

Technical Datasheet LS 120

*High Power Solid-State Ultraviolet COB LED Light Source*

# **CORAL**

# **LCR20D0404**

## **Introduction**

For a solid-state ultraviolet COB light source, Lustrous Technology is proud to release the new **CORAL LCR20D0404**. Ideal for your high power output design.

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**CORAL LCR20D**

## Part Name Matrix

Table.1

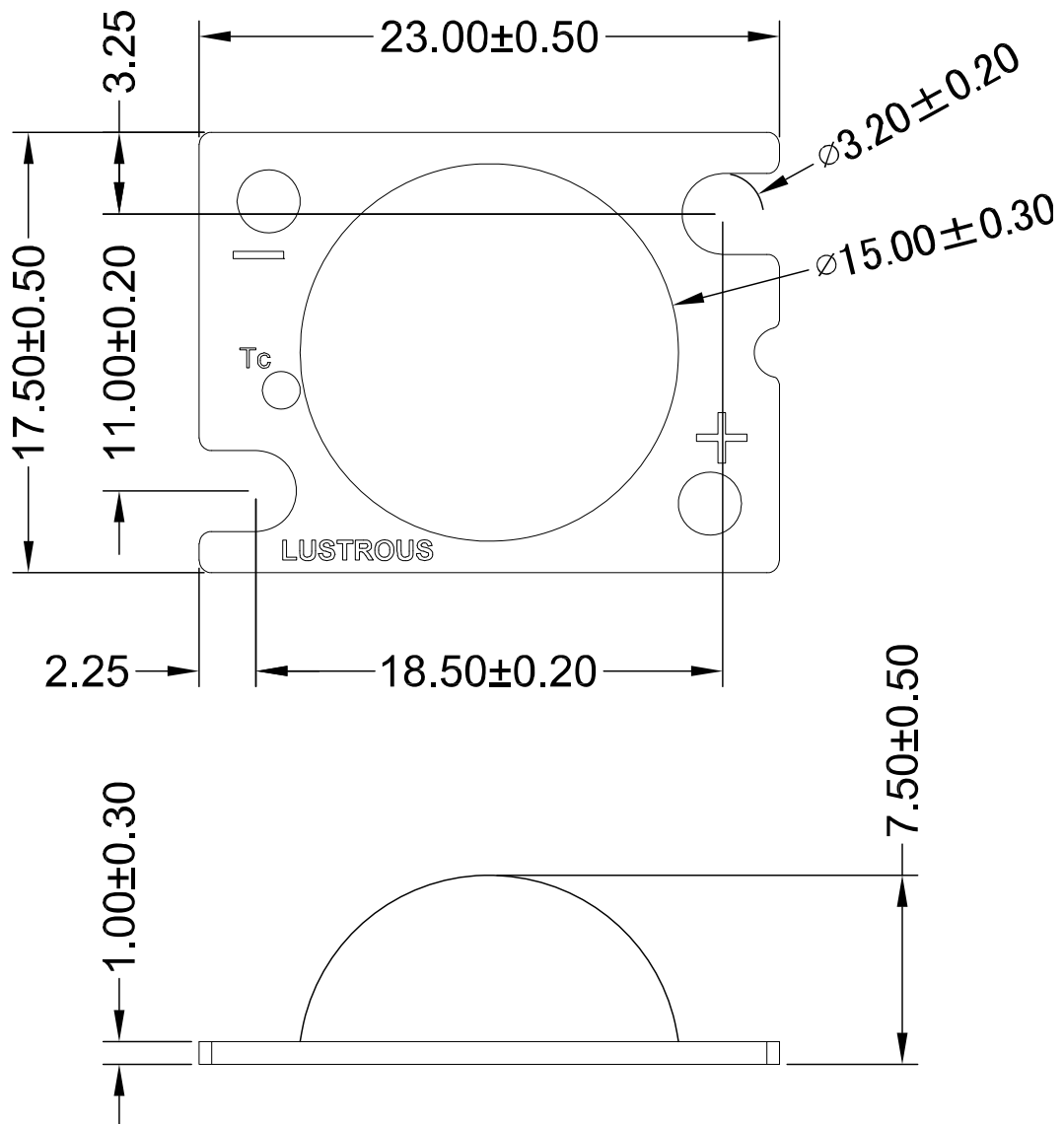
UV LED Wavelength	P/N
380~390nm	LCR20D0404-UCN
390~400nm	LCR20D0404-UDN
400~410nm	LCR20D0404-UEN

## CORAL LCR20D Material

Chip Material	GaN Base
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**Mechanical Dimensions**

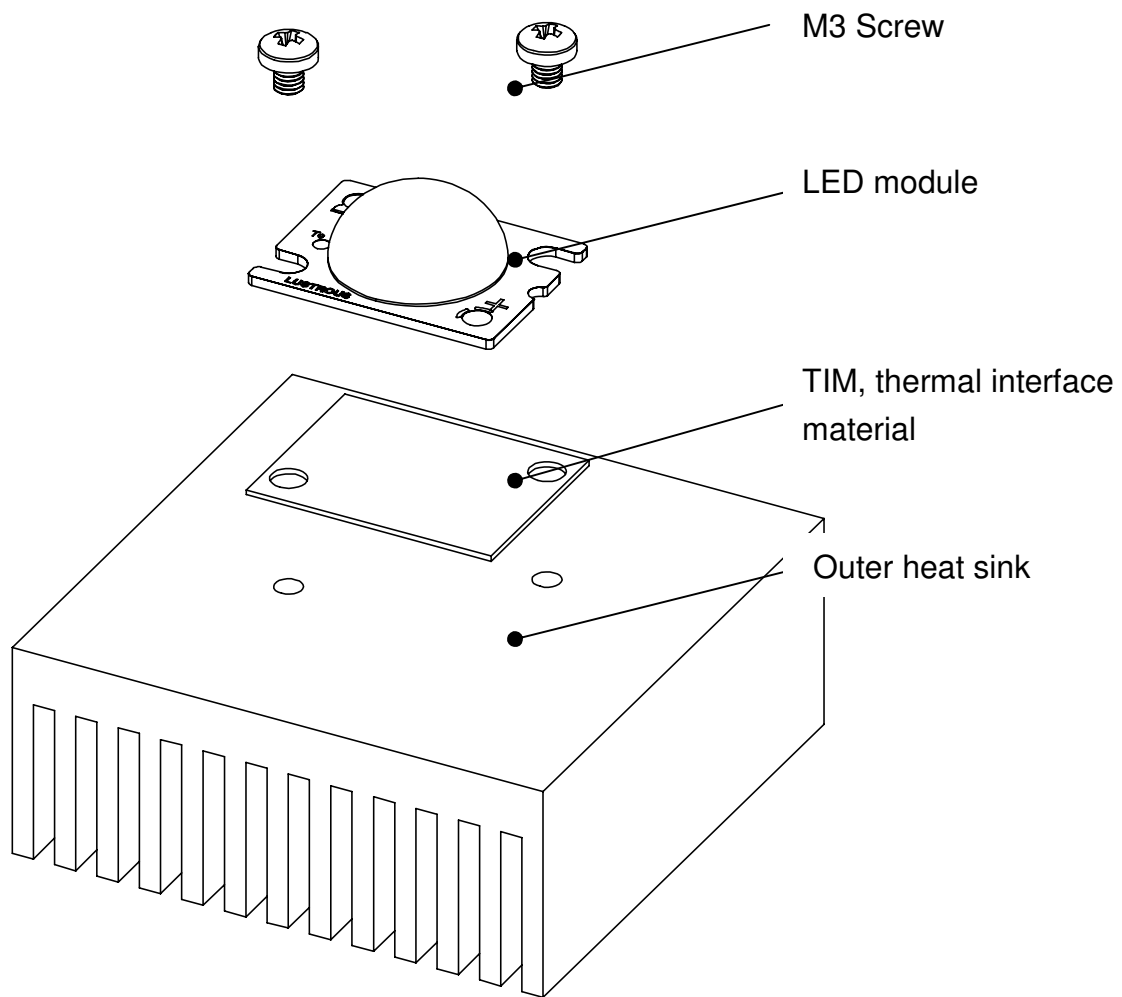
**CORAL LCR20D0404**



Note1 : These drawings are not for scale. All dimensions are in millimeters.

**CORAL LCR20D**

### Recommended installation screw pitch



**Warning:**

**Do not** touch the lighting surface area during installation.

## Characteristics at 1500mA, Junction Temperature T<sub>j</sub> = 25°C

Table.2

LED	Typ. W <sub>p</sub> (nm)	Intensity, Radiant Flux ( mW )		
		Min.	Typ.	Typ. (Tc 85°C)
LCR20D0404-UCN	385	3000	4500	3915
LCR20D0404-UDN	395	7000	8500	7400
LCR20D0404-UEN	405	7800	9500	8250

Note1 : Radiant Flux is measured in total power with a tolerance rate of ±10%. Minimum Radiant Flux is guaranteed from the above data.

Note2 : Binning information of Peak Wavelength can be found in Table.7.

Note3 : Binning information of Radiant Flux can be found in Table.8.

Note4 : Radiant Flux at case temperature of 85°C is for reference.

## Optical Characteristics

Table.3

LED	Viewing Angle ( degrees )
LCR20D0404-UCN	~130
LCR20D0404-UDN	
LCR20D0404-UEN	

## Electrical Characteristics

Table.4

LED	Forward Voltage (V) for 1500mA forward current		
	Min	Typ.	Max
LCR20D0404-UCN			
LCR20D0404-UDN	11.6	13.6	14.4
LCR20D0404-UEN			

Note1 : Lustrous Technology allows a tolerance of each LED for voltage measurements.

Note2 : Measurements are taken under typical forward current.

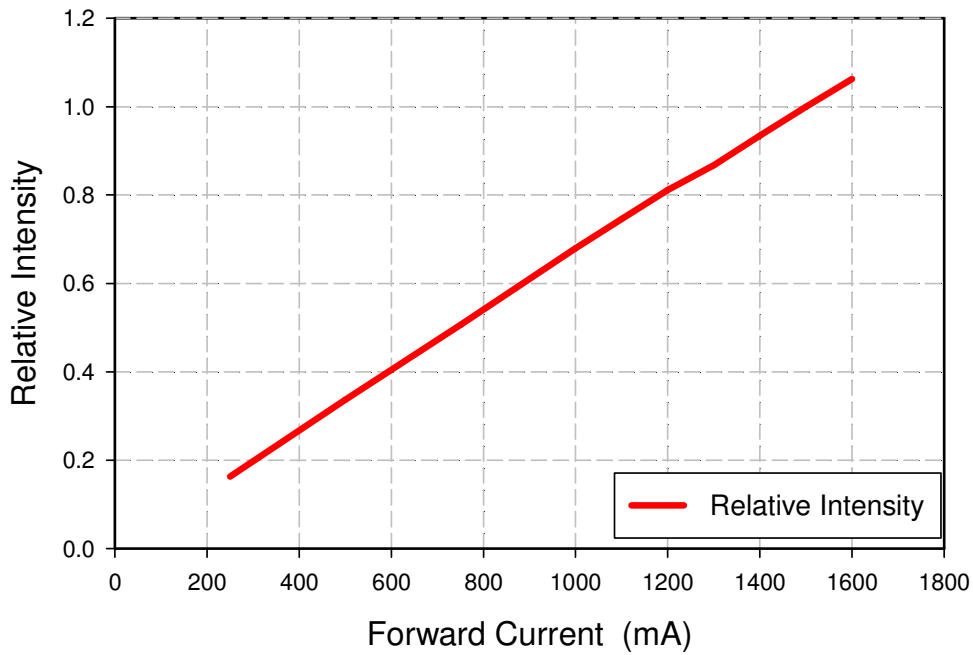
## Absolute Maximum Ratings

Table.5

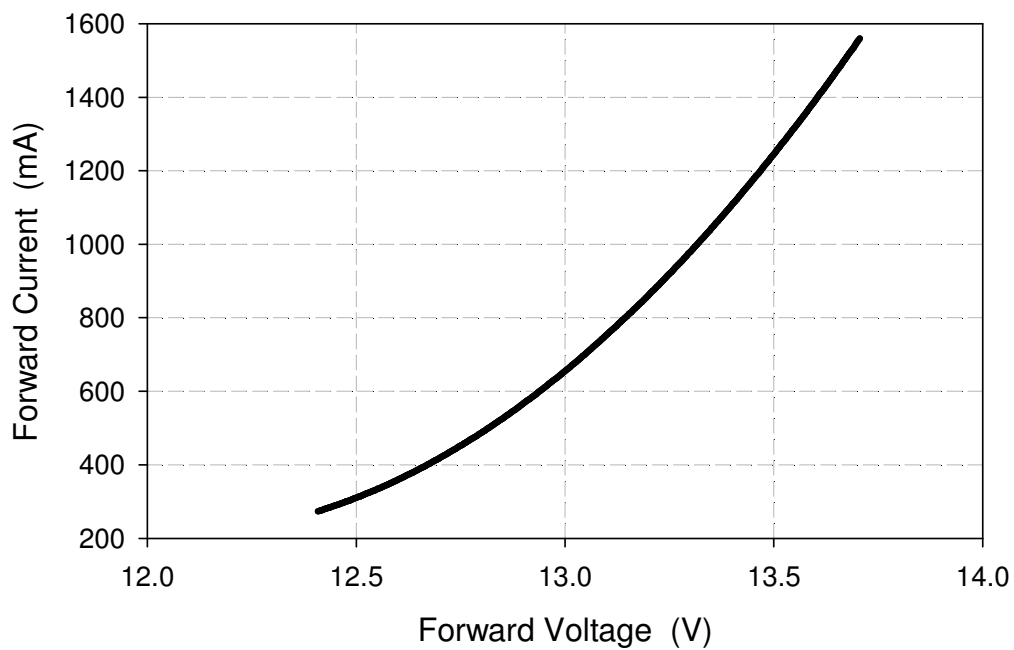
Parameters	
Advised DC Forward Current (mA)	1500
Max. DC Forward Current (mA)	1600
LED Junction Temperature (°C)	< 125
ESD Sensitivity	+4kV (HBM)
Thermal Resistance (°C/W)	~ 2
LED Case Temperature, T <sub>c</sub> (°C)	< 85
Storage Temperature (°C)	-20 ~ +50

Note1 : Proper current operating must be observed to maintain junction temperature below the maximum.

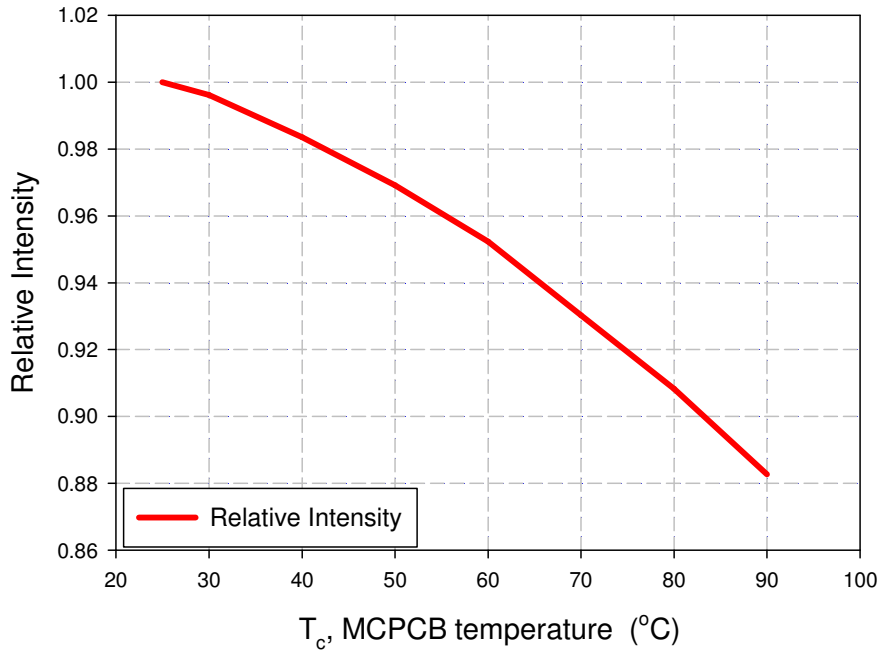
**Relative Intensity vs. Current (T<sub>j</sub> = 25°C)**



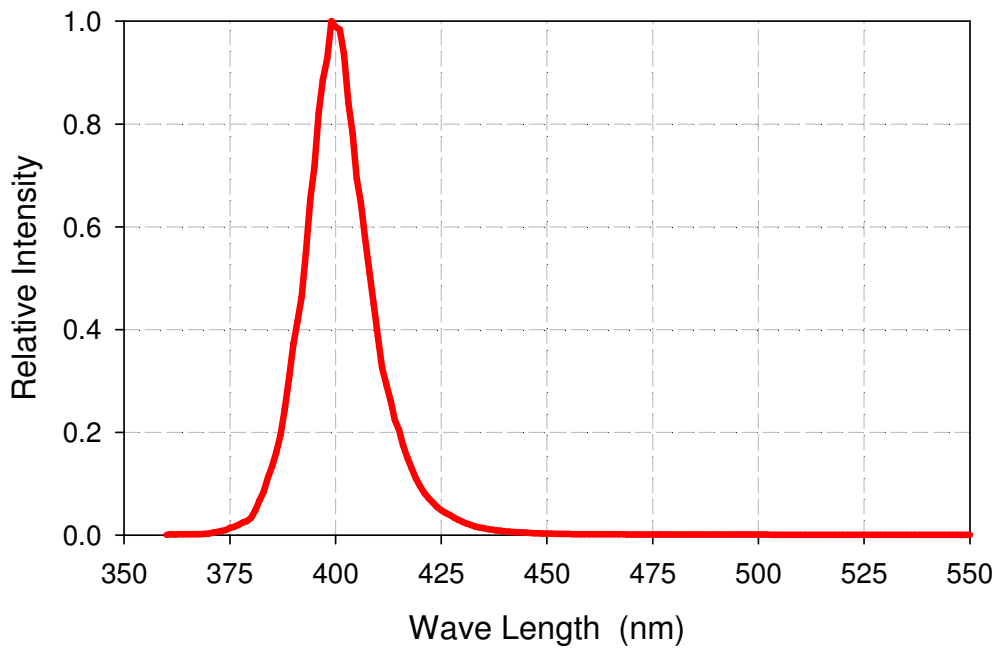
**Forward Voltage vs. Current (T<sub>j</sub> = 25°C)**



### Radiant Flux Output vs. Case Temperature

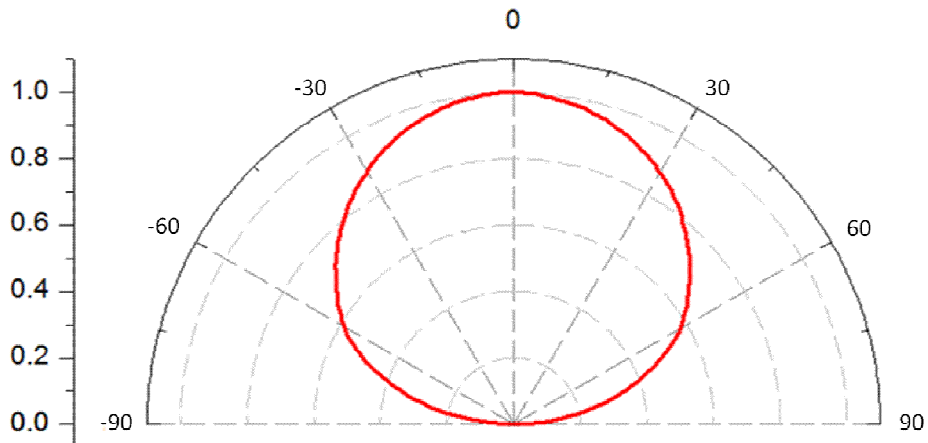


### Relative Spectral Power

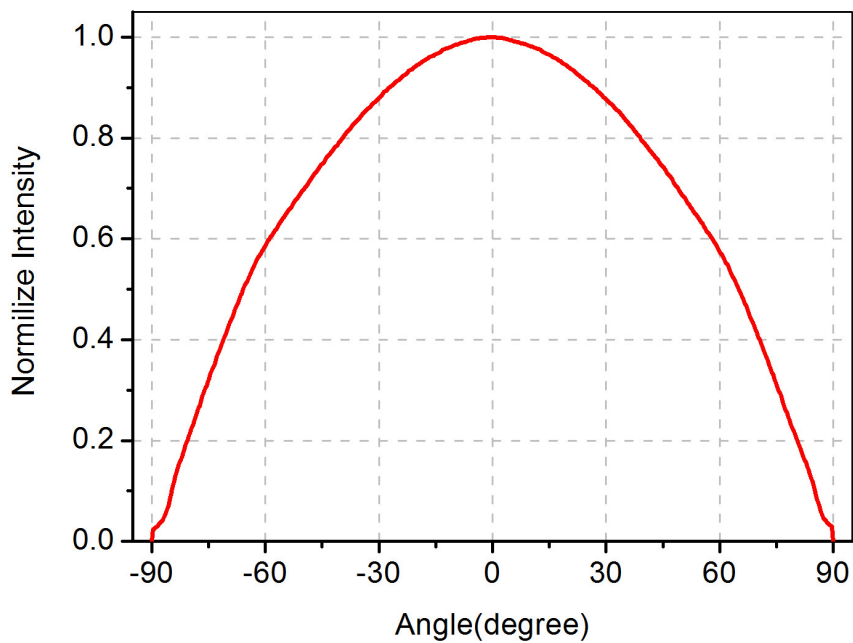




**Typical Angular Beam Profile,  $T_j = 25\text{ }^\circ\text{C}$**



**View Angle: 130 degree**



Note1 : Photometrics data is ready on request.

## Product Binning

In the manufacturing process, there is a natural variation of specifications between LEDs.

The tables below list the standard bins for Lustrous UV LED products (tested and binned at the indicated test current). **Product availability in a particular bin varies by product and production run. Please contact your Lustrous sales representative for further information regarding product availability.**

## Binning Condition

Table.6

LED	Forward Current (mA)
LCR20D0404-UCN	
LCR20D0404-UDN	1500
LCR20D0404-UEN	

## Peak Wavelength Binning Information

Table.7

BIN Code	W <sub>p</sub> ( nm )	
	min.	max.
UV1	380	385
UV2	385	390
UV3	390	395
UV4	395	400
UV5	400	405
UV6	405	410
UV7	410	415
UV8	415	420

Note1 : Peak wavelength is measured in total power with a tolerance rate of ±3nm.

## Intensity Binning Information

Table.8

BIN Code	Radiant Flux ( mW )	
	min.	max.
L01	0	2000
L02	2000	4000
L03	4000	6000
L04	6000	8000
L05	8000	10000
L06	10000	12000
L07	12000	14000

Note1 : Radiant Flux is measured in total power with a tolerance rate of ±10%.

**Print Code Guideline**

LCR 20 D 0404 – UD N  
 1 2 3 4 5 6

XXXXXXXXXXXXXXXX

7

V0 – L03 – UV4 XX XX XX  
 8 9 10 11 12 13

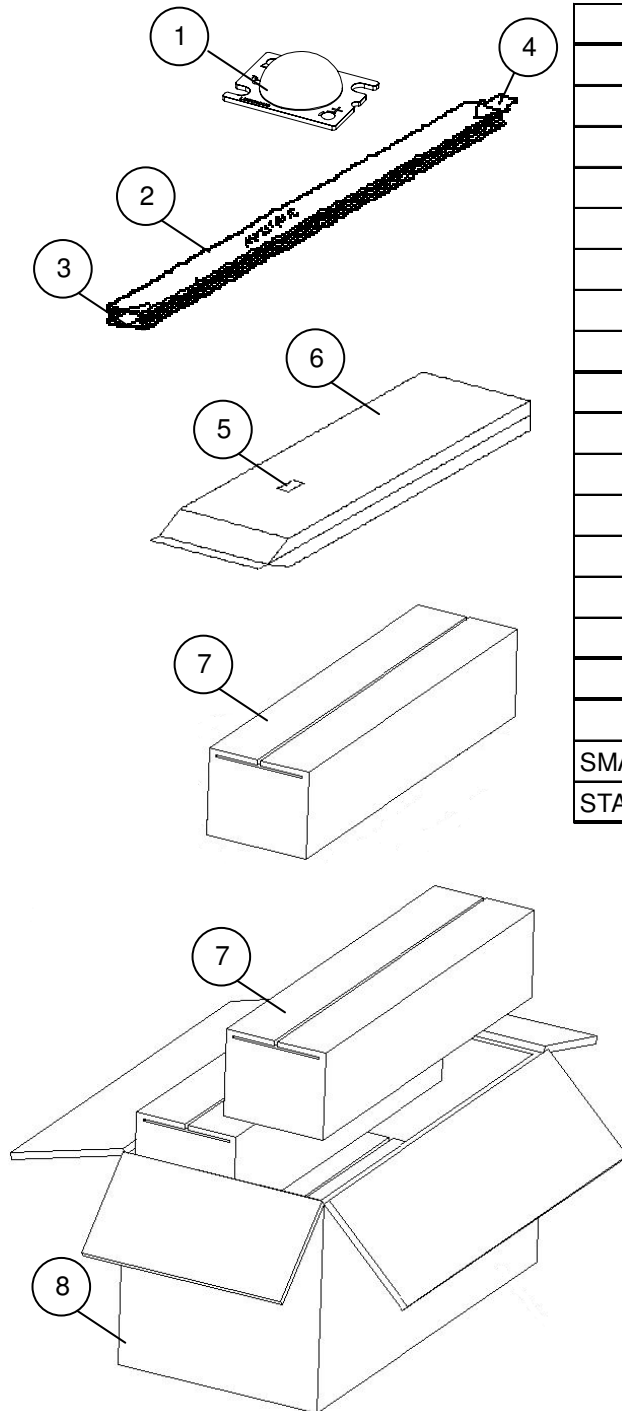
**Table.9**

1 Type	2 Power	3 Lens	4 Internal Code	5 UV Code	6 CRI
LCR	20 : 20W	D : Dome		UC : 380~390nm UD : 390~400nm UE : 400~410nm	N : None CRI

7 Internal Code	8 Bin - V <sub>f</sub>	9 Bin - Intensity	10 Bin - W <sub>p</sub>
	V0 : Without Binned	See Bin Code Definition	See Bin Code Definition

11 Year	12 Month	13 Week
14 : 2014 15 : 2015	01 : January 05 : May 10 : October	01 : 01 <sup>st</sup> Week 20 : 20 <sup>th</sup> Week 45 : 45 <sup>th</sup> Week

### Standard Packaging



ITEM	DESCRIPTION	
①	LED	
②	PLASTIC TUBE	
③	END-PLUG WHITE	
④	END-PLUG BLACK	
⑤	ADHESIVE MAIN LABEL	
⑥	MOISTURE BARRIER BAG	
⑦	SMALL BOX	
⑧	STANDARD BOX	
STACKING METHOD		
	PCS/TUBE	20
	TUBE/BAG	20
	BAG/SMALL BOX	1
	PCS/SMALL BOX	400
	SMALL BOX/STANDARD BOX	4
	PCS/STANDARD BOX	1600
SIZE AND WEIGHT		
	SIZE(mm <sup>3</sup> )	WEIGHT(kg)
SMALL BOX	440×130×130	1.54±0.5
STANDARD BOX	460×280×280	6.91±0.5

## Precaution for Use

Don't look into the UV light since it can be harmful to eyes. In case of the light reflection, UV protect glasses are required to use to avoid the damage by the light.

## Installation

1. Do not touch the lighting surface area during installation.
2. If the product might to be used under the following conditions, the customer must evaluate its appropriateness them. This product is not designed for use under the following conditions. In places where the product might:
  - get wet due to rain.
  - suffer from damage caused by salt.
  - be exposed to corrosive gas such as Cl, S, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, NO<sub>x</sub> and so on.
  - be exposed to dust, fluid or oil.

## Over-current Proof

1. Do not reverse current the LEDs we suggest current limit resistors for extra protection.
2. The maximum overshoot current should be limited to 1600mA.
3. The ripple of driving current should not exceed +/-10% of normal driving current.
4. When driving the products, the clamp voltage must be set at 16V in driver.

## Storage

1. Do not open the Moisture Barrier Bag (MBB) before you are ready to install the LEDs.
2. Storage Condition (before opening the MBB) :
  - Storage Temperature:-20~50°C.
  - Relative Humidity: <60% RH.
  - The products should be used within half a year.
3. Storage Condition (after opening the MBB) :
  - Storage Temperature:-20~50°C.
  - Relative Humidity: <60% RH.
  - The products should be used or installed as soon as possible after opening the MBB.
  - Please re-seal the MBB when storing longer than 3 weeks.

## Company Information

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Lustrous Technology, founded in 2004, endeavors to bring a new era of solid-state lighting. Our R&D development center and production facilities are based in Taiwan, a famous island for IT technology in the world. Our products are well designed in both performance and reliability. Lustrous is one of the leading high-power LED manufacturer and solution provider in the world.

\*\*Lustrous Technology may make process and material changes affecting performance and characteristics of our products without further notice. These products supplied after changes will continue to meet published specifications, but may not be identical to products supplied as samples or under prior orders.

**LUSTROUS**<sup>®</sup>  
*Green Technology of Lighting*

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**CORAL LCR20D**