

# LL03 3-in-1 Tri-Lens for Color Mixing

# **Datasheet**

For Edixeon® Multi-Color 3-in-1 and Single-Color LEDs

#### **Features:**

- High efficiency
- Available in 4 beam Patterns
- Optimized for color mixing effects
- Lens alone

# **Typical applications:**

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



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#### **General Information**

# • Compatible Led Type:

The LL03ED-AFxxL Tri-lens are optimized for both Multi-Color RGB 3in1 Edixeon® LEDs (EDERTB-1LC6 and EDERTB-1EC1) and Single-Color Edixeon® LEDs from Edison Opto.<sup>(1)</sup>

## • Beam Angle Type:

An optimized profile integrate different front shape enable the generation of four different lens models: Medium beam (30deg), wide beam (45deg), ultra wide beam (60deg) and oval beam(40\*70deg). (2)

#### • The Way to Assembly:

The lens should be assembled to the MCPCB or heat sink hole by the built-in three installation legs. The three installation legs ensure ideal relative position between the lens and LEDs resulting in the best optical performance.

## \*Hot Pressure and Ultrasonic Assembly process are recommended.

#### • Function:

LL03ED-AFxxL provides exceptional color mixing result with the highest efficiency through careful engineering and precision manufacturing process.

#### Notes:

- (1) Edixeon® is a trademark of Edison Opto, for technical information on LEDs, please refer to Edison Opto website at www.edison-opto.com.tw.
- (2) Typical beam divergence will be affected by different color of LEDs.





## **General Specifications**

• Lens Material Optical Grade PMMA PC

• Operating Temperature range  $-40^{\circ}\text{C} \sim +70^{\circ}\text{C} \text{ (upper limit } +80^{\circ}\text{C)}$ 

• Storage Temperature range  $-40^{\circ}\text{C} \sim +70^{\circ}\text{C} \text{ (upper limit } +80^{\circ}\text{C)}$ 

# Optical Specifications [ Typical beam Angle and intensity (cd/lm) of LL03 lenses ]

#### • EDERTB-1LC6

Part Number	Typical Cone Angle (degree) <sup>(3)</sup> with EDERTB-1LC6			
1 art Ivuilloci	Red LEDs	Green LEDs	Blue LEDs 🔵	RGB 3 in 1 👃
LL03ED-AF30L	41	44	42	43
LL03ED-AF45L	50	58	56	55
LL03ED-AF60L	60	66	64	65
LL03ED-AF4070L	41*68	43*72	42*72	40*71

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.

Part Number	Typical on axis intensity (cd/lm) <sup>(4)</sup> with EDERTB-1LC6			
Tart Indilioci	Red LEDs •	Green LEDs	Blue LEDs •	RGB 3 in 1 🍨
LL03ED-AF30L	60	40	57	37
LL03ED-AF45L	20	21	30	20
LL03ED-AF60L	15	19	23	16
LL03ED-AF4070L	38	41	30	28

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

#### • EDERTB-1EC1

Part Number	Typical Cone Angle (degree) <sup>(3)</sup> with EDERTB-1EC1			
r art indinoer	Red LEDs •	Green LEDs	Blue LEDs	RGB 3 in 1 🏖
LL03ED-AF30L	38	37	34	36
LL03ED-AF45L	44	46	42	44
LL03ED-AF60L	55	57	57	58
LL03ED-AF4070L	46*75	46*76	46*75	44*71

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.

Part Number	Typical on axis intensity (cd/lm) <sup>(4)</sup> with EDERTB-1EC1			
1 art ivallioci	Red LEDs 🔎	Green LEDs	Blue LEDs 🔸	RGB 3 in 1 🍨
LL03ED-AF30L	72	56	77	60
LL03ED-AF45L	51	57	51	37
LL03ED-AF60L	32	23	27	22
LL03ED-AF4070L	70	38	50	36

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

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





#### Notes:

- (3) The typical divergence will be changed by different color, chip size and chip position tolerance.

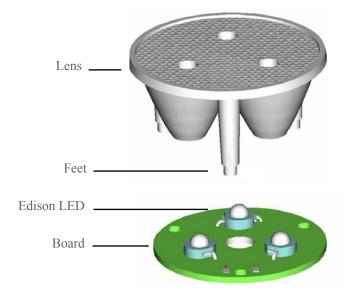
  The typical total divergence is the full angle measured where the luminous intensity is half of the peak value.
- (4) The efficiency value listed above is the total value of the whole Tri-lens model, the value depends on the total flux of the LED used. Luminous intensity depends on the LEDs flux and its tolerances, for more details of LED flux, please check Edixeon® datasheet at www.edison-opto.com.tw.

### **Mechanical Specifications**

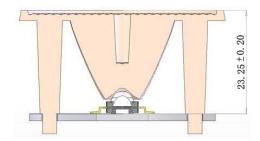
#### • Usage and Maintenance:

- 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:



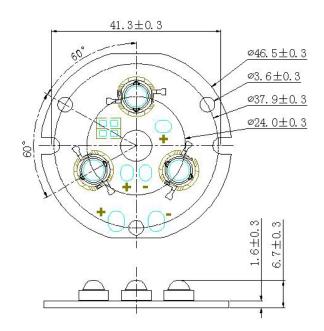
#### 2. View assembly lens with MCPCB:



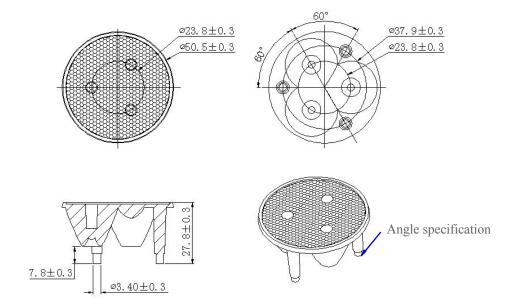


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- 3. Multi-Color RGB Compatible MCPCB Dimensions:
  - 41.3±0.3 Ø46.5±0.3 Ø3.6±0.3 Ø37.9±0.3 Ø24.0±0.3
- 4. Single-Color Compatible MCPCB Dimensions:



5. Lens assembly dimensions and Top Views:



#### Notes:

- (1) All dimensions are in mm.
- (2) Drawing not to scale.
- (3) Collimator material is PMMA.
- (4) View angle is showed on one of the installation legs.



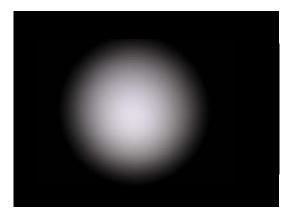


# Illumination charts

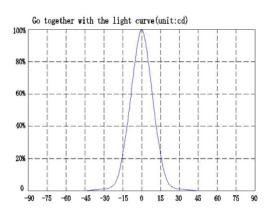
\*Edixeon® single white LED:EDEW-KLC8

#### LL03ED-AF30L

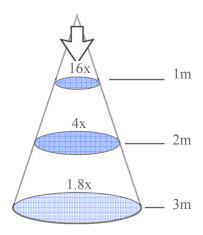
#### 1. Beam Pattern



# 2. Angular Intensity Distribution



# 3. Shine on one degree diagram

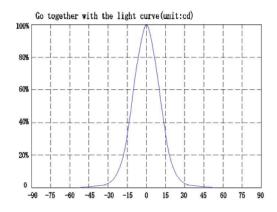


#### LL03ED-AF45L

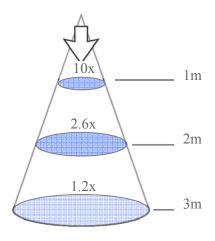
#### 1. Beam Pattern



# 2. Angular Intensity Distribution



# 3. Shine on one degree diagram







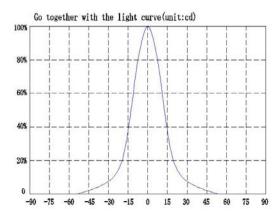
# **I**llumination charts

\*Edixeon® single white LED:EDEW-KLC8 LL03ED-AF60L

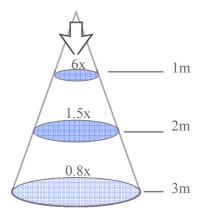
# 1. Beam Pattern



# 2. Angular Intensity Distribution

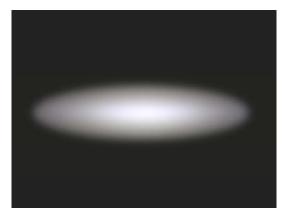


# 3. Shine on one degree diagram

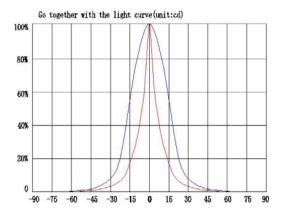


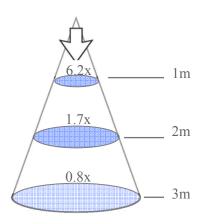
#### LL03ED-AF4070L

# 1. Beam Pattern



# 2. Angular Intensity Distribution



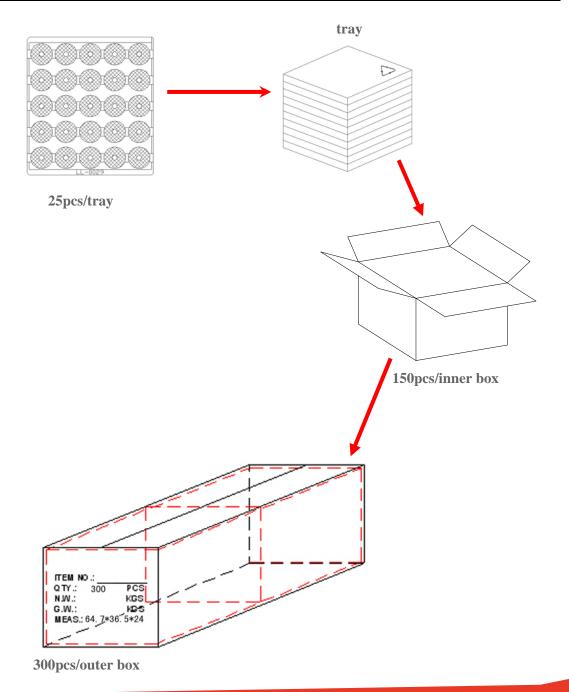






# Package

Item	Quantity	Total	Size (long * width * high)
Tray	25	25 pcs	34*30*3.5 cm
Inner box	6 tray/box	150pcs	35*31*21 cm
Outer box	2 inner box/outer box	300pcs	64.7*36.5*24 cm





#### **Product Nomenclature**

