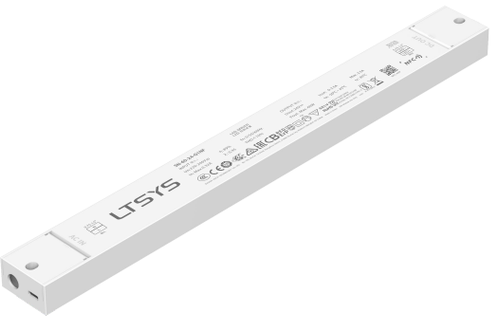
LED Driver (constant Voltage)



- Ultra-thin, ultra-small. Housing is made from V0 flame retardant PC materials.
- Clamshell style case and wire clamping structure for convenient wire connection.
- Change max.brightness, power-on fading time, PWM frequency and other parameters thorough a NFC-enabled phone and driver data can be synced between drivers and the APP.
- With soft-on and fade-in dimming function, enhancing your visual comfort.
- Innovative thermal management technology intelligently protects the life of the LED driver.
- Overheat, over voltage, overload, short circuit protection and automatic recovery.
- Suitable for Class Ⅰ / Ⅱ /Ⅲ indoor light fixtures.
- Suitable for indoor lights such as LED strips and magnetic track lights.
- 5-year warranty (Rubycon capacitor).

Flicker Free
IEEE 1789

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

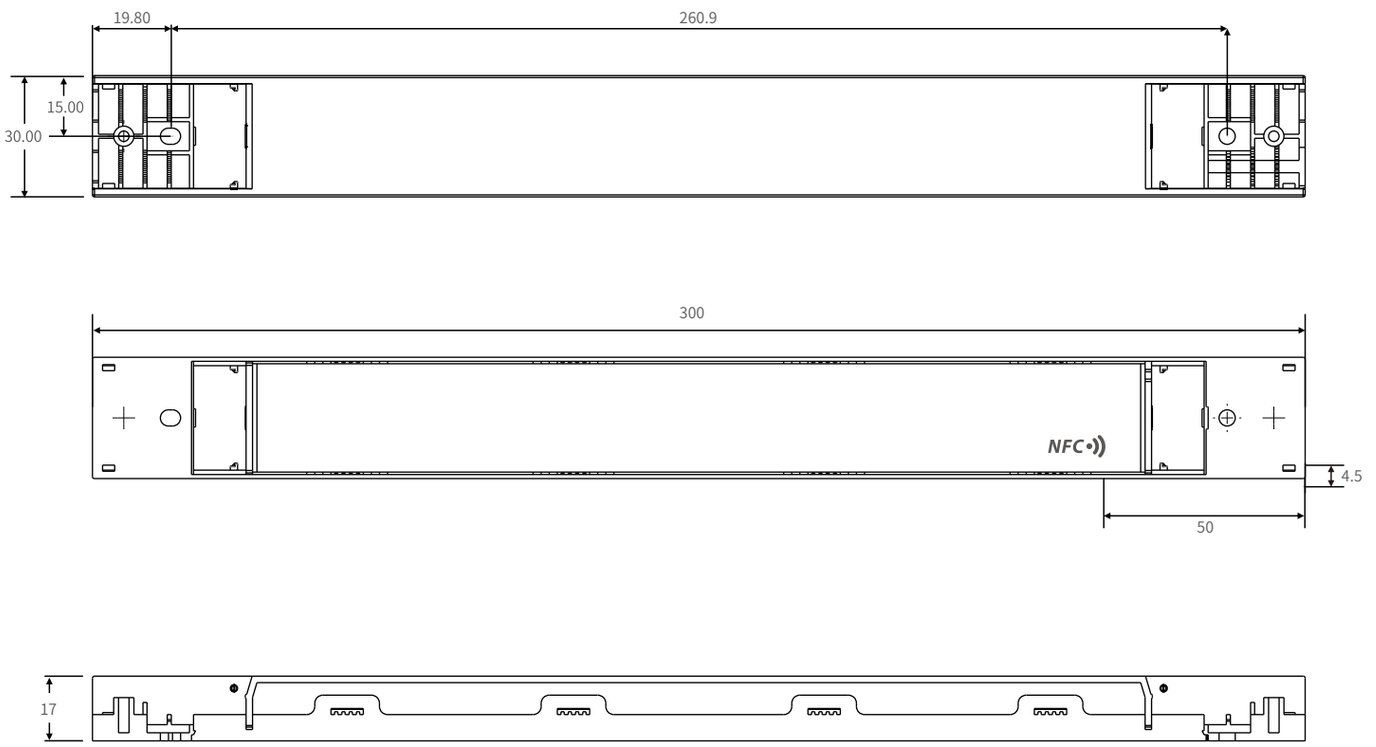
Overheat Protection | Over voltage protection | Over Load protection | Short circuit protection

Technical Specs

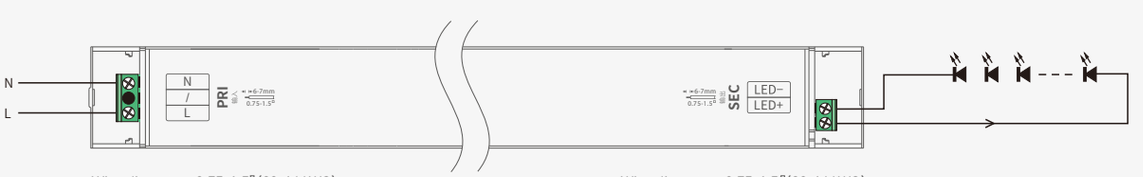
Model		SN-60-24-G1NF		
Features	Output Type	Constant voltage		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)		
OUTPUT	Output Voltage	24Vdc		
	Output Voltage Range	24Vdc±0.5Vdc		
	Output Current	Max. 2.5A		
	Output Power	Max. 60W		
	Output Power Range	0-60W		
	Overpower Limitation	≥102%		
	Ripple and Noise	350mVp-p		
	PWM frequency	NFC set up 300-22000Hz		
INPUT	DC Voltage Range	220-240Vdc		
	Input Voltage	220-240Vac		
	EoFv	99.6%		
	Frequency	0/50/60Hz		
	Input Current	Max. 0.32A/230Vac		
	Power Factor	PF＞0.95(atfullload)		
	THD	THD＜10%(atfullload)		
	Maximum Input Power	Max. 68W		
	Efficiency (Typ.)	89%		
	Inrush Current	Cold start 30A(Test twidth=162us tested under 50% Ipeak)/230Vac		
	Anti Surge	L-N: 2KV		
	Leakage Current	Max. 0.5mA		
ENVIRONMENT	Working Temperature	ta: -20~45°Ctc: 85°C		
	Working Humidity	20~95%RH,non-condensing		
	Storage Temperature/Humidity	-40~80°C/10~95%RH		
	Temperature Coefficient	±0.03%/°C(0-45°C)		
	Vibration	10~500Hz, 2G 12min/1cycle, 72 min for X, Y and Z axes respectively		
PROTECTION	Overload Protection	Shut down the output when rated power≥102%, auto recovers		
	Overheat Protection	Intelligently adjust or turn off the output current if the PCB temperature ≥110°C, and recover automatically		
	Overvoltage Protection	Shut down the output when voltage≥28V, and recover 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)
	EMC Emission	CCC	China	GB/T17743, GB17625.1
		CE	European Union	En55015, EN61000-3-2, EN61000-3-3, En61547
		KC	Korea	Kn15, Kn61547
		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
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547		
ErP	Power Consumption	No-load power consumption		<0 5W (When the lamp is not connected)
	Flicker/Stroboscopic Effect	IEEE1789		Meet IEEE 1789 standard/High frequency exemption level
		CIE SVM		Pst LM≤1.0, SVM≤0.4
	DF	Phase factor		DF≥0.9
OTHERS	Weight(N.W.)	195g±10g		
	Dimensions	300×30×17mm(L×W×H)		

Product Size

Unit：mm



Wiring Diagram



Wire diameter: 0.75-1.5² (20-16AWG)
Strip length: 6-7mm

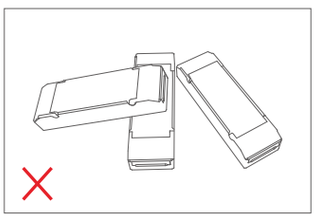
Wire diameter: 0.75-1.5² (20-16AWG)
Strip length: 6-7mm

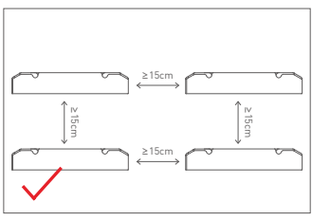
Protective Housing Application Diagram

1.Put the head of the screwdriver at the cable entry to pry up the protective cover, then connect the wires as the wiring diagram shown.

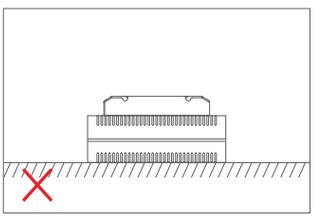
2. After closing the protective cover, tighten the protective cover with the PA screws.

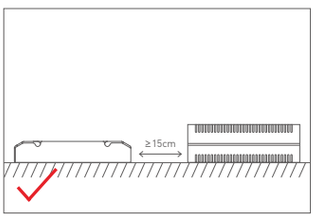
Installation Precautions





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 sensing area of the driver to read the driver parameters.

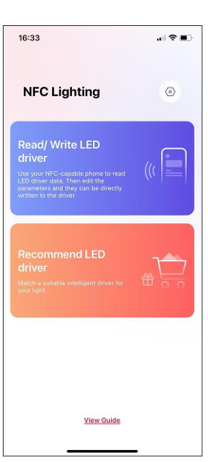
NFC sensing area of the driver

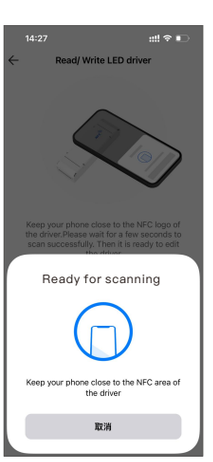
2. Edit the parameters

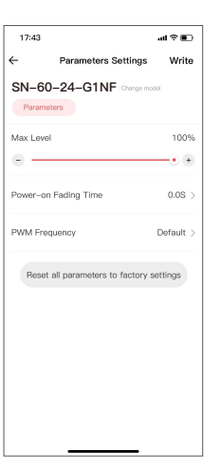
Click【Parameter Management】to edit the maximum brightness value, power transition time, PWM frequency and other parameters.

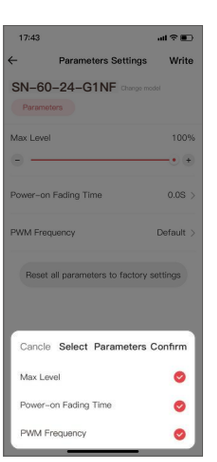
3. Write to the driver

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

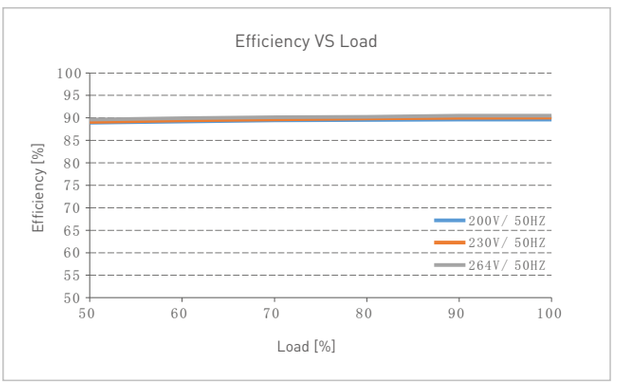


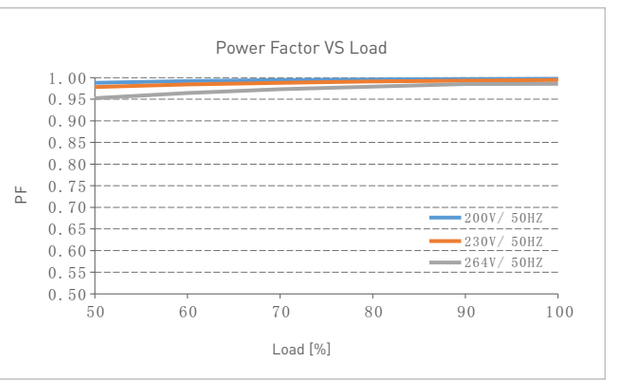


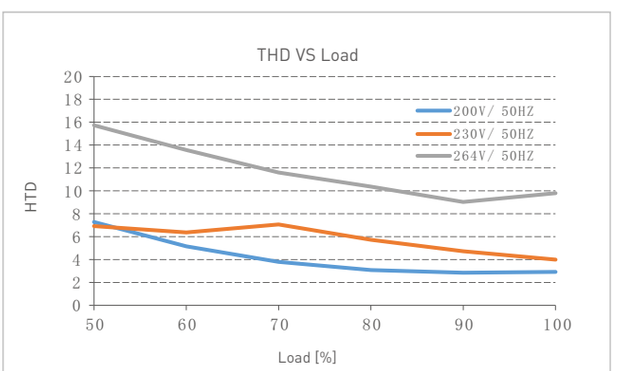




Relationship Diagrams







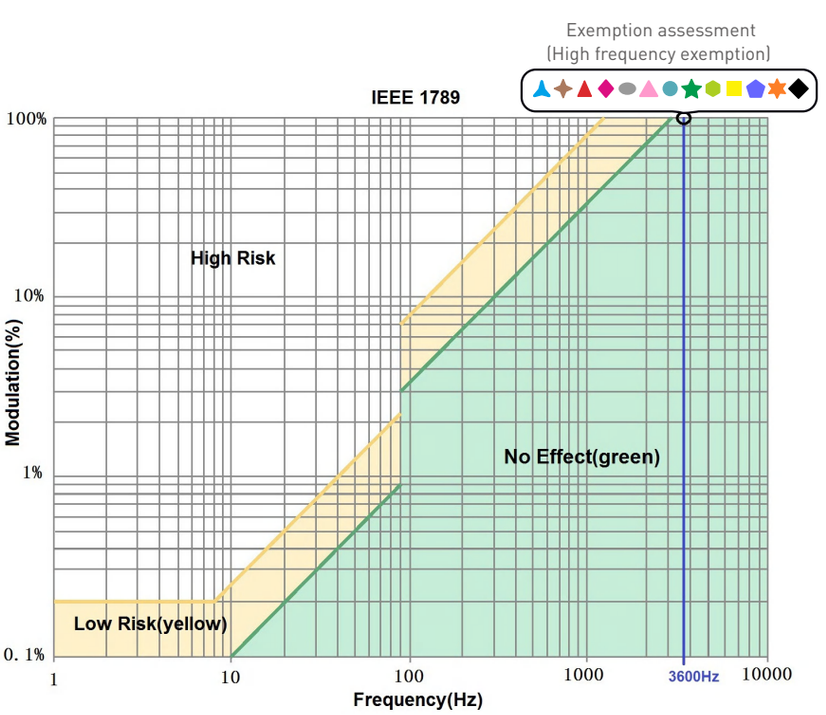
Flicker Test Form

IEEE 1789

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

Brightness

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



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

- Product installation and commissioning should be done by a qualified professional.
- LTECH products are and not lightningproof non-waterproof (special models excepted). Please avoid the sun and rain. When installed outdoors, please ensure they are mounted in a water proof enclosure or in an area equipped with lightning protection devices .
- 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.

LTSYS

SN-60-24-G1NF

非调光

LED驱动器 (恒压型)

- 超薄、紧凑型设计；外壳采用PC阻燃V0级原料
- 翻盖一体化压线结构，接线便捷
- 通过NFC手机更改最大亮度值、通电渐变时间、PWM频率等参数，实现驱动器数据交互功能
- 带软启动渐亮功能，让人眼视觉更舒服
- 创新的热管理技术，智能保护电源寿命
- 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
- 适用灯带、磁吸等室内照明
- 5年保修期

无频闪
IEEE 1789

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。

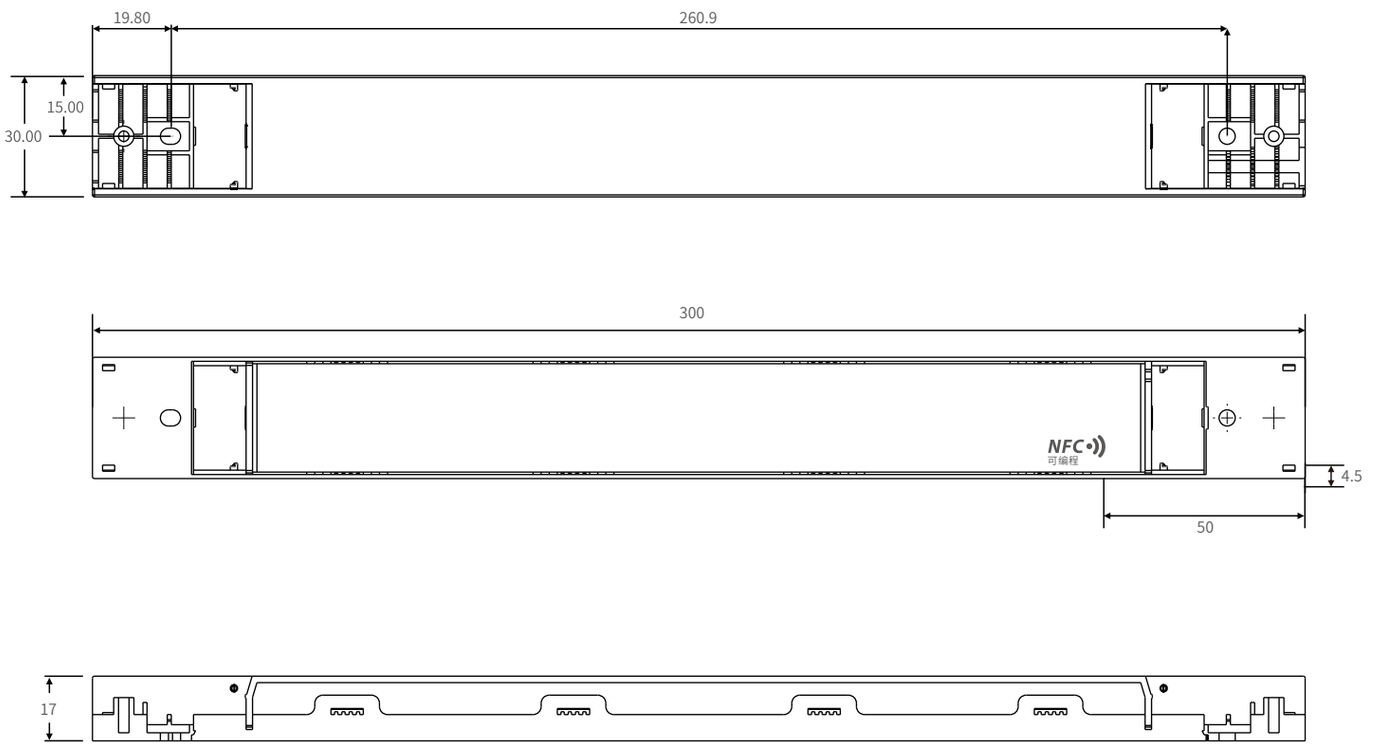
过温保护　过压保护　过载保护　短路保护

技术参数

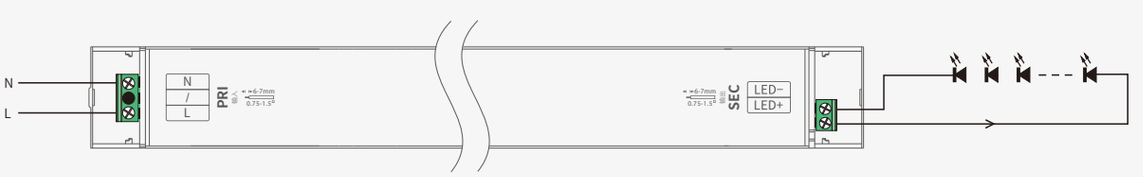
型号		SN-60-24-G1NF		
特征	输出类型	恒压		
	输出特征	隔离		
	防护等级	IP20		
	绝缘等级	Ⅱ类 (适用于室内Ⅰ、Ⅱ、Ⅲ类灯具)		
输出	输出电压	24Vdc		
	输出电压范围	24Vdc±0.5Vdc		
	输出电流	Max. 2.5A		
	输出功率	Max. 60W		
	输出功率范围	0-60W		
	过功率限制	≥102%		
	纹波与噪声	350mVp-p		
	PWM频率	NFC设置300-22000Hz		
输入	直流电压范围	220-240Vdc		
	输入电压	220-240Vac		
	应急输出系数	EoFv=99.6%		
	频率范围	0/50/60Hz		
	输入电流	Max. 0.32A/230Vac		
	功率因数	PF＞0.95(满载)		
	谐波THD	THD＜10%(满载)		
	最大输入功率	Max. 68W		
	效率(Typ.)	89%		
	浪涌电流	冷启动30A (在50%Ipeak下测试twidth=162us)/230Vac		
	抗浪涌	L-N: 2KV		
	漏电流	Max. 0.5mA		
环境	工作温度	ta: -20 ~ 45°C　tc: 85°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(0-45°C)		
	耐振动	10-500HZ, 2G 12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		
	过压保护	≥28V以上进入保护，可自行恢复		
	短路保护	进入打嗝模式，异常排除自动恢复		
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)
	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	KN15, KN61547
		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
	电磁兼容抗扰度	EN61000-4-2,3,4,5,6,8,11, EN61547		
ErP	功耗	空载功耗		＜0.5W（不接灯具时）
	频闪/频闪效应	IEEE 1789		满足无影响/高频豁免考核级别
		CIE SVM		Pst LM≤1.0，SVM≤0.4
	DF	相位因素		DF≥0.9
其他	产品重量	195g±10g		
	产品尺寸	300×30×17mm(L×W×H)		

尺寸图

单位：mm



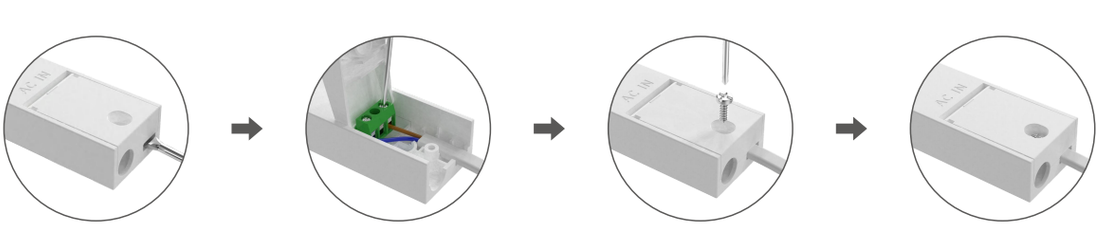
连接应用图



线径: 0.75-1.5°(20-16AWG)
剥线长度: 6-7mm

线径: 0.75-1.5°(20-16AWG)
剥线长度: 6-7mm

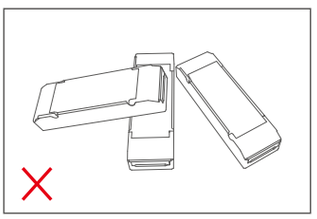
保护盖应用图



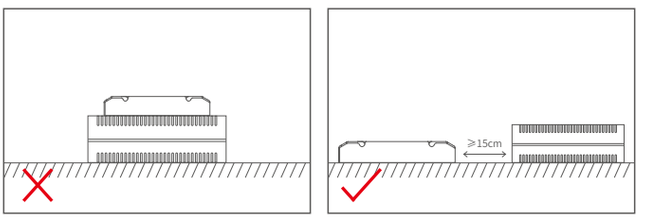
1. 在出线口使用螺丝批撬起保护盖后，按照接线图进行接线。

2. 扣合保护盖后，使用PA螺丝将保护盖拧紧即可。

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感应区，读取驱动器参数。

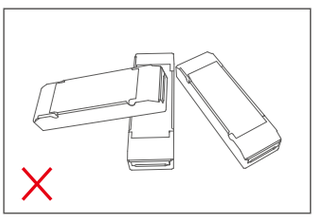
2. 编辑参数

点击【参数管理】可编辑最大亮度值、通电渐变时间、PWM频率等参数。

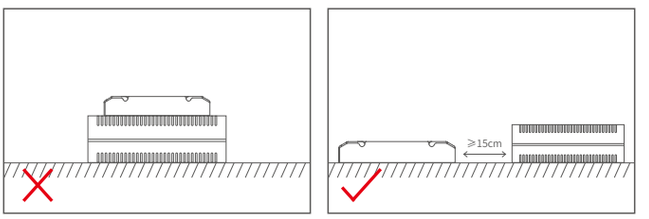
3. 写入驱动器

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感应区， 即可写入驱动器成功修改参数。

安装注意事项



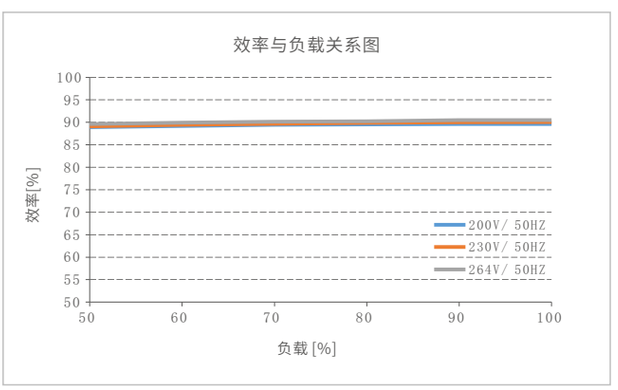
请勿将产品堆叠摆放，产品与产品间隔距离应≥15cm，避免影响产品散热和使用寿命。

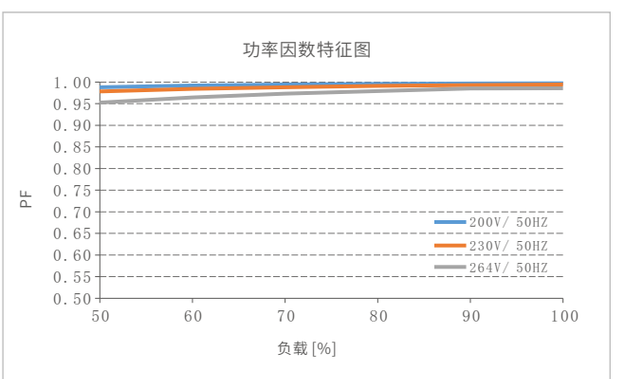


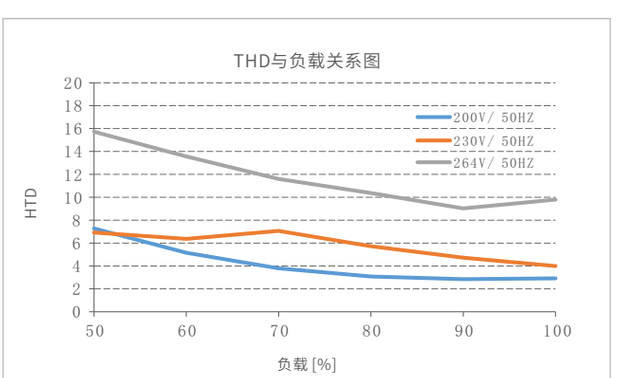
请勿将产品置于电源上方，与电源间隔距离应≥15cm，避免影响产品散热而减少使用寿命。

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。

关系图表



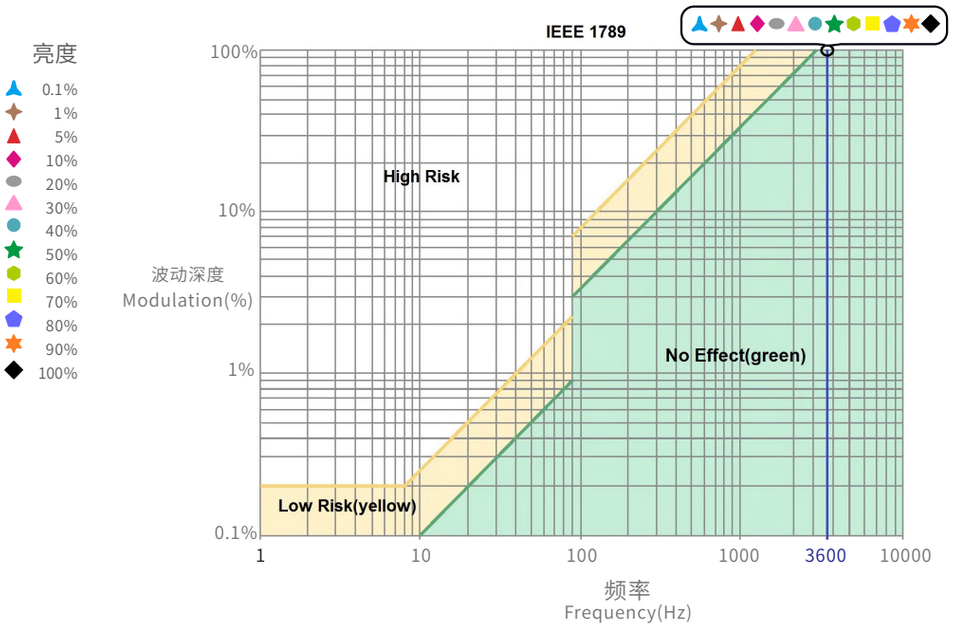




频闪测试表

IEEE 1789

低风险区域（Low Risk）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（No Effect）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）



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

- 请由具有专业资格的人员进行调试安装；
- 雷特产品（专有型号除外）不能防水防雷，需避免日晒雨淋，如安装在户外，请用防水箱和防雷装置；
- 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；
- 请检查使用的工作电压是否符合产品的参数要求；
- 使用的电线直径大小必须能足够负载连接的LED 灯具，并确保接线牢固；
- 通电调试前，应确保所有接线正确， 以避免因接线错误而导致灯具损坏；
- 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。