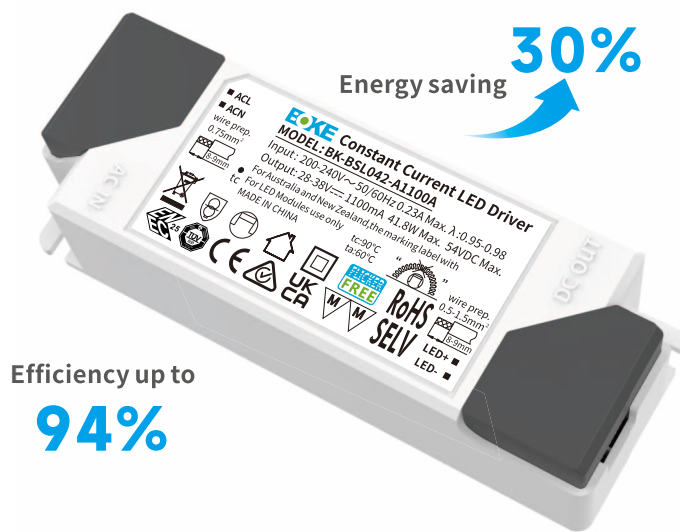


Constant current independent driver

BSL Series



Ultra-high efficiency | High stability | High cost performance | Reduce carbon emissions | Ultra-high environmental adaptability
Isolation safety | Anti 380V interference impact | Lightning resistant 2KV | Adapt to 60°C environment

Features

- Efficiency up to 94%, Energy saving 30%
- Two-stage and isolation, more stable and safer
- Ta up to 60°C, ultrahigh environmental adaptability
- Withstand 380VAC high voltage short-time shock
- Mains surge capability up to 2KV
- Flicker-free output, which meets the requirement of ErP standard
- Screw-free design, easy wiring
- High PF, high efficiency
- Pushable strain relief design, easy to crimp and install
- Compact housing design
- SELV and Class II design, suitable for use outside of the luminaires
- 5.5-year guarantee

Functions

- Protective features
(short-circuit, no-load protection)

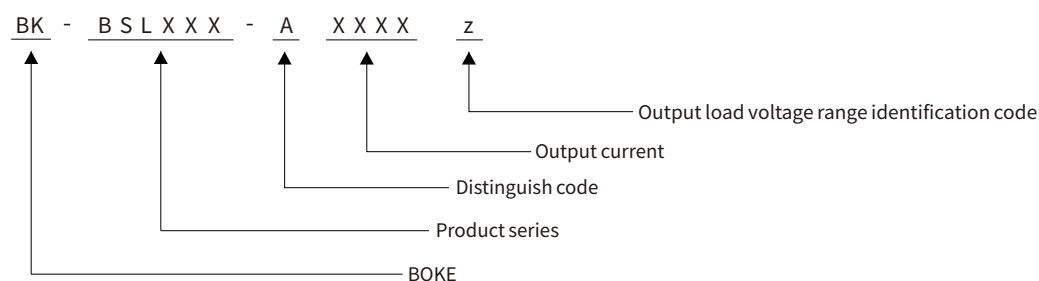
Suitable for lights

- Suitable for lights with independent drivers such as downlights, spotlights, panel lights, etc
- It is necessary to evaluate the chamber temperature of the light when it is used in the built-in

Typical applications

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

Model coding rules of BSL series



Model list

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-BSL022-A0600A	200-240VAC	25.2W MAX.	28-42VDC	0.3-0.6A	L119*W42.5*H28mm
BK-BSL042-A0900B	200-240VAC	41.6W MAX.	36-54VDC	0.4-0.9A	L119*W42.5*H28mm
BK-BSL042-A1100A	200-240VAC	42W MAX.	28-42VDC	0.5-1.1A	L119*W42.5*H28mm

Technical data

Product model	BK-BSL022-A0600A
Output parameters	
Regulation method	Constant Current
Rated output current range	0.3-0.6A
Rated output voltage range	28-42VDC
Rated output power	25.2W Max
Output current adjustment	Fixed output
Output current ripple LF	±2%
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	54VDC
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.263%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), Pst LM = 0.010, SVM = 0.005, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	200-240VAC
Input voltage range	180-264VAC
Input votage shock	<380V AC
Input current	<0.14A (Rated input voltage)
Input frequency	50/60Hz
Input PF/Input DF(typical)	PF:0.98 ,DF:0.98 ,see the electrical values below for details
Input THD(typical)	7.5% ,see the electrical values below for details
Efficiency(typical)	94% ,see the electrical values below for details
In-rush current(typical)	12.9A peak ,212us duration(50 % Ipeak), see the description below for details
Start/Switchover/Turn off	<0.5s(AC start), <0.5s(Turn off)
Switching cycles	> 100,000 switching cycles
Power consumption(typical)	Full load(Pin):26.8W, No load(Pno): N/A, 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:1KV(Performance criterion:A);L-N:2KV(Performance criterion:B)(90°/270°, 5 times each with an interval of 60s)
Leakage current(typical)	0.4mA
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 3in1 dimming port	N/A
Dimming range	N/A
Dimming drive mode	N/A
Emergency support	
Central emergency system	Not supported
Self-contained emergency	Not supported
Environment & Life time	
Operating temperature	Ta=-20-60°C
Case temperature	Tc=90°C
Operating humidity	5-85% RH, non-condensing
Storage temp./humidity	-40-80°C, 5-85% RH, non-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, Normal operation)
Environmental protection	RoHS
Certifications and standards	
Compliance certification	CE, ENEC, UKCA, RCM, CCC
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384
EMC	GB/T 17743 , GB17625.1, EN55015, EN61000-3-2, EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547
DALI-2	N/A
EL	N/A
RF	N/A

Technical data

Product model	BK-BSL042-A0750B	BK-BSL042-A0800B	BK-BSL042-A0850B	BK-BSL042-A0900B
Output parameters				
Regulation method	Constant Current			
Rated output current range	0.4-0.75A	0.8A	0.85A	0.9A
Rated output voltage range	36-54VDC	36-52VDC	36-48VDC	36-45VDC
Rated output power	40.5W Max	41.6W Max	40.8W Max	40.5W Max
Output current adjustment	Fixed output			
Output current ripple LF	±2%			
Output current accuracy	±5%			
Linear regulation	±5%			
Load regulation	±5%			
No load output voltage	60VDC			
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.356%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), Pst LM = 0.000, SVM = 0.007, (The above parameters are obtained from testing the panel lights)			
Input parameters				
Rated input voltage range	200-240VAC			
Input voltage range	180-264VAC			
Input votage shock	<380V AC			
Input current	<0.23A (Rated input voltage)			
Input frequency	50/60Hz			
Input PF/Input DF(typical)	PF:0.98 ,DF:0.98 ,see the electrical values below for details			
Input THD(typical)	5.9% ,see the electrical values below for details			
Efficiency(typical)	94% ,see the electrical values below for details			
In-rush current(typical)	19.25A peak ,220us duration(50% Ipeak), see the description below for details			
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(Turn off)			
Switching cycles	> 100,000 switching cycles			
Power consumption(typical)	Full load(Pin):43.1W, No load(Pno): N/A, 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:1KV(Performance criterion:A);L-N:2KV(Performance criterion:B)(90°/270°, 5 times each with an interval of 60s)			
Leakage current(typical)	0.4mA			
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 3in1 dimming port	N/A			
Dimming range	N/A			
Dimming drive mode	N/A			
Emergency support				
Central emergency system	Not supported			
Self-contained emergency	Not supported			
Environment & Life time				
Operating temperature	Ta=-20-60°C			
Case temperature	Tc=90°C			
Operating humidity	5-85% RH, non-condensing			
Storage temp./humidity	-40-80°C, 5-85% RH, non-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, Normal operation)			
Environmental protection	RoHS			
Certifications and standards				
Compliance certification	CE, ENEC, UKCA, RCM, CCC			
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384			
EMC	GB/T 17743 , GB17625.1, EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547			
DALI-2	N/A			
EL	N/A			
RF	N/A			

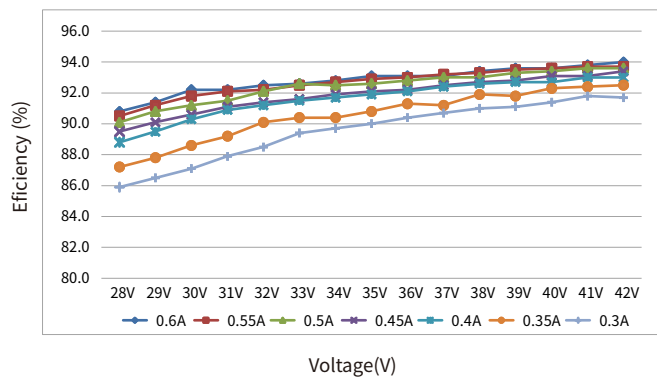
Technical data

Product model	BK-BSL042-A1000A	BK-BSL042-A1050A	BK-BSL042-A1100A
Output parameters			
Regulation method	Constant Current		
Rated output current range	0.5-1A	1.05A	1.1A
Rated output voltage range	28-42VDC	28-40VDC	28-38VDC
Rated output power	42W Max	42W Max	41.8W Max
Output current adjustment	Fixed output		
Output current ripple LF	±2%		
Output current accuracy	±5%		
Linear regulation	±5%		
Load regulation	±5%		
No load output voltage	54VDC		
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.221%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.010, SVM = 0.007, (The above parameters are obtained from testing the panel lights)		
Input parameters			
Rated input voltage range	200-240VAC		
Input voltage range	180-264VAC		
Input votage shock	<380V AC		
Input current	<0.23A (Rated input voltage)		
Input frequency	50/60Hz		
Input PF/Input DF(typical)	PF:0.98 ,DF:0.98 ,see the electrical values below for details		
Input THD(typical)	8% ,see the electrical values below for details		
Efficiency(typical)	94% ,see the electrical values below for details		
In-rush current(typical)	20.64A peak ,202us duration(50 % Ipeak), see the description below for details		
Start/Switchover/Turn off	<0.5s(AC start),<0.5s(Turn off)		
Switching cycles	> 100,000 switching cycles		
Power consumption(typical)	Full load(Pin):44.7W, No load(Pno): N/A, 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:1KV(Performance criterion:A);L-N:2KV(Performance criterion:B)(90°/270° , 5 times each with an interval of 60s)		
Leakage current(typical)	0.4mA		
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 3in1 dimming port	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	Not supported		
Self-contained emergency	Not supported		
Environment & Life time			
Operating temperature	Ta=-20-60°C		
Case temperature	Tc=90°C		
Operating humidity	5-85% RH, non-condensing		
Storage temp./humidity	-40-80°C, 5-85% RH, non-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, Normal operation)		
Environmental protection	RoHS		
Certifications and standards			
Compliance certification	CE, ENEC, UKCA, RCM, CCC		
Safety	GB/T 19510.1, GB/T 19510.213, EN61347-1, EN61347-2-13, EN62384		
EMC	GB/T 17743 , GB17625.1, EN55015, EN61000-3-2 , EN61000-3-3, EN61000-4-2,3,4,5,6,8,11, EN61547		
DALI-2	N/A		
EL	N/A		
RF	N/A		

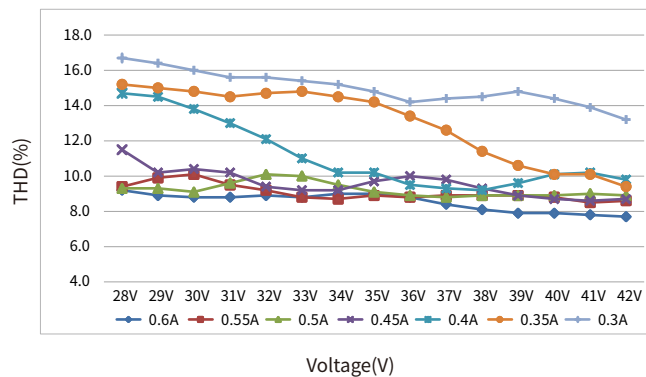
Electrical values

BK-BSL022-A0600A

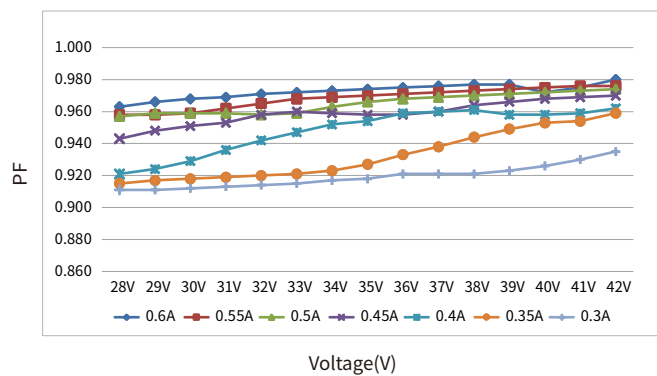
Efficiency vs voltage



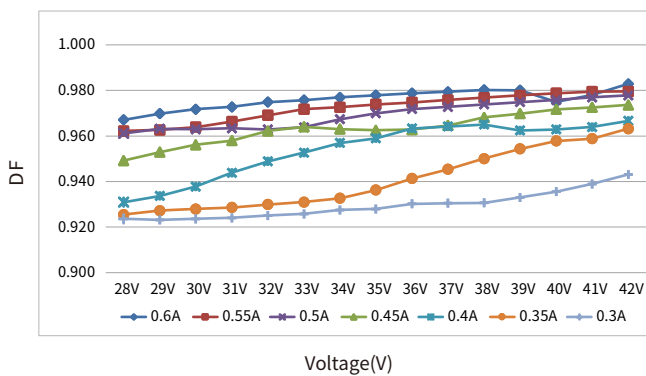
THD vs. voltage



Power factor vs. voltage

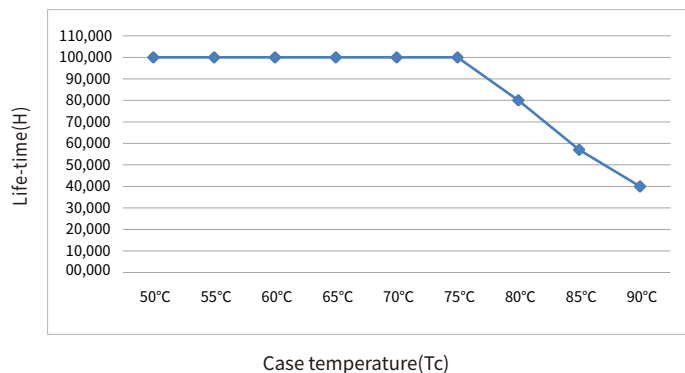


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature

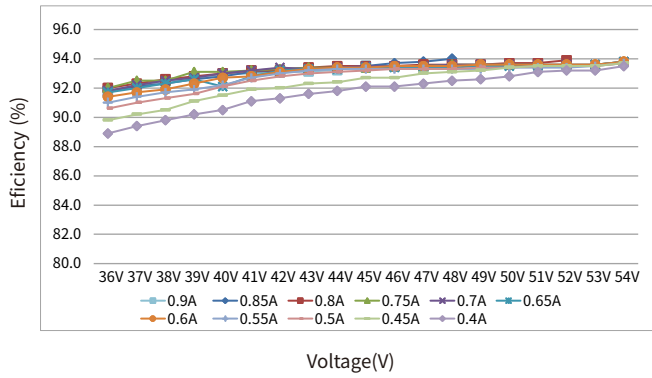


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of tc to ta temperature depends also on the luminaire design.

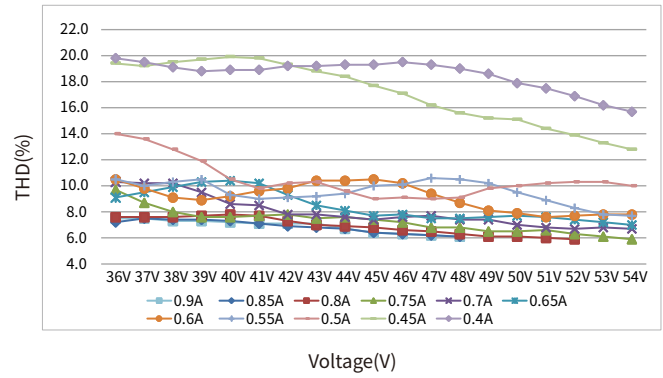
Electrical values

BK-BSL042-A0900B

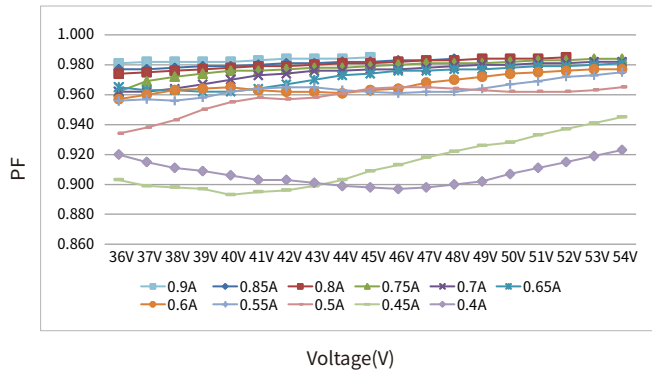
Efficiency vs voltage



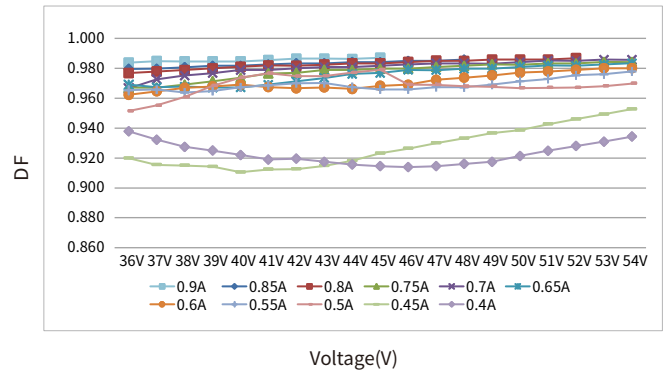
THD vs. voltage



Power factor vs. voltage

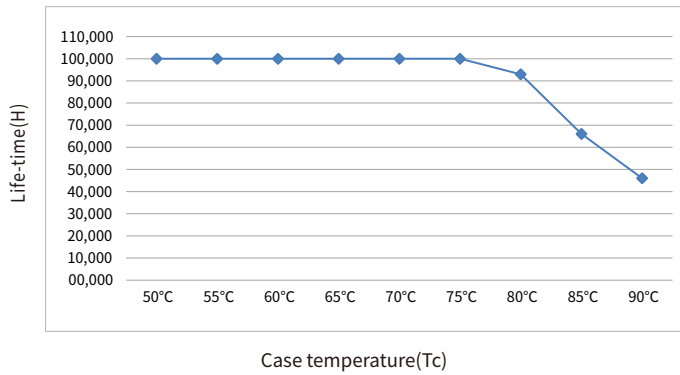


Displacement factor vs. voltage



Expected life-time

Life-time vs. case temperature

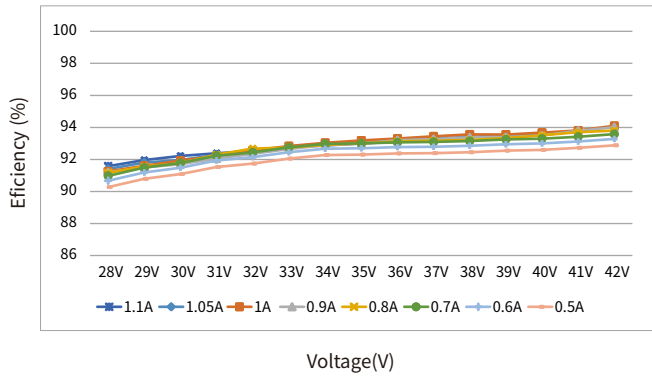


- The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).
- The relation of t_c to t_a temperature depends also on the luminaire design.

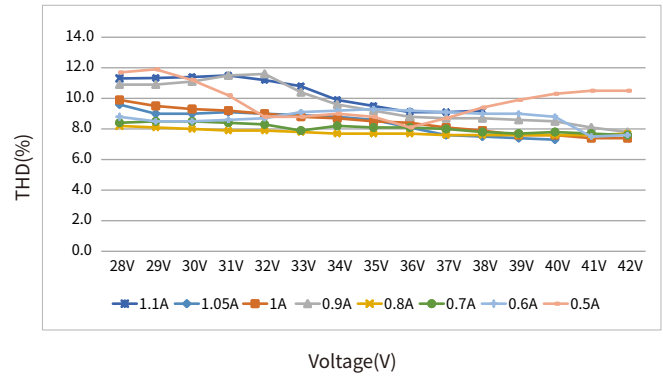
Electrical values

BK-BSL042-A1100A

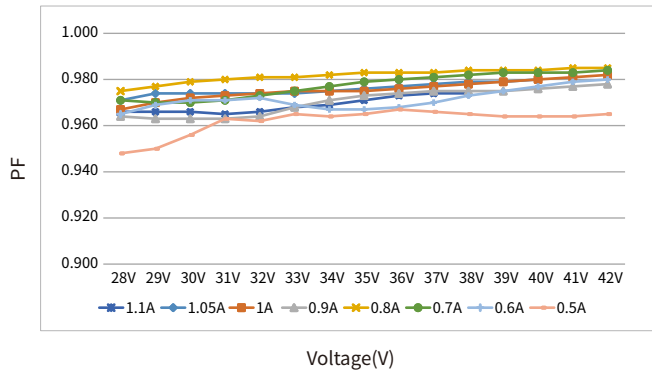
Efficiency vs voltage



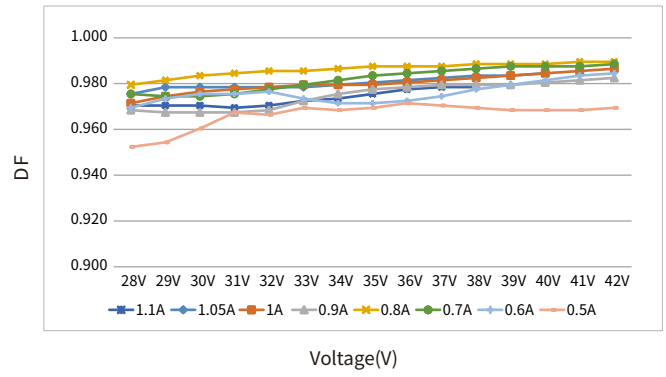
THD vs. voltage



Power factor vs. voltage

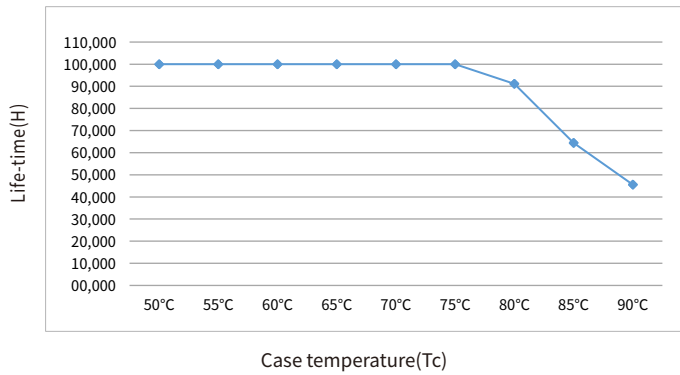


Displacement factor vs. voltage



Expected life-time

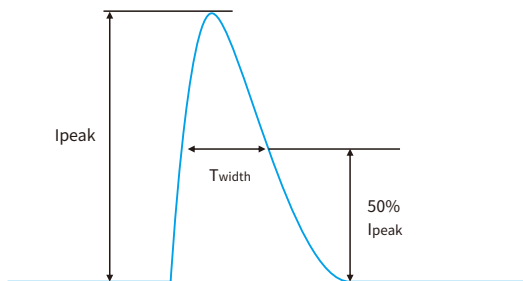
Life-time vs. case temperature



- 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	I _{peak}	Twidth	Condition	Relative number of MCB/pcs														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-BSL022-A0600A	12.9A	212us	AC 230V, Full load, Cold start, T _a ≤ 30°C, MCB is not installed side by side	26	34	41	52	65	43	56	69	86	108	74	96	118	148	184
BK-BSL042-A0900B	19.25A	220us		17	22	27	34	42	28	36	45	56	70	41	53	66	82	103
BK-BSL042-A1100A	20.64A	202us		17	22	27	34	42	28	37	45	56	70	56	73	90	112	141



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, the driver will automatically resume output.

Output no-load operation

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

Insulation between circuits

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

Label

BSL022-A0600A

BOKE Constant Current LED Driver
MODEL: BK-BSL022-A0600A
 Input: 200-240V~50/60Hz 0.14A Max. λ: 0.9C-0.98
 Output: 28-42V= 600mA 25.2W Max. 54VDC Max.
 For Australia and New Zealand, the marking label with
 For LED Modules use only
 MADE IN CHINA

tc: 90°C
 ta: 60°C

wire prep. 0.5-1.5mm²
 8-9mm

ACL
 ACN
 25
 TUV
 CE
 UK
 CA
 M
 M
 RoHS
 SELV
 LED+
 LED-

BSL042-A0900B

BOKE Constant Current LED Driver
MODEL: BK-BSL042-A0900B
 Input: 200-240V~50/60Hz 0.23A Max. λ: 0.95-0.98
 Output: 36-45V= 900mA 40.5W Max. 60VDC Max.
 For Australia and New Zealand, the marking label with
 For LED Modules use only
 MADE IN CHINA

tc: 90°C
 ta: 60°C

wire prep. 0.5-1.5mm²
 8-9mm

ACL
 ACN
 25
 TUV
 CE
 UK
 CA
 M
 M
 RoHS
 SELV
 LED+
 LED-

BSL042-A1100A

BOKE Constant Current LED Driver
MODEL: BK-BSL042-A1100A
 Input: 200-240V~50/60Hz 0.23A Max. λ: 0.95-0.98
 Output: 28-38V= 1100mA 41.8W Max. 54VDC Max.
 For Australia and New Zealand, the marking label with
 For LED Modules use only
 MADE IN CHINA

tc: 90°C
 ta: 60°C

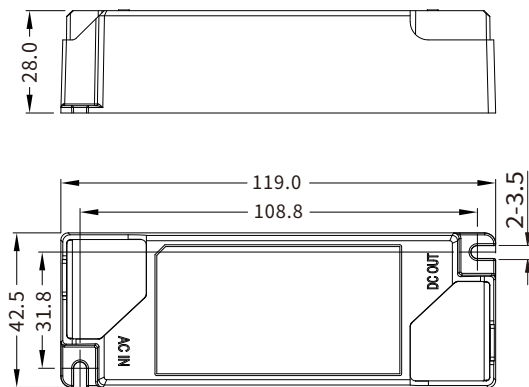
wire prep. 0.5-1.5mm²
 8-9mm

ACL
 ACN
 25
 TUV
 CE
 UK
 CA
 M
 M
 RoHS
 SELV
 LED+
 LED-

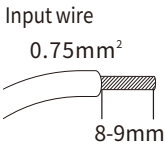
Installation

Unit:mm

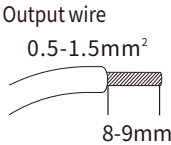
BSL022-A/BSL042-A



INPUT		
Numbering	function	colour
1	ACL	orange
2	ACN	orange



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



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 driver shall not exceed the value of Ta at any time.
- The temperature of the mounting surface of the driver should be lower than the temperature of Ta.
- 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.

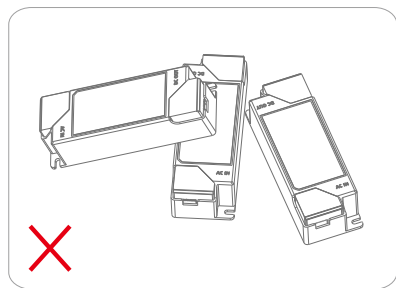


Figure 1

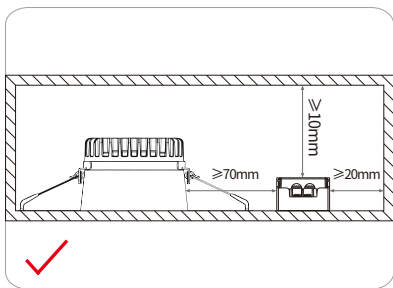
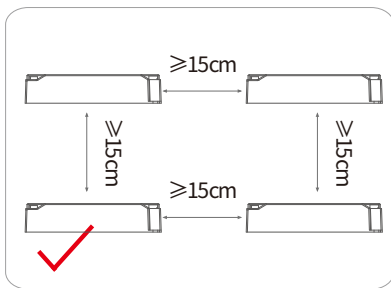
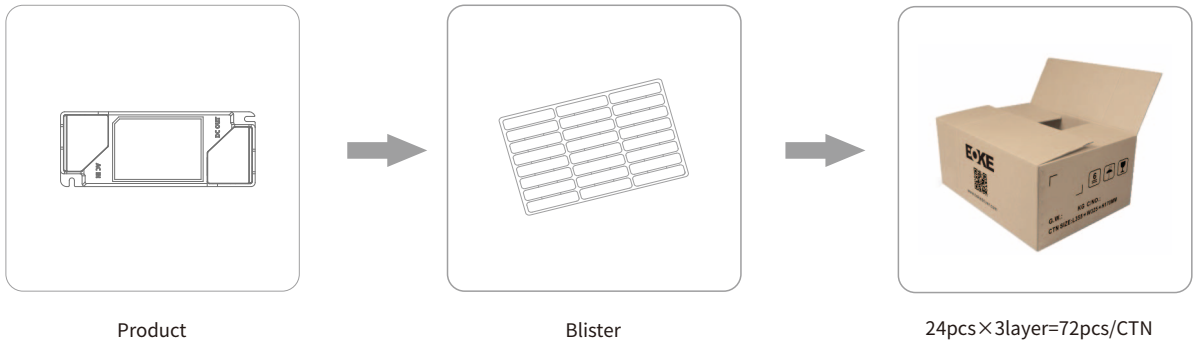


Figure 2

Packaging

Optional 1: factory default



Model	Product size	Weight	Blister size	Carton size	Qty/carton	N.W	G.W
BSL022-A	L119*W42.5*H28mm	105g	L430*W340*H47mm	L450*W350*H180mm	72pcs	7.56kg	8.76kg
BSL042-A	L119*W42.5*H28mm	105g	L430*W340*H47mm	L450*W350*H180mm	72pcs	7.56kg	8.76kg

Optional 2:



Model	Product size	Weight	Packaging size	Carton size	Qty/carton	N.W	G.W
BSL022-A	L119*W42.5*H28mm	105g	L140*W35*H50mm	L345*W310*H170mm	54pcs	5.67kg	6.87kg
BSL042-A	L119*W42.5*H28mm	105g	L140*W35*H50mm	L345*W310*H170mm	54pcs	5.67kg	6.87kg

Additional information

- When the driver is used as an internal power supply for luminaires, re-evaluation of performance including temperature rise, conducted interference, radiated interference, surge immunity and electrostatic discharge (ESD) are required due to differences in luminaire structure and wiring. Ensure compliance with practical application requirements and stable & reliable operation of the driver.
- Unless otherwise specified, all specifications and parameters are measured under conditions of 230VAC input, 50Hz, full load and ambient temperature of 25°C.
- Product service life and MTBF values are for reference only and do not constitute a warranty statement.
- BOKE reserves the final right to interpret the above parameters. For further information, please send an email to info@bokedriver.com.
- The above information is subject to change without prior notice. Please ensure you use the latest version of the datasheet.