Intelligent Tunable White LED Driver (Constant Current)

- Housing made from SAMSUNG/COVESTRO's V0 flame retardant PC materials.
- Ultra small, thin and lightweight, screwless end cap.
- Change the dimming interface, output current, DALI address and other parameters via the APP.
- Set the DALI group and scene in the advanced DALI template via the APP.
- Adjustable output current with 1mA step.
- Soft-on and fade-in dimming function enhances your visual comfort.
- T-PWM™ super deep dimming technology, 0.01% dimming depth.
- The whole dimming process is flicker-free with high frequency exemption level.
- Comply with the EU's ErP Directive, networked standby<0.5W.
- When there is no load, the output will be 0V to prevent damage to LEDs due to poor contact.
- Overheat, over voltage, overload, short circuit protection and automatic recovery.
- Suitable for Class Ⅰ / Ⅱ /Ⅲ indoor light fixtures.
- Normal service life can reach 100,000 hours.
- 5-year warranty (Rubycon capacitor).

DIM / CT

T-PWM™
Dimming Technology

Flicker Free
IEEE 1789

Dimmable:
10000 : 1

The certification icon represents undergoing certification applications only, and final certification qualification subject to actual product.

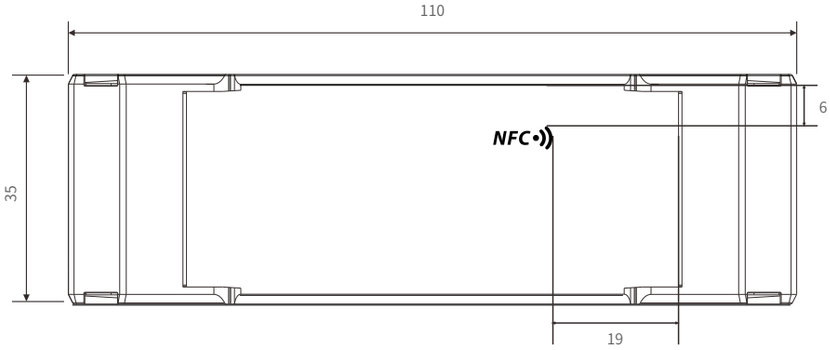
Multi current setting | Constant power setting | Overheat Protection | Over voltage protection | Over Load protection | Short circuit protection

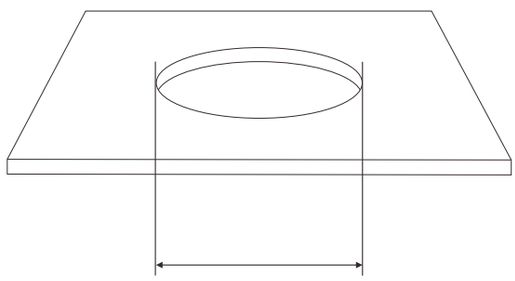
Technical Specs

Model		SE-12-100-500-W2D		
Features	Output Type	Constant current		
	Dimming Interface	DALI-2 DT6/DT8		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)		
OUTPUT	Output Voltage	9-42Vdc		
	Maximum output voltage	≤48V		
	Output Current Range	100-500mA		
	Output Power Range	0.9W~12W		
	Dimming Range	0~100%, down to 0.01%		
	LF Current Ripple	<3%(Maximum current for non dimming state)		
	Current Accuracy	±5%		
	PWM Frequency	≤3600Hz		
INPUT	DC Voltage Range	120-300Vdc		
	AC Voltage Range	100-240Vac		
	Input Voltage	115Vac/230Vac		
	Frequency	50/60Hz		
	Input Current	≤0.18A/115Vac ≤0.08A/230Vac		
	Power Factor	PF>0.95/115Vac (at full load), PF>0.9C/230Vac (at full load)		
	THD	THD≤10%/230Vac (at full load)		
	Efficiency (Typ.)	84%@300mA (at full load), 82%@500mA (at full load)		
	Inrush Current	Cold start 15A(Test twidth=130us tested under 50% Ipeak)/230Vac		
	Anti Surge	L-N:2KV		
	Leakage Current	Max.0.24mA		
ENVIRONMENT	Working Temperature	ta:-20~50°C tc:90°C		
	Working Humidity	20 ~ 95%RH, non-condensing		
	Storage Temperature/Humidity	-40~80°C/10~95%RH		
	Temperature Coefficient	±0.03%/°C(0-50°C)		
	Vibration	10~500Hz, 2G 12min/1cycle, 72 min for X, Y and Z axes respectively		
PROTECTION	Overload Protection	Automatically protect the device when the load exceeds 102% of the rated power. Automatically recover once load is reduced		
	Overheat Protection	Intelligently adjust or turn off the current output if the PCB temperature ≥110°C. When the PCB temperature <90°C, automatically recover normal output		
	Overvoltage Protection	Automatically protect the device when voltage exceeds the no-load voltage. It can be recovered automatically		
	Short Circuit Protection	Enter hiccup mode if short circuit occurs, and recover automatically		
SAFETY & EMC	Withstand Voltage	I/P-O/P: 3750Vac		
	Insulation Resistance	I/P-O/P: 100MΩ/500VDC/25°C/70%RH		
	Safety Standards	CCC	China	GB19510.1, GB19510.14
		TUV	Germany	EN61347-1, EN61347-2-13, EN62493
		CB	CB Member States	IEC61347-1, IEC61347-2-13
		CE	European Union	EN61347-1, EN61347-2-13, EN62384
		KC	Korea	KC61347-1, KC61347-2-13
		EAC	Russia	IEC61347-1, IEC61347-2-13
		RCM	Australia	AS 61347-1, AS 61347-2-13
		ENEC	Europe	EN61347-1, EN61347-2-13, EN62384
		UKCA	Britain	BS EN 61347-1, BS EN 61347-2-13, BS EN 62493
		BIS	India	IS 15885 (PART 2/SEC 13)
		CUL	Canada	CSA C22.2 NO.250.13
		UL	America	UL 8750
	EMC Emission	CCC	China	GB/T17743, GB17625.1
		CE	European Union	EN55015, EN61000-3-2, EN61000-3-3, EN61547
		KC	Korea	KSC 9815, KSC 9547
		EAC	Russia	IEC62493, IEC61547, EH55015
		RCM	Australia	EN55015, EN61000-3-2, EN61000-3-3, EN61547
		UKCA	Britain	BS EN IEC 55015, BS EN IEC 61000-3-2, BS EN 61000-3-3, BS EN 61547
		CUL	Canada	ICES-005
		UL	America	FCC PART 15B
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547		
ErP	Power Consumption	Networked standby		<0.5W (After shutdown by command)
		No-load power consumption		<0.5W (When the lamp is not connected)
	Flicker/Stroboscopic Effect	IEEE1789		Meet IEEE 1789 standard/High frequency exemption level
		CIESVM		Pst LM≤1.0，SVM≤0.4
	DF	Phase factor		DF 0.9
OTHERS	Weight(N.W.)	85g±10g		
	Dimensions	110×35×20mm(L×W×H)		

Product Size

Unit：mm

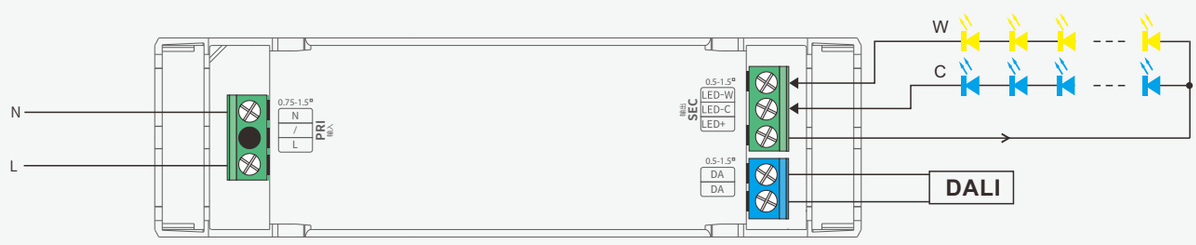




Minimum hole size: φ40mm (1,57")

Wiring Diagram

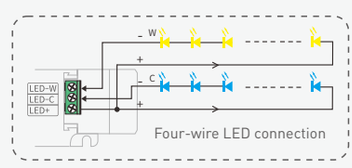
DALI Connection



Wire diameter: 0.75-1.5□(20-16AWG)
Strip length: 5-6mm

Wire diameter: 0.5-1.5 (22-16AWG)
Strip length: 5-6mm

Dimming: 0~100%
Color temperature: 1000-10000K



＊ Adopting constant power program design, it keeps the same brightness in color temperature dimming, and twice the rated power load can be connected.
e.g. A 12W driver can connect to 12W X 2CH load, but the total power of the 2 channels will be kept in 12W

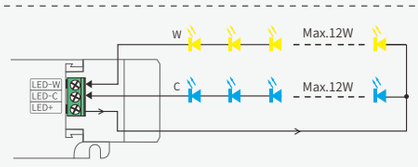
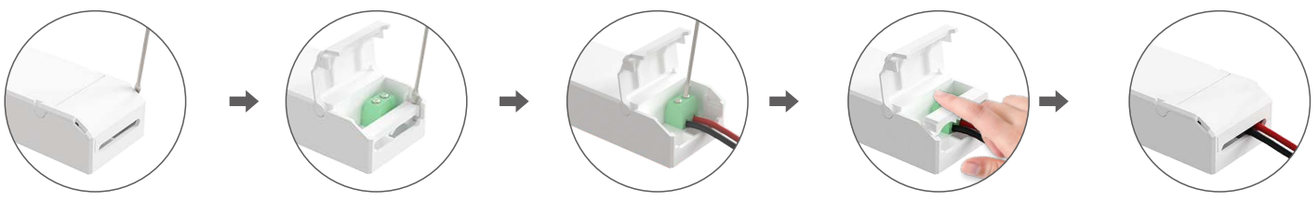


Table of Typical Corresponding Parameters for Current

The typical 9 current data sets below are for reference when selecting LED fixture models. More current levels can be set by NFC using mobile APP with 100-500mA adjustable in 1mA step					
Output Current	100mA	150mA	200mA	250mA	300mA
Output Voltage	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-40Vdc
Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W
Output Current	350mA	400mA	450mA	500mA	/
Output Voltage	9-34Vdc	9-30Vdc	9-27Vdc	9-24Vdc	/
Output Power	3.15-11.9W	3.6-12W	4.05-12.15W	4.5-12W	/

Protective Housing Application Diagram



1. Use a tool to pry up the protective housing on the side panel.

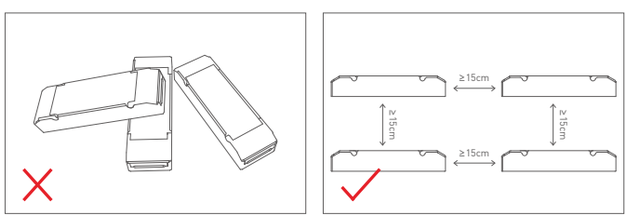
2. Pry up the protective housing in the side plate position with a tool.

3. Connect to electrical wires with a screwdriver as wiring diagram shows.

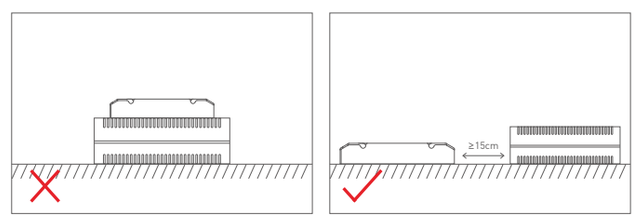
4. Press down the tension plate to fix the the electrical wires.

5. Close the protective housing.

Installation Precautions



Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.



Please not place the products on LED drivers. The distance between the product and the driver should be ≥15cm so as not to affect heat dissipation and shorten the lifespan of the products.

Note: The temperature within the installation area should be within the working temperature range of the products. Please do not install products inside LED fixtures to avoid temperature exceeding the working temperature that may affect the product lifetime.

Use the NFC Lighting APP

Scan the QR code below with your mobile phone and follow the prompts to complete the APP installation (According to performance requirements, you need to use a NFC-capable Android phone, or an iphone 8 and later that are compatible with iOS 13 or higher).

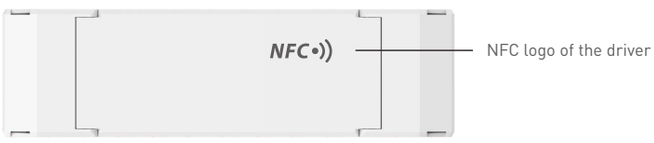
∗ Before you begin setting the parameters of the driver, please make sure the driver is powered off.

Read/Write the LED driver

Use your NFC-capable phone to read LED driver data, then edit the parameters and they can be directly written to the driver.

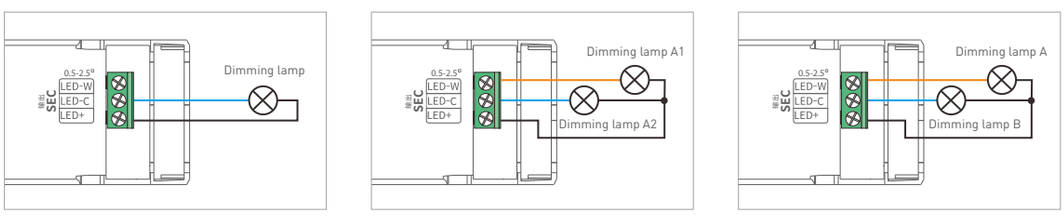
1. Read the LED driver

On the APP home page, click【Read/Write LED driver】, then keep the programmer's sensing area close to the NFC logo of the driver to read the driver parameters.



2. Switch the dimming interface

On the page of "Edit parameters", click 【Dimming interfaces】to switch to the needed dimming interface: DT8 CT (DT8 1 channel), DT6 CT (DT6 2 channels), DT6 DIM (1 address for 1 channel / 1 address for 2 channels / 2 addresses for 2 channels).



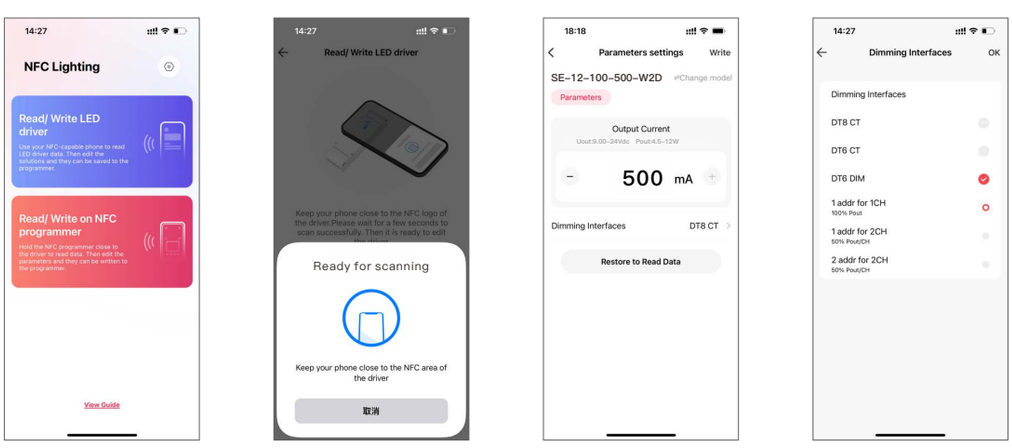
1 address for 1 channel　　1 address for 2 channels　　2 addresses for 2 channels

3. Edit the parameters

Click【Parameter settings】to edit the advanced parameters, like output current, DALI address, dimming curve, advanced DALI template, etc.

4. Write to the driver

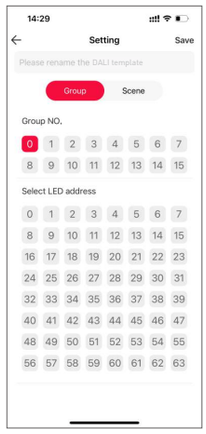
After completing the parameter settings, click 【Write】 in the upper right corner, and keep the programmer's sensing area close to the NFC logo of the driver, so the parameters can be written to the driver.

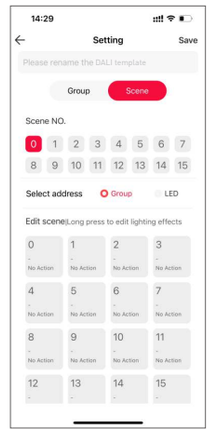


Advanced DALI template

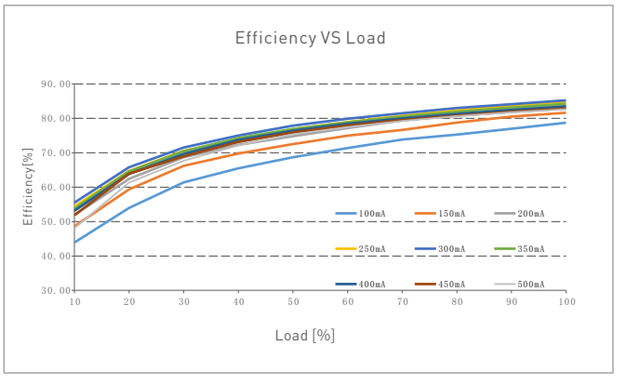
Integrate the functions of the DALI lighting system, edit the DALI group and lighting effects for scenes, then save them in the advanced template to achieve lighting programming.

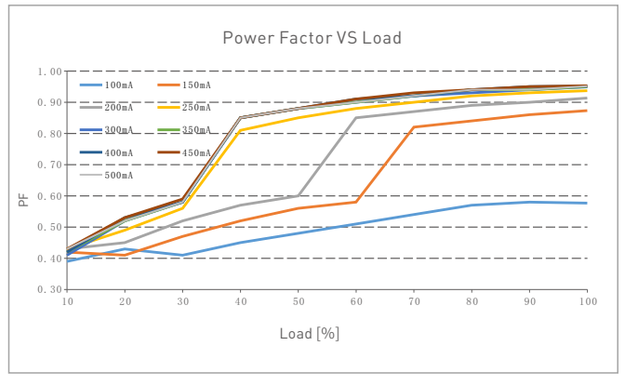
Setup page (for Read/Write LED driver) : Go to App home page — 【⚙】 icon in the top right — 【DALI template on pnone】.

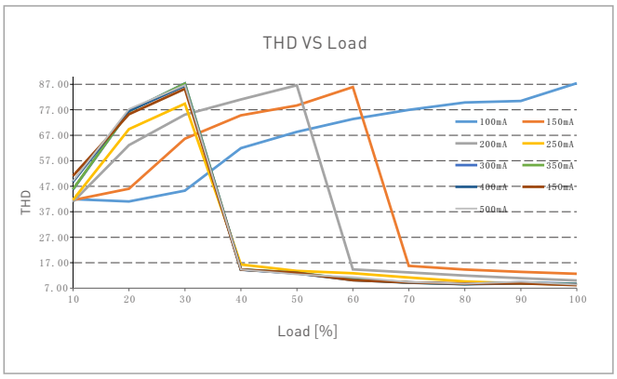


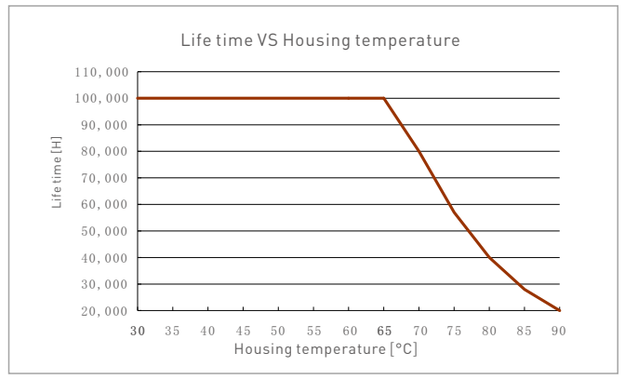


Relationship Diagrams







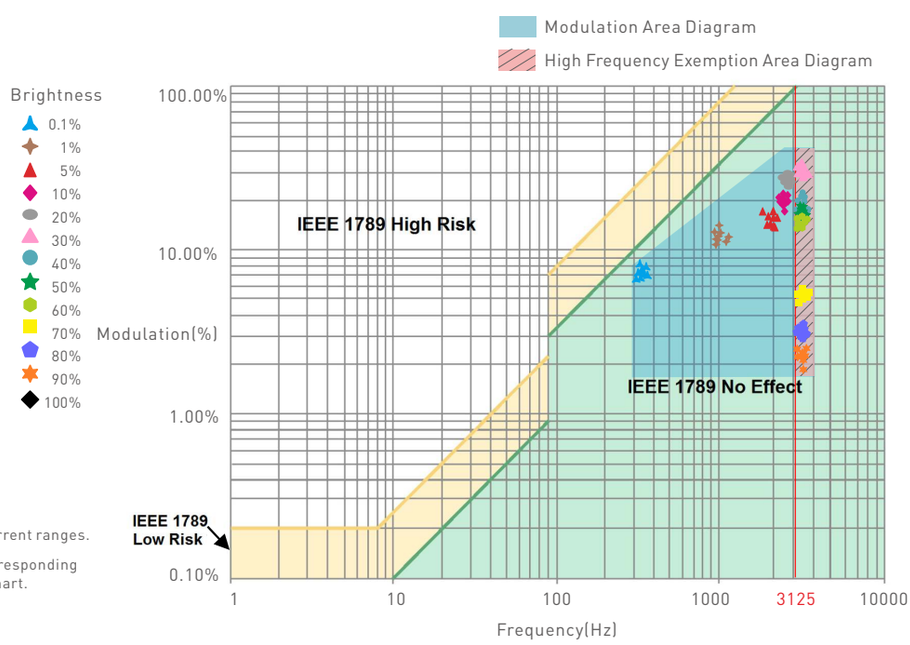


SE-12-100-500-W2D

Flicker Test Sheet

IEEE 1789

Limit of modulation in low risk area	
Waveform frequency of optical output	limit [%]
$f \leqslant 8Hz$	0.2
$8Hz < f \leqslant 90Hz$	$0.025 \times f$
$90Hz < f \leqslant 1250Hz$	$0.08 \times f$
$f > 1250Hz$	Exemption assessment
Limit of modulation in no effect area	
Waveform frequency of optical output	limit [%]
$f \leqslant 10Hz$	0.1
$10Hz < f \leqslant 90Hz$	$0.01 \times f$
$90Hz < f \leqslant 3125Hz$	$(0.08/2.5) \times f$
$f > 3125Hz$	Exemption assessment (High frequency exemption)



Marks in the right chart were tested results of different current ranges.

The output frequeny is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.

Packaging Specifications

Model	SE-12-100-500-W2D
Carton Dimensions	260×240×215mm(L×W×H)
Quantity	20 PCS/Layer; 5 Layers/Carton; 100 PCS/Carton
Weight	0.095 kg/PC; 9.5 kg±5%/Carton

Packaging Image

Inner Packaging Box

Carton Packaging

Transportation and Storage

1. Transportation

Products can be shipped via vehicles, boats and planes.

During transportation, products should be protected from rain and sun. Please avoid severe shock and vibration during the loading and unloading process.

2. Storage

The storage conditions should comply with the Class I Environmental Standards. The products that have been stored for more than six months are recommended to be re-inspected and can be used only after they have been qualified.

Attentions

- This product must be installed and adjusted by a qualified professional.
- This product is non-waterproof (special models excepted). Please avoid the sun and rain. When installed outdoors, please ensure it is mounted in a water proof enclosure.
- Good heat dissipation will extend the life the product. Please install the product in a environment with good ventilation.
- When you install this product, please avoid being near a large area of metal objects or stacking them to prevent signal interference.
- Please keep the product away from a intense magnetic field, a high pressure area or a place where lightning is easy to occur.
- Please check whether the working voltage used complies with the parameter requirements of the product.
- Before you power on the product, please make sure all the wiring is correct in case of incorrect connection that may cause a short circuit and damage the components, or trigger a accident.
- If a fault occurs, please do not attempt to fix the product by yourself. If you have any question, please contact the supplier.

* This manual is subject to changes without further notice. Product functions depend on the goods. Please feel free to contact our official distributors if you have any question.

Warranty Agreement

- Warranty periods from the date of delivery: 5 years.
- Free repair or replacement services for quality problems are provided within warranty periods.

Warranty exclusions below:

- Beyond warranty periods.
- Any artificial damage caused by high voltage, overload, or improper operations.
- Products with severe physical damage.
- Damage caused by natural disasters and force majeure.
- Warranty labels and barcodes have been damaged.
- No any contract signed by LTECH.

1. Repair or replacement provided is the only remedy for customers. LTECH is not liable for any incidental or consequential damage unless it is within the law.
2. LTECH has the right to amend or adjust the terms of this warranty, and release in written form shall prevail.

ZHUHAI LTECH TECHNOLOGY CO., LTD.

Add: 15th Building, No.3, Pingdong 6th Road, Nanping Technical Industrial Park, Zhuhai, Guangdong, China Website: www.ltech-led.com

Update Log

Version	Updated Time	Update Content	Updated by
A0	20230130	Original version	Yang Weiling

LED智能色温驱动器(恒流型)

- 外壳采用科思创/三星PC阻燃V0级原料
- 超小体积、轻薄、免螺丝端盖设计
- 通过手机APP可更改调光接口、输出电流、DALI地址等参数，亦可设置群组、场景等高级模板，实现驱动器数据交互功能
- 电流步进值低至1mA，兼容性更高更精细
- 带软启动渐亮功能，让人眼视觉更舒服
- T-PWM™ 超深度调光技术，调光深度可达0.01%
- 0-100%全程调光无可视频闪，高频豁免考核级别
- 欧盟ERP空载功耗、网络待机功耗＜0.5W
- 空载0V输出，防止接触不良损坏LED灯具
- 过温、过载、短路保护，可自动恢复
- 适合室内Ⅰ、Ⅱ、Ⅲ类灯具应用
- 常规使用下寿命可达10万小时
- 5年保修期（红宝石电容）

DALI 2

调光调色温

T-PWM™
超深度调光技术

无频闪
IEEE1789
高频豁免考核级别

Dimmable:
10000:1

认证图标仅代表产品正在进行这一系列的认证申请，认证资质以产品实物为准。

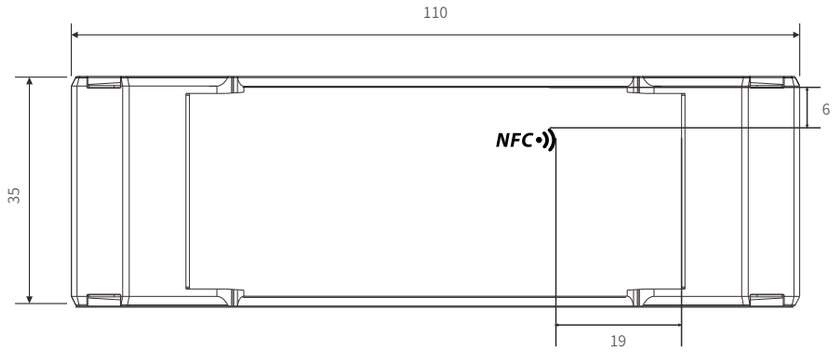
多电流设置 | 恒功率设计 | 过温保护 | 过压保护 | 过载保护 | 短路保护

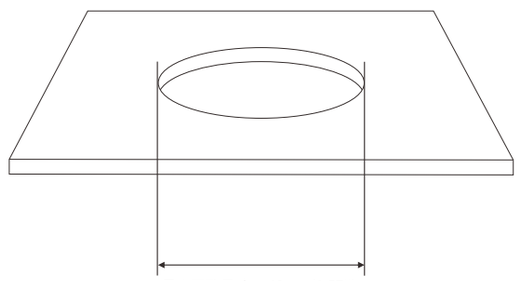
技术参数

型号		SE-12-100-500-W2D		
特征	输出类型	恒流		
	调光接口	DALI-2 DT6/DT8		
	输出特征	隔离		
	防护等级	IP20		
	绝缘等级	II类(适用于室内Ⅰ、Ⅱ、Ⅲ类灯具)		
输出	输出电压	9-42Vdc		
	最大输出电压	≤48V		
	工作电流范围	100-500mA		
	负载功率范围	0.9W~12W		
	调光范围	0~100%，调光深度:0.01%		
	电流纹波	<3%(输出最大电流非调光状态)		
	电流精度	±5%		
	PWM频率	≤3600Hz		
输入	直流电压范围	120-300Vdc		
	交流电压范围	100-240Vac		
	额定电压	115Vac/230Vac		
	频率范围	50/60Hz		
	输入电流	≤0.18A/115Vac ≤0.08A/230Vac		
	功率因数	PF>0.95/115Vac(满载) PF>0.9C/230Vac(满载)		
	谐波THD	THD≤10%/230Vac(满载)		
	效率(Typ.)	84%@300mA(满载) , 82%@500mA(满载)		
	浪涌电流	冷启动,15A(在50%Ipeak下测twidth=102us)@230Vac		
	抗浪涌	L-N:2KV		
	漏电流	Max.0.24mA		
环境	工作温度	ta:-20~50°C tc:90°C		
	工作湿度	20~95%RH,无冷凝		
	储存温度/湿度	-40~80°C/10~95%RH		
	温度系数	±0.03%/°C(0-50°C)		
	耐振动	10-500HZ,2G12分钟/周期，X,Y,Z轴各72分钟		
保护	过载保护	负载超过额定功率≥1.02倍时自动保护，减轻负载自动恢复		
	过温保护	根据PCB温度超标情况(≥110°C)，智能调节电流输出或关闭，可自动恢复；PCB温度＜90°C时，可自动恢复正常输出		
	过压保护	超过空载电压值进入保护，可自行恢复		
	短路保护	输出线路短路进入打嗝模式，可自动恢复		
安规和电磁规格	耐压	输入对输出：3750Vac		
	绝缘阻抗	输入对输出：100MΩ/500VDC/25°C/70%RH		
	安全规范	CCC	中国	GB19510.1，GB19510.14
		TUV	德国	EN61347-1，EN61347-2-13，EN62493
		CB	CB成员国	IEC61347-1，IEC61347-2-13
		CE	欧盟	EN61347-1，EN61347-2-13，EN62384
		KC	韩国	KC61347-1，KC61347-2-13
		EAC	俄罗斯	IEC61347-1，IEC61347-2-13
		RCM	澳洲	AS 61347-1，AS 61347-2-13
		ENEC	欧洲	EN61347-1，EN61347-2-13，EN62384
		UKCA	英国	BS EN 61347-1，BS EN 61347-2-13，BS EN 62493
		BIS	印度	IS 15885 (PART 2/SEC 13)
		CUL	加拿大	CSA C22.2 No.250.13
		UL	美国	UL 8750
	电磁兼容发射	CCC	中国	GB/T17743，GB17625.1
		CE	欧盟	EN55015，EN61000-3-2，EN61000-3-3，EN61547
		KC	韩国	KSC 9815，KSC 9547
		EAC	俄罗斯	IEC62493，IEC61547，EH55015
		RCM	澳洲	EN55015，EN61000-3-2，EN61000-3-3，EN61547
		UKCA	英国	BS EN IEC 55015，BS EN IEC 61000-3-2，BS EN 61000-3-3，BS EN 61547
		CUL	加拿大	ICES-005
		UL	美国	FCC part 15B
	电磁兼容抗扰度	EN61000-4-2,3,4,5,6,8,11,EN61547		
ErP	功耗	网络待机功耗	＜0.5W（通过指令关机后）	
		空载功耗	＜0.5W（不接灯具时）	
	频闪/频闪效应	IEEE1789	满足无影响/高频豁免考核级别	
		CIESVM	PstLM≤1.0，SVM≤0.4	
	DF	相位因素	DF≥0.9	
其他	产品重量	85g±10g		
	产品尺寸	110×35×20mm(L×W×H)		

尺寸图

单位:mm

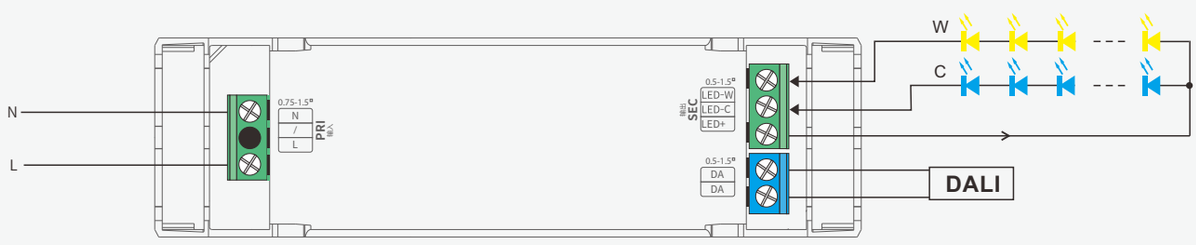




最小开孔尺寸:ϕ40mm(1.57'')

连接应用图

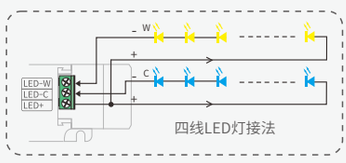
DALI连接方式



调光:0~100%
色温:1000-10000K

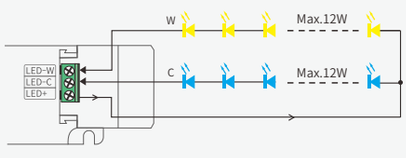
线径:0.75-1.5(20-16AWG)
剥线长度:5-6mm

线径:0.5-1.5(22-16AWG)
剥线长度:5-6mm



* 采用恒功率程序设计,色温调节全程能保持亮度一致,电源可连接额定功率两倍的负载。

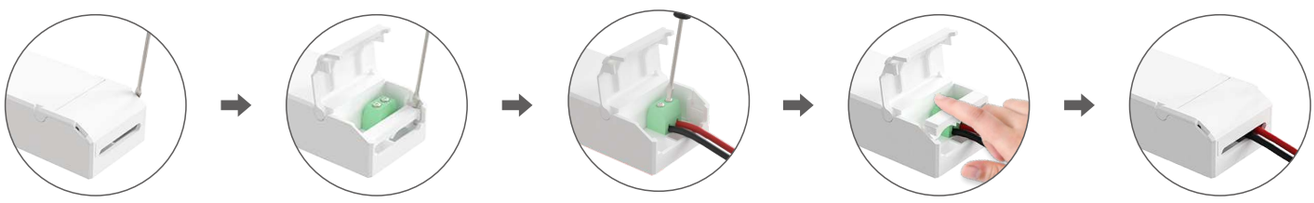
如:12W电源,可连接12WX2CH的负载,两路总功率会保持在12W以内。



典型电流对应参数表

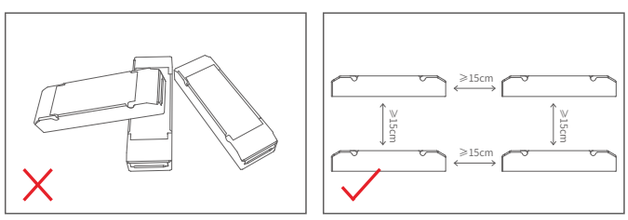
下图典型9组电流数据供选型参考，均可通过手机APP NFC设置更多电流，可设置范围在100-500mA，电流步进值低至1mA					
输出电流	**100mA**	**150mA**	**200mA**	**250mA**	**300mA**
输出电压	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-40Vdc
输出功率	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W
输出电流	**350mA**	**400mA**	**450mA**	**500mA**	/
输出电压	9-34Vdc	9-30Vdc	9-27Vdc	9-24Vdc	/
输出功率	3.15-11.9W	3.6-12W	4.05-12.15W	4.5-12W	/

保护盖应用图

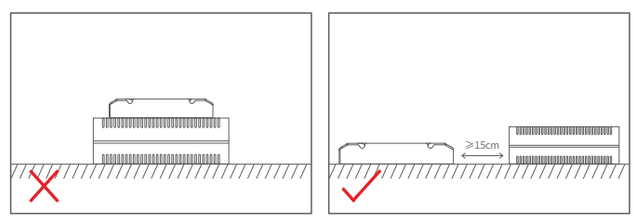


1.在侧板使用工具撬起保护盖。 2.使用工具撬起压线板侧边即可拆下。 3.使用螺丝批按照接线图接线。 4.向下推压线板，可固定线。 5.合上保护盖。

安装注意事项



请勿将产品堆叠摆放，产品与产品间隔距离应≥15cm，避免影响产品散热和使用寿命。



请勿将产品置于电源上方，与电源间隔距离应≥15cm，避免影响产品散热而减少使用寿命。

注：安装需符合产品的环境工作温度，切勿安装到灯具内部，以免超出产品环境工作温度影响产品寿命。

搭配 NFC Lighting APP 使用

通过手机扫描下方二维码， 按提示完成APP安装。(因性能需求，要求手机型号苹果：iPhone 8及以上、且操作系统iOS13及以上； 安卓：具备NFC功能机型）

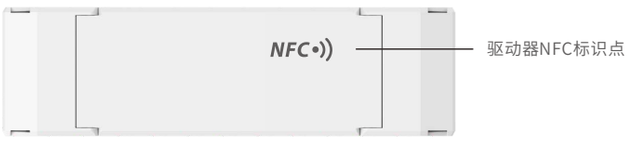
＊ 设置驱动器参数时，必须在驱动器断电情况下进行操作。

读/写智能电源

使用手机，通过NFC读取驱动器信息，根据需求设置参数后，可直接写入驱动器。

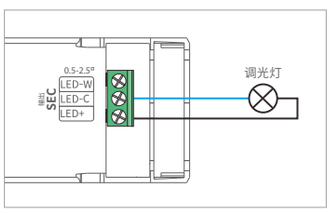
1. 读取驱动器

在APP“首页”点击【读/写智能电源】，将手机感应区域靠近驱动器NFC标识点，读取驱动器参数。

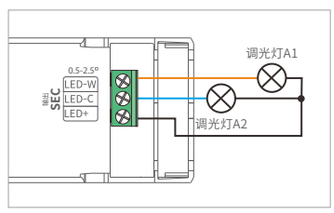


2. 切换调光接口

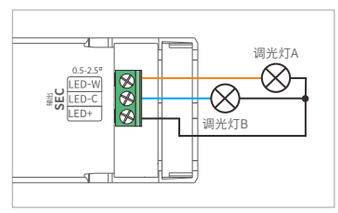
在“ 编辑参数” 界面，点击【调光接口】可切换调光接口：DT8色温(DT8单地址)、 DT6色温(DT6两地址色温) 、DT6调光(单地址单通道 / 单地址双通道 / 两地址双通道)。



单地址单通道—单路全功率输出



单地址双通道—每路最大输出总功率50%



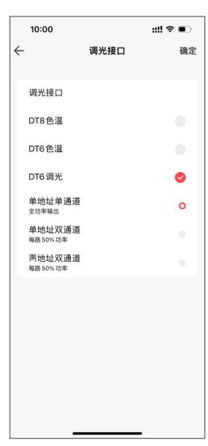
两地址双通道—每路最大输出总功率50%

3. 编辑参数

点击【参数管理】可编辑输出电流、DALI地址、调光曲线、DALI高级模板等更多高级参数。

4. 写入驱动器

参数设置完成后， 点击右上角【写入】， 将手机感应区域靠近驱动器NFC标识点， 即可写入驱动器成功修改参数。

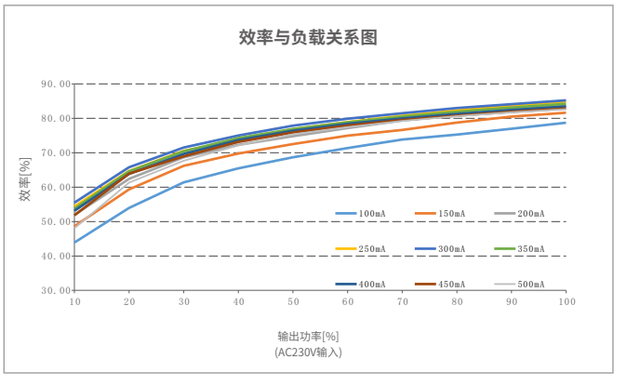


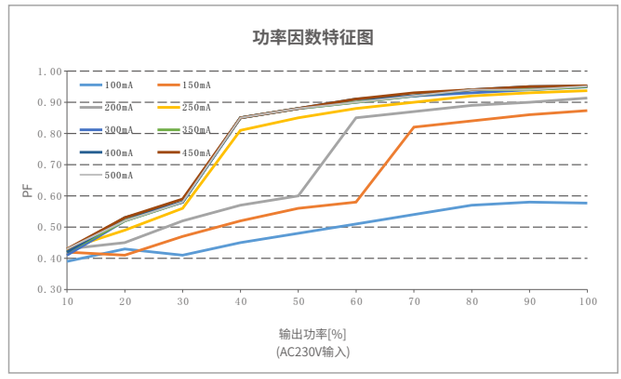
DALI高级模板

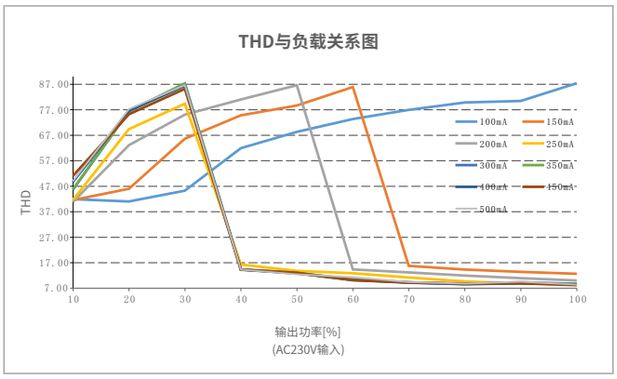
整合DALI灯光系统的设置功能，编辑DALI群组和场景的灯光效果并保存为高级模板，实现灯光编程。

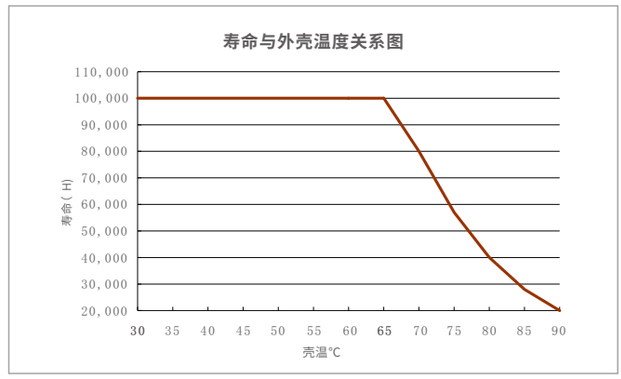
读/写智能电源设置入口：APP首页 — 右上角【 ⊙ 】图标 —【手机本地的DALI高级模板】

关系图表









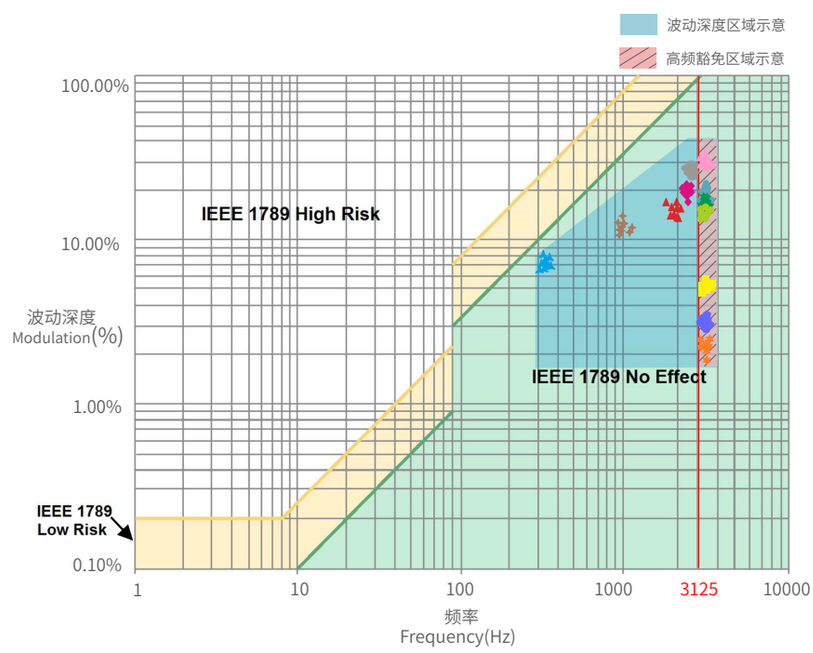
SE-12-100-500-W2D

频闪测试表

IEEE1789

低风险区域(LowRisk)的波动深度(Modulation)限值	
光输出波形频率 f	限值(%)
f ≤8Hz	0.2
8Hz< f ≤90Hz	0.025× f
90Hz< f ≤1250Hz	0.08× f
f >1250Hz	免除考核
无风险区域(NoEffect)的波动深度(Modulation)限值	
光输出波形频率 f	限值(%)
f ≤10Hz	0.1
10Hz< f ≤90Hz	0.01× f
90Hz< f ≤3125Hz	(0.08/2.5)× f
f >3125Hz	免除考核(高频豁免)

亮度
- 0.1%
- 1%
- 5%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%



右图标识为不同电流档的测试结果。

100%亮度时输出频率为0Hz，对应波动深度为0%，无法在右图中示意。

包装规格

型号	SE-12-100-500-W2D
包装箱尺寸	260×240×215mm(L×W×H)
数量	20PCS/层;5层/箱; 100PCS/箱
重量	0.095kg/PC;9.5kg±5%/箱

包装样式图

内包装盒

整箱包装

运输和贮存

1.运输

产品适用车、船、飞机交通运输工具运输。

在运输中，应使用遮蓬进行防雨和防晒，并保持文明装卸，不应有剧烈振动、撞击等。

2.贮存

贮存符合I类环境的规定。贮存期限超过6个月的产品建议重新检验，合格后方可使用。

注意事项

- 本产品请由具有专业资格的人员进行调试安装；
- 本产品(专有型号除外)不能防水，需避免日晒雨淋。如安装在户外，请使用防水箱；
- 良好的散热条件会延长产品的使用寿命，请把产品安装在通风良好的环境；
- 安装时，避免靠近大面积金属物体，或堆叠摆放，以免信号干扰影响使用；
- 避免安装在雷区、强磁场和高压区域；
- 请检查使用的工作电压是否符合产品的参数要求；
- 通电调试前，确保所有接线正确且牢固，以免短路损坏部件，触发事故；
- 如果发生故障，请勿私自维修；如果有疑问，请联系供应商。

＊ 本说明书的内容如有变更，恕不另行通知。若内容与您使用的功能有所不同，则以实物为准。如有疑问，欢迎向我司授权的经销商咨询。

保修条例

- 自出厂之日起保修服务期为5年。
- 在保修服务期内出现产品质量问题雷特将给予免费修理或更换服务。

非保修条例:

属下列情况不在免费保修或更换服务范围之内:

- 已经超出保修服务期;
- 过高电压、超负载、操作不当等人为造成的损坏;
- 产品外形严重损坏或变形;
- 自然灾害以及人力不可抗拒原因造成的损坏;
- 产品保修标签和产品唯一条形码损坏;
- 无雷特签订的合同或发票凭证。

1.修理或更换是雷特对客户的唯一补救措施。雷特不承担任何附带引起的损害赔偿责任,除非在适用法律范围之内。

2.雷特享有修正或调整本保修条款的权利,并以书面形式发布为准。

珠海雷特科技股份有限公司

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更新日志

版本	更改日期	更改内容	更改人
A0	20230114	正稿	杨魏玲