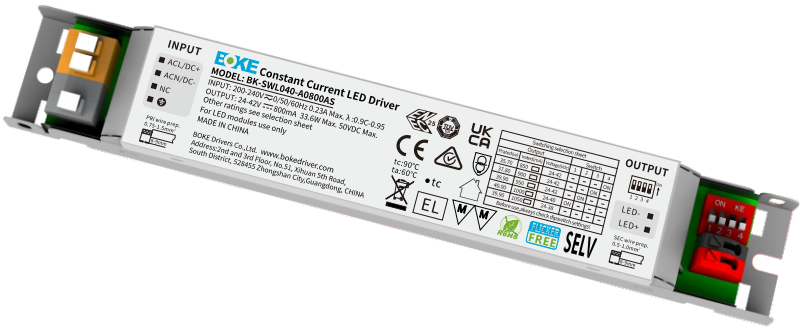
Constant current linear driver
SWL Series suffix S



Features

- 5-level current output can be realized DIP-switch
- Output flick-free, meets the new requirements of ErP certification
- High PF, high efficiency, low THD
- Dual-stage circuit design, work stable
- Withstand 380VAC high voltage short-time shock
- SELV and Class I design, suitable for use built-in of the luminaires
- Compliance with CE,ENEC,UKCA,RCM,CCC,EL and other certifications
- IP20 protection grade, indoor use
- Nominal life-time up to 100,000 h
- 5.5-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 linear lights,tri-proof lights,working lights, bracket lights and other linear or ultra-thin lights etc.

Typical applications

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

Model coding rules of SWL series

BK - SWLXXX - A XXXX A S

- S — Integrated dialing
- A — Output load voltage range identification code
- XXXX — Output current
- A — Distinguish code
- SWLXXX — Product series
- BK — BOKE

Function list

Model	Mode	Function
BK-SWL022-A BK-SWL040-A BK-SWL060-A	S	Integrated dialing
	R	External dialing

* The description in this specification is only applicable to the products with the suffix S and the model are SWL022-A,SWL040-A,SWL060-A.

Model list

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-SWL022-A0350AS BK-SWL022-A0350AR	200-240VAC/DC	14.7W MAX.	24-42VDC	0.15-0.35A	L158*W30*H21mm
BK-SWL022-A0600AS BK-SWL022-A0600AR	200-240VAC/DC	22.8W MAX.	24-42VDC	0.4-0.6A	L158*W30*H21mm
BK-SWL040-A0800AS BK-SWL040-A0800AR	200-240VAC/DC	33.6W MAX.	24-42VDC	0.6-0.8A	L195*W30*H21mm
BK-SWL040-A1050AS BK-SWL040-A1050AR	200-240VAC/DC	40.0W MAX.	24-42VDC	0.85-1.05A	L195*W30*H21mm
BK-SWL060-A1150AS BK-SWL060-A1150AR	200-240VAC/DC	48.3W MAX.	24-42VDC	0.95-1.15A	L285*W30*H21mm
BK-SWL060-A1400AS BK-SWL060-A1400AR	200-240VAC/DC	58.8W MAX.	24-42VDC	1.2-1.4A	L285*W30*H21mm
BK-SWL060-A1650AS BK-SWL060-A1650AR	200-240VAC/DC	62.7W MAX.	24-42VDC	1.45-1.65A	L285*W30*H21mm

* The description in this specification is only applicable to the products with the suffix S and the model are SWL022-A,SWL040-A,SWL060-A.

Technical data

Product model	BK-SWL022-A0350AS	BK-SWL022-A0600AS
Output parameters		
Regulation method	Constant Current	Constant Current
Rated output current range	0.15-0.35A,see the DIP-switch for details	0.4-0.6A,see the DIP-switch for details
Rated output voltage range	24-42VDC,see the DIP-switch for details	24-42VDC,see the DIP-switch for details
Rated output power	14.7W Max,see the DIP-switch for details	22.8W Max,see the DIP-switch for details
Output current adjustment	DIP S.W(5 levels)	DIP S.W(5 levels)
Output current ripple LF	±1%	
Output current accuracy	±5%-±17%,see the DIP-switch for detailsils	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	60VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.166%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), Pst LM = 0.009, SVM = 0.006, (The above parameters are obtained from testing the panel lights)	
Input parameters		
Rated input voltage	200-240VAC 200-240VDC	
Input voltage range	180-264VAC 180-264VDC	
Input votage shock	<380 V AC	
Input current	<0.135A (Rated input voltage)	
Input frequency	0/50/60Hz	
Input PF/Input DF(typical)	PF:0.97,DF:0.98, see the electrical values below for details	
Input THD(typical)	8% ,see the electrical values below for details	
Efficiency(typical)	87% ,see the electrical values below for details	
In-rush current(typical)	4.025A peak ,153us 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	> 100,000 switching cycles	
Power consumption(typical)	Full load(Pin):26.2W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-O/P:3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC	
Mains surge capability	L-N:2KV,L-FG/N-FG:4KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:A)	
Leakage current(typical)	0.43mA	
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	
Auxiliary power supply	N/A	
Dimming range	N/A	
Dimming drive mode	N/A	
Emergency support		
Central emergency system	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 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		
Compliance certification	CE,ENEC,UKCA,RCM,CCC,EL	
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	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, 50Hz, full load and 25°C of ambient temperature.

Technical data

Product model	BK-SWL040-A0800AS	BK-SWL040-A1050AS
Output parameters		
Regulation method	Constant Current	Constant Current
Rated output current range	0.6-0.8A,see the DIP-switch for details	0.85-1.05A,see the DIP-switch for details
Rated output voltage range	24-42VDC,see the DIP-switch for details	24-42VDC,see the DIP-switch for details
Rated output power	33.6W Max,see the DIP-switch for details	40W Max,see the DIP-switch for details
Output current adjustment	DIP S.W(5 levels)	DIP S.W(5 levels)
Output current ripple LF	±1%	
Output current accuracy	±5%-±8%,see the DIP-switch for details	
Linear regulation	±5%	
Load regulation	±5%	
No load output voltage	50VDC	
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.207%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), Pst LM = 0.008, SVM = 0.007, (The above parameters are obtained from testing the panel lights)	
Input parameters		
Rated input voltage	200-240VAC 200-240VDC	
Input voltage range	180-264VAC 180-264VDC	
Input votage shock	<380 V AC	
Input current	<0.23A (Rated input voltage)	
Input frequency	0/50/60Hz	
Input PF/Input DF(typical)	PF:0.97,DF:0.98, see the electrical values below for details	
Input THD(typical)	9% ,see the electrical values below for details	
Efficiency(typical)	89% ,see the electrical values below for details	
In-rush current(typical)	7.2A peak ,190us 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	> 100,000 switching cycles	
Power consumption(typical)	Full load(Pin):46.2W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A	
Safety		
Withstand voltage	I/P-O/P:3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC	
Mains surge capability	L-N:2KV,L-FG/N-FG:4KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:A)	
Leakage current(typical)	0.38mA	
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	
Auxiliary power supply	N/A	
Dimming range	N/A	
Dimming drive mode	N/A	
Emergency support		
Central emergency system	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 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		
Compliance certification	CE,ENEC,UKCA,RCM,CCC,EL	
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	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, 50Hz, full load and 25°C of ambient temperature.

Technical data

Product model	BK-SWL060-A1150AS	BK-SWL060-A1400AS	BK-SWL060-A1650AS
Output parameters			
Regulation method	Constant Current	Constant Current	Constant Current
Rated output current range	0.95-1.15A,see the DIP-switch for details	1.2-1.4A,see the DIP-switch for details	1.45-1.65A,see the DIP-switch for details
Rated output voltage range	24-42VDC,see the DIP-switch for details	24-42VDC,see the DIP-switch for details	24-42VDC,see the DIP-switch for details
Rated output power	48.3W Max,see the DIP-switch for details	58.8W Max,see the DIP-switch for details	62.7W Max,see the DIP-switch for details
Output current adjustment	DIP S.W(5 levels)	DIP S.W(5 levels)	DIP S.W(5 levels)
Output current ripple LF	±1%		
Output current accuracy	±5%,see the DIP-switch for details		
Linear regulation	±5%		
Load regulation	±5%		
No load output voltage	60VDC		
Flicker-free(typical)	Flickering percent(IEEE 1789)=0.055%(100Hz), Flicker index(IEEE 1789)=0.000(100Hz), 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 180-264VDC		
Input votage shock	<380 V AC		
Input current	<0.4A (Rated input voltage)		
Input frequency	0/50/60Hz		
Input PF/Input DF(typical)	PF:0.98,DF:0.98, see the electrical values below for details		
Input THD(typical)	7% ,see the electrical values below for details		
Efficiency(typical)	90% ,see the electrical values below for details		
In-rush current(typical)	11.25A peak ,180us 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	> 100,000 switching cycles		
Power consumption(typical)	Full load(Pin):69.7W, No load(Pno): N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A		
Safety			
Withstand voltage	I/P-O/P:3750VAC,I/P-FG:1750VAC,O/P-FG:500VAC		
Mains surge capability	L-N:2KV,L-FG/N-FG:4KV(90°/270°, 5 times each with an interval of 60s)(Performance criterion:A)		
Leakage current(typical)	0.58mA		
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		
Auxiliary power supply	N/A		
Dimming range	N/A		
Dimming drive mode	N/A		
Emergency support			
Central emergency system	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 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			
Compliance certification	CE,ENEC,UKCA,RCM,CCC,EL		
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	Compatible IEC 61347-2- 13 Annex J , compatible with EN 60598-2-22 and EN 50172		
RF	N/A		

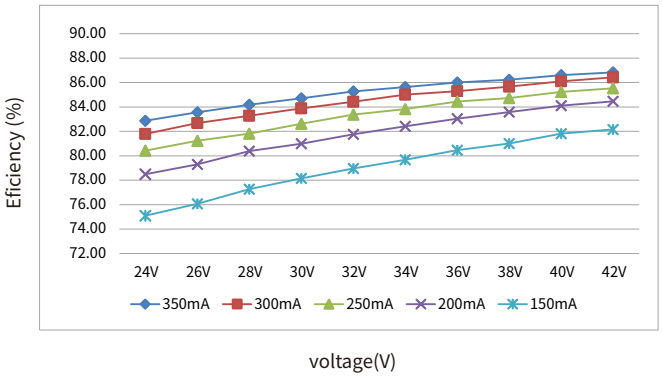
Remarks

1.By default, all parameter are measured at 230VAC input, 50Hz, full load and 25°C of ambient temperature.

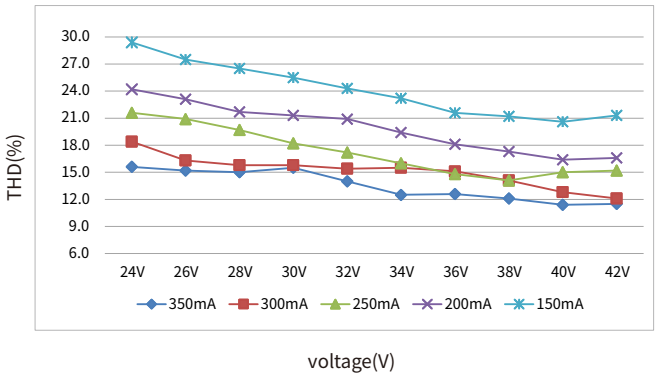
Electrical values

BK-SWL022-A0350AS

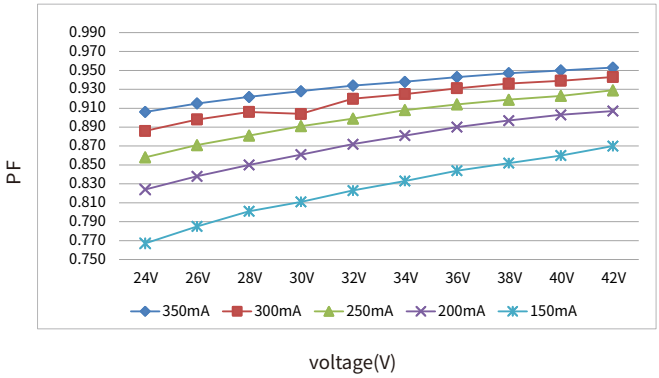
Efficiency vs voltage



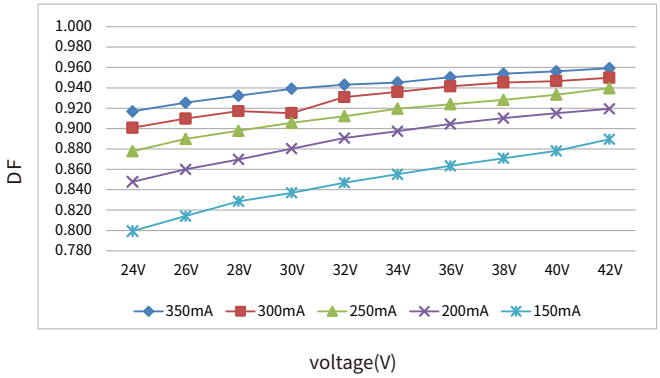
THD vs. voltage



Power factor vs. voltage

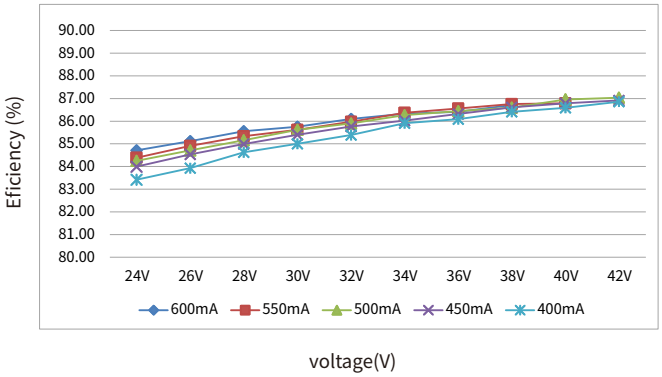


Displacement factor vs. voltage

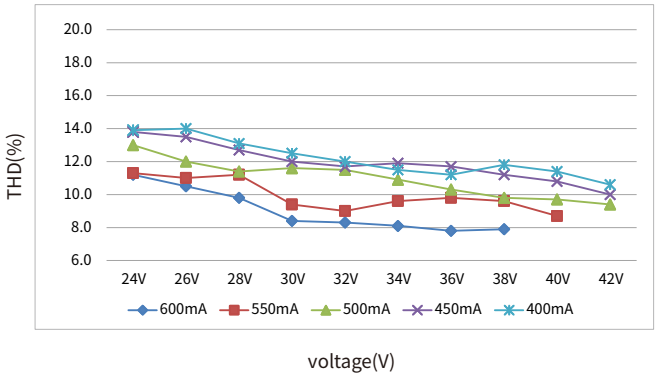


BK-SWL022-A0600AS

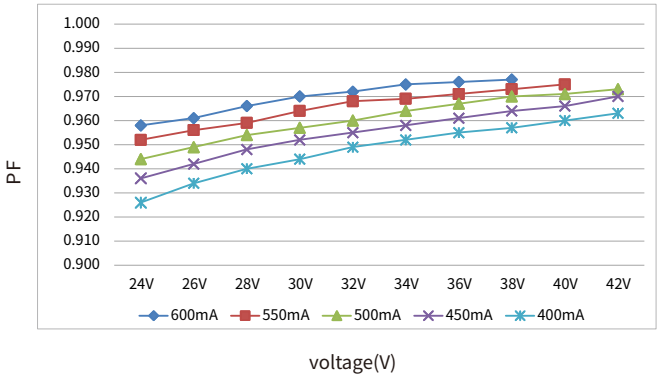
Efficiency vs voltage



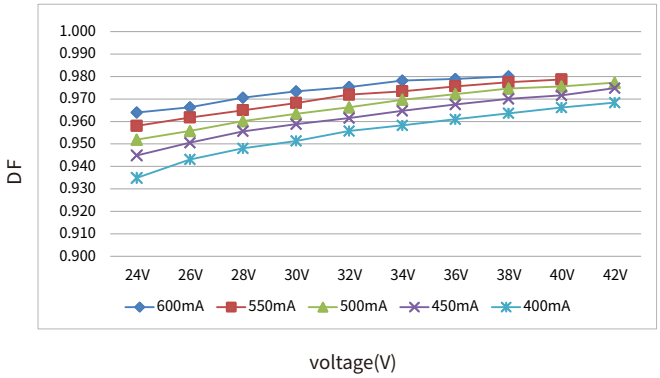
THD vs. voltage



Power factor vs. voltage



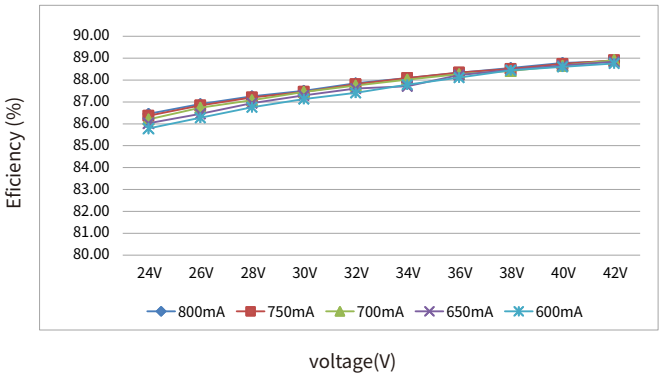
Displacement factor vs. voltage



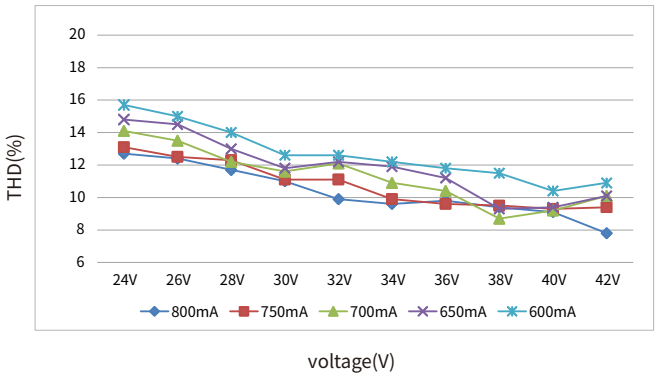
Electrical values

BK-SWL040-A0800AS

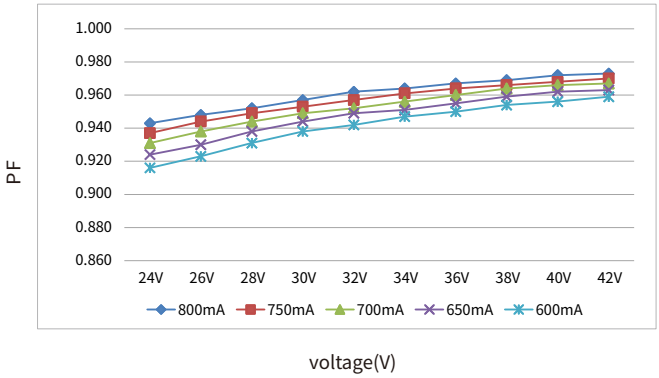
Efficiency vs voltage



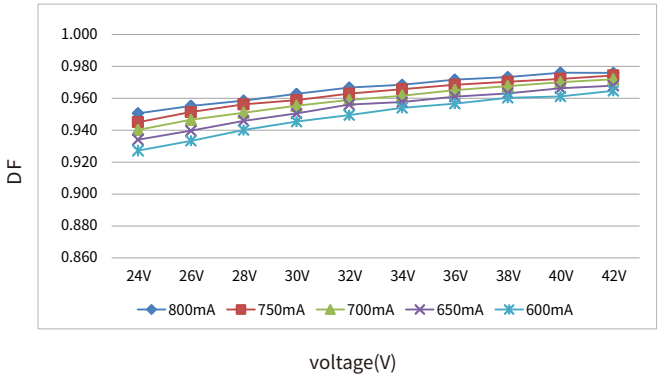
THD vs. voltage



Power factor vs. voltage

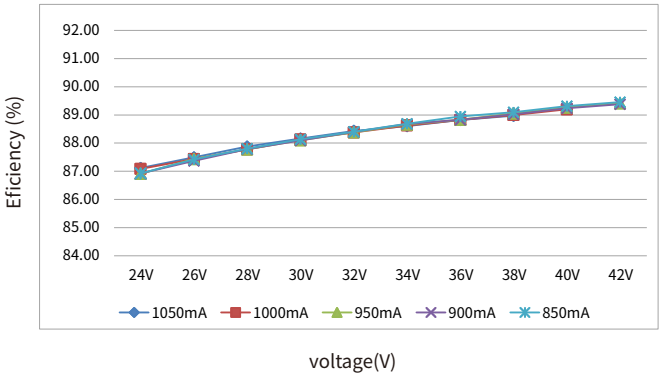


Displacement factor vs. voltage

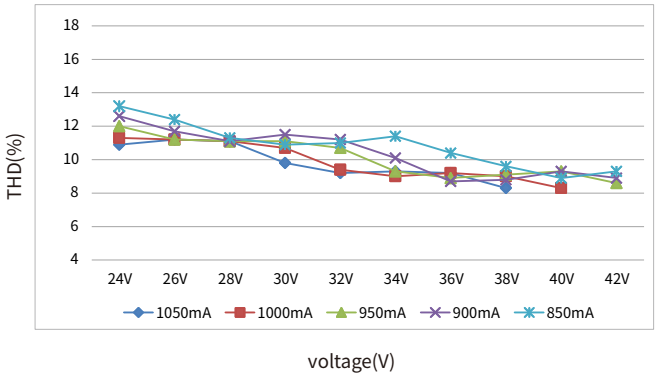


BK-SWL040-A1050AS

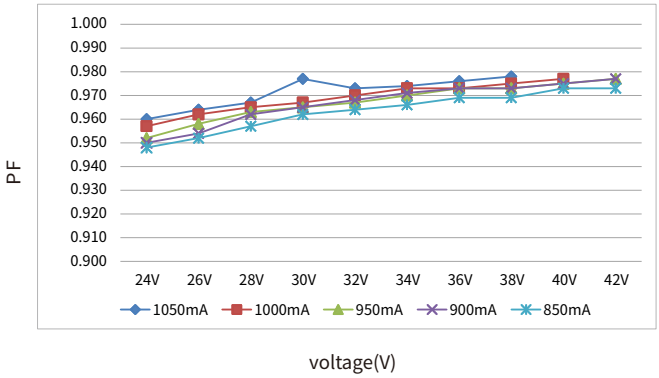
Efficiency vs voltage



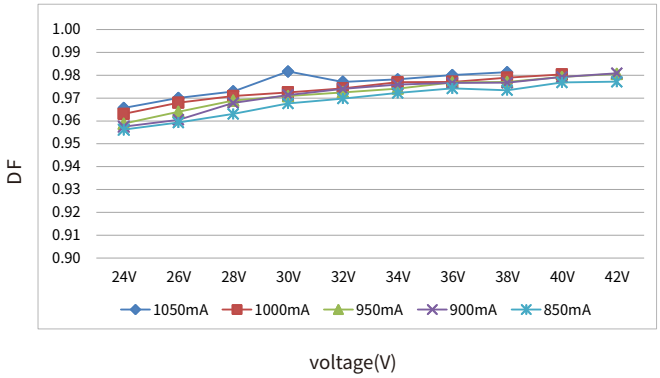
THD vs. voltage



Power factor vs. voltage



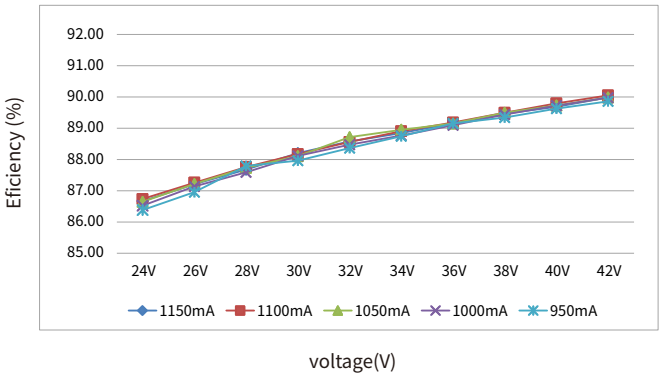
Displacement factor vs. voltage



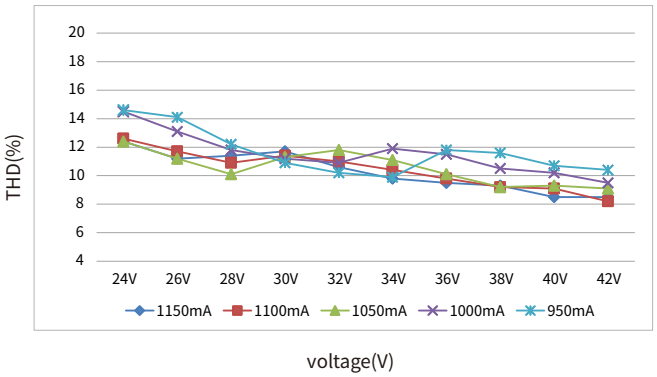
Electrical values

BK-SWL060-A1150AS

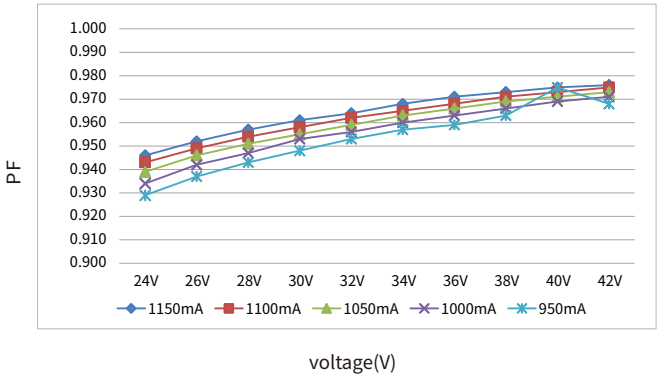
Efficiency vs voltage



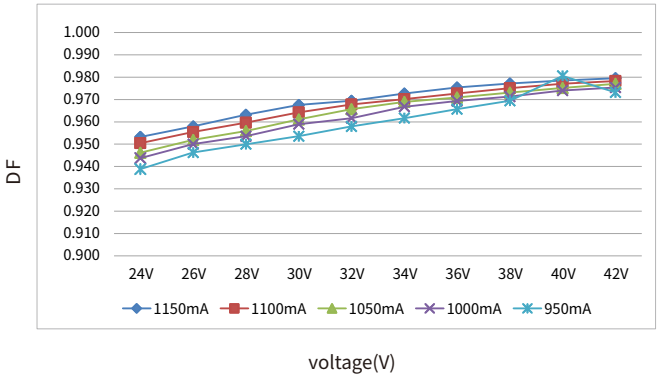
THD vs. voltage



Power factor vs. voltage

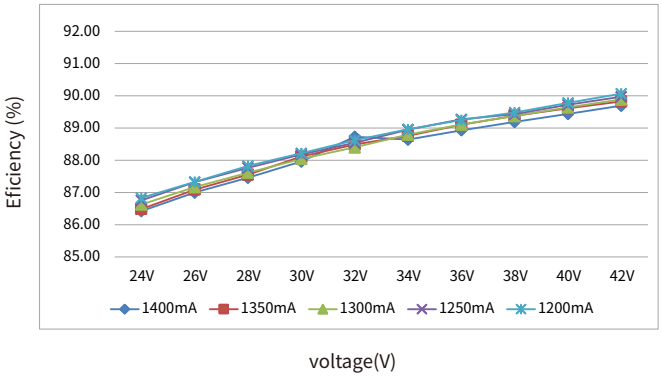


Displacement factor vs. voltage

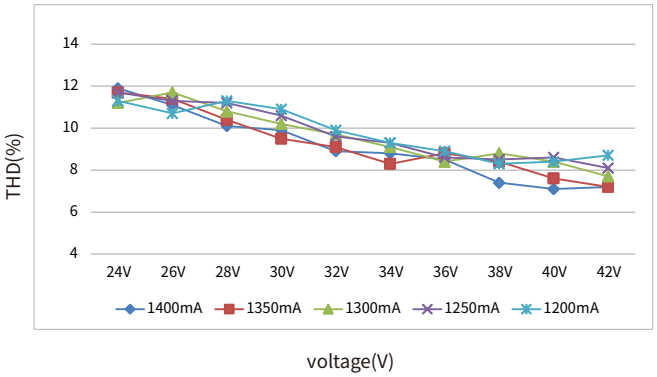


BK-SWL060-A1400AS

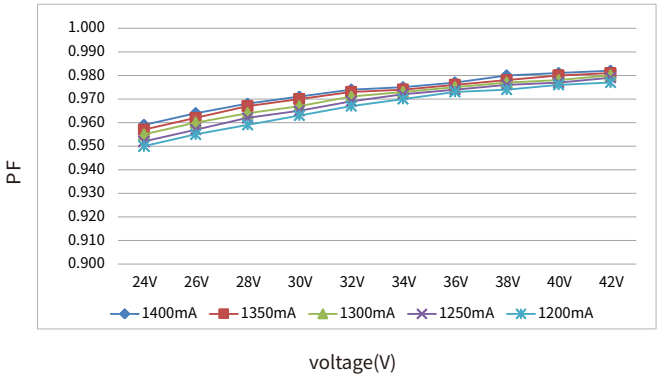
Efficiency vs voltage



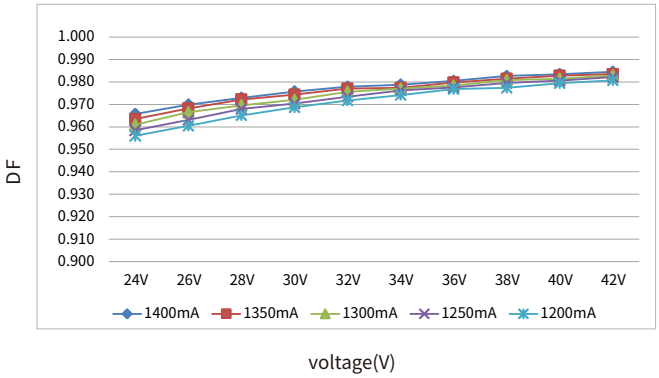
THD vs. voltage



Power factor vs. voltage



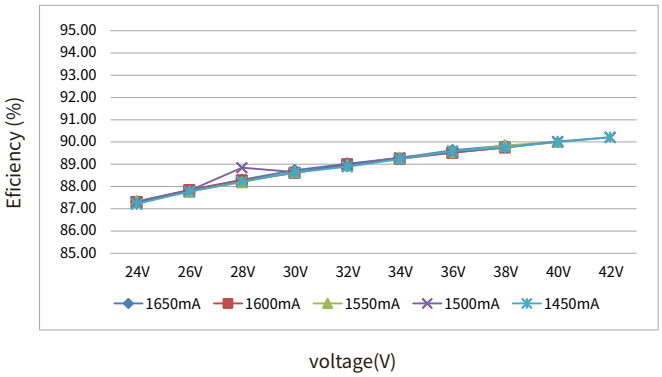
Displacement factor vs. voltage



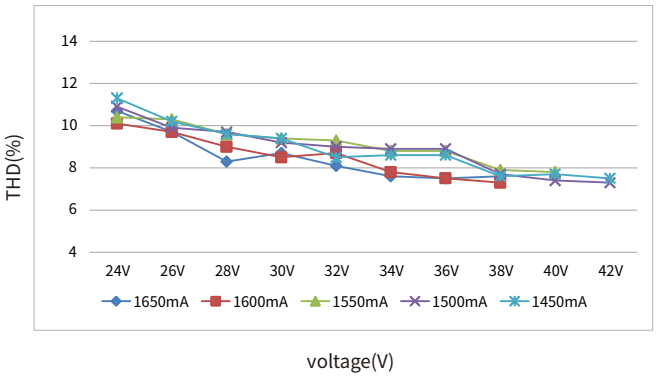
Electrical values

BK-SWL060-A1650AS

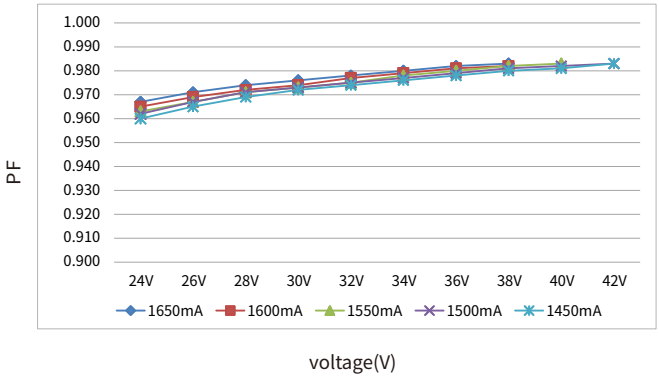
Efficiency vs voltage



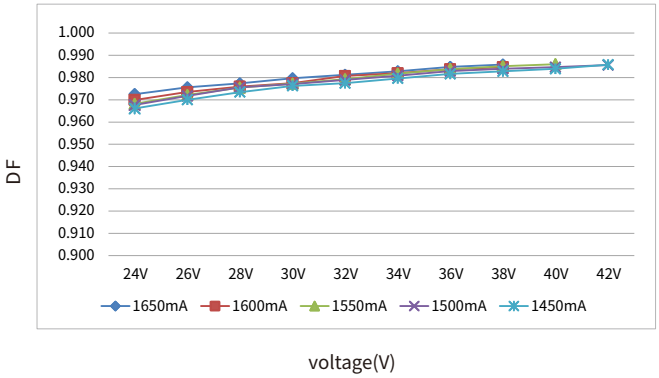
THD vs. voltage



Power factor vs. voltage



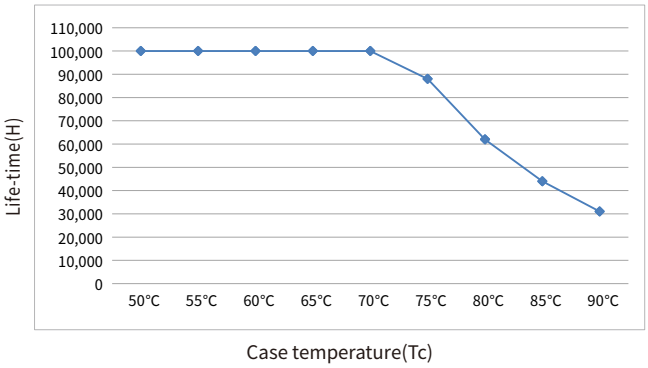
Displacement factor vs. voltage



Expected life-time

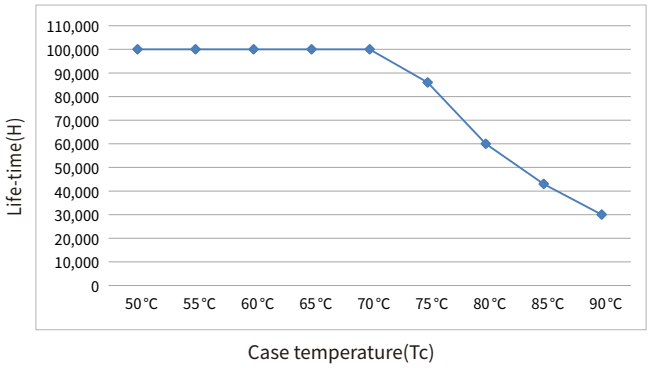
BK-SWL022-A0350AS

Life-time vs. case temperature



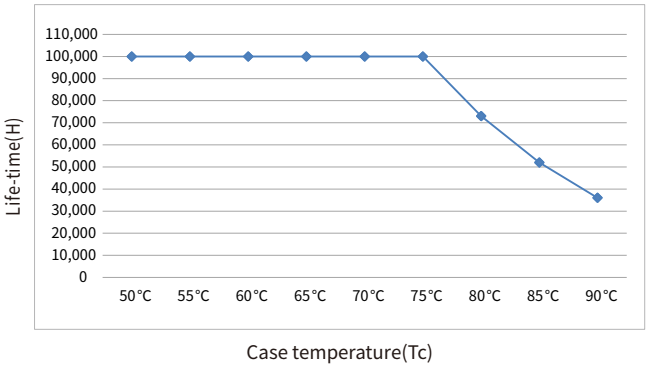
BK-SWL022-A0600AS

Life-time vs. case temperature



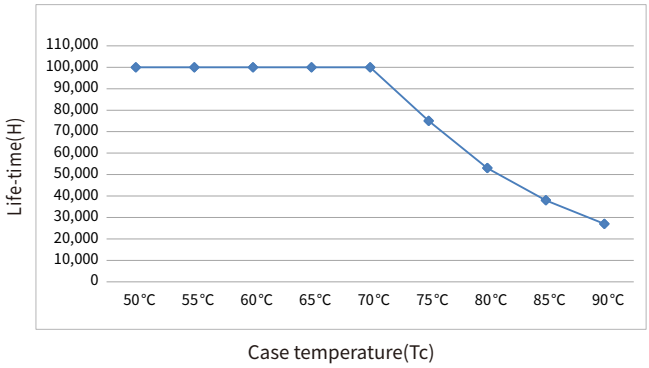
BK-SWL040-A0800AS

Life-time vs. case temperature



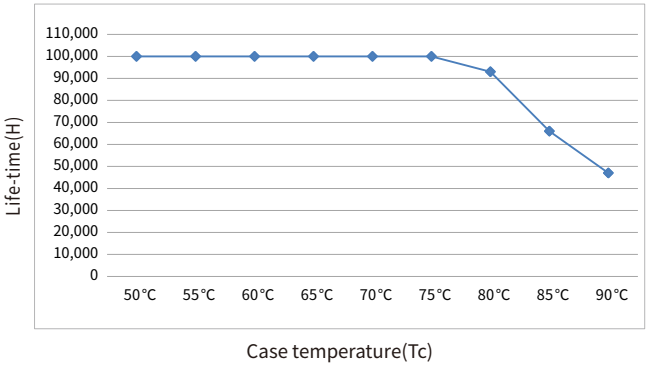
BK-SWL040-A1050AS

Life-time vs. case temperature



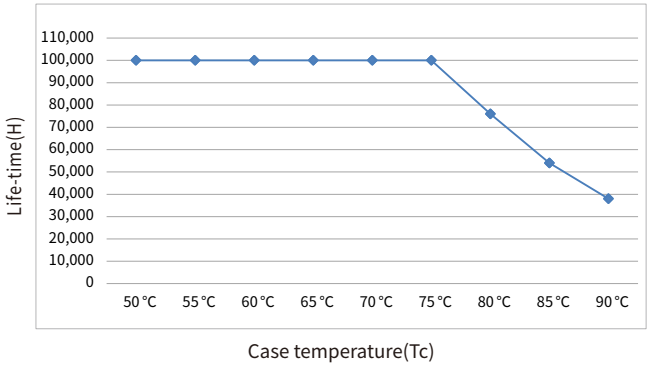
BK-SWL060-A1150AS

Life-time vs. case temperature



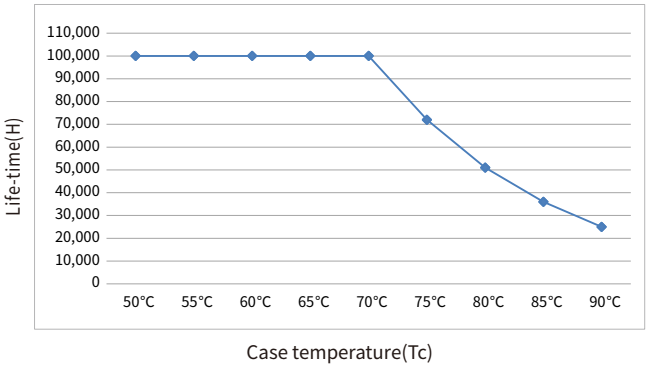
BK-SWL060-A1400AS

Life-time vs. case temperature



BK-SWL060-A1650AS

Life-time vs. case temperature

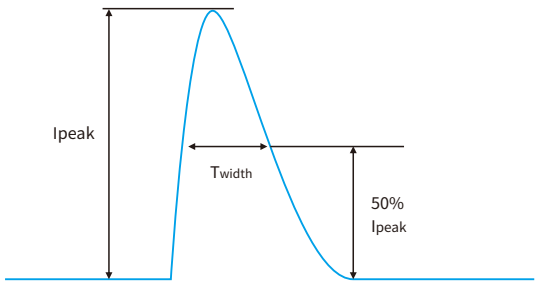


-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

- The relation of tc to ta temperature depends also on the luminaire design.

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB														Unit: pcs
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-SWL022-A	4.025A	154us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	68	89	109	136	170	68	89	109	136	170	68	89	109	136	170
BK-SWL040-A	7.2A	190us		39	50	62	77	97	39	50	62	77	97	39	50	62	77	97
BK-SWL060-A	11.25A	180us		26	33	41	51	64	26	33	41	51	64	26	33	41	51	64



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.

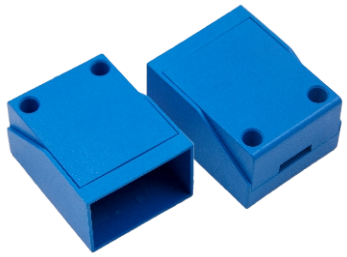
Output no-load operation

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

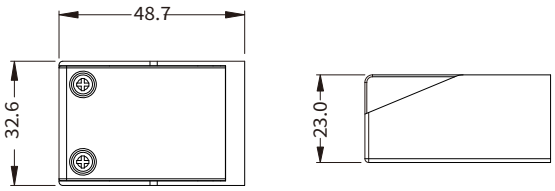
Insulation between circuits

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

Optional accessories



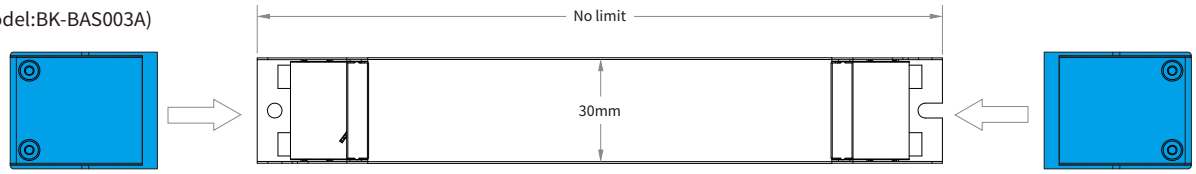
(Model:BK-BAS003A)



Unit:mm

Installation diagram of accessories

(Model:BK-BAS003A)



DIP-switch&outputcurrent

BK-SWL022-A0350AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
6.30	150	24-42	--	--	--	ON	±17%
8.40	200	24-42	--	--	ON	--	±10%
10.50	250	24-42	--	ON	--	--	±8%
12.40	300	24-42	ON	--	--	--	±7%
14.70	350 ★	24-42	--	--	--	--	±5%

BK-SWL022-A0600AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
16.80	400	24-42	--	--	--	ON	±7%
18.90	450	24-42	--	--	ON	--	±6%
21.00	500	24-42	--	ON	--	--	±6%
22.00	550	24-40	ON	--	--	--	±6%
22.80	600 ★	24-38	--	--	--	--	±5%

BK-SWL040-A0800AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
25.20	600	24-42	--	--	--	ON	±8%
27.30	650	24-42	--	--	ON	--	±7%
29.40	700	24-42	--	ON	--	--	±5%
31.50	750	24-42	ON	--	--	--	±5%
33.60	800 ★	24-42	--	--	--	--	±5%

BK-SWL040-A1050AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
35.70	850	24-42	--	--	--	ON	±6%
37.80	900	24-42	--	--	ON	--	±6%
39.90	950	24-42	--	ON	--	--	±5%
40.00	1000	24-40	ON	--	--	--	±5%
39.90	1050 ★	24-38	--	--	--	--	±5%

BK-SWL060-A1150AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
39.90	950	24-42	--	--	--	ON	±5%
42.00	1000	24-42	--	--	ON	--	±5%
44.10	1050	24-42	--	ON	--	--	±5%
46.20	1000	24-42	ON	--	--	--	±5%
48.30	1150 ★	24-42	--	--	--	--	±5%

BK-SWL060-A1400AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
50.40	1200	24-42	--	--	--	ON	±5%
52.50	1250	24-42	--	--	ON	--	±5%
54.60	1300	24-42	--	ON	--	--	±5%
56.70	1350	24-42	ON	--	--	--	±5%
58.80	1400 ★	24-42	--	--	--	--	±5%

BK-SWL060-A1650AS

Output			1	2	3	4	Current Accuracy
Prated(w)	Irated(mA)	Voltage(Vdc)					
60.90	1450	24-42	--	--	--	ON	±5%
63.00	1500	24-42	--	--	ON	--	±5%
62.00	1550	24-40	--	ON	--	--	±5%
60.80	1600	24-38	ON	--	--	--	±5%
62.70	1650 ★	24-38	--	--	--	--	±5%

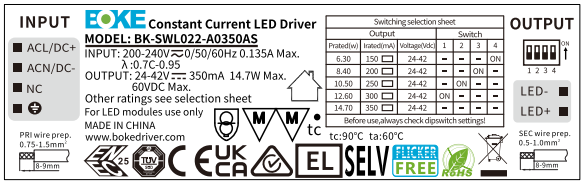
Remarks:

1.★ It means that this item is the factory default current.

2. -- It means that this channel is OFF.

Label

BK-SWL022-A0350AS



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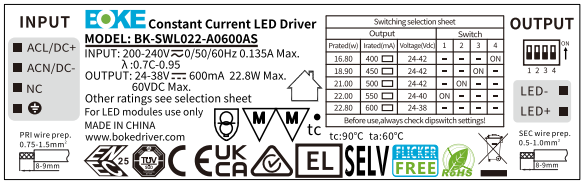

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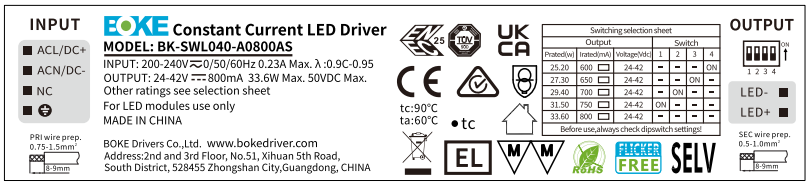

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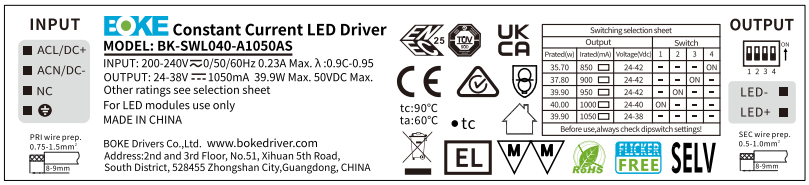

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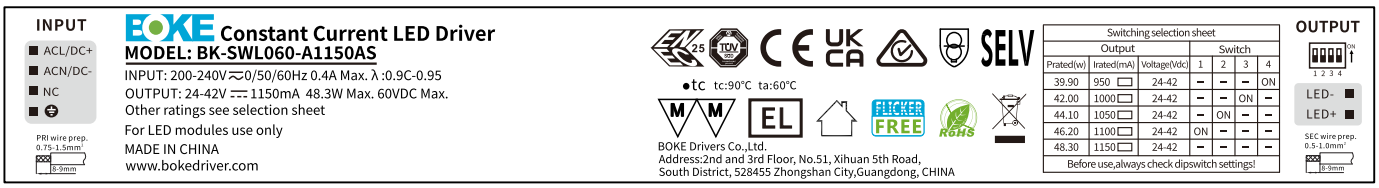

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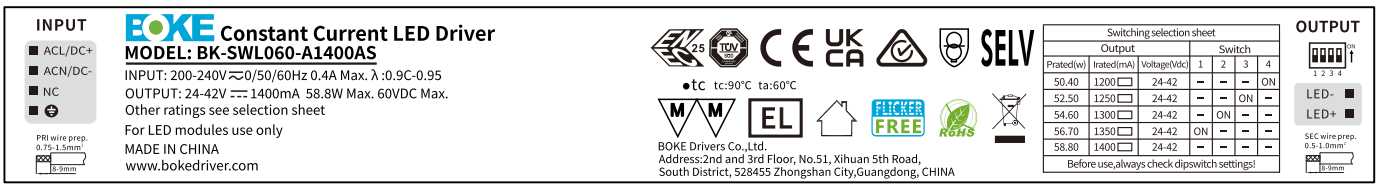

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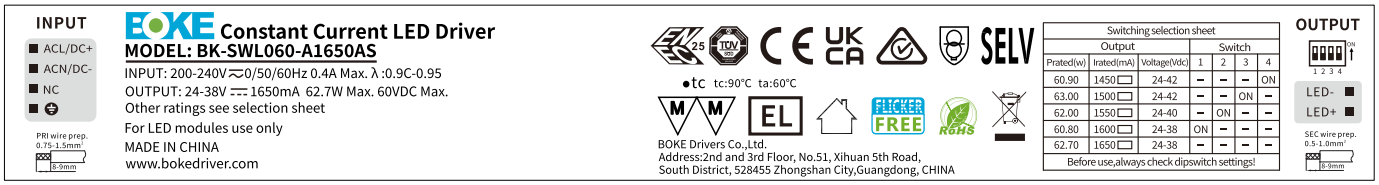
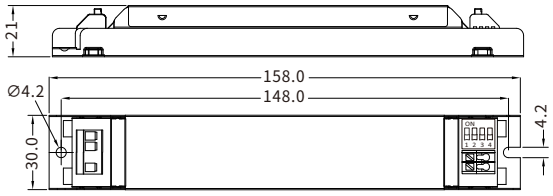


Mechanical Specification

Size(Excluding accessories)

Unit:mm

SWL022-A



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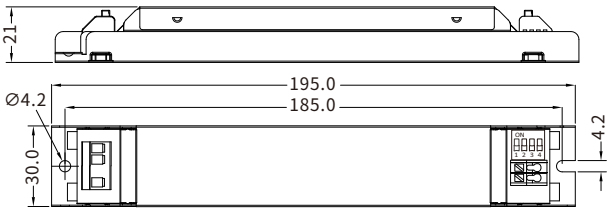

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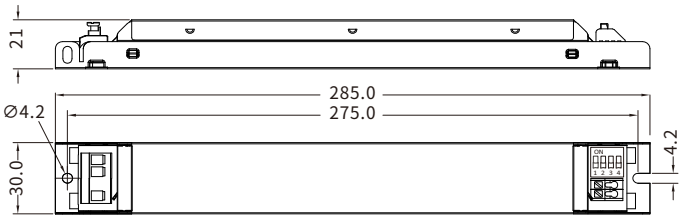
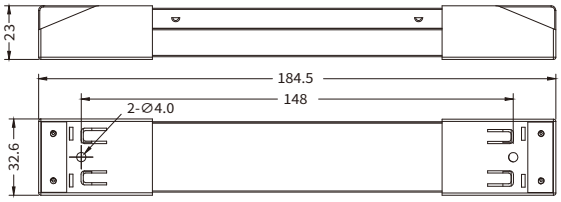


Mechanical Specification

Size(Include accessories)

Unit:mm

SWL022-A



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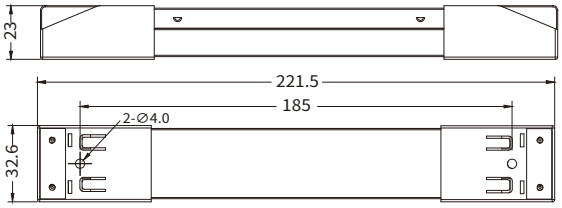

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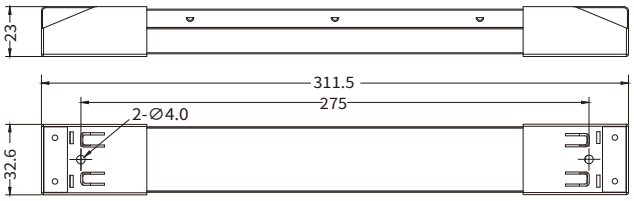
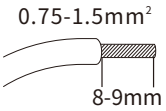


INPUT

Number	function	colour
1	ACL/DC+	orange
2	ACN/DC-	orange
3	NC	gray
4	FG	gray

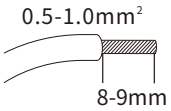
Input wire



OUTPUT

Number	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.

Installation requirements

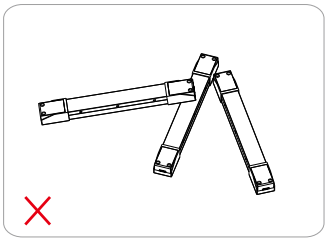
- The driver should be installed in a dry, acid-free, oil-free, fat-free environment.
- The installation ambient temperature of the driver shall not exceed the value of Ta at any time.
- The temperature of the mounting surface of the driver should be lower than the temperature of Ta.
- The driver should keep a certain distance from the heating stuff (such as the luminaire radiator).
- If the driver is used externally (it needs to be used with the accessories), the installation of the driver should also meet the following conditions:
  1.The driver should be a certain distance between the drivers, as shown in Figure 1.
  2.The driver keeps a certain distance from surrounding objects, as shown in Figure 2.

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 2m.
- Incorrect wiring can damage LED modules.

Replace LED module

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



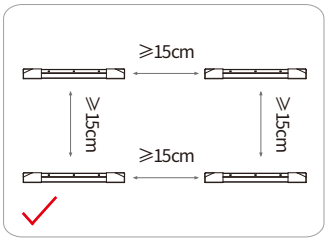


Figure 1

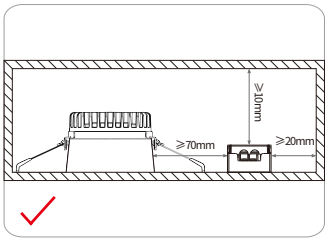
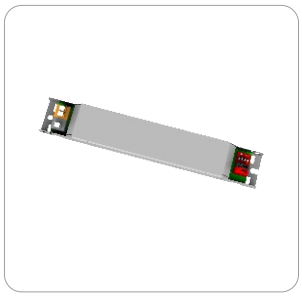
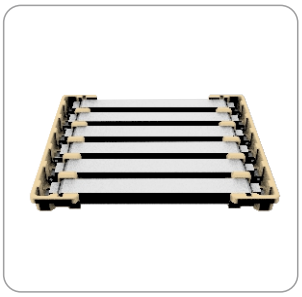


Figure 2

Packaging



Product

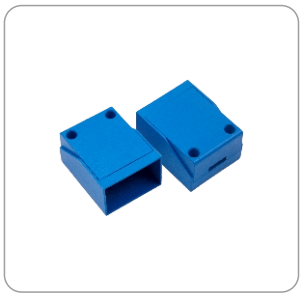


Paper tray

7pcs*8layer=56pcs/CTN
7pcs*6layer=42pcs/CTN
7pcs*5layer=35pcs/CTN

Model	Product size	Weight	Paper tray	Carton size	Packing	N.W	G.W
SWL022-A	L158*W30*H21mm	98g	L345*W75*H29mm	L355*W200*H270mm	56pcs	5.49kg	6.89kg
SWL040-A	L195*W30*H21mm	145g	L345*W75*H29mm	L355*W235*H205mm	42pcs	6.09kg	7.39kg
SWL060-A	L285*W30*H21mm	225g	L345*W75*H29mm	L355*W325*H170mm	35pcs	7.88kg	9.22kg

Accessories



End cap + screws

100 sets/CTN

Model	Product size	Weight	Carton size	Qty/carton	N.W	G.W
BAS003A	L48.7*W32.6*H23mm	22g	L450*W350*H180mm	100 sets	2.2kg	2.7kg

Additional information

1. The life and MTBF of the product are for reference only, and do not represent a warranty statement.
2. For more information, please send an email to info@bokedriver.com.