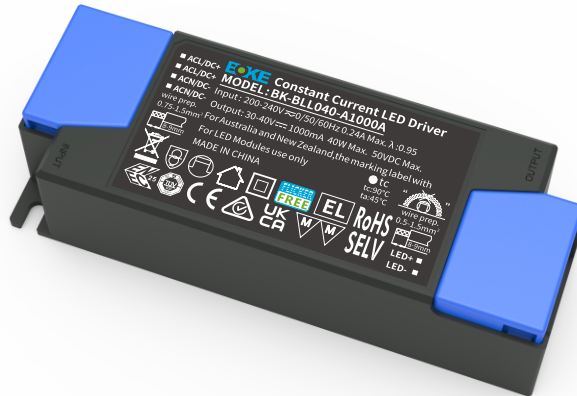


Constant current independent driver
BLL Series



Features

- Flicker-free output, which meets the requirement of ErP standard
- Loop-in and loop-out wiring without junction box
- Screw-free design, easy wiring
- Pushable strain relief design, easy to crimp and install
- Compact housing design
- Dual-stage circuit design, work stable
- Withstand 380VAC high voltage short-time shock
- High PF, high efficiency, low THD
- SELV and Class II design, suitable for use outside of the light
- Passed CE, ENEC, UKCA, RCM, CCC and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5-year guarantee

Functions

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

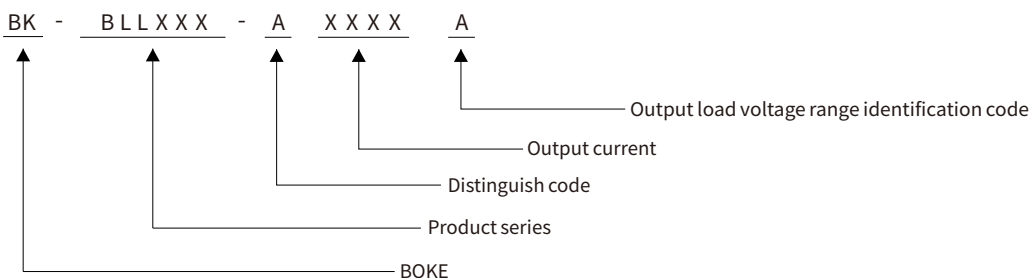
Suitable for lights

- 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 BLL series



Technical data

Product model	BK-BLL040-A0950A	BK-BLL040-A1000A	
Output parameters			
Regulation method	Constant Current	Constant Current	
Rated output current range	0.6-0.95A	0.96-1A	
Rated output voltage range	30-42VDC	30-40VDC	
Rated output power	39.9W Max	40W Max	
Output current adjustment	Fixed output	Fixed output	
Output current ripple LF	±1%	±1%	
Output current accuracy	±5%	±5%	
Linear regulation	±5%	±5%	
Load regulation	±5%	±5%	
No load output voltage	50VDC	50VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.215%, Flicker index(IEEE 1789)=0.000, Pst LM = 0.000, SVM = 0.001, (The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage	200-240VAC 200-240VDC		
Input voltage range	180-264VAC 200-264VDC		
Input voltage shock	<380V AC		
Input current	<0.24A (Rated input voltage)		
Input frequency	0/50/60Hz		
Input PF/Input DF	PF>0.95 (230V AC & Full load),DF>0.98 (230V AC & Full load)		
Input THD	15% (230V AC & Full load)		
Efficiency(typical)	88.5% (230V AC & Full load)		
In-rush current	20A peak ,218us 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(Pin):45.2W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A		
Withstand voltage	I/P-O/P:3750V AC		
Mains surge capability	L-N:2KV(Performance criterion:B)		
Leakage current	0.58mA (230V AC & Full load)		
Isolation resistance	I/P-O/P:100MΩ/500Vdc/25°C/70% RH		
Control interface			
DALI dimming port	N/A		
pushDIM dimming port	N/A		
1-10V 2in1 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, Normal operation)		
Environmental protection	RoHS		
Certifications and standards			
Certified	CE,ENEC,UKCA,RCM,EL		
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		

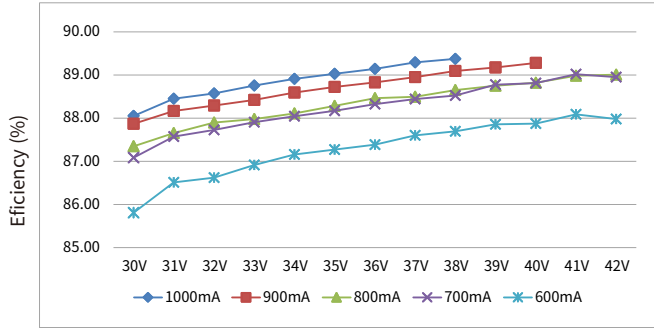
Remarks

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

Electrical values

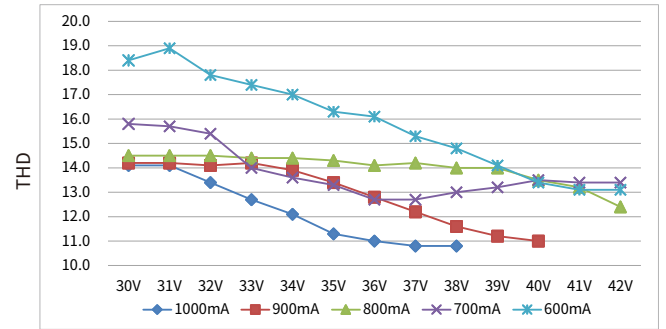
BK-BLL040-A

Efficiency vs voltage



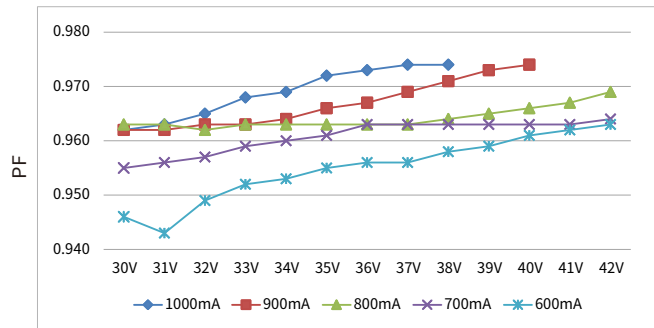
Voltage

THD vs. voltage



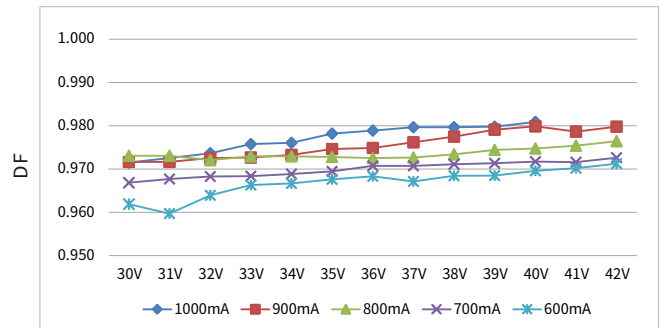
Voltage

Power factor vs. voltage



Voltage

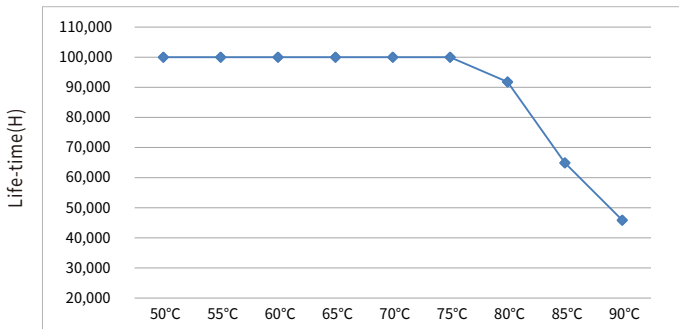
Displacement factor vs. voltage



Voltage

Expected life-time

Life-time vs. case temperature

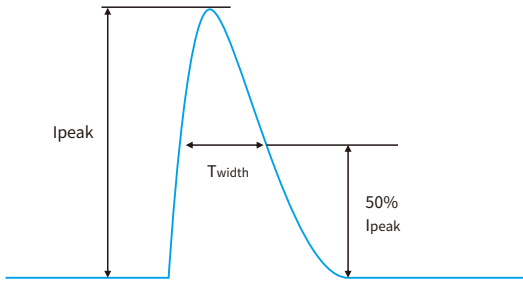


Case temperature(Tc)

- 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/pcs														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-BLL040-A	20A	218us	AC 230V, Full load, Cold start, Ta ≤ 30°C, MCB is not installed side by side	14	19	23	29	36	24	31	38	48	60	35	45	56	69	87



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 behaviour

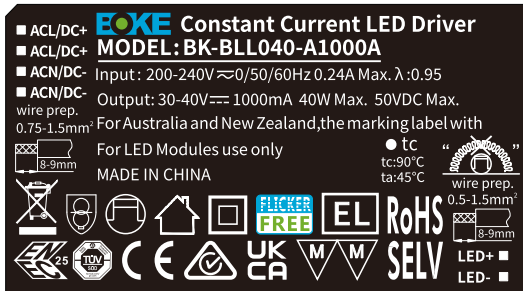
- Output short-circuit will not damage the driver.
- After removing the short-circuit fault point, the driver will automatically restore output.

Output no-load operation

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

Label

BLL040-A



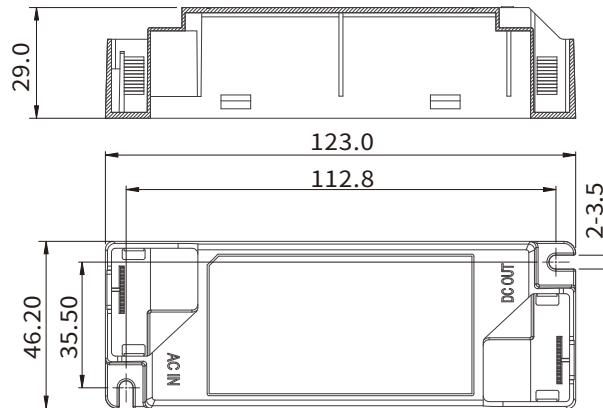
Insulation between circuits

Isolation	Input	Output	Case
Input	-	Double	Double
Output	Double	-	Basic
Case	Double	Basic	-

Installation

Unit:mm

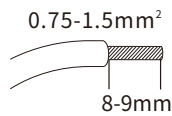
BLL040-A



INPUT

Numbering	function	colour
1	ACL/DC+	orange
2	ACL/DC+	orange
3	ACN/DC-	orange
4	ACN/DC-	orange

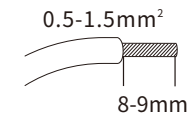
Input wire



OUTPUT

Numbering	function	colour
1	LED+	red
2	LED-	black

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.

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 lamp radiator).
- If the driver is used externally (it needs to be used with the power end cover), the installation of the driver should also meet the following conditions:
 - 1.The driver should be a certain distance between the drives, 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

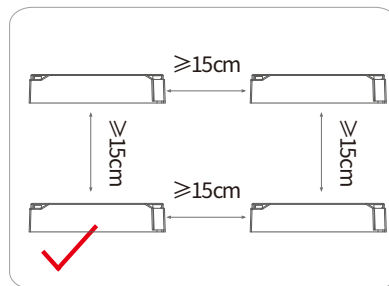
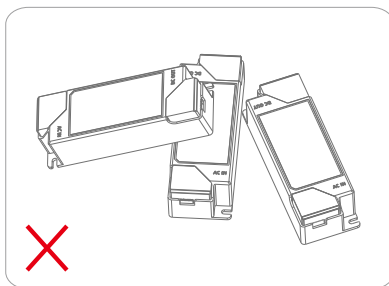


Figure 1

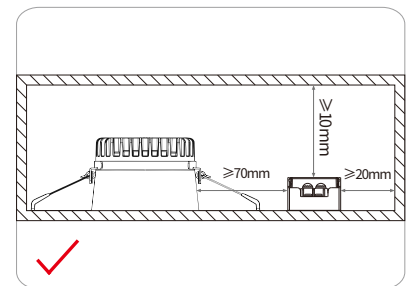
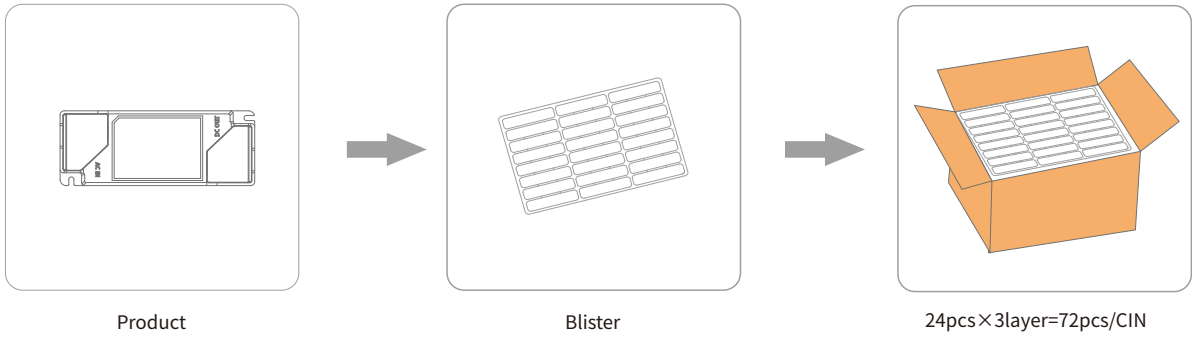


Figure 2

Packaging



Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
BLL040-A	L123*W46.2*H29mm	124.4g	L430*W340*H47mm	L450*W350*H180mm	72pcs	8.96kg	9.98kg

Additional information

1. This product can only be used outside the luminaire body, Can not be used inside of the luminaire, 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.
3. For more information, please send an email to info@bokedriver.com.