LTECH

LM-36-24-G1T2
LM-36-12-G1T2

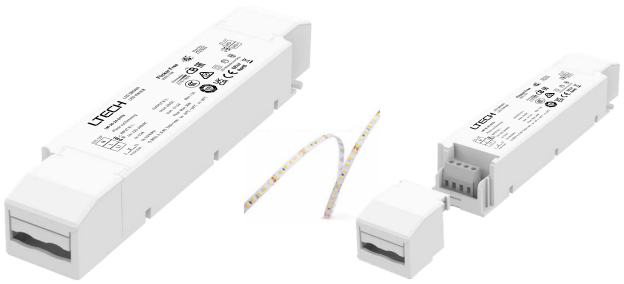
Triac/ELV Push DIM

LED Intelligent Driver (Constant Voltage)

- Small size and light weight. Adopt SAMSUNG/COVESTRO V0 flame resistant polycarbonate protective housings.
- The design of dismountable end cap allows you to adjust the length of housing depending on your needs.
- With soft-on and fade in function, visual more comfortable.
- Dimming range: 0~100%, dimming down to 0.1%.
- 0-100% flicker-free, High frequency exemption level.
- Leading edge (Triac), Trailing edge (ELV) phase-cut and Push DIM.
- The secure and reliable design for signal isolation.
- Innovative thermal management technology intelligently protects the lifetime the driver.
- Over load / Over temp. / Short circuit / Over voltage protection, recover automatically.
- Suitable for internal lights application for Ⅰ/Ⅱ/Ⅲ.
- Up to 50000-hour life time.
- 5 year warranty (Rubycon capacitor).

Flicker-free
IEEE 1789
Achieve high frequency exemption level.

Dimmable:
0.1%-100%



SELV RoHS

(The certification icons represent on-going certification applications only, and final certification qualification is subject to actual products.)

Triac/ELV Push DIM | Overheat protection | Short circuit protection | Overload protection | Over voltage protection

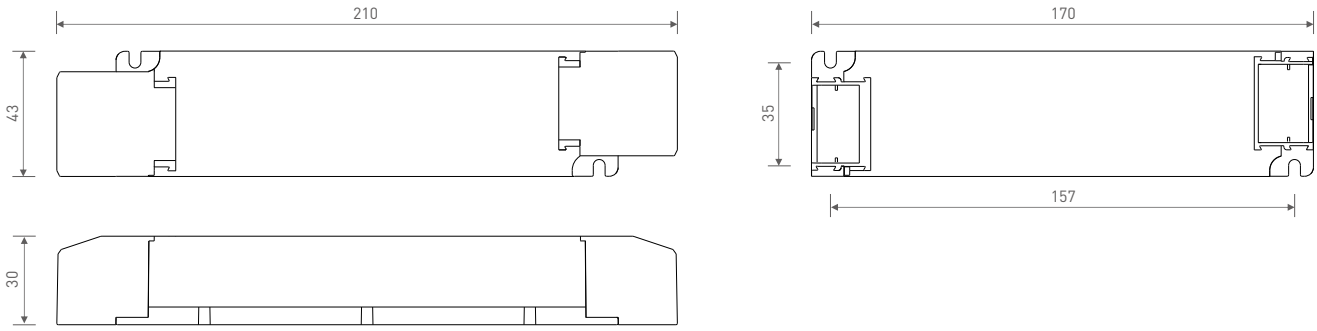
Technical Specs

Model		LM-36-24-G1T2			LM-36-12-G1T2
OUTPUT	Output voltage	24Vdc			12Vdc
	Output voltage range	24Vdc ± 0.5Vdc			12Vdc ± 0.5Vdc
	Output current	Max. 1.5A			Max. 3A
	Output power	Max. 36W			
	Output power range	0~36W			
	Strobe level	High frequency exemption level.			
	Dimming range	0~100%, dimming down to 0.1%			
	Overload power limitation	≥102%			
	Ripple & Noise	≤200mV			
	PWM frequency	3600Hz			
INPUT	Dimming interface	Leading edge (Triac), Trailing edge (ELV) phase-cut and Push DIM.			
	Input voltage	220-240Vac			
	Frequency	50/60Hz			
	Input current	≤0.2A/230Vac			
	Power factor	PF>0.95/230Vac , at full load			
	THD	230Vac@THD＜10%, at full load			
	Efficiency (typ.)	85%			84%
	Inrush current(typ.)	Cold start 30A at 230Vac			
	Control surge capability	L-N: 2kV			
	Leakage current	Max. 0.5mA			
ENVIRONMENT	Working temperature	ta: -20 ~ 50°C tc: 90°C			
	Working humidity	20 ~ 95%RH, non-condensing			
	Storage Temperature humidity	-40°C ~ 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	Over-heat protection	Intelligently adjust or turn off the output current if the PCB temperature ≥110°C, and recover automatically .			
	Over load protection	Shut down the output when current load≥102%, and recover automatically .			
	Short circuit protection	Shut down automatically if short circuit occurs, and recover automatically .			
	Over voltage protection	Shut down the output when non-load voltage≥26V, re-power on to recover after fault condition is removed.			Shut down the output when non-load voltage ≥13V, re-power on to recover after fault condition is removed.
SAFETY & EMC	Withstand voltage	I/P-O/P: 3750Vac			
	Isolation 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	
		CE	European Union	EN61347-1, EN61347-2-13, EN62384	
		KC	Korea	KC61347-1, KC61347-2-13	
		RCM	Australia	AS61347-1, AS61347-2-13	
		ENEC	Europe	EN61347-1, EN61347-2-13, EN62384	
		CB	CB member states	IEC61347-1, IEC61347-2-13	
	EMC Emission	EAC	Russia	IEC61347-1, IEC61347-2-13	
		CCC	China	GB/T17743, GB17625.1	
		CE	European Union	EN55015, EN61000-3-2, EN61000-3-3, EN61547	
		KC	Korea	KN15, KN61547	
		RCM	Australia	EN55015, EN61000-3-2, EN61000-3-3, EN61547	
		EAC	Russia	IEC62493, IEC61547, EH55015	
	EMC immunity	EN61000-4-2,3,4,5,6,8,11, EN61547			
	Strobe test standard	IEEE 1789			
OTHERS	Weight(G.W.)	210g±10g			
	Dimension	210×43×30mm(L×W×H)			
	Package Size	213×44×33mm(L×W×H)			
	Carton Size	440×218×235mm(L×W×H) 40pcs/ctn 9kg±5%/ctn			

※ The driver is suitable for connecting resistor current-limiting LED fixture (e.g. LED strip). The inrush current will be dozens of times increased if connecting built-in constant current IC current-limiting LED fixtures, the driver will activate the overloaded protection (hiccups flickering). When you order, please remark controlling the constant current LED fixture (e.g. MR16 lamp, underground light, LED wall washer, constant current LED strip, etc.), then we can prepare the special programs.

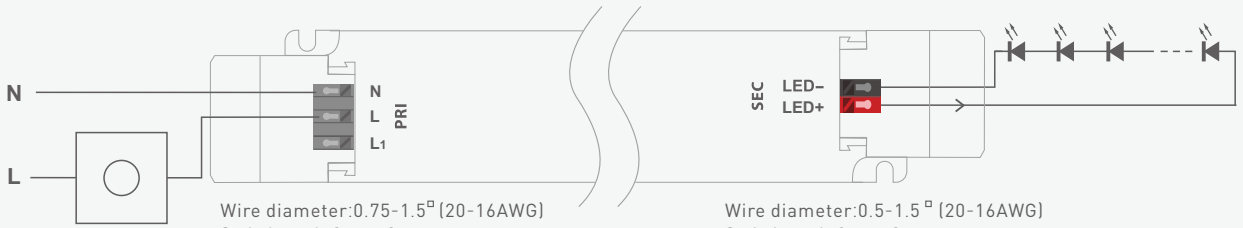
Dimensions

Unit: mm



Wiring Diagram

Triac connection



Push DIM connection

✻ Push DIM is invalid for DC voltage input.
Dimming interface priority: Triac first, Push DIM next.

Push Dimming

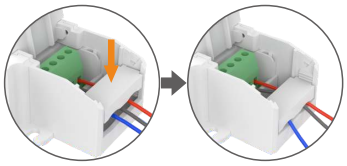
Reset switch

- On/off control: Short press.
- Stepless dimming: Long press.
- With every other long press, the brightness goes to the opposite direction.
- Dimming memory: The lights will return to its previous brightness value when short press on PUSH DIM button.

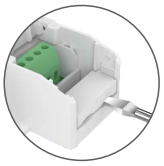
  Power on again after power cut, the output brightness is subjected to the input voltage of drivers.

Protective Housing Application Diagram

Tension plate

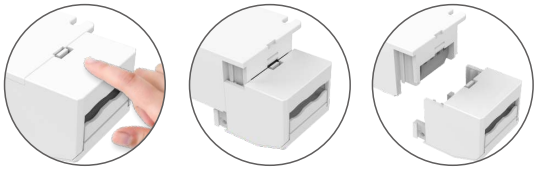


Push the tension plate down to fix the electric wires.



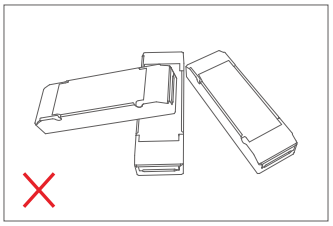
Push the side plate outwards and remove the tension plate by prying it up with a tool at the same time.

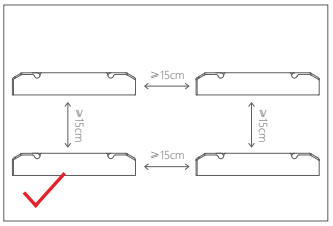
Remove the protective housing



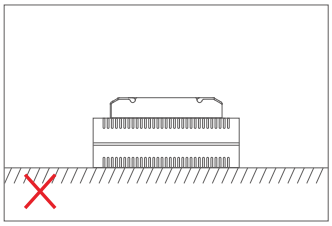
Pull the bottom left and right from the bottom to remove it.

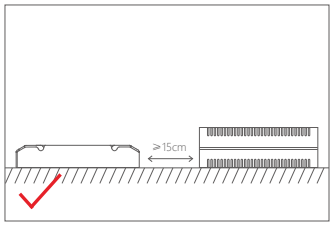
Installation Precautions





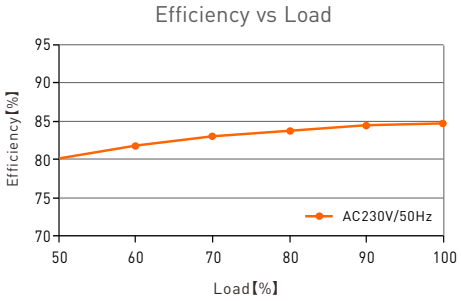
Please do not stack the products. The distance between two products should be≥15cm so as not to affect heat dissipation and the lifespan of the products.

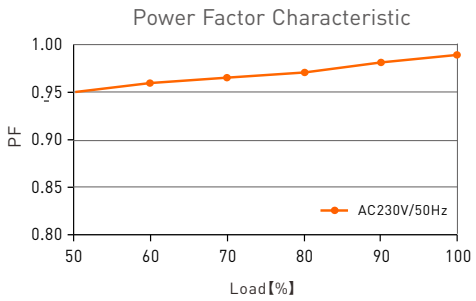


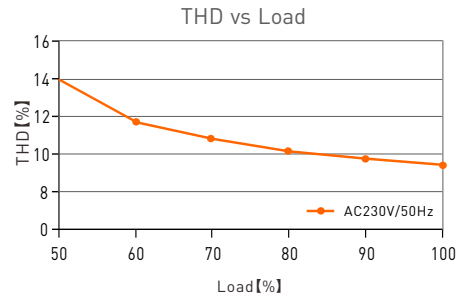


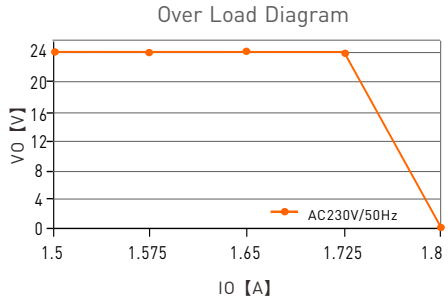
Please not place the products on LED drivers. The distance between the product and the driver should be ≥15cm so as not to affect heat dissipation and shorten the lifespan of the products.

Relationship Diagrams

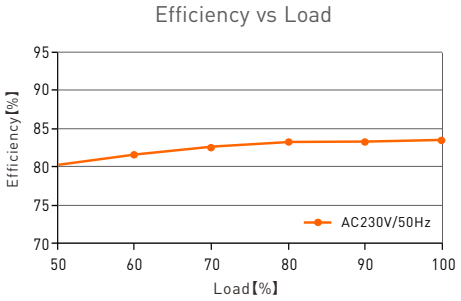


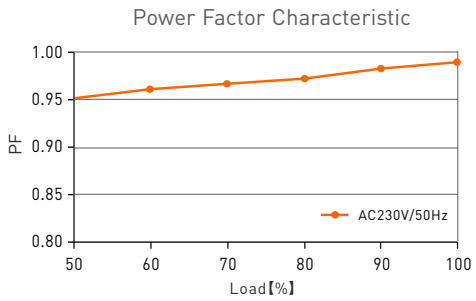


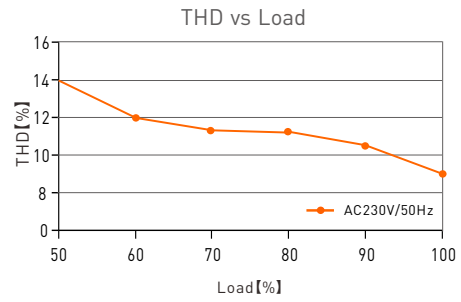


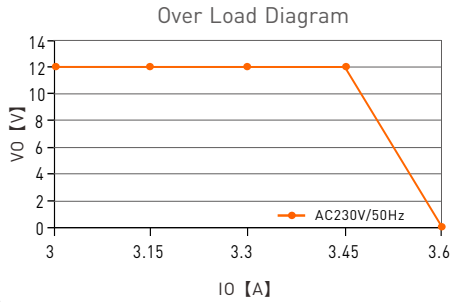


LM-36-24-G1T2







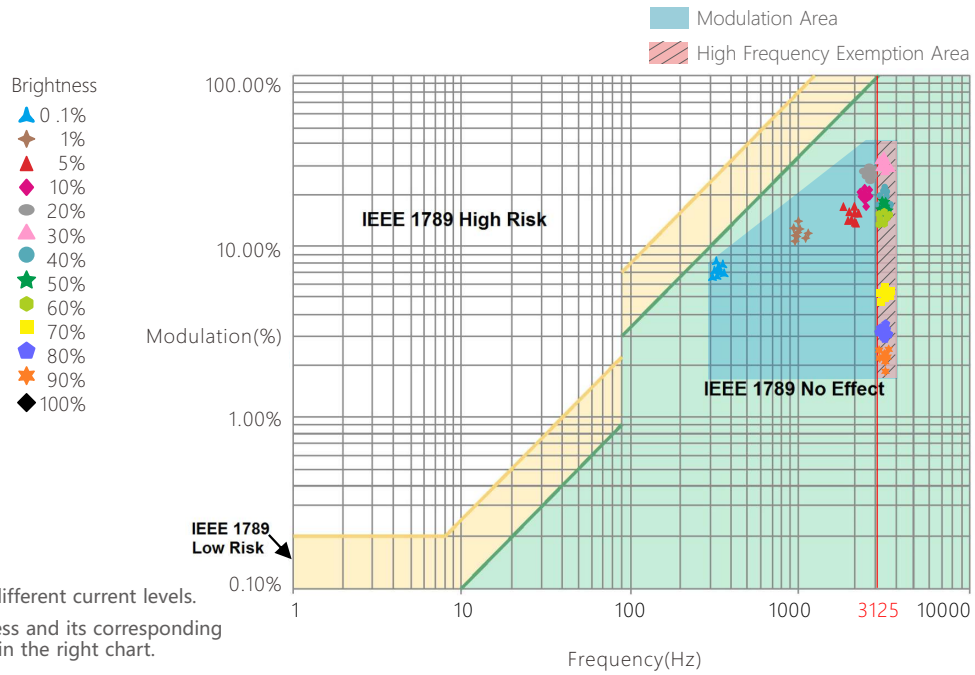


LM-36-12-G1T2

Flicker Test Table

IEEE 1789

Limit Value of Modulation in Low Risk Areas	
Waveform frequency of Optical output	Limit value (%)
$f \leq 8Hz$	0.2
$8Hz < f \leq 90Hz$	$0.025 \times f$
$90Hz < f \leq 1250Hz$	$0.08 \times f$
$f > 1250Hz$	Exemption assessment
Limit Value of Modulation in No Effect Areas	
Waveform frequency of Optical output	Limit value (%)
$f \leq 10Hz$	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)



Marks in the right chart are tested results of different current levels.

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

Attentions

- Products shall be installed by qualified professionals.
- LTECH products are 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 working life of products. Please ensure good ventilation.
- Please check if the working voltage used complies with the parameter requirements of products.
- The diameter of wire used must be able to load the light fixtures you connect and ensure the firm wiring.
- Before you power on products, please make sure all the wiring is correct in case of incorrect connection that causes damage to light fixtures.
- If a fault occurs, please do not attempt to fix products by yourself. If you have any question, please contact your suppliers.

✻ 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.

Update Log

Version	Updated Time	Update Content	Updated by
A0	2021.04.12	Original version.	Xu Shujun
A1	2021.12.27	Updated the silkscreen on the product.	Xu Shujun

LTECH

LM-36-24-G1T2
LM-36-12-G1T2

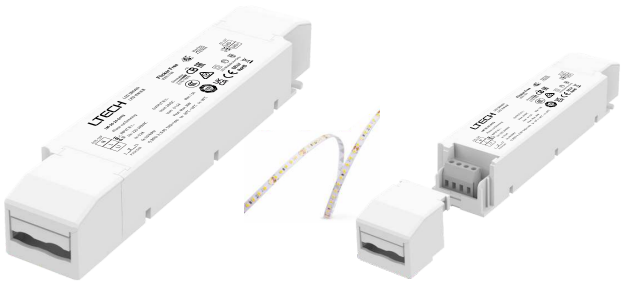
Triac/ELV Push DIM

LED智能调光驱动器（恒压型）

- 体积小、重量轻；采用SAMSUNG/COVESTRO PC V0阻燃保护壳
- 免螺丝压线翻盖设计，可拆卸端盖，按需调节壳体长度
- 带软启动渐亮功能，让人眼视觉更舒适
- 0-100%全程无频闪，高频豁免考核级别
- 调光范围：0~100%，LED从0.1%开始调光
- 前沿（Triac），后沿(ELV)切相和Push DIM
- 安全可靠的信号隔离设计
- 创新的热管理技术，智能保护电源寿命
- 短路、过温、过载、过压保护，可自动恢复
- 适合室内Ⅰ、Ⅱ、Ⅲ类灯具应用
- 高达50,000小时的额定寿命
- 5年保修期（采用红宝石电容）

无频闪
IEEE 1789
高频豁免考核级别

Dimmable:
0.1-100%



SELV
RoHS

（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）

Triac/ELV Push DIM　过温保护　短路保护　过载保护　V 过压保护

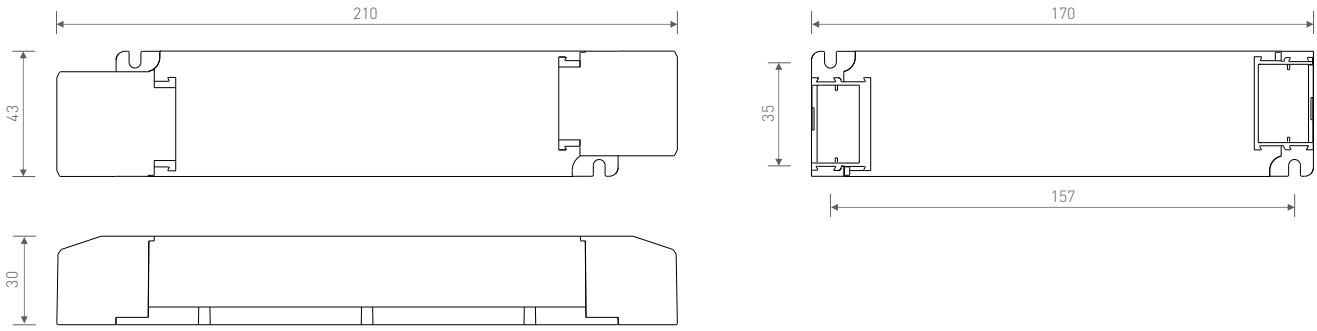
技术参数

型号		LM-36-24-G1T2			LM-36-12-G1T2
输出	输出电压	24Vdc			12Vdc
	输出电压范围	24Vdc ± 0.5Vdc			12Vdc ± 0.5Vdc
	输出电流	Max. 1.5A			Max. 3A
	输出功率	Max. 36W			
	输出功率范围	0-36W			
	频闪级别	高频豁免考核级别			
	调光范围	0-100%，调光深度Max.0.1%			
	过功率限制	≥102%			
	纹波	≤200mV			
	PWM调光频率	3600Hz			
输入	调光接口	前沿Triac/后沿ELV切相，Push DIM			
	输入电压	220-240Vac			
	频率范围	50/60Hz			
	输入电流	≤0.2A/230Vac			
	功率因数	PF＞0.95/230Vac（满载）			
	谐波THD	230Vac@THD<10%（满载）			
	效率(Typ.)	85%			84%
	浪涌电流	冷启动，30A(在50%Ipeak下测试twidth=270us)@230Vac			
	抗浪涌	L-N: 2KV			
	漏电流	Max. 0.5mA			
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, 2G 12分钟/周期，X,Y,Z轴各72分钟。			
保护	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，自动恢复。			
	过载保护	负载功率≥102%保护，可自动恢复。			
	短路保护	输出线路短路自动关闭，可自动恢复。			
	过压保护	空载电压≥26V，关闭输出，异常排除后上电恢复。			空载电压≥13V，关闭输出，异常排除后上电恢复。
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℃/70%RH			
	安全规范	CCC	中国	GB19510.1，GB19510.14	
		TUV	德国	EN61347-1，EN61347-2-13，EN62493	
		CE	欧盟	EN61347-1，EN61347-2-13，EN62384	
		KC	韩国	KC61347-1，KC61347-2-13	
		RCM	澳洲	AS61347-1，AS61347-2-13	
		ENEC	欧洲	EN61347-1，EN61347-2-13，EN62384	
		CB	CB成员国	IEC61347-1，IEC61347-2-13	
		EAC	俄罗斯	IEC61347-1，IEC61347-2-13	
	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	
		RCM	澳洲	EN55015，EN61000-3-2，EN61000-3-3，EN61547	
		EAC	俄罗斯	IEC62493，IEC61547，EH55015	
	电磁兼容抗扰度	EN61000-4-2,3,4,5,6,8,11，EN61547			
	频闪测试标准	IEEE 1789			
其他	产品重量(G.W)	210g±10g			
	产品尺寸	210×43×30mm(L×W×H)			
	包装尺寸	213×44×33mm(L×W×H)			
	外箱规格	440×218×235mm(L×W×H) 40个/箱 9kg±5%/箱			

*本款驱动器适合连接电阻限流的LED灯具（如LED灯条）。如果连接内置恒流IC限流的灯具，会产生几十倍的瞬间浪涌电流，导致驱动器会执行过载保护（打嗝频闪）。下单时这类内置恒流IC限流的灯具需要注明（如MR16灯杯、地埋灯、洗墙灯、恒流硬灯条等），以便烧写特殊程序。

尺寸图

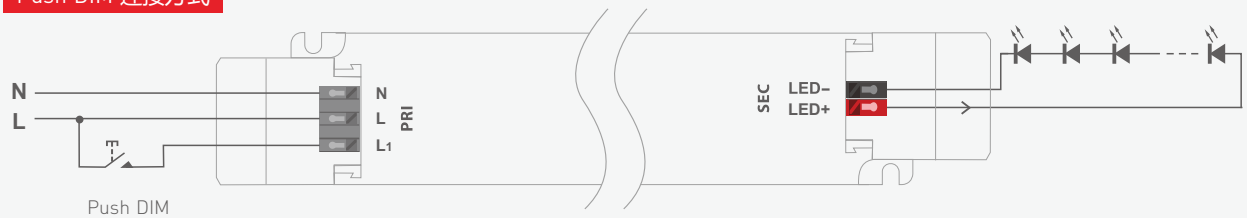
单位：mm



连接应用图

Triac连接方式

Push DIM 连接方式



✻ 在直流电压输入的情况下，按键调光无效

调光接口优先级为：首先Triac，然后Push DIM。

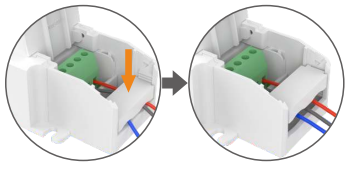
Push Dimming

复位开关

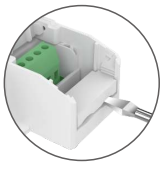
- 开关控制: 短按.
- 无级调光: 长按.
- 每隔一次长按，亮度会向相反方向调整.
- 调光记忆: 短按PUSH DIM按键开关时，灯光会回到先前调整的亮度值；
  断电后再上电，灯光按照输入驱动电源电压调整输出亮度值。

保护盖应用图

压线板



向下推压线板，可固定住线。

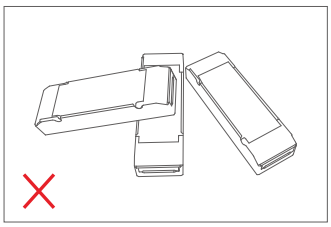


向外推侧板的同时，
用工具撬即可拆下压线板。

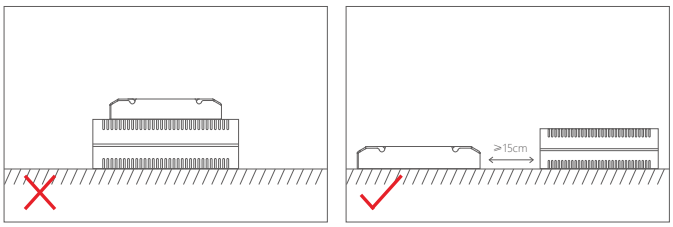
保护盖的拆装

在底部左右掰动，即可将保护盖拆下。

安装注意事项

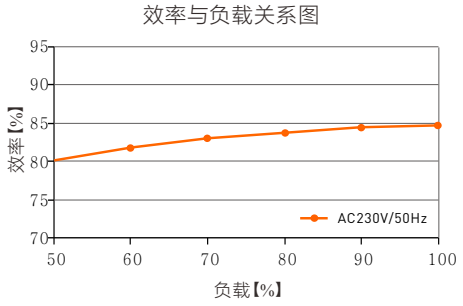


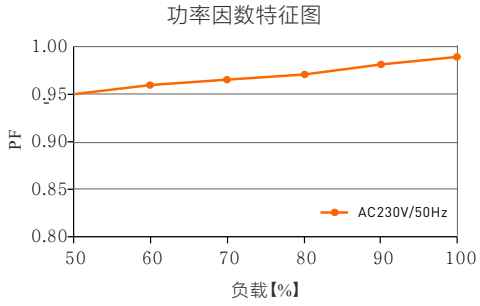
请勿将产品堆叠摆放，产品与产品间隔距离应≥15cm，避免影响产品散热和使用寿命。

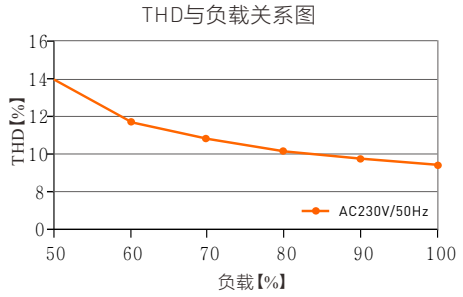


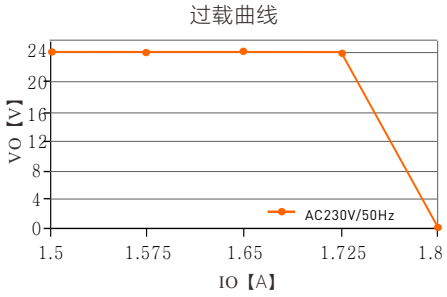
请勿将产品置于电源上方，与电源间隔距离应≥15cm，避免影响产品散热而减少使用寿命。

关系图表

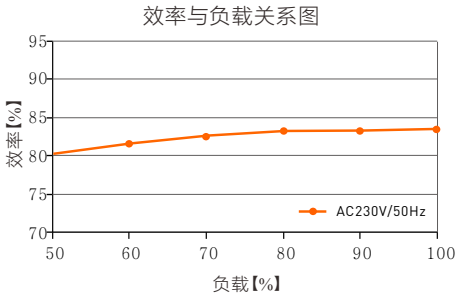


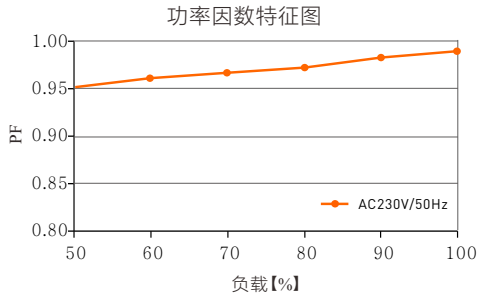


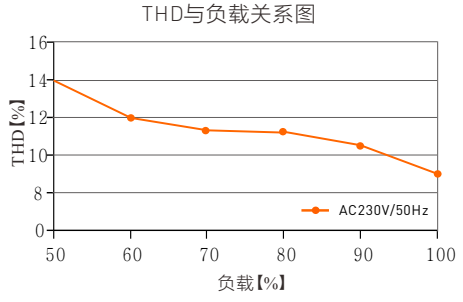


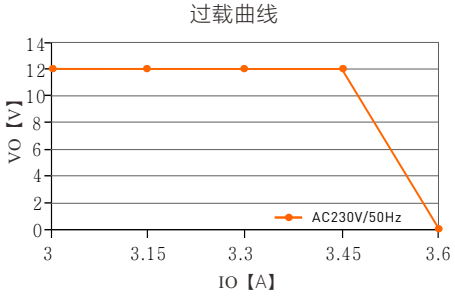


LM-36-24-G1T2









LM-36-12-G1T2

频闪测试表

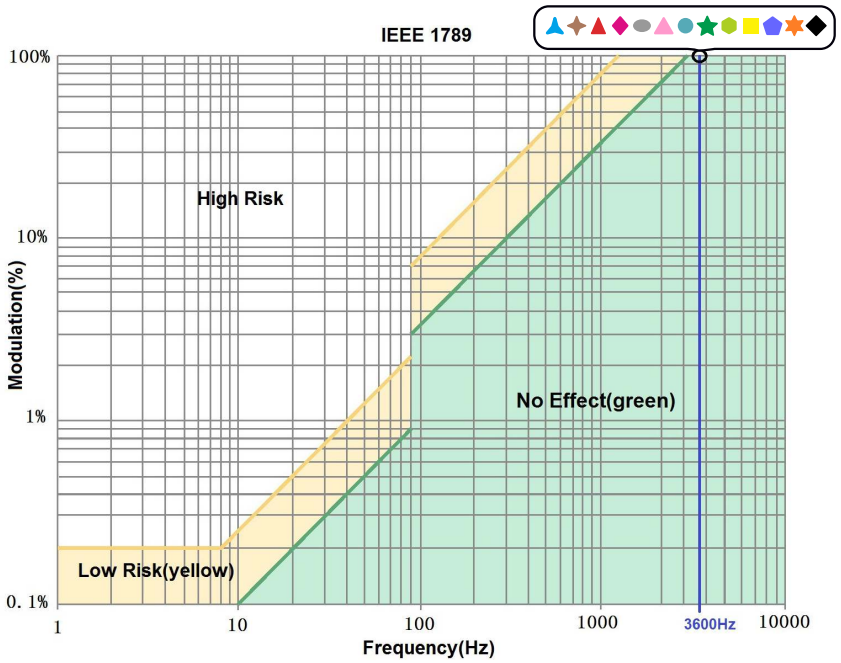
IEEE 1789

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(%)
$f \leq 8Hz$	0.2
$8Hz < f \leq 90Hz$	$0.025 \times f$
$90Hz < f \leq 1250Hz$	$0.08 \times f$
$f > 1250Hz$	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(%)
$f \leq 10Hz$	0.1
$10Hz < f \leq 90Hz$	$0.01 \times f$
$90Hz < f \leq 3125Hz$	$(0.08/2.5) \times f$
$f > 3125Hz$	免除考核(高频豁免)

亮度

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

免除考核(高频豁免)



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。

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，需避免日晒雨淋，如安装在户外，请用防水箱。
- 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。
- 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，请与供应商联系。

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。

更新日志

版本	更改日期	更改内容	更改人
A0	2021.04.12	正稿。	许淑钧
A1	2021.12.27	修改产品丝印。	许淑钧