

## Product Datasheet



The global certified BSR-080-V series is a dual stage high efficiency smart LED driver. The super slim form factor eases light box designs. 2% minimum level and high frequency PWM output provides strobe flicker free user experience. 100khour long life and 7-year warranty provide high confidence to luminaire designers and users. All around protections including digital OTP, SCP and OCP with auto-recovery secure 24hour non-stop operation for luminaires.

☒ Strip   ☒ Light box   ☒ Signage



|   |                                       |    |
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## 80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver

## ■ Features

- Supply Voltage: 90-305Vac or 127-250Vdc
- 100,000Hour Life @ Tc=75C
- PWM Output Frequency >1kHz
- 7 Year Warranty
- 2% 0-10V/PWM/Time/DALI2.0 Dimmable (0.1% Optional)
- Low Inrush Current
- Class II (Optional)
- UL Class P, Class 2
- ENEC/CB/CCC SELV Output
- Safety according to UL8750, EN 61347-1, 61347-2-13, 62384

## ■ Model List

| Model Number     | Input Voltage Range | Output Power | Output Voltage | Output Current Min | Output Current Max | Certification (TBD) |
|------------------|---------------------|--------------|----------------|--------------------|--------------------|---------------------|
| BSR-080-V024-XYZ | 90 ~ 305 Vac        | 80 W         | 24Vdc          | 0                  | 2.3A               | UL/FCC/CB/ENEC/CCC  |
| BSR-080-V048-XYZ | 90 ~ 305 Vac        | 80 W         | 48Vdc          | 0                  | 1.2A               | UL/FCC/CB/ENEC/CCC  |

| XY= | Dimming Method | Programmable | 12Vaux | Dim-off Power |
|-----|----------------|--------------|--------|---------------|
| NN  | -              | -            | -      | -             |
| DN  | 0-10V          | -            | -      | <1.5W         |
| AN  | DALI2.0        | -            | -      | <1.5W         |

Z: C, Class I input; E, Class II Input

## 80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver

## ■ Technical Data

|                        |                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Input Voltage          | 90~305Vac or 127V-250Vdc                                                                                                  |
| Input Frequency        | 47~63Hz                                                                                                                   |
| Power Factor           | >0.9@60-100%load, refer to PF vs. Load curve                                                                              |
| THD                    | <15%@60-100%load, refer to THD vs. Load curve                                                                             |
| Input Current          | 0.75 Amax@120Vac & Full-Load,<br>0.45Amax@220Vac & Full-Load                                                              |
| Inrush Current         | A peak, 0.2ms duration, <0.025A2s@230Vac, Cold Start<br>4A peak, 0.3ms duration, <0.05A2s@277Vac, Cold Start              |
| Leakage Current        | 1mA max @277Vac 60Hz, UL8750, 0.75mAmax @220Vac 50Hz, IEC61347-1                                                          |
| Input Under Voltage    | Shut down and auto-recovery                                                                                               |
| Surge Protection       | Line to line 2kV, line to ground 4kV, IEC 61000-4-5                                                                       |
| Voltage Accuracy       | ±3%Vo                                                                                                                     |
| Ripple Current         | Ip-p:5%Vo max                                                                                                             |
| Setup Time             | 1.2s max                                                                                                                  |
| Overshoot              | 10% Vo, max.                                                                                                              |
| Output Over Voltage    | 120% Io, typ.                                                                                                             |
| Short Circuit          | Auto recovery. The output recovers when short is removed.                                                                 |
| Over Temperature       | Lower the output current when $T_c \geq 105 \pm 10^\circ\text{C}$ ; Auto Recovery When $T_c \leq 70 \pm 10^\circ\text{C}$ |
| Auxiliary Power (Vaux) | -                                                                                                                         |
| Operating Temperature  | Case Temperature $T_c = -30^\circ\text{C} \sim +90^\circ\text{C}$ ; 10%RH~100%RH                                          |
| Storage Temperature    | $-30^\circ\text{C} \sim +85^\circ\text{C}$ ; 5%RH~100%RH                                                                  |
| MTBF                   | $\geq 350,000$ hours, $75^\circ\text{C}$ case temperature (MIL-HDBK-217F)                                                 |
| Lifetime               | $\geq 100,000$ hours, $75^\circ\text{C}$ case temperature, refer to life vs. $T_c$ curve                                  |
| Case Temperature       | $90^\circ\text{C}$ max, marked in the $T_c$ point of label                                                                |
| Dimensions             | 14.88x1.18x0.82 by inch                                                                                                   |
|                        | 378 x 30 x 21 by mm                                                                                                       |
| Net Weight             | 330g                                                                                                                      |
| Packing                | See Package Information Section in the datasheet                                                                          |

Notes: Unless specified, all the test results are measured in  $25^\circ\text{C}$  room temperature.

\* marked items are optional and contact with sales people to get the functions.

## 80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver

## ■ Safety/EMC Compliance

| Safety Standard | Description                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| UL8750          | Light emitting diode(LED) equipment for use in lighting products                                                      |
| UL1012/1310     | Power units other than class 2 / Class 2 power units                                                                  |
| IEC 61347-1     | Lamp control gear Part 1: general and safety requirements                                                             |
| IEC 61347-2-13  | Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied electronic control gear for LED modules |
| EMI Standards   | Description                                                                                                           |
| IEC 55015       | Conducted emission test & radiated emission test                                                                      |
| IEC 61000-3-2   | Harmonic current emissions; Class C                                                                                   |
| IEC 61000-3-3   | Voltage fluctuations & flicker                                                                                        |
| FCC Part 15     | ANSI C63.4:2009 Class B                                                                                               |
| EMS Standards   | Description                                                                                                           |
| IEC 61000-4-2   | Electrostatic discharge (ESD): 8 kV air discharge, 4 kV contact discharge                                             |
| IEC 61000-4-3   | Radio frequency electromagnetic field susceptibility test (RS)                                                        |
| IEC 61000-4-4   | Electrical fast transient (EFT)                                                                                       |
| IEC 61000-4-5   | Surge immunity test                                                                                                   |
| IEC 61000-4-6   | Conducted radio frequency disturbances test (CS)                                                                      |
| IEC 61000-4-8   | Power frequency magnetic field test                                                                                   |
| IEC 61000-4-11  | Voltage dips                                                                                                          |
| IEC 61547       | Electromagnetic immunity requirements applies to lighting equipment                                                   |

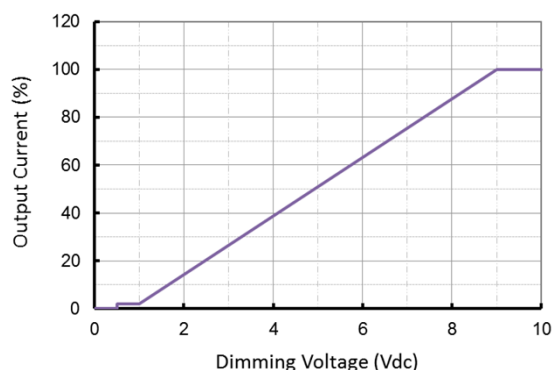
## ■ Dimming

| Parameter                                          | Min.                       | Typ.       | Max.                |
|----------------------------------------------------|----------------------------|------------|---------------------|
| Vdim Sourcing Current                              | 100uA                      | 150uA      | 200uA               |
| Vdim Allowed Input Voltage                         | -20 V                      |            | 20 V                |
| 0-10V Dimming Range                                | 10% (Vdim=1V)              | Linear     | 100% (Vdim=9~10V)   |
| PWM Dimming Range                                  | 10% (Duty=10%)             | Linear     | 100% (Duty=90-100%) |
| Dim off threshold                                  | 0.4V or 4%                 | 0.5V or 5% | 0.6V or 6%          |
| Dim on threshold                                   | 0.6V or 6%                 | 0.7V or 7% | 0.8V or 8%          |
| PWM High                                           | 3.8V                       |            | 10V                 |
| PWM Low                                            | 0V                         |            | 0.6V                |
| PWM Frequency                                      | 300Hz                      |            | 2kHz                |
| External PWM Controller Current Sinking Capability | 300uA                      |            |                     |
| DALI Interface Standard                            | IEC62386, part 101,102,207 |            |                     |
| DA1,DA2 High Level                                 | 9.5                        | 16         | 22.5                |
| DA1,DA2 Low Level                                  | -6.5                       | 0          | 6.5                 |
| DA1,DA2 Current                                    | 0                          |            | 2mA                 |

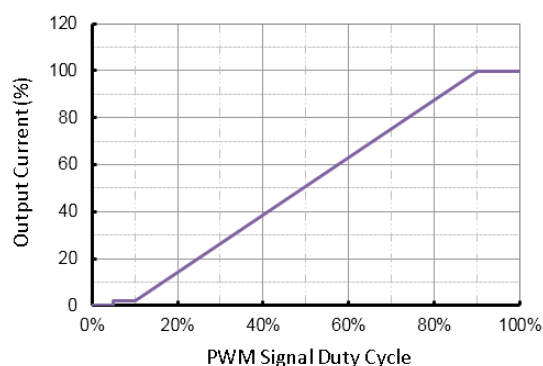
### 80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver

#### Dimming Curve

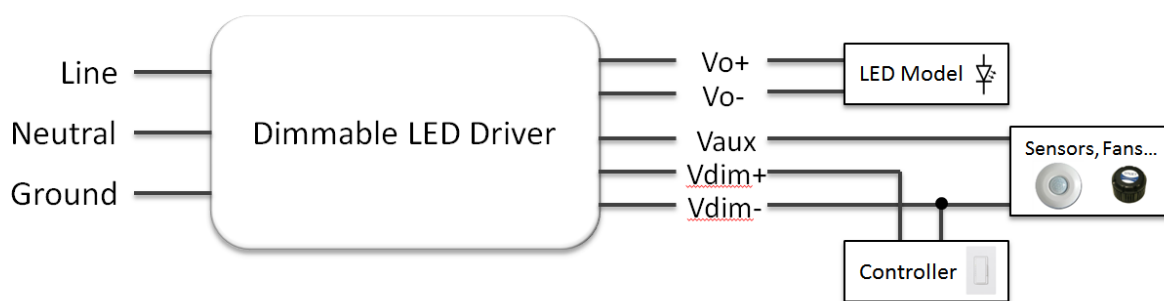
0-10V Dimming Curve



PWM Dimming Curve



#### Dimming Wiring



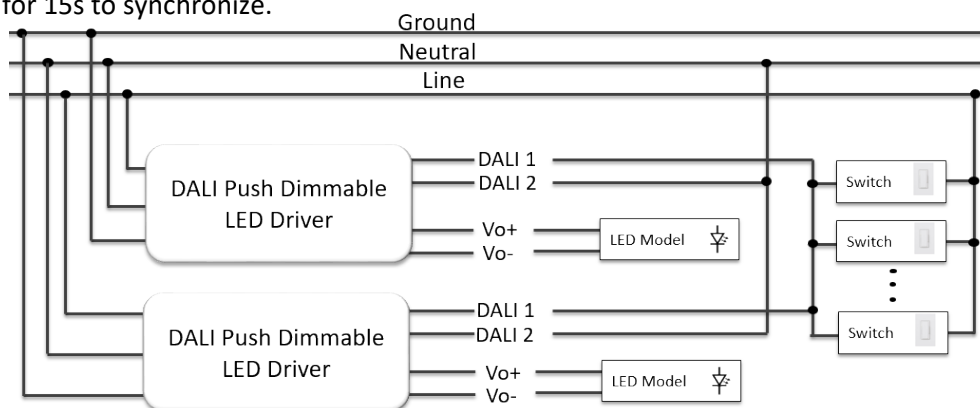
#### Push (Switch) Dim

A short press (50-600 ms) switches the device on or off

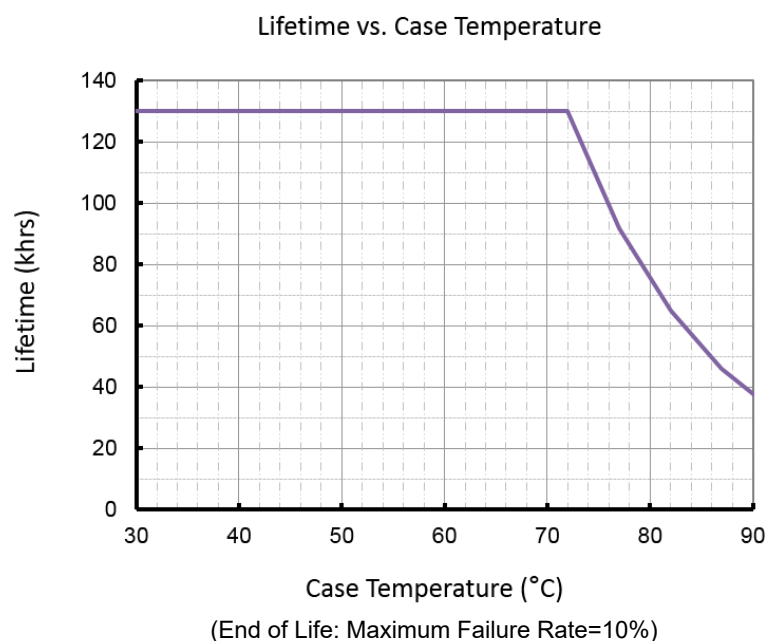
A long press (> 600 ms) fades the connected operating device alternately up and down (between 2 and 100%).

Up and down slew rate is 20%/s.

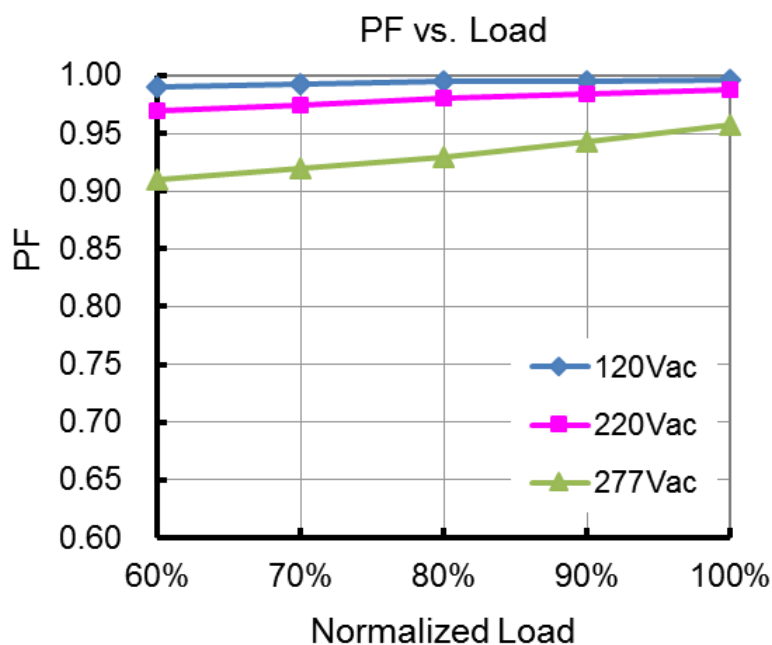
Long push for 15s to synchronize.



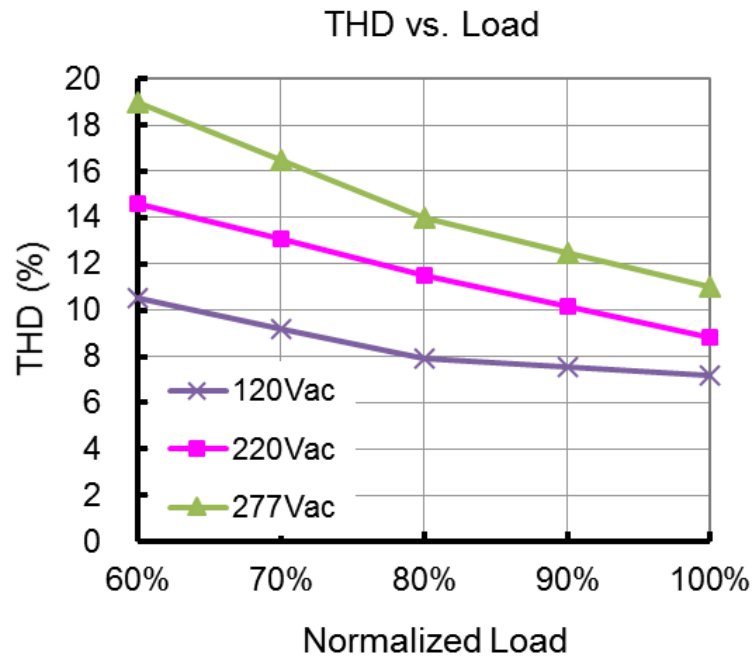
#### ■ Lifetime vs. Case Temperature



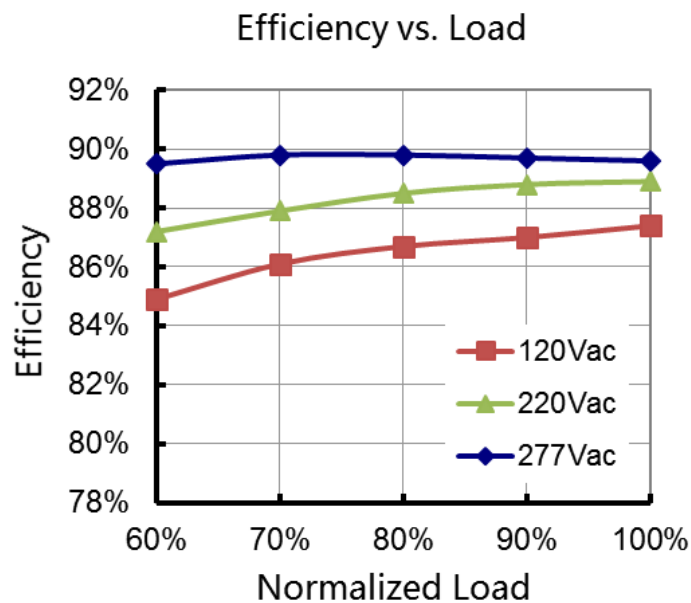
#### ■ Power Factor vs. Load



## ■ THD vs. Load



## ■ Efficiency vs. Load (24V Model)



**80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver**

■ **Dielectric Strength**

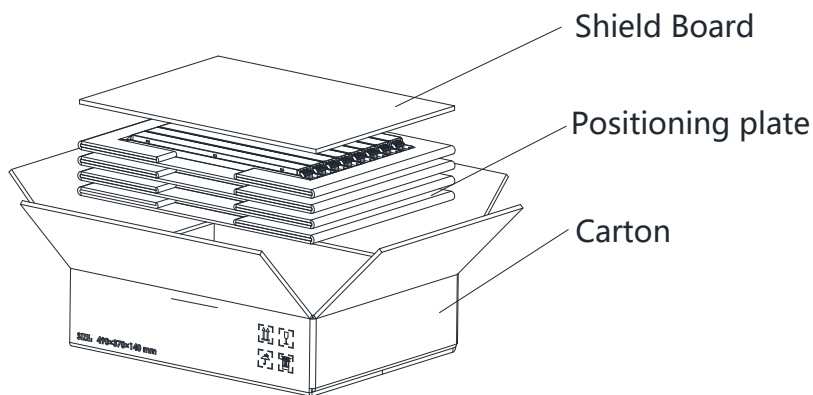
| Unit: Vac | Input | Output | Dimming | Case |
|-----------|-------|--------|---------|------|
| Input     | -     | 3750   | 3750    | 1554 |
| Output    | 3750  | -      | -       | 1554 |
| Dimming   | 3750  | -      | -       | 1554 |
| Case      | 1554  | 1554   | 1554    | -    |

■ **Tc Point**



■ **Packaging Information**

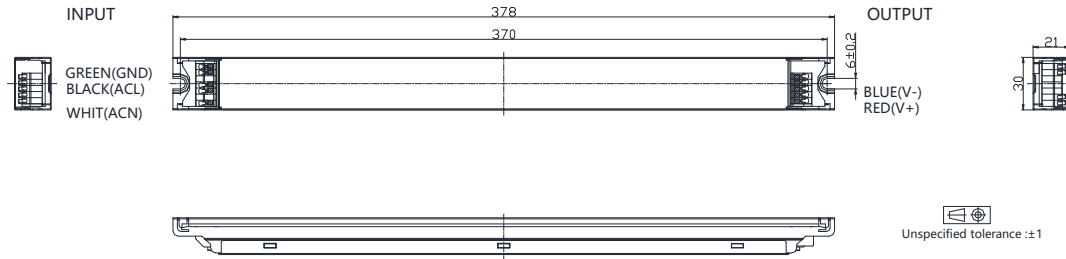
| Typical Carton Dimension(L×W×H) | 490×370×140 mm |
|---------------------------------|----------------|
| Positioning plate               | 4pcs/carton    |
| Shield Board                    | 1pcs/carton    |
| LED Drivers                     | 32pcs/carton   |



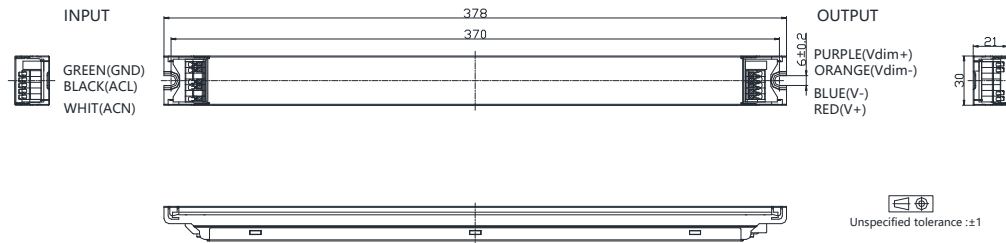
### 80W, 100-277Vac Input, Dimmable Constant Voltage LED Driver

#### Mechanical Design

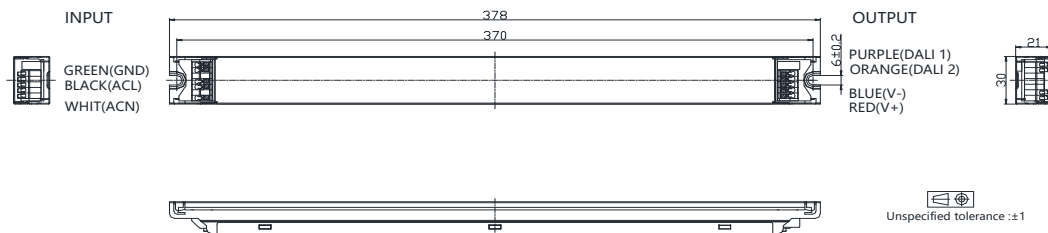
##### BSR-080-Vxxx-NNC/E



##### BSR-080-Vxxx-DNC/E



##### BSR-080-Vxxx-ANC/E



**■ Revision History**

| Revision | Date       | Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B        | 2022-03-22 | <ol style="list-style-type: none"><li>1. Index page added</li><li>2. Reduced dimming interface sourcing current</li><li>3. DALI 2.0 compatibility added</li><li>4. Programming instruction added</li><li>5. Inrush current data added</li><li>6. Tc point position indication added</li><li>7. Dielectric strength level added</li><li>8. Packaging information added</li><li>9. Mechanical design change with dimming cable color</li><li>10. Revision history added</li></ol> |
| C        | 2022-08-22 | <ol style="list-style-type: none"><li>1. Mechanical design updated</li></ol>                                                                                                                                                                                                                                                                                                                                                                                                    |