MNC Series - 100W Non-isolated LED Driver

Product Features：

- Input voltage range: 90~305Vac;
- Constant current design;
- THD<10%;
- 3-in-1 dimmable: 0~10Vdc, PWM, Resistor;
- Output current adjustable by potentiometer;
- Output and Dimming Signal Isolating;
- Surge protection:4KV line-line, 6KV line-earth;
- Protections: Output OVP, SCP; OTP;
- IP65 design for indoor and outdoor applications;
- Suitable for dry / damp / wet locations;
- 5 years warranty.

Application:

- Suitable for LED roadway lighting, plant lighting, industrial lighting, landscape lighting, etc.

DESCRIPTION

The MNC-100 series is a 100W non-isolated constant-current, IP65 LED driver that operates from 90-305Vac input with excellent power factor and low THD. It is created for industrial lights, tunnel and street lights. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, output over temperature,and short circuit.

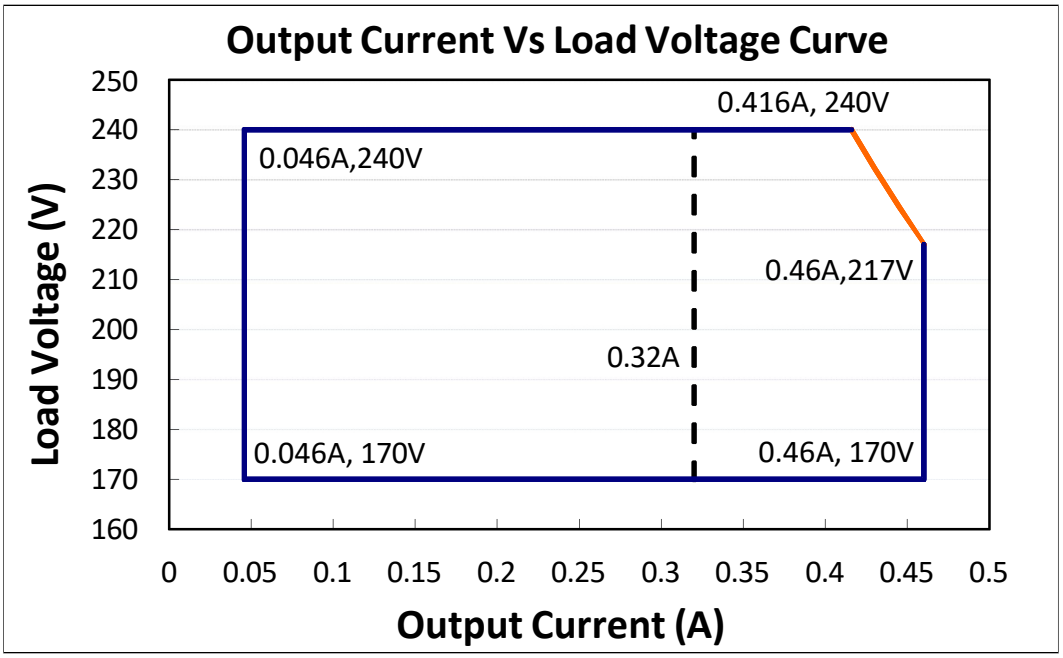
MODELS

Model Number	Input voltage range(Vac)	Max Output Power (W)	Output Voltage Range (Vdc)	Default Output	Typical Efficiency	Typical THD	Typical PF	
							115Vac	230Vac
MNC-100X240	90-305	100	170-240	170-217V/0.46A	94%	10%	0.99	0.97

Notes:

1. X can be M or V, X=M means dimmable. X=V means non-dimmable.
2. All specifications are measured at 25℃ ambient temperature, input voltage 230Vac, and the typical value tested by full load, if no specific note.

OPERA TING AREA I-V



Note: At full range output voltage, the maximum power output is 100W, output current setting suitable for the right area of the dotted line.

INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	100-277Vac	305Vac	
Input Frequency	47Hz	50/60	63Hz	
Leakage Current	-	-	0.75mA	277Vac/60Hz
Input AC Current	-	-	1.5A	100-277Vac &full load
Inrush Current	-	-	100A	230Vac input, Ta＝25℃（cold start）
Power Factor	0.97	0.99	-	115Vac, 50-60Hz,full load
	0.95	0.97		230Vac, 50-60Hz, full load
	0.92	0.94		277Vac, 50-60Hz, full load
THD	-	10%	15%	115-230Vac,50-60Hz, 60%-100% load
	-	15%	20%	277Vac, 50-60Hz, 60%-100% load

Max. NO. of PSUs on Circuit Breaker							230Vac 100% load
	B10	3	B16	4	B25	6	
	C10	4	C16	7	C25	11	

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%		+8%	Iset=0.46A
Output current set range(A)	0.32		0.46	
Total Output Current Ripple(pk-pk)	-	-	20%	20MHz BW, full load& LED load, the ripple would be tiny different under different LED load.
Startup Overshoot Current	-	-	10%	100~277Vac &100% Load, load is LED
No Load Output Voltage(V)	-	290	320	
Line Regulation	-1%	-	+1%	25°C±10°C ambient temperature, input voltage changes from 100Vac to277Vac.
Load Regulation	-3%	-	+3%	25°C±10°Cambient temperature, Input Voltage 230Vac, load changes from 80% to 100%.
Turn-on Delay Time	-	1S	3S	115Vac,100% load
	-	1S	2S	230Vac,100% load

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Notes
Efficiency @115Vac		90%	92%		Measured at full load and 25°Cambient temperature
Efficiency @230Vac		92%	94%		Measured at full load and 25°Cambient temperature
Efficiency @277Vac		92%	94%		Measured at full load and 25°Cambient temperature
Dielectric Strength	Input-PE	-	1650Vac	-	10mA/60S
	Output- PE	-	1650Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S, under 25°C±10°C ambient temperature
Insulation Resistance		10MΩ	-	-	Input- Output,Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF		-	200000Hrs	-	25°C±10°Cambient temperature, 230Vac,80% load (MIL-HDBK-217F)
Lifetime		-	50000Hrs	-	230Vac&100% load, 75°C case temperature, refer to lifetime curve for details
Operating Case Temperature for Safety Tc_s		-40°C	-	+90°C	
Ambient Temperature		-40°C	-	+55°C	230Vac&100% load
Operating Case Temperature for Warranty Tc_s		-40°C	-	+75°C	5 years warranty case temperature Humidity: 10% to 95% RH
Storage Temperature		-40°C	-	+85°C	Humidity: 5% to 100% RH
Dimensions (L*W*H)mm		L138*W55*H37mm			
Net Weight		550±100g/PCS			
Package		L500*W310*H160mm; 10PCS/Ctn.			

DIMMING

Parameter		Min.	Typ.	Max.	Notes
0~10V Absolute Maximum Voltage on the Vdim (+) Pin		-	10V	20V	
0~10V Source Current on Vdim(+)Pin		-	1mA	2mA	
Dimming Output Range	MNC-100M240	10%Imax	-	100%Imax	
			-		
Recommended Dimming Range for 0-10V		0V	-	10V	Default 0-10V/ PWM Dimming
PWM_in High Level		9.7V	-	10.3V	
PWM_in Low Level		0V	-	0.3V	
PWM_in Frequency Range		300Hz		2KHz	
PWM_in Duty Cycle		1%	-	99%	

SAFTY STANDARDS

Safety Category	Country / Territory	Standards	Approved
CCC	China	GB19510.1, GB19510.14	√
CE	Europe	EN61347-1, EN61347-2-13	√
		EN62493	√
ENEC		EN62384	√
CB	CB Countries	IEC61347-1, IEC61347-2-13	√
BIS	India	IS 15885(PART 2/SEC 13)	
UL	USA	UL 8750	√
CUL	Canada	CSA C22.2 No.250.13	√
KC	South Korea	K61347-1, K61347-2-13	
PSE	Japan	J61347-1, J61347-2-13	
SAA	Australia	AS/NZS IEC 61347.2.13	√
		AS/NZS 61347.1	√

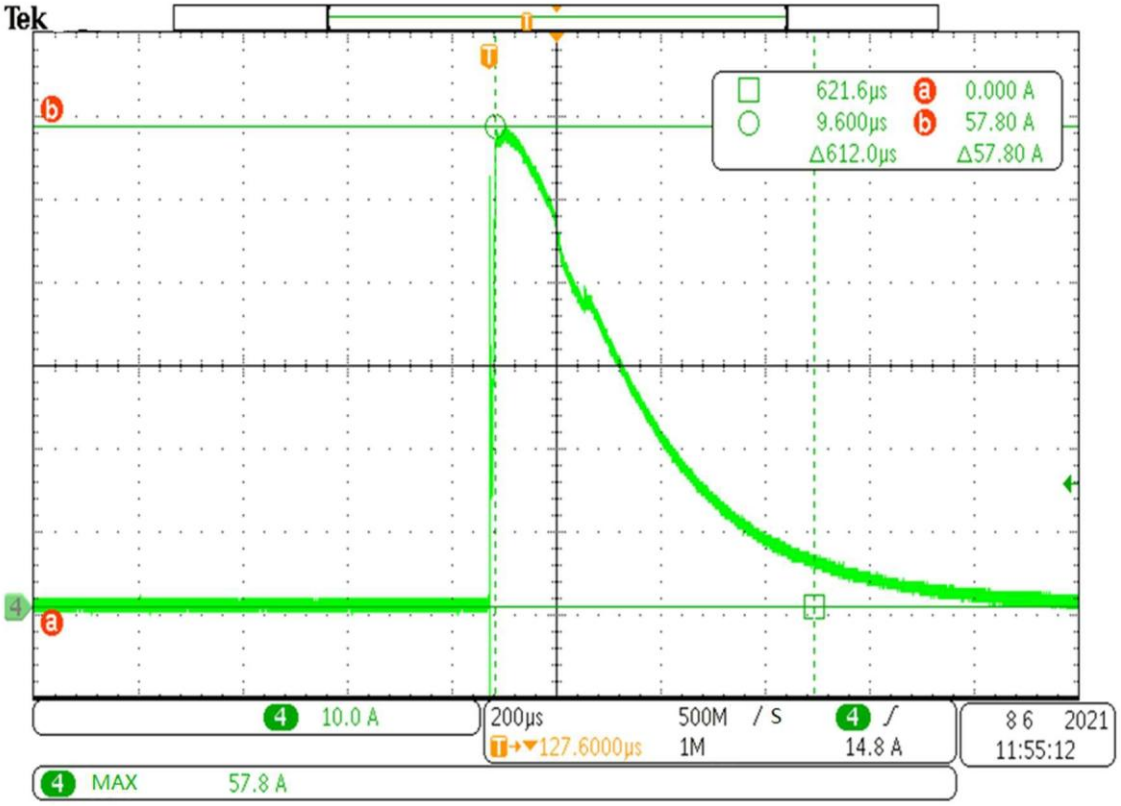
EMC COMPLIANCE

EMC Category	Country / Territory	Standards	Approved
CCC	China	GB/T 17743, GB 17625.1	√
CE	Europe	EN 55015	√
		EN 61000-3-2, EN 61000-3-3	√
		EN61000-4-2,3,4,5,6,11	√
		EN 61547	√
KC	South Korea	K61547	
		K00015	
PSE	Japan	J55015	
FCC	USA	FCC part 15	

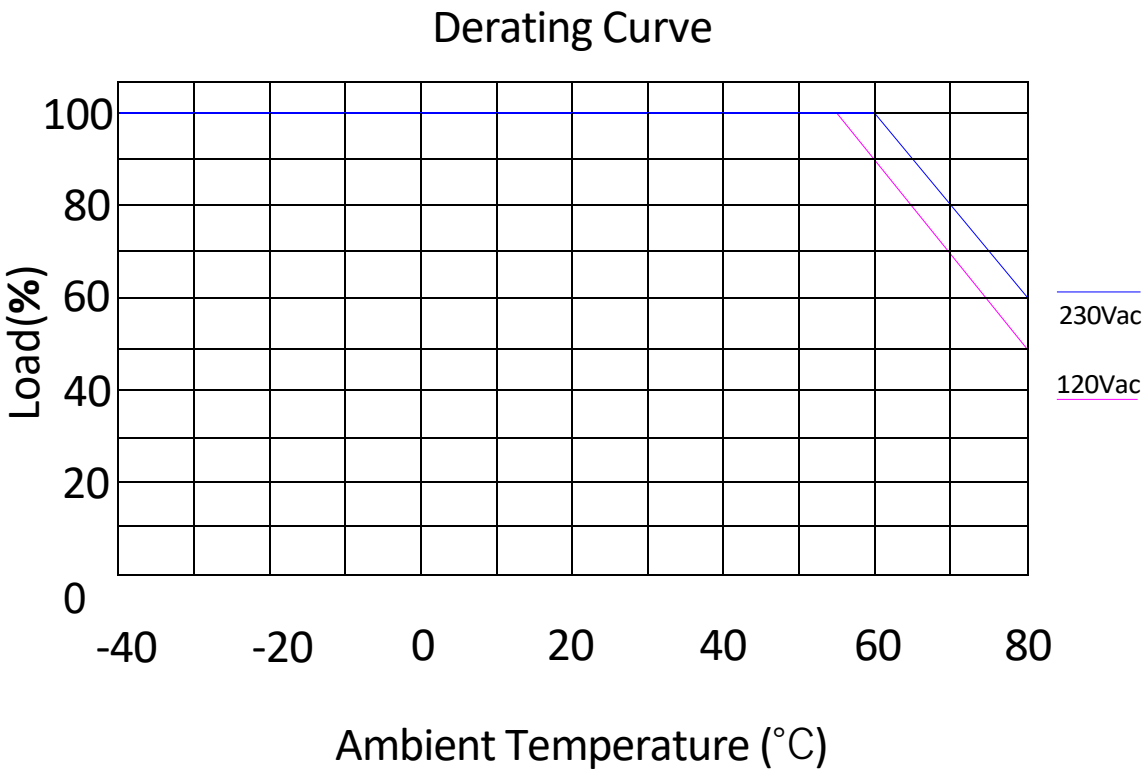
NOTE:

This LED driver meets the EMI specifications above, but as a component of a luminaire, end customer need to identify the EMI performance of a luminaire including LED driver, other devices connected to the driver and on the luminaire itself.

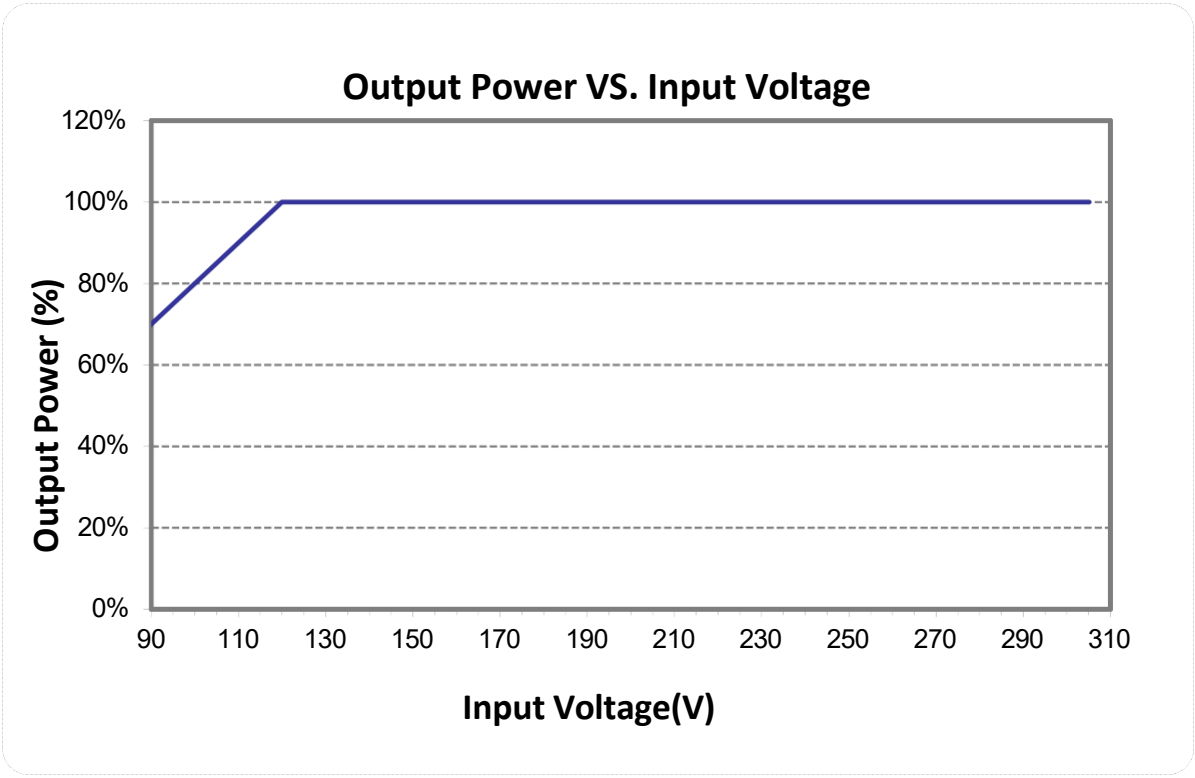
INRUSH CURRENT WAVEFORM



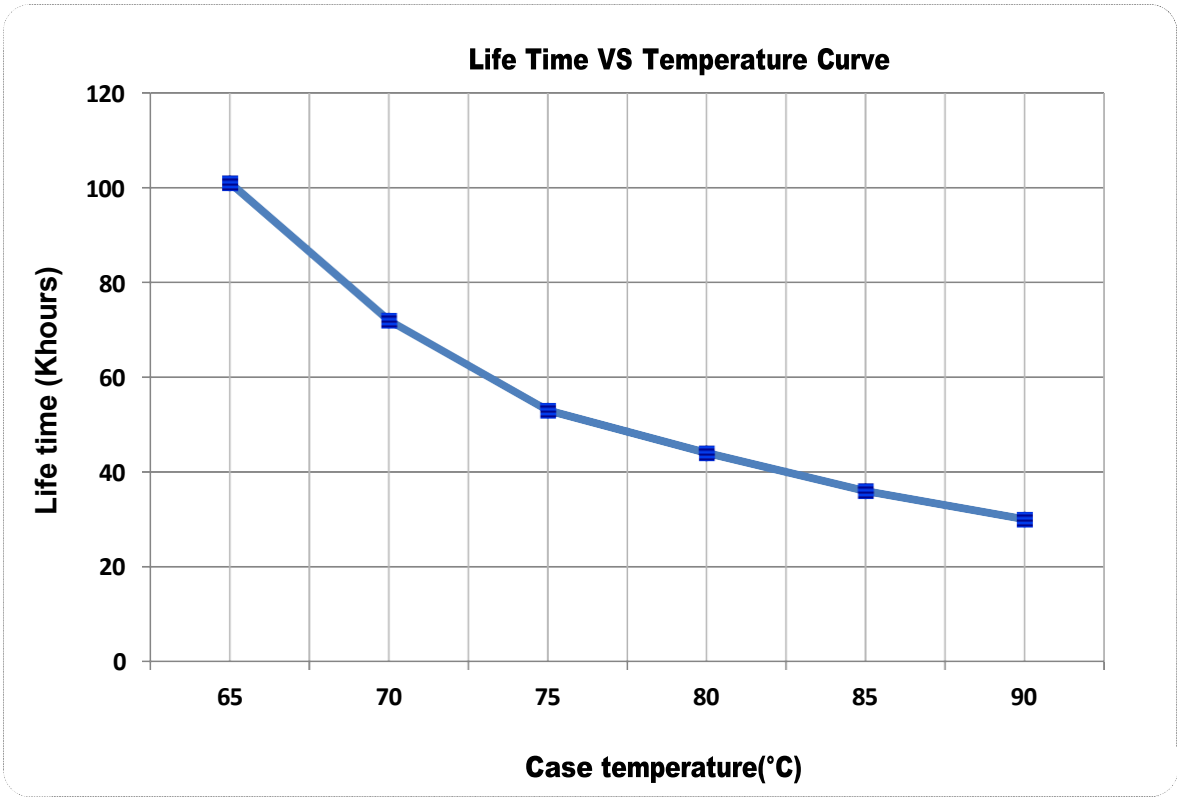
DERATING CURVE



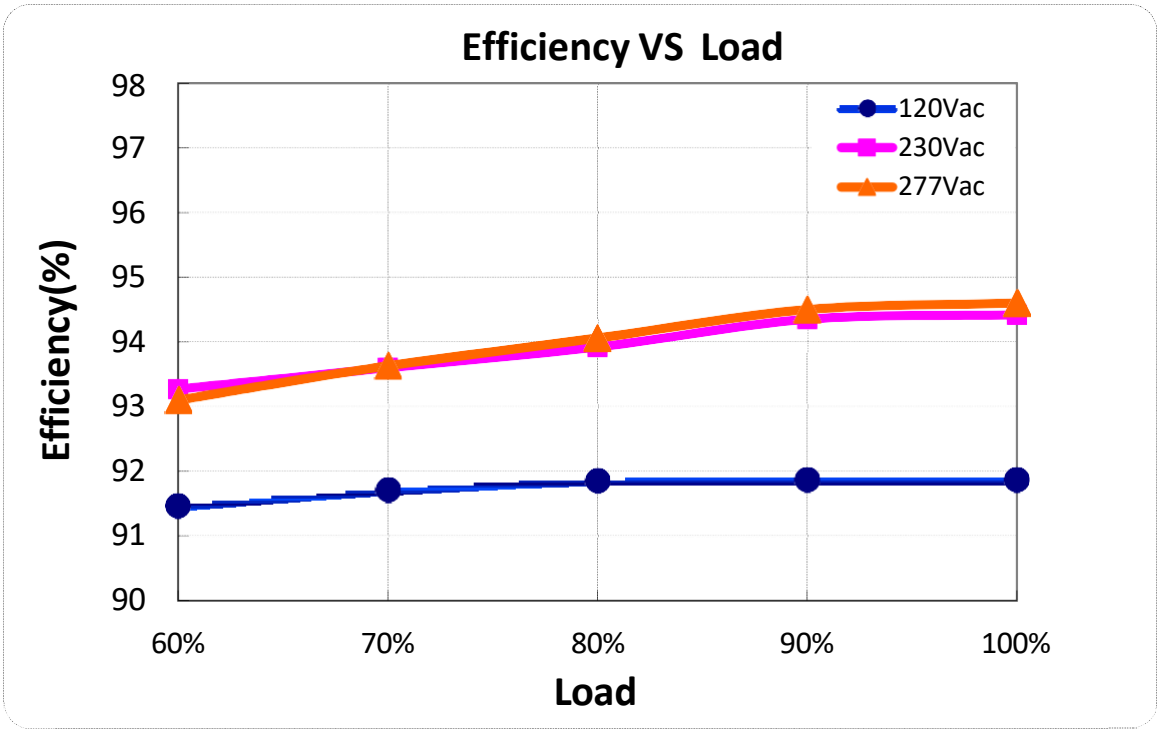
OUTPUT POWER VS INPUT VOLTAGE



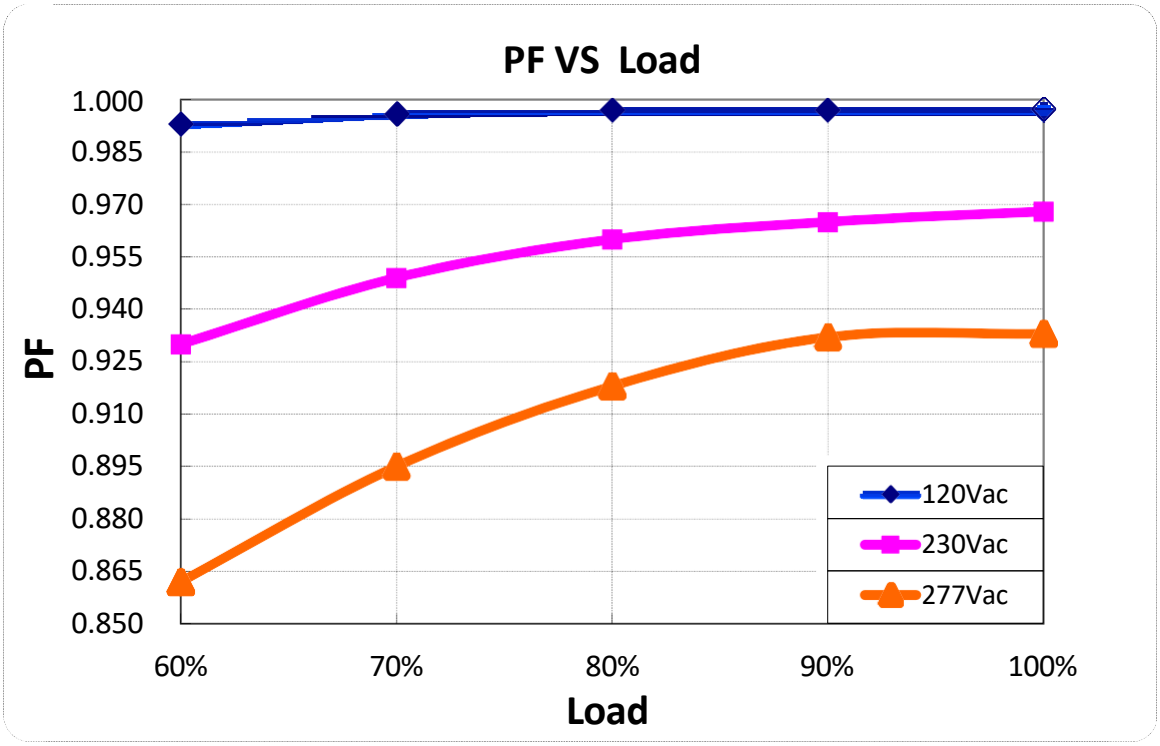
LIFETIME VS CASE TEMPERATURE



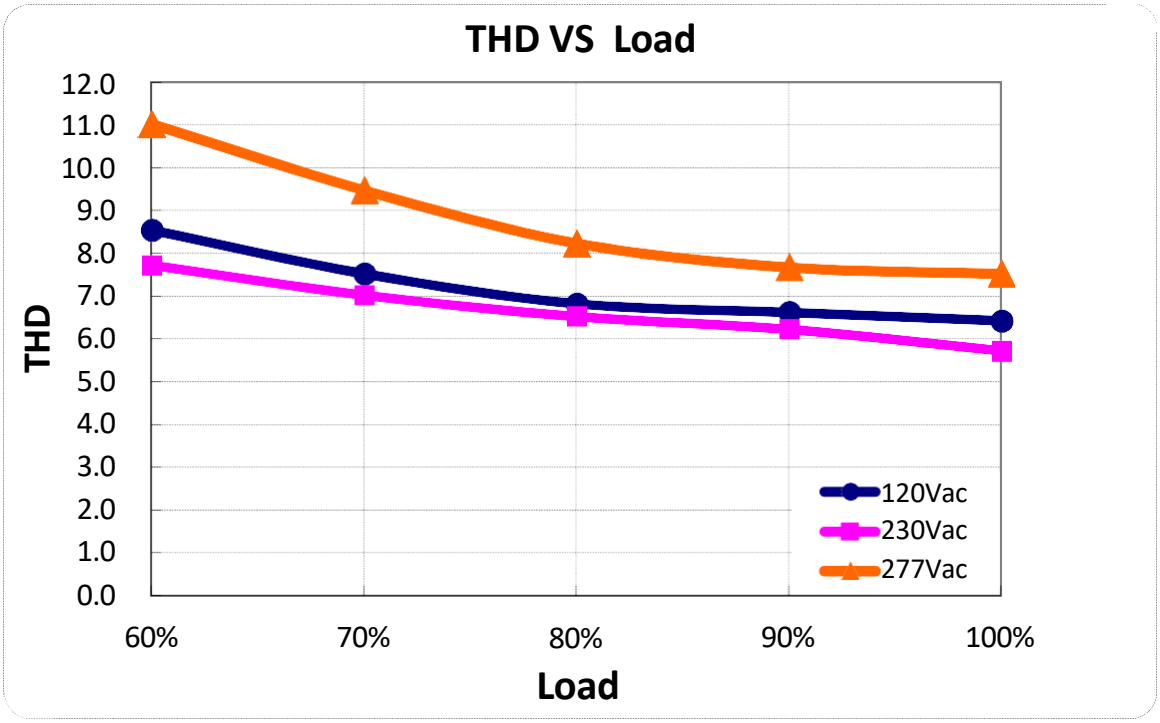
EFFICIENCY VS LOAD



POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION

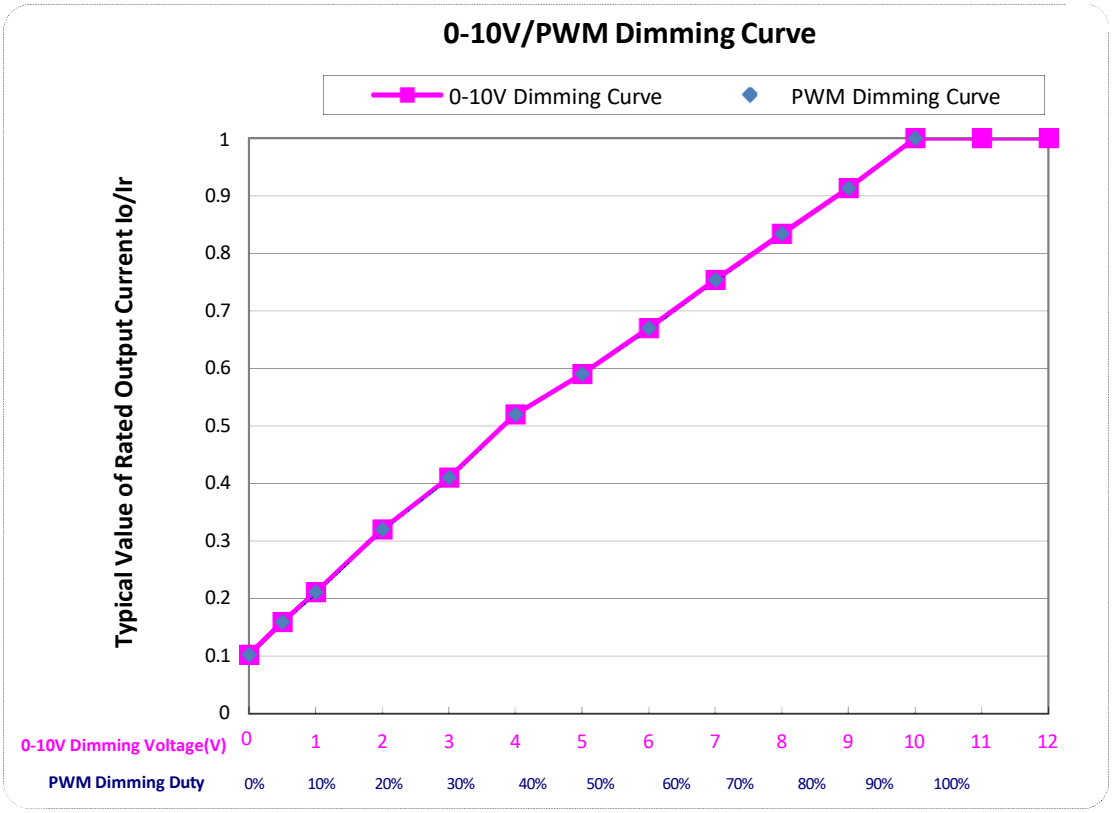


PROTECTIONS

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed, exclude auxiliary power supply.
Short Circuit Protection	Constant current and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.

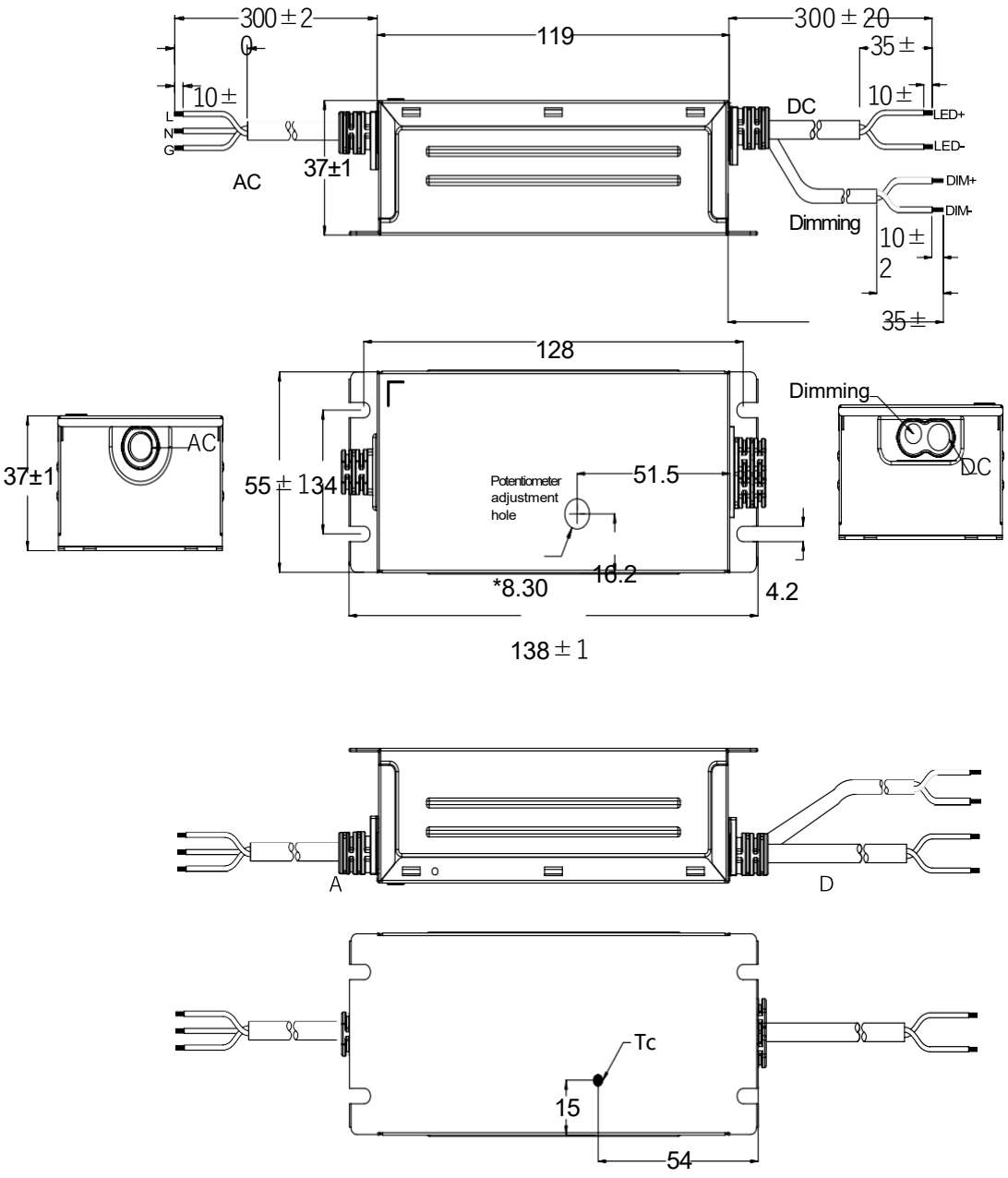
0-10V/PWM DIMMING

X=M

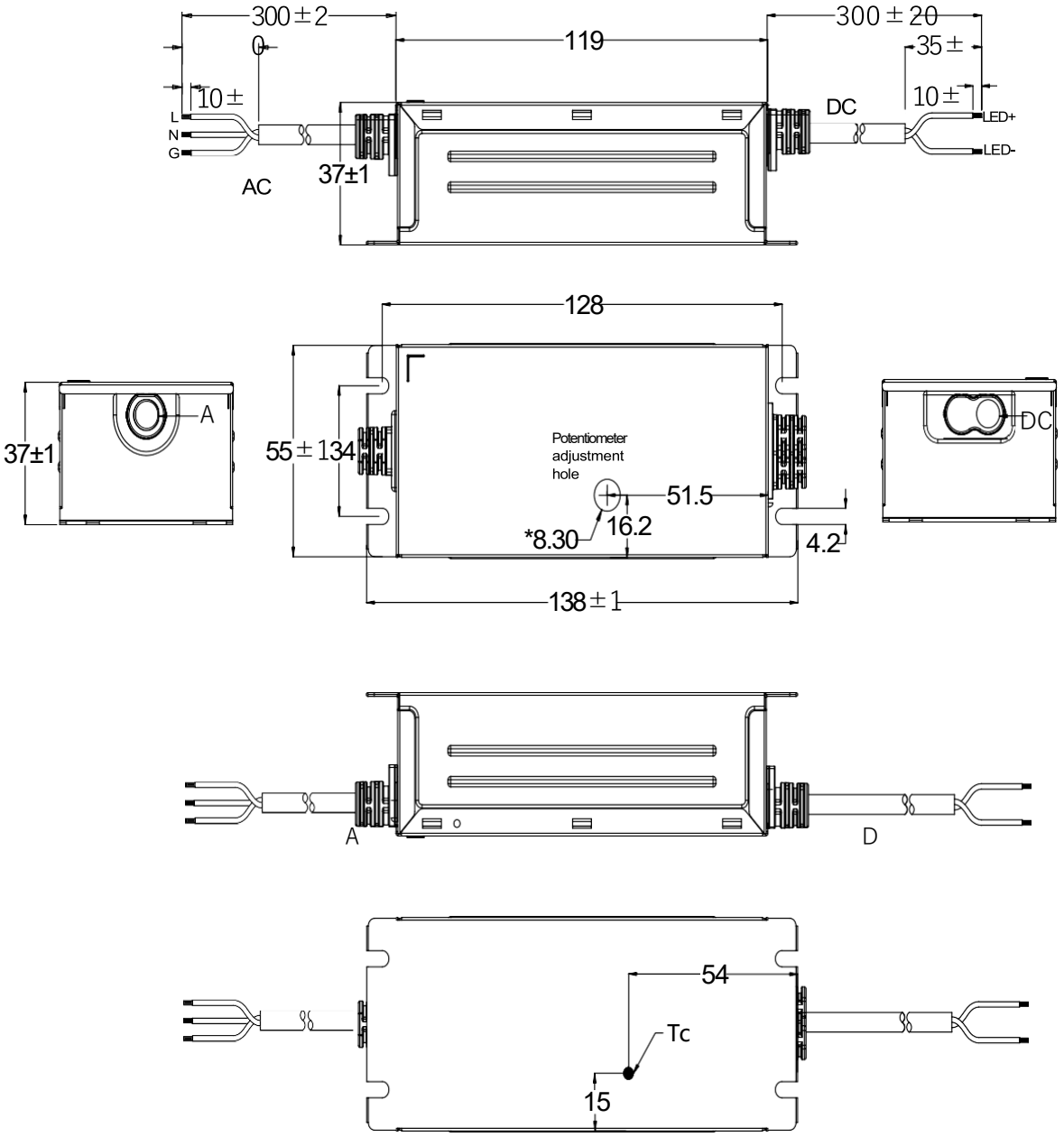


MECHANICAL OUTLINE

MNC-100M240



MNC-100V240



Wire	Specification	Note
Input	CCC+VDE H05RN-F 3x1.0mm^2 external diameter: 7.3mm L=300±20mm L:Brown, N:Blue, G:Yellow/Green	CCC/CE
	UL SJOW 3C*18AWG external diameter: 8.0mm L=300±20mm L:Black, N:White, G:Green	UL
Output	CCC+VDE H05RN-F 2x1.0mm^2 external diameter: 6.9mm L=300±20mm LED+:Brown, LED-:Blue	CCC/CE
	UL SJOW 2C*18AWG external diameter: 7.3mm L=300±20mm LED+:Red, LED-: Black	UL
Dimming	UL2733 22AWG*2C external diameter: 5.45mm L=250±20mm DIM+:Purple, DIM-:Pink	X=M