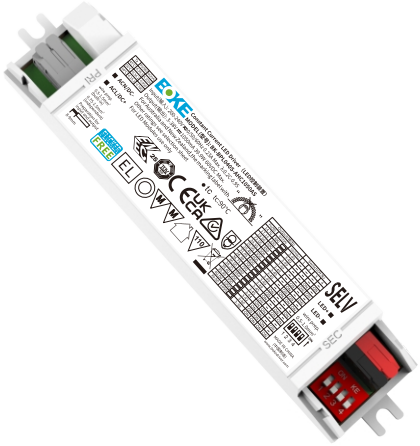
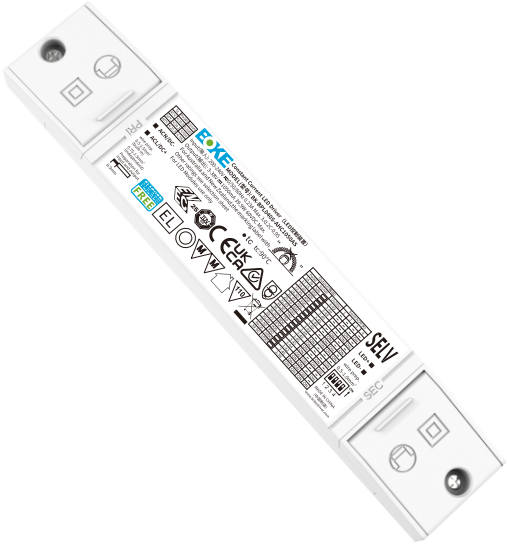
Constant current independent driver
BPL(S) Series suffix S





Features

- 16 -level current output can be realized by DIP-switch
- Flicker-free output,which meets the requirement of ErP standard
- Withstand 380VAC high voltage short-time shock
- Mains surge capability up to 2KV
- High PF,high efficiency,low THD
- Compact housing design
- SELV and Class II design, suitable for use outside or inside of the light
- 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-year guarantee

Functions

- Support central emergency application (100% output in DC input)
- Support self-contained emergency application
- Protective features (short-circuit,no-load,overload,over temperature 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 BPL(S) series

BK - BPLXXXS - AHC XXXX A S

- S — Function mode
- A — Output load voltage range identification code
- XXXX — Output current
- AHC — Distinguish code
- BPLXXXS — Product series
- BK — BOKE

Model list

Model	Input voltage	Output power	Output voltage	Output current	Dimension
BK-BPL040S-AHC1050AS	200-240VAC/DC	40W MAX.	3-49VDC	0.3-1.05A	L145.5*W30*H21.4mm(Built-in) L163.5*W30*H21.4mm(Independent)

Technical data

Product model	BK-BPL040S-AHC1050AS
Output parameters	
Regulation method	Constant Current
Rated output current range	0.3-1.05A,see the DIP-switch for details
Rated output voltage range	3-49VDC,see the DIP-switch for details
Rated output power	40W Max,see the DIP-switch for details
Output current adjustment	DIP S.W(16 levels)
Output current ripple(typ.)	±5%(100Hz)
Output current accuracy	±5%
Linear regulation	±5%
Load regulation	±5%
No load output voltage	60VDC
Flicker-free(typ.)	Flickering percent(IEEE 1789)=0.424%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.032, SVM = 0.011, (The above parameters are obtained from testing the panel lights)
Input parameters	
Rated input voltage range	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(typ.)	PF: 0.98,DF:0.98 , see the electrical values below for details
Input THD(typ.)	8% , see the electrical values below for details
Efficiency(typ.)	91% , see the electrical values below for details
In-rush current(typ.)	1.87A peak ,70us 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(typ.)	Full load(Pin):43.9W, 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
Mains surge capability	L-N:2KV(Performance criterion:B)
Leakage current(typ.)	0.67mA
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=-20-45/50/60°C,see the operating temperature for details
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, 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

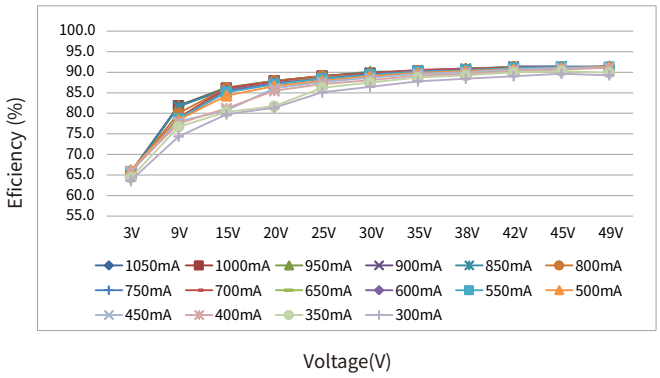
Remarks

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

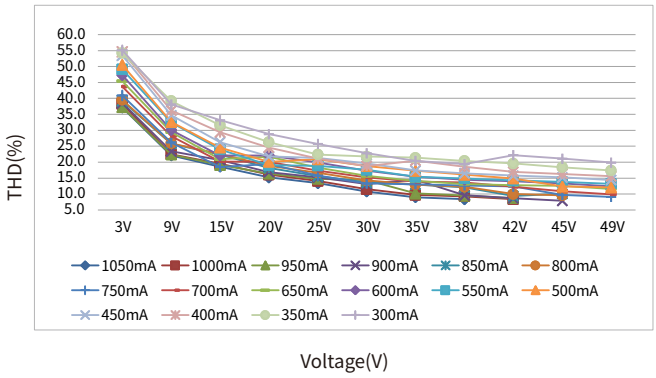
Electrical values

BK-BPL040S-AHC1050AS

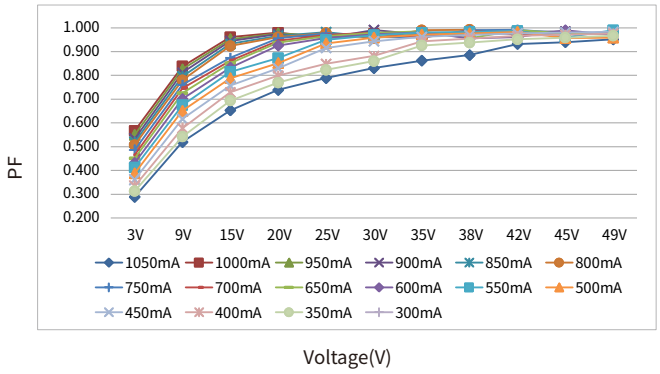
Efficiency vs voltage



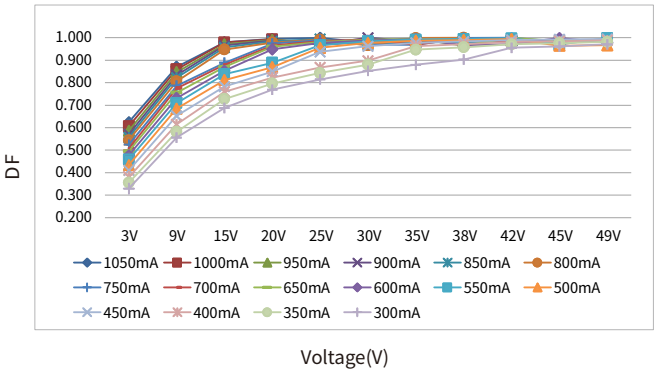
THD vs. voltage



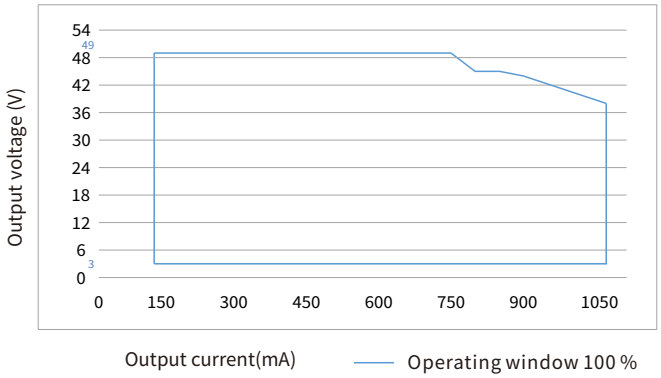
Power factor vs. voltage



Displacement factor vs. voltage

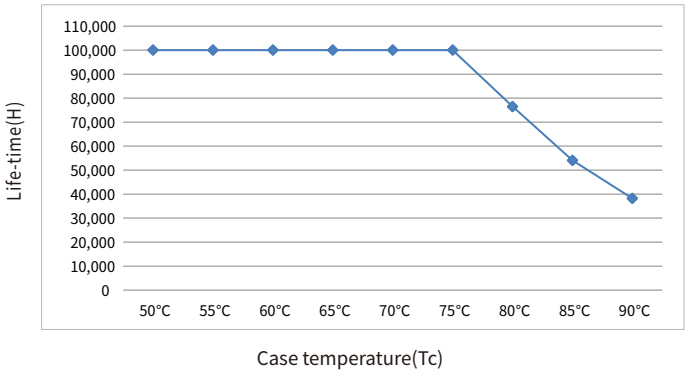


Operating window



Expected life-time

Life-time vs. case temperature

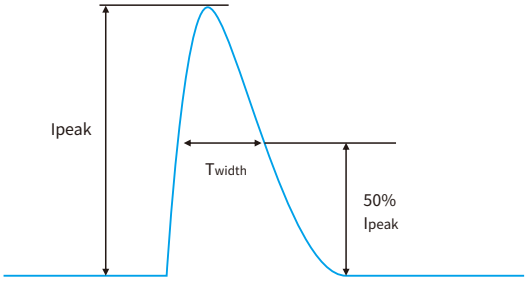


-The life-time of the LED driver is shown in the figure above (calculated based on the 90% survival rate).

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

Surge

Model	Ipeak	Twidth	Condition	Relative number of MCB/pcs														
				B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
BK-BPL040S-AHC	1.87A	70us	AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side	41	53	65	81	102	41	53	65	81	102	41	53	65	81	102



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.

Output overload protection

- The LED driver turns off the output if the output voltage range is exceeded.
  The output will be activated again after restart the LED driver .

Ouput over temperature

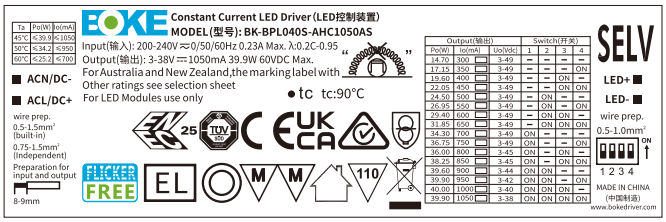
- When the operating temperature exceeds the set over temperature protection value of the internal circuit of the power supply, the power supply enters protection states such as output derating, output hiccup or output shutdown. After the external temperature is normal, restart and resume operation.

Insulation between circuits

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

Label

BK-BPL040S-AHC1050AS



Operating temperature & output current

BK-BQL042S-AHC1050BN

Tc	Ta	Po(W)	Io(mA)
90°C	45°C	≤39.9	≤1050
	50°C	≤34.2	≤950
	60°C	≤25.2	≤700

DIP-switch & output current

BK-BPL040S-AHC1050AS

Output			1	2	3	4
Prated(w)	Irated(mA)	Voltage(Vdc)				
14.70	300	3-49	--	--	--	--
17.15	350	3-49	--	--	--	ON
19.60	400	3-49	--	--	ON	--
22.05	450	3-49	--	--	ON	ON
24.50	500	3-49	--	ON	--	--
26.95	550	3-49	--	ON	--	ON
29.40	600	3-49	--	ON	ON	--
31.85	650	3-49	--	ON	ON	ON
34.30	700	3-49	ON	--	--	--
36.75	750	3-49	ON	--	--	ON
36.00	800	3-45	ON	--	ON	--
38.25	850	3-45	ON	--	ON	ON
39.60	900	3-44	ON	ON	--	--
39.90	950	3-42	ON	ON	--	ON
40.00	1000	3-40	ON	ON	ON	--
39.90	1050 ★	3-38	ON	ON	ON	ON

Remarks:

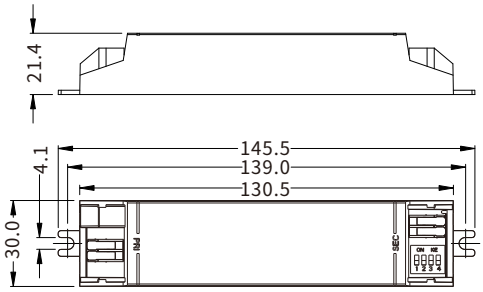
1.★ It means that this item is the factory default current.
2. -- It means that this channel is OFF.

Mechanical Specification

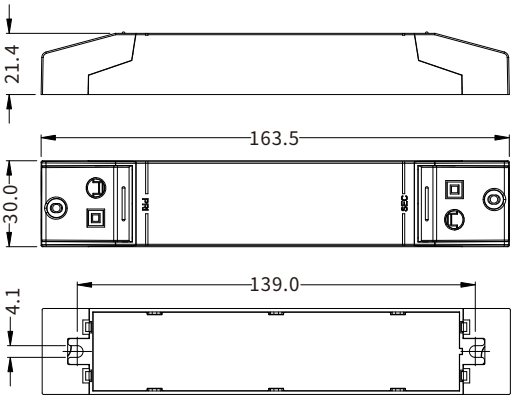
Size

Unit:mm

BK-BPL040S(built-in)



BK-BPL040S(independent)



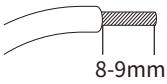
INPUT

numbering	function	colour
1	ACN/DC-	grey
2	ACL/DC+	grey

Input wire

0.5-1.5mm²(Built-in)

0.75-1.5mm²(Independent)

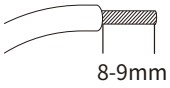


OUTPUT

numbering	function	colour
1	LED+	red
2	LED-	black

Output wire

0.5-1.0mm²



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 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.

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

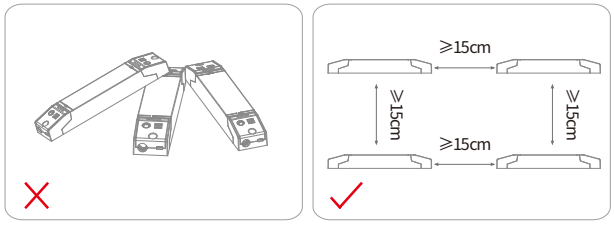


Figure 1

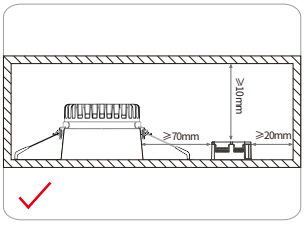


Figure 2

Packaging

Product

20pcs/Box

20pcs×4boxes=80pcs/CTN

Model	Product size	Weight	Box size	Carton size	Qty/carton	N.W	G.W
BPL040S(bilt-in)	L145.5*W30*H21.4mm	83g	L240*W150*H68mm	L320*W260*H155mm	80pcs	6.64KG	7.95KG
BPL040S(independent)	L163.5*W30*H21.4mm	95g	L232*W170*H71mm	L360*W250*H165mm	80pcs	7.60KG	8.91KG

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.