



# SOSEN LED Driver, Your Smart Choice

## Specifications

### SS-100GA-E Series LED Driver

Model: SS-100GA-E<sup>XXX\*</sup>

Description: 100W LED Driver

Rev.: V01

Release Date: 2024-02-29

# SS-100GA-E Series LED Driver

**SOSEN**  
LED DRIVER



**LED DRIVER**

**GA-E Series**



**CE RoHS IP67**

## Features:

- ❑ Efficiency up to 91%
- ❑ Output current can be adjusted by NFC(DALI-2)
- ❑ Isolated dimming: DALI-2, 0-10V, PWM, Resistor
- ❑ Communication Function With PC
- ❑ Timing and Negative logic programmable
- ❑ ELA
- ❑ Suitable for Class I /II lamps
- ❑ Protections: SCP/OTP/OVP/OPP/Power automatic derating at AC low line voltage input
- ❑ Surge protection: CM: 10kV(For Class I), DM: 6kV
- ❑ IP67
- ❑ Warranty: 5 years

## 产品概述:

GA-E Series are constant current LED Driver with wide O/P voltage range and adjustable O/P current by program. LED luminaries manufactures can easily design luminaries and reduce cost.

### Applications:

High Pole lighting, High bay lighting, Stadium lighting, Plant lighting, Fish lighting, Street lighting, Tunnel lighting, Stage lighting

## Model List:

Model	AC Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	Default Current	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-100GA-E62*	100-305Vac	100W	30-62V	35-62V	0.35-2.85A	2.08A	8%	0.97	89%	90°C
SS-100GA-E95*	100-305Vac	100W	48-95V	66-95V	0.35-1.5A	1.05A	8%	0.97	90%	90°C
SS-100GA-E143*	100-305Vac	100W	72-143V	95-143V	0.1-1.05A	0.7A	8%	0.97	90%	90°C

Note:

1. Default Tested: at 220Vac, full load, Ta 25°C.
2. The performance of the LED Driver can be guaranteed within the full power Vo range. The voltage lower than full power Vo range, it is need to test the performance with the LED module.

# SS-100GA-E Series LED Driver

## “\*” Means Additional Function

“*”	1-10V/PWM Dim /Resistor Or 10-0V (suffix:B)	DALI (suffix:D)	NFC	Class I	Class II	Remark
B	✓			✓		
BE	✓				✓	
D		✓	✓	✓		
DE		✓	✓		✓	

## Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
AC Input Range	100Vac	220-240Vac	305Vac	Reference Derating Curve
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			0.7A	220Vac, Full load
Max Input Power			115W	220Vac, Full load
Max Inrush Current(220Vac)			70A	Cold start
No Load Power			7.5W	220Vac/50Hz, No load
Power Factor	0.95	0.97		220Vac/50Hz, Full load
	0.90			220-277Vac, 70-100% load
THD		8%	10%	220Vac/50Hz, Full load
			20%	220-277Vac, 70-100% load

# SS-100GA-E Series LED Driver

## Output Characteristics(SS-100GA-E62\*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	30V		62V	Power derated @30-35V
Rated O/P Voltage	35V		62V	$P_o=V_o \cdot I_o=100W$ , Full load
Rated O/P Current	1.6A		2.85A	2.85A for 35V,1.6A for 62V
Adj. O/P Current (AOC)Range	0.35A		2.85A	
No Load Voltage			80V	
Efficiency @220Vac	87.0%	89.0%		Output 62V/1.6A, Test after burn-in
Efficiency @277Vac	88.0%	90.0%		Output 62V/1.6A, Test after burn-in
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient		0.05%/°C		Tc:0°C~90°C
OTP	90°C	100°C	110°C	>Tc Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection				Driver will not be damaged, Hiccup mode

# SS-100GA-E Series LED Driver

## Output Characteristics(SS-100GA-E95\*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	48V		95V	Power derated @48-66V
Rated O/P Voltage	66V		95V	$P_o=V_o \cdot I_o=100W$ , Full load
Rated O/P Current	1.05A		1.5A	1.5A for 66V,1.05A for 95V
Adj. O/P Current (AOC)Range	0.35A		1.5A	
No Load Voltage			120V	
Efficiency @220Vac	88.0%	90.0%		Output 95V/1.05A, Test after burn-in
Efficiency @277Vac	89.0%	91.0%		Output 95V/1.05A, Test after burn-in
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient		0.05%/°C		Tc:0°C~90°C
OTP	90°C	100°C	110°C	>Tc Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection				Driver will not be damaged, Hiccup mode

# SS-100GA-E Series LED Driver

## Output Characteristics(SS-100GA-E143\*):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	72V		143V	Power derated @72-95V
Rated O/P Voltage	95V		143V	Po=Vo*Io=100W, Full load
Rated O/P Current	0.7A		1.05A	1.05A for 95V,0.7A for 143V
Adj. O/P Current (AOC)Range	0.1A		1.05A	
No Load Voltage			180V	
Efficiency @220Vac	88.0%	90.0%		Output 143V/0.7A, Test after burn-in
Efficiency @277Vac	89.0%	91.0%		Output 143V/0.7A, Test after burn-in
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.5S	220Vac, Full load
Line Regulation	-2%		+2%	Full load
Load Regulation	-5%		+5%	
Temperature Coefficient		0.05%/°C		Tc:0°C~90°C
OTP	90°C	100°C	110°C	>Tc Typ., Current derating <Tc Min., Current recovery
Short Circuit Protection				Driver will not be damaged, Hiccup mode

# SS-100GA-E Series LED Driver

## Other Characteristics:

Parameter		Min.	Typ.	Max.	Remark	
0-10V Positive Dimming (Configurable)	Dim Vmax	0V		12V	DIM+ source current 110uA. Dimming prohibits reverse connection Configurable to 0-5V	
	Dim Range	10%Iomax		100%Ioset		
	Rec.Dim Range	0V		10V		
10-0V Negative Dimming (Configurable)	Rec.Dim Range	0V		10V	DIM+ sink current I <sub>max</sub> 40uA. Dimming prohibits reverse connection Configurable to 5-0V	
PWM Dimming (Optional)	PWM High	9.8V		10.2V	DIM+ source current 110uA. Dimming prohibits reverse connection	
	PWM Low	0V		0.3V		
	Frequency	1KHz		2KHz		
	PWM Duty	0%		100%		
Resistor Dimming (Optional)	Resistance	0Kohm		100Kohm	Not available with negative logic	
	Dim Range	10%Iomax		100%Ioset	DIM+ source current 110uA .	
0-10V Dim to Off	Dim off	0.6V	0.8V	1.0V	If the led is less than maximum rated output voltage of 75%,the luminaries may possibly have slight light when dim-to-off. Thus the whole lighting system needs to be tested	
	Dim on	0.7V	0.9V	1.1V		
10-0V Dim to Off	Dim off	9.0V	9.2V	9.4V		
	Dim on	8.8V	9.0V	9.2V		
Lifetime(Tc≤80°C)		≥50,000 hours				80% load
MTBF		203,200 hours				220Vac,Full load, Ta=25°C (MIL-HDBK-217F)
IP Grade		IP67				
Tc		90°C				
Warranty		5 years			Tc: 80°C	
Net Weight		560g				
Dimension		138mm*66mm*35.5mm			L x W x H	

NOTE: 1,All the parameters above are tested Ta 25°C and LED load, unless specified.

2. When using resistor dimming (parallel connection of dimming wires), if the number of parallels is: N, the dimming resistor should be realized 0-100% dimming range, resistance value: 91KΩ/N.

# SS-100GA-E Series LED Driver

## Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40°C	25°C	+90°C	
Storage Temperature	-40°C	25°C	+90°C	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4000m	

## Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017	✓	
UKCA	EN 61347-1:2015+A1:2021 EN 61347-2-13:2014+A1:2017 EN 62493:2015 BS EN 61347-1:2015+A1:2021 BS EN 61347-2-13:2014+A1:2017 BS EN 62493:2015	✓	
EAC	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 TP TC 004/2011 TP TC 020/2011	✓	
RCM	AS/NZS61347.2.13		
CCC	GB 19510.14-2009	✓	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	✓	

EMI/EMS	Criterion	Remark
Conduction Emission	EN55015:2013+A1:2015 GB/T 17743	
Radiation Emission	EN55015:2013+A1:2015 GB/T 17743	
Harmonic Current Emissions	IEC/EN 61000-3-2 GB/T 17625.1	Class C
Surge	IEC/EN61000-4-5	DM: 6kV,CM: 8kV,Criterion B
	EN61547	DM: 6kV,CM: 10kV,Criterion B



# SS-100GA-E Series LED Driver

## Safety Test Items(B/D Model):

Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	/	3000Vac	3750Vac	Reinforced insulation
Input-Case	/	1500Vac	1875Vac	Basic insulation
Input-Dim	/	3000Vac	3750Vac	Reinforced insulation
Output-Dim	/	1000Vac	1000Vac	Basic insulation
Output-Case	/	1000Vac	1000Vac	Basic insulation
Dim-Case	/	250Vac	500Vac	Basic insulation
Insulation Resistance	$\geq 10M\Omega$			Input-Output,Test voltage:500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min
Leakage Current	$\leq 0.75mA$			240Vac

### NOTE:

1. SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference of components.
2. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - )when Hi-pot test.

# SS-100GA-E Series LED Driver

## Safety Test Items(BE/DE Model):

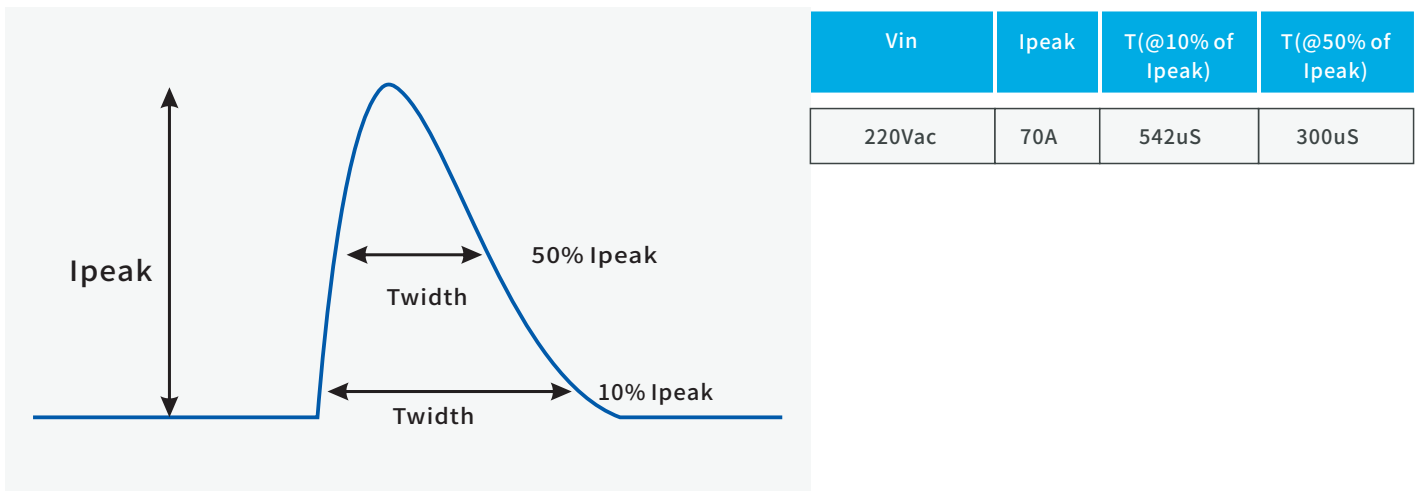
Safety Test Items	Technical Indicators			Remark
Insulation Requirements	UL Insulation Requirements	ENEC Insulation Requirements	CCC Insulation Requirements	
Input-Output	/	3000Vac	3750Vac	Reinforced insulation
Input-Case	/	3000Vac	3750Vac	Reinforced insulation
Input-Dim	/	3000Vac	3750Vac	Reinforced insulation
Output-Dim	/	1000Vac	1000Vac	Basic insulation
Output-Case	/	1000Vac	1000Vac	Basic insulation
Dim-Case	/	250Vac	500Vac	Basic insulation
Insulation Resistance	$\geq 10M\Omega$			Input-Output,Test voltage:500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min
Leakage Current	$\leq 0.75mA$			240Vac

**NOTE:**

1. SOSEN warrants the LED Driver itself complies with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference of components.
2. Please short (ACL and ACN), (V+ and V-), (Dim+ and Dim - )when Hi-pot test.

## Performance Curves:

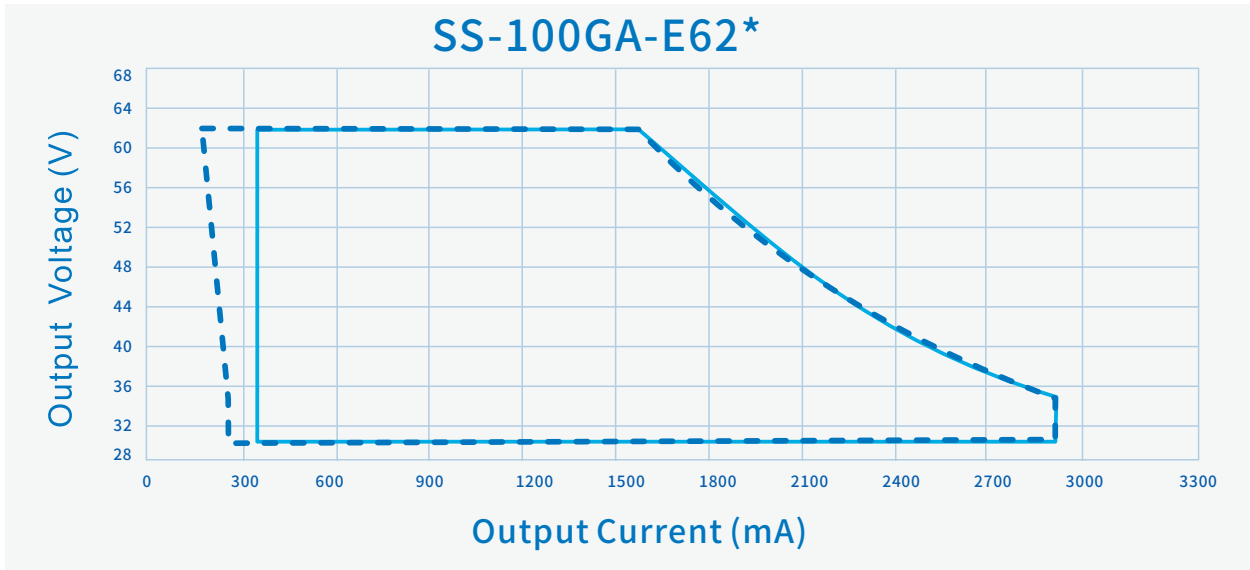
### Input Inrush Current



# SS-100GA-E Series LED Driver

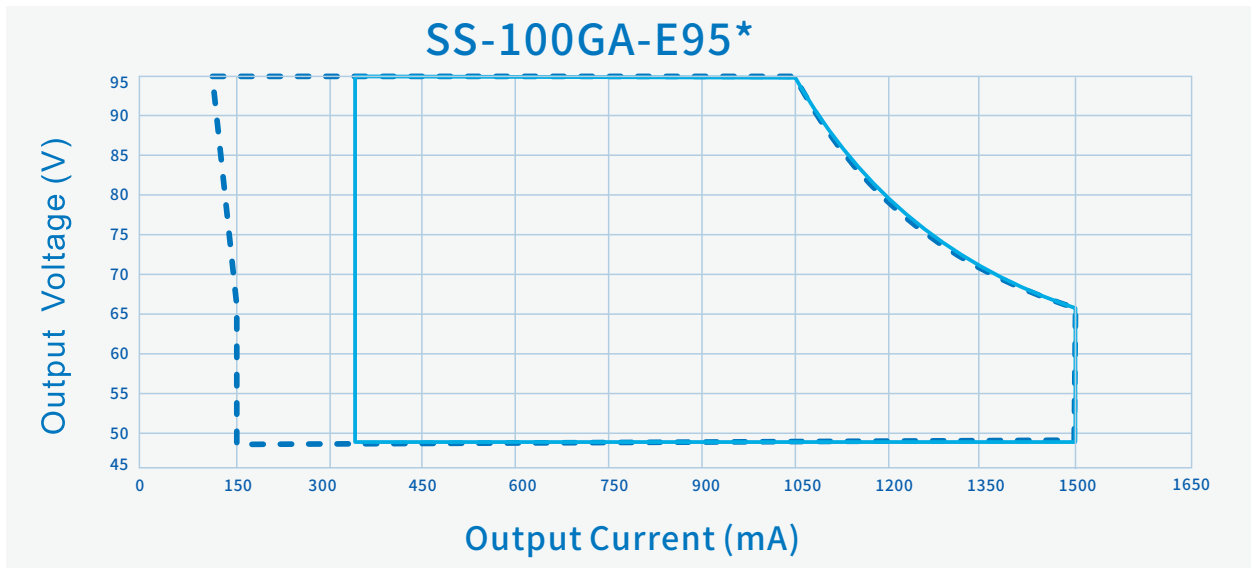
## Performance Curves:

Output Voltage Vs. Output Current(Dim/AOC Window)



----- Dimming Window      ————— AOC Window

Output Voltage Vs. Output Current(Dim/AOC Window)

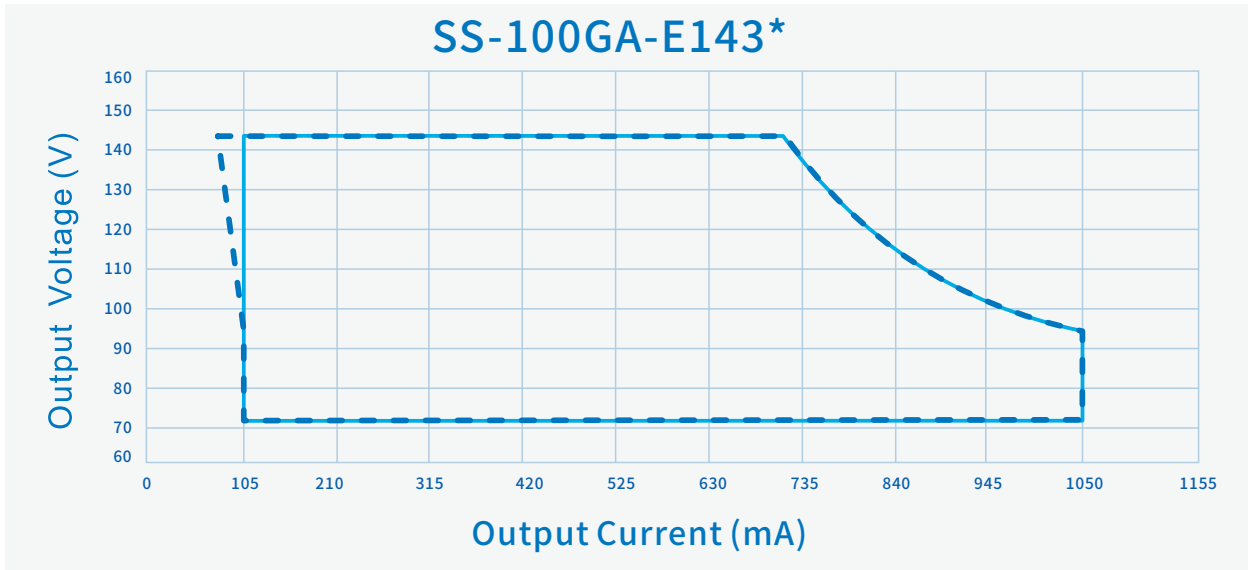


----- Dimming Window      ————— AOC Window

# SS-100GA-E Series LED Driver

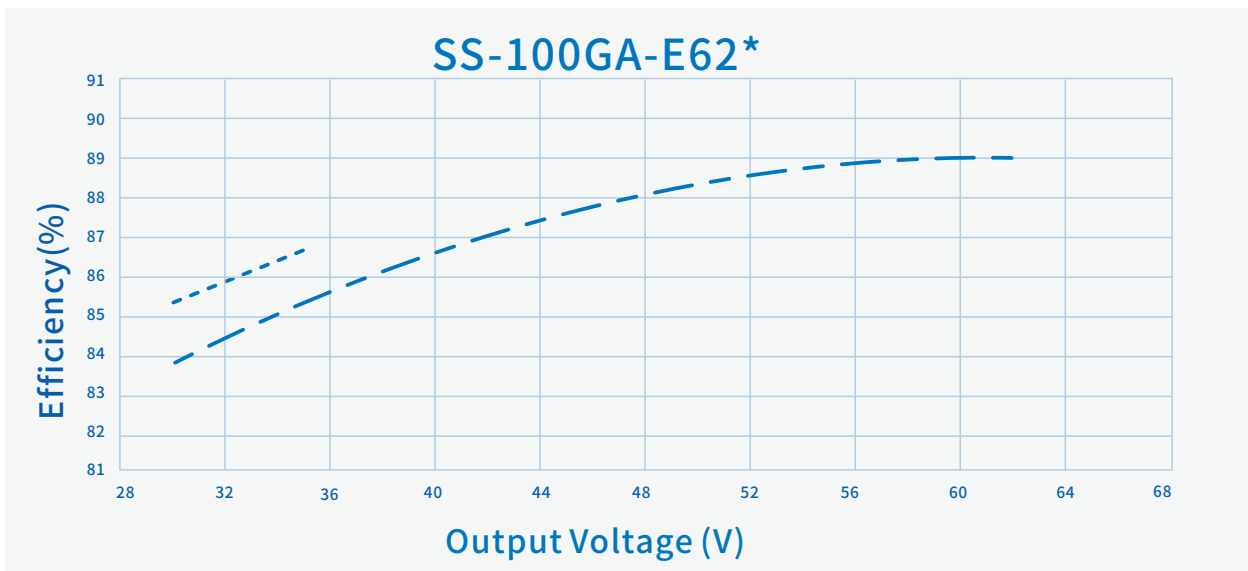
## Performance Curves:

### Output Voltage Vs. Output Current(Dim/AOC Window)



----- Dimming Window      ————— AOC Window

### Efficiency Vs. Output Voltage (Vin=220Vac)



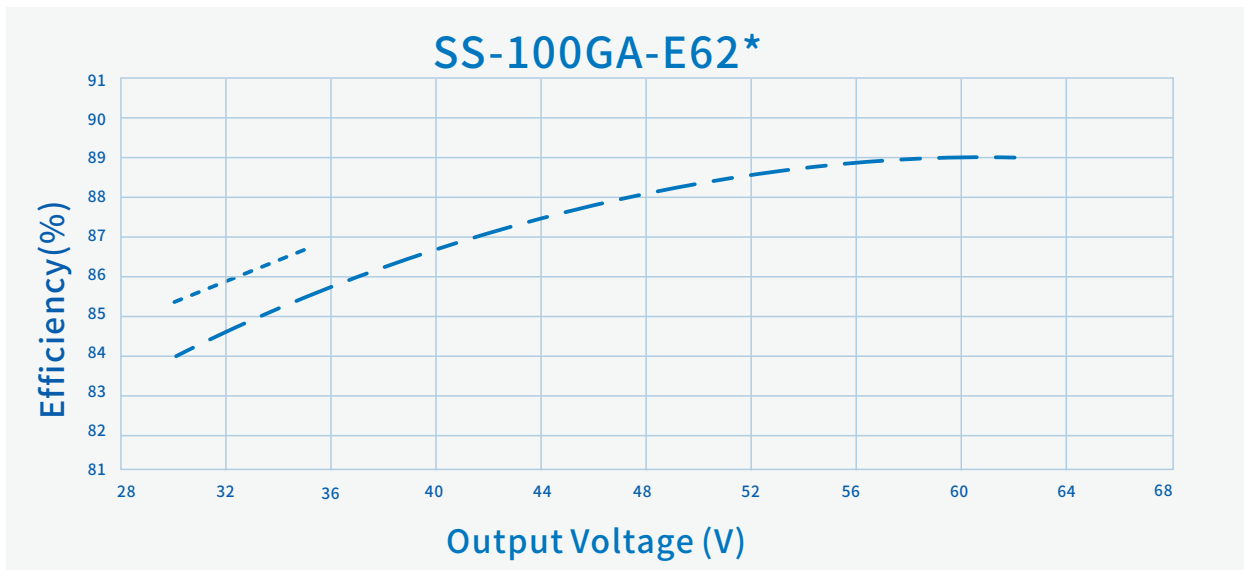
----- Io=2850mA

- - - Io=1600mA

# SS-100GA-E Series LED Driver

## Performance Curves:

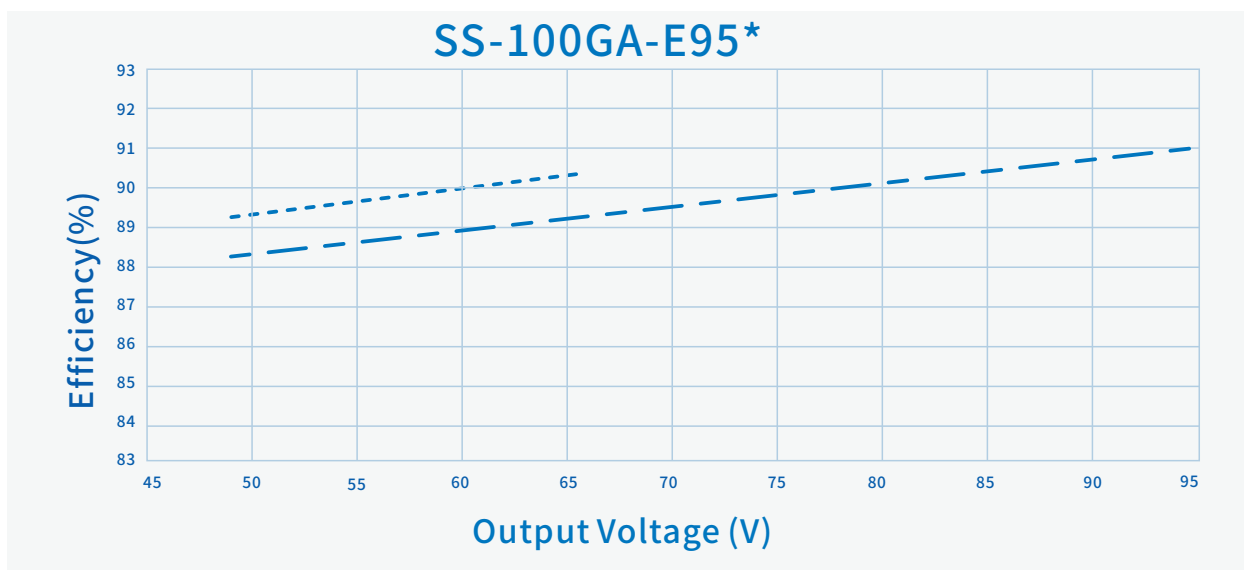
Efficiency Vs. Output Voltage ( $V_{in}=277V_{ac}$ )



-----  $I_o=2850mA$

- . - .  $I_o=1600mA$

Efficiency Vs. Output Voltage ( $V_{in}=220V_{ac}$ )



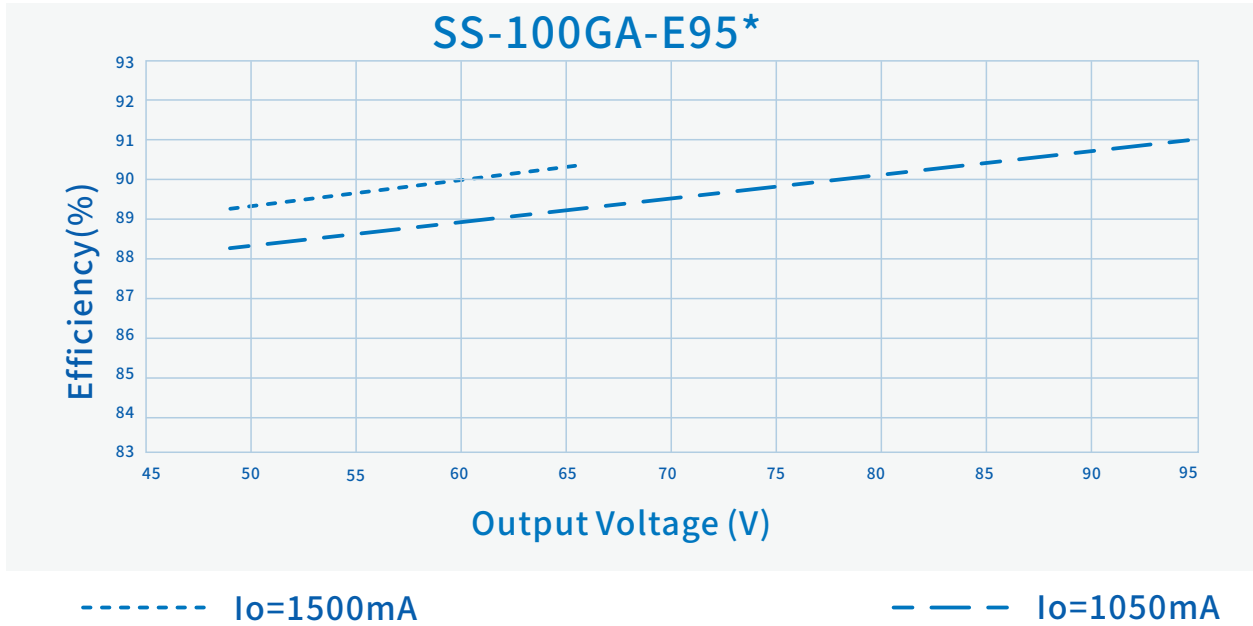
-----  $I_o=1500mA$

- . - .  $I_o=1050mA$

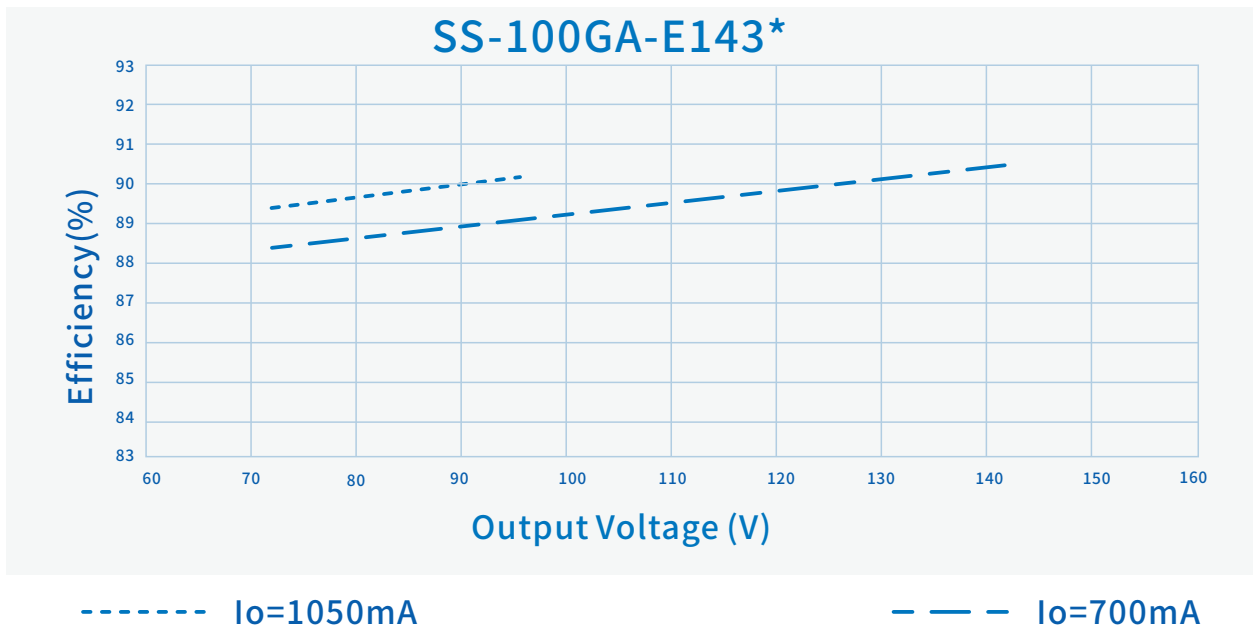
# SS-100GA-E Series LED Driver

## Performance Curves:

Efficiency Vs. Output Voltage ( $V_{in}=277V_{ac}$ )



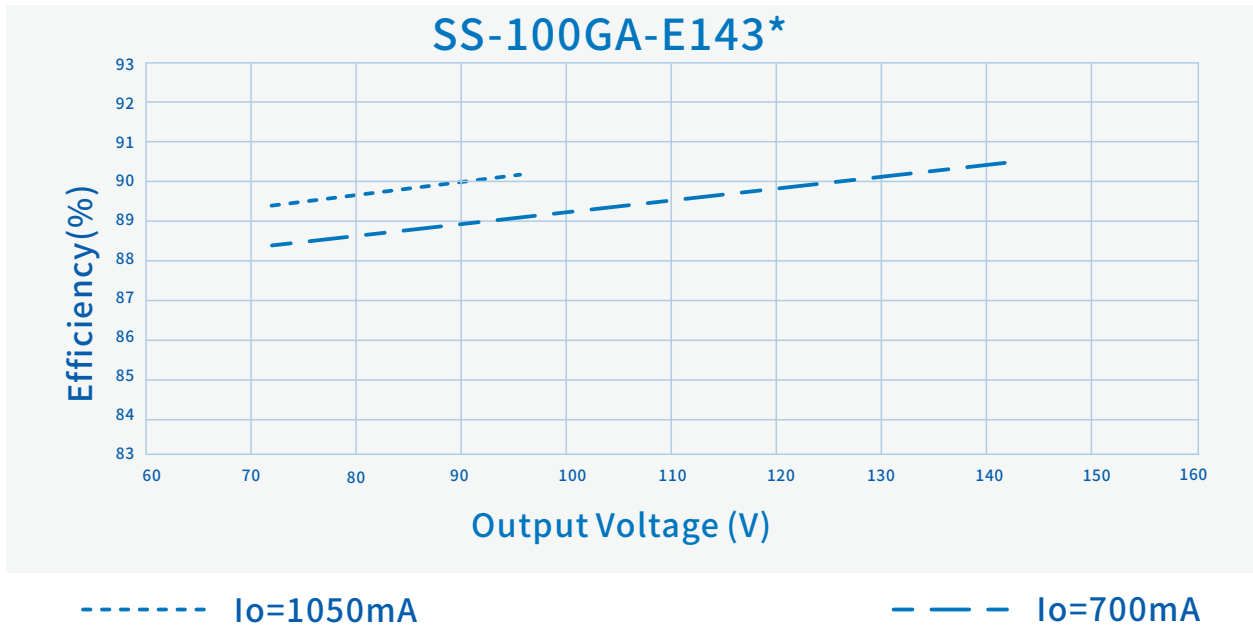
Efficiency Vs. Output Voltage ( $V_{in}=220V_{ac}$ )



# SS-100GA-E Series LED Driver

## Performance Curves:

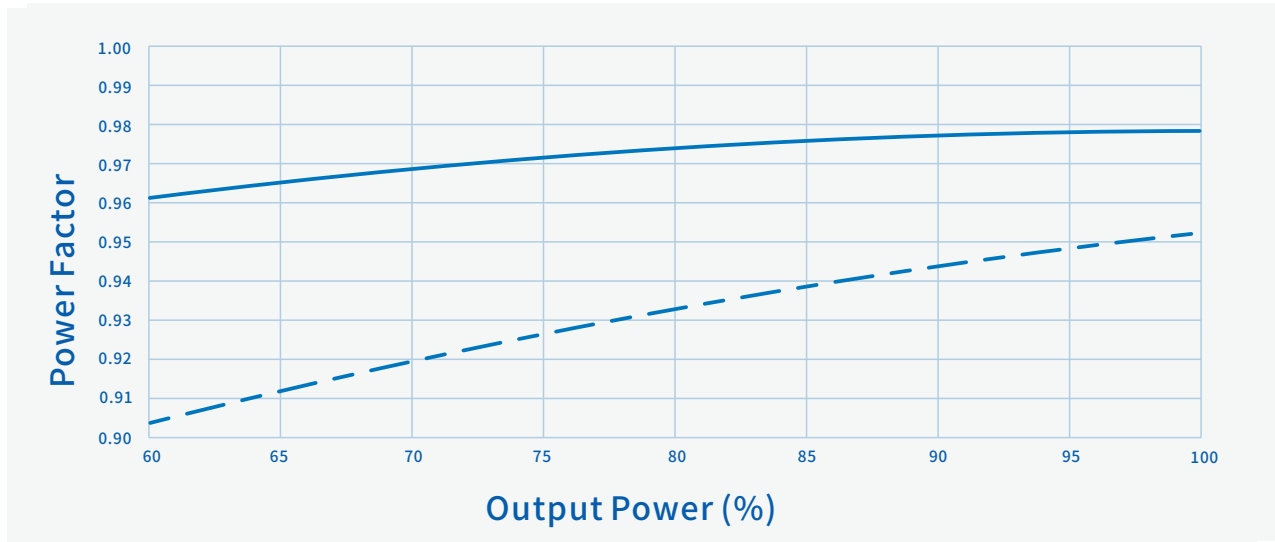
Efficiency Vs. Output Voltage ( $V_{in}=277V_{ac}$ )



# SS-100GA-E Series LED Driver

## Performance Curves:

### Power Factor Vs. Output Power



———— Vin=220Vac

- - - - - Vin=277Vac

### THD Vs. Output Power



———— Vin=220Vac

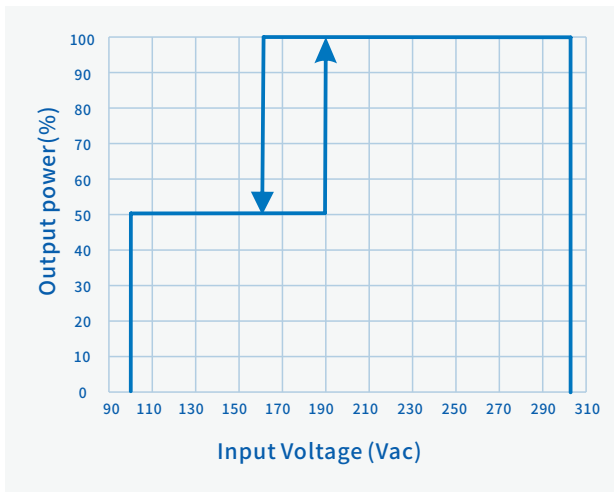
- - - - - Vin=277Vac



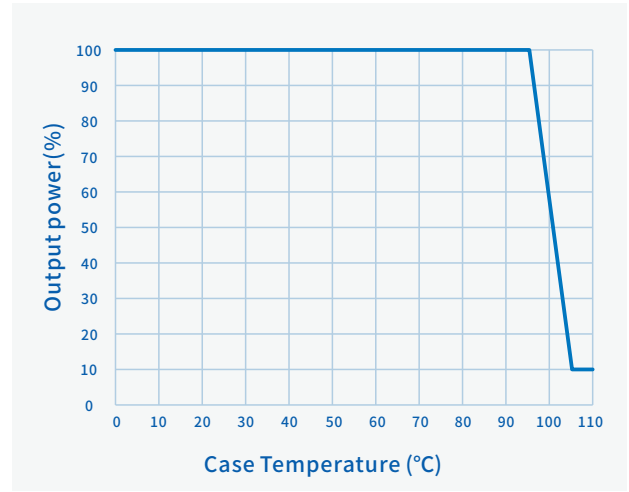
# SS-100GA-E Series LED Driver

## Performance Curves:

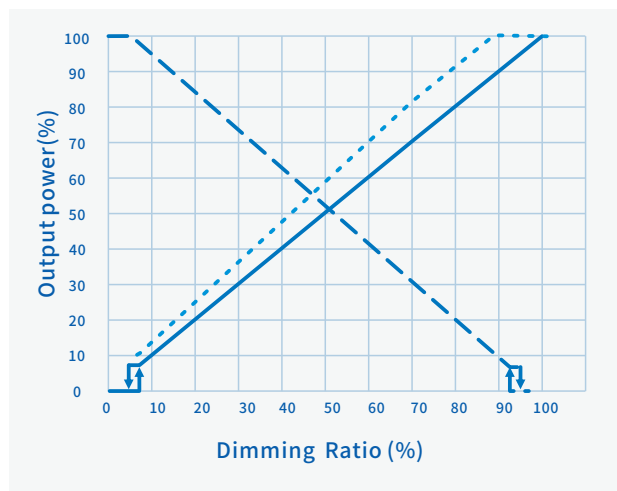
### Output power Vs. Input Voltage



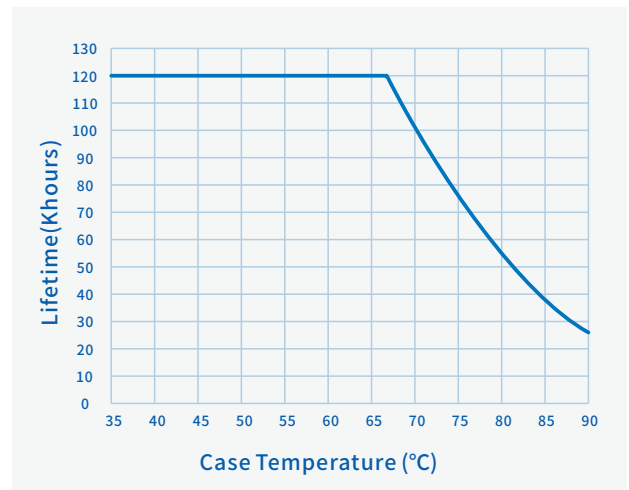
### Output power Vs. Case Temperature



### O/P Power Vs. Dimming



### Lifetime Vs. Case Temperature

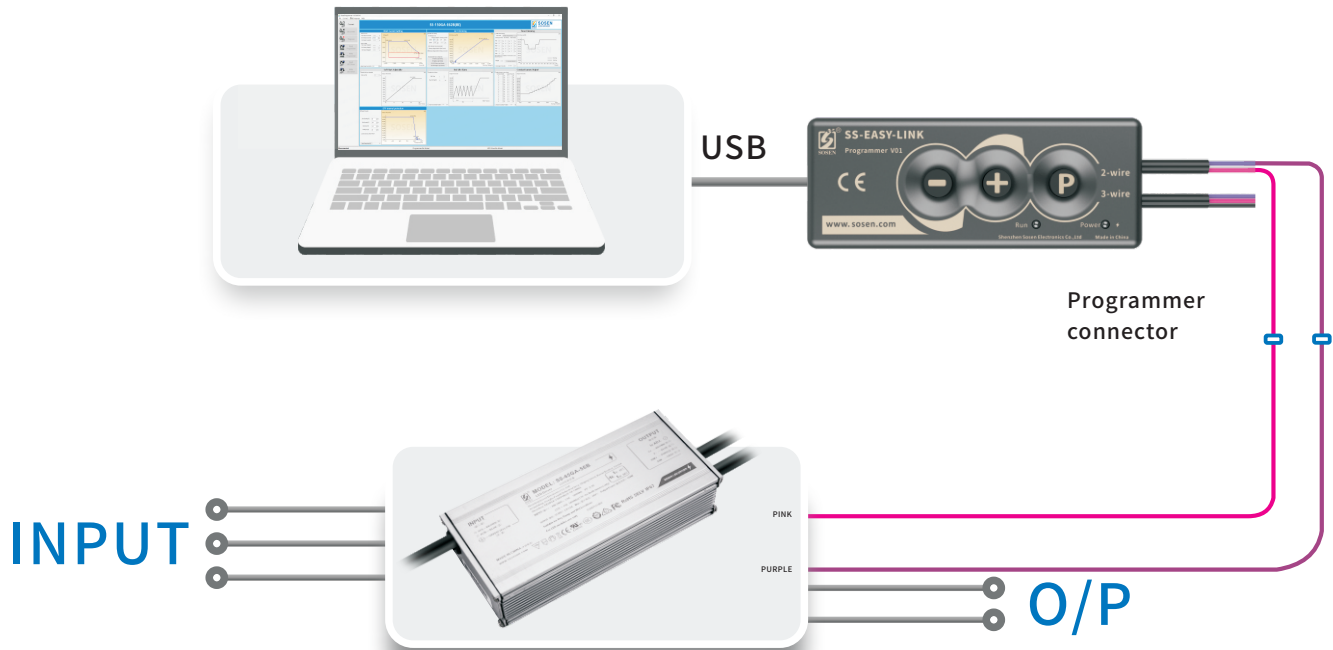


- 0-10V,0-5V,PWM
- - 10-0V,5-0V
- ... Resistor Dimming(100KΩ)

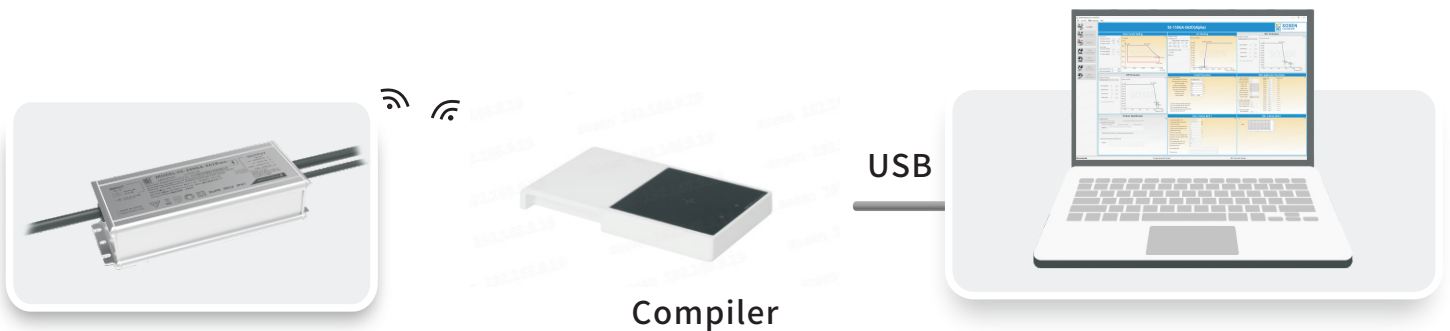
# SS-100GA-E Series LED Driver

## Programming connection diagram(B/BE Model):

Legacy Timer: Driver's O/P follows the pre-programmed timing curve after turn-on.  
Auto-Adjust by Percentage: Driver's O/P will be adjusted by automatically changed dimming curve by the period percentage based on the latest 5 dimming curve.  
Auto-Adjust by Mid-point: Driver's O/P will be adjusted by automatically changed dimming curve by mid-point based on the latest 5 dimming curve.



## NFC Programming connection diagram(D/DE Model):



## Constant Lumen Output

Constant Lumen Output are design to maintain fixture's stable output lumen by increasing driver's output current within driver's life span to counteract LED lumen degradation.

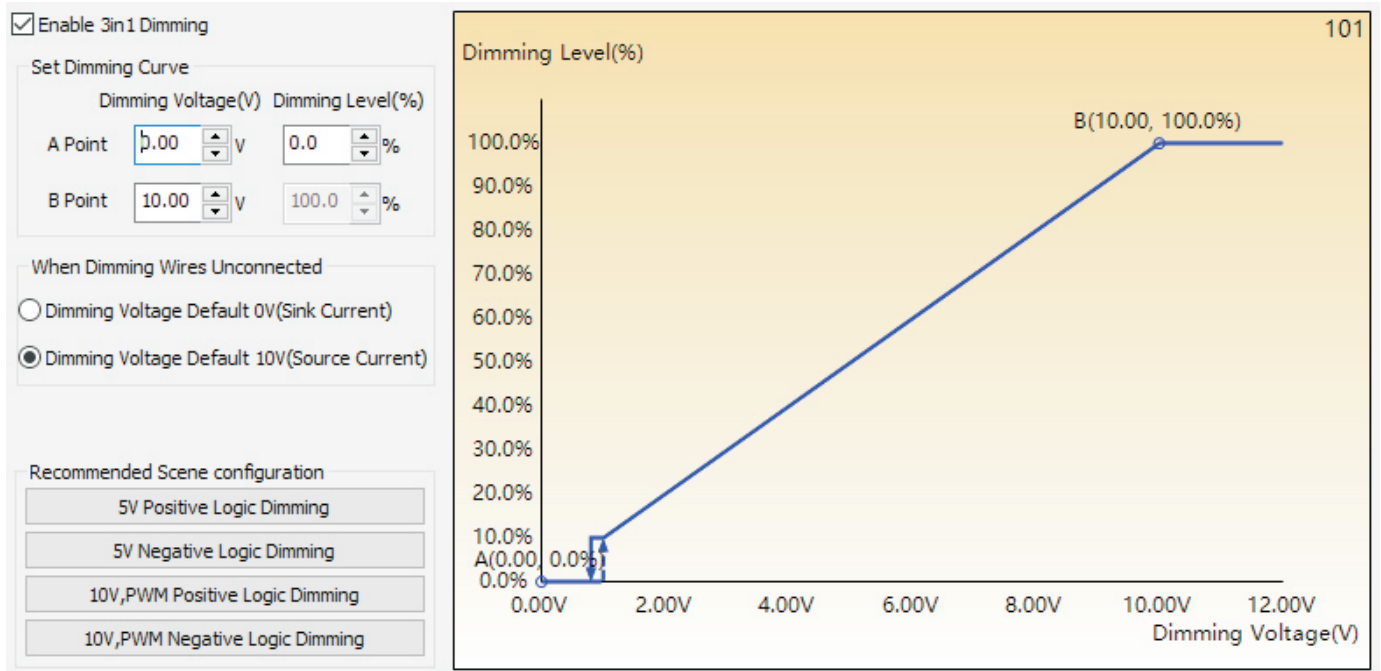
# SS-100GA-E Series LED Driver

Parameter			Remark
Default setting	Positive logic dimming (0-10V)	Dimming voltage default 10V (source current)	
	Negative logic dimming (10-0V)	Dimming voltage default 0V (sink current)	
Dimming optional function	Positive logic dimming (0-10V)	Dimming voltage default 0V (sink current)	When the dimming wire is not connected, the LED driver output is the minimum (to be noted in the order)
		Resistance dimming not available	For parallel dimming applications with multiple LED drivers, it is recommended to use the sink current mode (to be noted in the order)

**Note:**

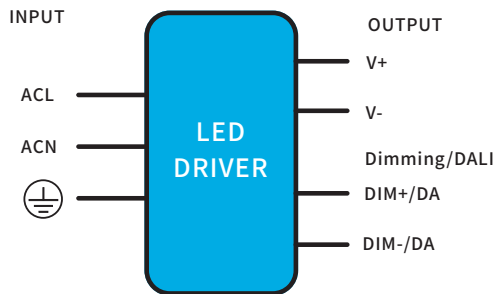
Select "Dimming voltage defaults to 10V (source current)" / "Dimming voltage defaults to 0V (sink current)", which needs to be set according to the dimmer used by the end user.

## Settings Interface



# SS-100GA-E Series LED Driver

## Mechanical Characteristics(B/D Model)



### AC Input Cable(Exposed Length $450 \pm 10\text{mm}$ ):

EU model: H05RN-F,  $3 \times 1.0\text{mm}^2$ , O.D:7.3mm, Brown:L, Blue:N, Yellow/Green:  $\oplus$

### DC Output Cable(Exposed Length $250 \pm 10\text{mm}$ ):

EU model: H05RN-F,  $2 \times 1.0\text{mm}^2$ , O.D:7.0mm, Brown:V+, Blue:V-

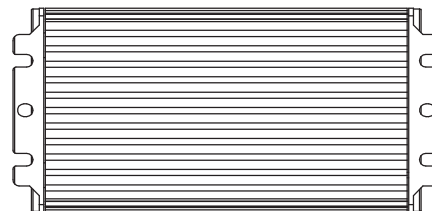
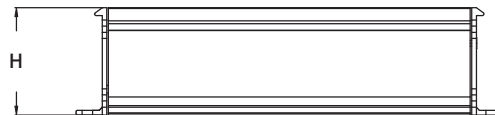
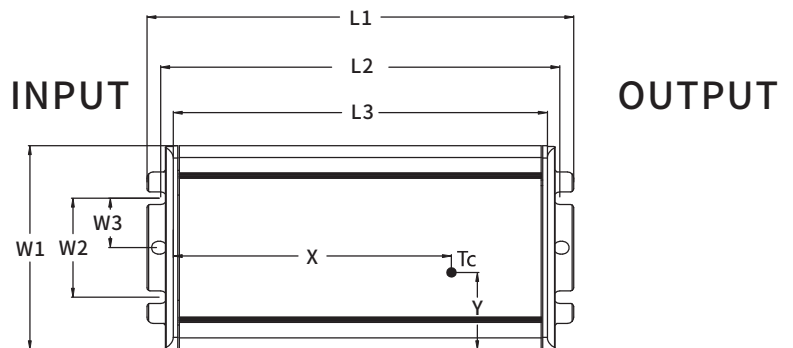
### DIM Cable(Exposed Length $220 \pm 10\text{mm}$ ):

UL model: STYLE 21996  $2 \times 22\text{AWG}$ , O.D: 4.9mm, Purple: DIM+/DA, Pink: DIM-/DA

Name Description	Standard Code	mm(In.)
Case Length	L3	121(4.76)
Case Width	W1	66(2.6)
Case Height	H	35.5(1.4)
Overall Length	L1	138(5.43)
Mounting Hole Length	L2	129(5.08)
Mounting Hole Width	W2	32(1.26)
TC Point Position	X	85(3.35)
TC Point Position	Y	40(1.57)

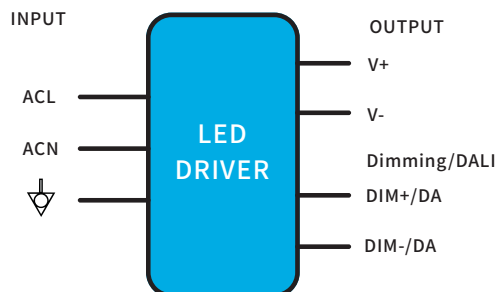
#### Note:

- Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.
- AC Input Cable, DC O/P Cable, DIM/AUX Power/Programming Cable:  
Peeled length of cable:  $43 \pm 5\text{mm}$ , Tinned length of wire:  $10 \pm 2\text{mm}$



# SS-100GA-E Series LED Driver

## Mechanical Characteristics(BE/DE Model)



### AC Input Cable(Exposed Length 450±10mm):

EU model: H05RN-F,3\*1.0mm<sup>2</sup>, O.D:7.3mm, Brown:L, Blue:N, Black:⏚  
 EU model: H05RN-F,2\*1.0mm<sup>2</sup>, O.D:7.0mm, Brown:L, Blue:N

### DC Output Cable(Exposed Length 250±10mm):

EU model: H05RN-F,2\*1.0mm<sup>2</sup>, O.D:7.0mm, Brown:V+, Blue:V-

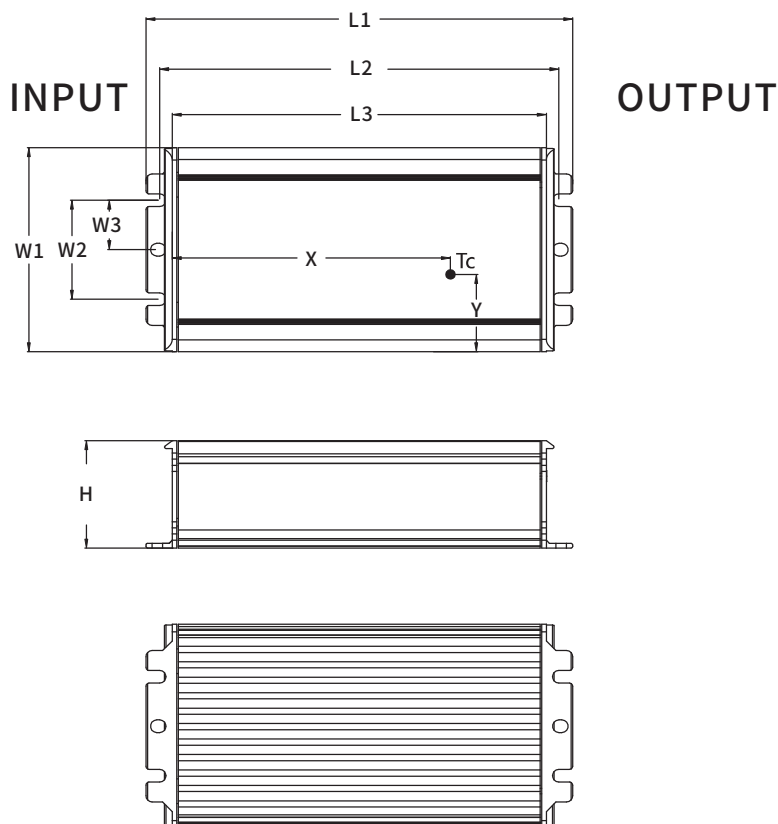
### DIM Cable(Exposed Length 220±10mm):

UL model: STYLE 21996 2\*22AWG, O.D: 4.9mm, Purple: DIM+/DA, Pink: DIM-/DA

Name Description	Standard Code	mm(In.)
Case Length	L3	121(4.76)
Case Width	W1	66(2.6)
Case Height	H	35.5(1.4)
Overall Length	L1	138(5.43)
Mounting Hole Length	L2	129(5.08)
Mounting Hole Width	W2	32(1.26)
TC Point Position	X	85(3.35)
TC Point Position	Y	40(1.57)

#### Note:

- Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.
- AC Input Cable,DC O/P Cable,DIM/AUX Power/Programming Cable:  
 Peeled length of cable:43±5mm, Tinned length of wire:10±2mm



# SS-100GA-E Series LED Driver



## Assembly Tips

1. Please take isolation and waterproof measures if the dimming cable is not in use.

## Package

- Outside carton dimension: L × W × H = 495mm × 385mm × 162mm;
- 14PCS/Carton;
- Net weight/Piece: 0.56kg; Gross weight/Carton: 9.1kg;
- Please refer to the product name, model number, manufacturer identification, QC PASS, manufacturing date on the package.

## Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be avoided direct sunlight and rain, loaded/unloaded with caution.

## Storage

The product storage meets the standard of the GB 3873—83.  
Products should be rechecked if stored for over 1 year before installation.

## RoHS

Products comply with RoHS Directive (2011/65/EU) and amendment 2015/863/EU.

## Revision History

Version	Description of Update	Updated Date	Remark
V00	Original Release	2023/10/08	
V01	Add Models	2024/02/29	