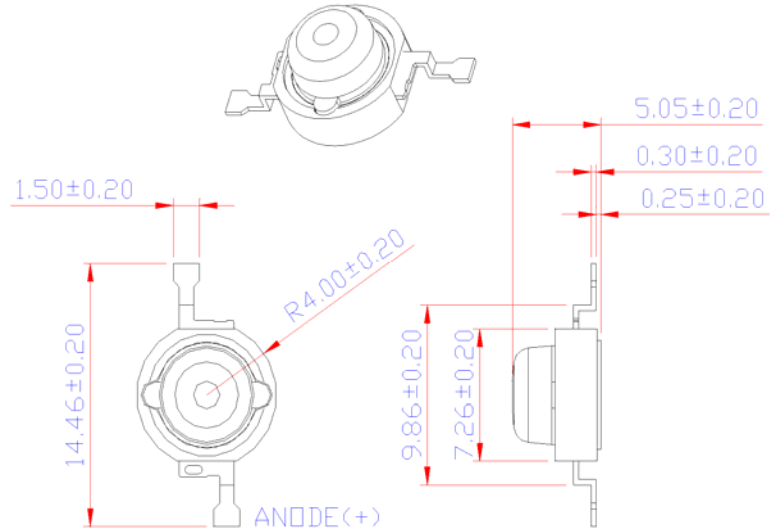


## BriLux 1W Emitter

### BTP-87XXCG-XX-X/X



#### Package Dimension



Tolerance: ± see spec

Unit: mm

#### Features

- Highest Lumen Per Watt
- Long Operational Life
- White or Black Housing
- Superior ESD Protection
- Instant Light (less than 100ns)
- Compatible to Luxeon's "Batwing"

#### Applications

- Accent Light/Down Light/Spot Light
- Automotive Exterior/Interior Light
- Large Area LCD Backlights
- Reading Light
- Marine/Miner's Lighting
- Portable Flashlight/ General Lighting

#### Optical Characteristics at $T_J=25^\circ\text{C}$ , $I_F=350\text{mA}$

| PART NUMBER       | Emitting Color | LED Chip Material | Lens Color  | Wavelength (nm) |       | Drive Voltage @ 350mA | Luminous Flux (lm) @350mA | VIEW ANGLE $2\theta_{1/2}$ (deg) |
|-------------------|----------------|-------------------|-------------|-----------------|-------|-----------------------|---------------------------|----------------------------------|
|                   |                |                   |             | CCT (K) Range   |       |                       |                           |                                  |
|                   |                |                   |             | Min             | Max   | Typ.                  | Typ.                      |                                  |
| BTP-87NRCG-XX-X/X | Normal Red     | AllnGaP           | Water Clear | 620             | 630   | 2.20V                 | 27 lm                     | 90                               |
| BTP-87AMCG-XX-X/X | Amber          | AllnGaP           | Water Clear | 610             | 620   | 2.20V                 | 30 lm                     | 90                               |
| BTP-87YECG-XX-X/X | Yellow         | AllnGaP           | Water Clear | 585             | 595   | 2.20V                 | 25 lm                     | 90                               |
| BTP-87BLCG-XX-X/X | Blue           | AllnGaN           | Water Clear | 460             | 475   | 3.50V                 | 7 lm                      | 90                               |
| BTP-87PGCG-XX-X/X | Green          | AllnGaN           | Water Clear | 515             | 535   | 3.20V                 | 25 lm                     | 90                               |
| BTP-87WWCG-XX-X/X | Warm White     | AllnGaN           | Water Clear | 2800K           | 3800K | 3.50V                 | 20 lm                     | 90                               |
| BTP-87WHCG-XX-X/X | White          | AllnGaN           | Water Clear | 5000K           | 8000K | 3.50V                 | 25 lm                     | 90                               |

#### Notes:

- 1) Picture for illustration purpose only. Please refer to outline dimension for actual package size.
- 2) Flux is measured with the accuracy of  $\pm 15\%$ . Please refer to Flux Selection Guide
- 3) CCT is measured with the accuracy of  $\pm 400\text{K}$ . Please refer to CCT Selection Guide
- 4)  $V_F$  is measured with the accuracy of  $\pm 0.15\text{V}$ . Please refer to  $V_F$  Selection Guide

## BriLux 1W Batwing Emitter

### BTP-87XXCG-XX-X/X

Absolute Maximum Ratings at  $T_J=25^\circ\text{C}$

| Parameter   | Red/Amber/Yellow        | White/Blue/Green        |
|---|-------------------------|-------------------------|
| Power Dissipation (W)                                 | 0.77                    | 1.22                    |
| DC Forward Current (mA) <sup>[1]</sup>                | 350                     | 350                     |
| Peak Pulsed Forward Current (mA) <sup>[4]</sup>       | 1000                    | 1000                    |
| Average Forward Current (mA)                          | 350                     | 350                     |
| Reverse Voltage (V)                                   | 5                       | 5                       |
| Reverse Current (uA)                                  | 50                      | 50                      |
| ESD Sensitivity (V) <sup>[2]</sup>                    | 2,000                   | 2,000                   |
| LED Junction Temperature at 350mA (°C) <sup>[3]</sup> | 125                     | 125                     |
| Thermal Resistance Junction to Board (°C/W)           | 15                      | 15                      |
| Temperature Coefficient of $V_F$ (mV/°C)              | -2                      | -2                      |
| Storage Temperature (°C)                              | -40 to +120             | -40 to +120             |
| Operating Temperature (°C)                            | -30 to +110             | -30 to +110             |
| Lead Soldering Temperature (°C) <sup>[4]</sup>        | 240°C for 5 seconds max | 240°C for 5 seconds max |

#### Application Notes:

1. Proper forward current must be observed to maintain the junction temperature below maximum rating
2. Although all products listed are class one ESD protection (+/- 2KV by HBM mode), care must be fully taken when handling products
3. Specification is subjected to change for improvements without notice.
4. Test conditions:  $t_p \leq 10\mu\text{s}$ , duty cycle = 0.005
5. CAUTION: When lighting up, the emitter will become very hot if it is not attached to a heat sink. Please provide proper heat management to prevent damage to the emitter.



#### WARNING

This range of LEDs is produced with die having a high radiant flux. Care must be taken when viewing the product at close range as the light may be intense enough to cause damage to the human eye.

**Note:** Industry standard procedures regarding static must be observed when handling this product.

# BriLux 1W Batwing Emitter

## BTP-87XXCG-XX-X/X

CCT, Flux and V<sub>F</sub> Selection Guide (@ I<sub>F</sub>=350mA)

### BTP-87XXCG-XX-X/W/B

White Housing (Optional: B=Black)

#### Wavelength Ranks Selection

| Color  | Bin | λ <sub>D</sub> (nm) |     |
|--------|-----|---------------------|-----|
|        |     | Min                 | Max |
| Blue   | B5  | 460                 | 465 |
|        | B6  | 465                 | 470 |
|        | B7  | 470                 | 475 |
|        | XX  | 460 – 475           |     |
| Green  | G6  | 515                 | 520 |
|        | G7  | 520                 | 525 |
|        | G8  | 525                 | 530 |
|        | G9  | 530                 | 535 |
|        | XX  | 515 – 535           |     |
| Red    | XX  | 620 – 630           |     |
| Amber  | XX  | 610 – 620           |     |
| Yellow | XX  | 585 – 595           |     |

#### Flux Ranks Selection

| Color                                    | Bin | Flux (lumens)      |
|--|-----|--------------------|
| Blue                                     | H   | 4.5~6              |
|  | J   | 6~8                |
|  | K   | 8~10               |
|  | X   | Default Full Range |
| Red<br>Amber<br>Yellow<br>Green<br>White | M   | 14~18              |
|  | N   | 18~23              |
|  | P   | 23~30              |
|  | Q   | 30~39              |
|  | R   | 39~50              |
|  | X   | Default Full Range |

#### CCT Ranks Selection

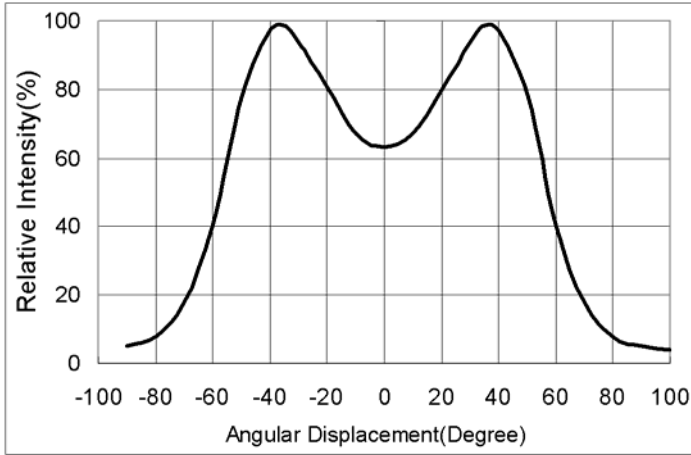
| Color Temp | Bin | CCT(K)        |      |
|------------|-----|---------------|------|
|            |     | Min           | Max  |
| Warm White | 00  | 2800          | 3300 |
|            | 01  | 3300          | 3800 |
|            | XX  | 2800K – 3800K |      |
| White      | 02  | 5000          | 6000 |
|            | 03  | 6000          | 7000 |
|            | 04  | 7000          | 8000 |
|            | XX  | 5000K – 8000K |      |

#### V<sub>F</sub> Ranks Selection

| Color                  | Bin       | V <sub>F</sub> (V) |     |
|------------------------|-----------|--------------------|-----|
|                        |           | Min                | Max |
| Red<br>Amber<br>Yellow | V04       | 2.0                | 2.2 |
|                        | V05       | 2.2                | 2.4 |
|                        | V06       | 2.4                | 2.6 |
|                        | V07       | 2.6                | 2.8 |
|                        | VXX(Full) | 2.0~2.8            |     |
| White<br>Blue<br>Green | V08       | 2.8                | 3.0 |
|                        | V09       | 3.0                | 3.2 |
|                        | V10       | 3.2                | 3.4 |
|                        | V11       | 3.4                | 3.6 |
|                        | V12       | 3.6                | 3.8 |
|                        | VXX(Full) | 2.8~3.8            |     |

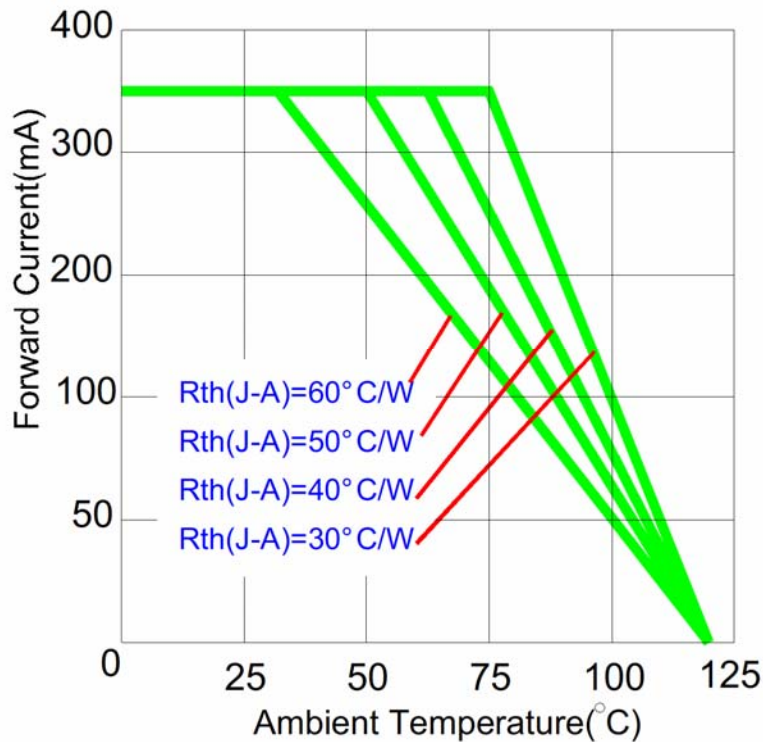
(Please specify on order, otherwise, default full range of V<sub>F</sub>)

**Typical Radiation Pattern for Batwing Emitter**



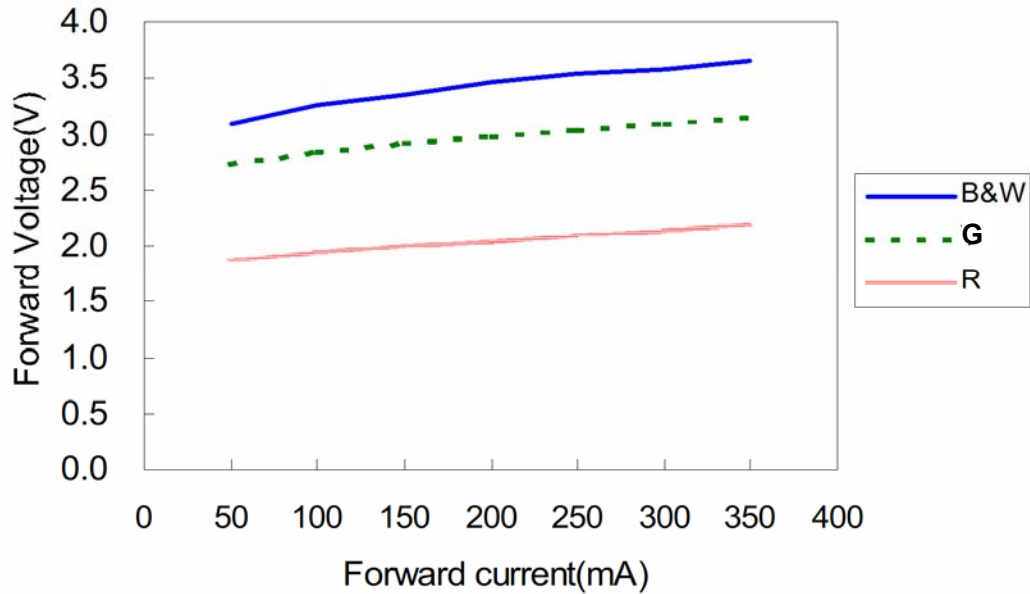
**Fig. 1 Typical Radiation Pattern**

**Operating Current & Ambient Temperature**



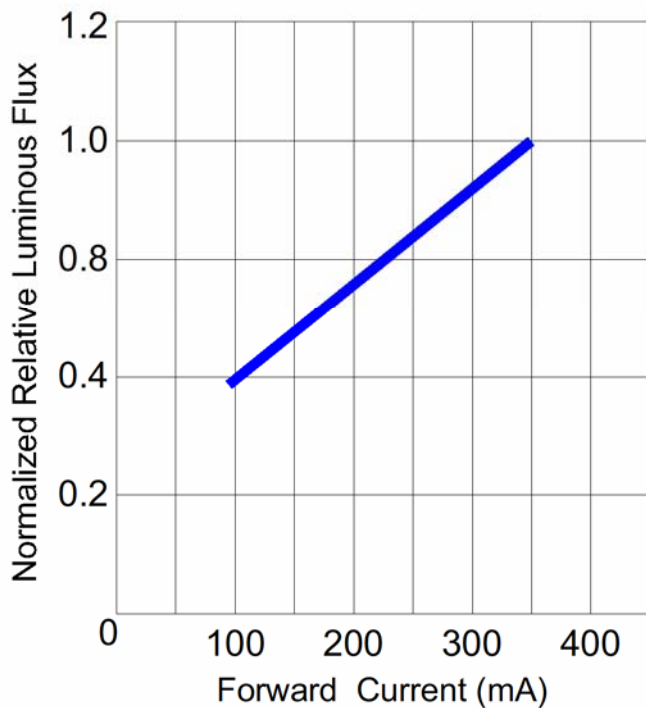
**Fig. 2 Forward Current vs Ambient Temperature**

Operating Current & Forward Voltage



**Fig. 3. Forward Current vs Forward Voltage**

Current & Luminous Flux



**Fig. 4 Forward Current vs Luminous Flux**



**DB LECTRO**  
COMPOSANTS ÉLECTRONIQUES  
ELECTRONIC COMPONENTS



## **BriLux 1W Batwing Emitter**

### **BTP-87XXCG-XX-X/X**

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