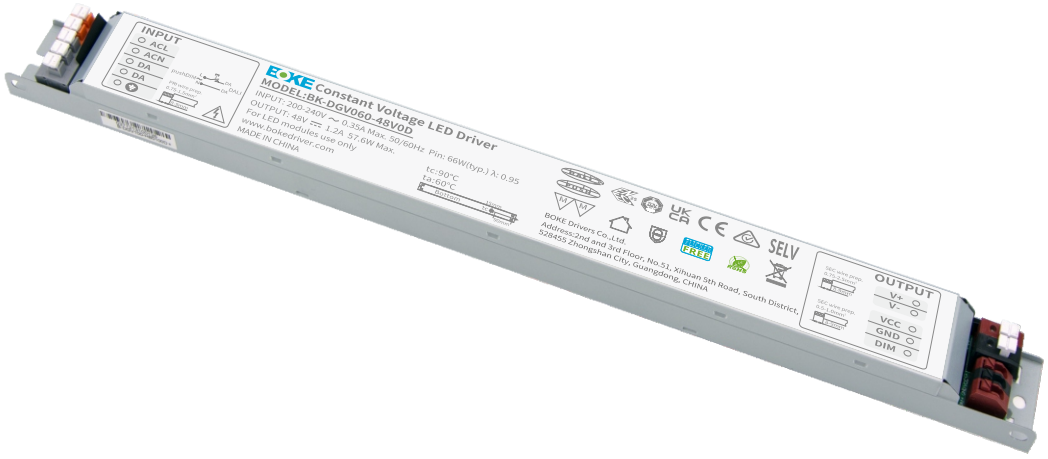
Constant voltage linear dimmable driver
DGV Series suffix D(DALI-2+pushDIM+1-10V/10V PWM/Rx+12V)



Features

- Support DALI-2/pushDIM+1-10V/10V PWM/Rx dimming +12V auxiliary power
- Provide 12V 100mA auxiliary power supply to power control module or sensor
- 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 ENEC-TUV,CE,RCM,CCC ,DALI-2,UKCA and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5-year guarantee

Interfaces

- DALI-2(DALI-2 DT6)
- PUSH(pushDIM)
- 1-10V 3in1(1-10V / 10V PWM/Rx)
- VCC Auxiliary power(12V,100mA)

Functions

- 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 DGV series

BK - DGVXXX - XXV0 D

- BK: BOKE
- DGVXXX: Product series
- XXV0: Output current
- D: Function mode(D: DALI-2+pushDIM+1-10V/10V PWM/Rx dimming +12V auxiliary power)

Dimming function table of DGV series

Model	Suffix	Wired dimming			Aux power	Advanced functions				Device Configuration	
		DALI-2	pushDIM	1-10V 3in1	12V/0.1A	AOC	EL	CLO	corridorDIM	DALI interfaces	NFC interfaces
BK-DGV060 BK-DGV100 BK-DGV150	D	√	√	√	√						

* The description in this specification is only applicable to the products with the suffix D and the model are DGV060,DGV100 and DGV150 .

Selection table of DGV series(just suffix D, 60W/100W/150W)

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-DGV060-24V0D	200-240VAC	60W	24VDC	2.5A	L285*W30*H21mm
BK-DGV060-48V0D	200-240VAC	60W	48VDC	1.2A	L285*W30*H21mm
BK-DGV100-24V0D	200-240VAC	100W	24VDC	4.0A	L355*W30*H21mm
BK-DGV100-48V0D	200-240VAC	100W	48VDC	2.0A	L355*W30*H21mm
BK-DGV150-24V0D	200-240VAC	150W	24VDC	6.0A	L355*W36*H23mm
BK-DGV150-48V0D	200-240VAC	150W	48VDC	3.0A	L355*W36*H23mm

Technical data

Product model	BK-DGV060-24V0D	BK-DGV060-48V0D	
Output parameters			
Regulation method	Constant voltage	Constant voltage	
Rated output current	2.5A	1.2A	
Rated output voltage	24V	48V	
Rated output power	60W Max	57.6W Max	
Output voltage adjustment	N/A	N/A	
Output current ripple LF	±2%	±2%	
Voltage accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	N/A	N/A	
Flicker-free	Flicker-free(High frequency exemption level)		
Input parameters			
Rated input voltage	200-240VAC		
Rated input voltage	180-264VAC		
Input votage shock	<380 V AC, 1 h		
Input current	<0.35A (AC 200V)		
Input frequency	0/50/60Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	10% (230V AC & Full load)		
Efficiency(typical)	90% (230V AC & Full load)		
In-rush current	34A peak ,260us duration(50 % Ipeak), see the description below for details		
Start/Switchover/Turn off	<0.6s(AC start),<0.6s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)		
Switching cycles	> 50,000 switching cycles		
Power consumption	Full load(Pmax):60W, 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		
Leakage current	<0.7mA (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	Voltage range: DC0-15V, interface current consumption: <1mA		
Auxiliary power supply	DC12V ±5% 100mA		
Dimming range	1-100%		
Dimming drive mode	H-PWM		
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	ENEC-TUV, RCM, EMC, CE, CCC, DALI-2,UKCA		
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)		
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-DGV100-24V0D	BK-DGV100-48V0D	
Output parameters			
Regulation method	Constant voltage	Constant voltage	
Rated output current	4A	2A	
Rated output voltage	24V	48V	
Rated output power	96W Max	96W Max	
Output voltage adjustment	N/A	N/A	
Output current ripple LF	±2%	±2%	
Voltage accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	N/A	N/A	
Flicker-free	Flicker-free(High frequency exemption level)		
Input parameters			
Rated input voltage	200-240VAC		
Rated input voltage	180-264VAC		
Input votage shock	<380 V AC, 1 h		
Input current	<0.7A (AC 200V)		
Input frequency	0/50/60Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	10% (230V AC & Full load)		
Efficiency(typical)	91% (230V AC & Full load)		
In-rush current	46.38A peak ,278us duration(50 % Ipeak), see the description below for details		
Start/Switchover/Turn off	<0.6s(AC start),<0.6s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)		
Switching cycles	> 50,000 switching cycles		
Power consumption	Full load(Pmax):96W, 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		
Leakage current	<0.7mA (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	Voltage range: DC0-15V, interface current consumption: <1mA		
Auxiliary power supply	DC12V ±5% 100mA		
Dimming range	1-100%		
Dimming drive mode	H-PWM		
Emergency support			
Central emergency system	Not supported		
Self-contained emergency	Supported		
Environment & Life time			
Operating temperature	Ta=-20-60°C		
Case temperature	Tc=95°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	ENEC-TUV, RCM, EMC, CE, CCC, DALI-2,UKCA		
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)		
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-DGV150-24V0D	BK-DGV150-48V0D	
Output parameters			
Regulation method	Constant voltage	Constant voltage	
Rated output current	6A	3A	
Rated output voltage	24V	48V	
Rated output power	144W Max	144W Max	
Output voltage adjustment	N/A	N/A	
Output current ripple LF	±2%	±2%	
Voltage accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	N/A	N/A	
Flicker-free	Flicker-free(High frequency exemption level)		
Input parameters			
Rated input voltage	200-240VAC		
Rated input voltage	180-264VAC		
Input votage shock	<380 V AC, 1 h		
Input current	<1A (AC 200V)		
Input frequency	0/50/60Hz		
Input power factor	0.95 (230V AC & Full load)		
Input THD	10% (230V AC & Full load)		
Efficiency(typical)	92% (230V AC & Full load)		
In-rush current	50A peak ,468us duration(50 % Ipeak), see the description below for details		
Start/Switchover/Turn off	<0.6s(AC start),<0.6s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)		
Switching cycles	> 50,000 switching cycles		
Power consumption	Full load(Pmax):144W, 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		
Leakage current	<0.7mA (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	Voltage range: DC0-15V, interface current consumption: <1mA		
Auxiliary power supply	DC12V ±5% 100mA		
Dimming range	1-100%		
Dimming drive mode	H-PWM		
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	ENEC-TUV, RCM, EMC, CE, CCC, DALI-2,UKCA		
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)		
EL	N/A		
RF	N/A		

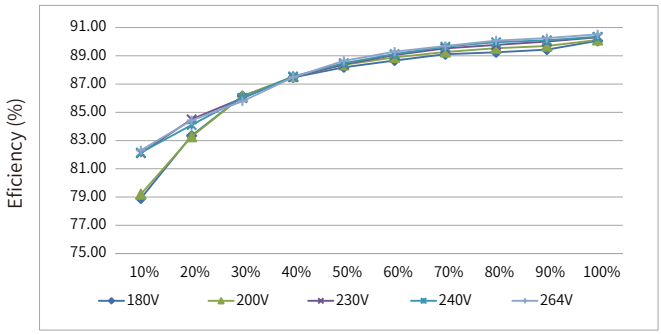
Remarks

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

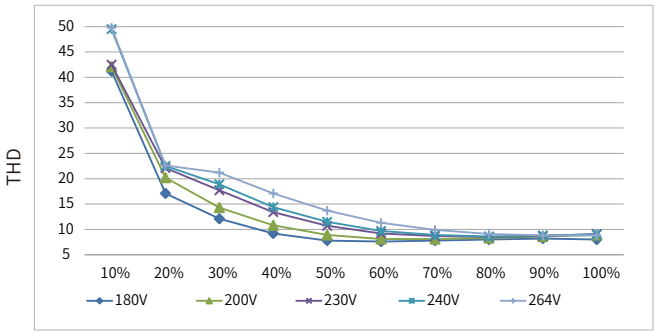
Electrical values and expected life-time

BK-DGV060-24V0D

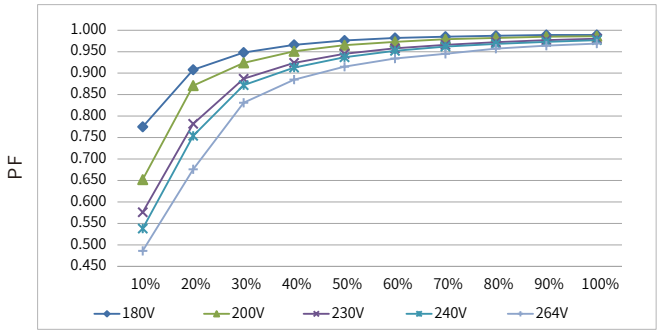
Efficiency vs load



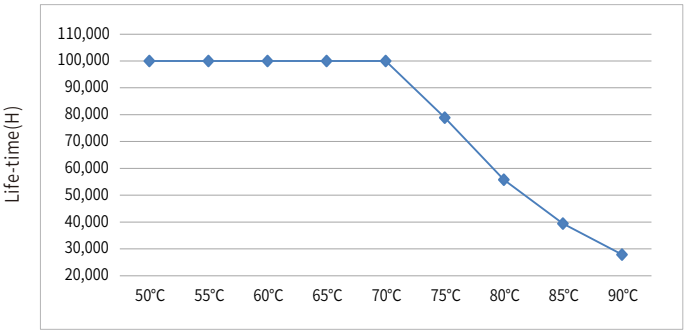
THD vs. Load



Power factor vs. Load



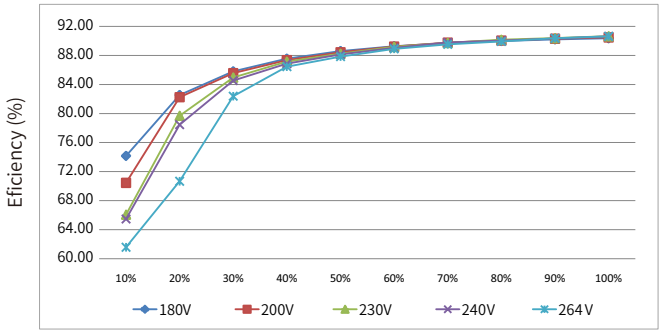
Life-time vs. case temperature



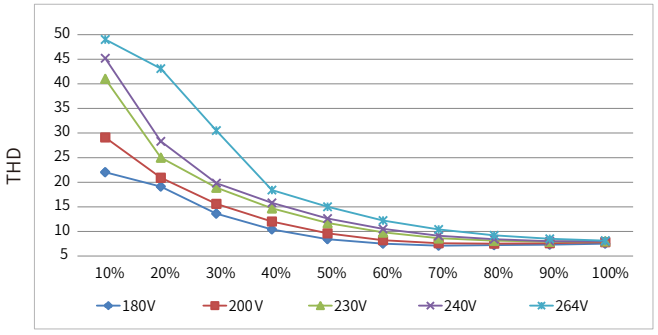
-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of tc to ta temperature depends also on the luminaire design.

BK-DGV060-48V0D

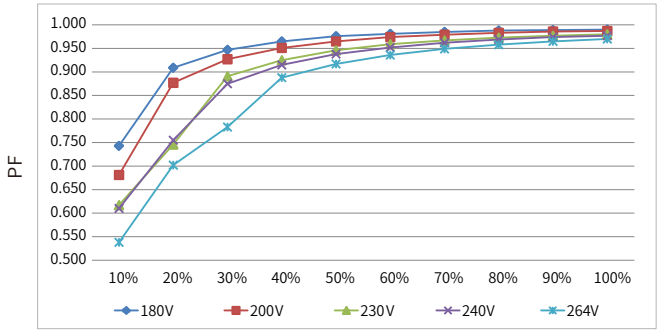
Efficiency vs load



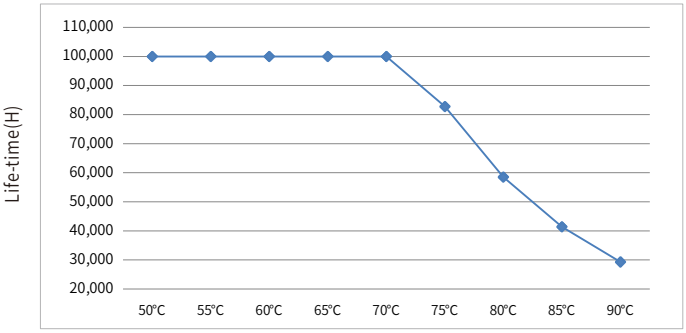
THD vs. Load



Power factor vs. Load



Life-time vs. case temperature

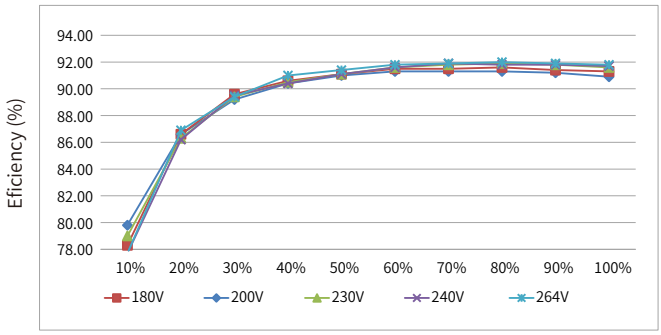


-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of tc to ta temperature depends also on the luminaire design.

Electrical values and expected life-time

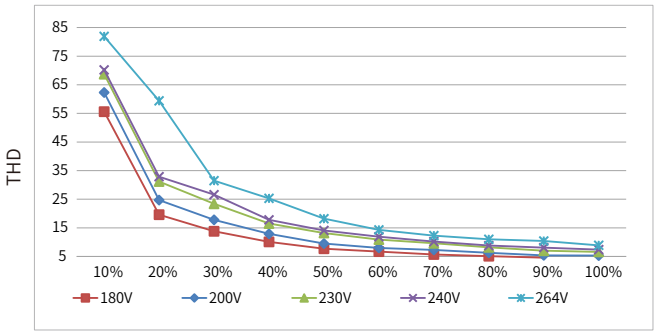
BK-DGV100-24V0D

Efficiency vs load



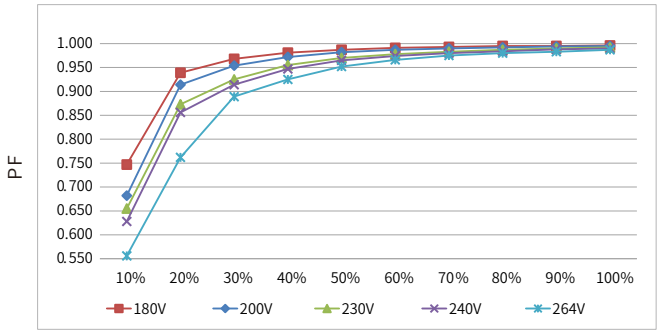
Load(%)

THD vs. Load



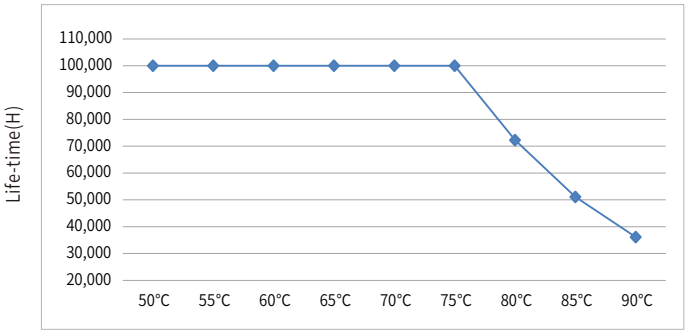
Load(%)

Power factor vs. Load



Load(%)

Life-time vs. case temperature

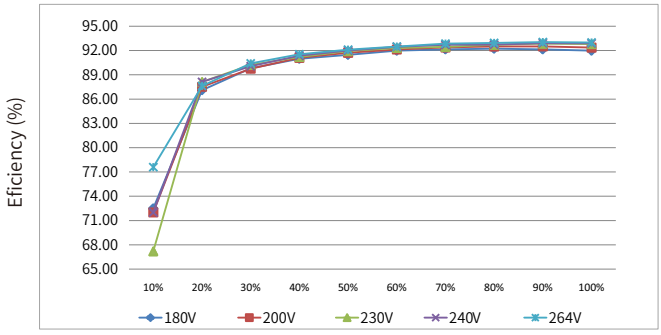


Case temperature(Tc)

-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.

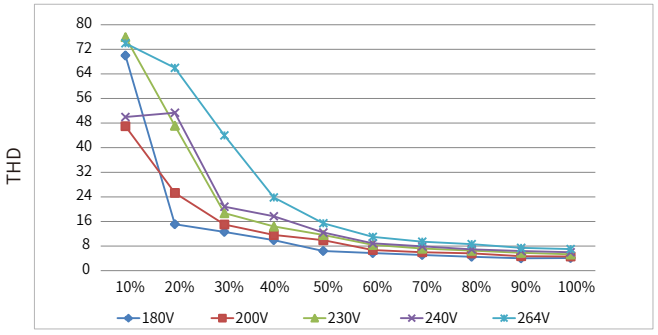
BK-DGV100-48V0D

Efficiency vs load



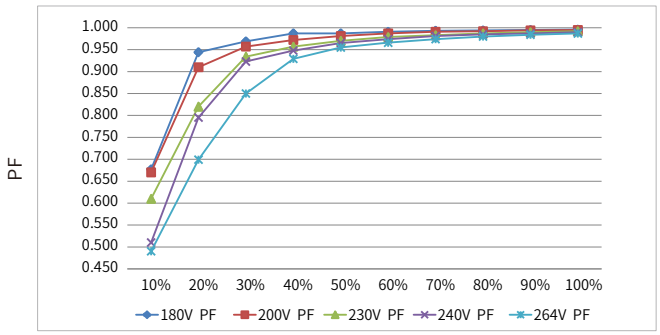
Load(%)

THD vs. Load



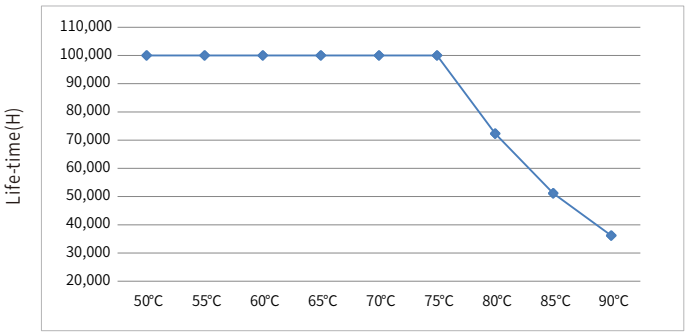
Load(%)

Power factor vs. Load



Load(%)

Life-time vs. case temperature



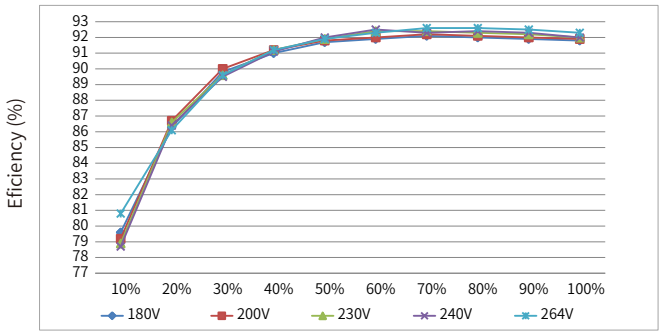
Case temperature(Tc)

-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.

Electrical values and expected life-time

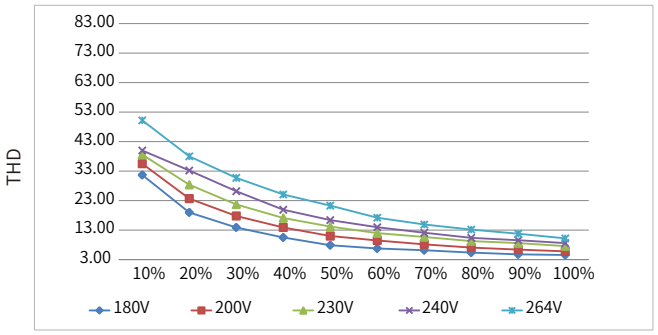
BK-DGV060-24V0D

Efficiency vs load



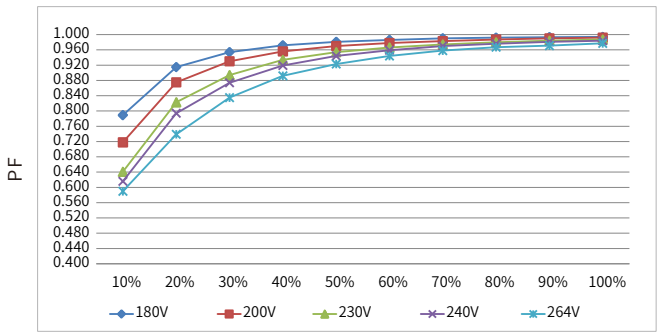
Load(%)

THD vs. Load



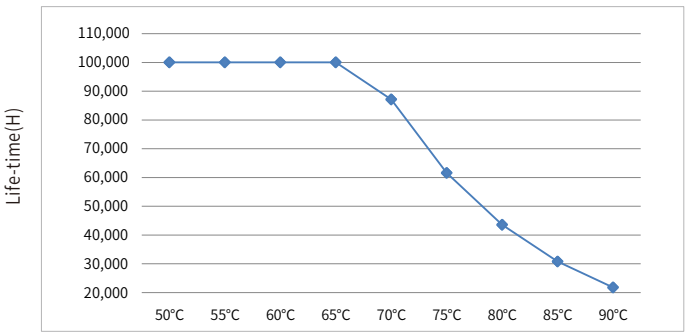
Load(%)

Power factor vs. Load



Load(%)

Life-time vs. case temperature

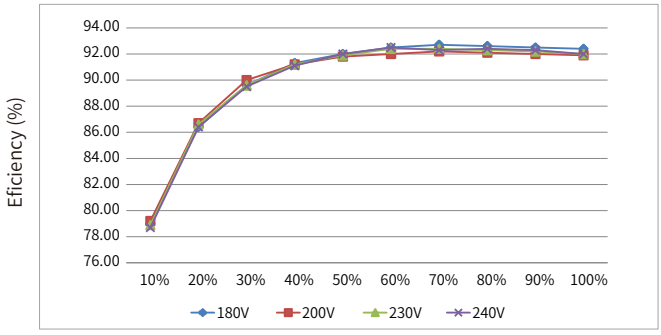


Case temperature(Tc)

-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.

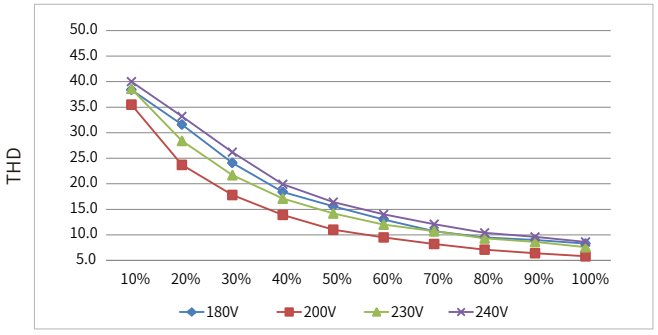
BK-DGV060-48V0D

Efficiency vs load



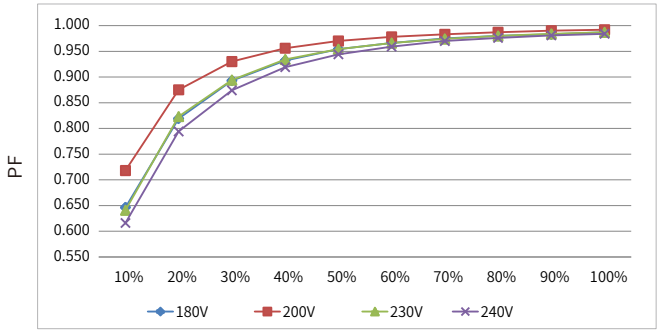
Load(%)

THD vs. Load



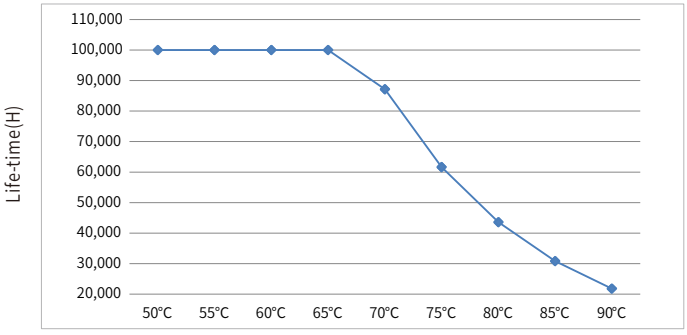
Load(%)

Power factor vs. Load



Load(%)

Life-time vs. case temperature

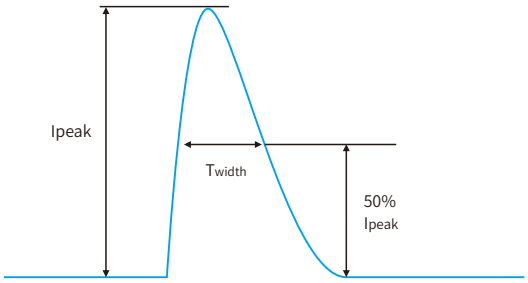


Case temperature(Tc)

-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														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-DGV060	24A	260us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	7	9	11	14	17	11	15	18	23	28	15	19	24	30	37
BK-DGV100	46.3A	278us		4	6	7	9	11	7	9	12	14	18	14	19	23	29	36
BK-DGV150	50A	468us		10	13	16	20	25	10	13	16	20	25	10	13	16	20	25



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

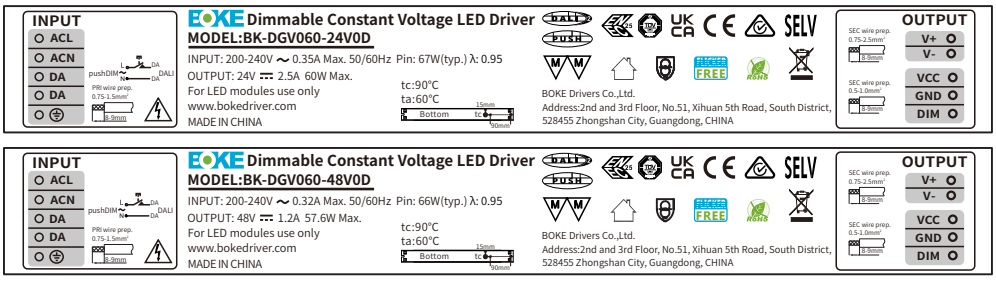
- When there is no load on the driver, the driver will enter a hiccup state. After the load is connected, the output will return to normal.

Output overload protection

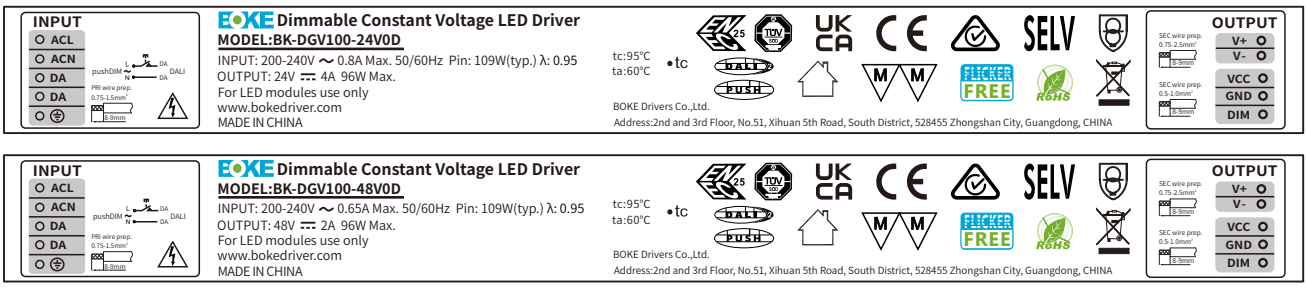
- When the load connected to the drive exceeds the rated power, the drive will enter a hiccup state. After reducing the load power, the drive will resume normal output.

Label

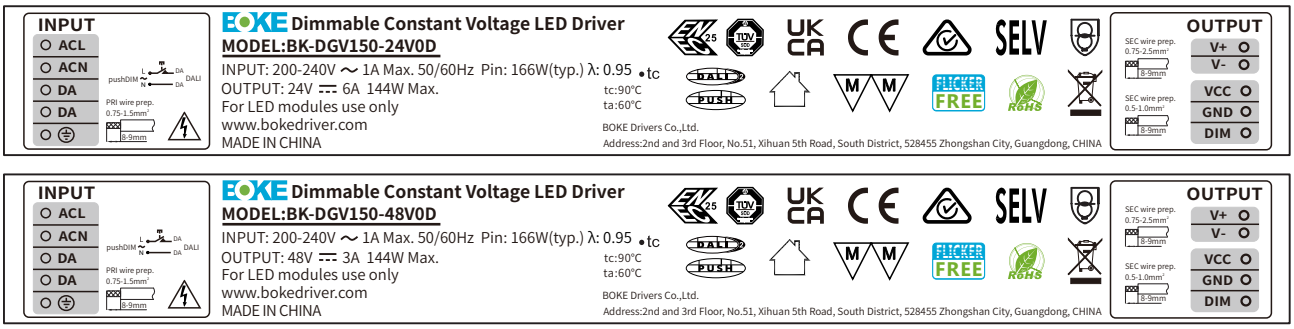
DGV060



DGV100



DGV150



DALI dimming application

Wiring diagram

Activating DALI dimming mode

- After installation according to the wiring diagram of DALI dimming 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.
- The configuration parameters of the driver can be set through the DALI configuration tool or DALI application controller during installation, such as setting device address, group address, power-on level, bus-failure level, scene level, fade time, dimming curve, etc.

Please refer to the table below

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

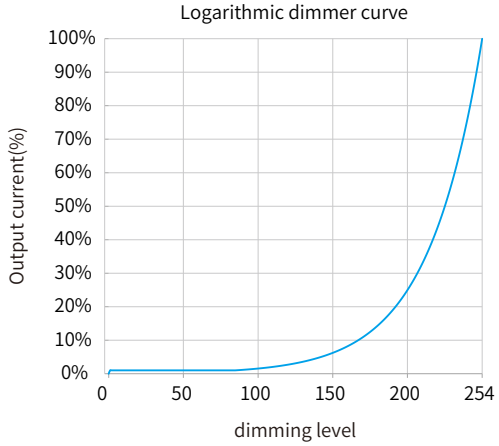
Power-on level :

When the driver is in DALI-2 dimming mode, the factory default level after each power-on is the brightest.

The power-on level can be set through the DALI configuration tool or DALI application controller during installation, and can be set to memory or fixed any brightness (such as off, darkest, 50%, etc.).

Note: The recommended setting for the default factory power-on level of the DALI-2 driver is the brightest in the DALI-2 standard.

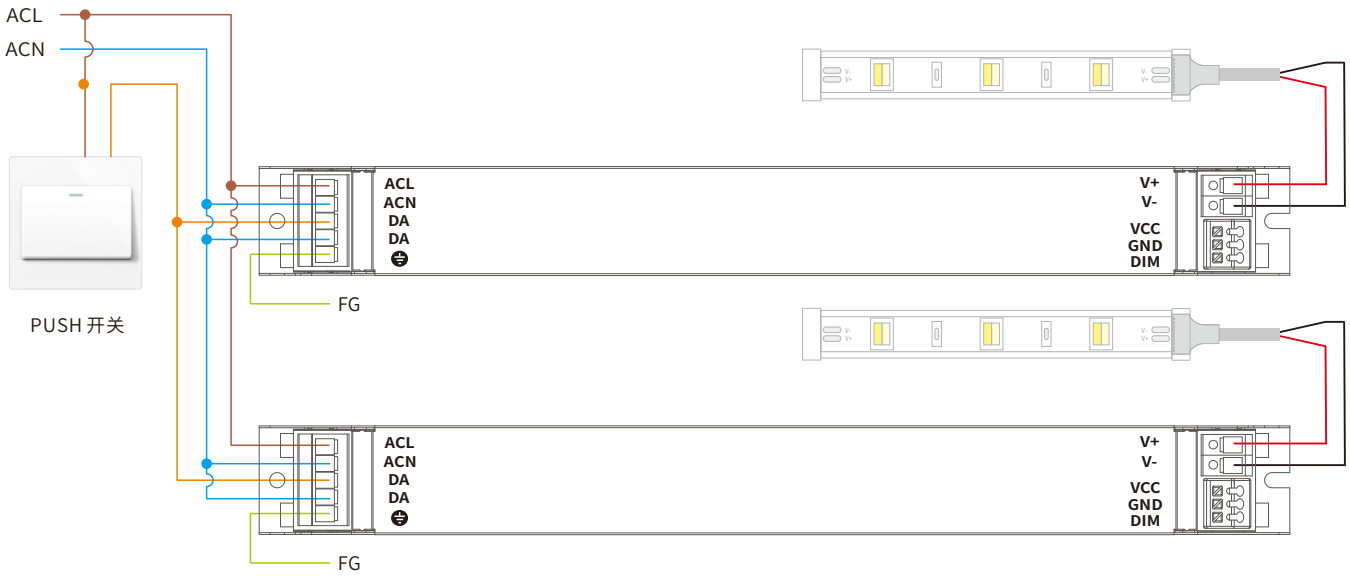
Dimming curve



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

pushDIM dimming application

Wiring diagram



Activating pushDIM dimming mode

After installation according to the wiring diagram of pushDIM dimming application, long press the PUSH switch 3 times ,then the driver will automatically switch to pushDIM dimming mode.

Remarks:

Max. 50 drivers per pushDIM control line.

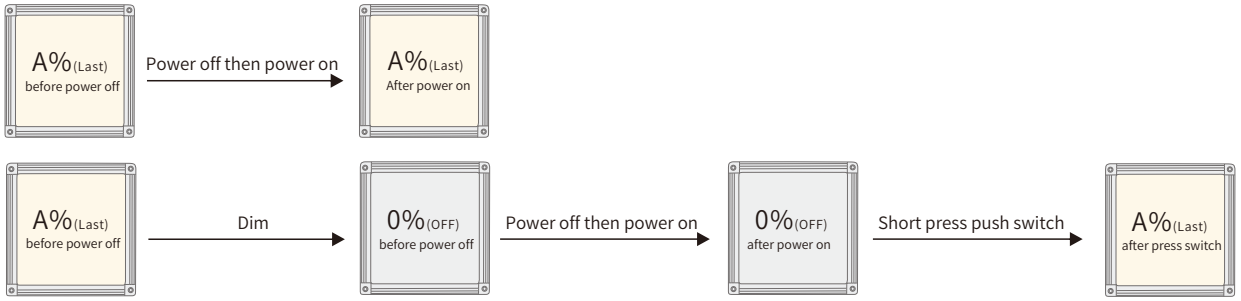
Turn on or turn off:short press push switch for 0.2-1s.

Dimming: long press push switch for 1-5s.

Power on status: after power on,the light state will be the same as the lighting on state.

If the light is on before power on,the light will be on after power on again,brightness will be the same as the last lighting on brightness.

If the light is off before power off,the light will be off after power on again,short press the push button,then the light will be on,the brightness will be the same as the last brightness.



Multiple lights synchronize control operation

method 1:

Step 1:long press the PUSH switch,confirm each light is on.

Step 2:short press the PUSH switch,confirm each light is off.

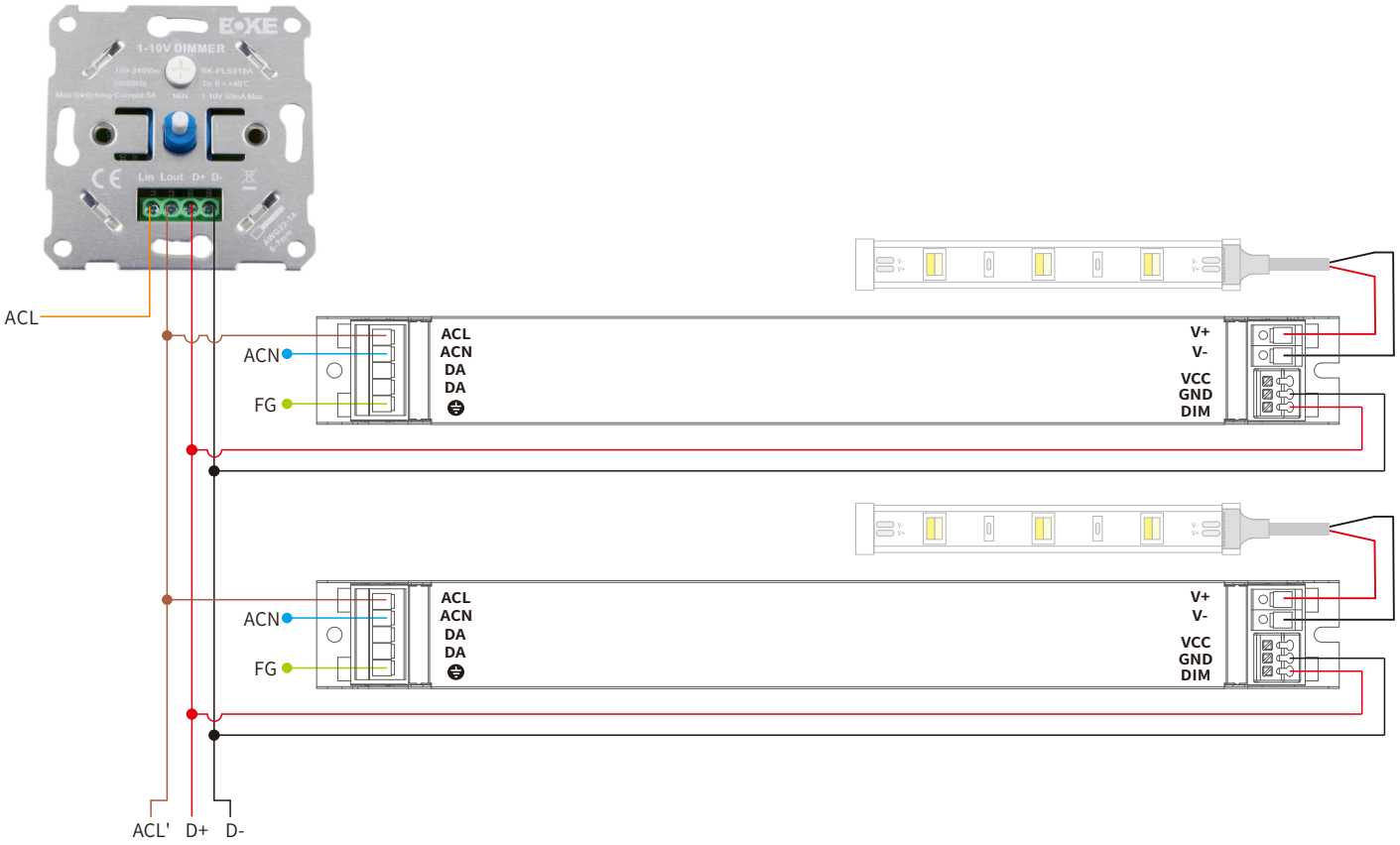
Step 3:long press the PUSH switch,confirm each light is from darkest to brightest and all the lights are synchronous.

method 2:

- Long press the PUSH switch15s,all lights output to the brightest state.

1-10V/10V PWM dimming application

Wiring diagram

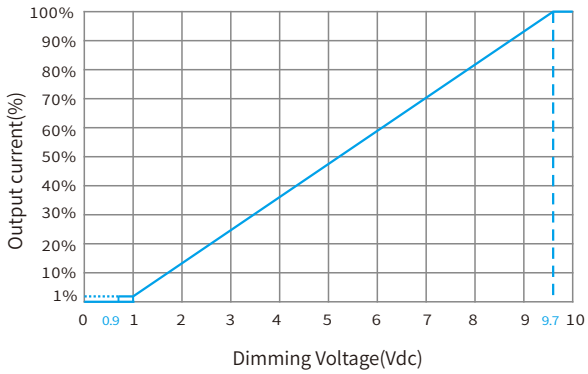


Remarks

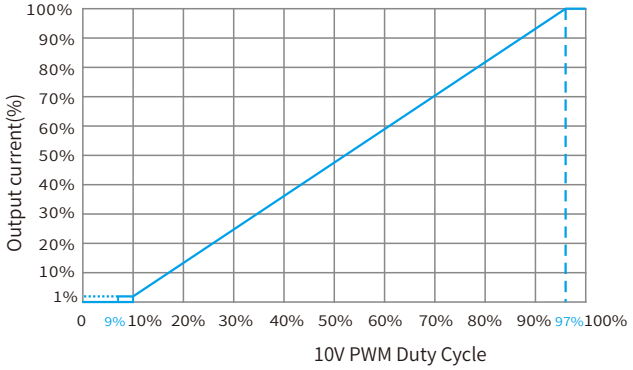
- Dimming interface characteristics: 0.9V and below are closed, 1V is the darkest, 10V is the brightest,1-10V is the dimming range.
- The dimming interface distinguishes between positive and negative, DIM+ is positive, DIM- is negative, please do not reverse.
- Dimming interface does not support voltage access higher than 15V, otherwise it will cause damage to the internal components.
- When the dimming interface is open, the driver outputs the maximum current. When the interface is short-circuited, the current output is closed.
- When multiple synchronous dimming is required, the positive poles of the dimming interface of each driver are connected together, and the negative poles are connected together.
- Support passive dimmer or isolated active dimmer dimming, does not support non-isolated active dimmer dimming.
- In general, it is recommended that the number of mounted drives does not exceed 30pcs, and the wiring length does not exceed 100m.
- It is recommended that the dimming wires should not be lower than the 22AWG wire.
- Do not put the dimming wires with high voltage or interference sources. If it is unavoidable, please use the shielded wires.
- If you need a drive with 0-10V dimming characteristics, please contact BOKE.

Dimming curve

Output current vs.Dimming Voltage



Output current vs.10V PWM Duty Cycle



*Frequency range:300Hz-3KHz

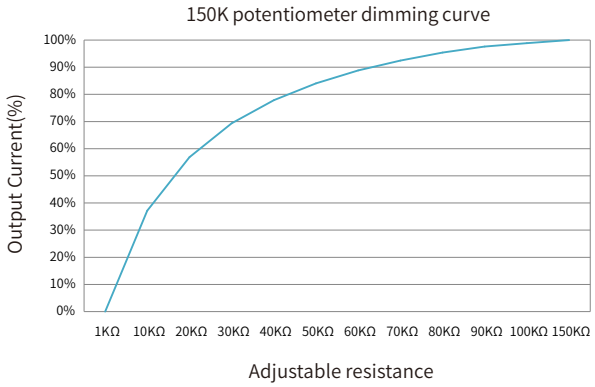
150K potentiometer dimming application

Wiring diagram

Remarks

- In the 150K potentiometer dimming mode, the potentiometer can only be connected to one driver.

Dimming curve



1-10V/10V PWM+12V dimming application

Wiring diagram

Electrical description

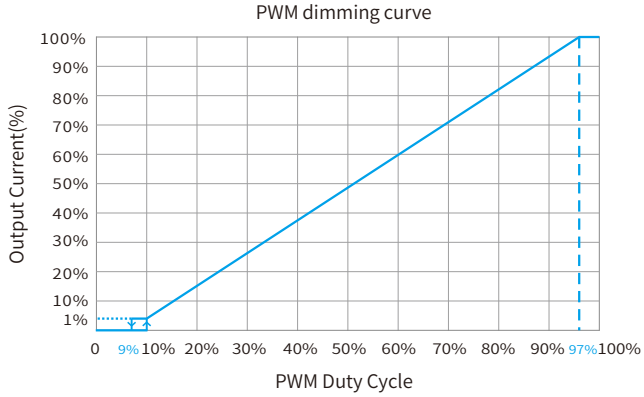
VCC：+12VDC±5%,100mA MAX
PDIM：Voltage:3.3-10V
Frequency range:300hz-3khz
Phase position:positive logic
Duty cycle:0%(OFF),10%(darkest)~100%(brightest)

Typical applications

- Aux supply 12V
- Diming PWM
- GND

Diming PWM →
- Bluetooth module
- Zigbee module
- WiFi module
- LoRa module
- 4G/5G module
- NB-IoT module
- Daylight Sensor
- PIR Sensor
- Microwave Sensor
- IR Sensor
- RF module
- .....

Dimming curve

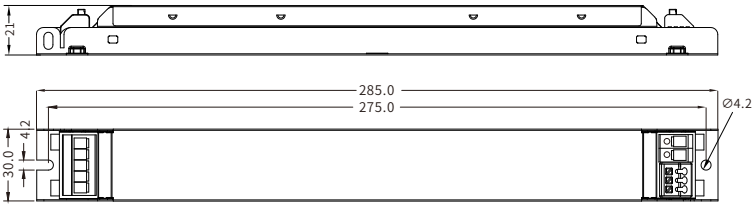


Installation

Mechanical dimensions

Unit:mm

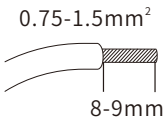
DGV060



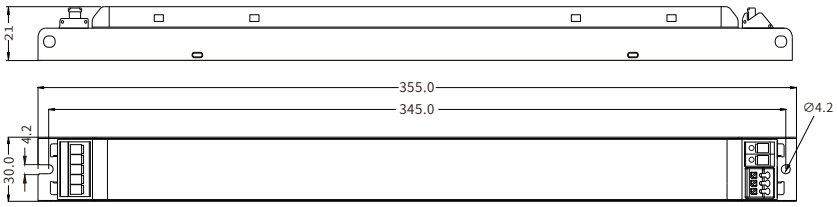
INPUT

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

Input wire



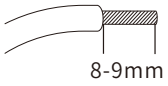
DGV100



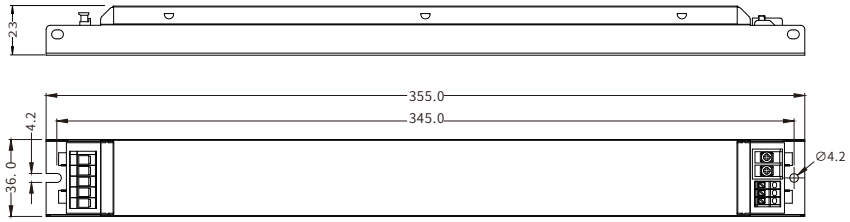
OUTPUT

Numbering	function	colour
1	V+	red
2	V-	black

Output wire



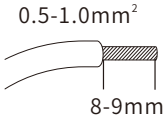
DGV150



DIMMING

Numbering	function	colour
1	VCC	red
2	GND	black
3	DIM	red

Dimming 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.

Mounting screw specifications and torque

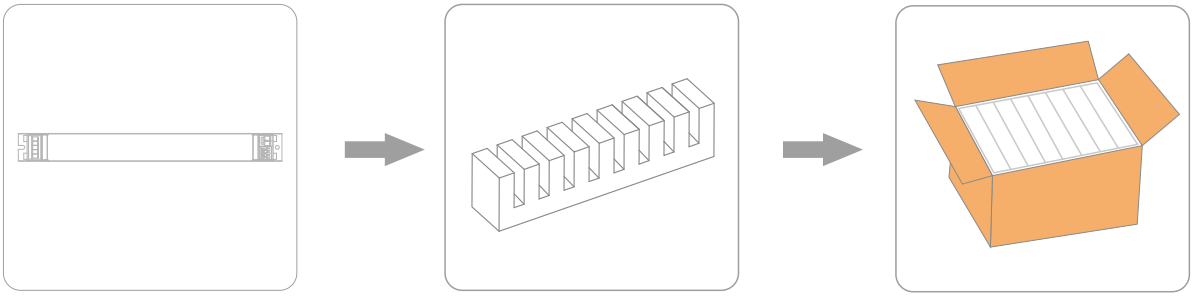
- Max. torque at the clamping screw: 0.5 Nm / M4

Replace LED module

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

Packaging

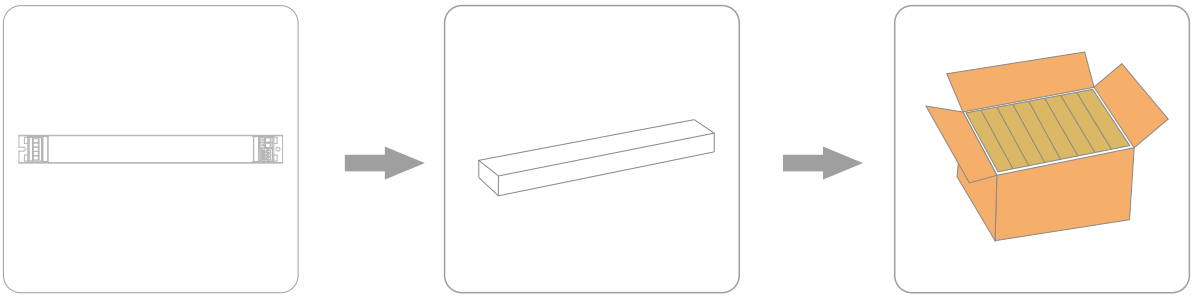
Optional 1: factory default



Product | Pearl wool | 8pcs*5layer=40pcs/CIN
7pcs*5layer=35pcs/CIN
7pcs*4layer=28pcs/CIN

Model	Product size	Weight	Pearl wool	Carton size	Qty/carton	N.W	G.W
DGV060	L285*W30*H21mm	250g	L405*W30*H65mm	L415*W330*H190mm	40pcs	10.0KG	11.8KG
DGV100	L355*W30*H21mm	307g	L319*W30*H75mm	L415*W330*H190mm	35pcs	10.75KG	12.5KG
DGV150	L355*W36*H23mm	415g	L364*W28*H105mm	L435*W375*H150mm	28pcs	11.62KG	13.5KG

Optional 2:



Product | Packaging | 7pcs*5layer=35pcs/CIN
9pcs*3layer=27pcs/CIN

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
DGV060	L285*W30*H21mm	250g	L320*W40*H30mm	L345*W300*H175mm	35pcs	8.75kg	10.2kg
DGV100	L355*W30*H21mm	307g	L390*W40*H30mm	L410*W285*H155mm	27pcs	8.29kg	10.2kg
DGV150	L355*W33*H23mm	415g	L390*W43*H30mm	L410*W285*H155mm	27pcs	11.21kg	13.3kg

Additional information

1. The life and MTBF of the product are for reference only, and do not represent a warranty statement. If the drive has been turned on, there is no warranty.
2. For more information, please send an email to info@bokedriver.com.