Product Features

- High power factor: PF > 0.9
- Low Harmonic Distortion: THD < 10%
- Efficiency: 82%
- Flicker-free parameters: Pst LM < 0.03, SVM < 0.01
- No load/Standby power < 0.5W
- Anti-surge voltage: differential mode1kV (L-N)
- Designed for CE-Erp compliance
- Over-heat / Over-load / Short circuit protection
- Suitable for Class II, III fixtures

Flicker-Free
IEEE 1789

Advantages of the DB-12-XX-XX-XZB series products

- **Smart Lighting Control:** Supports the Tuya smart lighting control system, enabling remote operation via the Tuya Smart APP for individual lamp adjustment, multi-lamp grouping, and scene configuration
- **Cross-ecosystem voice control:** Compatible with third-party voice-controlled smart speakers(such as Amazon Alexa, Google Assistant, Tmall Genie, and Xiaodu Voice Assistant)
- **Wireless Smart Control:** Supports Tuya ZigBee 3.0 protocol remote controls and scene panels.
- **Low standby power consumption:** Low standby power consumption (<0.5W), compliant with energy efficiency regulations (CE-Erp)
- **High-frequency exemption level:** Supports high-frequency dimming above 4000 Hz, compliant with IEEE 1789 exemption standards
- **Ultra-low energy consumption:** Features an active PFC design with PF > 0.9
- **Safety protection:** Class II insulation design and multiple protection functions

Product Description

- 12W, 150-500mA (Set via DIP switches)
- Constant current output, 1CH dimmable LED driver
- Tuya Smart App Cloud Control
- Dimming range: 0.1-100%
- 5 years warranty

Housing Features

- Housing material: Polycarbonate, white color
- Input wiring: Screw terminal
- Output wiring: Screw terminal
- Ingress protection: IP20, for indoor use

Product Applications

- Downlights and spotlights for indoor lighting
- Panel lights for office/commercial lighting

Model List

Model	Input voltage ~	Output voltage ⎓	Output Current	Output power	Power factor	Efficiency	Certification
DB-12-150-500-ZB	220-240V	53V Max.	150-500mA	12W Max.	>0.9	82%	ENEC, TUV, CB, CE, RoHS, UKCA, ERP
DB-12-150-500-2ZB	220-240V	53V Max.	150-500mA	12W Max.	>0.9	82%	ENEC, TUV, CB, CE, RoHS, UKCA, ERP

Model Naming Rule

D B - 1 2 - 1 5 0 - 5 0 0 - Z B

- DB: Housing type
- 12: Output power: 12 = 12W
- 150-500: Output current range: 150-500 = 150-500mA
- ZB: Dimming type: ZB = ZigBee

Technical Parameters

Output parameter			
Item	Value	Unit	Note
Output Current Range:	150-500	mA	-
Output Voltage Range:	9-42	VDC	Max. 53VDC
Output Power Range:	1.35-12.15	W	Max. 12W
Dimming Range	0.1~100	%	-
Ripple	63	mA	-
Current Accuracy	±5	%	-
Flicker-free	Pst LM<0.03, SVM<0.01	-	Measure using constant-current LED chips.

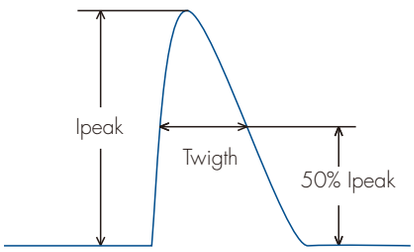
Input parameters			
Item	Value	Unit	Note
Input Voltage Range	220~240	VAC	-
Rated Input Voltage Range	220~240	VAC	-
Maximum Input Voltage Range	198~264	VAC	-
Frequency Range	50/60	Hz	-
Efficiency(Typ)	82	%	230VAC
Input Current	0.08 Max.	A	-
Power Factor	>0.9	-	Full load, refer to the "Char.Curve Figure 3"
THD	<10	%	Full load, refer to the "Char.Curve Figure 4"
Inrush Current	9.36	A	Cold start at 230VAC
Anti Surge	1	KV	diff. mode: L-N Acc. to IEC61000-4-5.1.2/50us,8/20us
Leakage Current	0.4	mA	-
No Load/Standby Power	<0.5	W	-

Operation Environment			
Item	Value	Unit	Note
Woking Temperature	-20~45	°C	-
T-case Max	80	°C	-
Working Humidity	20~90	%	non-condensing
Storage Humidity	10~95	%	-
Storage Temperature	-40~80	°C	-
Temperature Coefficient	±0.03	%/°C	0-50%
Noise	22.8	dB	-
Vibration Resistance	10-500	Hz	Hz, 2G, 6min/cycle, X,Y,Z axes/2min
IP Rating	IP20	-	-
Lifetime	50000	Hrs	@Tc 80°C, refer to the"Char.Curve Figure 5"

Safety & EMC			
Item	Value	Unit	Note
Withstand Voltage	3750	VAC	I/P-O/P
Insulation Resistance	>5.5/500/25/70	GΩ/VDC/°C/%RH	I/P-O/P
EMC Emission	EN55015, EN61000-3-2/-3	-	-
EMC Immunity	EN61000-4-2.3.4.5.6.11, EN61547	-	-
Certications	ENEC, TUV, CB, CE, RoHS, UKCA, ERP	-	-

CertiAcation Standards:
EN61347-1, EN61347-2, EN61547, EN55015, EN61000-3-2, EN61000-3-3, EN301 489-1, EN301 489-17, ETSI EN 300 328

Inrush current & MCB						
Item	Value				Unit	Note
Inrush current	9.6				A	-
Twigth	0.116				ms	-
MCB type	B10	B16	C10	C16	pcs	-
	27	43	44	71		



- The calculation is based on the parameters of the ABB S200 series of miniature circuit breakers.
- For miniature circuit breakers of different brands and models, the number of power supplies that can be connected varies.
- When the installation environment temperature of the MCB exceeds 30°C, or parallel connection installed, the number of connectable power supplies will also decrease, need recalculation.
- Type B MCB are suitable for household lighting, Type C MCB are suitable for commercial lighting.

Insulation betwwen circuits			
Insulation	Input	Output	Case
Input	-	SELV	SELV
Output	SELV	-	SELV
Case	SELV	SELV	SELV

Basic insulation: The minimum insulation required for the normal operation of the equipment, used to isolate energized parts from accessible parts (e.g., shells, parts that may be touched by the human body) and to prevent direct contact with electric shocks.

Double insulation: It is composed of basic insulation and additional insulation, forming two independent layers of insulation protection, even if one layer fails, the other layer can still prevent electric shock.

Protection function

Over Load: When the load≥110%~140%, the indicator light flashes slowly, hiccup protection, automatic recovery after load reduction.
Over Temperature: When the PCB temperature >100°C, the indicator light flashes slowly, output power is reduced, and automatically resumes after the fault condition is eliminated.
Short Circuit: During short-circuit protection, the indicator flashes rapidly, output voltage shuts off, and automatically resumes within 5s;
If short-circuit protection lasts over 15s, the indicator light remains flashing rapidly without restoring output voltage.
A restart is required to resume output voltage.

Test note:

If not specified, the above parameters are the result of testing at ambient temperature of 25°C, humidity of 50%, full load conditions.
The startup time is measured during a cold start. Frequent powering on and off may lead to an increase in the startup time.
The ripple current and standby power consumption are measured under full load conditions.

Identifier explanation:

: A standalone power supply unit that can be installed independently of the lighting fixture.

: Safety-isolated and short-circuit-resistant control device.

SELV : Safety extra-low voltage. Output voltage must not exceed 50V (AC) and 120V (DC).

Characteristic Curve

Figure 1

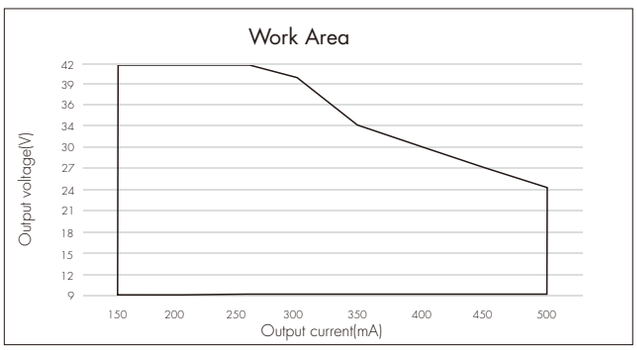


Figure 2

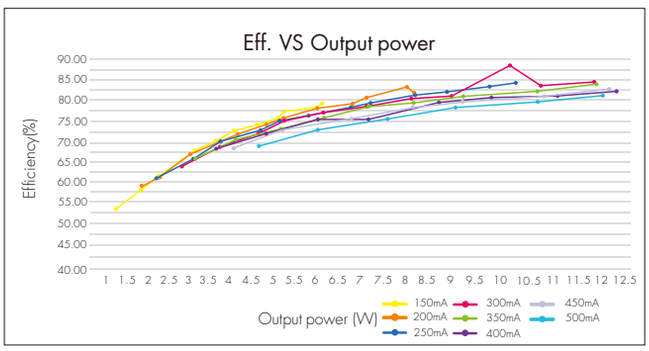


Figure 3

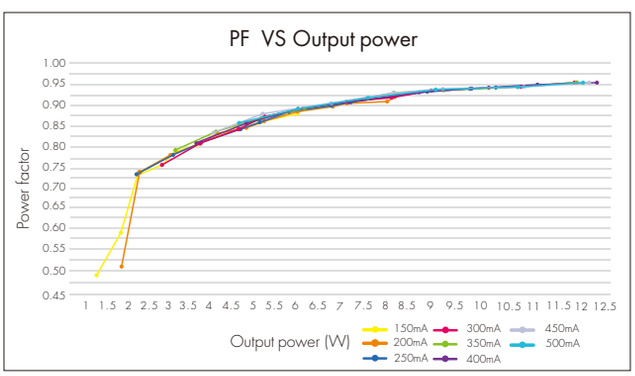


Figure 4

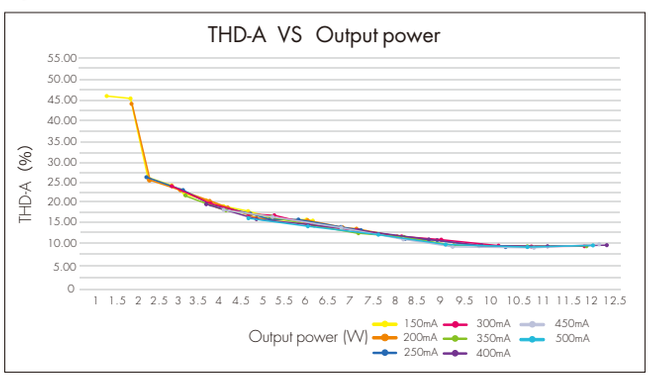
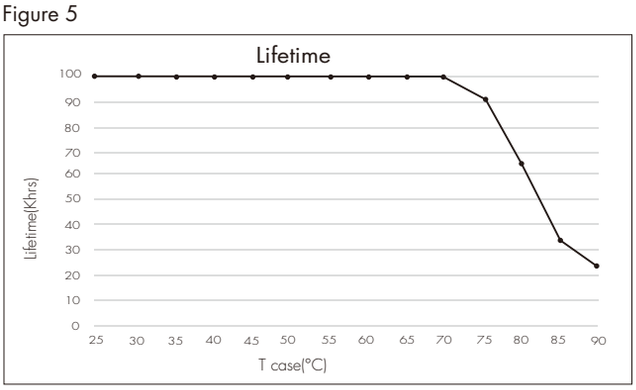


Figure 5



The relationship of the Tc temperature also depends on the lighting fixture setting.

LED Current Setting

Set the output current value via the 3-digit DIP switch 

1 2 3								
output current	150mA	200mA	250mA	300mA	350mA	400mA	450mA	500mA
output voltage	9-42V	9-42V	9-42V	9-40V	9-34V	9-30V	9-27V	9-24V
output power	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W	3.15-11.9W	3.6-12W	4.05-12.15W	4.5-12W

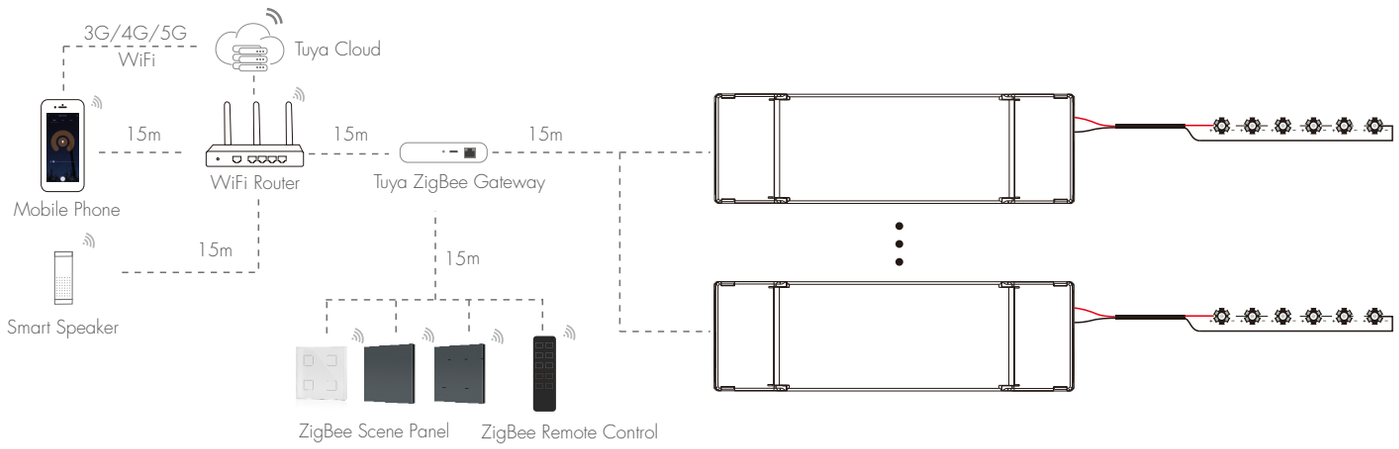
Note: 1. Before adjusting the current via the DIP switches, disconnect the power supply. Failure to do so may damage the lighting fixture.
2. Output current accuracy ±5%.

Wiring Diagram

- Wiring Instructions

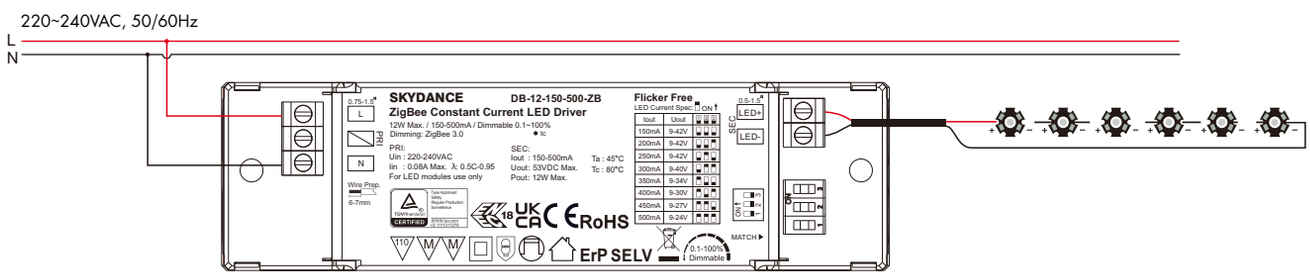
Input/Output Wiring	Port Definition	Wire Diameter and Stripping Length
Input Wiring(PRI)	AC-L, AC-N	Wire Diameter: 0.75-1.5㎟(18-16AWG) Stripping Length: 6-7mm 
Output Wiring(SEC)	LED+, LED-	Wire Diameter: 0.5-1.5㎟(20-16AWG) Stripping Length: 6-7mm 

• System Wiring



Note:
1. The distances listed above were measured in an open (obstacle-free) environment. Please refer to actual test distances before installation.
2. Users can achieve remote control and voice control via the Tuya ZigBee gateway, or use the Philips HUE bridge for HUE APP control.

• Dimming Wiring Diagram

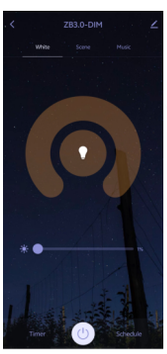


Tuya Smart APP User Guide

- **Download the APP:** Please download the corresponding Tuya Smart/Smart Life APP based on your region or scan the QR code on the right to download the APP, register an account and log in after installation.
- **Add Gateway:** Search for and add the ZigBee gateway in the Tuya Smart APP.
- **Configure Network:**
  Upon first use, the device will automatically enter Wi-Fi pairing mode after powering on, with the indicator light flashing rapidly and the LED output light flashing 10 times.
  In theTuya APP, locate the ZB3.0-DIM device to connect.
  Once the network connection is successful, the indicator light will immediately stop flashing.
- **Clear network connections:**
  There are two methods to clear previous network connections and enter the network configuration mode, The indicator light flashes rapidly, and the LED output light flashes 10 times.
  1. Press and hold the pairing button for 5s.
  2. Press the pairing button twice in quick succession.
- **Reset Network:**
  Press and hold the pairing button for 2s. The indicator light will flash once, allowing you to reset the ZigBee network.

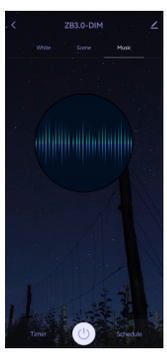
Smart Life Tuya Smart

• APP User Interface



White Light Interface:
Press the ⏻ to turn the light on or off.
Slide the brightness slider to adjust the light intensity.

Scene Interface:
Scenes 1-8,
these scenes can be edited.



Music, Countdown, Timer:
Music playback can use smart phone musical instrument APPs or micro-phone as music signal input.

The countdown timer can be set to automatically turn lights on or off within the next 24 hours.

The timer button allows you to add multiple timers, enabling or disabling lights based on different schedules.

Installation Precautions

1. Hot plug-in

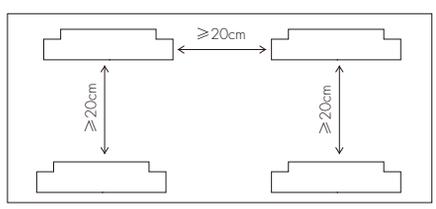
- Hot plug-in is not supported due to residual output voltage of > 0 V.
- If a load is connected, the device needs has to be restarted.
- The restart can be achieved by reset or dimming interface.

2. Wiring guidenlines

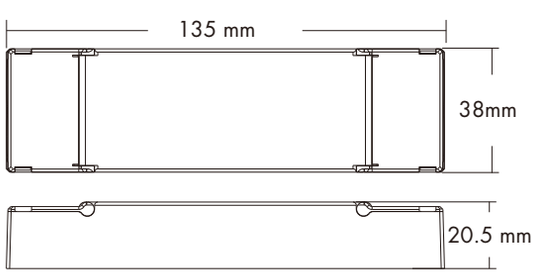
- This product must be installed and adjusted by a qualified professional.
- Before you power on the product, please make sure all the wiring is correct in case of incorrect connection.
- PC covers, housings and plug light kits for power supplies assembled within the fixture are required to meet UL94-V0 and above fire ratings.
- The power supply is used as part of the luminaire system in conjunction with the end device (luminaire), and since the EMC performance is affected by the LEDs and the alignment. The end device manufacturer needs to re-verify the EMC of the complete unit.
- If a fault occurs, please do not attempt to x the product by yourself; If you have any questions, please contact us in time.

3. Installation environment

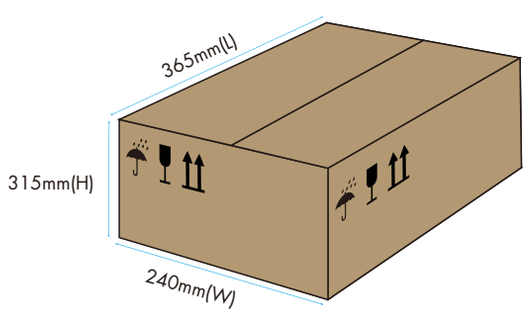
- This product is non-waterproof. When installed outdoors, please ensure it is mounted in a water proof enclosure.
- This product should be installed in a dry, acid-free, oil-free environment.
- Please use the product within the operating temperature range of -20°C~45°C to ensure stable performance.
- LED driver should keep a certain distance from the heating stuff(such as the luminaries radiator). The installation interval between the product and the product is recommended to be 20cm, so as not to affect the service life due to poor heat dissipation (show in Figure).



Product Size and Packaging Information



(Product size)



(Carton size)

Model	Product size (mm)	White box size(mm)	N.W(pcs)	Carton size(mm)	Qty/carton	N.W/carton	G.W/carton
DB-12-150-500-ZB	135*38*20.5	156*52*28	84g(±5g)	365*240*315	100pcs	8.4kg (±0.5kg)	11.32kg (±0.5kg)

Version Log

Version	Update time	Update Content
1.0.0	2026.01.07	Original version