Constant voltage linear dimming color temperature driver
DWV Series suffix D(DALI-2+pushDIM+pushCCT)

Features

- Support DALI-2+pushDIM+pushCCT control
- 2 channels of constant voltage output,at the tinting temperature, the output channel power is complementary, and the total output power remains unchanged
- Soft dimming and flicker-free at any brightness
- Dimming range 1~100%,support multiple lights dimming
- Standby power input<0.5W, meets the requirements of ErP certification
- High PF, high efficiency, low THD
- SELV and Class I design, suitable for use inside of the light
- Passed CE, ENEC, UKCA, RCM, DALI-2 and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5-year guarantee

Interfaces

- DALI-2(DALI-2 DT8)
- PUSH(pushDIM,corridorDIM)
- PUSH(pushCCT)

Functions

- PUSH dimming (pushDIM) and PUSH color temperature (pushCCT) with memory
- Support self-contained emergency application
- Protective features (short-circuit, overload,no-load protection)

Suitable for lights

- Suitable for CV strip lights, CV linear lights, floor lights, three-proof lights, etc

Typical applications

- LED indoor lighting
- LED office lighting
- LED commercial lighting

Model coding rules of DWV series

BK - DWVXXX - XXV0 D

- D: Function mode(D: DALI-2+pushDIM+pushCCT)
- XXV0: Output current
- DWVXXX: Product series
- BK: BOKE

功能清单

Model	Suffix	Wired dimming		
		DALI-2	pushDIM	pushCCT
BK-DWV100 BK-DWV150 BK-DWV200	D	√	√	√

型号清单

Model	Input voltage	Output power	Output voltage	Output current	Dimension	Certification
BK-DWV100-24V0D	200-240VAC	100W MAX.	24VDC	4.17A	L355*W36*H23mm	CE,ENEC,UKCA,RCM,DALI-2
BK-DWV150-24V0D	200-240VAC	150W MAX.	24VDC	6.25A	L355*W36*H23mm	CE,ENEC,UKCA,RCM,DALI-2
BK-DWV200-24V0D	200-240VAC	199.2W MAX.	24VDC	8.3A	L322*W48.5*H30.5mm	CE,ENEC,UKCA,RCM,DALI-2

Technical data

Product model	BK-DWV100-24V0D	
Output parameters		
Regulation method	Constant voltage	
Rated output current	4.17A	
Rated output voltage	24V	
Rated output power	100W Max	
Output voltage adjustment	Fixed output	
Output current ripple LF	±2%	
Voltage accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	N/A	
Flicker-free	Pst LM = 0.073, SVM = 0.887 ,(The above parameters are obtained by testing with constant voltage light strip)	
Input parameters		
Rated input voltage range	200-240VAC	
Input voltage range	180-264VAC	
Input votage shock	<300 V AC	
Input current	<0.65A (AC 200V)	
Input frequency	50/60Hz	
Input PF/Input DF	PF>0.95 (230V AC & Full load),DF>0.98 (230V AC & Full load)	
Input THD	10% (230V AC & Full load)	
Efficiency(typical)	91% (230V AC & Full load)	
In-rush current	32.25A peak ,355us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.7s(AC start),<0.7s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):109.9W, No load(Pno): N/A, On stand-by(Psb) : <0.5W, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-O/P(LED):3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC,I/P-DALI: 1500VAC,O/P-DALI: 1500VAC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Leakage current	0.3mA (230V AC & Full load)	
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	Voltage range: DC9.5-22.5V, typical 16V, interface current consumption: 1.8mA	
pushDIM dimming port	Voltage range: AC180-264V 50/60Hz	
1-10V 3in1 dimming port	N/A	
Auxiliary power supply	N/A	
Dimming range	1-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Not supported	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-60°C	
Case temperature	Tc=90°C	
Operating humidity	5-85% RH, not condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, not condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Full load)	
Environmental protection	RoHS	
Certifications and standards		
Certified	CE, ENEC, UKCA, RCM, DALI-2	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	IEC 62386-101(DALI-2), IEC 62386-102(DALI-2), IEC 62386-207(DALI-2),IEC 62386-209(DALI-2)	
EL	N/A	
RF	N/A	

Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

Technical data

Product model	BK-DWV150-24V0D	
Output parameters		
Regulation method	Constant voltage	
Rated output current	6.25A	
Rated output voltage	24V	
Rated output power	150W Max	
Output voltage adjustment	Fixed output	
Output current ripple LF	±2%	
Voltage accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	N/A	
Flicker-free	Pst LM = 0.000, SVM = 0.609 ,(The above parameters are obtained by testing with constant voltage light strip)	
Input parameters		
Rated input voltage range	200-240VAC	
Input voltage range	180-264VAC	
Input votage shock	<300 V AC	
Input current	<1A (AC 200V)	
Input frequency	50/60Hz	
Input PF/Input DF	PF>0.95 (230V AC & Full load),DF>0.98 (230V AC & Full load)	
Input THD	10% (230V AC & Full load)	
Efficiency(typical)	92% (230V AC & Full load)	
In-rush current	36.13A peak ,410us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.7s(AC start),<0.7s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):166W, No load(Pno): N/A, On stand-by(Psb) : <0.5W, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-O/P(LED):3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC,I/P-DALI: 1500VAC,O/P-DALI: 1500VAC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Leakage current	0.3mA (230V AC & Full load)	
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	Voltage range: DC9.5-22.5V, typical 16V, interface current consumption: 1.8mA	
pushDIM dimming port	Voltage range: AC180-264V 50/60Hz	
1-10V 3in1 dimming port	N/A	
Auxiliary power supply	N/A	
Dimming range	1-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Not supported	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-60°C	
Case temperature	Tc=90°C	
Operating humidity	5-85% RH, not condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, not condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Full load)	
Environmental protection	RoHS	
Certifications and standards		
Certified	CE, ENEC, UKCA, RCM, DALI-2	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	IEC 62386-101(DALI-2), IEC 62386-102(DALI-2), IEC 62386-207(DALI-2),IEC 62386-209(DALI-2)	
EL	N/A	
RF	N/A	

Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

Technical data

Product model	BK-DWV200-24V0D	
Output parameters		
Regulation method	Constant voltage	
Rated output current	8.3A	
Rated output voltage	24V	
Rated output power	199.2W Max	
Output voltage adjustment	Fixed output	
Output current ripple LF	±2%	
Voltage accuracy	±5%	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	N/A	
Flicker-free	Pst LM = 0.000, SVM = 0.737 ,(The above parameters are obtained by testing with constant voltage light strip)	
Input parameters		
Rated input voltage range	200-240VAC	
Input voltage range	180-264VAC	
Input votage shock	<300 V AC	
Input current	<1.1A (AC 200V)	
Input frequency	50/60Hz	
Input PF/Input DF	PF>0.95 (230V AC & Full load),DF>0.98 (230V AC & Full load)	
Input THD	10% (230V AC & Full load)	
Efficiency(typical)	90.5% (230V AC & Full load)	
In-rush current	37A peak ,410us duration(50 % Ipeak), see the description below for details	
Start/Switchover/Turn off	<0.7s(AC start),<0.7s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)	
Switching cycles	> 50,000 switching cycles	
Power consumption	Full load(Pin):221W, No load(Pno): N/A, On stand-by(Psb) : <0.5W, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-O/P(LED):3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC,I/P-DALI: 1500VAC,O/P-DALI: 1500VAC	
Mains surge capability	L-N:2KV,L-FG/N-FG:2KV(Performance criterion:B)	
Leakage current	0.42mA (230V AC & Full load)	
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70% RH	
Control interface		
DALI dimming port	Voltage range: DC9.5-22.5V, typical 16V, interface current consumption: 1.8mA	
pushDIM dimming port	Voltage range: AC180-264V 50/60Hz	
1-10V 3in1 dimming port	N/A	
Auxiliary power supply	N/A	
Dimming range	1-100%	
Dimming drive mode	AM(amplitude modulation)	
Emergency support		
Central emergency system	Not supported	
Self-contained emergency	Supported	
Environment & Life time		
Operating temperature	Ta=-20-60°C	
Case temperature	Tc=90°C	
Operating humidity	5-85% RH, not condensing	
Storage temp./humidity	-40-80°C, 5-85% RH, not condensing	
IP grade	IP20	
MTBF	500,000H,MIL-HDBK-217F(25°C)	
Life-time	Nominal life-time up to 100,000 h, see the description below for details	
Vibration resistant	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes	
Acoustic Noise	<25dB(30cm, Full load)	
Environmental protection	RoHS	
Certifications and standards		
Certified	CE, ENEC, UKCA, RCM, DALI-2	
Safety	EN61347-1, EN61347-2-13, EN62384	
EMC	EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547	
DALI-2	IEC 62386-101(DALI-2), IEC 62386-102(DALI-2), IEC 62386-207(DALI-2),IEC 62386-209(DALI-2)	
EL	N/A	
RF	N/A	

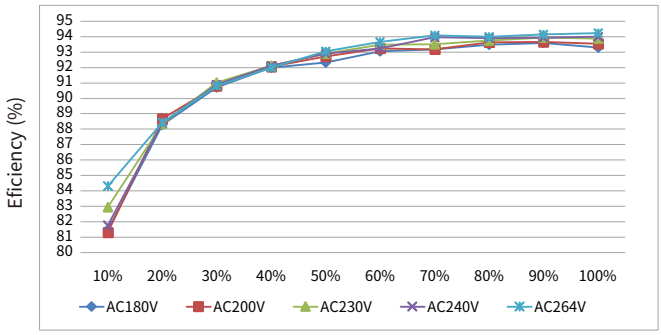
Remarks

1.By default, all parameter are measured at 230VAC input, full load and 25°C of ambient temperature.

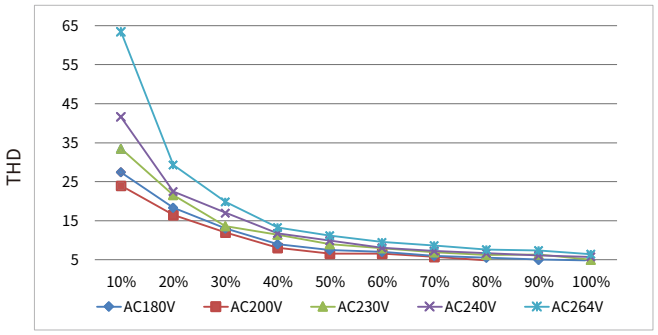
Electrical values

BK-DWV100-24V0D

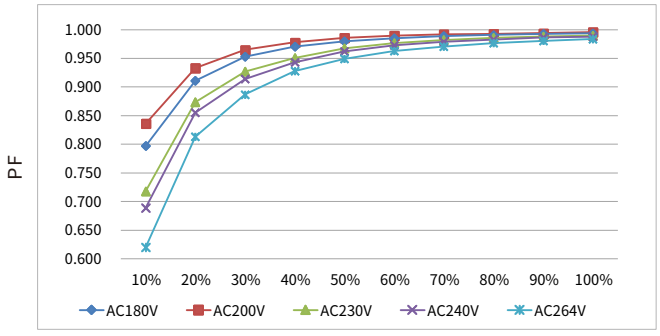
Efficiency vs load



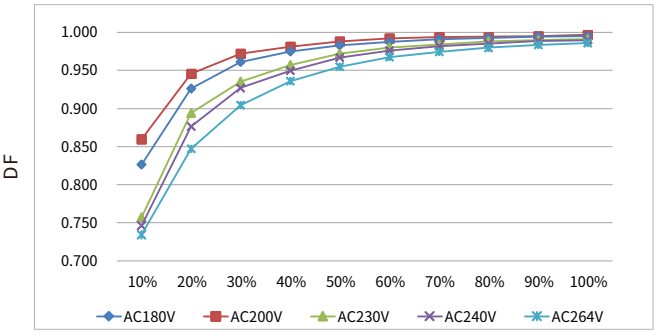
THD vs. Load



Power factor vs. Load

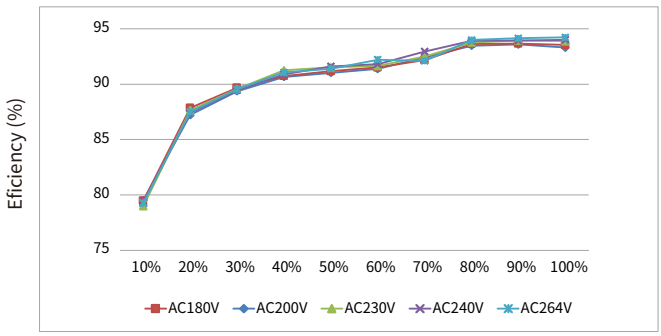


Displacement power vs. Load

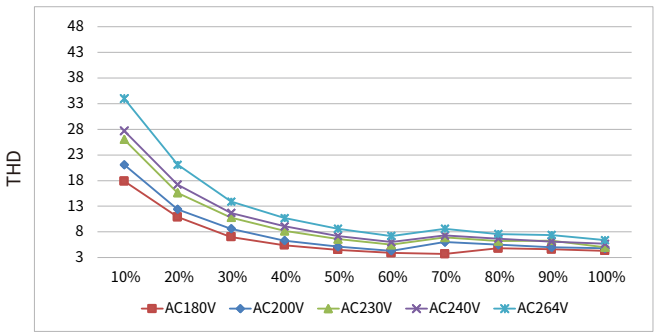


BK-DWV150-24V0D

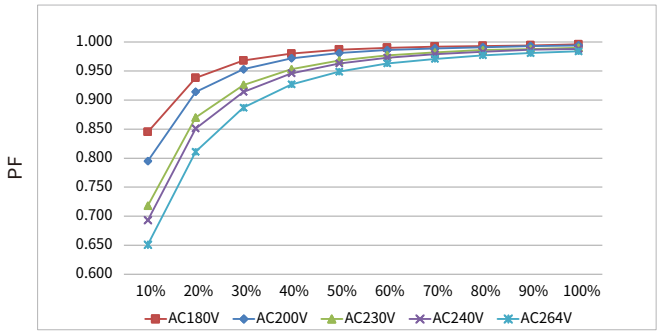
Efficiency vs load



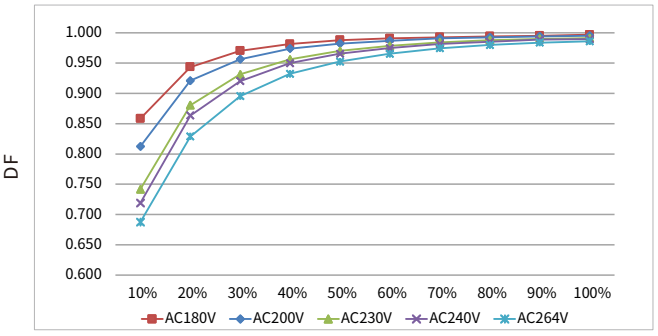
THD vs. Load



Power factor vs. Load



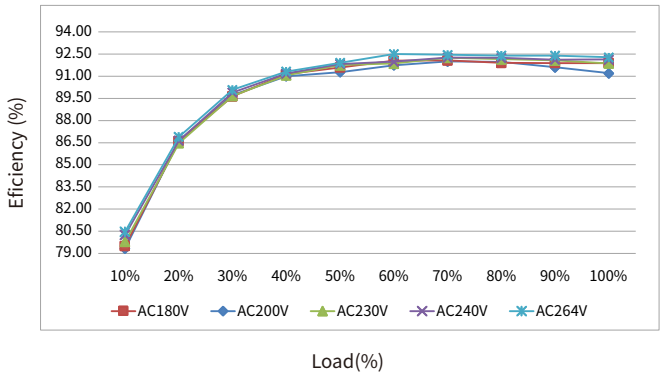
Displacement power vs. Load



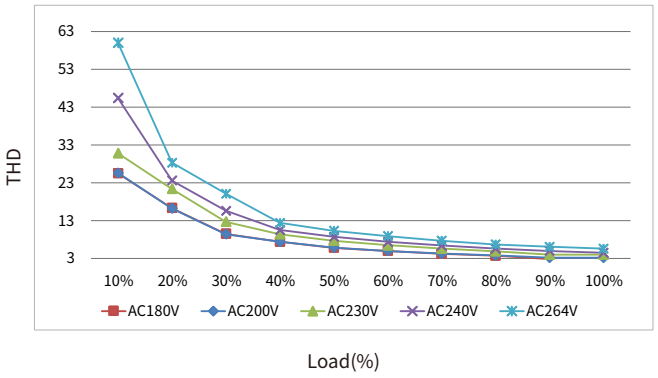
Electrical values

BK-DWV200-24V0D

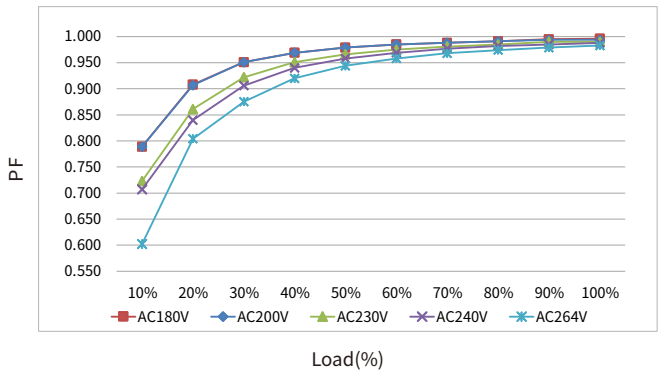
Efficiency vs load



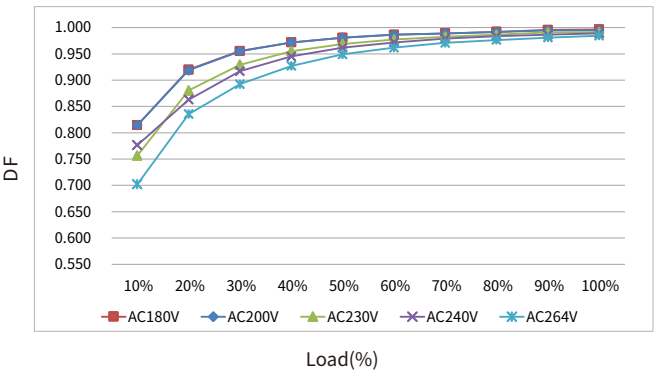
THD vs. Load



Power factor vs. Load

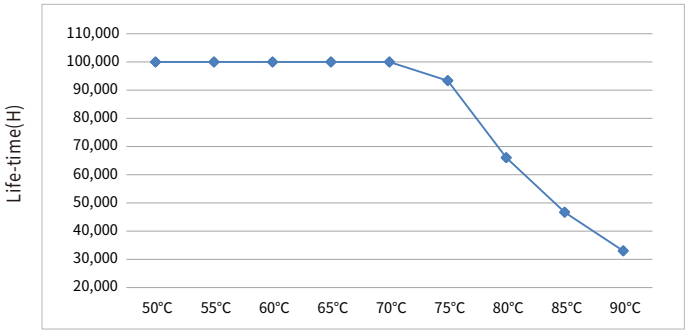


Displacement power vs. Load

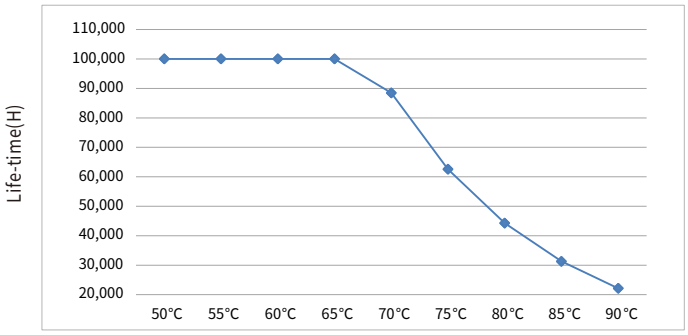


Expected life-time

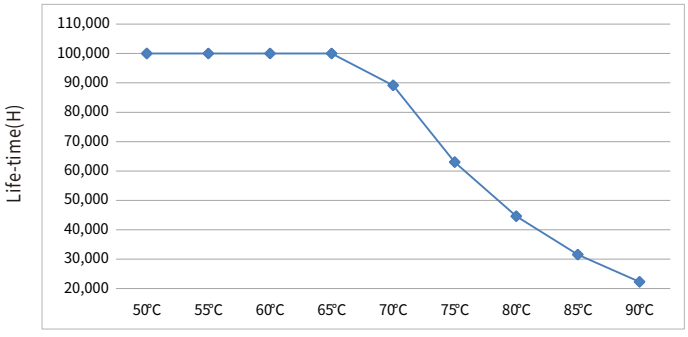
BK-DWV100
Life-time vs. case temperature



BK-DWV150
Life-time vs. case temperature



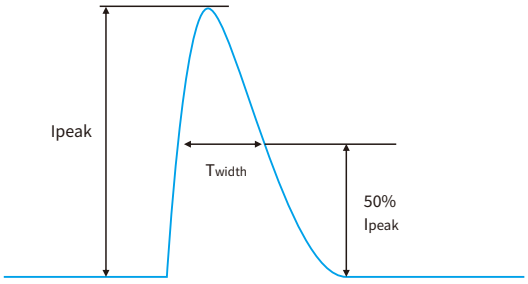
BK-DWV200
Life-time vs. case temperature



-The life-time of the LED driver is shown in the figure above
(calculated based on the 90% survival rate).
- The relation of tc to ta temperature depends also on the luminaire design.

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB/pcs														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-DWV100	32.25A	355us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	5	7	8	10	13	9	11	14	17	22	14	19	23	29	36
BK-DWV150	36.13A	410us		5	6	7	9	12	8	10	12	15	19	10	13	16	21	26
BK-DWV200	37A	410us		4	5	6	7	9	6	8	10	12	15	7	9	11	14	18



Remarks

- The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- Calculation uses typical values from ABB series S200 as a reference.
- Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.
- If the ambient temperature of the MCB installation exceeds 30°C or multiple MCBs are installed side by side, the number of drives mounted will be reduced and the calculation needs to be recalculated.
- Electrician's usually consider Type B for household lighting and Type C for commercial lighting application.

Functions

Output short-circuit protection

- When the output of the driver is short-circuited, the driver will enter the protection state, disconnect the AC for more than 1 minute, and the output will return to normal.

Output no-load protection

- When there is no load on the driver, the driver will enter a hiccup state. After the load is connected, the output will return to normal.

Output overload protection

- When the load connected to the drive exceeds the rated power, the drive will enter a hiccup state. After reducing the load power, the drive will resume normal output.

Tunable white functionality

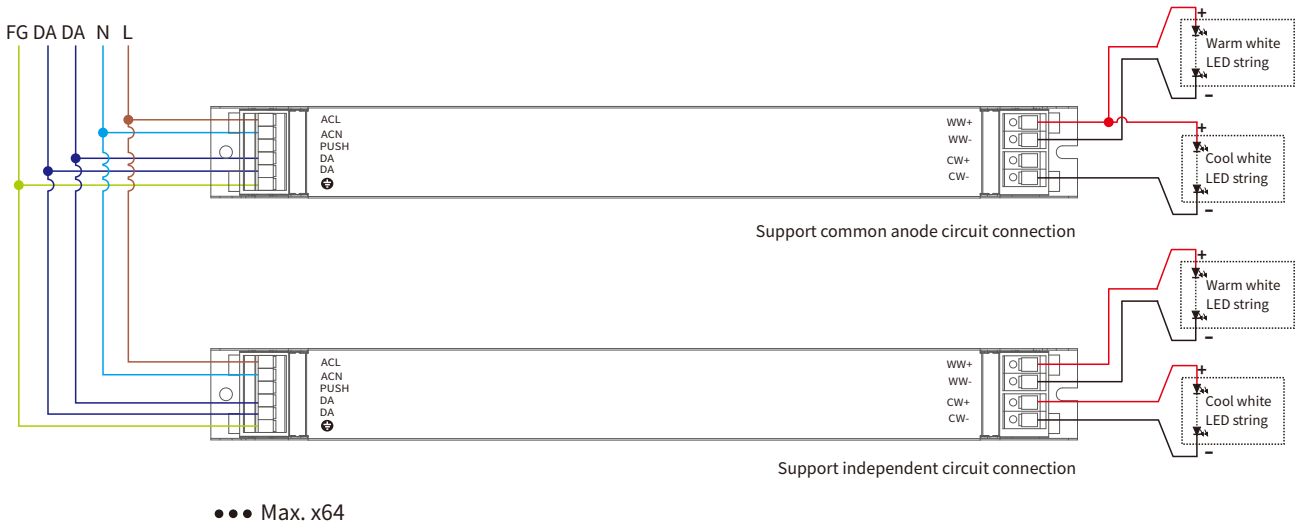
- This driver have 2 output channels used to control the intensity and temperature of white colour as well known as “Tunable White”.
- These drivers respond to DALI type 8 (DT8) commands, which in practice means that they only have 1 common address for both output channels .
- The tunable white level of intensity and colour temperature can be set either with a DALI command or by PUSH switch control.
- The higher the brightness, the wider the color temperature range can be obtained.

Insulation between circuits

Isolation	Input	Output	Case	DALI	PUSH
Input	-	Double	Basic	Basic	-
Output	Double	-	Basic	Basic	Double
Case	Basic	Basic	-	Basic	Basic

DALI dimming application

Wiring diagram



●●● Max. x64

Note: The voltage deviation of warm white and cool white light strings should be less than 0.5V

Activating DALI control mode

- After installation according to the wiring diagram of DALI control application,the driver will automatically switch to the DALI control mode after receiving any DALI command.

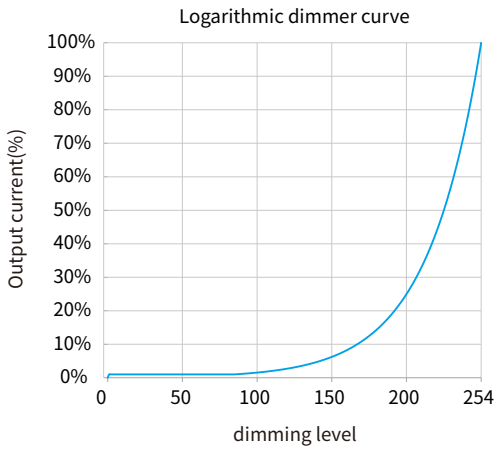
Remarks:

- Standard DALI control line voltage range:9.5V to 22.5V ,type 16V.
- The two DALI control lines polarity-reversible.
- Max. 64 DALI drivers per DALI control line.
- The maximum distance length of the DALI control line is 300m at 2×1.5mm^2.
- DALI bus can be wired together with any mains voltage cables, but separate wiring is recommended.

Wiring distance vs cable size

Cable size	Distance
2×0.50mm^2	max.100m
2×0.75mm^2	max.150m
2×1.00mm^2	max.200m
⩾2×1.50mm^2	max.300m

Dimming curve

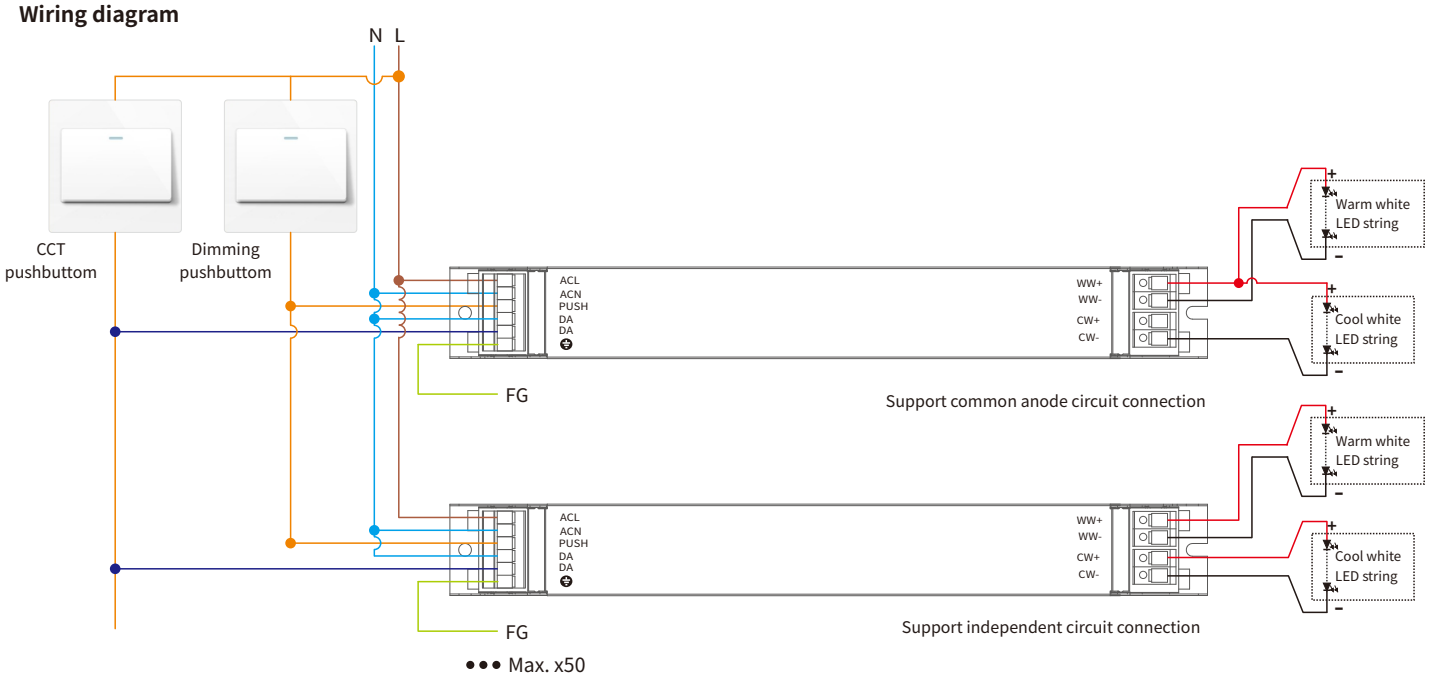


Remarks:

The dimming curve can be selected by DALI configuration. The default is logarithmic dimming curve.

pushDIM dimming application

Wiring diagram



Note: The voltage deviation of warm white and cool white light strings should be less than 0.5V

Activating pushDIM,pushCCT control mode

- After installation according to the wiring diagram of pushDIM,pushCCT control application, short press the dimmming pushbuttom(pushDIM port) 5 times within 3 seconds, the driver will automatically switch to pushDIM,pushCCT control mode.
- After activating pushDIM, pushCCT control mode, CorridorDIM mode will be automatically closed.

Number of mounted drivers

- Up to 50pcs drivers can be mounted.

Dimming pushbuttom operating instructions

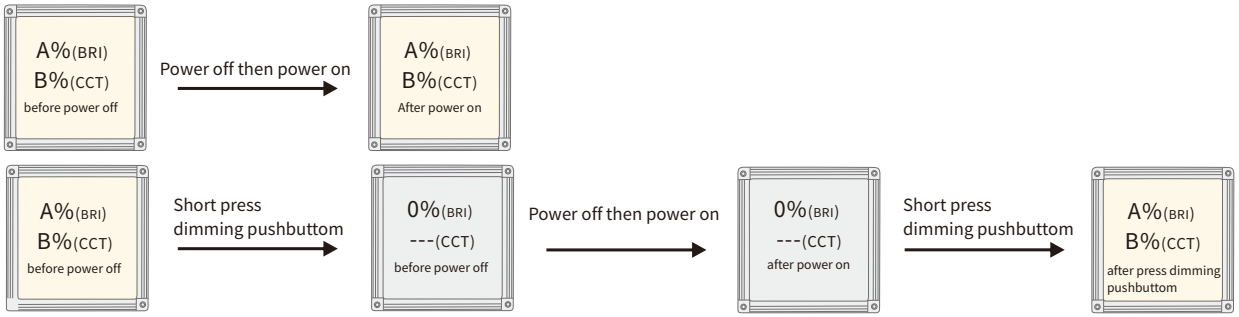
- Turn on or turn off: short press dimming pushbuttom for 0.2-1s.
- Stepless dimming : long press dimming pushbuttom for 1-6s, Press again to switch dimming directions.

PUSH CCT switch operating instructions

- Switch CCT level: short press CCT pushbuttom for 0.2-1s，9 levels of preset CCT can be switched.
- Stepless CCT adjustment: long press CCT pushbuttom for 1-6s,Press again to switch CCT adjustment directions.

Power on status:

- After power on,the light state will be the same as the last dimming level and the last CCT level.
- If the light is on before the power is turned off, after turning the power back on, the brightness will be the same as the last time, and the color temperature will be the same as the last time.
- If the light is off before the power is turned off, the light will be turned off after the power is turned back on. You need to press the dimming pushbuttom for a short time to turn on the light. The brightness after lighting will be the same as the last time, and the color temperature will be the same as the last time.



Multiple lights synchronize control operation

method 1:

Step 1:long press the dimming pushbuttom,confirm each light is on.

Step 2:short press the dimming pushbuttom,confirm each light is off.

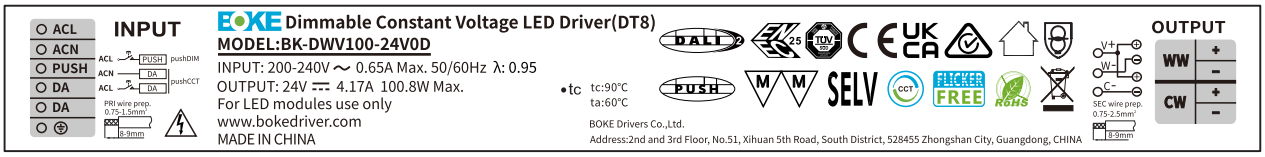
Step 3:long press the dimming pushbuttom,confirm each light is from darkest to brightest and all the lights are synchronous.

method 2:

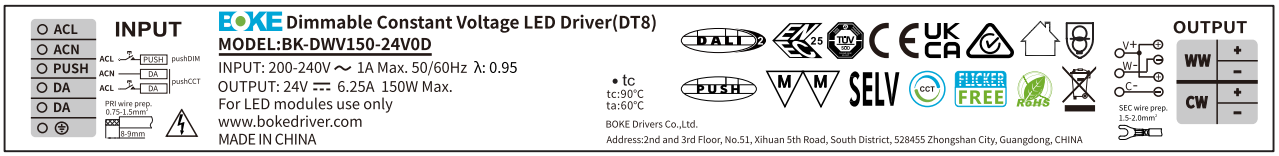
- Long press the dimming pushbuttom for more than 15s, all drivers will output 100% brightness and the color temperature is natural white (middle of color temperature range).

Label

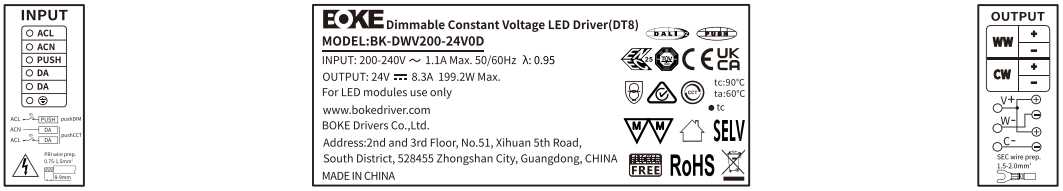
DWV100



DWV150

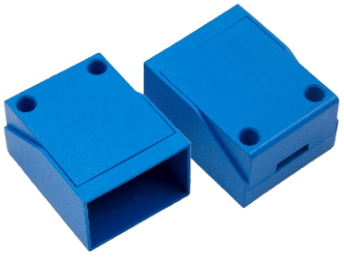


DWV200

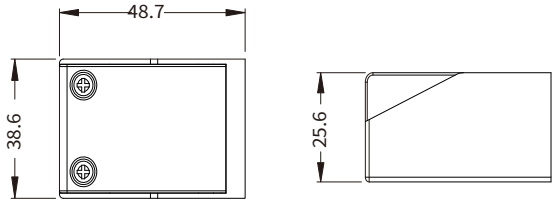


Laser carving process

Optional accessories



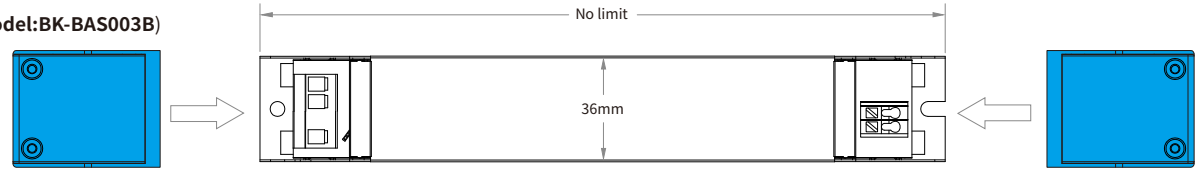
(Model: BK-BAS003B)



Unit:mm

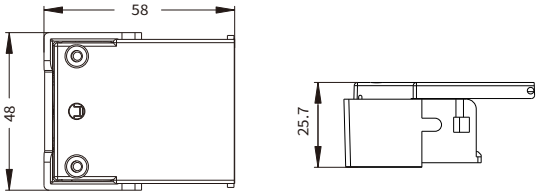
Installation diagram of accessories

(**Model:BK-BAS003B**)



Optional accessories

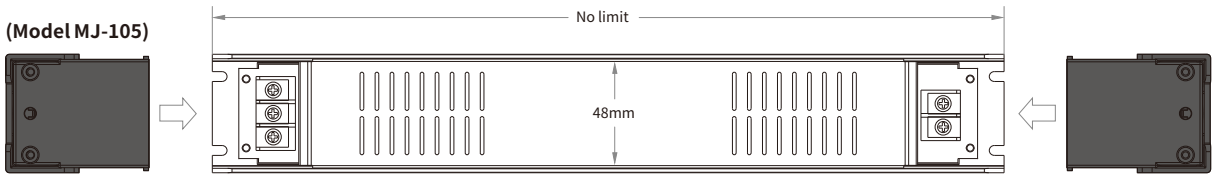
(Model MJ-105)



Remark: MJ-105 apply to DWV200

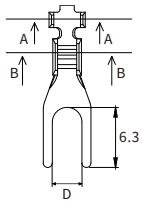
单位:mm

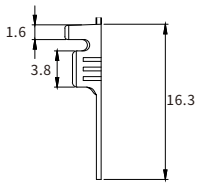
Installation diagram of accessories

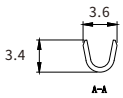


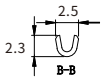
Optional accessories

Unit:mm





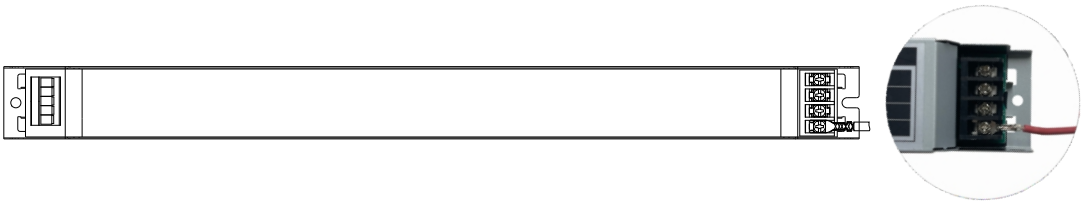




Recommendedsize

Number	Bolt hole diameter(D)	Model
1	6mm	DWV150
2	6.5mm	DWV200

Installation diagram of accessories

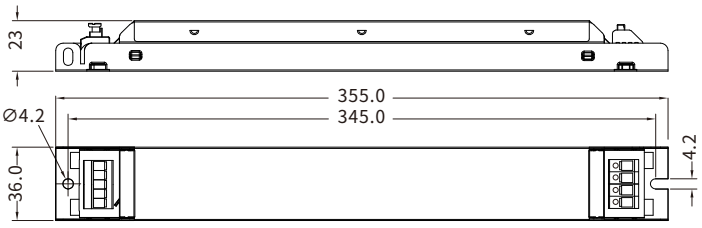


Mechanical Specification

Size(Excluding accessories)

Unit:mm

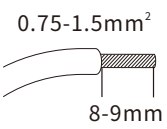
DWV100



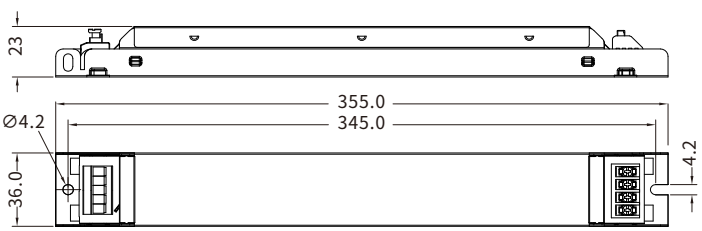
INPUT

Numbering	function	colour
1	ACL	orange
2	ACN	orange
3	push	orange
4	DA	gray
5	DA	gray
6	FG	gray

Input wire



DWV150

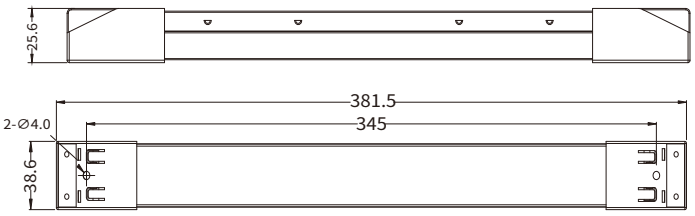


Mechanical Specification

Size(Include accessories)

Unit:mm

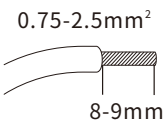
DWV100



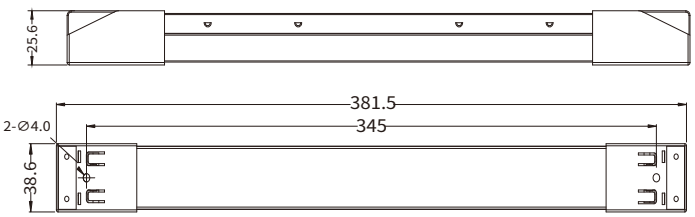
OUTPUT

Numbering	function	colour
1	WW+	red
2	WW-	black
1	CW+	red
2	CW-	black

Output wire



DWV150

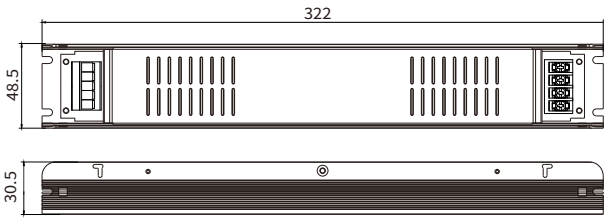


Mechanical Specification

Size(Excluding accessories)

Unit:mm

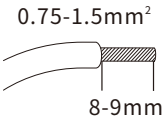
DWV200



INPUT

Numbering	function	colour
1	ACL	orange
2	ACN	orange
3	push	orange
4	DA	gray
5	DA	gray
6	FG	gray

Input wire

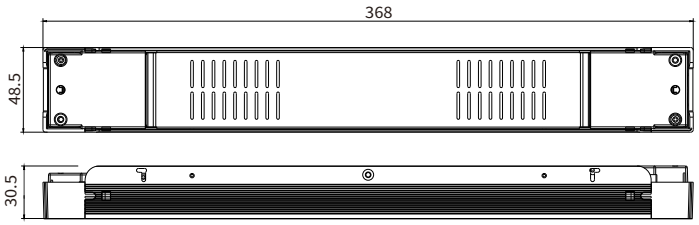


Mechanical Specification

Size(Include accessories)

Unit:mm

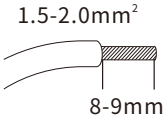
DWV200



OUTPUT

Numbering	function
1	WW+
2	WW-
1	CW+
2	CW-

Output wire



Installation note

Hot plug-in

- Hot plug-in is not supported due to residual output voltage of > 0 V.

Wiring guidelines

- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Max. lenght of output wires is 2 m.
- Incorrect wiring can damage LED modules.

Installation requirements

- The driver should be installed in a dry, acid-free, oil-free, fat-free environment.
- The installation ambient temperature of the drive shall not exceed the value of Ta at any time.
- The temperature of the mounting surface of the driver should be lower than 40°C
- The driver should keep a certain distance from the heating stuff (such as the luminaire radiator).
- If the driver is used externally (it needs to be used with the accessories), the installation of the driver should also meet the following conditions:
  1.The driver should be a certain distance between the drivers, as shown in Figure 1.
  2.The driver keeps a certain distance from surrounding objects, as shown in Figure 2.

Mounting screw specifications and torque

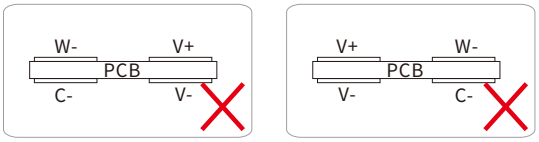
- Max. torque at the clamping screw: 0.5 Nm / M4

Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 5 seconds
4. Connect LED module again

PCB indicator board cable routing requirements

- When wiring the PCB of the lamp board, avoid placing the copper foils of W- and C- on the upper and lower layers of the same side of the lamp board (to avoid capacitance effect).



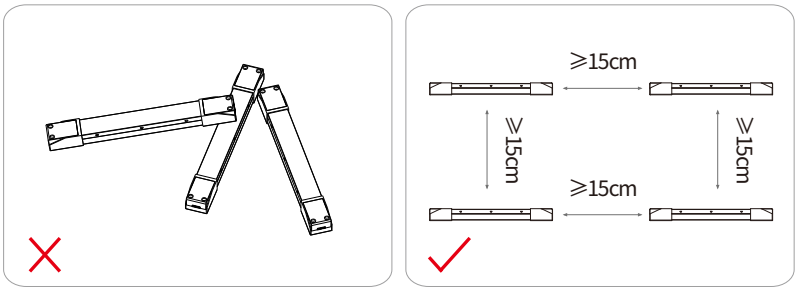


Figure 1

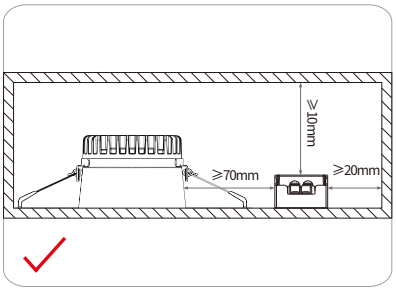
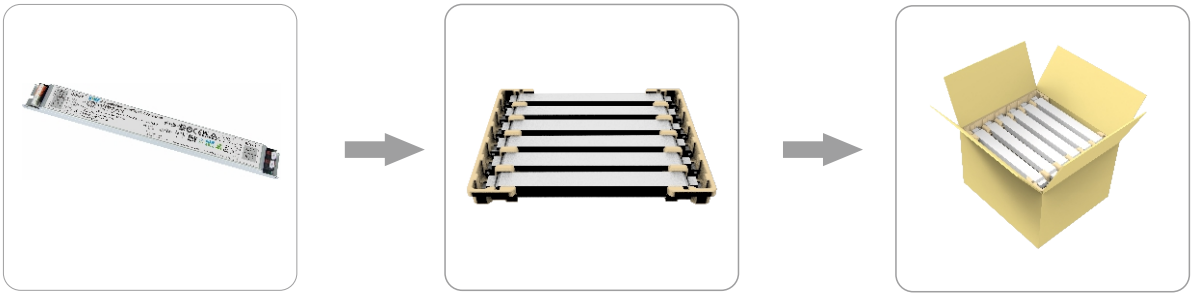


Figure 2

Packaging

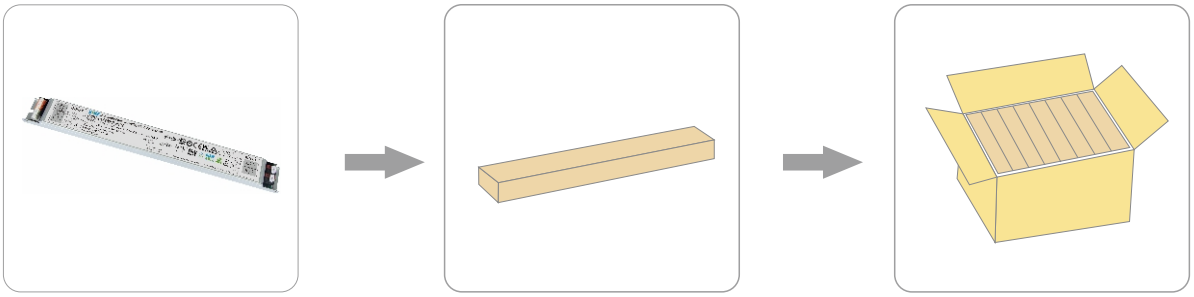
Optional 1: factory default



Product | Paper tray | 6pcs*4layer=24pcs/CIN

Model	Product size	Weight	Paper tray	Carton size	Qty/carton	N.W	G.W
DWV100	L355*W36*H23mm	372g	L340*W75*H33mm	L395*W355*H160mm	24pcs	8.93KG	10.0KG
DWV150	L355*W36*H23mm	436g	L340*W75*H33mm	L395*W355*H160mm	24pcs	10.5KG	11.5KG

Optional 2:



Product | Packaging | 9pcs*3layer=27pcs/CIN
4pcs*4layer=16pcs/CIN

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
DWV100	L355*W36*H23mm	372g	L390*W43*H30mm	L410*W285*H155mm	27pcs	10.0kg	11.3kg
DWV150	L355*W36*H23mm	436g	L390*W43*H30mm	L410*W285*H155mm	27pcs	11.8kg	12.9kg
DWV200	L322*W48.5*H30.5mm	540g	L380*W54*H37mm	L400*W240*H165mm	16pcs	8.64kg	9.64kg

Additional information

1. The life and MTBF of the product are for reference only, and do not represent a warranty statement.
2. For more information, please send an email to info@bokedriver.com.