LTECH

SE-10-350-700-W1AS
SE-12-100-400-W1AS
SE-12-350-700-W1AS

0-10V

Intelligent LED Driver (Constant Current)

- Housing made from SAMSUNG/COVESTRO's V0 flame retardant PC materials.
- Small size and light weight.
- Automatically recognize 0-10V and 1-10V input signal.
- Class 2 LED driver, Safety Extra Low Voltage (SELV).
- Soft-on and fade-in dimming function enhances your visual comfort.
- T-PWM™ dimming technology allows quality and high-end lighting.
- The whole dimming process is flicker-free with high frequency exemption level.
- Multiple current levels, wide voltage range, suitable for LEDs with different power
- 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).

4 in 1 dimming
0-10V
1-10V
10V PWM
RX

DIM

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.

0-10V | T-PWM™ Dimming Technology | Flicker Free IEEE 1789 | Multiple Current | Over voltage protection | Short circuit protection | Over Load protection | Overheat Protection

Technical Specs

Model		SE-10-350-700-W1AS	SE-12-100-400-W1AS	SE-12-350-700-W1AS
Features	Output Type	Constant current		
	Dimming Interface	0-10V (1-10V, 10V PWM, RX)		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)		
OUTPUT	Output Voltage	2-12Vdc	9-42Vdc	9-24Vdc
	Output voltage range(No-load)	⩽35Vdc	⩽50Vdc	⩽35Vdc
	Output Current Range	350-700mA	100-400mA	350-700mA
	Maximum output voltage	0.7W-8.4W	0.9W-12W	3.15W-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	100-240Vdc		
	AC Voltage Range	100-240Vac		
	Input Voltage	115Vac/230Vac		
	Frequency	50/60Hz		
	Input Current	⩽0.15A/115Vac (at full load), ⩽0.07A/230Vac (at full load),	⩽0.18A/115Vac (at full load), ⩽0.08A/230Vac (at full load),	⩽0.18A/115Vac (at full load),⩽0.08A/230Vac (at full load)
	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.)	75% (at full load),	82% (at full load),	82%(at full load),
	Inrush Current	Cold start 15A(Test twidth=102us tested under 50% Ipeak)/230Vac		
	Anti Surge	L-N:2KV		
	Leakage Current	Max.0.24mA		
ENVIRONMENT	Working Temperature	ta:-20~50°C tc:80°C		
	Working Humidity	20 ~ 95%RH, non-condensing		
	Storage Temperature/Humidity	-40~80°C/10~95%RH		
	Temperature Coefficient	±0.03%/°C(-20°C-40°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)		
	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		
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11,EN61547		
ErP	Power Consumption	Standby power consumption: No standby mode		
		Networked standby: ＜0.5W (After shutdown by command)		
	Flicker/Stroboscopic Effect	No-load power consumption: ＜0.5W (When the lamp is not connected)		
		CIESVM: PstLM⩽1.0 SVM⩽0.4		
	DF	Phase factor: DF⩾0.9		
OTHERS	Weight(N.W.)	80g±10g		
	Dimensions	135×30×20mm(L×W×H)		

LED Current Selection

DIP switch quickly selects 8th gear current value

DIPswitch

	DIP Switch	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-10-350-700-W1AS	Output Current	350mA	400mA	450mA	500mA	550mA	600mA	650mA	700mA	
	Output Voltage	2-12V	2-12V	2-12V	2-12V	2-10V	2-12V	2-12V	2-12V	
	Output Power	0.7-4.2W	0.8-4.8W	0.9-5.4W	1-6W	1.1-6.6W	1.2-7.2W	1.3-7.8W	1.4-8.4W	

	DIP Switch	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-12-100-400-W1AS	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA		
	Output Voltage	9-42V	9-42V	9-42V	9-42V	9-40V	9-34V	9-30V		
	Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W	3.15-11.9W	3.6-12W		

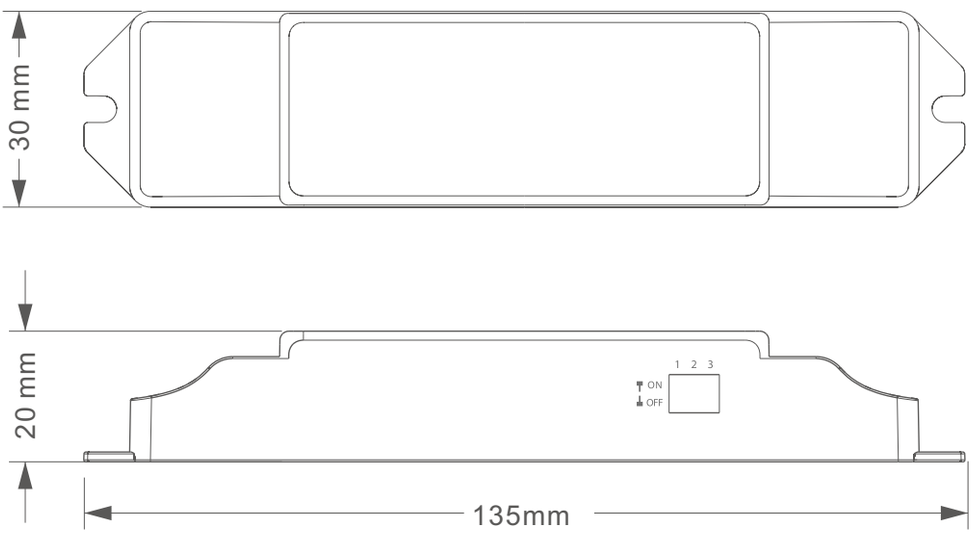
	DIP Switch	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-12-350-700-W1AS	Output Current	350mA	400mA	450mA	500mA	550mA	600mA	650mA	700mA	
	Output Voltage	9-24V	9-24V	9-24V	9-24V	9-22V	9-20V	9-18.5V	9-17V	
	Output Power	3.15-8.4W	3.6-9.6W	4.05-10.8W	4.5-12W	4.95-12.1W	5.4-12W	5.85-12W	6.3-11.9W	

✻ Before setting the current via the DIP switches, confirm that the LED driver is powered off. To make the current setting effective, you need to power on the driver again.
(Note: If you do not power off the driver before setting the current, it may cause damage to the light fixture.)

✻ E.g. LED 3V/pcs: 9-42V can power 3-14pcs LEDs in series, 9-21.5V can power 3-7pcs LEDs, the max quantity of LEDs in series will be subject to the actual voltage of LED.

Product Size

Unit: mm

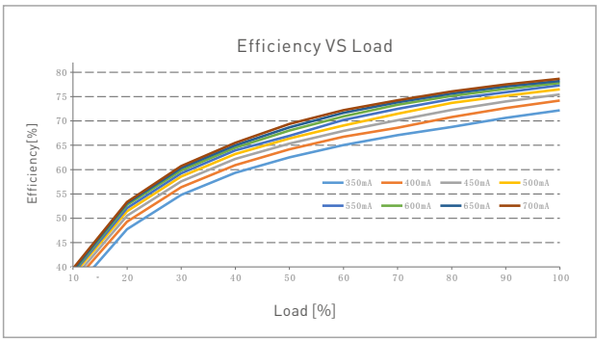


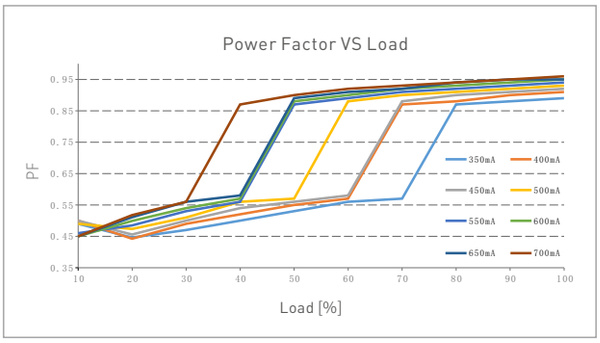
Wiring Diagram

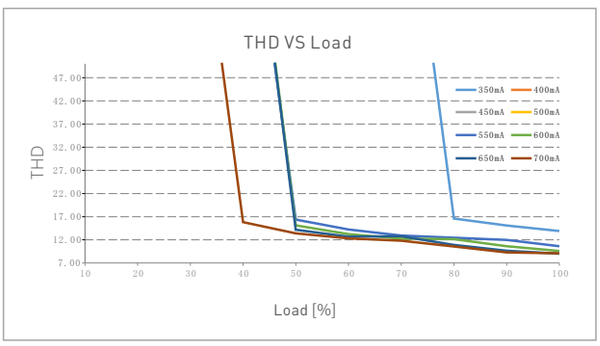
Wire diameter:0.75-2.5㎟
Strip length:4.5mm-5mm

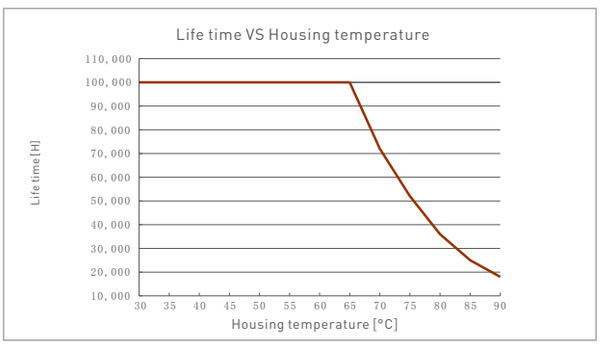
Wire diameter:0.7-2.5㎟
Strip length:4.5mm-5mm

Relationship Diagrams

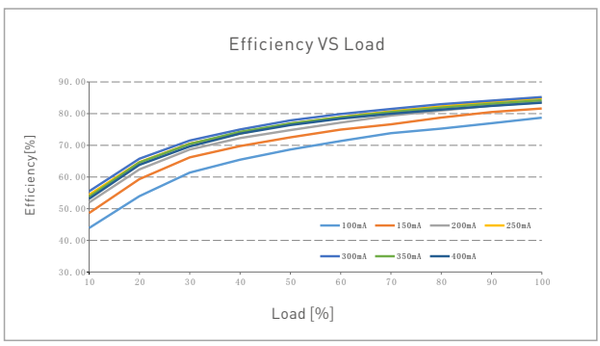


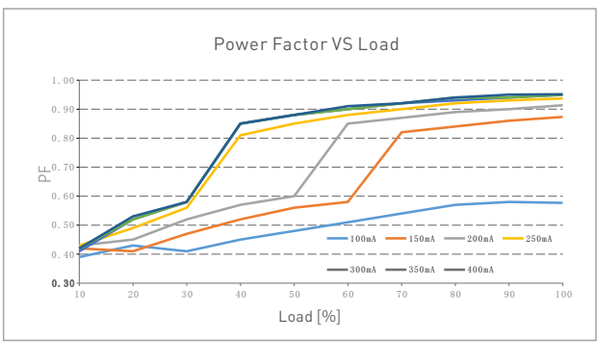


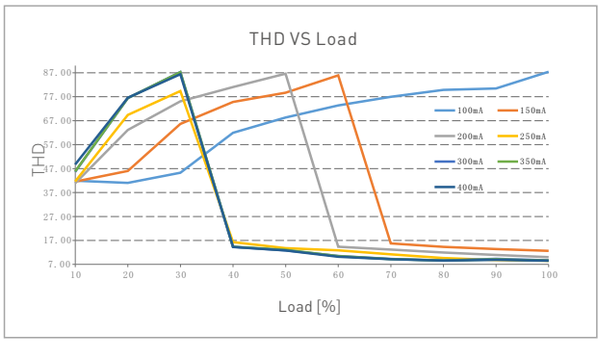


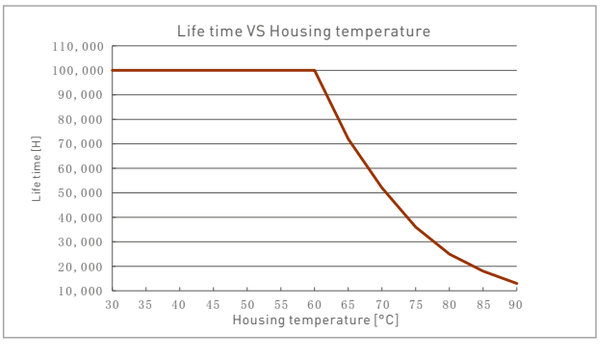


SE-10-350-700-W1AS

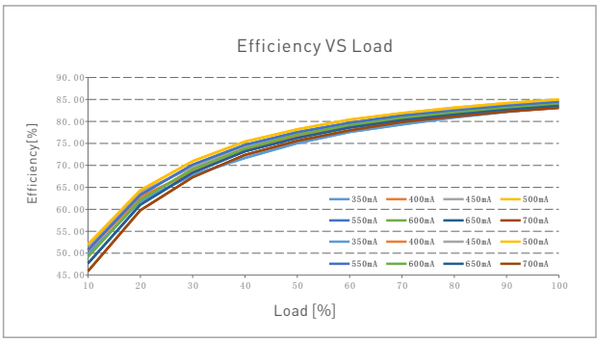


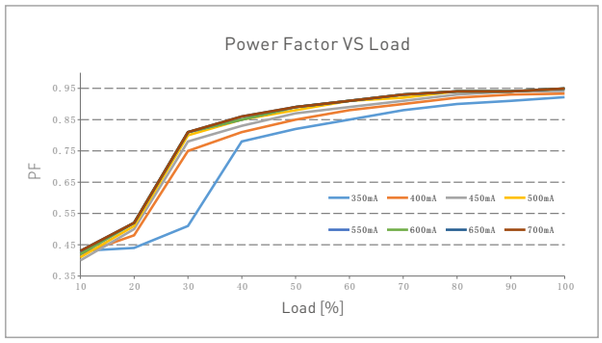


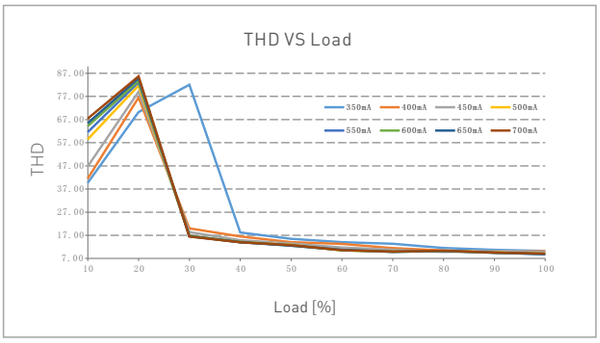


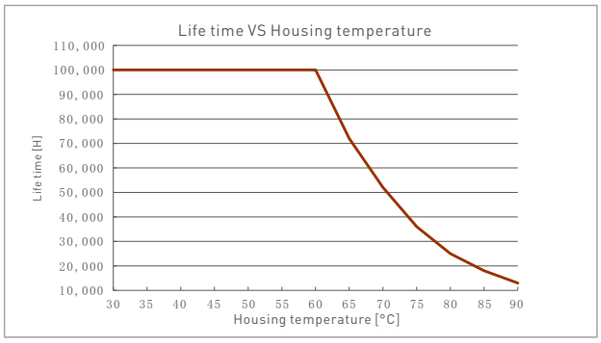


SE-12-100-400-W1AS









SE-12-350-700-W1AS

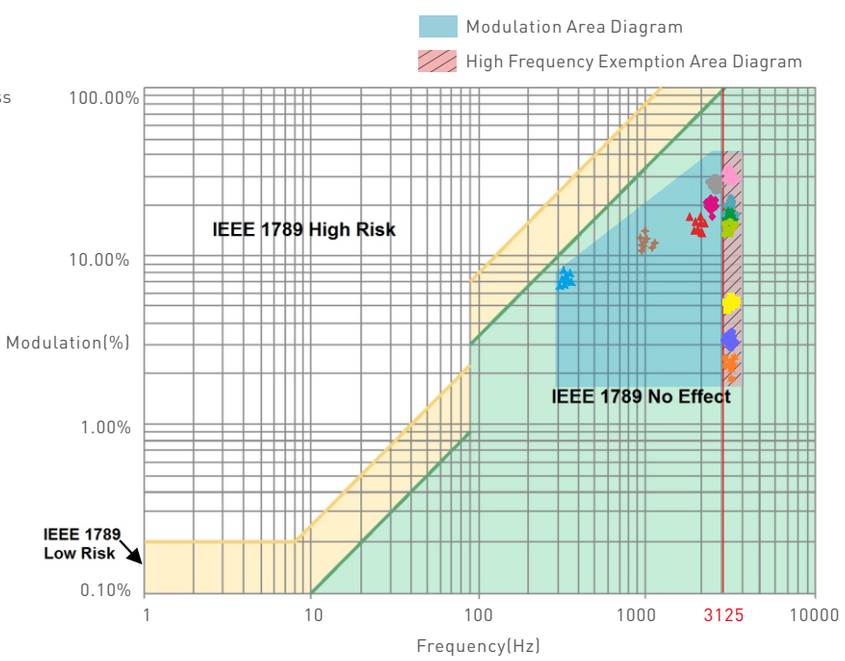
Flicker Test Sheet

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)

Brightness

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



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-10-350-700-W1AS/SE-12-100-400-W1AS/SE-12-350-700-W1AS
Carton Dimensions	350×285×180mm(L×W×H)
Quantity	30 PCS/Layer; 5 Layers/Carton; 150 PCS/Carton
Weight	0.08 kg/PC; 12 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.

Update Log

Version	Updated Time	Update Content	Updated by
A0	20230307	Original version	Yang Weiling

LED智能调光驱动器 (恒流型)

- 外壳采用科思创/三星PC阻燃V0级原料
- 体积小、重量轻
- 自动识别0-10V、1-10V输入
- 0-10V端口超低消耗<0.05mA
- 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，呈现高级感
- 0-100%全程调光无可视频闪, 高频豁免考核级别
- 调光范围0~100%, LED从0.01%开始调光
- 欧盟ERP空载功耗、网络待机功耗<0.5W
- 多电流、宽电压，适用不同功率的LED
- 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100,000小时
- 5年保修期（采用红宝石电容）

4合1调光
0-10V
1-10V
10V PWM
RX

调光

T-PWM™
超深度调光技术

无频闪
IEEE1789
高频豁免考核级别

Dimmable:
10000:1

SELV RoHS ErP

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。

0-10V | T-PWM 超深度调光技术 | 无频闪 IEEE 1789 | 多电流 | 过压保护 | 短路保护 | 过载保护 | 过温保护

技术参数

型号		SE-10-350-700-W1AS		SE-12-100-400-W1AS	SE-12-350-700-W1AS
特征	输出类型	恒流			
	调光接口	0-10V (1-10V, 10V PWM, RX)			
	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	2-12Vdc		9-42Vdc	9-24Vdc
	最大输出电压（空载）	≤35Vdc		≤50Vdc	≤35Vdc
	工作电流范围	350-700mA		100-400mA	350-700mA
	负载功率范围	0.7W-8.4W		0.9W-12W	3.15W-12W
	调光范围	0~100%，调光深度: Max. 0.01%			
	电流纹波	<3% (非调光状态)			
	电流精度	±5%			
	PWM调光频率	≤3600Hz			
输入	直流电压范围	100-240Vdc			
	交流电压范围	100-240Vac			
	额定电压	115Vac/230Vac			
	频率范围	50/60Hz			
	输入电流	≤0.15A/115Vac(满载) ≤0.07A/230Vac(满载)		≤0.18A/115Vac(满载) ≤0.08A/230Vac(满载)	≤0.18A/115Vac(满载) ≤0.08A/230Vac(满载)
	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.)	75%(满载)		82%(满载)	82%(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°C ~ 50°C tc: 80°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(-20°C~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；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)	
	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	
	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	80g±10g			
	产品尺寸	135×30×20mm(L×W×H)			

LED电流选择

DIP开关快速选择 8 档电流值

DIP 开关

	DIP开关	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-10-350-700-W1AS	电流输出	350mA	400mA	450mA	500mA	550mA	600mA	650mA	700mA	
	电压输出	2-12V	2-12V	2-12V	2-12V	2-10V	2-12V	2-12V	2-12V	
	功率输出	0.7-4.2W	0.8-4.8W	0.9-5.4W	1-6W	1.1-6.6W	1.2-7.2W	1.3-7.8W	1.4-8.4W	

	DIP开关	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-12-100-400-W1AS	电流输出	100mA	150mA	200mA	250mA	300mA	350mA	400mA		
	电压输出	9-42V	9-42V	9-42V	9-42V	9-40V	9-34V	9-30V		
	功率输出	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W	3.15-11.9W	3.6-12W		

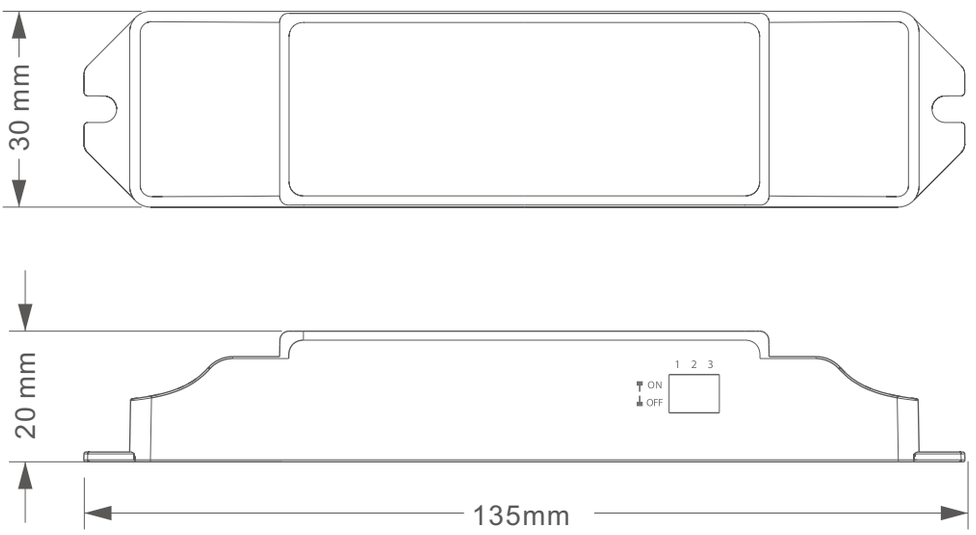
	DIP开关	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-12-350-700-W1AS	电流输出	350mA	400mA	450mA	500mA	550mA	600mA	650mA	700mA	
	电压输出	9-24V	9-24V	9-24V	9-24V	9-22V	9-20V	9-18.5V	9-17V	
	功率输出	3.15-8.4W	3.6-9.6W	4.05-10.8W	4.5-12W	4.95-12.1W	5.4-12W	5.85-12W	6.3-11.9W	

✻ 确保驱动断电，再进行DIP开关设置所需电流。驱动重新上电后所需电流生效(注：若驱动不断电设置电流，可能会造成对灯具损坏)。

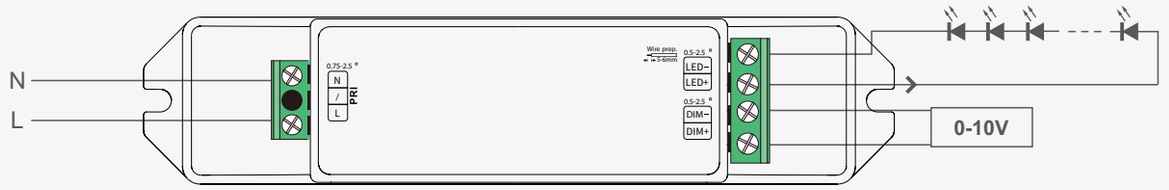
✻ 假设LED的电压是3V/颗：电源9-42V的输出电压范围可串联3-14颗LED，9-27V的输出电压范围可串联3-9颗LED，最大串联数量以LED实际电压为准。

尺寸图

单位：mm



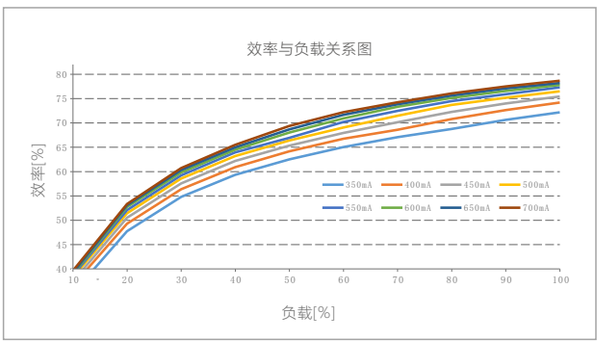
连线图

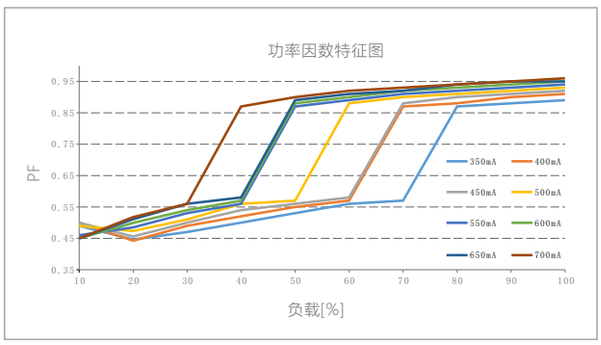


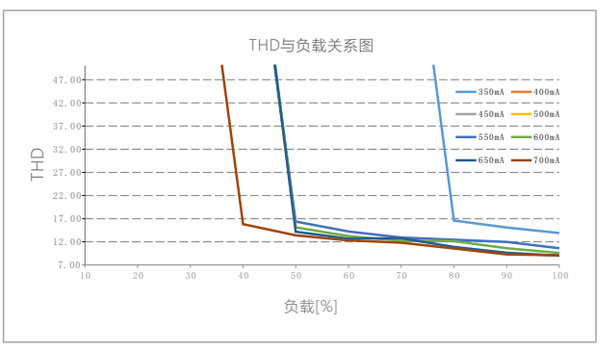
线径：0.75-2.5㎟
剥线长度：4.5mm-5mm

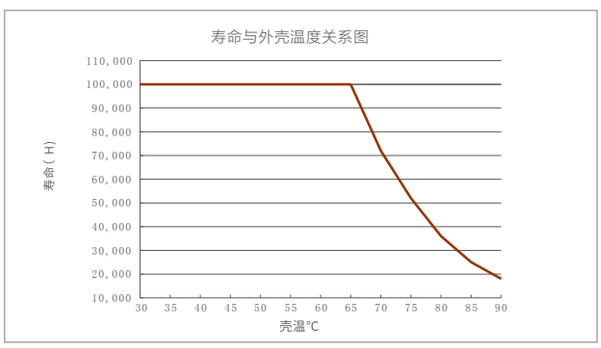
线径：0.5-2.5㎟
剥线长度：4.5mm-5mm

关系图表

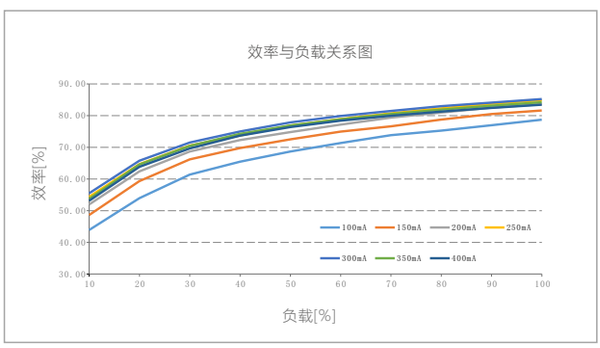


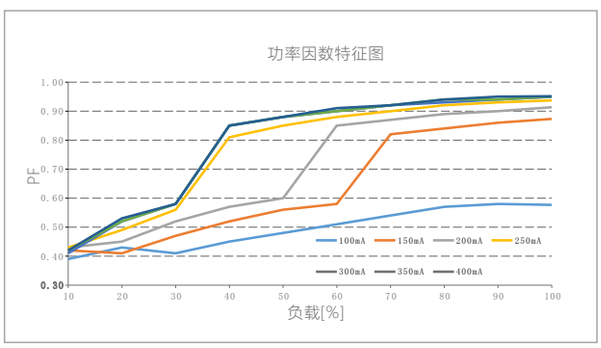


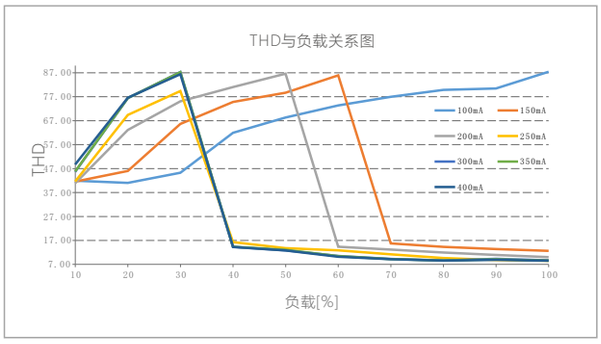


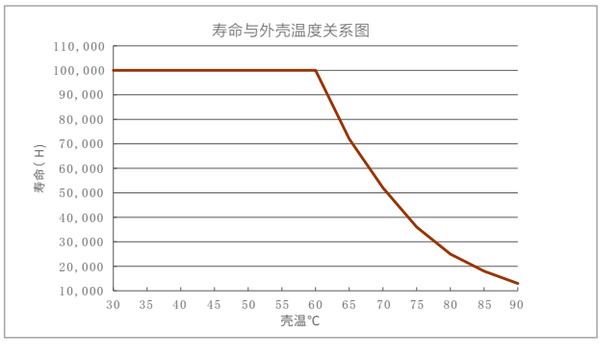


SE-10-350-700-W1AS

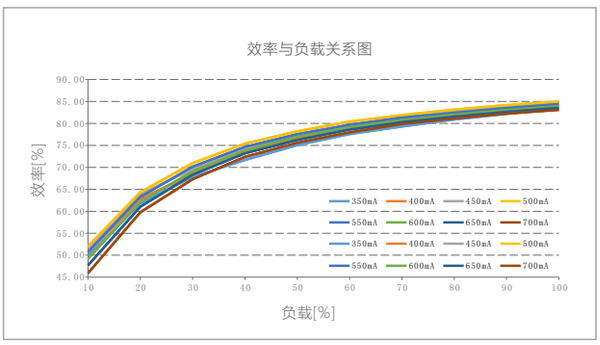


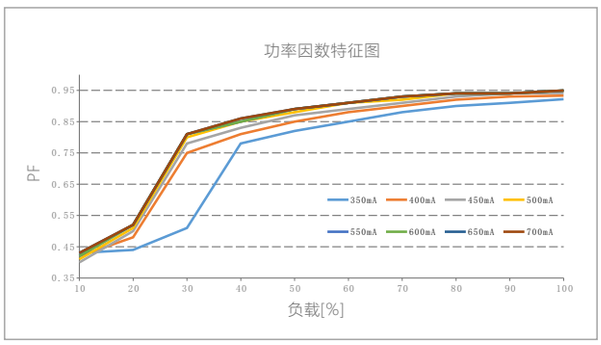


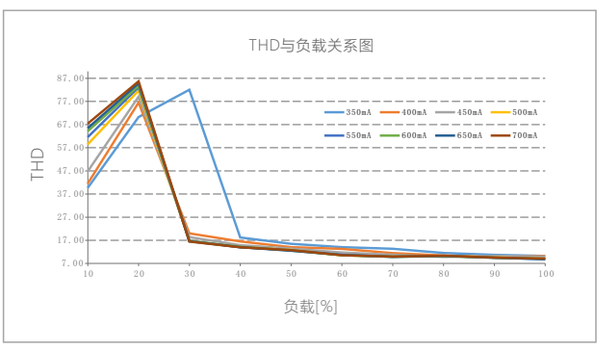


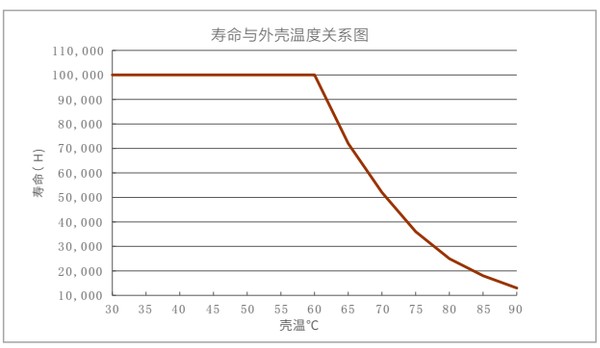


SE-12-100-400-W1AS









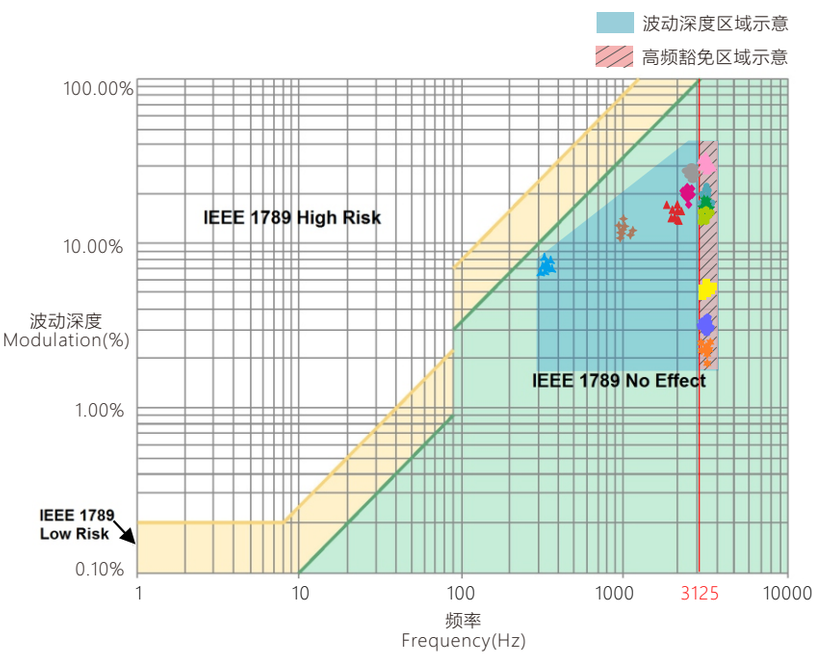
SE-12-350-700-W1AS

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）

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-10-350-700-W1AS/SE-12-100-400-W1AS/SE-12-350-700-W1AS
包装箱尺寸	350×285×180mm（L×W×H）
数量	30 PCS/层； 5 层/箱； 150 PCS/箱
重量	0.08kg/PC； 12±5% kg/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

- 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	2023.03.07	正稿	杨魏玲