

SOSEN LED Driver, Your Smart Choice

Specifications

165W NFC Driver with DALI-2

Model: SS-165PA-XXD

Description: 165W NFC Driver
with DALI-2

Rev.: V00

Release Date: 2024-09-07

165W NFC Driver with DALI-2

SOSEN
LED DRIVER



LED DRIVER

PA Series



RoHS



Features:

- Efficiency up to 94%
- Adjusted Via NFC
- DALI-2 certified, Part 251,252,253
- Standby power consumption $\leq 0.5W$
- Surge Protection: CM: 10kV, DM: 6kV
- Timing/ELA/CLO
- Protections: UVP/SCP/OTP/OVP
- Suitable for Class I /II luminaires
- IP20
- Installation dimensions conform to Zhaga standards
- Warranty: 8 years

Description:

SS-165PA-XXD is 165W NFC intelligent LED driver .It can realize interconnection with intelligent lighting system to achieve fine control and management, as well as being compatible and connected with a wide variety of intelligent lighting systems and controllers. Our product has multiple intelligent functions, such as real-time adjustment of the power, brightness and color of the luminaires, supporting intelligent lighting scene settings and adjustments, as well as monitoring the status and faults of the luminaires, and carry out remote management and maintenance, etc. In addition, it also has a full range of protection mechanism, highly efficient electrical power conversion and consistent output performance, which can provide stable, safe and reliable power supply support for LED luminaires.

Application:

Street lights, tunnel lights, sports lights.

Model List:

Model	Input Range	Max. Pout	Vout Range	Full Power Vo Range	Iout	Default Current	THD(Typ.)	PF(Typ.)	Eff.(Typ.)	Max.Tc
SS-165PA-157D	198-264Vac	165W	54-157V	110-157V	0.2-1.5A	1.05A	6%	0.98	93.5%	90°C
SS-165PA-236D	198-264Vac	165W	79-236V	157-236V	0.2-1.05A	0.7A	6%	0.98	94%	90°C
SS-165PA-367D	198-264Vac	165W	118-367V	236-367V	0.2-0.7A	0.7A	6%	0.98	94%	90°C

Note:

1.Default Tested: at 230Vac, 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;

165W NFC Driver with DALI-2

Input Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Rated AC Input Range	220Vac		240Vac	
Input AC Voltage Range	198Vac		264Vac	
Input DC Voltage Range	200Vdc		280Vdc	
Input Frequency Range	47Hz	50/60Hz	63Hz	
Max Input Current			1.0A	198Vac, Full load
Max Inrush Current(230Vac)			40A	Cold start
Standby Power			0.5W	230Vac/50Hz, Dim to off
Power Factor	0.96	0.98		230Vac/50Hz, Full load
	0.9			220-240Vac/50Hz, 30-100% load
THD		6%	8%	230Vac/50Hz, Full load
			20%	220-240Vac/50Hz, 30-100% load

165W NFC Driver with DALI-2

O/P Characteristics(SS-165PA-157D):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	54V		157V	
Rated O/P Voltage	110V		157V	Po=Vo*Io=165W, Full load
Rated O/P Current	1.05A		1.5A	1.5A for 110V,1.05A for 157V
Adj. O/P Current (AOC)Range	0.2A		1.5A	Output current can be adjusted by NFC
No Load Voltage			250V	
Efficiency @230Vac	91.5%	93.5%		O/P 157V/1.05A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Output P _{stLM}			1	Full load
Output SVM			0.4	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.7S	230Vac, Full load
Line Regulation	-1%		+1%	
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.05%/°C		+0.05%/°C	Tc:0°C~90°C
OTP	90°C	93°C	96°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged, CC mode

165W NFC Driver with DALI-2

O/P Characteristics(SS-165PA-236D):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	79V		236V	
Rated O/P Voltage	157V		236V	Po=Vo*Io=165W, Full load
Rated O/P Current	0.7A		1.05A	1.05A for 157V, 0.7A for 236V
Adj. O/P Current (AOC) Range	0.2A		1.05A	Output current can be adjusted by NFC
No Load Voltage			300V	
Efficiency @230Vac	92.0%	94.0%		O/P 236V/0.7A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Output P _{stLM}			1	Full load
Output SVM			0.4	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.7S	230Vac, Full load
Line Regulation	-1%		+1%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.05%/°C		+0.05%/°C	Tc:0°C~90°C
OTP	90°C	93°C	96°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged, CC mode

165W NFC Driver with DALI-2

O/P Characteristics(SS-165PA-367D):

Parameter	Min.	Typ.	Max.	Remark
O/P Voltage Range	118V		367V	
Rated O/P Voltage	236V		367V	Po=Vo*Io=165W, Full load
Rated O/P Current	0.45A		0.7A	0.7A for 236V,0.45A for 367V
Adj. O/P Current (AOC)Range	0.2A		0.7A	Output current can be adjusted by NFC
No Load Voltage			400V	
Efficiency @230Vac	92.0%	94.0%		O/P 367V/0.45A
O/P Current Tolerance	-5%		+5%	
O/P Current Ripple(PK-AV)		5%	10%	Full load
Output P _{stLM}			1	Full load
Output SVM			0.4	Full load
Start-up Current Overshoot			10%	Full load
Start-up Time			0.7S	230Vac, Full load
Line Regulation	-1%		+1%	Full load
Load Regulation	-2%		+2%	
Temperature Coefficient	-0.05%/°C		+0.05%/°C	Tc:0°C~90°C
OTP	90°C	93°C	96°C	Drop current when OTP, and it can be automatically restored after the abnormality is removed.
Short Circuit Protection				Driver will not be damaged, CC mode

165W NFC Driver with DALI-2

Dimming Characteristics:

Parameter		Min.	Typ.	Max.	Remark
DALI-2	DA, DA High Level	9.5V	16V	22.5V	
	DA, DA Low Level	-6.5V	0V	6.5V	
	DA, DA Current	0mA		2mA	
Dimming Output Range	SS-165PA-367D	10%loset		loset	$450\text{mA} \leq \text{loset} \leq 700\text{mA}$
	SS-165PA-236D				$700\text{mA} \leq \text{loset} \leq 1050\text{mA}$
	SS-165PA-157D				$1050\text{mA} \leq \text{loset} \leq 1500\text{mA}$
	SS-165PA-367D	45mA		loset	$45\text{mA} \leq \text{loset} \leq 450\text{mA}$
	SS-165PA-236D	70mA			$70\text{mA} \leq \text{loset} \leq 700\text{mA}$
	SS-165PA-157D	105mA			$105\text{mA} \leq \text{loset} \leq 1050\text{mA}$

165W NFC Driver with DALI-2

Other Characteristics:

Parameter	Min.	Typ.	Max.	Remark
Life Time($T_c \leq 80^\circ\text{C}$)	$\geq 100,000$ hours			80% load
MTBF	250,000 hours			230Vac, Full load, $T_a = 25^\circ\text{C}$ (MIL-HDBK-217F)
IP Grade	IP20			
T_c	90°C			
Warranty	8 years			$T_c: 80^\circ\text{C}$
Net Weight	933g			
Dimension	171mm*101mm*35mm			L x W x H

NOTE: 1, All the parameters above are tested $T_a 25^\circ\text{C}$ and LED load, unless specified.

165W NFC Driver with DALI-2

Environmental Requirements

Parameter	Min.	Typ.	Max.	Remark
Operating Temperature(Tcase)	-40℃	25℃	+90℃	
Storage Temperature	-40℃	25℃	+90℃	
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+A1:2021 EN 61347-2-13:2014+A1:2017 EN IEC 62384:2020	✓	
UKCA	EN 61347-1:2015/A1:2021 EN 61347-2-13:2014/A1:2017 EN 62493:2015/A1:2022	✓	
EAC	EN 61347-2-13:2014+A1:2017 EN61347-1:2015+A1:2021	✓	
CE	EN 61347-1:2015/A1:2021 EN 61347-2-13:2014/A1:2017 EN 62493:2015/A1:2022	✓	

EMI/EMS	Criterion	Remark
Conduction Emission	EN IEC 55015:2019/A11:2020	Class B
Radiation Emission	EN IEC 55015:2019/A11:2020	Class B
Harmonic Current Emissions	EN IEC 61000-3-2:2019/A1:2021	Class C
Surge	IEC/EN61000-4-5	DM: 6kV,CM: 8kV,Criterion B
	EN61547:2009	DM: 6kV,CM: 10kV,Criterion B

165W NFC Driver with DALI-2

Safety Test Items:

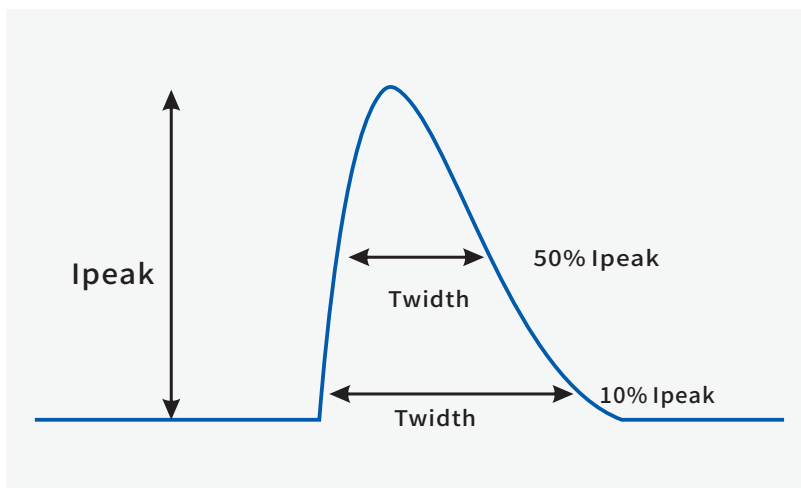
Safety Test Items	Technical Indicators	Remark
Insulation Requirements	ENEC Insulation Requirements	
Input-EQUI	4U+2000	Reinforced insulation
Input-Dim	4U+2000	Reinforced insulation
Dim-EQUI	2U+1000	Basic insulation
Insulation Resistance	$\geq 10\text{M}\Omega$	Input-Output, Test voltage: 500Vdc
Leakage Current	$\leq 0.7\text{mA}_{pk}$	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), (LED+ and LED-), (DA and DA) when Hi-pot test.

Performance Curves:

Input Inrush Current

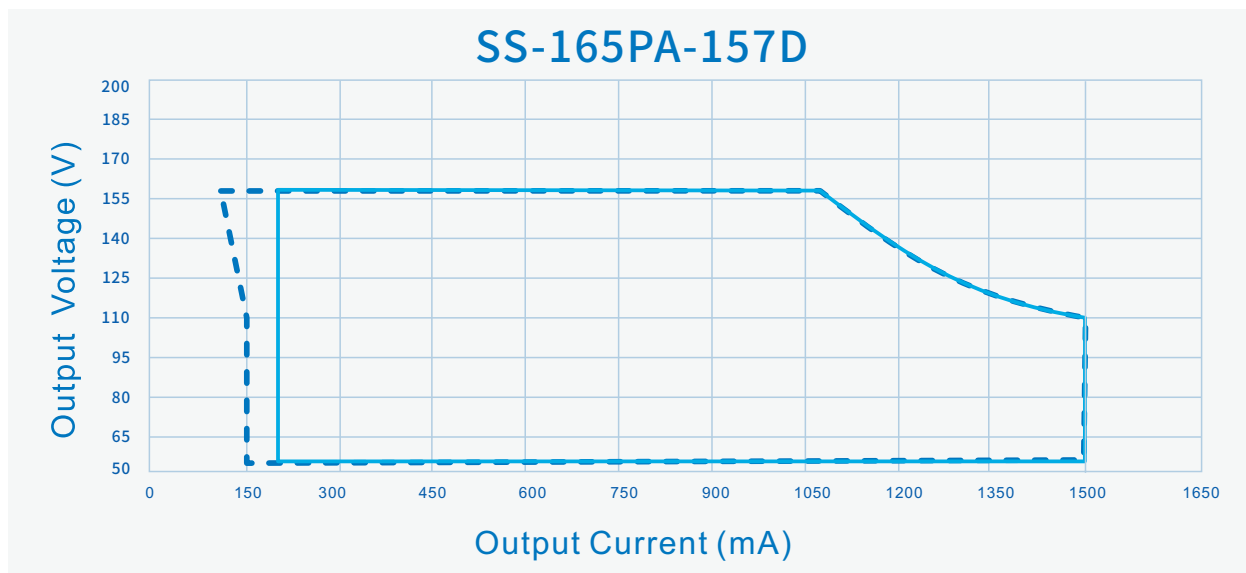


Vin	Ipeak	T(@50% of Ipeak)
230Vac	40A	0.55mS

165W NFC Driver with DALI-2

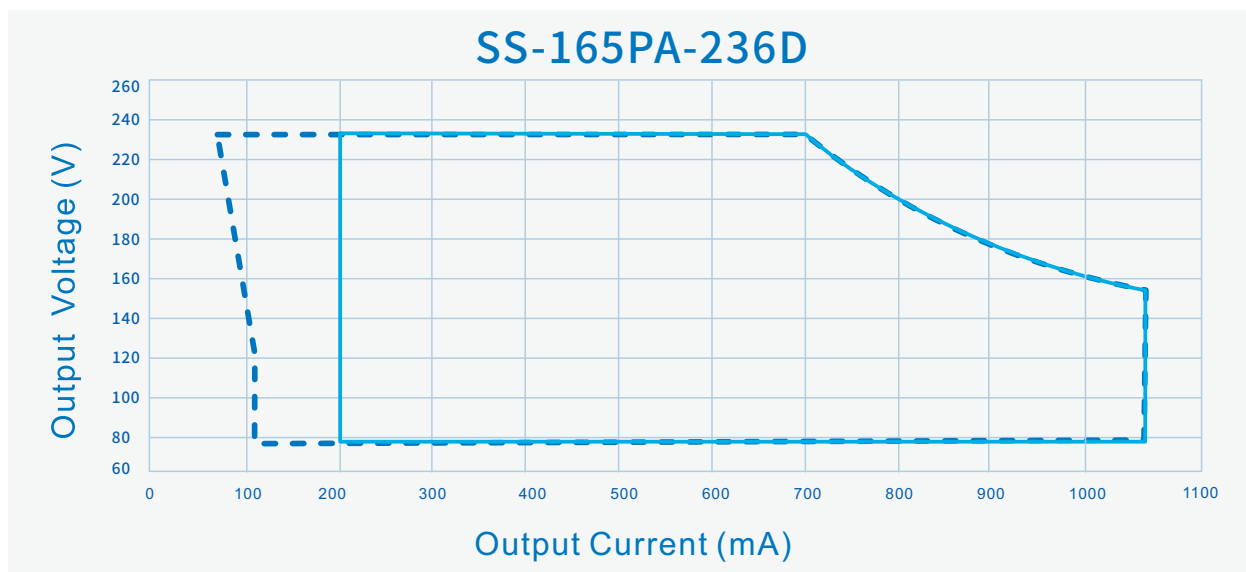
Performance Curves:

O/P Voltage Vs. O/P Current(Dim/AOC Window)



----- Dimming Window ————— AOC Window

O/P Voltage Vs. O/P Current(Dim/AOC Window)

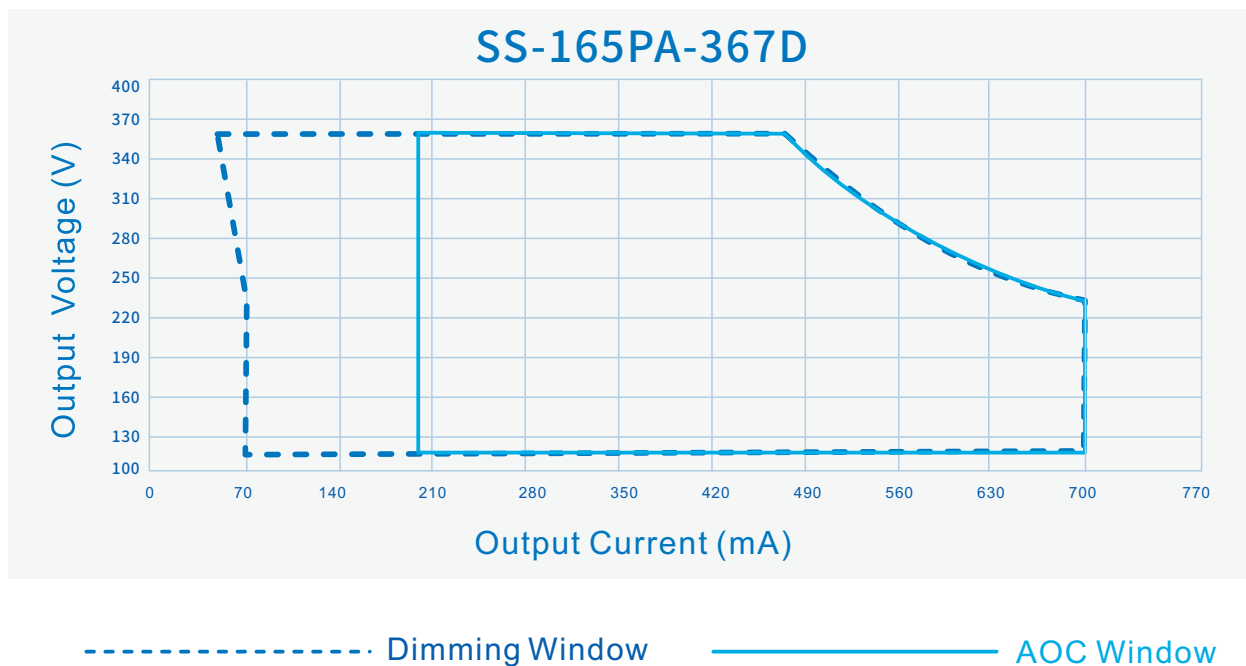


----- Dimming Window ————— AOC Window

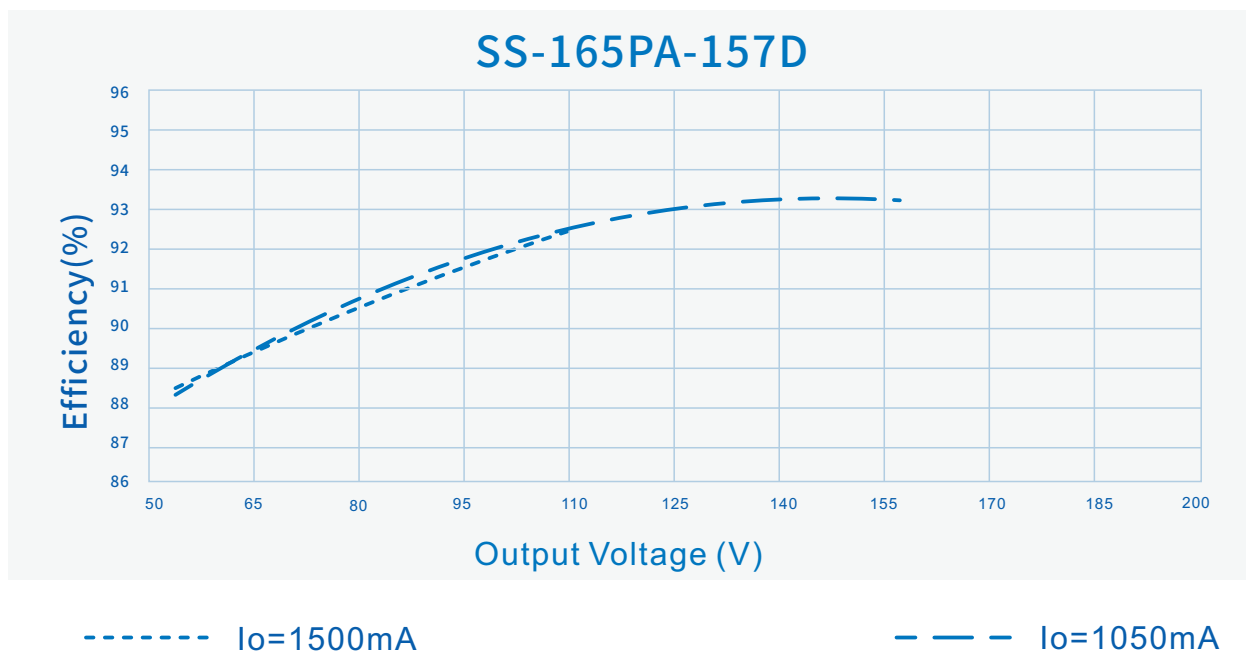
165W NFC Driver with DALI-2

Performance Curves:

O/P Voltage Vs. O/P Current(Dim/AOC Window)



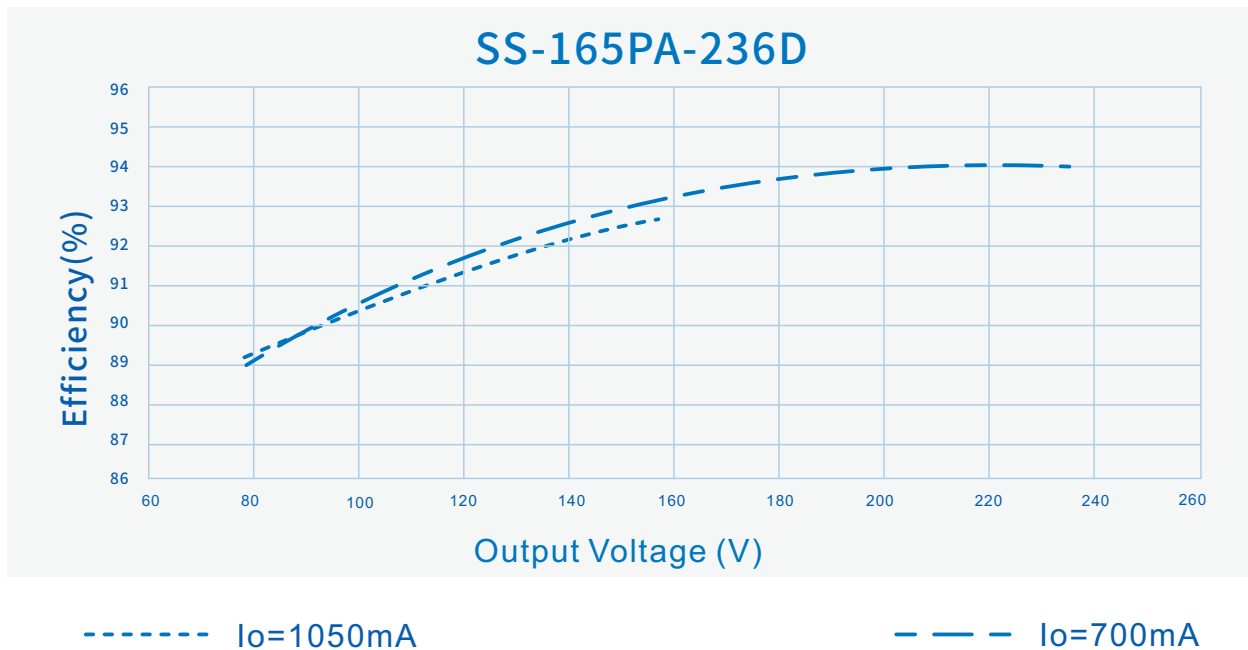
Efficiency Vs. O/P Voltage (Vin=230Vac)



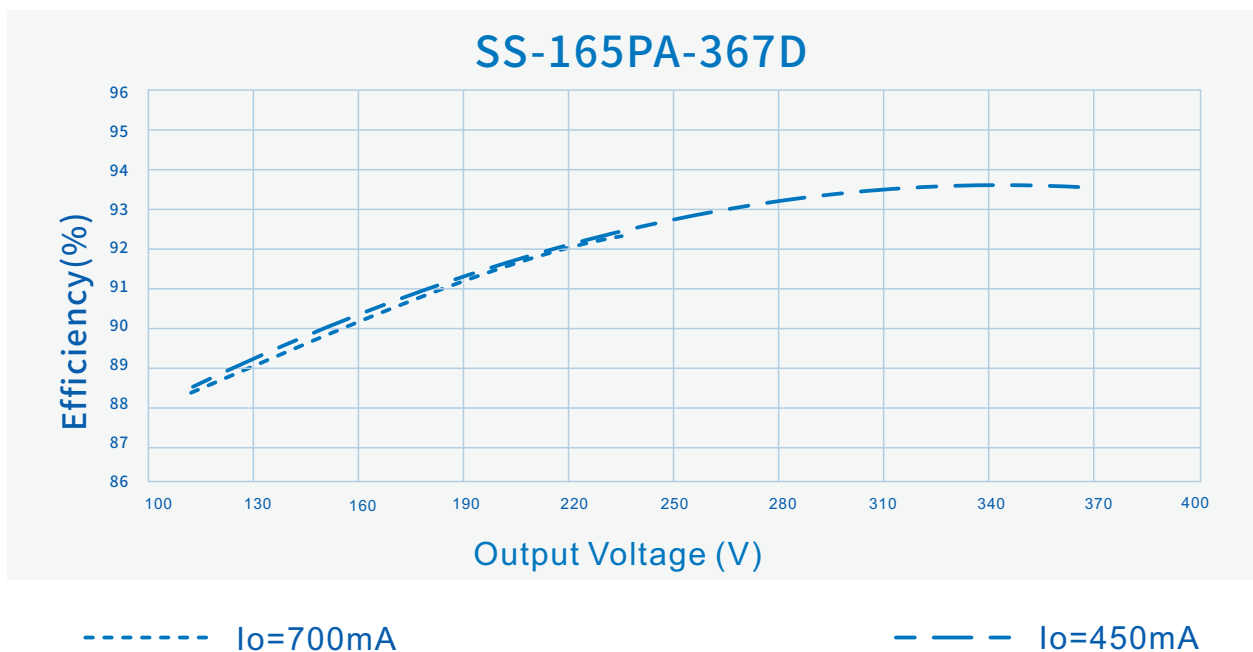
165W NFC Driver with DALI-2

Performance Curves:

Efficiency Vs. O/P Voltage ($V_{in}=230V_{ac}$)



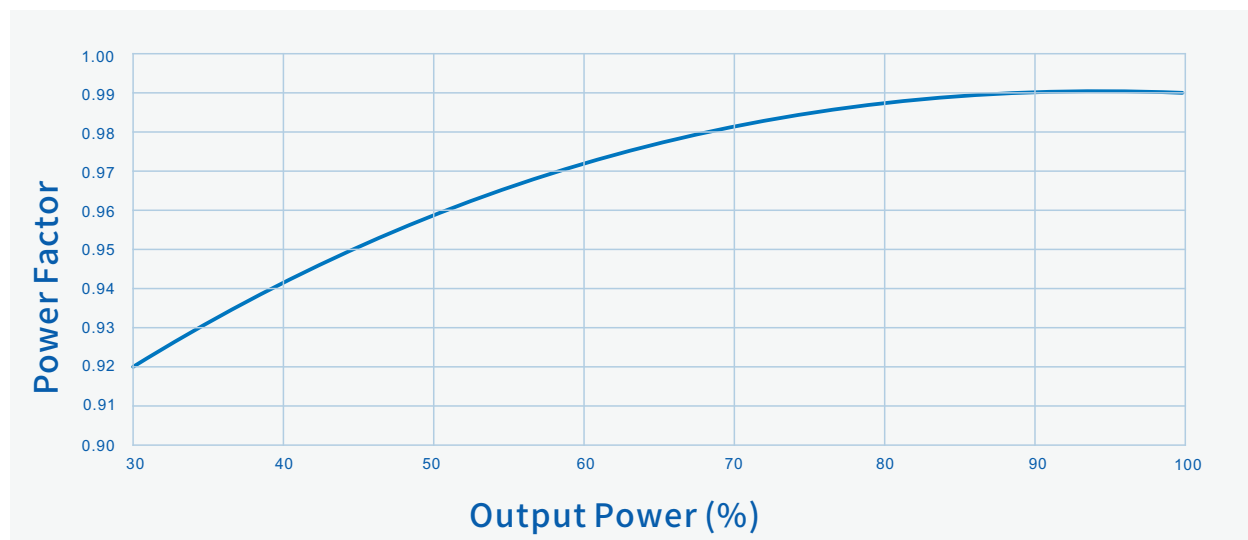
Efficiency Vs. O/P Voltage ($V_{in}=230V_{ac}$)



165W NFC Driver with DALI-2

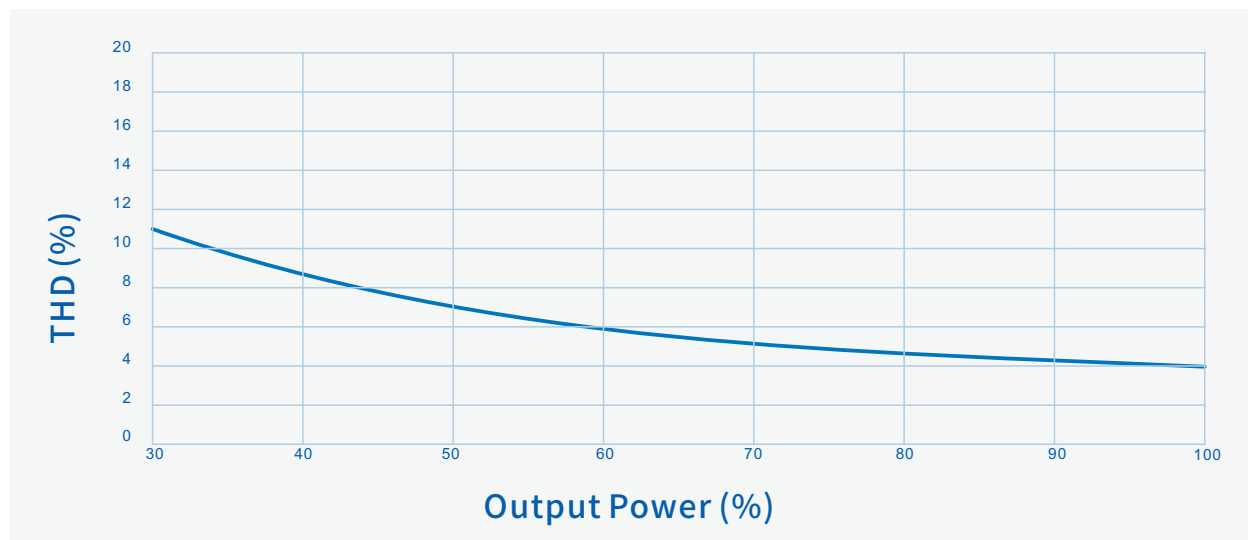
Performance Curves:

Power Factor Vs. O/P Power



Vin=230Vac

THD Vs. O/P Power

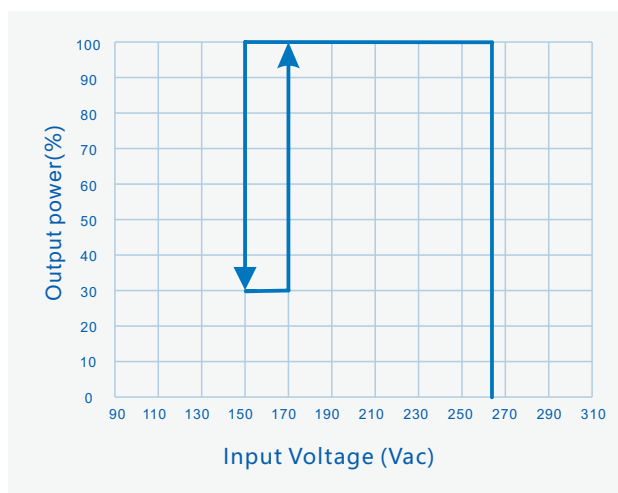


Vin=230Vac

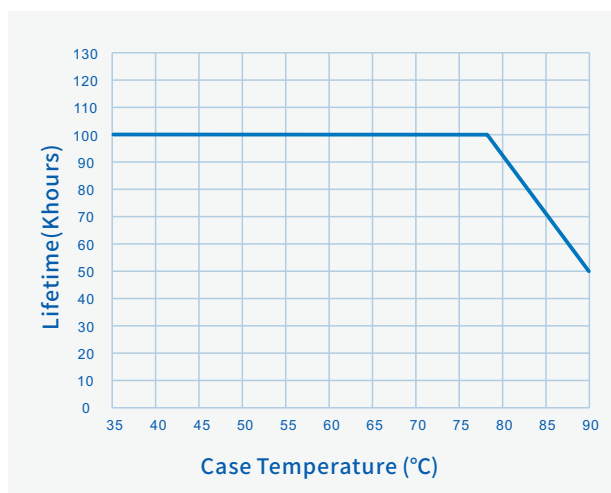
165W NFC Driver with DALI-2

Performance Curves:

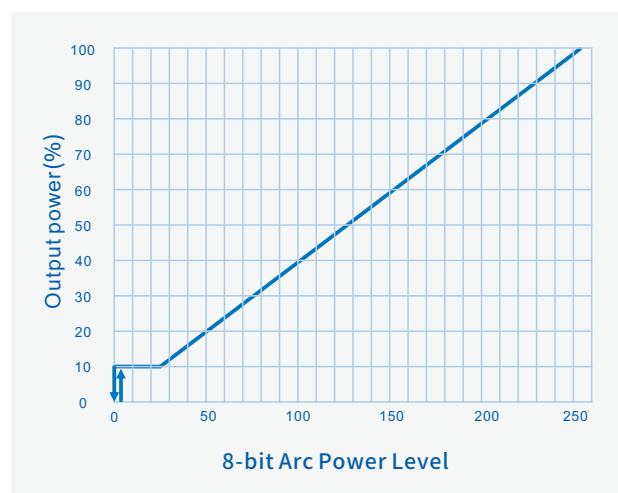
Input under voltage protection curve



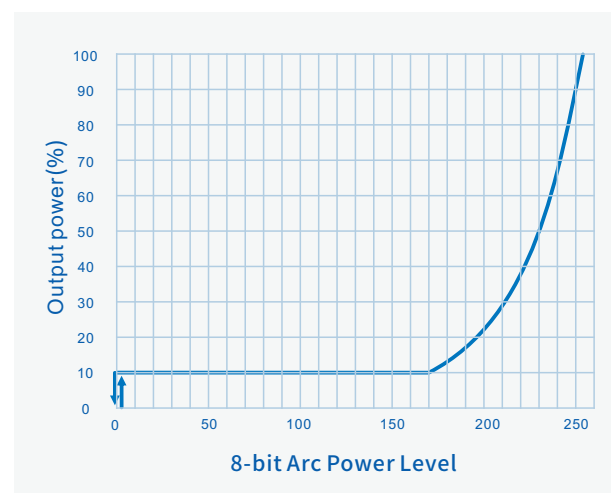
Lifetime Vs. Case Temperature



Linear Dimming Curve



Logarithmic Dimming Curve



165W NFC Driver with DALI-2

Timer Dimming:

Automatic conversion between DST and Standard Time. Traditional Timer Dimming, Self-Adapt-Midnight Timer, Self-Adapt-Percentage Timer. The time dimming percentage can be set by setting 8 curves.

Traditional timer: After power-on, it works according to the set timing curve (Increasing fade time allows for slow changes between different dimming levels, preventing sudden changes in brightness and causing dazzle)

Self Adapting-Midnight: Automatically save power-on times and use 2 valid timers to assume that the center point of the dimming curve is local midnight time.

Self Adapting-Percentage: Runs the initially set dimming curve according to an automatically calculated adaptive cycle time.

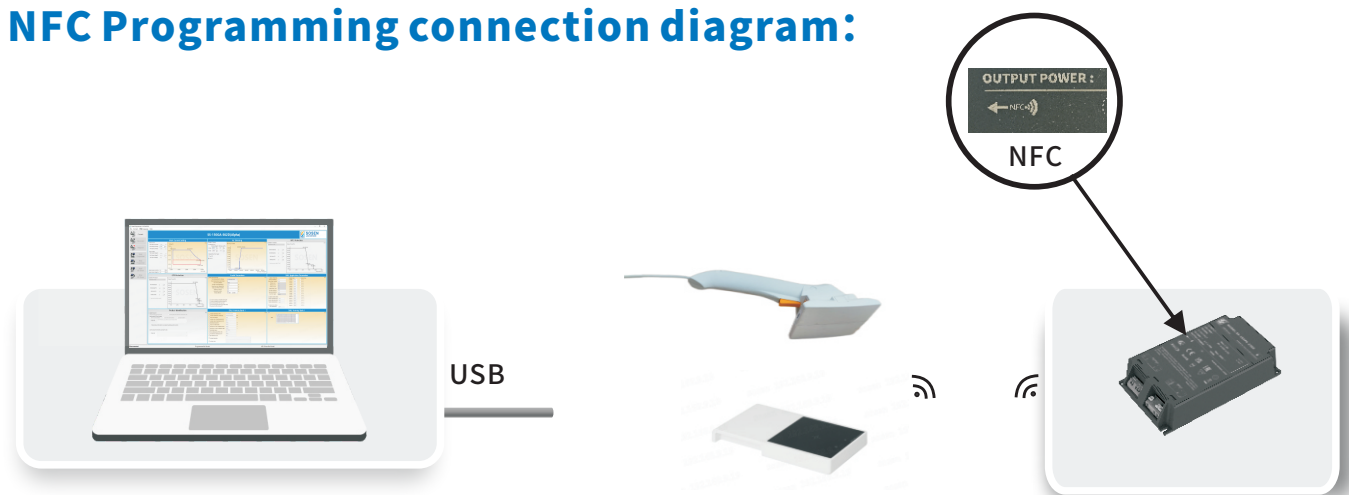
CLO Constant Lumen Output:

Light failure compensation function, in the Luminaire life cycle, by gradually increasing the output current, to achieve a constant output of LED luminous flux, the overall luminous effect remains unchanged.

ELA End-of-Life Alert:

By presetting a LED driver life time, such as 50KH, after the luminaire has accumulated 50KH of light-up time, every time the luminaire is powered on, it will blink 4 times to remind the user to replace the LED driver.

NFC Programming connection diagram:

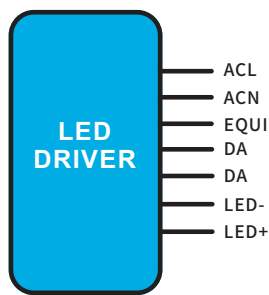


Note:

- 1.The drive is programmed not to powered on.
- 2.The NFC programmer needs to be aligned with the area indicated by the arrow.

165W NFC Driver with DALI-2

Mechanical Characteristics



AC Input Cable:

0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

DC O/P Cable:

0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

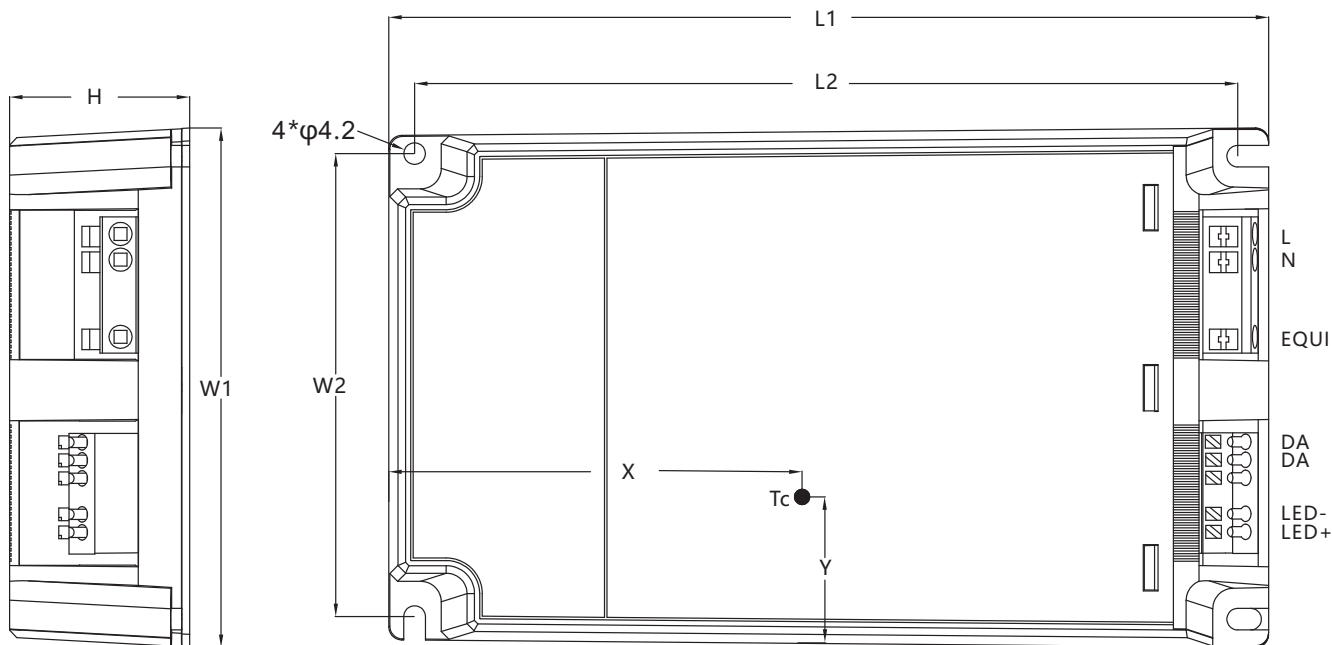
DIM Cable:

0.2-1.5mm²,16-24AWG,WAGO250(3.5mm),Solid/Stranded Wire
Strip length 8.5-9.5mm

Name Description	Standard Code	mm (In.)
Case Length	L1	171(6.73)
Mounting Hole Length	L2	160(6.3)
Case Width	W1	101(3.98)
Mounting HoleWidth	W2	90(3.54)
Case Height	H	36(1.42)
TC Point Position	X	77(3.03)
TC Point Position	Y	40(1.57)

Note:

1,Please follow the "LED Driver User Manual" obtained from SOSEN's official website for assembly.



165W NFC Driver with DALI-2



Package

- Outside carton dimension: $L \times W \times H = 445\text{mm} \times 225\text{mm} \times 145\text{mm}$;
- 12PCS/Carton;
- Net weight/Piece: 0.933kg; Gross weight/Carton: 12.2kg;
- 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 assembly.

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	2024/09/07	