | --        |
| LL01ZZ-EX25L-M2   | --       | --         | --        |
| LL01ZZ-EX40L-M2   | --       | --         | --        |
| LL01ZZ-EX60L-M2   | --       | --         | --        |
| LL01ZZ-EX3065L-M2   | --       | --         | --        |

Luminous intensity depends on the flux binning and tolerance of the LEDs. Please refer to the LEDs data sheet for more details on Flux binning and mechanical tolerance.

• CREE XP-E LED

| Typical Cone Angle (degree) <sup>(3)</sup> with CREE XP-E |            |                 |  |
|---|------------|-----------------|--|
| Part Number   | White LEDs | Warm white LEDs |  |
| LL01ZZ-EX10L-M2   | 12         | 12              |  |
| LL01ZZ-EX25L-M2   | 22         | 23              |  |
| LL01ZZ-EX40L-M2   | 45         | 45              |  |
| LL01ZZ-EX60L-M2   | 65         | 66              |  |
| LL01ZZ-EX3065L-M2   | 29*65      | 29*65           |  |

The typical cone angle the full angle measured where the luminous intensity is 90% of the peak value of intensity. That typical cone varies with LED color due to different chip size and chip position tolerance.

| Typical on axis intensity (cd/lm) <sup>(4)</sup> with CREE XP-E |            |                 |  |
|---|------------|-----------------|--|
| Part Number   | White LEDs | Warm white LEDs |  |
| LL01ZZ-EX10L-M2   | 2430       | 1650            |  |
| LL01ZZ-EX25L-M2   | 1000       | 770             |  |
| LL01ZZ-EX40L-M2   | 385        | 320             |  |
| LL01ZZ-EX60L-M2   | 130        | 115             |  |
| LL01ZZ-EX3065L-M2   | 380        | 230             |  |

Luminous intensity depends on the flux binning and tolerance of the LEDs. Please refer to the LEDs data sheet for more detail on Flux binning and mechanical tolerance

Notes:

(3) The typical divergence will be changed by different color, chip size and chip position tolerance. The typical total divergence is the full angle measured where the luminous intensity is half of the peak value.

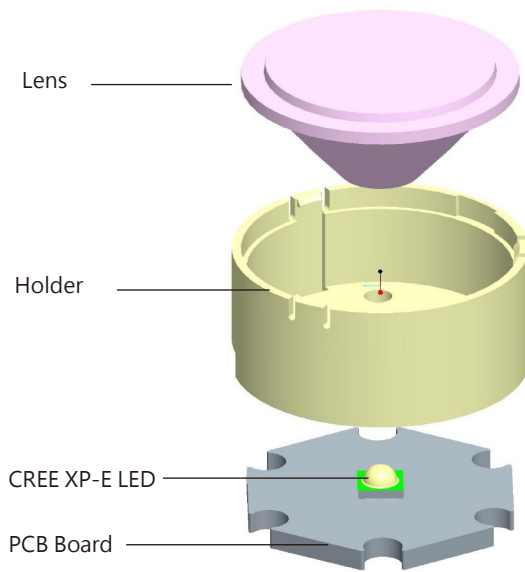
(4) The efficiency value listed above is the total value of the whole lens model, the value depends on the total flux of the LED used. Luminous intensity depends on the LEDs flux and its tolerances, for more details of LED flux, please check Cree data sheet at [www.cree.com](http://www.cree.com).

## Mechanical Specifications

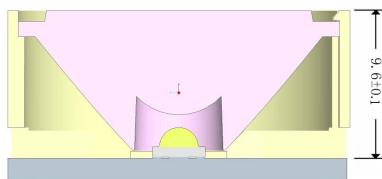
### • Usage and Maintenance :

1. If necessary, clean lenses with mild soap, water and soft cloth
2. Never use any commercial cleaning solvents on lenses, like alcohol
3. Please handle or install lenses with wearing gloves, skin oils may damage lens or its optical characteristic.

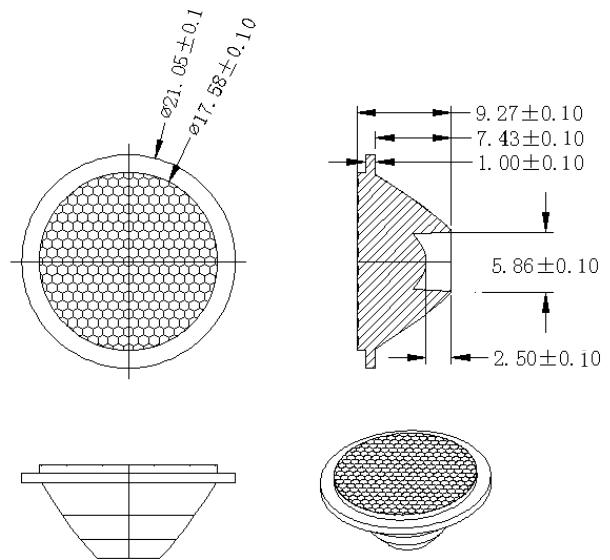
### 1. Lens + Leds+MCPCB assembly instruction



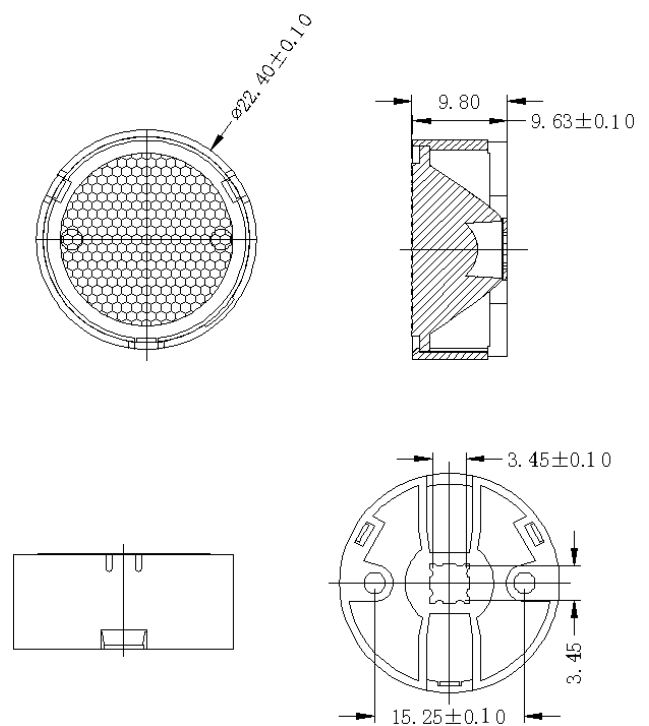
### 2. View assembly lens with MCPCB:



### 3. Lens dimensions and Top Views:





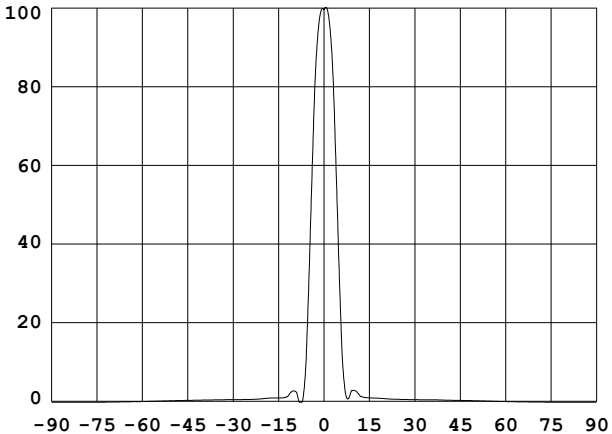
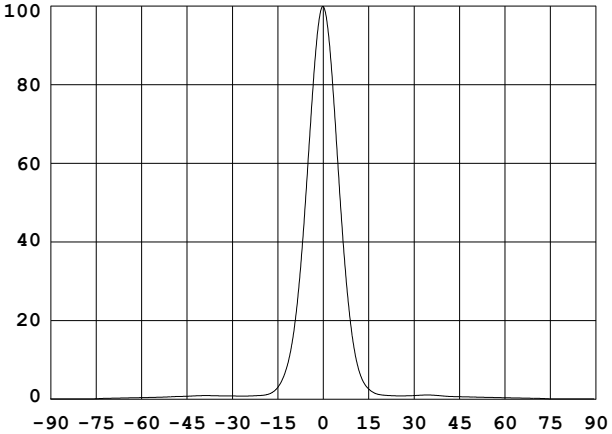
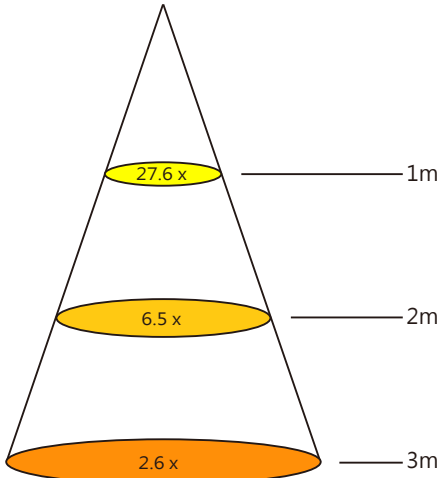
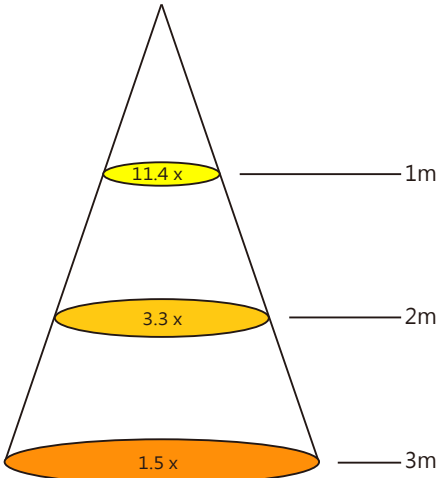
### 4. Lens assembly Dimensions and Top Views :



- Notes:
- (1) All dimensions are in mm.
  - (2) Drawing not to scale.
  - (3) Collimator material is PMMA.

## Illumination charts

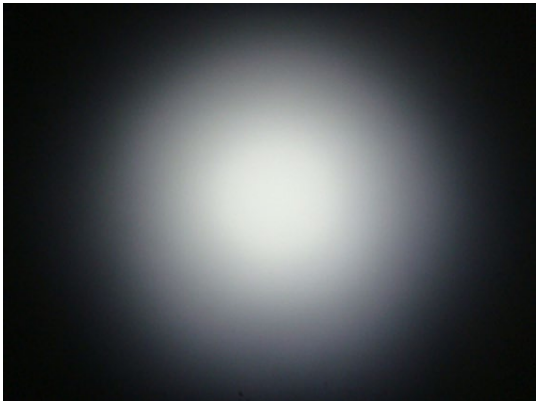
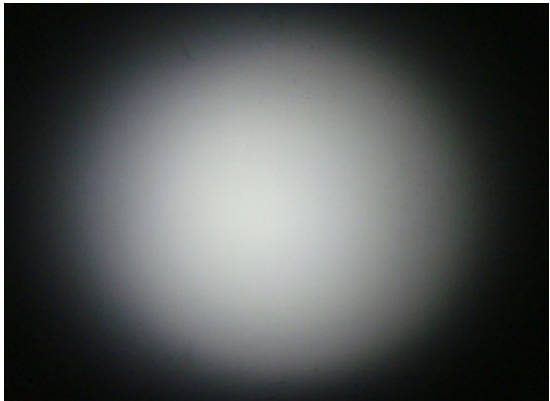
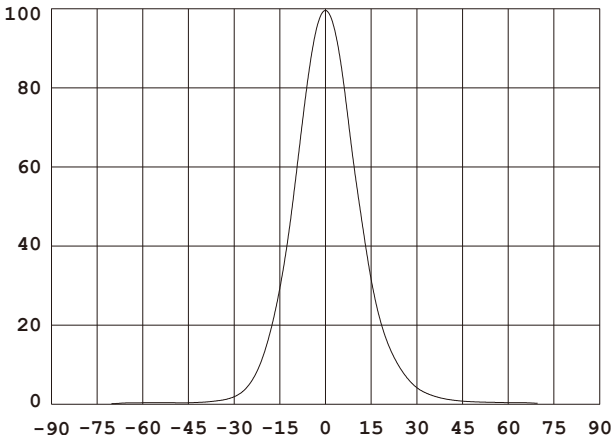
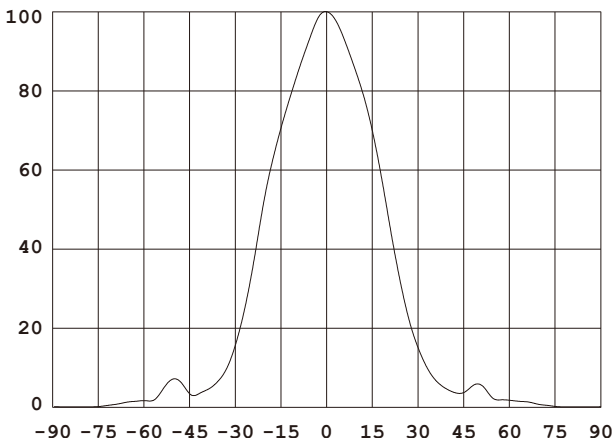
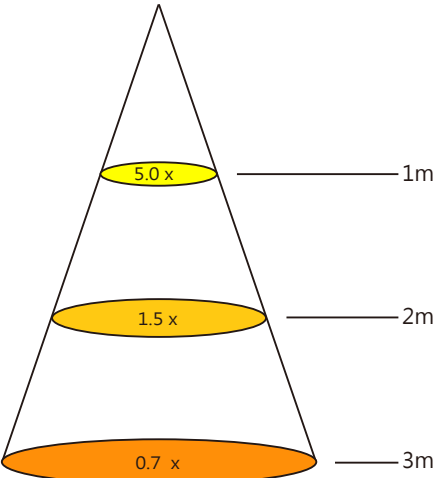
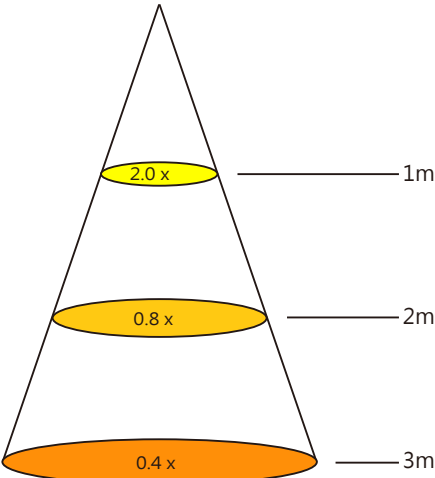
\*CREE single white LED: CREE XP-E

| LL01ZZ-EX10L-M2   | LL01ZZ-EX25L-M2  |
|---|--|
| 1. Beam Pattern   | 1. Beam Pattern  |
|    |    |
| 2. Light Distribution Curve   | 2. Light Distribution Curve  |
|   |   |
| 3. Illuminance  | 3. Illuminance   |
|  |  |

Notes: The Flux of CREE XP-E LED is 88 lm

## Illumination charts

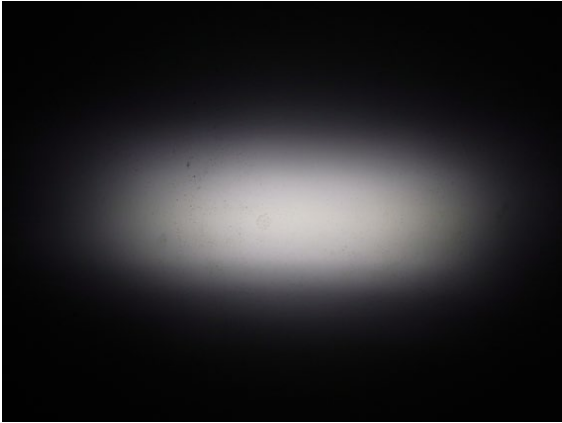
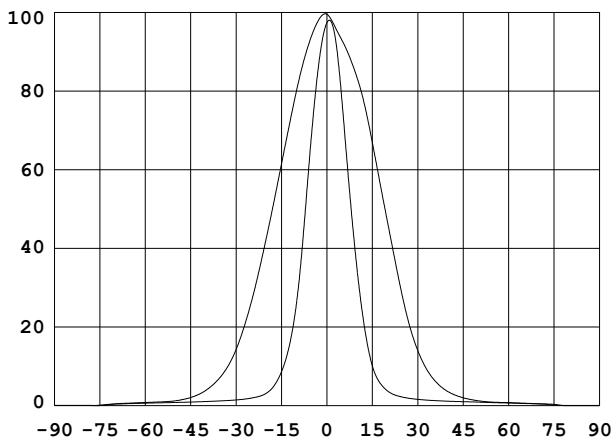
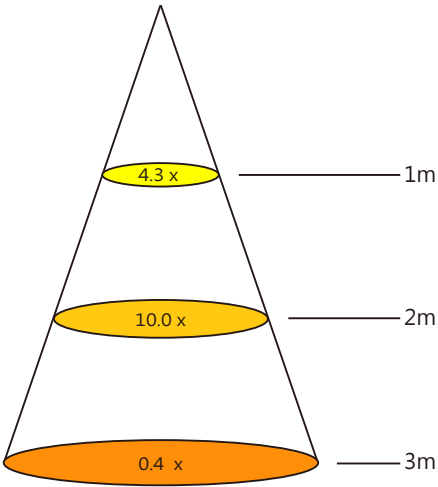
\*CREE single white LED: CREE XP-E

| LL01ZZ-EX40L-M2   | LL01ZZ-EX60L-M2  |
|---|--|
| 1. Beam Pattern   | 1. Beam Pattern  |
|    |    |
| 2. Light Distribution Curve   | 2. Light Distribution Curve  |
|   |   |
| 3. Illuminance  | 3. Illuminance   |
|  |  |

Notes: The Flux of CREE XP-E LED is 88 lm

## Illumination charts

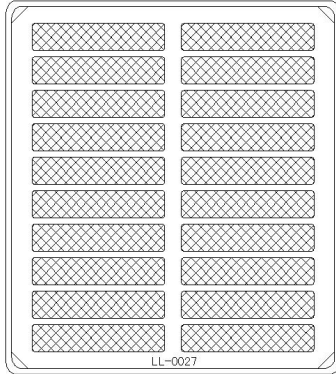
\*CREE single white LED: CREE XP-E

| LL01ZZ-EX3065L-M2   |  |
|---|--|
| 1. Beam Pattern   |  |
|    |  |
| 2. Light Distribution Curve   |  |
|   |  |
| 3. Illuminance  |  |
|  |  |

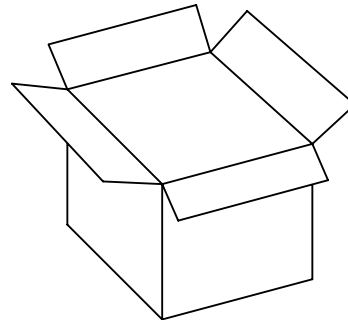
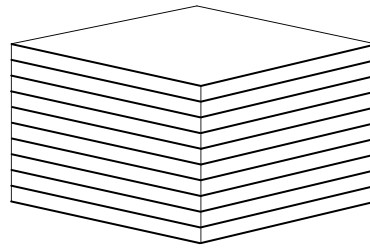
Notes: The Flux of CREE XP-E LED is 88 lm

## Package

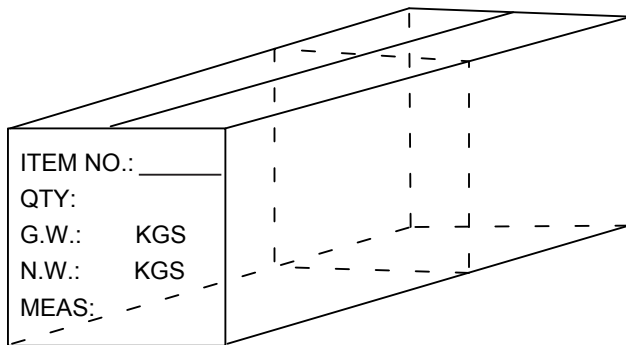
| Item      | Quantity              | Total   | Size (long*width* high) |
|-----------|-----------------------|---------|-------------------------|
| Tray      | 100                   | 100pcs  | 34*30*3.5 cm            |
| Inner box | 10tray/box            | 1000pcs | 35*31*21 cm             |
| Outer box | 2 Inner box/outer box | 2000pcs | 64.7*36.5*24 cm         |



100pcs/tray



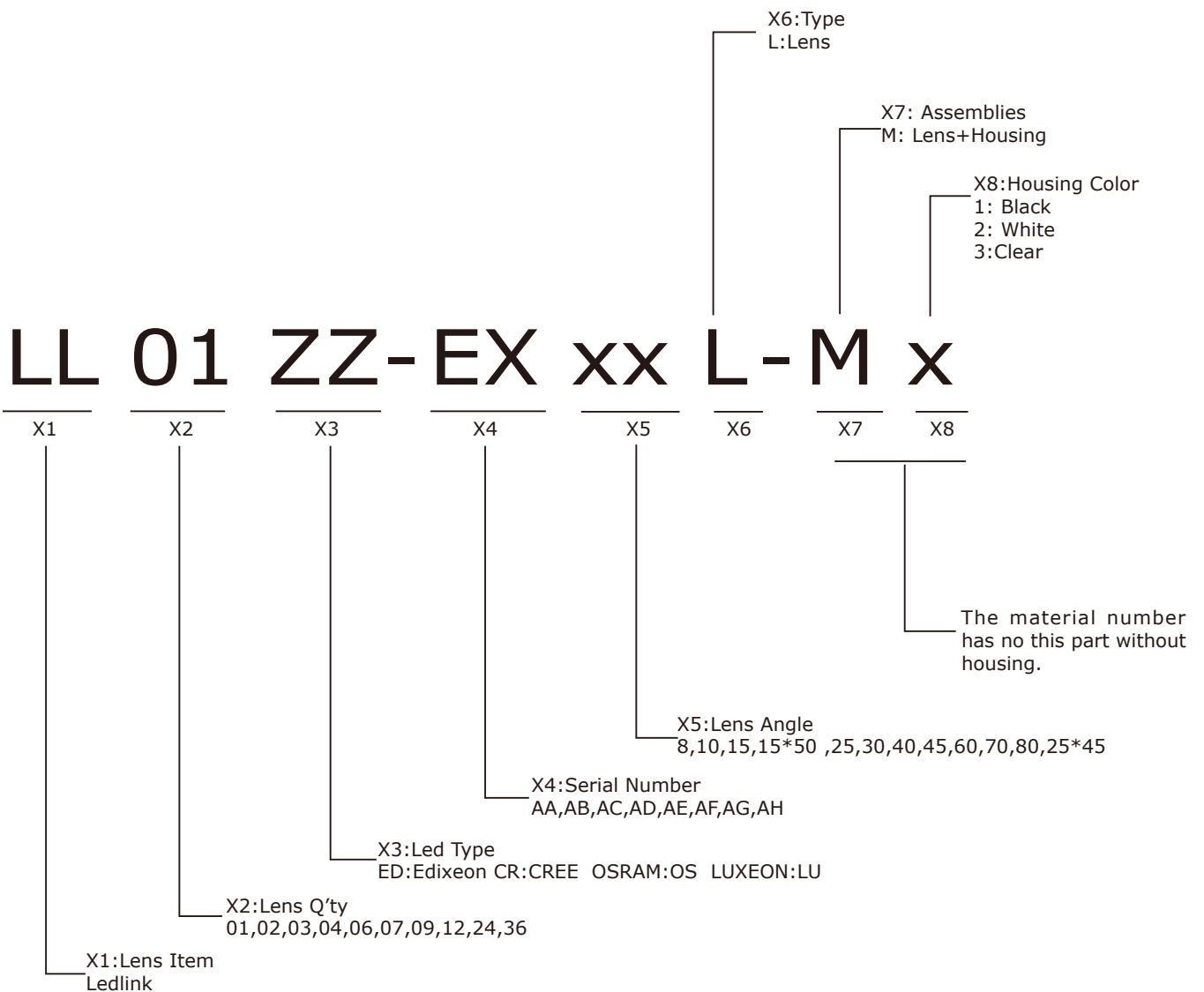
1000pcs/inner box



2000pcs/outer box



## Product Nomenclature



Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».



## JONHON

«**JONHON**» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«**FORSTAR**» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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