

# PRODUCT DATASHEET

## LVCOB PFM-020-1205

COB LED PERFORMANCE 20W 1205



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### AREAS OF APPLICATION

- Tracking Light
- Spot Light
- Par Light
- Bulb Light
- Down Light

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### PRODUCT BENEFITS

- High color quality, high-flux, high-efficacy
  - Low thermal resistance
  - Easy for assemble
  - Long lifetime
  - RoHS compliant
  - Available white chromaticity bins form ANSI
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**TECHNICAL DATA**

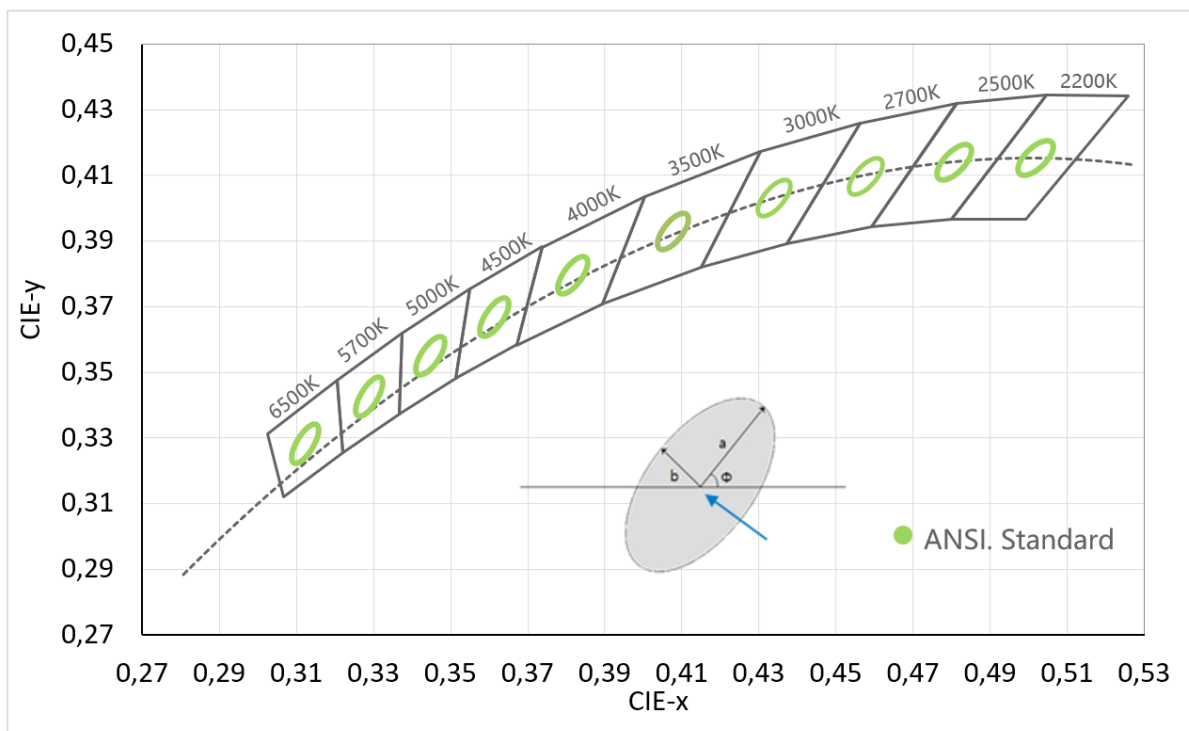
Electrical and Thermal Characteristics

Item	Symbol	Min	Max	Unit
Forward Current	$I_F$	/	1000	mA
Forward Voltage	$V_F$	33.6	39.6	V
Operating Temperature	$T_{opr}$	-40	+105	°C
Storage Temperature	$T_{stg}$	-40	+120	°C
Soldering Temperature	$T_{sol}$	/	350	°C
Junction Temperature	$T_j$	/	150	°C
Case Temperature	$T_c$	/	105	°C
Thermal Resistance	$R_{j-c}$	/	0.9	°C/W
Antistatic Ability	ESD	2000	/	V

The using temperature is less than 105°C; please reduce the using current or contact with us if using temperature is more than 105°C.

When hand soldering,keep the temperature of iron below less 350°C less than 5 seconds.

Chromaticity Coordinate Groups



Standard Type	ANSI/A		2-step		3-step		θ
	Center Point	CIE-X	CIE-Y	a	b	a	
2200K	0.5018	0.4153	0.0050	0.0028	0.0075	0.0042	52.78
2500K	0.4806	0.4141	0.0052	0.0028	0.0078	0.0042	53.10
2700K	0.4578	0.4101	0.0054	0.0028	0.0081	0.0042	53.42
3000K	0.4339	0.4033	0.0056	0.0027	0.0083	0.0041	53.13
3500K	0.4078	0.3930	0.0063	0.0028	0.0095	0.0042	52.58
4000K	0.3818	0.3797	0.0063	0.0027	0.0094	0.0040	53.43
4500K	0.3613	0.3670	0.0059	0.0025	0.0088	0.0038	56.4
5000K	0.3446	0.3551	0.0055	0.0024	0.0082	0.0035	59.37
5700K	0.3287	0.3425	0.0050	0.0021	0.0075	0.0032	58.86
6500K	0.3123	0.3283	0.0045	0.0019	0.0067	0.0029	58.34

LEDVANCE maintains chromaticity (x, y) ±0.005, color region stay within MacAdam 2-step ellipse from the chromaticity center.

The ANSI standard is A standard for short, reference standard is ANSI-C78.377-2015.

The using current should be consistent with the label, and chromaticity will change if working current is outside this range of the label.

Product Selection Guide

If=500mA Tj= 85°C

Product Code	CCT	CRI Min.	Luminous Flux (lm)		Efficacy (lm/w) Typ.	Voltage (V) Typ.
			Min.	Typ.		
LVCOB-PFM-020-1205-P3070	3000K	70	2504	2693	157	34.3
LVCOB-PFM-020-1205-P4070	4000K	70	2568	2761	161	34.3
LVCOB-PFM-020-1205-P5070	5000K	70	2552	2744	160	34.3
LVCOB-PFM-020-1205-P2780	2700K	80	2201	2367	138	34.3
LVCOB-PFM-020-1205-P3080	3000K	80	2313	2487	145	34.3
LVCOB-PFM-020-1205-P3580	3500K	80	2376	2555	149	34.3
LVCOB-PFM-020-1205-P4080	4000K	80	2424	2607	152	34.3
LVCOB-PFM-020-1205-P5080	5000K	80	2456	2641	154	34.3
LVCOB-PFM-020-1205-P5780	5700K	80	2456	2641	154	34.3
LVCOB-PFM-020-1205-P6580	6500K	80	2424	2607	152	34.3
LVCOB-PFM-020-1205-P2790	2700K	90	1882	2024	118	34.3
LVCOB-PFM-020-1205-P3090	3000K	90	1978	2127	124	34.3
LVCOB-PFM-020-1205-P3590	3500K	90	2042	2195	128	34.3
LVCOB-PFM-020-1205-P4090	4000K	90	2089	2247	131	34.3
LVCOB-PFM-020-1205-P5090	5000K	90	2106	2264	132	34.3

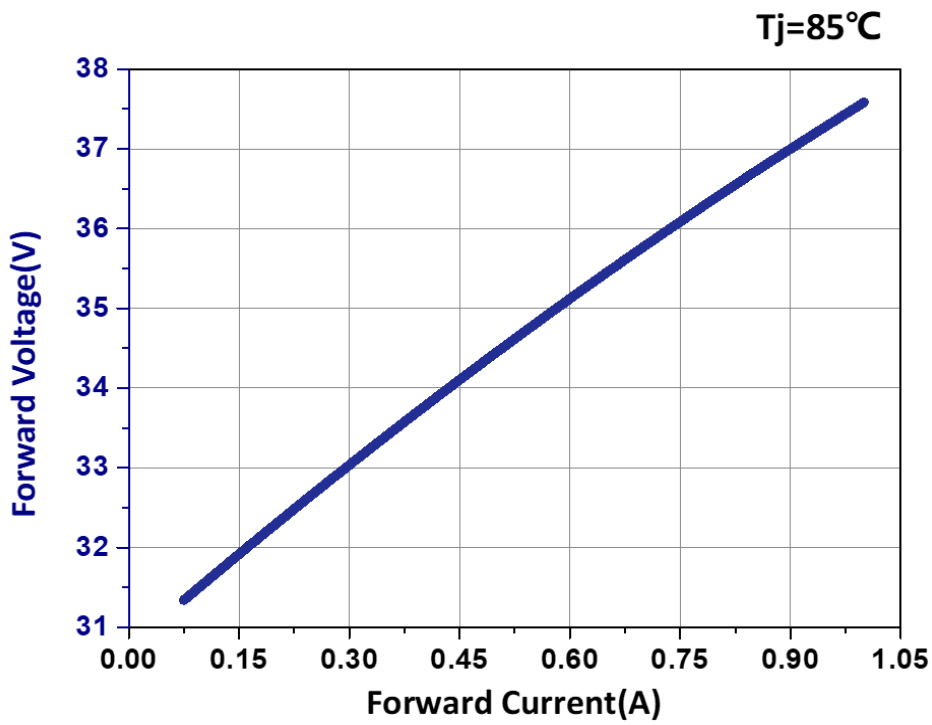
The tolerance of measurement at our tester is voltage±5%, luminous flux±7% and Ra±1.

Luminous flux inside the integrating sphere measurements. (Tj=Tc=85°C)

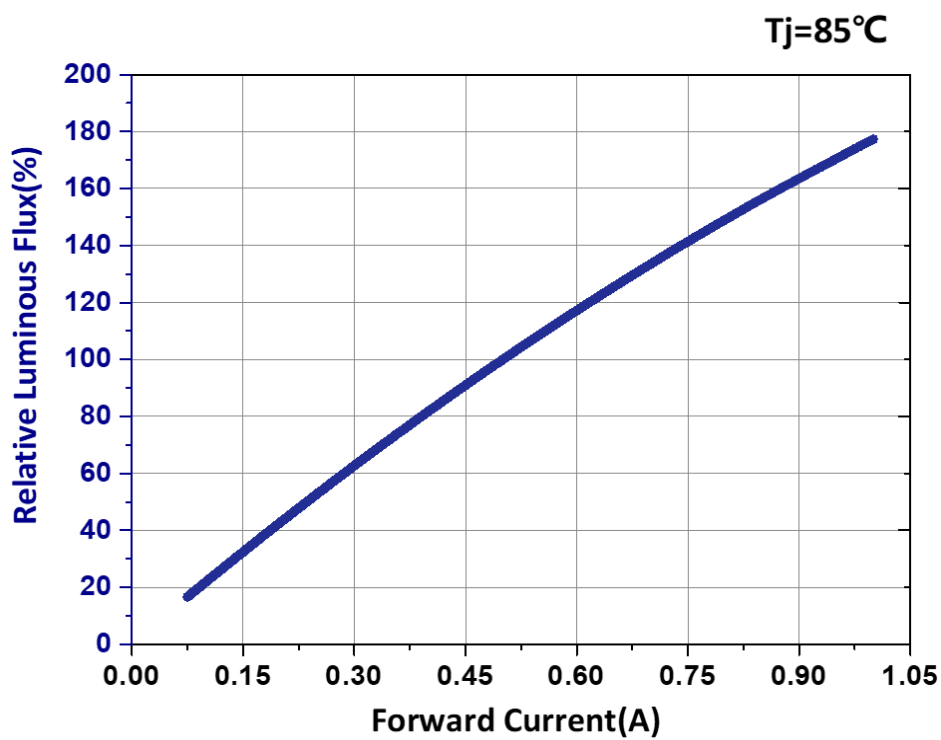
**CHARACTERISTIC CURVES**

Forward Current Characteristics

Forward Voltage vs Forward Current

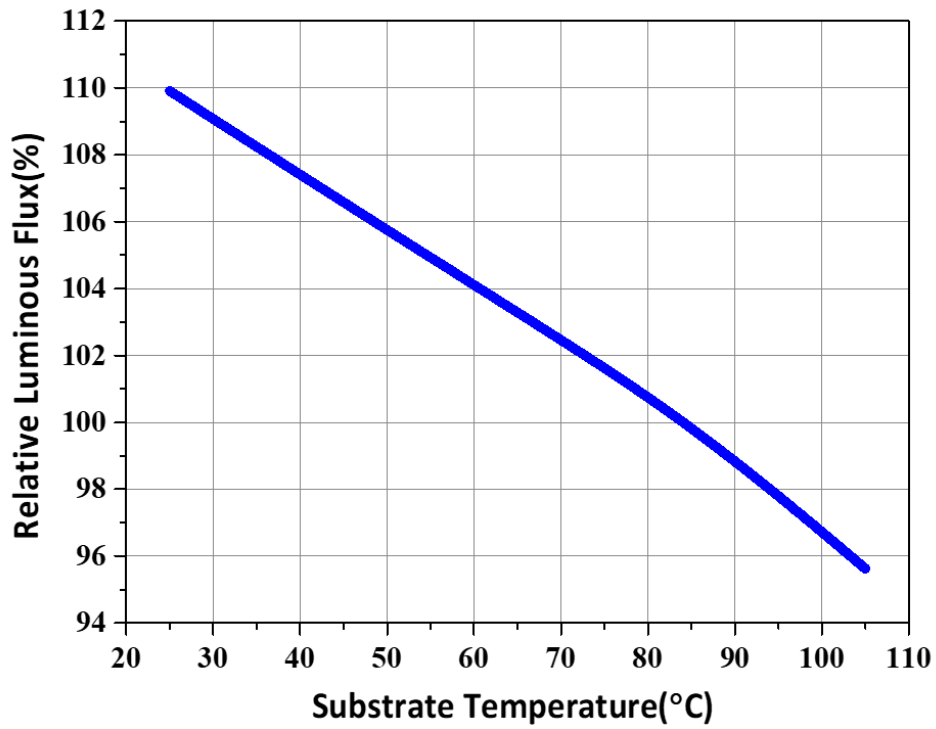


Forward Current vs Relative Luminous Flux

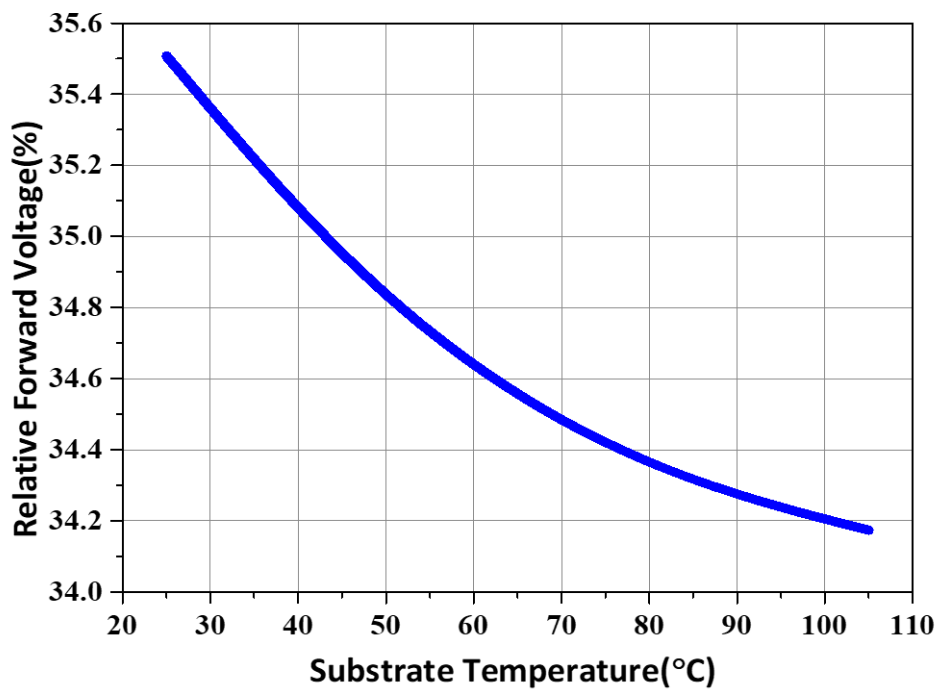


Temperature Characteristics

Relative Luminous Intensity vs Substrate Temperature  $I_f=500\text{mA}$

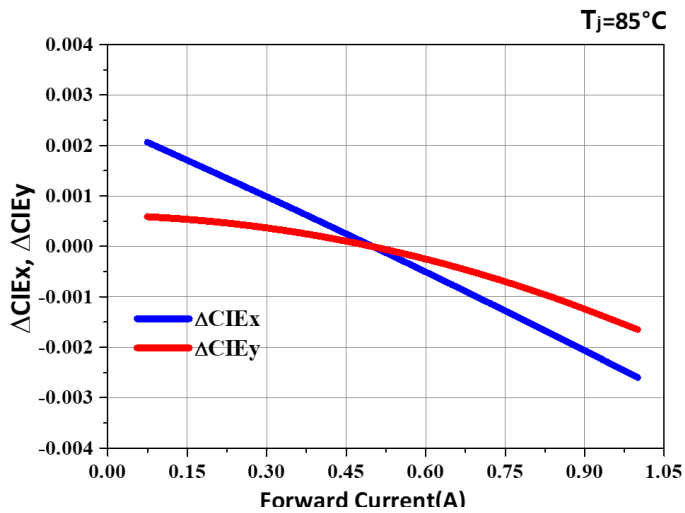


Forward Voltage vs Substrate Temperature  $I_f=500\text{mA}$

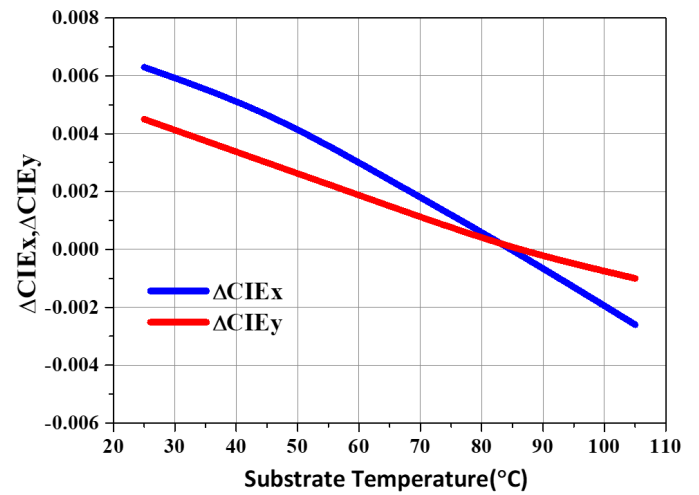


Color Shift Characteristics

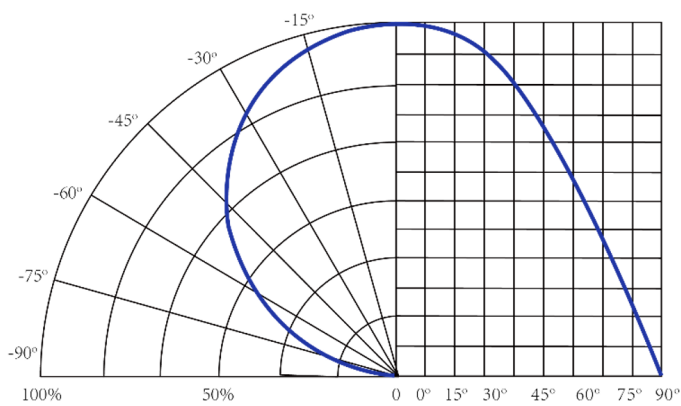
$\Delta CIE_x, \Delta CIE_y$  vs Forward Current  
CRI(Ra)=80  $T_j=85^\circ C$   $I_f=500mA$



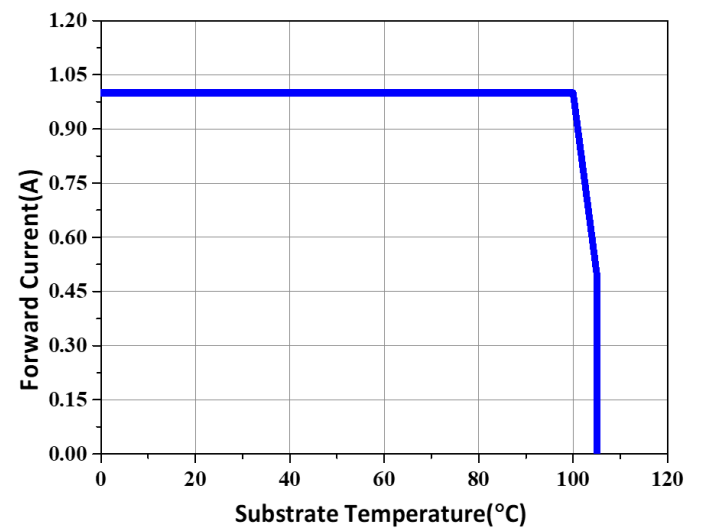
$\Delta CIE_x, \Delta CIE_y$  vs Substrate Temperature  
CRI(Ra)=80  $T_j=85^\circ C$   $I_f=500mA$



Radiation Angle



Maximum Forward Current vs Case Temperature Graph

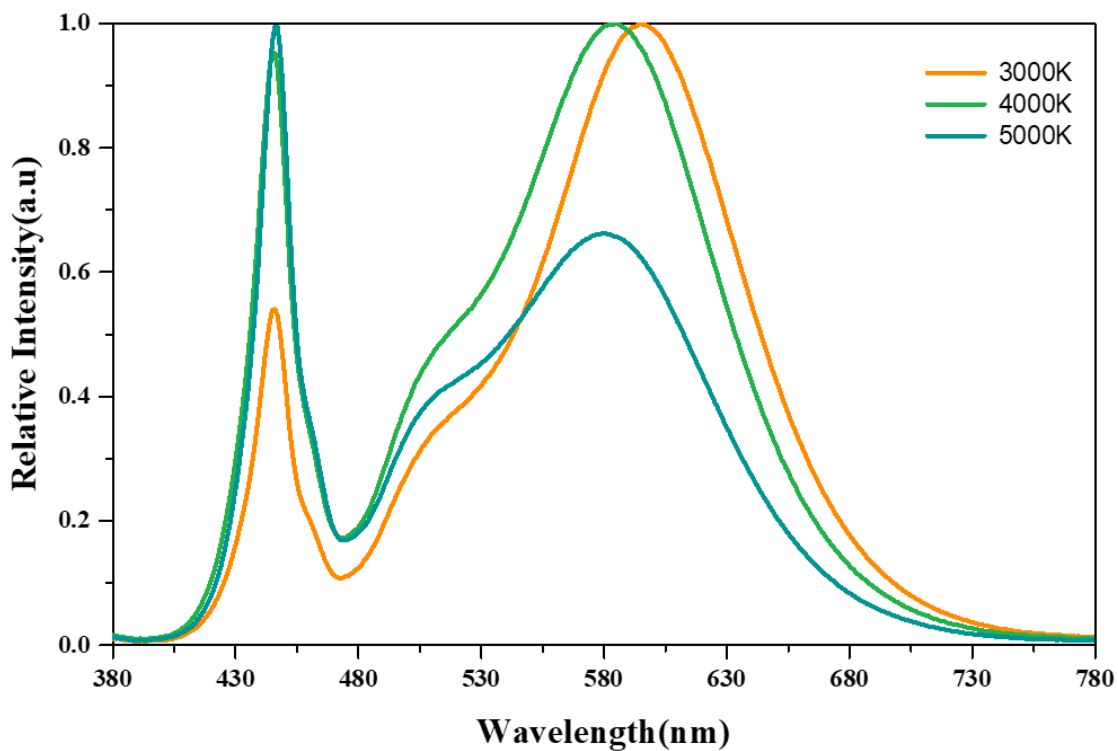


Spectrum Distribution

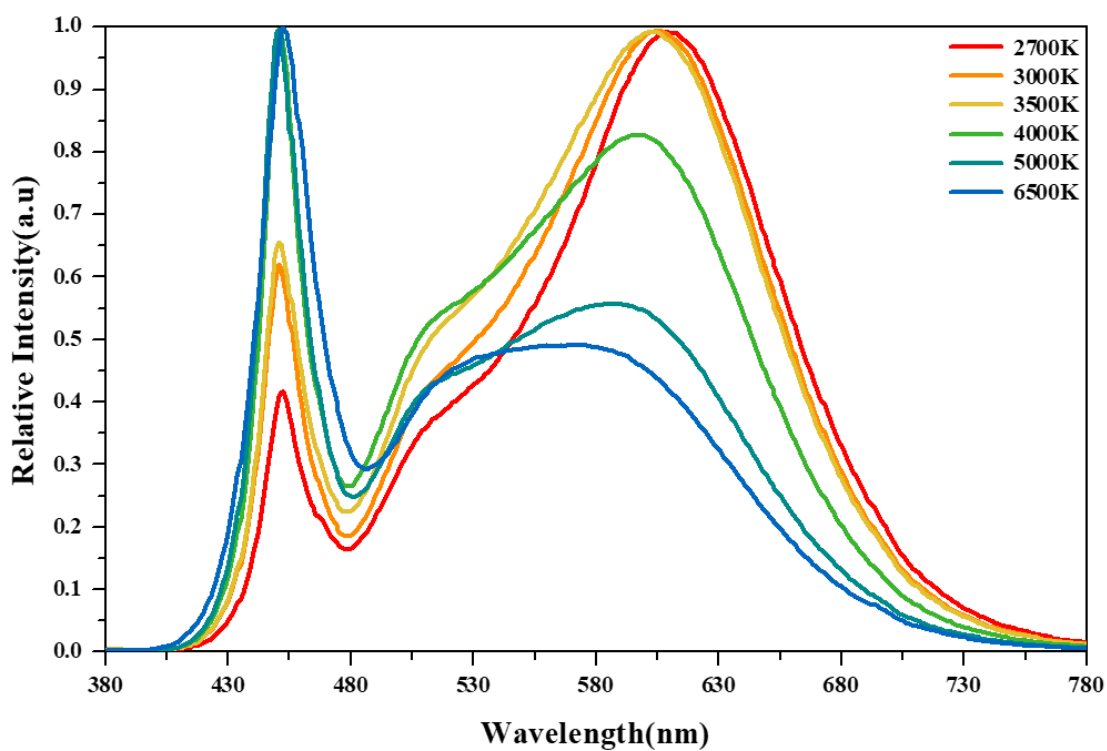
Relative Intensity vs Wavelength

T<sub>j</sub>=85°C I<sub>f</sub>=720mA

**CRI(Ra) 70Min**



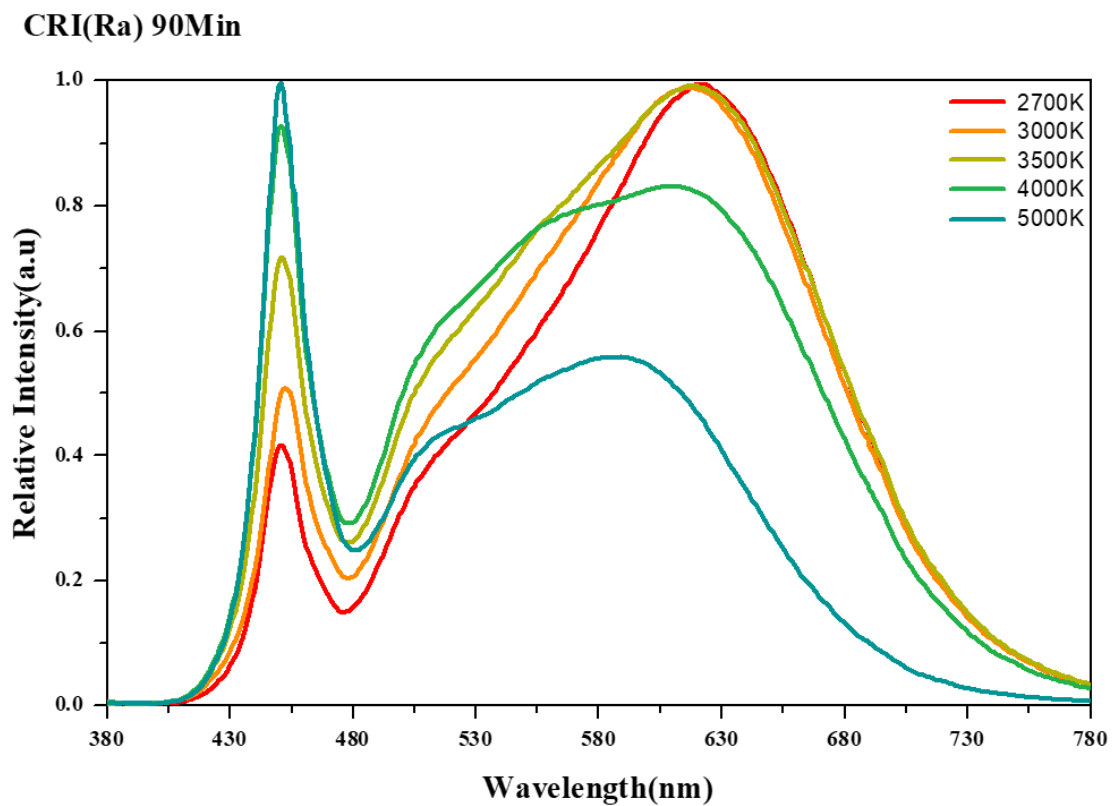
**CRI(Ra) 80Min**



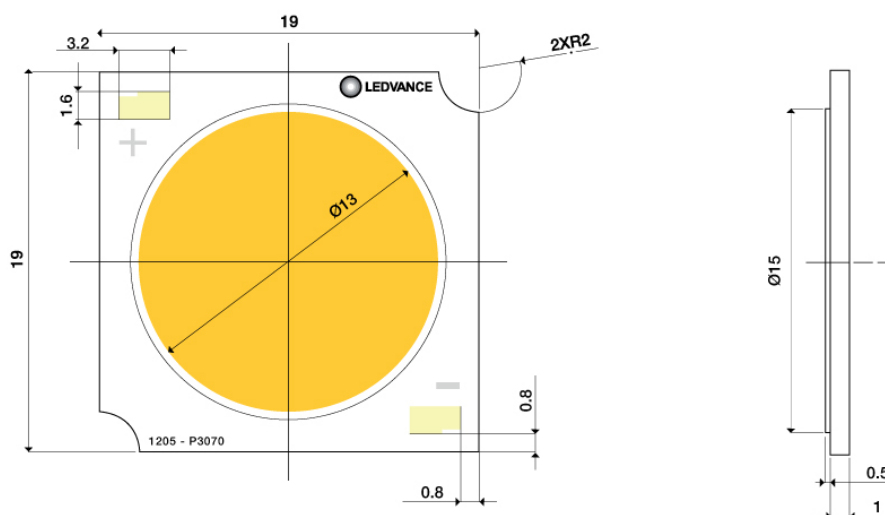


Characteristic Curves

Spectrum Distribution

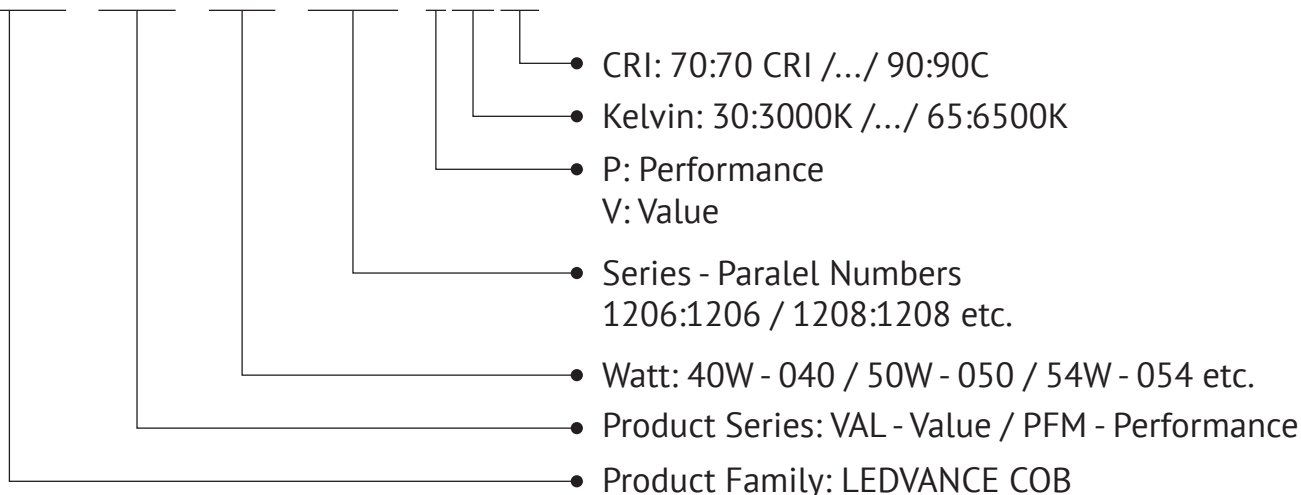


MECHANICAL DIMENSION



ENCODING

LVCOB - PFM - 040 - 1206 - P3070

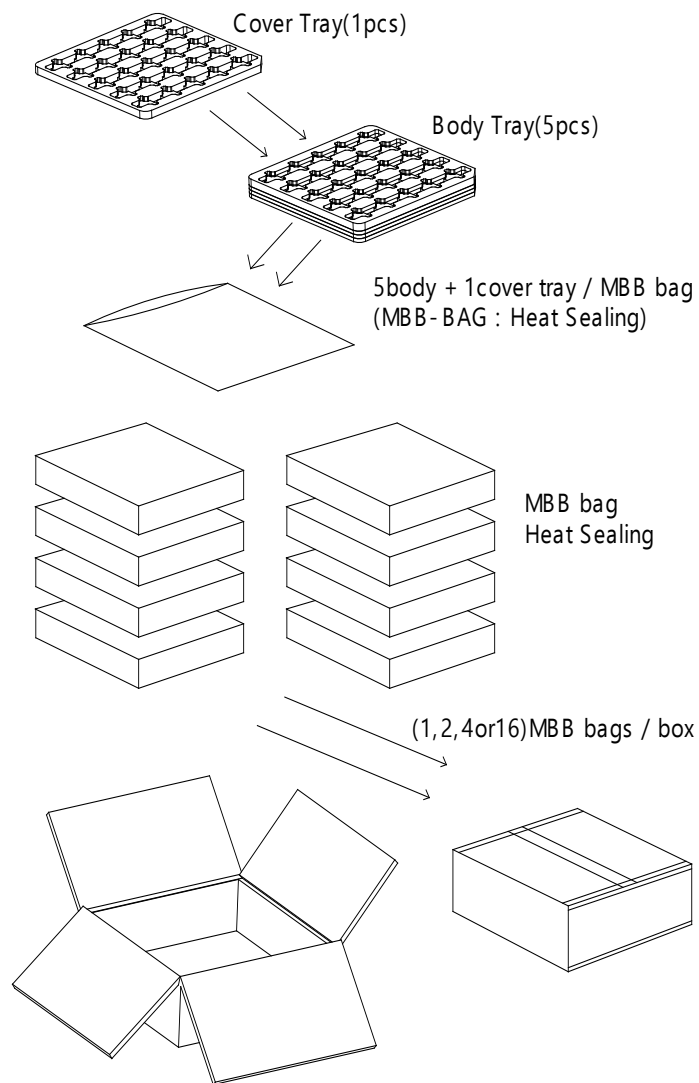
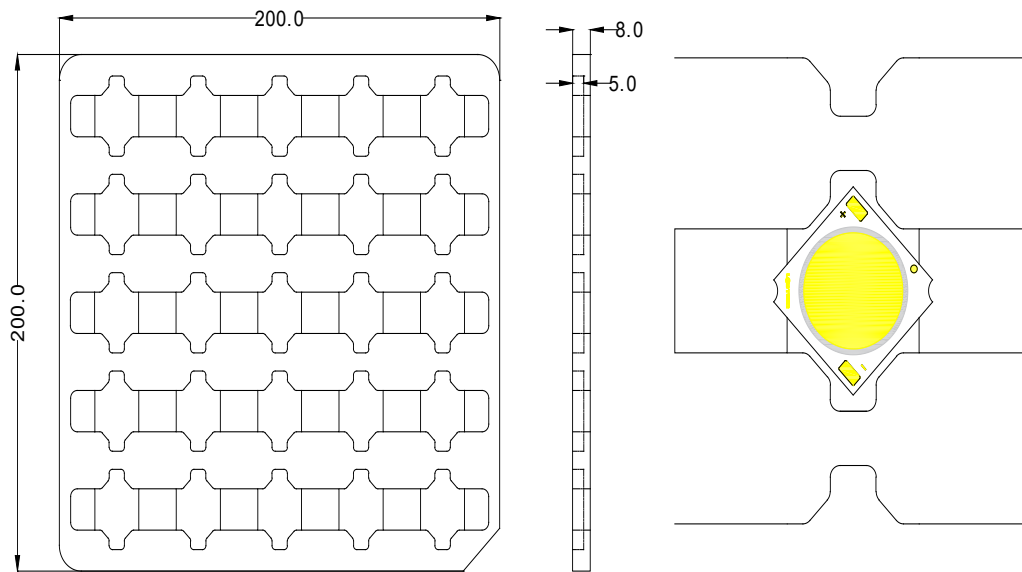


PACKING SPECIFICATION / EAN CODES

RoHS	Qty:XXX	
PN: LVCOB PFM-020-1205-P3070		
Des: COB LED PFM 20W 1205 3000K 70CRI		
lf(mA):XXX	Vf(V):XX.X	Pi(W):XX
CCT(K):XXXX	Φ(lm):XXXX	Ra:XX
XXXXXXXXXX LotXXXXXXXXXX XXXX-XXXXXXXX		
Date: XX / XX / XXXX	www.ledvance.com	

Short Text	EAN10 1PC LED	EAN20 1 BAG - 125 PCS	EAN40 1 BOX - 500 PCS

MANNER OF PACKING



An empty tray is placed on top of a 5-tier tray which contain 25 PCS each.(Smallest packing unit:125 PCS)

A label whit product name,quantity and lot number is placed on the upper empty tray.(Tray Dimension:200\*200\*8 mm)

## CAUTIONS

### 1. Storage

Store the parts in a dry, nitrogen-purged cabinet or container that actively maintains the temperature at 20°C-30°C and the RH at no greater than 60%.

### 2. Precautions for Use

By using anti-static-electricity bracelets/ cushions/ overalls/ shoes/gloves and anti-static-electricity containers, it can effectively prevent static electricity and surge. The soldering iron point should be properly grounded. Use soldering by hand: Soldering bit temperature shall be 350°C or less, Heating time: 5 seconds or less.

### 3. ESD Protection

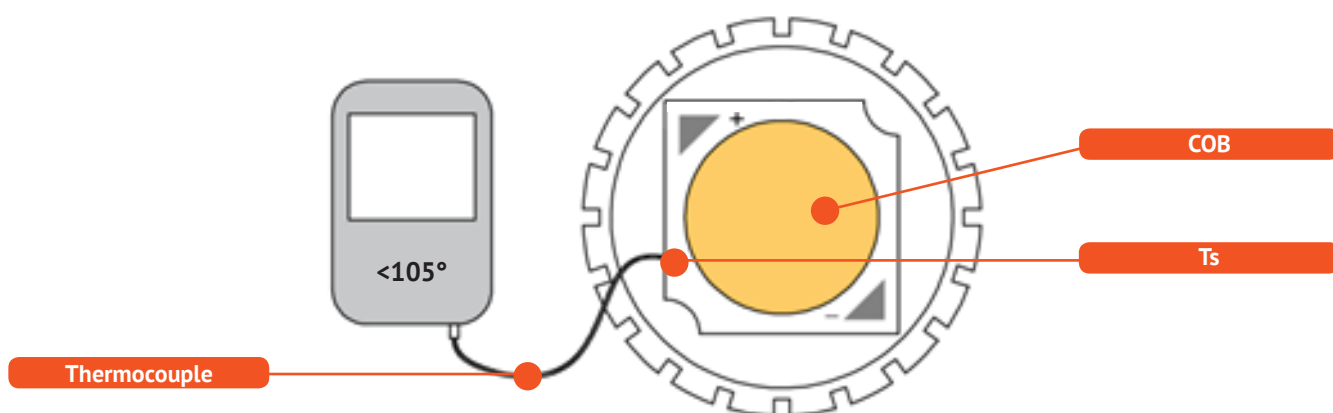
You need to take the protective measures for the product being sensitive to static electricity. It can lead to product damage or even the total invalid when the high voltage current made by static electricity is beyond the maximum rating. The ground resistance can't beyond 10Ω.

### 4. Cleaning

Please do not make the thermal grease, oil exposed to the light-emitting surface, air gun can be used to remove dirt. Guns Pressure: 0.5MPa, Time: 1 to 2 seconds, Distance: more than 20cm.

### 5. Overcurrent Protection

Any time, don't press colloid part, lest product surface come to be damaged or even invalid. It is recommended to design PCB with ground circuit. Pay special attention to the use environment of the products: Humidity must be between 50% and 80%, or else electrostatic breakdown and overcurrent damage would occur. The use temperature is -40°C~105°C. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these data sheets. LEDVANCE assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these data sheets.



### 6. Thermal Design

The thermal design to draw heat away from the LED junction is most critical parameter for an LED illumination system. High operating temperatures at the LED junction adversely affect the performance of LED's light output and lifetime. Therefore the LED junction temperature should not exceed the absolute maximum rating in LED illumination system.

### 7. Safety Tips

During using this product, the country relative safety standards (eg. GB7000.1-2007) should be accorded with. We will not be liable for the users' acts of non-observance of the country safety standards.

Reminder: In order to protect the environment, please dispose the waste light according to the general waste

If you have any objection of this datasheet, please inform us in writing within 7 days, or it will be considered as accepting all the contents of this datasheet.