

**Constant current independent driver
PBL Series suffix 3 (Single input+DIP-switch)**



Features

- 5-level of current output optional by DIP-switch
- 0.75-1.5mm² support Input large terminal design, wiring is more reliable
- Screw-free and pressing type strain relief, supports thicker cables and is easier to install
- Soft dimming and flicker-free at any brightness
- No-load power input<0.5W, meets the requirements of ErP certification
- High PF, high efficiency, low THD
- SELV and Class II design, suitable for use inside of the light
- Passed ENEC-TUV,CE,RCM,CCC and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5-year guarantee

Functions

- DIP switch to switch output current
- Support central emergency application (100% output in DC input)
- Support self-contained emergency application
- Protective features (short-circuit,no-load protection)

Suitable for lights

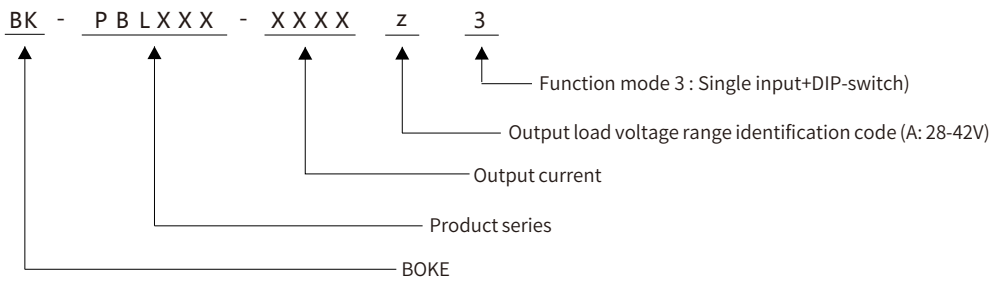
- Suitable for lights with independent drivers such as downlights, spotlights, panel lights, etc
- Not suitable for lights with built-in drivers

Typical applications

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



Model coding rules of PBL series



Optional function selection table of PBL series

Model	Suffix	Features			
		Dual input	Single input	CCT-switch (Slide switch)	Switch output current (DIP-switch)
PBL040 PBL050	1	√		√	√
	2		√	√	√
	3		√		√
	4	√			√

* The description in this specification is only applicable to the products with the suffix 3 and the model are PBL040,PBL050

Order selection table of PBL series(just suffix 3, 31.5W/40W/50W)

Model	Input voltage	Output power	Output voltage	Output current	Dimension	Article number
BK-PBL040-0750A3	200-240VAC	31.5W	28-42VDC	0.55-0.75A	L142*W50*H30mm	B-PBL040-HA1007A3
BK-PBL040-1000A3	200-240VAC	40.0W	28-42VDC	0.80-1.00A	L142*W50*H30mm	B-PBL040-HA1003A3
BK-PBL050-1250A3	200-240VAC	50.4W	28-42VDC	0.75-1.25A	L142*W50*H30mm	B-PBL050-HA1003A3

Technical data

Product model	BK-PBL040-0750A3	BK-PBL040-1000A3	
Output parameters			
Regulation method	Constant Current	Constant Current	
Rated output current	0.55-0.75A	0.8-1A	
Rated output voltage	28-42V	28-42V	
Rated output power	31.5W Max	40W Max	
Output current adjustment	DIP S.W(5 levels)	DIP S.W(5 levels)	
Output current ripple LF	±1%	±1%	
Output current accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	50V	50V	
Flicker-free(typical)	Modulation depth =0.193% (100 Hz), Pst LM = 0.015, SVM = 0.005,(The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage	200-240VAC 200-240VDC		
Rated input voltage	180-264VAC 180-264VDC		
Input voltage shock	<380 VAC, 1 h		
Input current	<0.35A (AC input)		
Input frequency	0/50/60Hz		
Input power factor	>0.95 (230V AC & Full load)		
Input THD	<10% (230V AC & Full load)		
Efficiency(typical)	88% (230V AC & Full load)		
In-rush current	14A peak, 280us duration(50 % Ipeak), see the description below for details		
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(DC start),<0.3s(AC/DC switchover),<0.5s(Turn off)		
Switching cycles	> 50,000 switching cycles		
Power consumption	Full load(Pmax):40W, No load(Pno): <0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A		
Safety			
Withstand voltage	I/P-O/P:3750V AC		
Mains surge capability	L-N: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	N/A		
PUSH dimming port	N/A		
1-10V 3in1 dimming port	N/A		
Auxiliary power supply	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	Supported(100% output in DC input)		
Self-contained emergency	Supported		
Environment & Life time			
Operating temperature	Ta=-20-45°C		
Case temperature	Tc=90°C		
Operating humidity	5-85% RH, not condensed		
Storage temp./humidity	-40-80°C, 5-85% RH, not condensed		
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		
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	N/A		
EL	Compatible IEC 61347-2- 13 Annex J, compatible with EN 60598-2-22 and EN 50172		
RF	N/A		

Remarks

- 1.By default, all parameter are measured at 230V AC input, full load and 25°C of ambient temperature.
- 2.The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

Technical data

Product model	BK-PBL050-1250A3
Output parameters	
Regulation method	Constant Current
Rated output current	0.75-1.25A
Rated output voltage	28-42V
Rated output power	50.4W Max
Output current adjustment	DIP S.W(11 levels)
Output current ripple LF	±1%
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	50V
Flicker-free(typical)	Modulation depth =0.244% (100 Hz), Pst LM = 0.022, SVM = 0.007, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage	200-240VAC 200-240VDC
Rated input voltage	180-264VAC 180-264VDC
Input voltage shock	<380 VAC, 1 h
Input current	<0.4A (AC input)
Input frequency	0/50/60Hz
Input power factor	>0.95 (230V AC & Full load)
Input THD	<10% (230V AC & Full load)
Efficiency(typical)	89% (230V AC & Full load)
In-rush current	21.8A peak, 286us duration(50% Ipeak), see the description below for details
Start/Switchover/Turn off	<0.5s(AC start), <0.5s(DC start), <0.3s(AC/DC switchover), <0.5s(Turn off)
Switching cycles	> 50,000 switching cycles
Power consumption	Full load(Pmax):50.4W, No load(Pno): <0.5W, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A
Safety	
Withstand voltage	I/P-O/P:3750V AC
Mains surge capability	L-N: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	N/A
PUSH dimming port	N/A
1-10V 3in1 dimming port	N/A
Auxiliary power supply	N/A
Dimming range	N/A
Dimming drive mode	N/A
Emergency support	
Central emergency system	Supported(100% output in DC input)
Self-contained emergency	Supported
Environment & Life time	
Operating temperature	Ta=-20-45°C
Case temperature	Tc=90°C
Operating humidity	5-85% RH, not condensed
Storage temp./humidity	-40-80°C, 5-85% RH, not condensed
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
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	N/A
EL	Compatible IEC 61347-2-13 Annex J, compatible with EN 60598-2-22 and EN 50172
RF	N/A

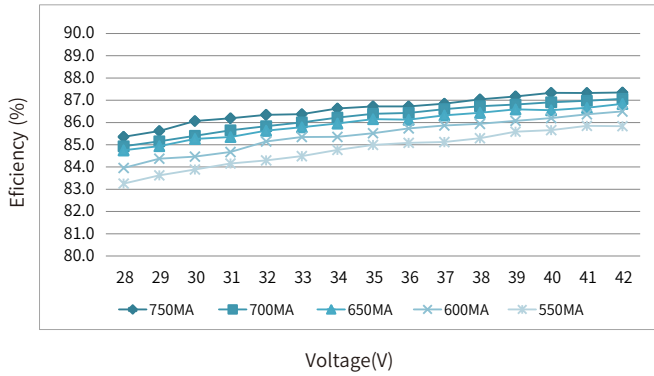
Remarks

1. By default, all parameter are measured at 230V AC input, full load and 25°C of ambient temperature.
2. The driver can not be installed inside the light. when the driver is used with the light, the EMC of the whole light needs to be tested.

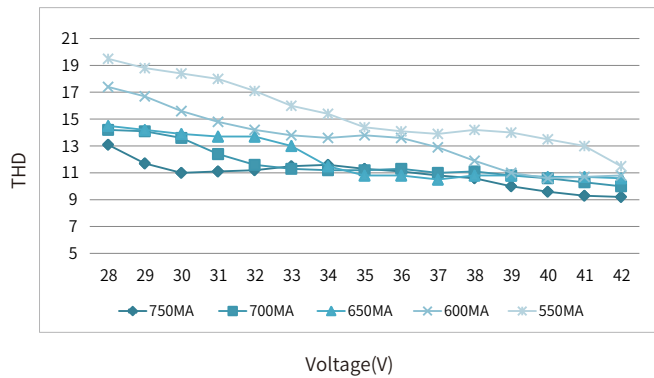
Electrical values

BK-PBL040-0750A3

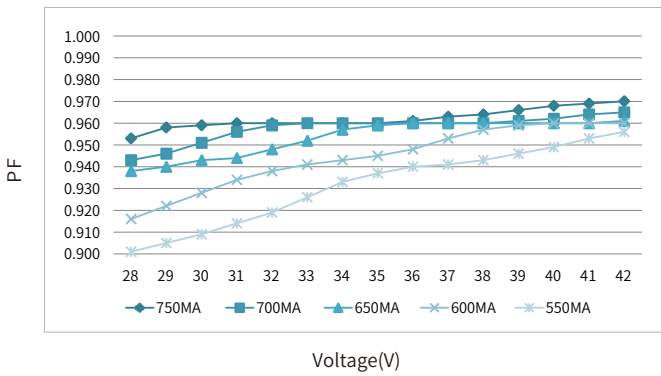
Efficiency vs Voltage



THD vs. Voltage

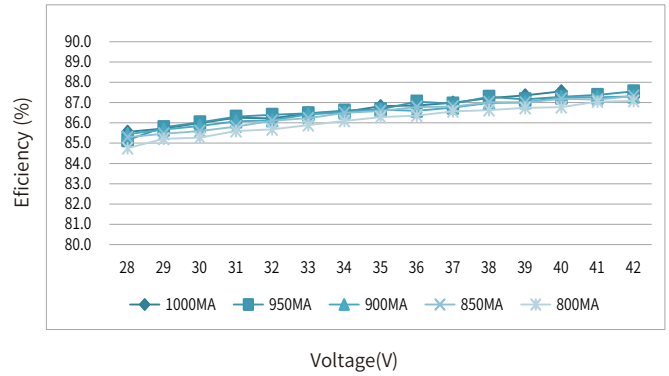


Power factor vs. Voltage

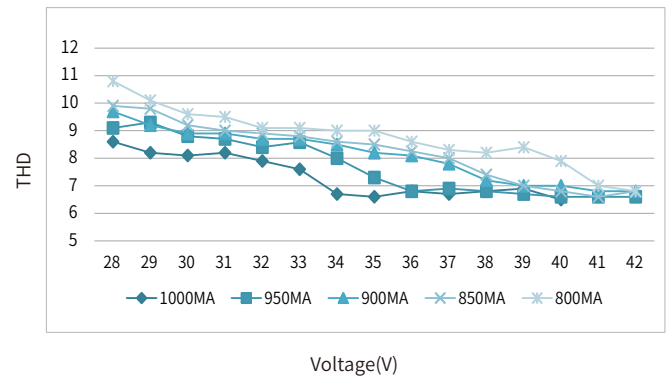


BK-PBL040-1000A3

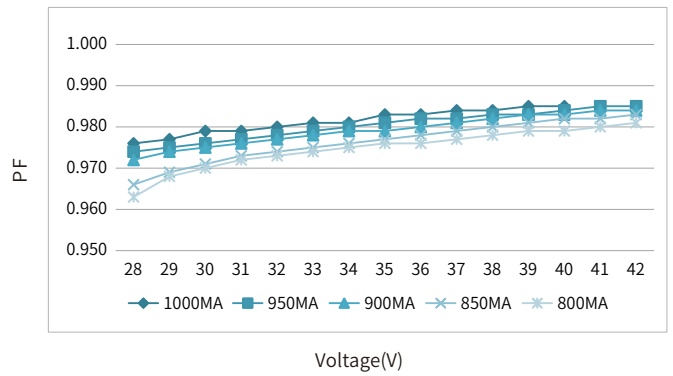
Efficiency vs Voltage



THD vs. Voltage

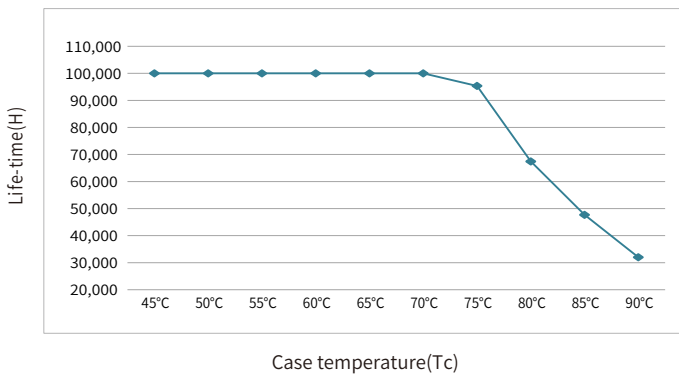


Power factor vs. Voltage



Expected life-time

Life-time vs. case temperature

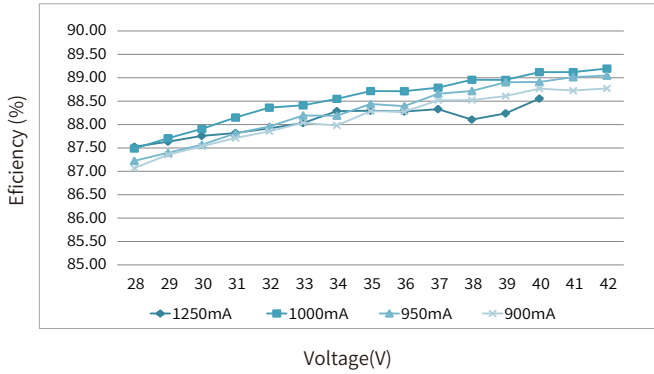


-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
 - The relation of tc to ta temperature depends also on the luminaire design.

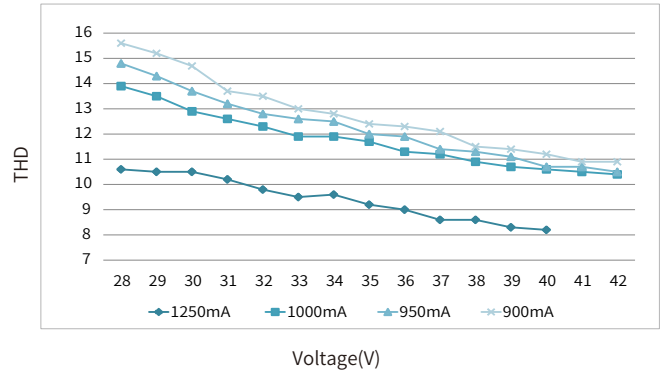
Electrical values

BK-PBL050-1250A3

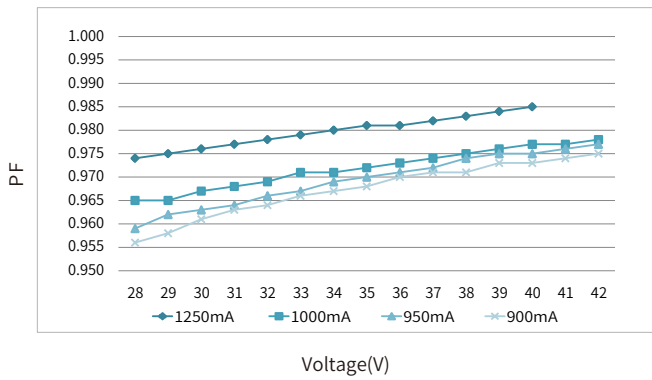
Efficiency vs Voltage



THD vs. Voltage

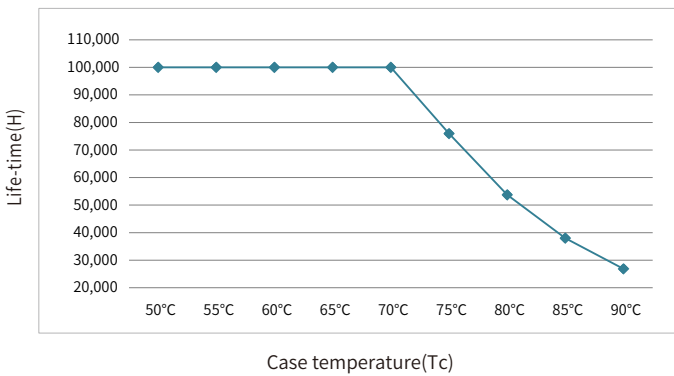


Power factor vs. Voltage



Expected life-time

Life-time vs. case temperature



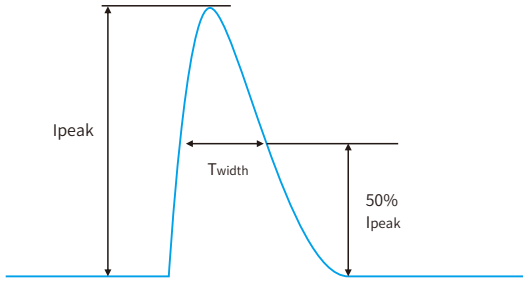
- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of tc to ta temperature depends also on the luminaire design.

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-PBL040-0750A3	14A	280us	AC 230V, Full load, Cold start, Ta ≤ 30°C, MCB is not installed side by side	15	20	24	30	38	25	33	40	50	63	44	57	70	87	109
BK-PBL040-1000A3	14A	280us		15	20	24	30	38	25	33	40	50	63	35	45	56	70	87
BK-PBL050-1250A3	21.8A	286us		9	12	15	19	24	16	20	25	31	39	28	36	44	56	69

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

- Output short-circuit will not damage the driver.
- After removing the short-circuit fault point, the driver will automatically restore output.

Output no-load protection

- Output no-load will not damage the driver.
- Please turn off the mains first if you need to connect the LED load.

Label

BOKE Constant Current LED Driver
MODEL: BK-PBL040-0750A3
 INPUT: 200-240V ~ 0/50/60Hz 0.35A Max. λ: 0.95 tc:90°C ta:45°C LED- ■
 OUTPUT: 28-42V ~ 750mA 31.5W 50VDC Max. •tc ta:45°C LED+ ■
 Other ratings see selection sheet
 For LED Modules use only
 For Australia and New Zealand, the marking label with www.bokedriver.com
 MADE IN CHINA
 ■ ACN/DC- ■ ACN/DC+
 Preparation for input and output 8-9mm

MODEL: BK-PBL040

Pin typ.	Output			Switch			
	Prated(W)	Irated(mA)	Voltage(Vdc)	1	2	3	4
27.8	23.1	550	28-42	ON	ON	ON	ON
29.1	25.2	600	28-42	ON	ON	ON	—
31.5	27.3	650	28-42	ON	ON	—	—
33.8	29.4	700	28-42	ON	—	—	—
36.0	31.5	750	28-42	—	—	—	—

Before use, always check dipswitch settings!

BOKE Constant Current LED Driver
MODEL: BK-PBL040-1000A3
 INPUT: 200-240V ~ 0/50/60Hz 0.35A Max. λ: 0.95 tc:90°C ta:45°C LED- ■
 OUTPUT: 28-40V ~ 1000mA 40W 50VDC Max. •tc ta:45°C LED+ ■
 Other ratings see selection sheet
 For LED Modules use only
 For Australia and New Zealand, the marking label with www.bokedriver.com
 MADE IN CHINA
 ■ ACN/DC- ■ ACN/DC+
 Preparation for input and output 8-9mm

MODEL: BK-PBL040

Pin typ.	Output			Switch			
	Prated(W)	Irated(mA)	Voltage(Vdc)	1	2	3	4
38.6	33.6	800	28-42	ON	ON	ON	ON
41.0	35.7	850	28-42	ON	ON	ON	—
43.2	37.8	900	28-42	ON	ON	—	—
45.3	39.9	950	28-42	ON	—	—	—
45.5	40.0	1000	28-40	—	—	—	—

Before use, always check dipswitch settings!

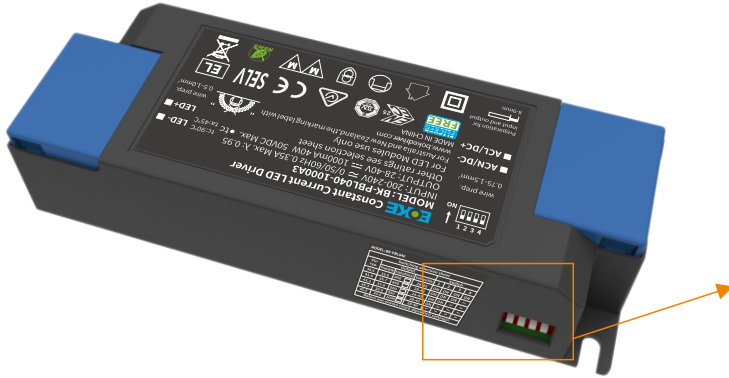
BOKE Constant Current LED Driver
MODEL: BK-PBL050-1250A3
 INPUT: 200-240V ~ 0/50/60Hz 0.4A Max. λ: 0.95 tc:90°C ta:45°C LED- ■
 OUTPUT: 28-40V ~ 1250mA 50W 50VDC Max. •tc ta:45°C LED+ ■
 Other ratings see selection sheet
 For LED Modules use only
 For Australia and New Zealand, the marking label with www.bokedriver.com
 MADE IN CHINA
 ■ ACN/DC- ■ ACN/DC+
 Preparation for input and output 8-9mm

MODEL: BK-PBL050

Pin typ.	Output			Switch			
	Prated(W)	Irated(mA)	Voltage(Vdc)	1	2	3	4
36.0	31.5	750	28-42	ON	ON	ON	ON
38.5	33.6	800	28-42	ON	—	ON	ON
41.0	35.7	850	28-42	ON	ON	—	ON
43.5	37.8	900	28-42	ON	—	ON	ON
45.5	39.9	950	28-42	—	—	ON	ON
48.0	42.0	1000	28-42	ON	—	ON	—

Before use, always check dipswitch settings!

DIP Switch & output current



Remarks:

- ★ It means that this item is the factory default current.
- It means that this channel is OFF.

BK-PBL040-0750A3

Pin	Irated	Voltage	1	2	3	4
27.8W	550mA	42VDC	ON	ON	ON	ON
29.1W	600mA	42VDC	ON	ON	ON	--
31.5W	650mA	42VDC	ON	ON	--	--
33.8W	700mA	42VDC	ON	--	--	--
36.0W	750mA ★	42VDC	--	--	--	--

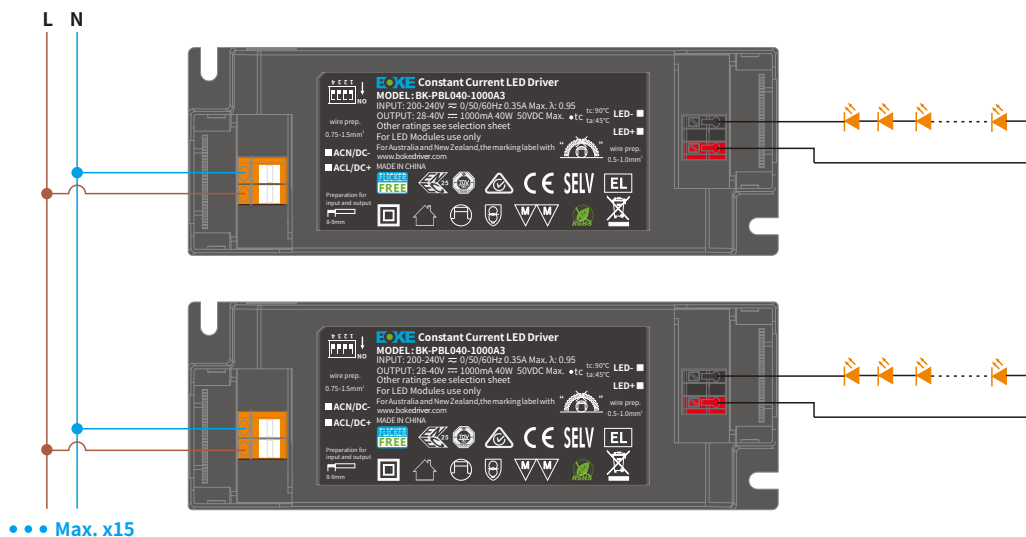
BK-PBL040-1000A3

Pin	Irated	Voltage	1	2	3	4
38.6W	800mA	42VDC	ON	ON	ON	ON
41.0W	850mA	42VDC	ON	ON	ON	--
43.2W	900mA	42VDC	ON	ON	--	--
45.3W	950mA	42VDC	ON	--	--	--
45.5W	1000mA ★	40VDC	--	--	--	--

BK-PBL050-1250A3

Pin	Irated	Voltage	1	2	3	4
36.0W	750mA	42VDC	ON	ON	ON	ON
38.5W	800mA	42VDC	ON	--	ON	ON
41.0W	850mA	42VDC	ON	ON	--	ON
43.5W	900mA	42VDC	ON	--	--	ON
45.5W	950mA	42VDC	--	--	--	ON
48.0W	1000mA	42VDC	ON	--	ON	--
50.5W	1050mA	42VDC	--	--	ON	--
53.0W	1100mA	42VDC	ON	ON	--	--
55.0W	1150mA	42VDC	--	ON	--	--
57.5W	1200mA	42VDC	ON	--	--	--
57.0W	1250mA ★	40VDC	--	--	--	--

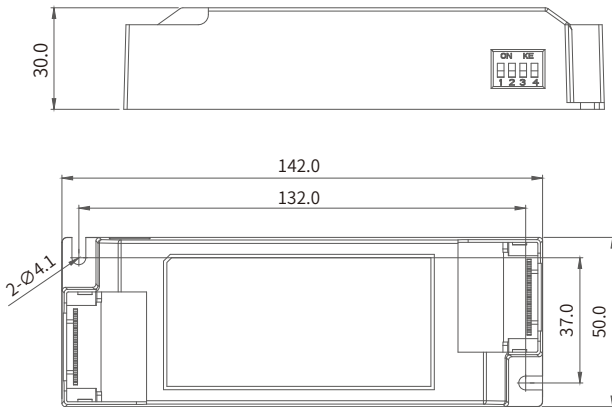
Wiring diagram



Installation

Mechanical dimensions

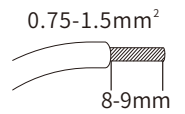
Unit:mm



INPUT

Pin Numbering	function	colour
1	ACL	orange
2	ACN	orange

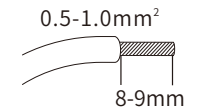
Input wire



OUTPUT

Pin Numbering	function	colour
1	LED-	black
2	LED+	red

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. length of output wires is 2 m.
- Incorrect wiring can damage LED modules.

Mounting screw specifications and torque

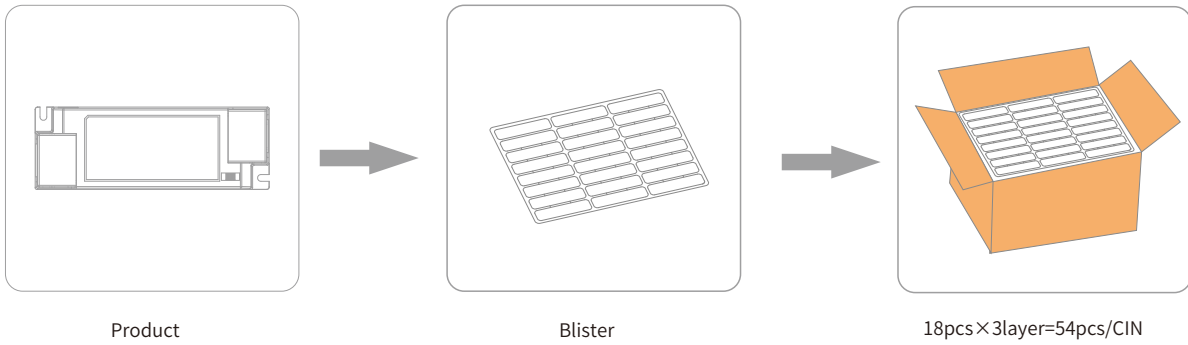
- Max. torque at the clamping screw: 0.5 Nm / M4

Replace LED module

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

Packaging

Optional 1: factory default



Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
PBL040	L142*W50*H30mm	138g	L430*W340*H48mm	L450*W350*H180mm	54pcs	7.45kg	9.50kg
PBL050	L142*W50*H30mm	180g	L430*W340*H48mm	L450*W350*H180mm	54pcs	9.70kg	11.2kg

Optional 2:



Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
PBL040	L142*W50*H30mm	138g	L178*W59*H50mm	L440*W375*H222mm	56pcs	7.70kg	10.0kg
PBL050	L142*W50*H30mm	180g	L178*W59*H50mm	L440*W375*H222mm	56pcs	10.0kg	11.5kg

Additional information

1. This product can only be used outside the light body, Can not be used inside of the light, and it must be used within the specified working environment.
2. 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.
3. For more information, please send an email to info@bokedriver.com.