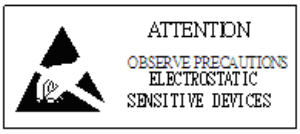
# YJ-BC-400L-G01
## High CRI LED

**PRODUCT:**

50W CHIP ON BOARD LED

**FEATURES:**
46 mm × 40 mm x 3.3 mm chip-on-board LED
120° emission angle
95 min Ra

**DESCRIPTION**
YUJILEDS™ BC400L series high CRI COB provides high CRI, high luminous flux solution. Providing 95 CRI (typical) at 3500 lm, this high-power LED can be used in a variety of applications demanding high color quality and light output.





| ELECTRICAL-OPTICAL CHARACTERISTICS ($T_A$ = 25 °C) | | | | | | | |
|---|---|---|---|---|---|---|---|
| PARAMETER | SYMBOL | VALUE | | | UNIT | TOLERANCE | CONDITION |
| | | MIN. | TYP. | MAX. | | | |
| Forward voltage | $V_f$ | 28 | -- | 31 | V | ±0.05 | $I_f$ = 1500mA |
| Luminous flux | $\Phi_{3200K}$ | 3025 | -- | 3575 | lm | -- | $I_f$ = 1500mA |
| | $\Phi_{5600K}$ | 3190 | | 3740 | | | |
| Correlated color temperature | $CCT_{3200K}$ | 3050 | 3200 | 3350 | K | -- | $I_f$ = 1500mA |
| | $CCT_{5600K}$ | 5300 | 5600 | 5900 | | | |
| Color rendering index | Ra | 95 | -- | -- | -- | ±1 | $I_f$ = 1500mA |
| TCS R9 (CRI Red) | R9 | -- | 70 | -- | -- | -- | $I_f$ = 1500mA |
| Chromaticity coordinates | (X,Y) | -- | -- | -- | -- | ±0.005 | -- |
| Reverse current | $I_r$ | -- | -- | 50 | μA | ±0.1 | $V_r$ = 50V |
| Viewing angle | 2θ1/2 | -- | 120 | -- | Deg | ±5 | $I_f$ = 1500mA |

| ORDERING INFORMATION | | | |
|---|---|---|---|
| PART NUMBER | EMISSION AREA | CCT | CHROMATICITY BINS |
| YJ-BC-400HS-G01-32 | SQUARE | 3200K ± 150K | F4-2, F7-2, F5-1, F8-1 |
| YJ-BC-400HS-G01-56 | | 5600K ± 300K | B8-2, B10-2, C3-1, C5-1 |
| YJ-BC-400HS-G01-XX | | CUSTOM | -- |
| YJ-BC-400HC-G01-32 | CIRCULAR | 3200K ± 150K | F4-2, F7-2, F5-1, F8-1 |
| YJ-BC-400HC-G01-56 | | 5600K ± 300K | B8-2, B10-2, C3-1, C5-1 |
| YJ-BC-400HC-G01-XX | | CUSTOM | -- |

| VOLTAGE BIN CODES | |
|---|---|
| **Bin** | **V28** |
| $V_F$ | 28-31 |

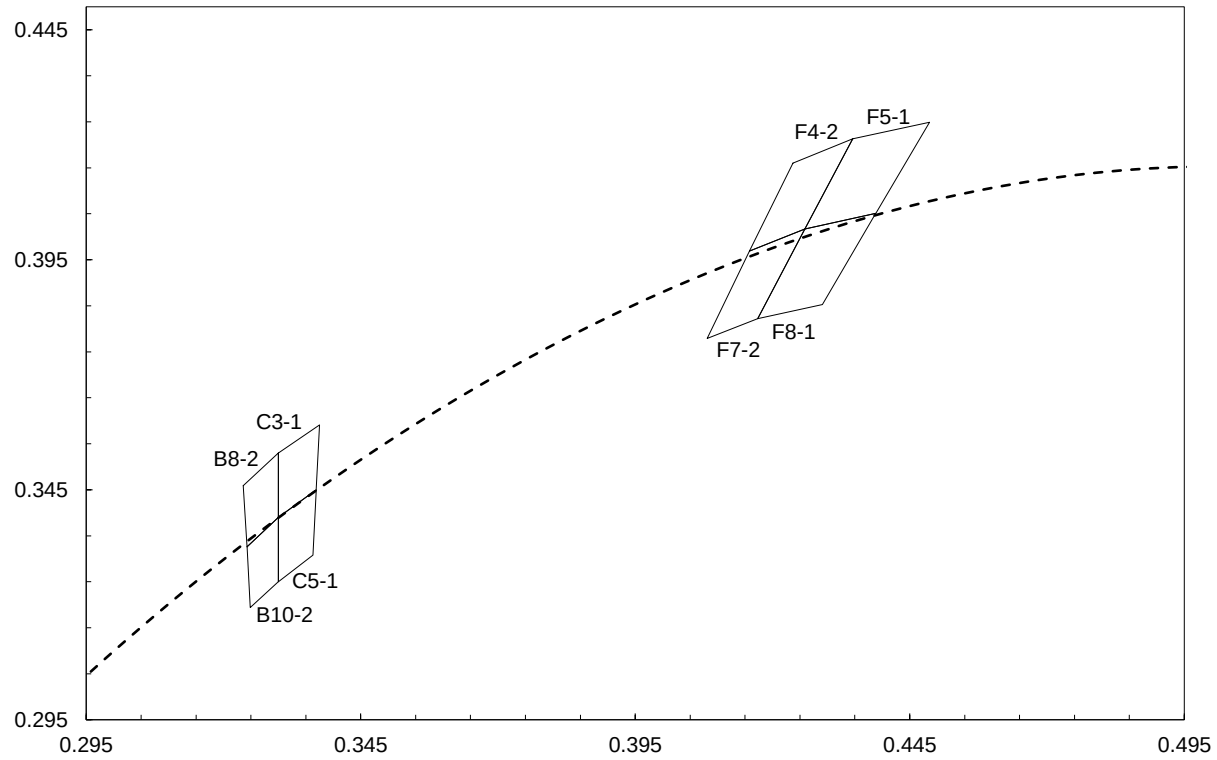
| ABSOLUTE MAXIMUM RATING ($T_A$ = 25 °C) | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **LIMIT** | **UNIT** |
| Power Consumption | $P_D$ | 175 | W |
| DC Forward Current (pulsed)* | $I_{Fp}$ | 10000** | mA |
| DC Forward Current | $I_F$ | 5000 | mA |
| Reverse Voltage | $V_R$ | 50 | V |
| Junction Temperature | $T_j$ | 125 | °C |
| Case Temperature*** | $T_c$ | 65 | °C |
| Operating Temperature | $T_{opr}$ | -30 ~ +80 | °C |
| Storage Temperature | $T_{stg}$ | -30 ~ +80 | °C |
| Soldering Temperature | $T_{sol}$ | 260 ± 5 | °C |
| Reflow Cycles Allowed | -- | 2 | -- |

* Pulse width ≤ 0.1ms, Duty ≤ 1/10.
** Theoretical data.
*** See page 4, 5 for case temperature point definition.

| CHROMATICITY BINS & COORDINATES | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| CCT | BIN | CIE 1931 COORDINATES | | | | | | | |
| | | X0 | Y0 | X1 | Y1 | X2 | Y2 | X3 | Y3 |
| 5600K | B8-2 | 0.3236 | 0.3459 | 0.3243 | 0.3326 | 0.3300 | 0.3390 | 0.3300 | 0.3530 |
| | B10-2 | 0.3243 | 0.3326 | 0.3249 | 0.3194 | 0.3300 | 0.3250 | 0.3300 | 0.3390 |
| | C3-1 | 0.3300 | 0.3530 | 0.3300 | 0.3390 | 0.3369 | 0.3450 | 0.3375 | 0.3591 |
| | C5-1 | 0.3300 | 0.3390 | 0.3300 | 0.3250 | 0.3363 | 0.3308 | 0.3369 | 0.3450 |
| 3200K | F4-2 | 0.4237 | 0.4160 | 0.4158 | 0.3969 | 0.4259 | 0.4017 | 0.4346 | 0.4213 |
| | F7-2 | 0.4158 | 0.3969 | 0.4081 | 0.3779 | 0.4173 | 0.3822 | 0.4259 | 0.4017 |
| | F5-1 | 0.4346 | 0.4213 | 0.4259 | 0.4017 | 0.4388 | 0.4051 | 0.4486 | 0.4249 |
| | F8-1 | 0.4259 | 0.4017 | 0.4173 | 0.3822 | 0.4291 | 0.3853 | 0.4388 | 0.4051 |

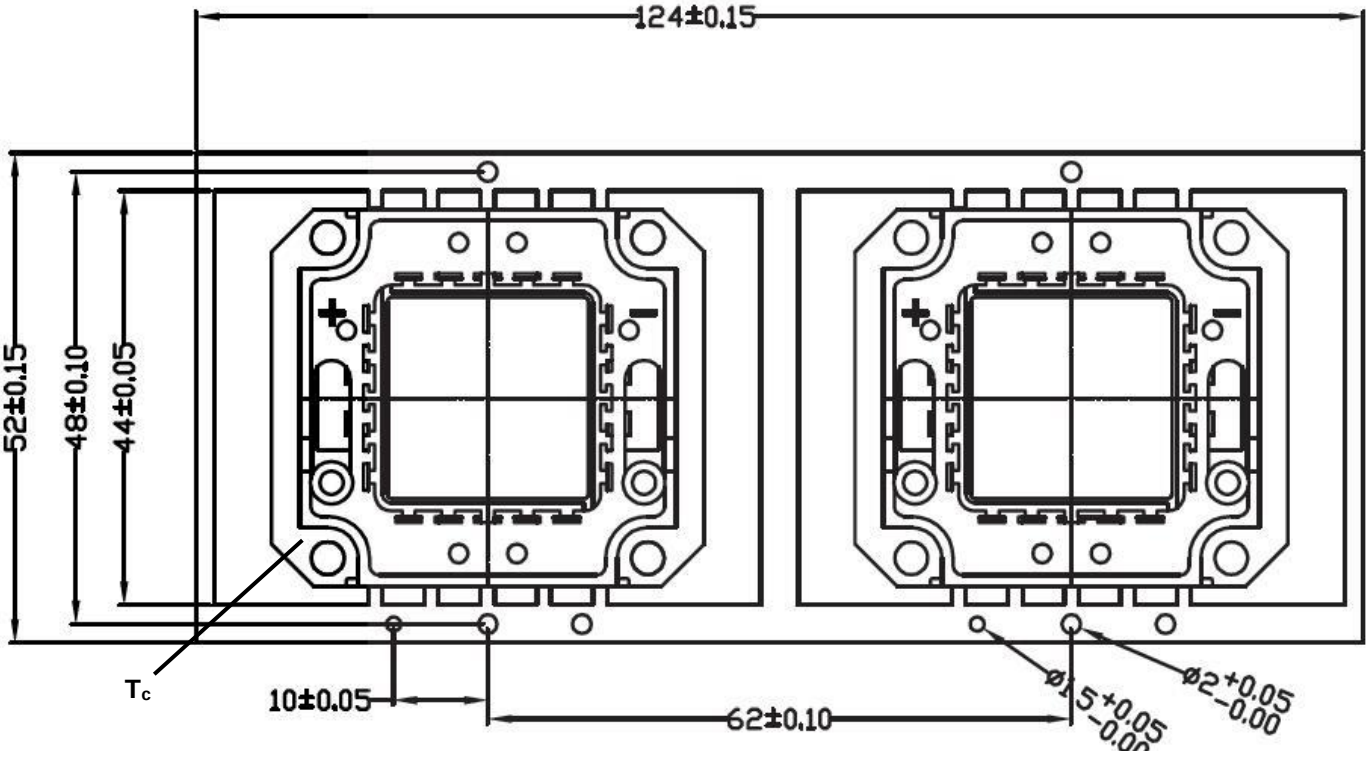
## CHROMATICITY BINS & COORDINATES

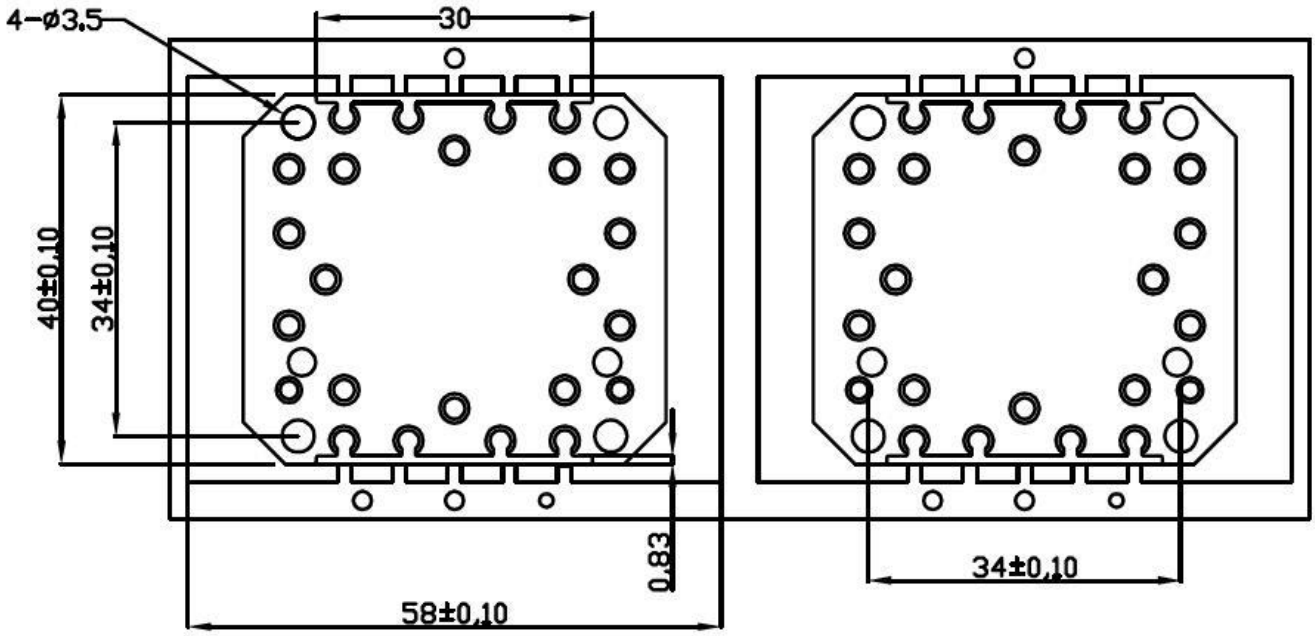
### CIE 1931 COORDINATES

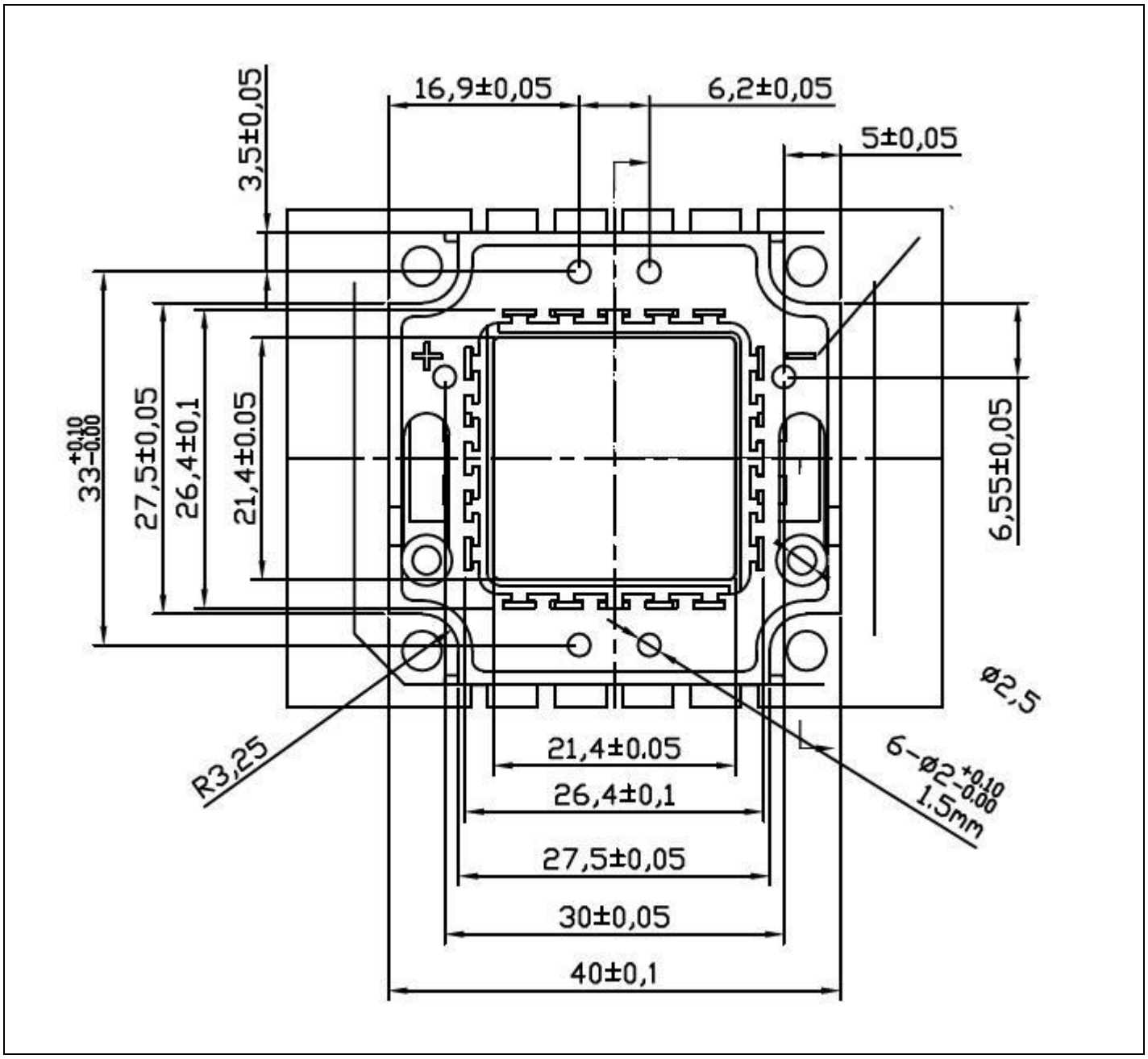


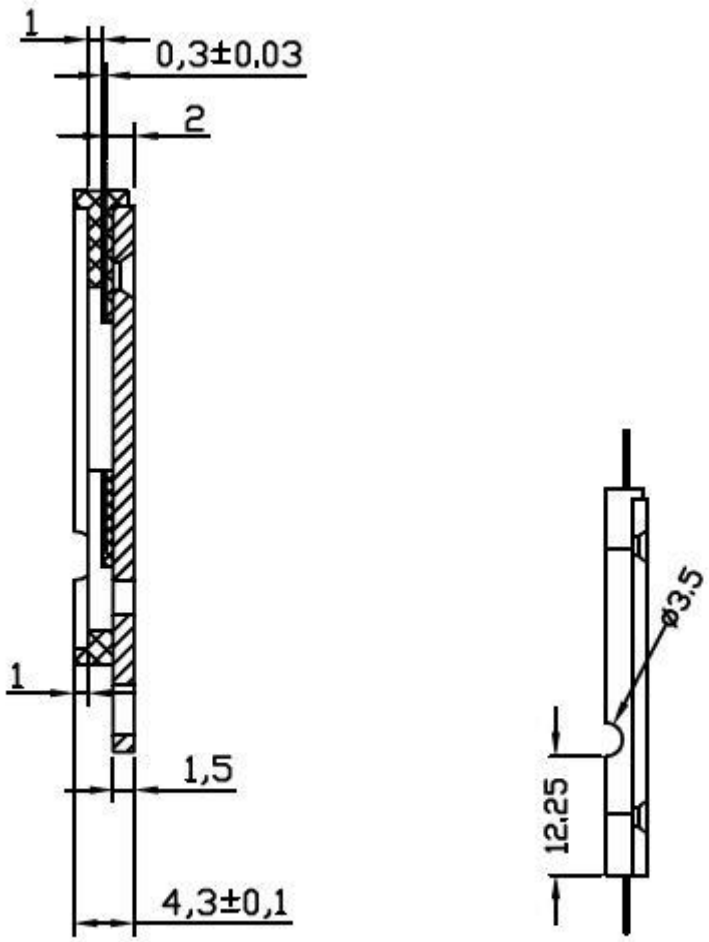
## PACKAGE LAYOUT – SQUARE EMISSION MODEL

All dimensions in mm, tolerance unless mentioned is ±0.1mm.





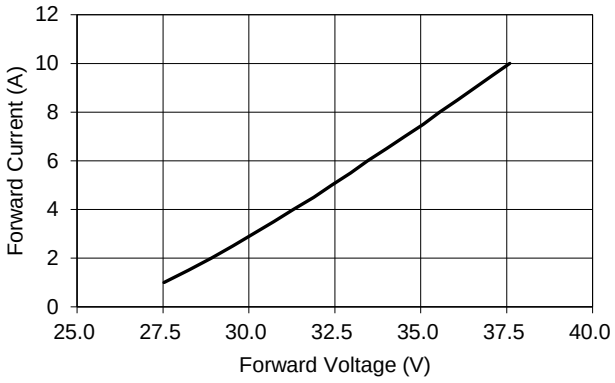



| PACKAGE MATERIALS | |
|---|---|
| **ITEM** | **DESCRIPTION** |
| DIE MATERIAL | InGaN |
| LEAD FRAME MATERIAL | COPPER ALLOY |
| ENCAPSULANT RESIN MATERIAL | SILICONE + PHOSPHOR |
| ELECTRODES MATERIAL | COPPER + SILVER ALLOY |

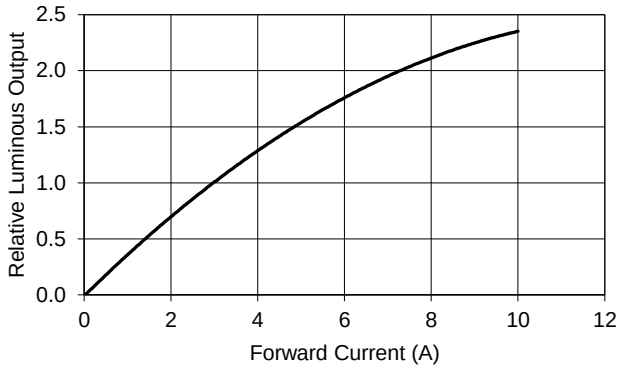
## CHARACTERISTIC CURVES

ALL CHARACTERISTIC CURVES ARE FOR REFERENCE ONLY AND NOT GUARANTEED

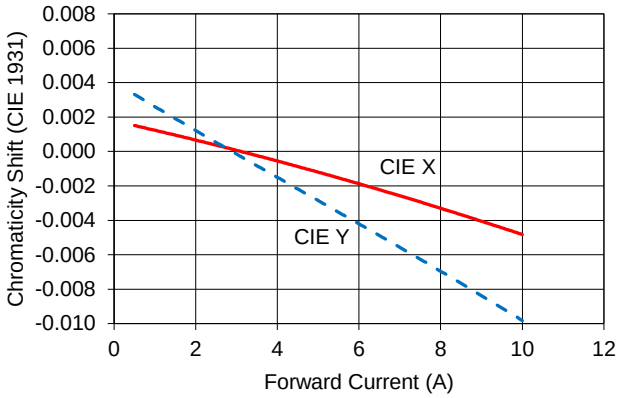
FORWARD CURRENT
VS FORWARD VOLTAGE ($T_A$ = 25°C)



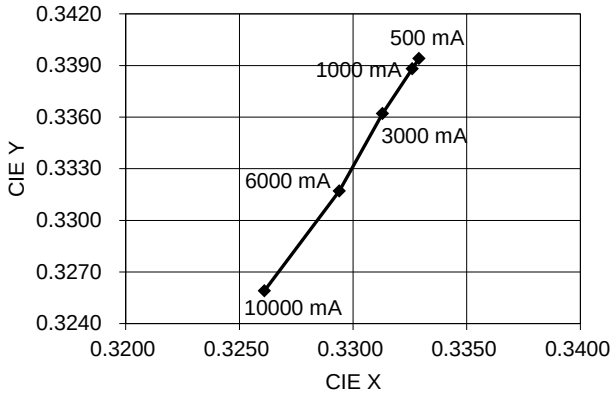

FORWARD CURRENT
VS RELATIVE LUMINOUS OUTPUT ($T_A$ = 25°C)



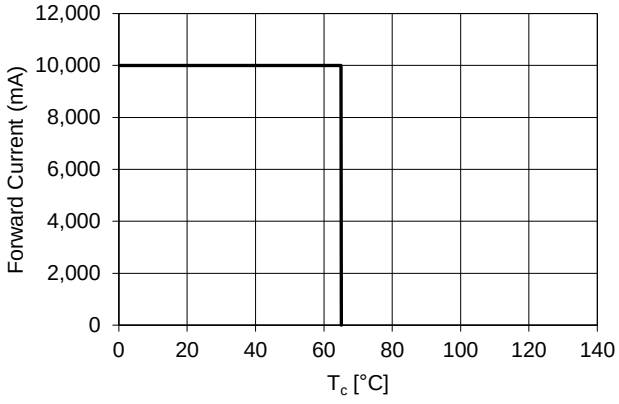

FORWARD CURRENT VS CHROMATICITY SHIFT
(5600K, $T_A$ = 25°C)




FORWARD CURRENT VS CHROMATICITY SHIFT
(5600K, $T_A$ = 25°C)

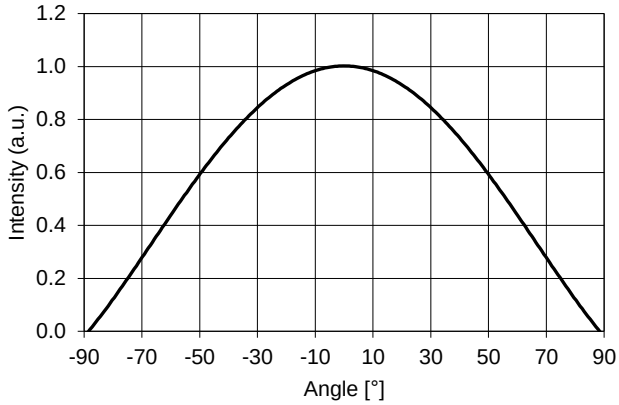



FORWARD CURRENT DERATING BASED ON CASE TEMPERATURE



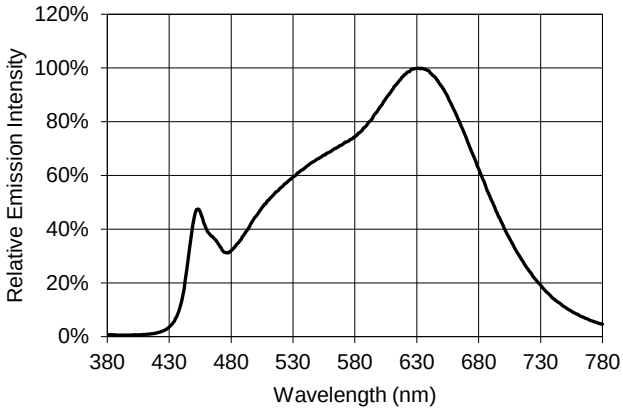

NOTE: DE-RATING CURVES ARE MEANT FOR RECOMMENDATION ONLY AND ARE NOT MEANT TO PROVIDE GUARANTEES OF PRODUCT STABILITY AND LONGEVITY

TYPICAL SPATIAL DISTRIBUTION
($T_A$ = 25°C, $I_F$ = 3000 mA)

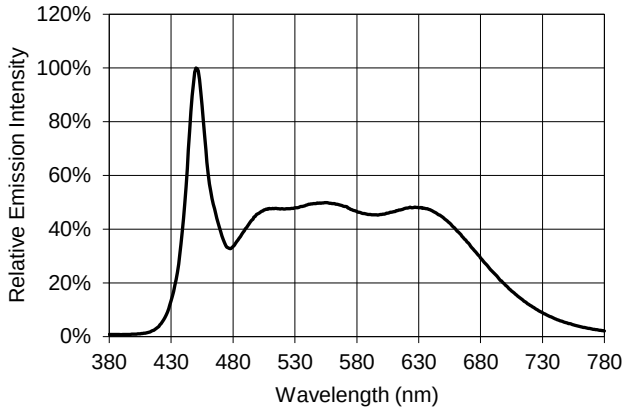


## TYPICAL SPECTRAL DISTRIBUTION GRAPHS

3200K




5600K




## LOT NUMBERING SCHEME

Yuji LED uses two formats for lot numbering purposes:

1) YYYY-MM-XXX-Z

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)
Z: internal alphanumeric code

2) YYYYMMXXX

YYYY: 4-digit manufacturing year
MM: 2-digit manufacturing month
XXX: 3-digit inventory number (000 – 999)