



Product Feature:

- ◆ Input Voltage: 90~305Vac;
- ◆ Offline programming through dimming wire;
- ◆ No stroboscopic;
- ◆ 0-10V, PWM dimming, dim-to-off;
- ◆ THD<10%;
- ◆ Surge protection: 4KV line-line, 6KV line-earth;
- ◆ Protection: Input OVP, Output OVP, SCP, OTP;
- ◆ IP67 design for indoor and outdoor applications;
- ◆ 5 years warranty.

Application

- ◆ LED street lighting, industrial lighting and landscape lighting.

DESCRIPTION

The PHC-060 is a 60W, constant-current, programming 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, input over voltage, output over voltage, short circuit, and over temperature.

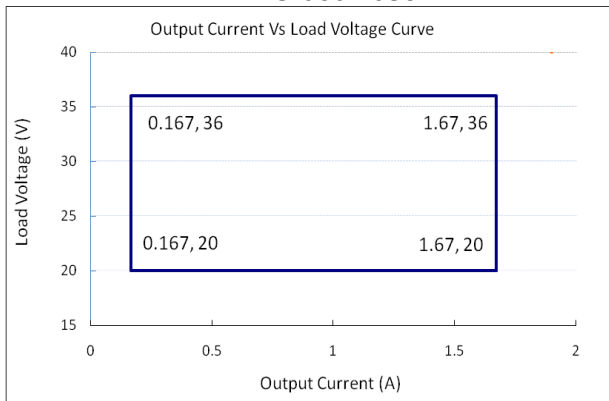
Models

Model Number	Max Output Power(W)	Output Voltage Range (Vdc)	Output Current Adjustable Range (A)	Default Output Setting	Typical Efficiency	Typical THD	Typical PF	
							120Vac	230Vac
PHC-060M036	60	20-36	0.167-1.67	20-36V/1.67A	86%	10%	0.99	0.97
PHC-060M062	60	30-62	0.097-0.97	30-62V/0.97	86%	10%	0.99	0.97

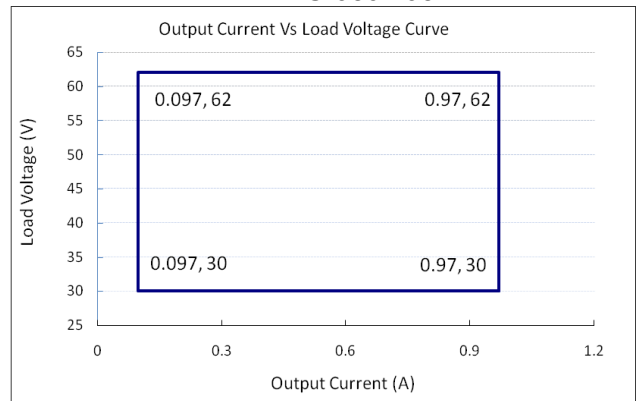
Remark: All parameters not specially mentioned are measured at 230Vac input, full load and 25°C of ambient temperature.

OPERATING AREA I-V

PHC-060M036



PHC-060M062



INPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90Vac	120-277Vac	305Vac	Please refer to the derating curve
Input Frequency	47Hz	50/60 Hz	63Hz	
Leakage Current	-	-	0.70mA	277Vac/60Hz
Input AC Current	-	-	0.80A	120-277Vac with full load
Inrush Current(I _{2t})	-	-	0.1A ² S	230Vac input, Ta=25℃ (cold start)
Power Factor	0.95	0.98	-	120Vac with full load
	0.94	0.97	-	230Vac with full load
THD	-	-	20%	120-277Vac with 70%-100% load
	-	10%	15%	120-230Vac with 80%-100% load

OUTPUT SPECIFICATIONS

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%	-	8%	
Output Current Setting Range (A)				
PHC-060M036	0.167	-	1.67	
PHC-060M062	0.097		0.97	
Total Output Current Ripple(pk-pk)	-	-	10%	20MHz BW, full load & LED Load, ripple is different with difference LED load.
Startup Overshoot Current	-	-	10%	120~277Vac & full load, LED Load
No Load Output Voltage				
PHC-060M036			70V	
PHC-060M062			100V	
Line Regulation	-	-	±5%	25°C±10°C ambient temperature, input voltage changes from 120Vac to 277Vac.
Load Regulation	-	-	±5%	25°C±10°C ambient temperature, 230Vac input, load changes from 60% to 100%.
Turn-on Delay Time	-	-	3S	120Vac, 100% load
	-	0.5S	1S	230Vac, 100% load

GENERAL SPECIFICATIONS

Parameter		Min.	Typ.	Max.	Notes
Efficiency @120Vac					Measured at full load and 25°C ambient temperature
PHC-060M036		84%	86%		
PHC-060M062		84%	86%		
Efficiency @230Vac					Measured at full load and 25°C ambient temperature
PHC-060M036		85%	86%		
PHC-060M062		84%	86%		
Efficiency @277Vac					Measured at full load and 25°C ambient temperature
PHC-060M036		85%	86%		
PHC-060M062		83%	85%		
Dielectric Strength	Input-Output	-	3750Vac	-	10mA/60S
	Input-PE	-	1600Vac	-	
	Output- PE	-	1600Vac	-	
Grounding Resistance		-	-	0.1Ω	25A/60S
Insulation Resistance		50MΩ	-	-	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF		-	200000Hours	-	230Vac, 80% load (MIL-HDBK-217F)
Lifetime		-	50000Hours	-	230Vac & 100% load, 70°C case temperature, refer to lifetime VS Tc curve for details
Operating Case Temperature for Safety Tc_s		-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w		-40°C	-	+70°C	5 Years Warranty Humidity: 10% to 95% RH
Storage Temperature		-40°C	-	+90°C	Humidity: 10% to 95% RH
Dimensions (L×W×H)mm		122*64*33mm			
Net Weight		500±50g/PCS			
Package		L480×W275×H208mm; 24PCS/Ctn.			

Note: All specifications are tested by Cree XLamp XP-G2 and typical measured at 230Vac and 25°C unless otherwise stated.

SAFTY STANDARDS

Safety Category	Country / Territory	Standards	Whether have Certification
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	

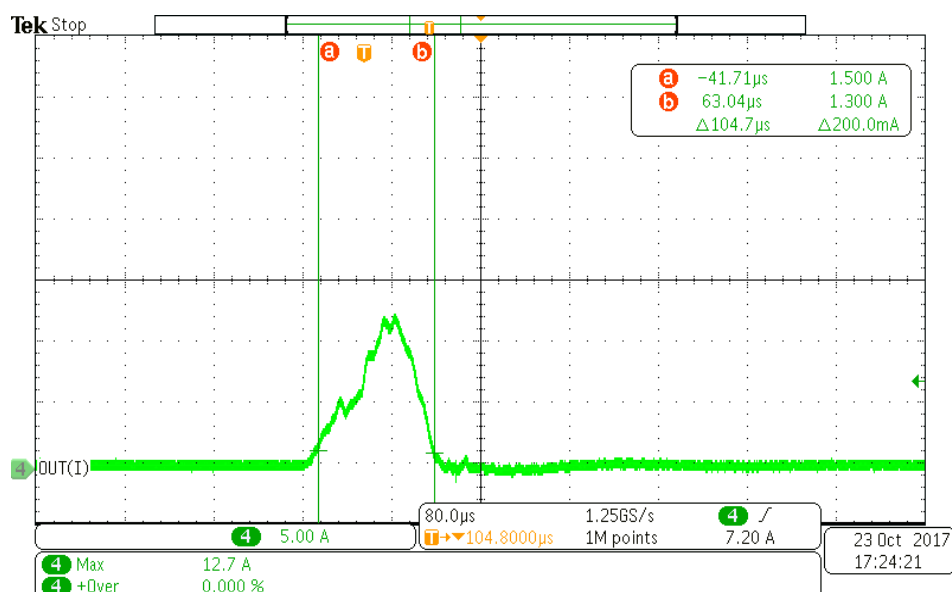
EMC COMPLIANCE

EMC Category	Country / Territory	Standards	Whether have Certification
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	

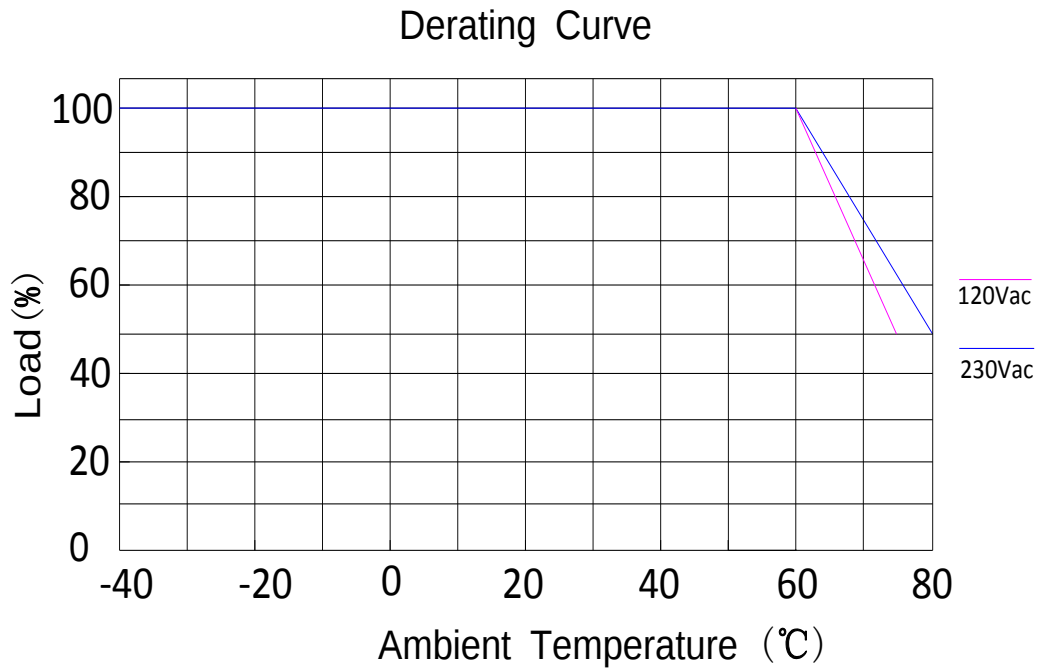
NOTE:

This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

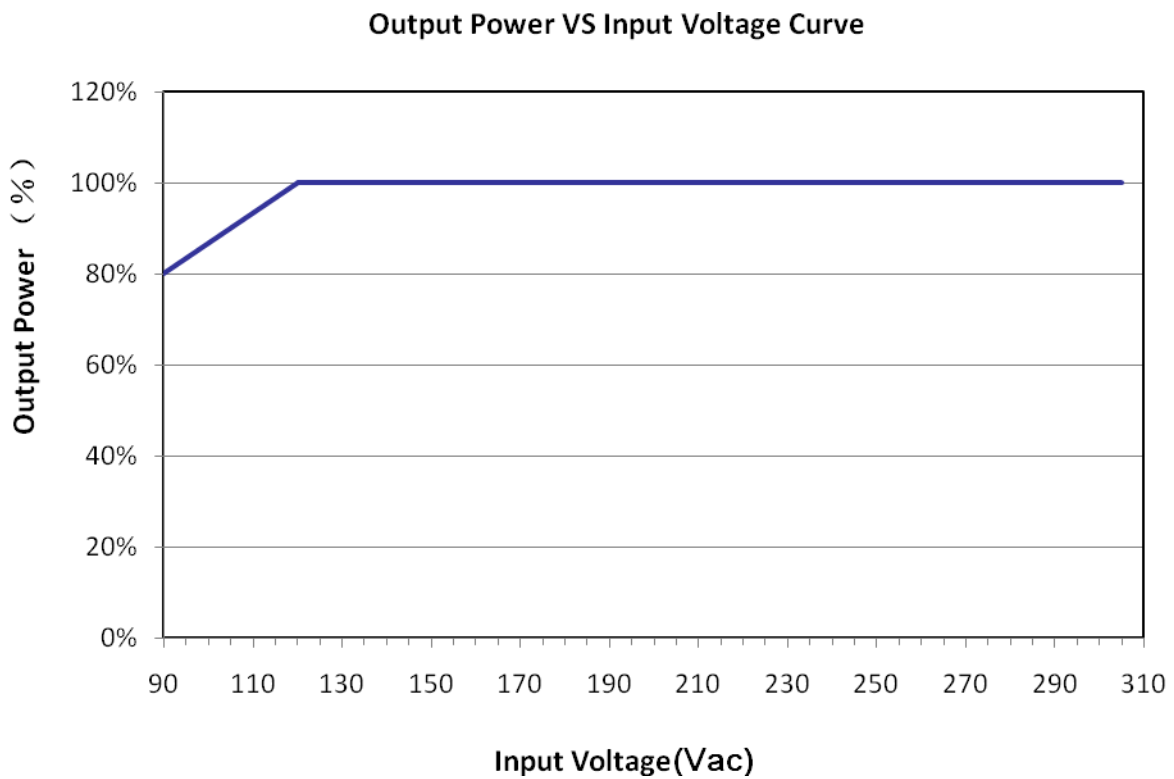
INRUSH CURRENT WAVEFORM



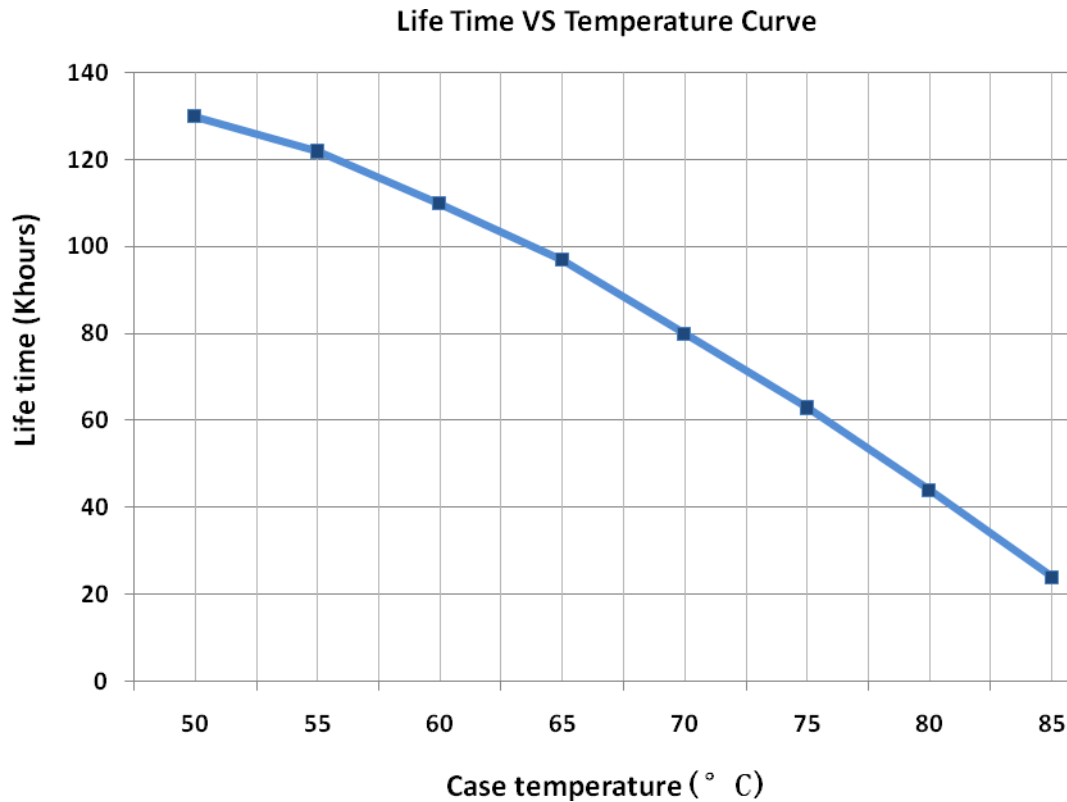
DERATING CURVE



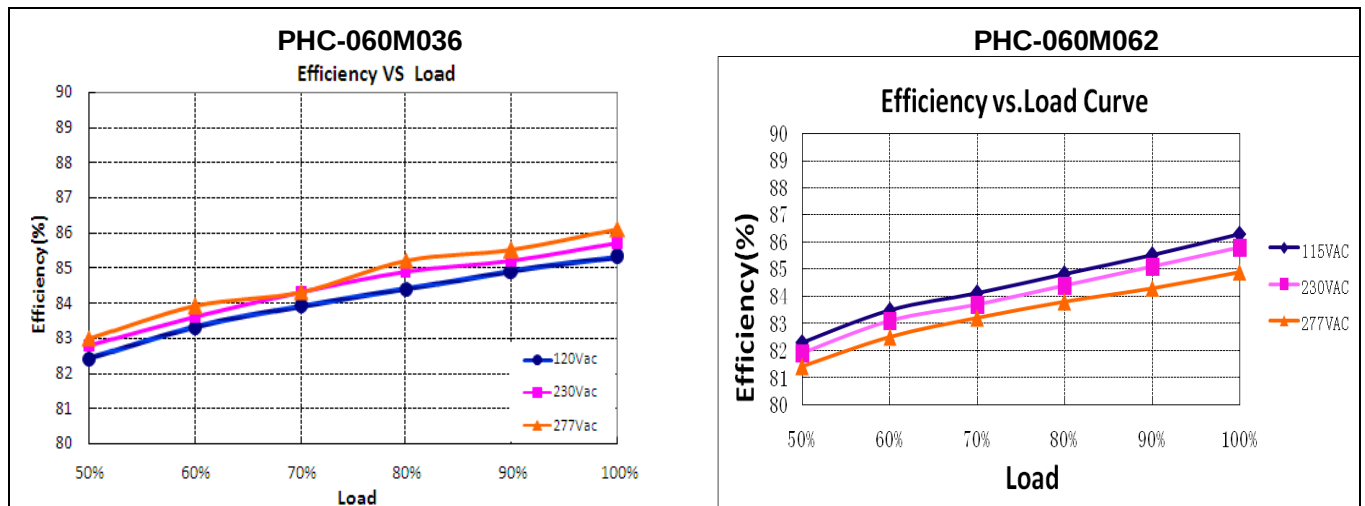
OUTPUT POWER VS INPUT VOLTAGE



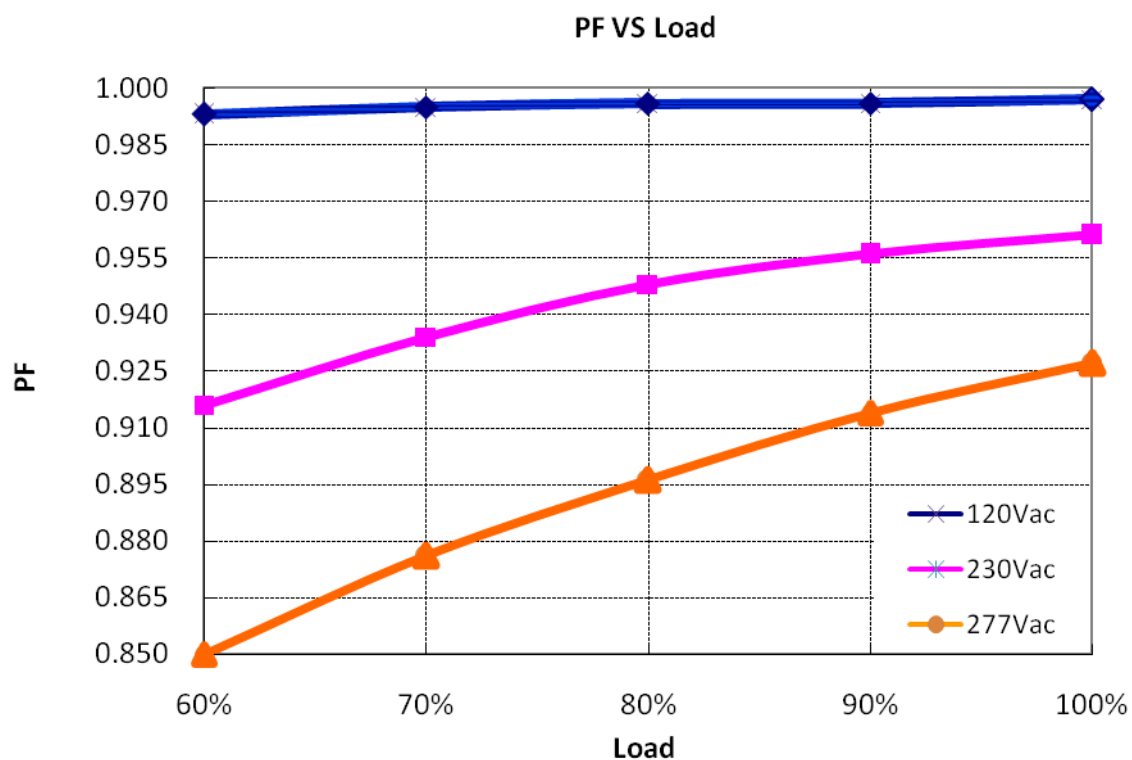
LIFETIME VS CASE TEMPERATURE



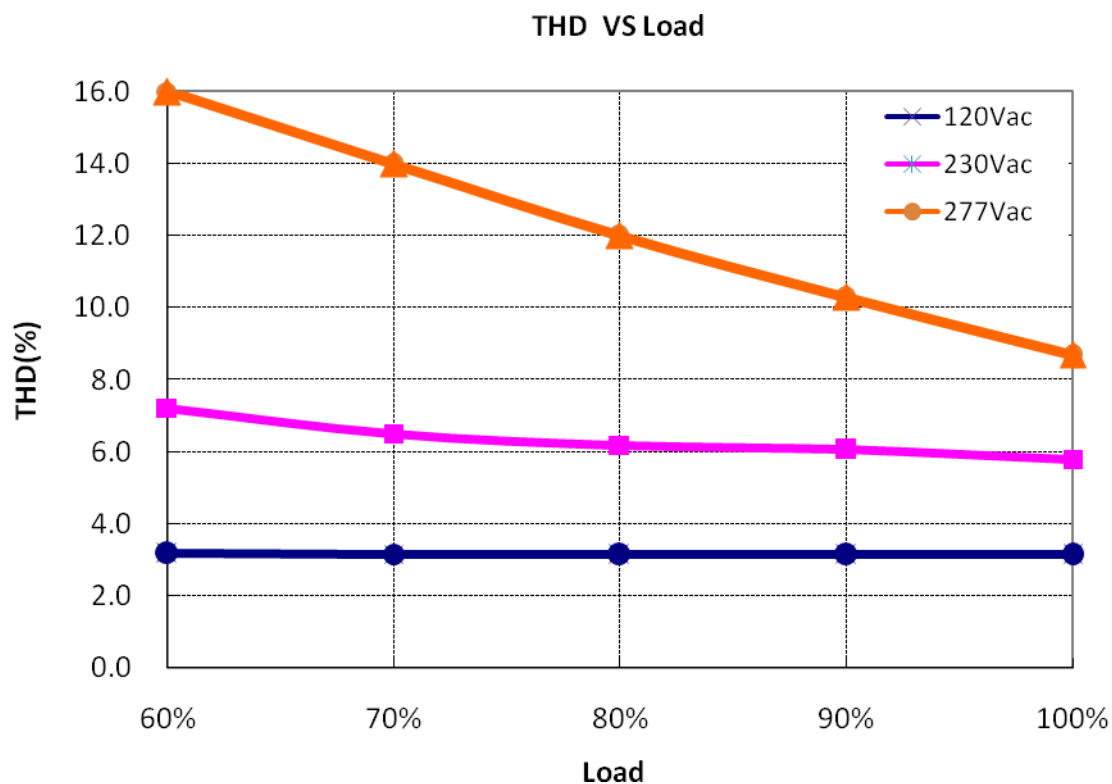
EFFICIENCY VS LOAD



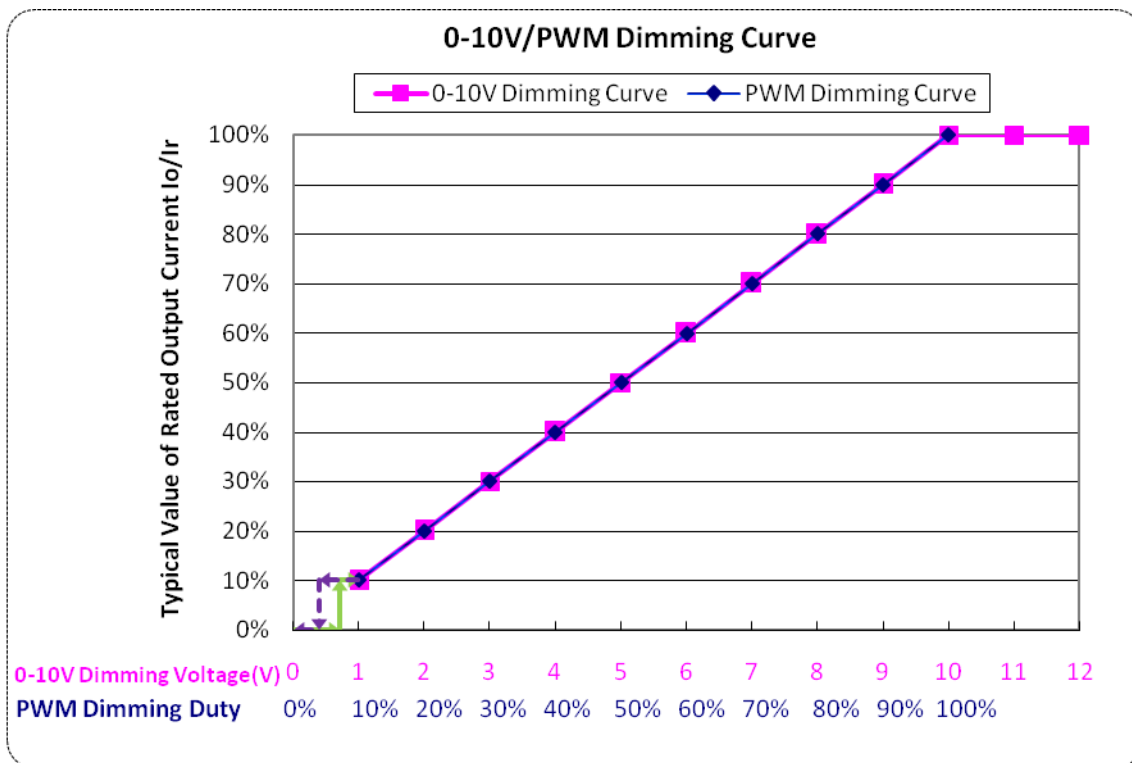
POWER FACTOR VS LOAD



TOTAL HARMONIC DISTORTION



0-10V/PWM DIMMING CURVE



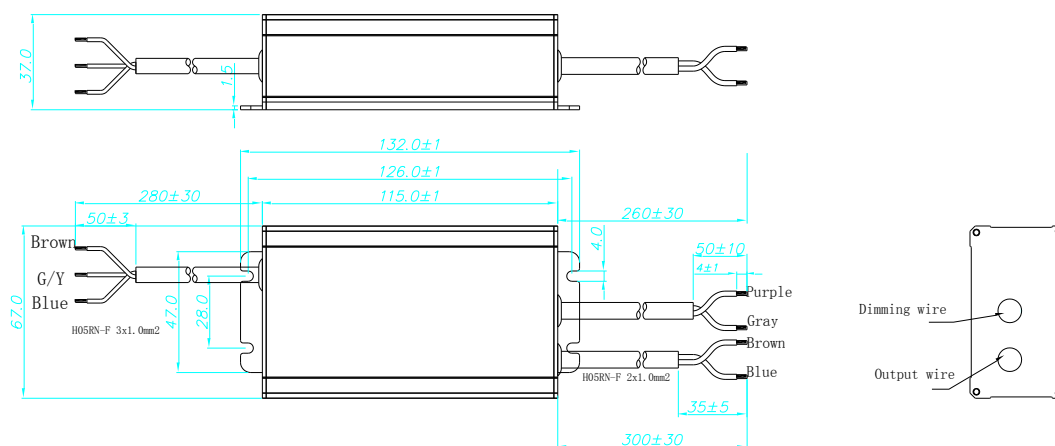
Note:

Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage.

PROTECTIONS

Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection	Input Protection Voltage	330Vac	350Vac	370Vac	Turn off the output when the input voltage exceeds protection voltage.
	Recovery Voltage	320Vac	340Vac	360Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.
Over Temperature Protection		Decreases output current, returning to normal after over temperature is removed.			
Short Circuit Protection		Hiccup mode 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.			
Output Over Voltage Protection		Limits output voltage at no load and in case the normal voltage limit fail			

MECHANICAL OUTLINE



Wire	Specification	Note
Input	CCC+VDE H05RN-F 3x1.0mm ² OD=7.3mm L=280±30mm	CCC/CE
	SJOW 18AWG*3C OD=7.8mm L=280±30mm	UL
Output	CCC+VDE H05RN-F 2x1.0mm ² OD=7.0mm L=300±30mm	CCC/CE
	SJOW 18AWG*2C OD=7.3mm L=300±30mm	UL
Dimming	UL2733 22AWG*2C OD=5.45mm L=260±30mm	PURPLE/GRAY

[illegible]

Specification for Approval

Product Name: 60W Programmable Driver

Product Model: PHC-060 Series

Rev. A.1

CUSTOMER AUTHORIZED SIGNATURE		
Tested By	Checked By	Approved By
(Company seal)Return one copy to MOSO with approved signature and company seal.		

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Prepared By	Checked By	Approved By