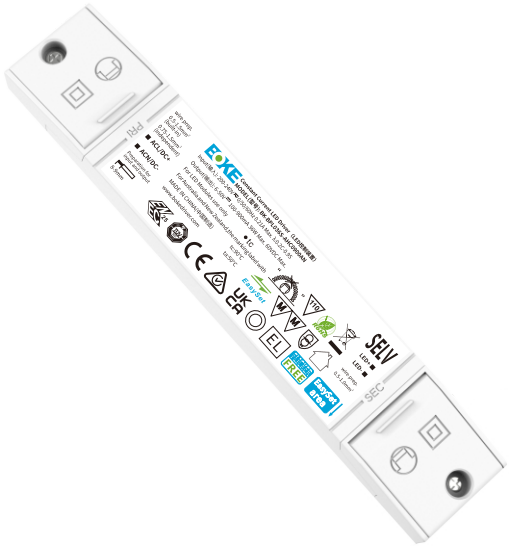
# Constant current independent driver
# BPL(S) Series suffix N(NFC programmable)



## Features

- The output current programming can be realized through the NFC interface
- 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 Zhaga Book 24/25 standards
- 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
- Programming via NFC(EasySet)
- 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 N

- N: Function mode(N:NFC programmable)
- 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-BPL036S-AHC0900AN | 200-240VAC/DC | 36W MAX. | 6-50VDC | 0.1-0.9A | L145.5*W30*H21.4mm(Built-in)<br>L163.5*W30*H21.4mm(Independent) |

## Technical data

| | |
|---|---|
| Product model | BK-BPL036S-AHC0900AN |
| Output parameters | |
| Regulation method | Constant Current |
| Rated output current range | 0.1-0.9A,see the operating window for details |
| Rated output voltage range | 6-50VDC,see the operating window for details |
| Rated output power | 36W Max,see the operating window for details |
| Output current adjustment | EasySet Programming |
| Output current ripple(typ.) | ±5%(@>250mA),±10%(@≤250mA),(100Hz) |
| Output current accuracy | ±5%(@>250mA),±10%(@≤250mA) |
| Linear regulation | ±5% |
| Load regulation | ±5% |
| No load output voltage | 60VDC |
| Flicker-free(typ.) | Flickering percent(IEEE 1789)=0.327%(100Hz), Flicker index(IEEE 1789)=0.001(100Hz), Pst LM = 0.72, SVM = 0.011,<br>(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 | <0.21A (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.) | 10% , see the electrical values below for details |
| Efficiency(typ.) | 90% , see the electrical values below for details |
| In-rush current(typ.) | 1.9A peak ,59us 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):40W, No load(Pno):N/A, On stand-by(Psb) : N/A, Network stand-by(Pnet) : N/A |
| Safety | |
| Withstand voltage | I/P-O/P(LED):3750V AC |
| 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=-20-50°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, 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 |

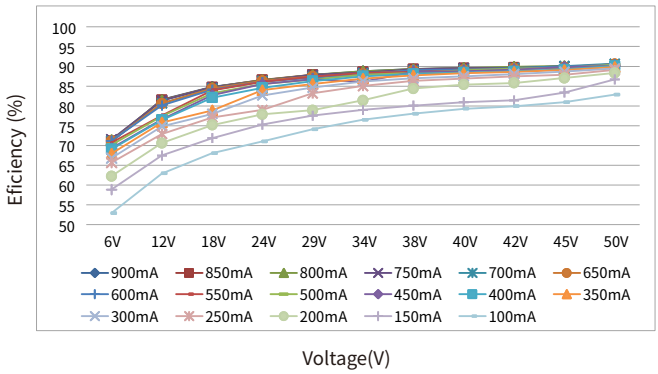
## Remarks

1.By default, all parameter are measured at 230VAC input,50Hz, full load and 25°C of ambient temperature.
2.When the driver is used with the light, the EMC of the whole light needs to be tested.

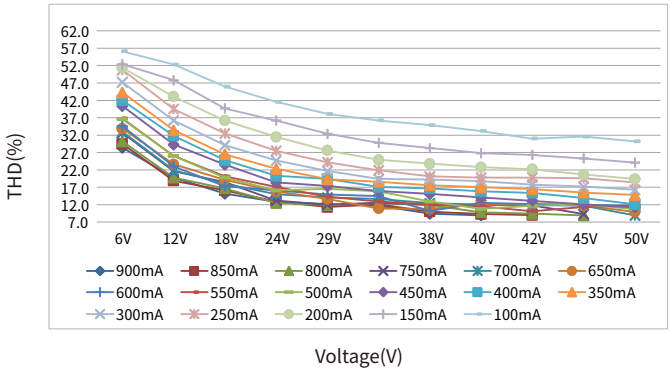
## Electrical values

BK-BPL036S-AHC0900AN

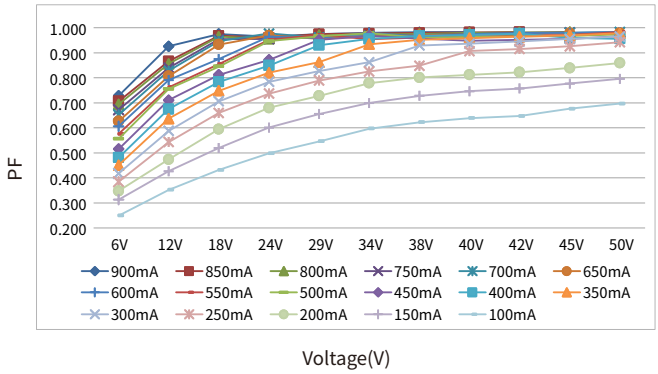
Efficiency vs voltage



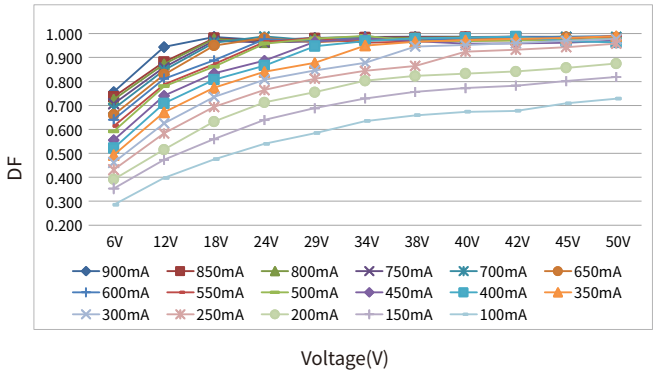

THD vs. voltage



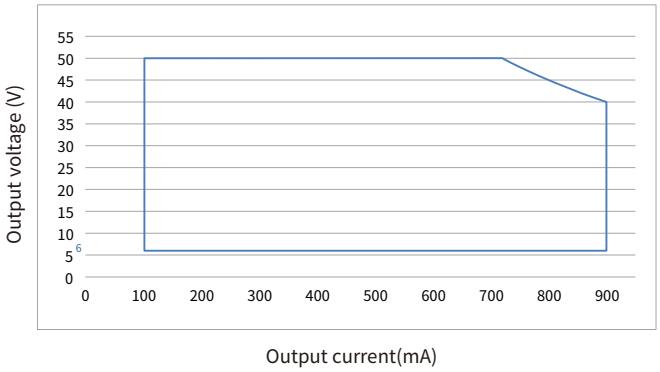

Power factor vs. voltage




Displacement factor vs. voltage



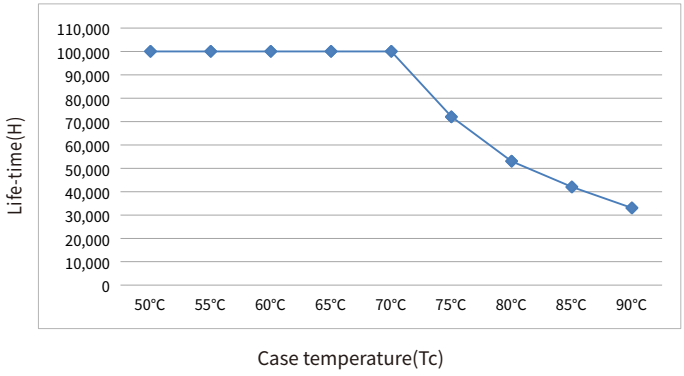

Operating window




- Output voltage x output current = output power
- The minimum current step is 1mA, the minimum voltage step is 1V, the voltage range is 6-50V, the current range is 100-900mA, and the voltage and current can be set arbitrarily under the premise that the output power does not exceed 36W.

## Expected life-time

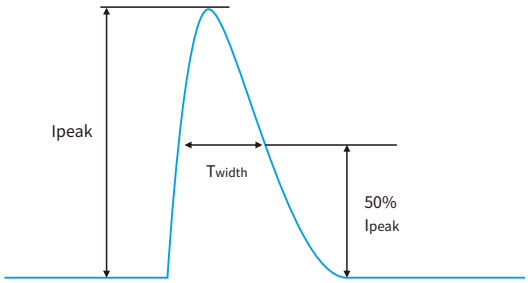
Life-time vs. case temperature




-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-BPL036S-AHC | 1.9A | 59us | AC 230V,Full load, Cold start,Ta≤30°C, MCB is not installed side by side | 45 | 58 | 72 | 90 | 112 | 45 | 58 | 72 | 90 | 112 | 45 | 58 | 72 | 90 | 112 |




### 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.

**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.

**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 .

**Driver restart method**

- Through the AC input:disconnect the AC of the driver and power it again.

**Adjustable output current (AOC)**

- The output current of the driver can be adjusted within a certain range, can be selected through the EasySet configuration software.

**Configuration programming(EasySet)**

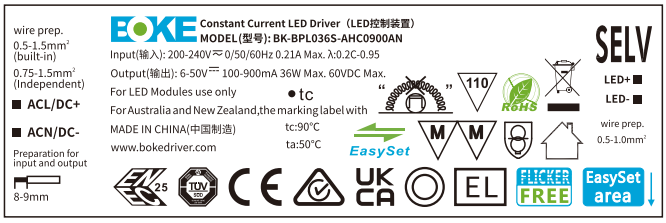
- The programming configuration of the driver is realized using the BOKE EasySet programming suite and through the driver's NFC interface.
- Please see the "Device configuration" section.
- More information about the EasySet programming suite can be found at www.bokedriver.com.

## Insulation between circuits

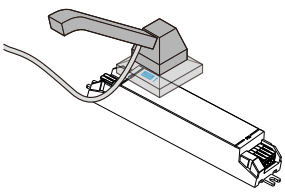
| Isolation | Input | Output | Case |
|---|---|---|---|
| Input | - | Double | Double |
| Output | Double | - | Basic |
| Case | Double | Basic | - |

## Label

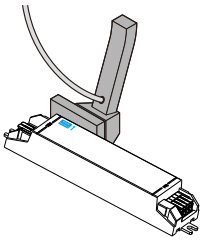
BK-BPL036S-AHC0900AN




## NFC scan area

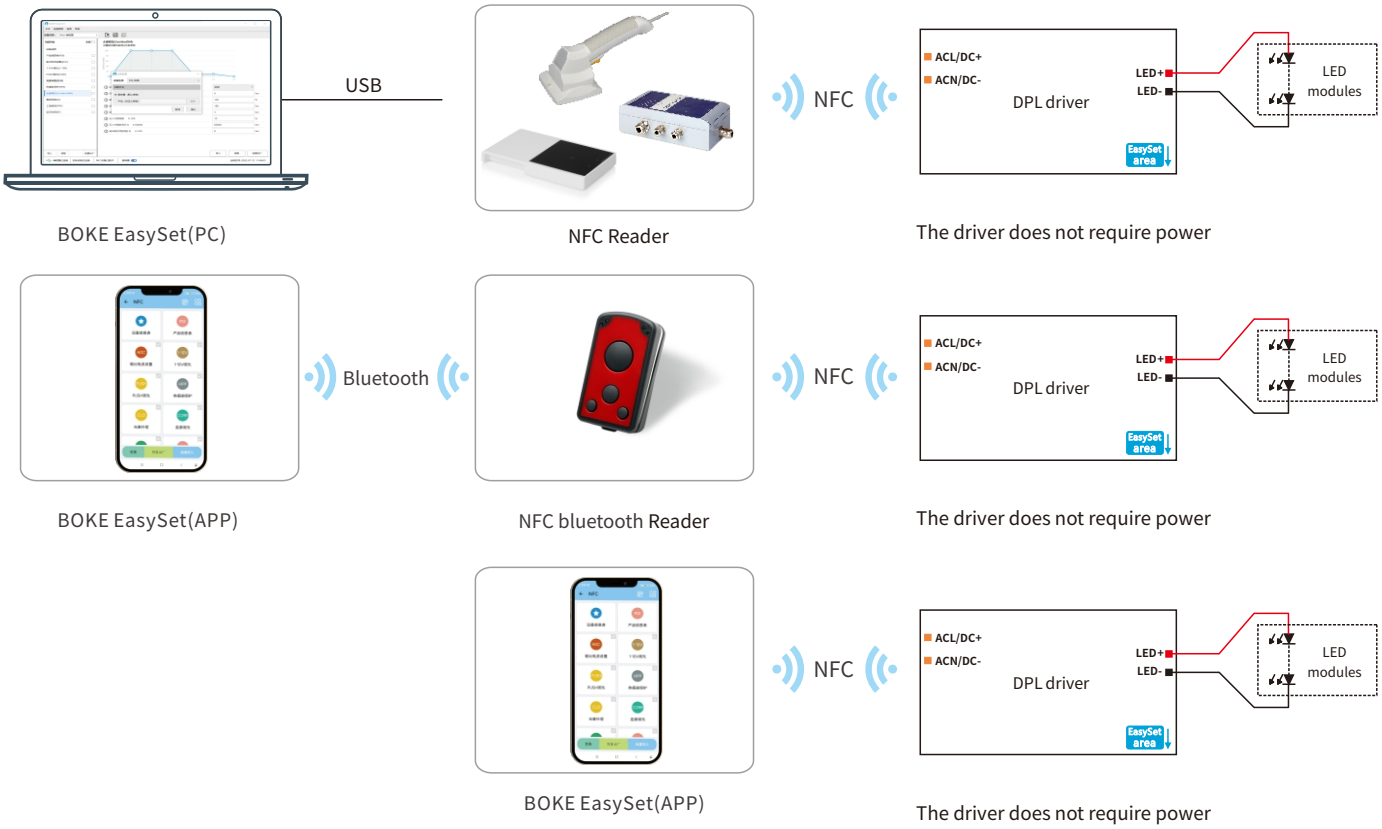


Error scanning mode



Correct scanning mode

## Device configuration




### Software download(PC&mobile)

PC:Windows7/Windows10/Windows1132bit/64bit;
Mobile:Androidsystem≥6.0, iossystem≥14.0.

### Configure tools and software

| Type | Name | Brand | Name | BOKE EasySet minimum version(PC) | BOKE EasySet minimum version(APP) |
|---|---|---|---|---|---|
| Programmer | NFC desktop Reader | FEIG | CPR30+ | V1.0.0 | - |
| | NFC handheld Reader | FEIG | ID ISC-PRH101-USB | V1.2.2 | - |
| | NFC Bluetooth Reader | FEIG | ID ECCO Smart HF-BLE | - | V1.0.0 |
| | NFC batch Reader | FEIG | ID ISC.LR1002-E | V1.3.4 | - |
| Software | PC Software | BOKE | BOKE EasySet | V1.0.0 | - |
| | APP | BOKE | BOKE EasySet | - | V1.0.0 |

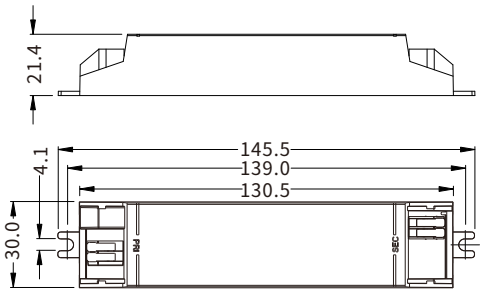
### Parameters configure

| Configuration items | Factory settings | Parameter configuration | Read/Wirte |
|---|---|---|---|
| Product information | - | NO | Read Only |
| Adjustable output current(AOC) | Activated | YES | Read/Wirte |
| Run-time(RT) | | NO | Read Only |
| Other parameters | | YES | |

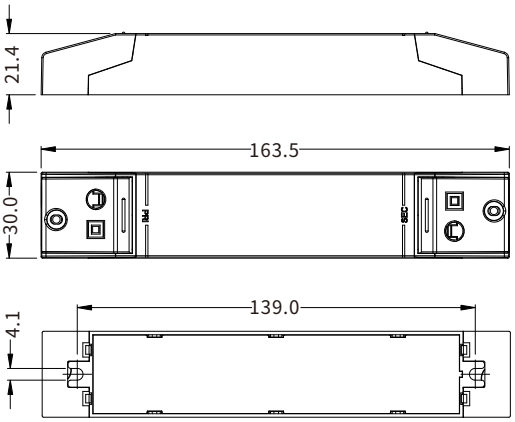
## Mechanical Specification

**Size**(Unit:mm)

BK-BPL036S(built-in)




BK-BPL036S(independent)



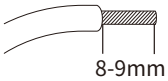

INPUT

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

Input wire

0.5-1.5mm²(Built-in)

0.75-1.5mm²(Independent)

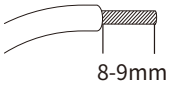



OUTPUT

| 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

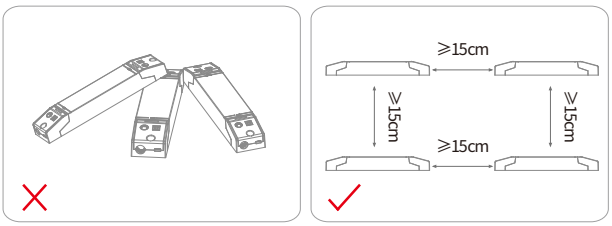



Figure 1

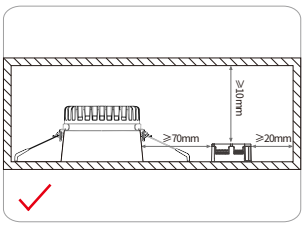



Figure 2

## Packaging

Product

20pcs/Box

20pcs×4boxes=80pcs/CTN

| Model | Product size | Weight | Box size | Carton size | Qty/carton | N.W | G.W |
|---|---|---|---|---|---|---|---|
| BPL036S(bilt-in) | L145.5*W30*H21.4mm | 107g | L240*W150*H68mm | L320*W260*H155mm | 80pcs | 8.56KG | 9.85KG |
| BPL036S(independent) | L163.5*W30*H21.4mm | 119g | L250*W170*H71mm | L360*W270*H175mm | 80pcs | 9.52KG | 10.8KG |

### 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.