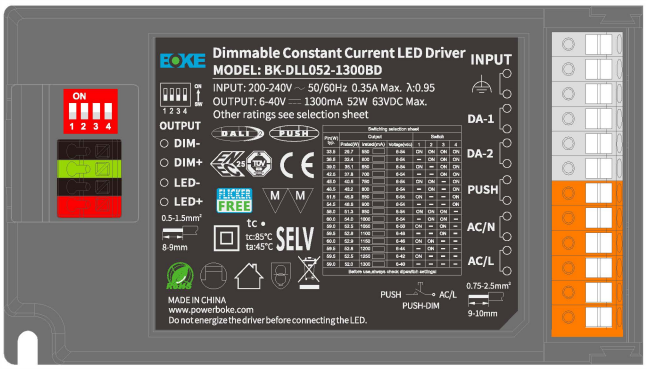
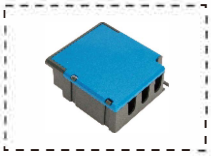


Model: BK-BAS004



Model: BK-BAS005A

Model: BK-BAS005B

FEATURES

- Built-in DALI-2+PUSH+1-10V /10V PWM+100K potentiometer dimming-
- Dual parallel input terminal for hand-in-hand installation
- Pluggable connectors of WAGO(Winsta) or Wieland(gesis) is available
- Constant current output with mulitiple levels selectable by DIP.switch (16 levels selectable)
- HPC Patent technology at any dimming level,the output current between the drivers is the same(even at the lowest brightness)
- Flicker-free at any brightness, meeting the standard of Flicker-free(IEEE Std-1789-2015)
- Support LED hot-plug in protection function and over-power protection function
- Excellent PUSH software processing,good synchronization effect,suppore small gap switch action
- Minimum dimming brightness is low to 1%, output current accuracy less than 2%
- Power on time is less than 0.5s and standby power is less than 0.5w
- Passed certification:ENEC-TUV CE CCC
- 5 years warranty

APPLICATION

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

MODEL CODE

BK - DLLXXX - XXXX z D

- D: Function mode D: DALI-2+PUSH+1-10V /10V PWM+100K potentiometer
- z: Output load voltage range identification code(B:6-42V)
- XXXX: Output current
- DLLXXX: Product series
- BK: BOKE

ELECTRICAL SPECIFICATION

MODEL	BK-DLL052-1300BD
OUTPUT	
Output current	0.5-1.3A
Output current ADJ. method	DIP S.W(16 level)
Output voltage range	6-54V
Output power	54W Max
Voltage ripple & noice (note.2)	≤350mV(Vpp)
Current ripple & noice	≤60mA(RMS)
Output current accuracy	±30mA
Linear regulation	±30mA
Load regulation	±30mA
No-load output voltage	63V
INPUT	
Rated input voltage	200-240VAC 200-240VDC
Input voltage range	180-264VAC 180-264VDC
Frequency range	47-63Hz
Power factor	PF>0.95(230VAC&full load)
Total harmonic distortion	THD<10%(230VAC&full load)
Efficiency (Typ.)	89%
Standby power (note.3)	<0.5W
Input current	<0.35A
Inrush current(cold start)	See data table for details
Max. drivers under the MCB	See data table for details
Power on delay	<0.5s @ 230Vac
DIMMING FUNCTION	
DALI dimming	input voltage:9.5V to 22.5V,type 16V,current consumption:1.7mA
PUSH dimming	input voltage:180-264V 47/63Hz
1-10V dimming	MAX. 20V
Dimming method	Built-in DALI-2+PUSH+1-10V /10V PWM+100K potentiometer dimming,Automatic switch
PROTECTION	
Short circuit protection (SCP)	Hiccup,recovers automatically after short circuit condition is removed
Over-power protection (OPP)	When the LED string power exceeds the output power range, the driver will close the output to prevent damage
Over-temperature protection (OTP)	Hiccup,recovers automatically after environment temperature declines
LED hot-plug in protection function	Hot plugging the LED when the driver is powered, the driver will turn off the output.
ENVIROHMENT	
Operation temperature	-20-45°C
Operation humidity	10-90% RH,non-condensing
Storagr tempera-ture/humidity	-25-80°C,5-95% RH,non-condensing
IP class	IP20
Vibration	10~500Hz,5G 12min./1cycle,period for 72min. each along X,Y,Z axes
Tc (note.4)	Tc=85°C(Ta=45°C)
MTBF	500000H,MIL-HDBK-217F(25°C)
Life time	See life time curve table for details
Environmental protection	RoHS
EMC	
EMC emisson (note.5)	EN55015,GB17743,EN61000-3-2 Class C,EN61000-3-3
EMC immunity	EN61000-4-2,3,4,5,6,8,11,EN61547
SAFETY	
Safety standards	EN61347-1/2-13,GB19510.1/14,EN62384
Flicker-free standard	IEEE1789
Flicker-free modulation(%)	0.151% , frequency <100 kHz
Certificate	ENEC-TUV CE CCC RCM
Withstand voltage	I/P-O/P:3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC,I/P-DALI:500VAC.
Surge	DM 2KV CM 2KV
Leakage current	<0.7mA @ 240Vac
Isolation resis-tance	I/P-O/P:100MΩ/500Vdc/25°C/70% RH

NOTE

1.All parameter are measured at 230VAC input,rated load and 25°C of ambient temperature.

2.Ripple & Noise are measured at 20MHz of bandwith by using a 12" twised pair-wire terminated with a 0.1uF & 47uF paralled capacitor.

3.Stand-by power consumption is measured at dimmable off condition.

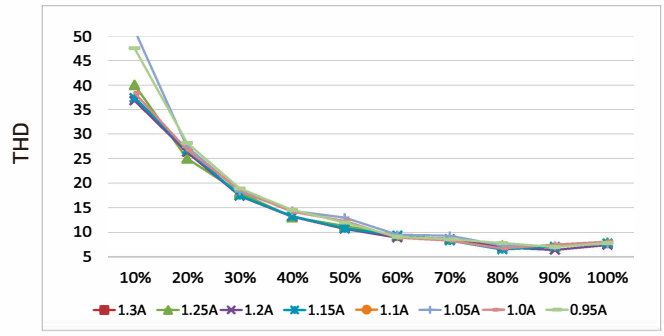
4.If this driver used for led lighting, the TC should not higherthan TC showed on the driver when the lighting working on the highest rated working tempreture.

5.The power supply is considers as a compent that wil be operated in combination with final equipment.Since EMC performance will be affected by the complete installation the final equipment mancfactures must re-quality EMC directive on the complete installation again.

Electrical characteristics

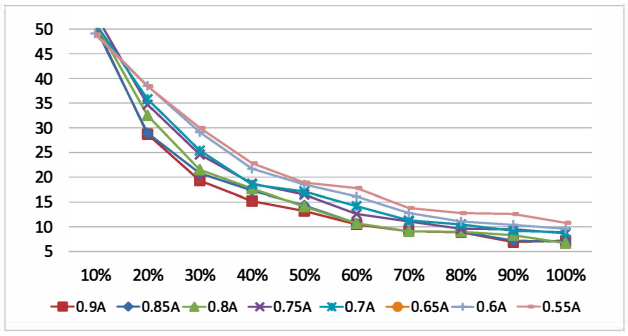
BK-DLL052-1300BD Electrical characteristics(40V/1.3A)

THD vs. Load



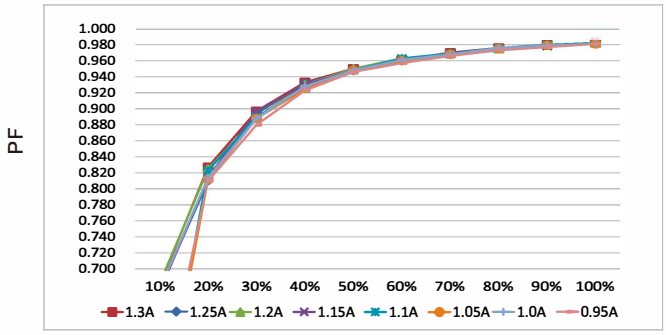
Load

THD vs. Load



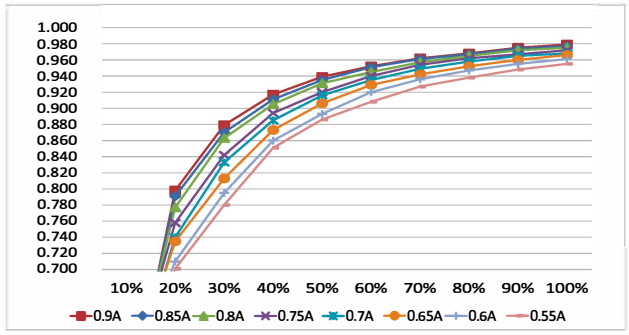
Load

Power factor vs. Load



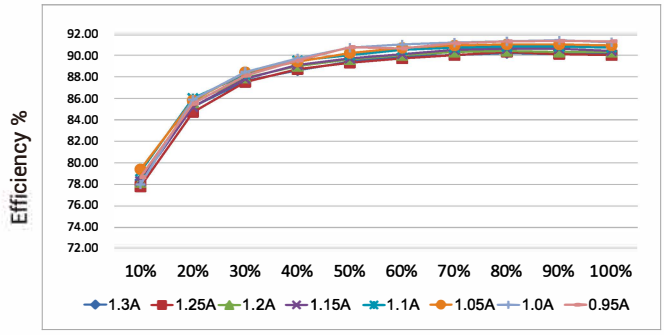
Load

Power factor vs. Load



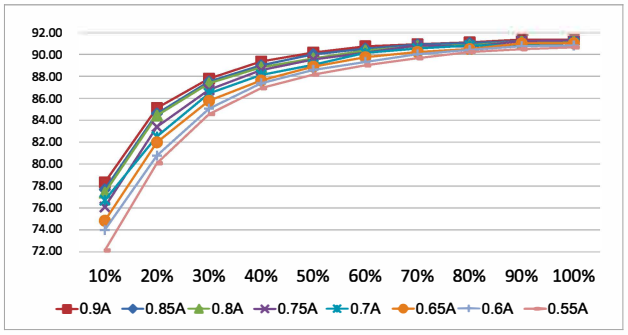
Load

Efficiency vs. Load



Load

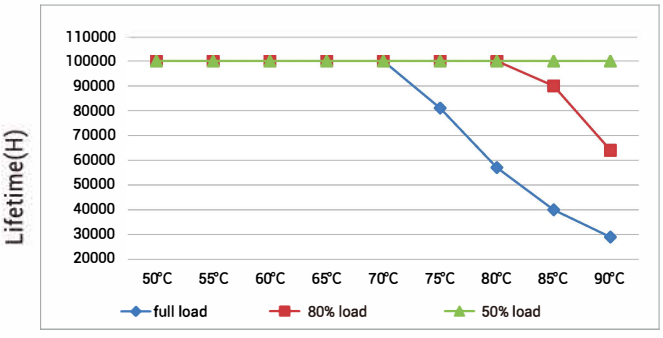
Efficiency vs. Load



Load

Lifetime vs. case temperature

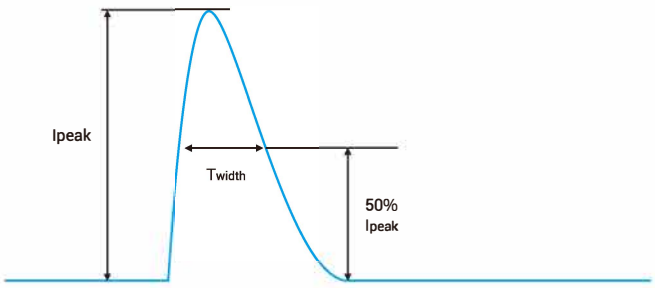
Lifetime vs. case temperature



case temperature(Tc)

Surge curve

Specification item	Value	unit	Condition
Inrush current Ipeak	11.4	A	Input voltage 230V
Inrush current Twidth	0.19	ms	Input voltage 230V, width at 50% Ipeak
Drivers/MCB 16A type B	⩽15	pcs	



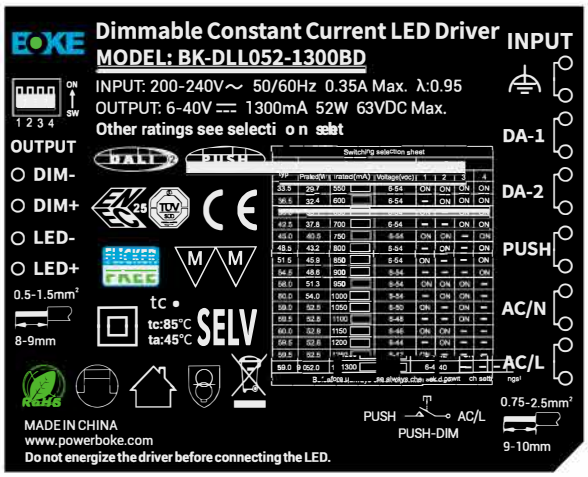
MCB	Rating	Relative number of LED driver
B	10A	63%
B	13A	81%
B	16A	100%(stated in datasheet)
B	20A	125%
B	25A	156%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%

DIP S.W Select output current table

Pin(W) typ.	Irated(mA)	Voltage(vdc)	1	2	3	4
29.7W	550mA	6-54VDC	ON	ON	ON	ON
32.4W	600mA	6-54VDC	--	ON	ON	ON
35.1W	650mA	6-54VDC	ON	--	ON	ON
37.8W	700mA	6-54VDC	--	--	ON	ON
40.5W	750mA	6-54VDC	ON	ON	--	ON
43.2W	800mA	6-54VDC	--	ON	--	ON
45.9W	850mA	6-54VDC	ON	--	--	ON
48.6W	900mA	6-54VDC	--	--	--	ON
51.3W	950mA	6-54VDC	ON	ON	ON	--
54.0W	1000mA	6-54VDC	--	ON	ON	--
52.5W	1050mA	6-50VDC	ON	--	ON	--
52.8W	1100mA	6-48VDC	--	--	ON	--
52.9W	1150mA	6-46VDC	ON	ON	--	--
52.8W	1200mA	6-44VDC	--	ON	--	--
52.5W	1250mA	6-42VDC	ON	--	--	--
52.0W	1300mA ★	6-40VDC	--	--	--	--

Remark: ★this current is factory default.
-- this channel is off.

Label



LED hot plug-in protection function

In the following two cases,the LED driver will automatically turn off the output to protect the LED

- When the driver is powered on first and the LED is connected later.
- When the driver is powered on,disconnected and connecred again.

The LED can be activated in two ways

- Through the AC input portr:disconnect the AC of the driver and power it again.
- Through dimming interface.

DALI:send“OFF"command first,then send “MAX"command.

PUSH:short press PUSH switch two times,then long press PUSH switch.

1-10V:first adjust the output voltage of the dimmer to 0.9v or below, then adjust it to 1V or above.

LED over-power protection

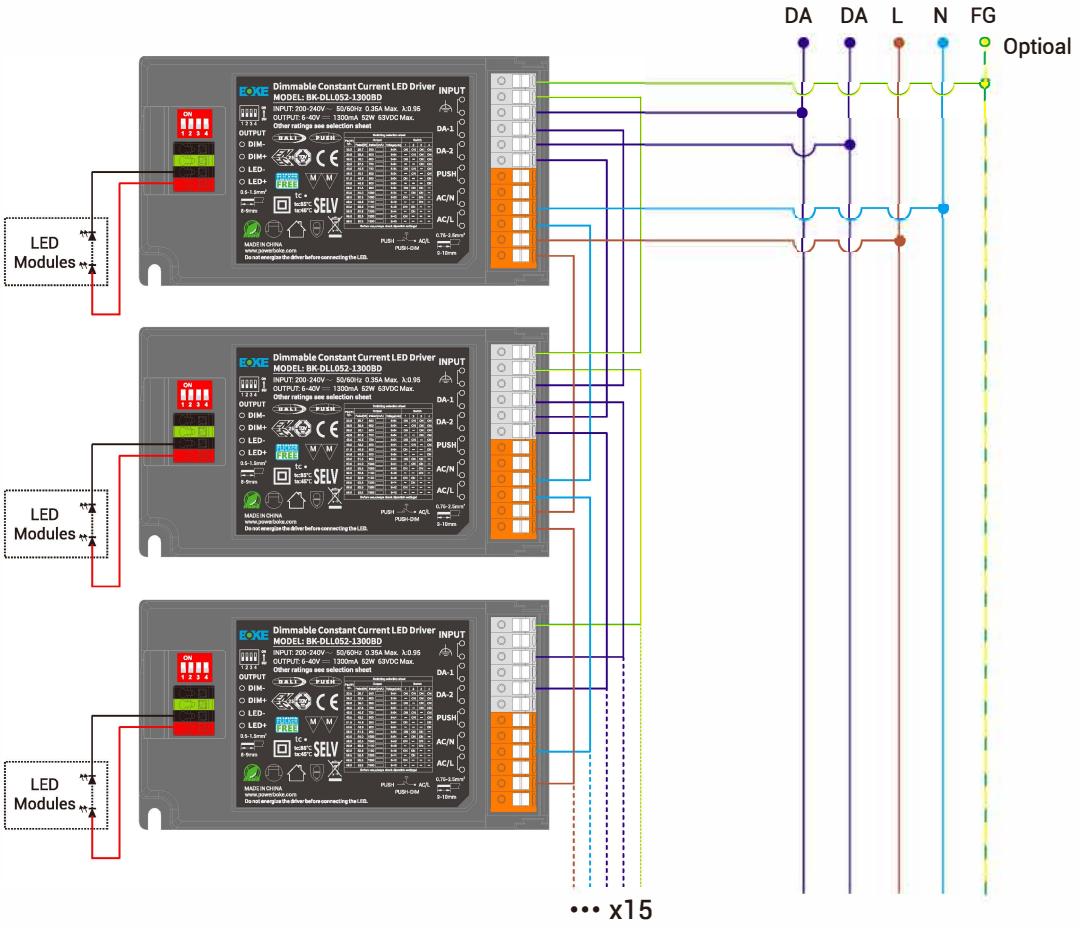
- When the connected LED string voltage exceeds the highest output voltage defined by the switch selection sheet, the driver will turns off the output.
- When the correct LED is connected,the driver will automatically resume output

Control mode switching method

- Switch to DALI control mode:The DALI signal is connected to the DA and DA ports, and the driver will automatically switch to the DALI control mode.
- Switch to PUSH control mode:Short press or long press the switch on the PUSH port, the driver will automatically switch to PUSH control mode.
- Switch to 1-10V control mode:Connect the 1-10V signal to the DIM and GND port, and then adjust the 1-10V signal to the maximum and minimum, the driver will automatically switch to the 1-10V control mode.orShort circuit DIM and GND port lasts 2s, the driver will automatically switch to 1-10V control mode.

DALI dimming

Wiring diagram



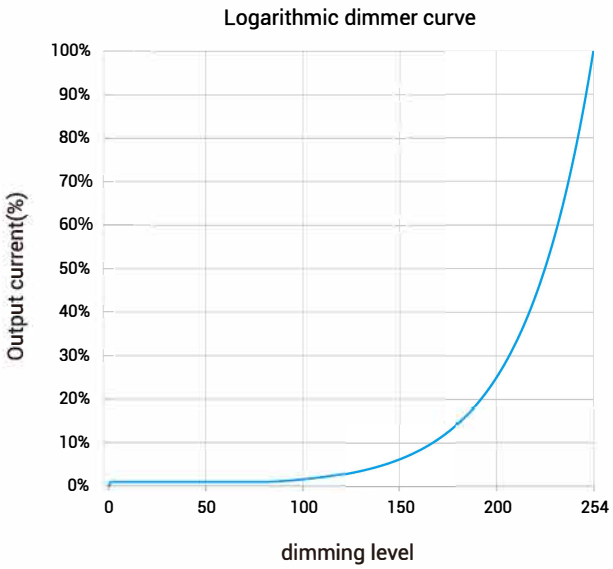
Note

- 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 2×1.5mm².
- DALI bus can be wired together with any mains voltage cables, but separate wiring is recommended.

Please refer to the table below

Cable size	Distance
2×0.50mm²	max.100m
2×0.75mm²	max.150m
2×1.00mm²	max.200m
⩾2×1.50mm²	max.300m

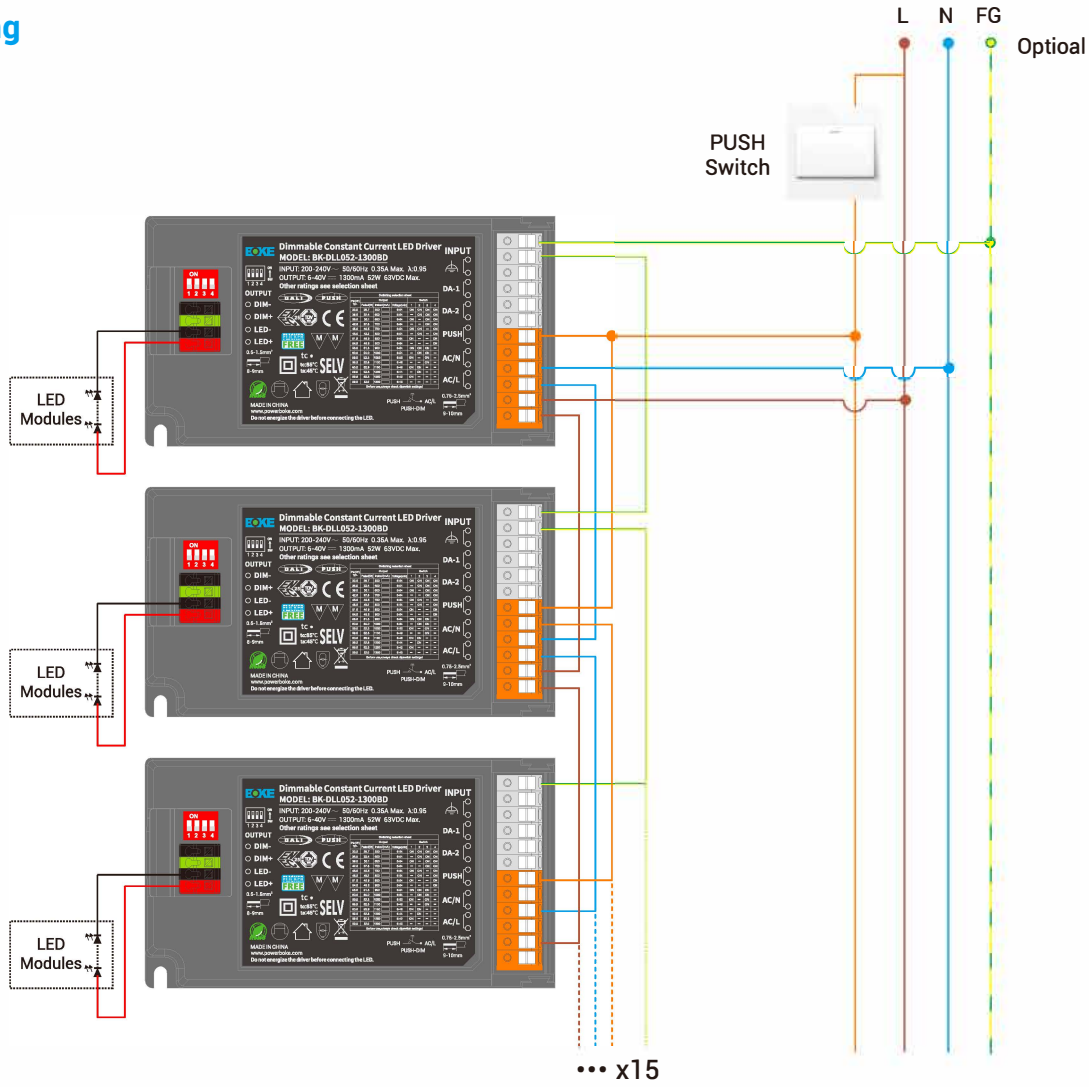
Dimming curve



Note:
The default is a logarithmic dimming curve. If necessary, the dimming curve can be changed to a linear dimming curve through the DALI configuration tool.

PUSH dimming

Wiring diagram



Note

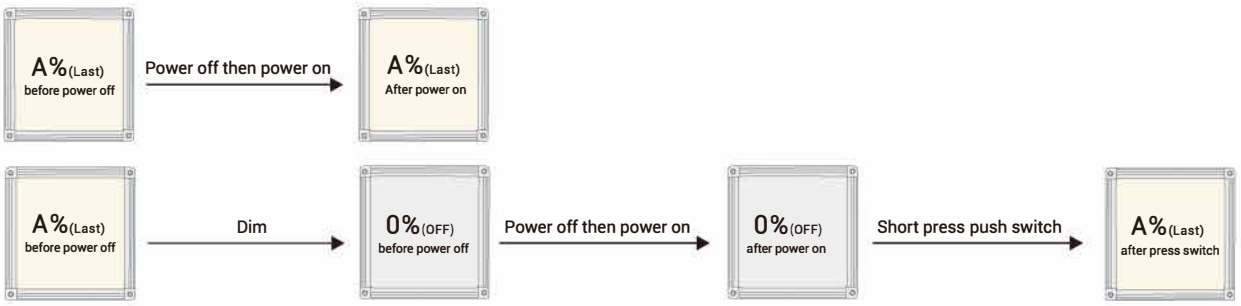
Turn on or turn off:short press push switch for 0.2-1s.

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 off,the light will be on after power on again,brightness will be the same as the last lighting on brightness.

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

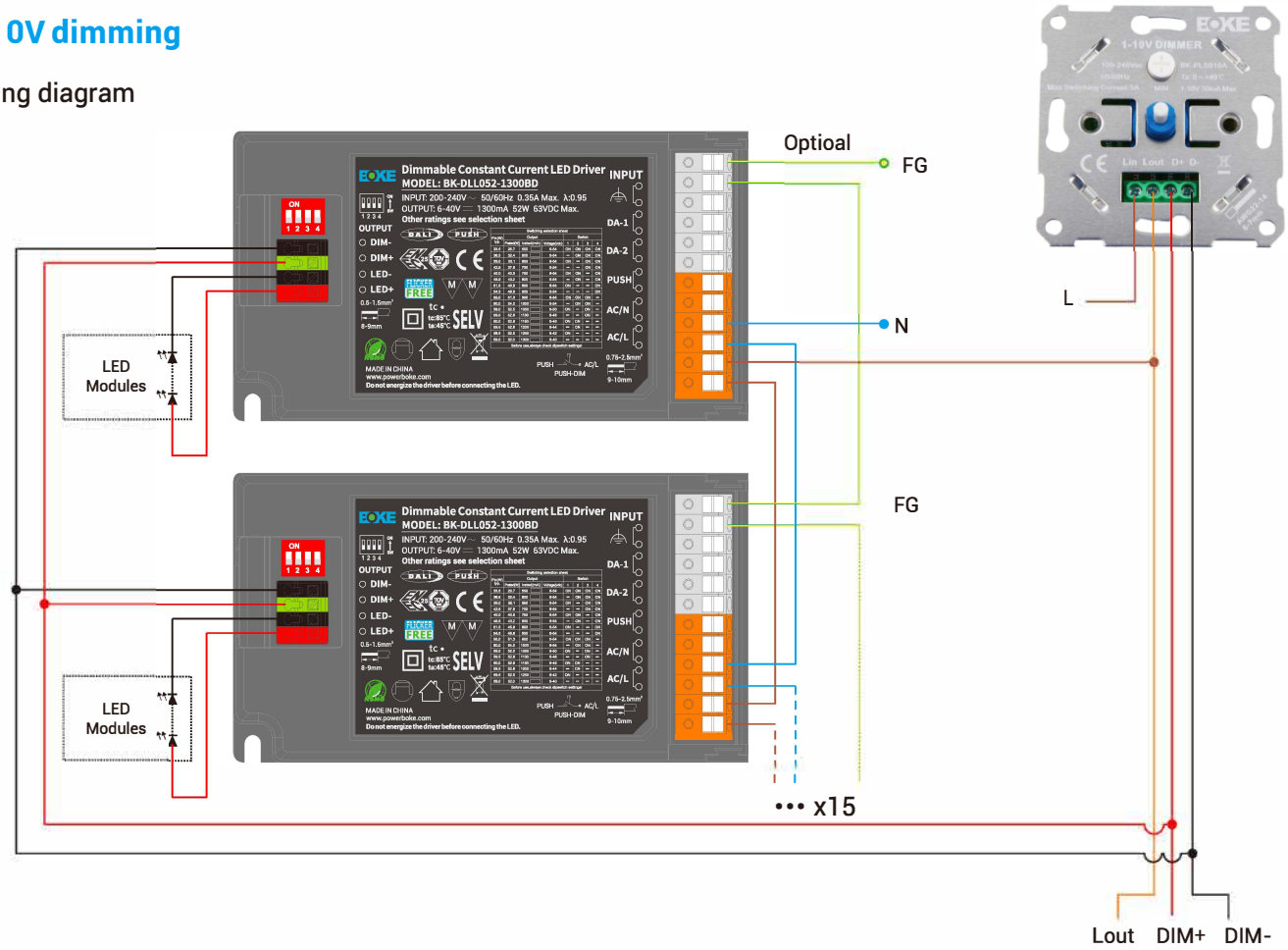
Step 3：long press the PUSH switch,confirm each light is from darkest to brightest and all the lights are synchronous.

method 2：

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

1-10V dimming

Wiring diagram

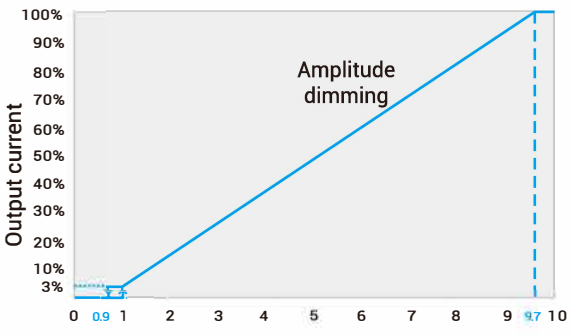


Note

- 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, GND is negative, please do not reverse.
- Dimming interface does not support voltage access higher than 20V, 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.
- It is recommended to conduct sample test first and confirm the dimming effect before bulk purchase.
- If you need a drive with 0-10V dimming characteristics, please contact BOKE.

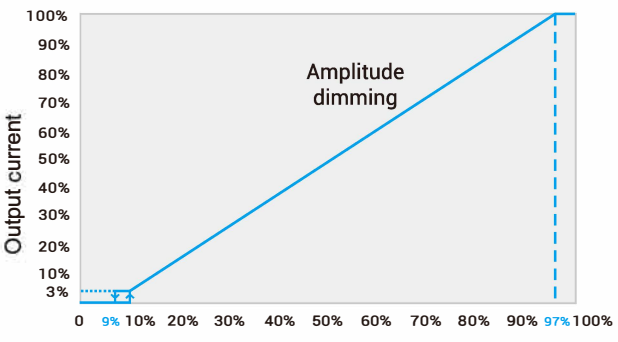
Dimming curve

Output current vs.Dimming Voltage(Typical)



Dimming Voltage(Vdc)

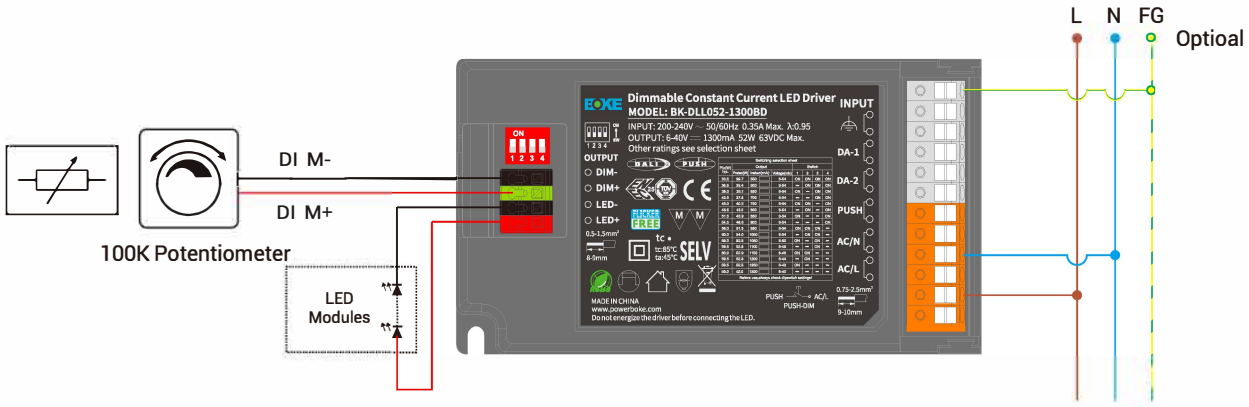
Output current 10V PWM Duty Cycle(Typical)



10V PWM Duty Cycle
*Frequency range:100Hz-3KHz

100K potentiometer dimming

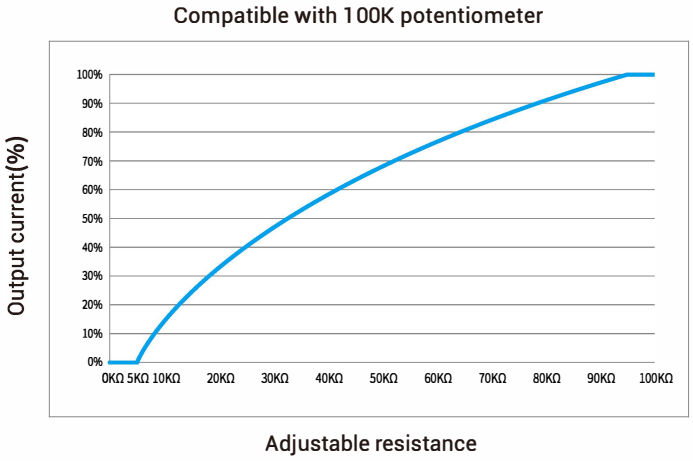
Wiring diagram



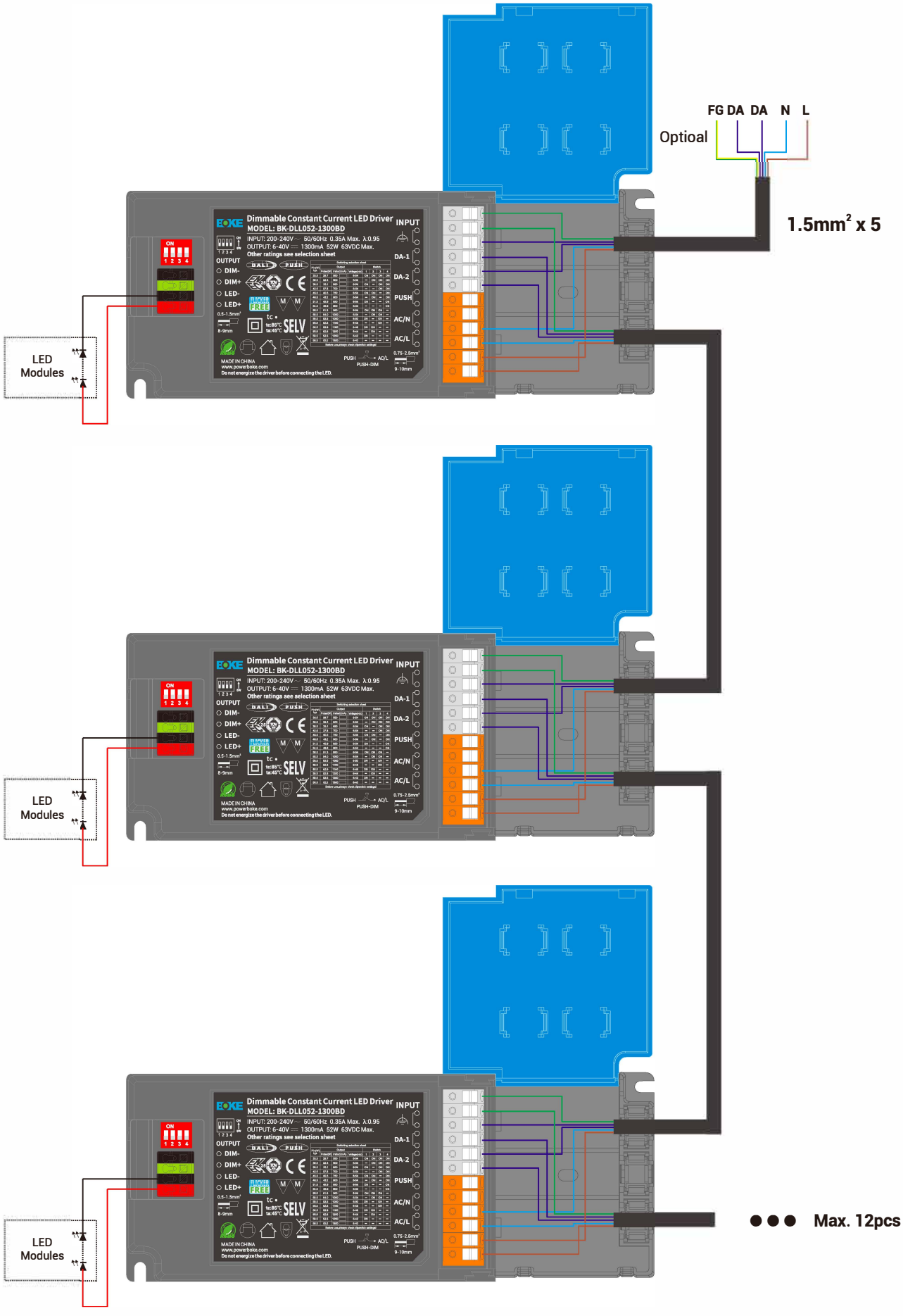
Note

- Only one driver can be mounted in the potentiometer dimming mode.
- Dimming interface does not support voltage access higher than 20V, 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 currentoutput is closed.
- 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.
- It is recommended to conduct sample test first and confirm the dimming effect before bulk purchase.
- If you need a drive with 0-10V dimming characteristics, please contact BOKE.

Dimming curve

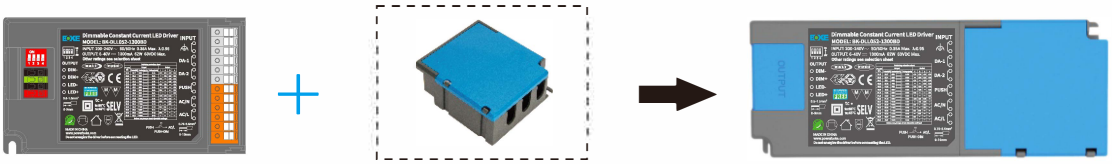


Loop-in loop-out wiring application



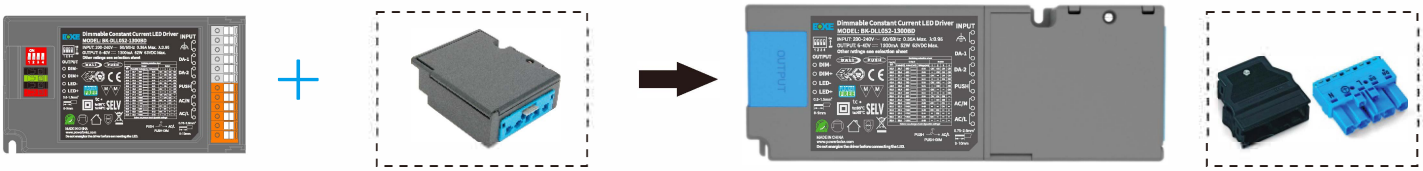
Optional accessories

Optional 1：



Model: BK-BAS004

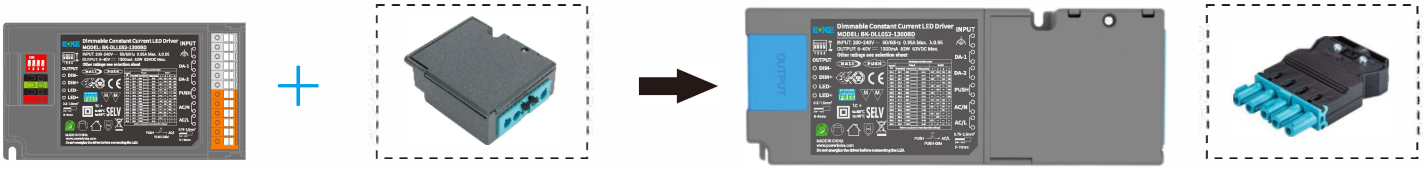
Optional 2：Pluggable strain relief, 5Pole (WAGO)



Model: BK-BAS005A1
Pluggable connector：
WAGO(770-2115/007-000)

Model: BK-BAS005A2
Pluggable connector：
WAGO(770-1105/022-000)

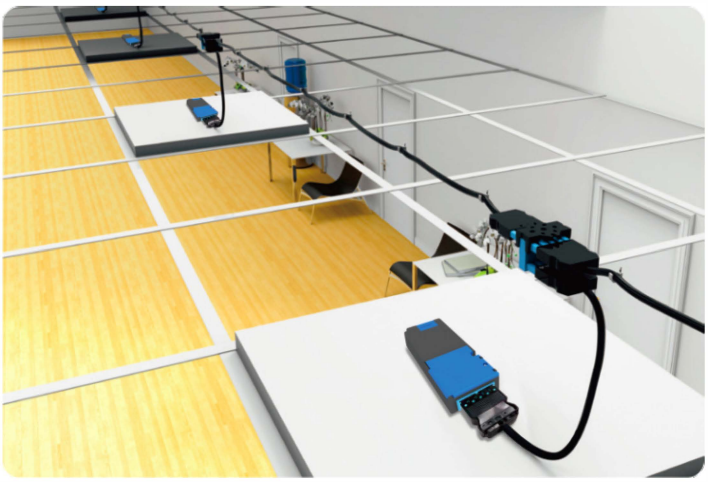
Optional 3：Pluggable strain relief, 5Pole (Wieland)



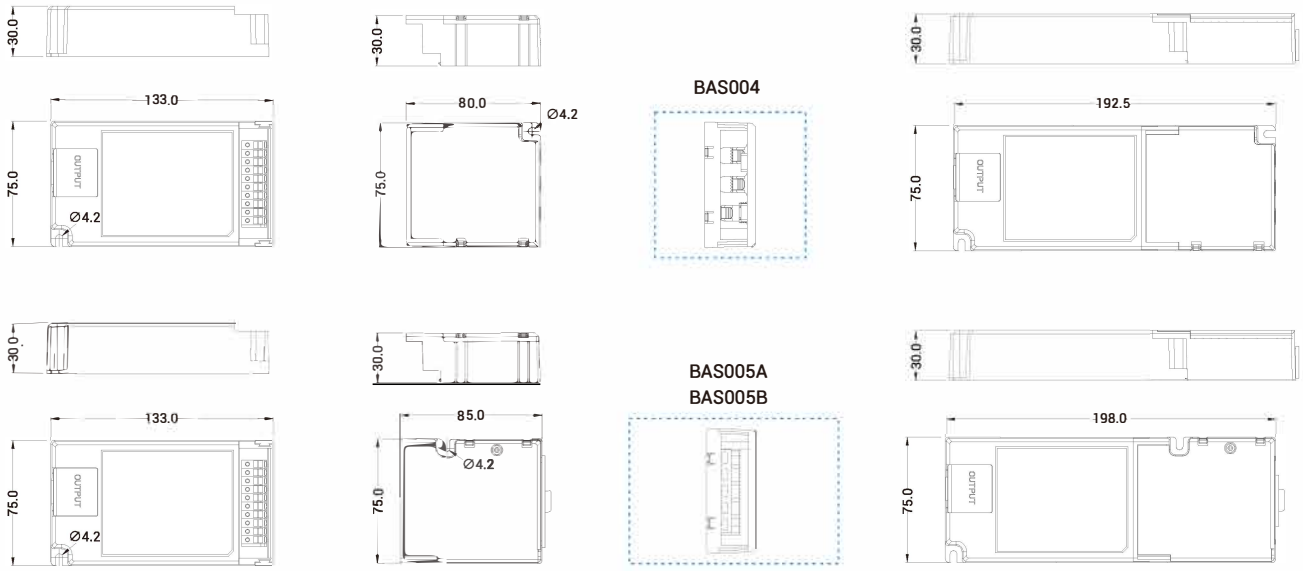
Model: BK-BAS005B1
Pluggable connector：
Wieland(92.052.8658.0)

Model: BK-BAS005B2
Pluggable connector：
Wieland(92.953.5453.0)

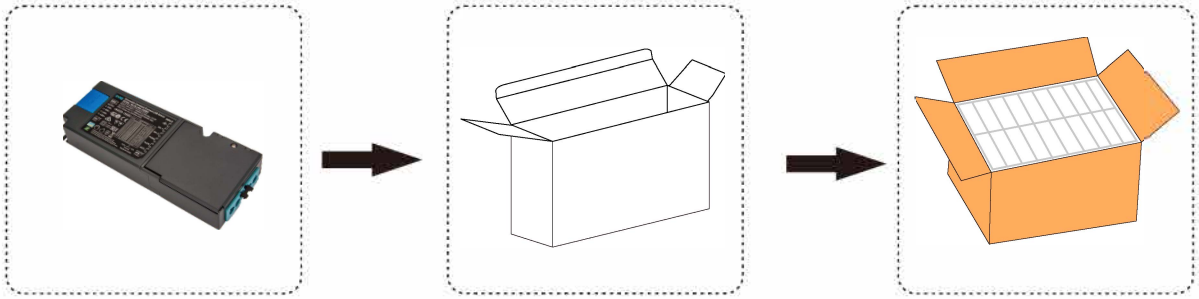
Optionl 2 or Optionl 3 application



Mechanical Specification



Product package



Product | Packaging | 25pcs×2layer=50pcs/CIN
16pcs×2layer=32pcs/CIN

Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
DLL052(no-accessories)	L133*W75*H30mm	222g	L140*W40*H100mm	L530*W310*H230mm	50pcs	11.0kg	13.5kg
DLL052 (BAS004)	L192.5*W75*H30mm	260g	L225*W38*H82mm	L465*W325*H185mm	32pcs	8. 30kg	10.7kg
DLL052 (BAS005A)	L198*W75*H30mm	276g	L225*W38*H82mm	L465*W325*H185mm	32pcs	8.90kg	11.0kg
DLL052 (BAS005B)	L198*W75*H30mm	276g	L225*W38*H82mm	L465*W325*H185mm	32pcs	8.90kg	11.0kg