



Features

- Ultra high input range: 180-528Vac
- Constant power mode operation
- Infrared remote control
- 3-in-1 dimming function (0-10Vdc, PWM Signal, Timer)
- Surge protection: Line-Line 4KV / Line-Earth 6KV
- Output over-voltage, over-temperature and short-circuit protections
- IP67 enclosure for indoor and outdoor applications
- UL 8750 recognized

Applications

- Architecture lighting, industrial lighting, flood lighting and roadway lighting

Selection Guide

Part Number	Max Output Power (W)	Output Voltage Range (Vdc)	Output Current Adjustable Range (A)	Full Power Current Adjustable Range (A)	Default Output Setting	Typical Efficiency
LHA060X-036C	60	20-36	0.21-2.10	1.67-2.10	20-36V/1.67A	86%
LHA060X-062C		20-62	0.14-1.40	0.97-1.40	20-57V/1.05A	86%
LHA060X-090C		45-90	0.10-0.95	0.67-0.95	45-85V/0.70A	83%

Note: X in the Part Number can be either M or R, M means 3-in-1 dimming function; R means timer dimmable.

Input Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Input Voltage Range	AC input	180	200-480	528	Vac
Input Frequency Range		47	50/60	63	Hz
Power Factor	200-480Vac input, full load	0.90	0.95	-	-
Input Current	200-480Vac input, full load	-	-	0.5	A
Inrush Current	480Vac input, full load, cold start	-	-	75	A
Leakage Current	480Vac input, 50Hz	-	-	0.75	mA
THD	277-347Vac input, 80-100% of full load	-	-	20	%
	480Vac input, 80-100% of full load	-	20	25	

Output Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Output Current Tolerance	Full load	-5	-	+5	%Iset
Output Current Set Point Range LHA060X-036C LHA060X-062C LHA060X-090C		0.21 0.14 0.10	- - -	2.10 1.40 0.95	A
Output Current Set Point Range LHA060X-036C LHA060X-062C LHA060X-090C	Full power	1.67 0.97 0.67	- - -	2.10 1.40 0.95	A
Total Output Current Ripple	480Vac input, full LED load, peak-peak	-	-	20	%
Startup Overshoot Current	200-480Vac input, full LED load	-	-	10	%Iset
Output Voltage LHA060X-036C LHA060X-062C LHA060X-090C	No load	- - -	- - -	45 75 105	V
Line Regulation	220-480Vac input	-	-	1	%
Load Regulation	480Vac input, 50-100% of full load	-	-	3	%
Turn-on Delay	200-480Vac input, full load	-	-	5	s
Efficiency LHA060X-036C I _o = 1.67A I _o = 2.10A LHA060X-062C I _o = 1.05A I _o = 1.40A LHA060X-090C I _o = 0.70A I _o = 0.95A	277Vac input, full load	84 83 85 84 82 82	86 85 86 86 84 84	- - - - - -	%
Efficiency LHA060X-036C I _o = 1.67A I _o = 2.10A LHA060X-062C I _o = 1.05A I _o = 1.40A LHA060X-090C I _o = 0.70A I _o = 0.95A	347Vac input, full load	84 84 84 84 82 82	86 85 86 86 84 84	- - - - - -	%
Efficiency LHA060X-036C I _o = 1.67A I _o = 2.10A LHA060X-062C I _o = 0.97A I _o = 1.40A LHA060X-090C I _o = 0.67A I _o = 0.95A	480Vac input, full load	84 83 84 84 81 81	86 85 86 86 83 83	- - - - - -	%

Note: Unless otherwise specified, data in this datasheet should be tested under the conditions of 480Vac input, rated load and Ta=25°C.

Protection Specifications

Parameter	Notes
Over Voltage Protection	The driver will enter protection mode and will resume normal operation when the fault condition is cleared.
Over Temperature Protection	The output current will decrease up to 30% of its set point, and will return to its set point when the over temperature condition is cleared.
Short-circuit Protection	The driver will enter constant current/auto recovery mode. No damage will occur when the output is shorted. The output current will return to its set point when the fault condition is cleared.

Environmental and Other Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Operating Case Temperature	Tc	-40	-	+85	°C
Storage Temperature		-40	-	+85	°C
Storage Relative Humidity		10	-	95	%RH
Life Time	480Vac, full load, 70°C case temperature	-	50	-	10 ³ hrs
Isolation Voltage	Input-Output	-	3,750	-	Vac
	Input-PE	-	1,600	-	
	Output-PE	-	1,600	-	
Insulation Resistance	Input-Output/Input-PE/Output-PE, 500Vdc/60s /70%RH	50	-	-	MΩ
Grounding Resistance	25A/60s	-	-	0.1	Ω
MTBF(MIL-HDBK-217F)	480Vac input, 80% of full load	-	200	-	10 ³ hrs
Dimensions (L*W*H)	207.0 x 68.0 x 39.0 mm				
Weight	900±50g				

Dimming Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Absolute Maximum Voltage	0-5V/0-10V on the DIM +	-	5/10	-	V
Source Current	0-5V/0-10V on the DIM +	-	-	2	mA
Dimming Output Range	LHA060X-036C	0.21	-	2.10	A
	LHA060X-062C	0.14	-	1.40	
	LHA060X-090C	0.10	-	0.95	
Dimming Range	0-5V	0	-	5	V
	0-10V	0	-	10	
PWM	High Level	9.7	-	10.3	V
	Low Level	0	-	0.3	V
	Frequency Range	250	-	1,000	Hz
	Duty Cycle	1	-	99	%

EMC Specifications

Parameter	Standards
EMI	EN55015
	EN 61000-3-2, 3
EMS	EN61547
	EN61000-4-2, 3, 4, 5, 6, 8, 11

Typical V-I Characteristic Curves

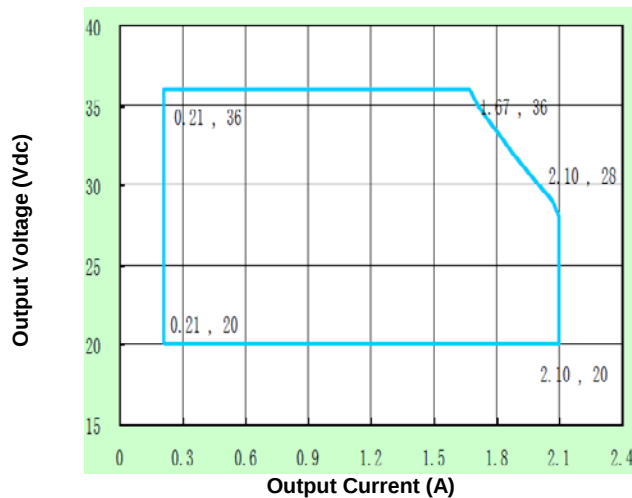


Figure 1: Typical V-I Characteristic Curve
(LHA060X-036C)

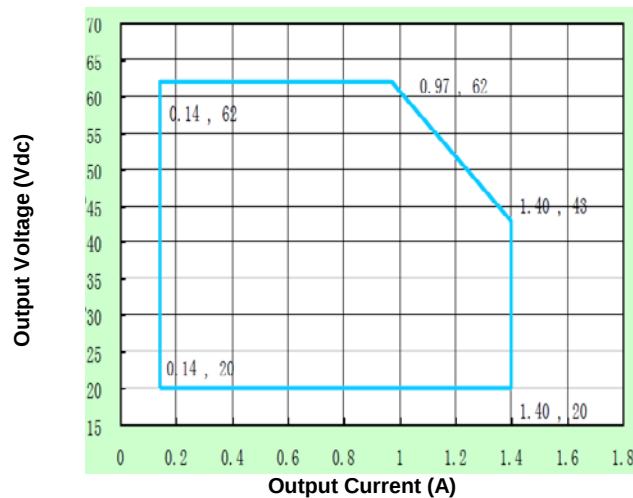


Figure 2: Typical V-I Characteristic Curve
(LHA060X-062C)

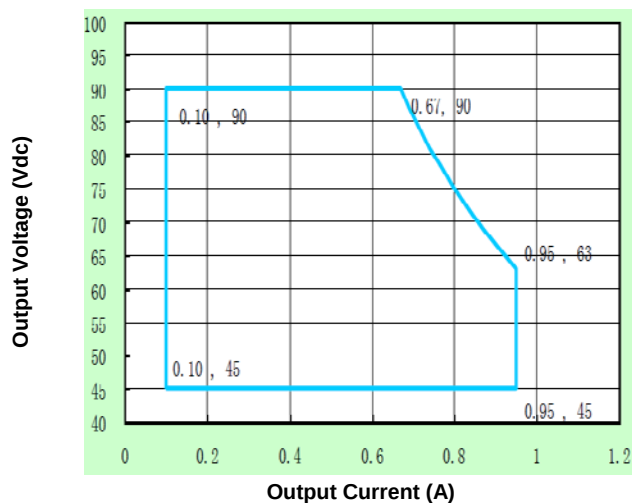


Figure 3: Typical V-I Characteristic Curve
(LHA060X-090C)

Characteristic Curves

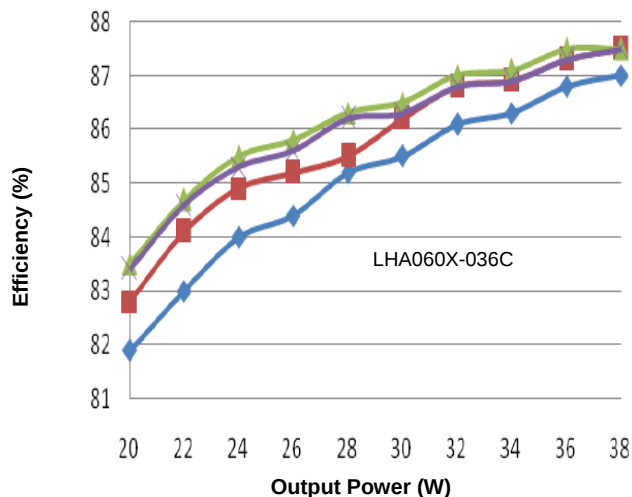


Figure 4: Efficiency vs. Output Power ($I_o=1.67A$)

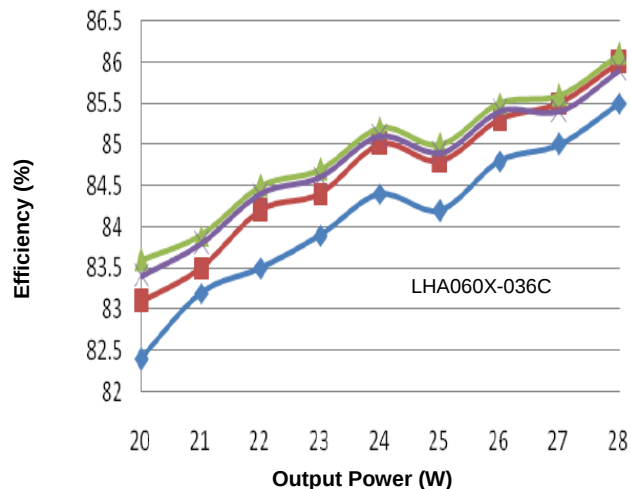


Figure 5: Efficiency vs. Output Power ($I_o=2.10A$)

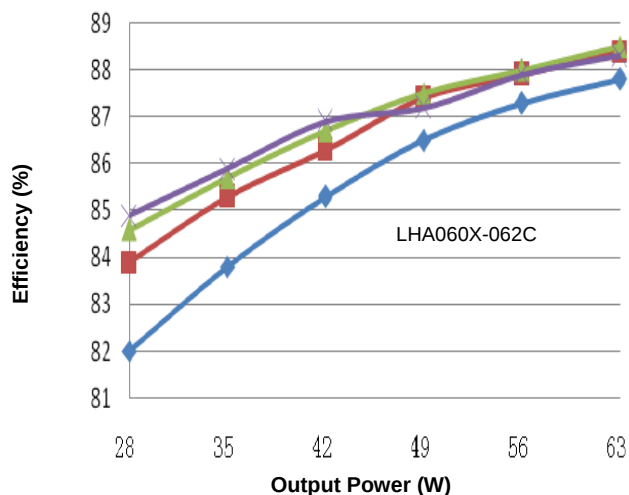


Figure 6: Efficiency vs. Output Power ($I_o=1.05A$)

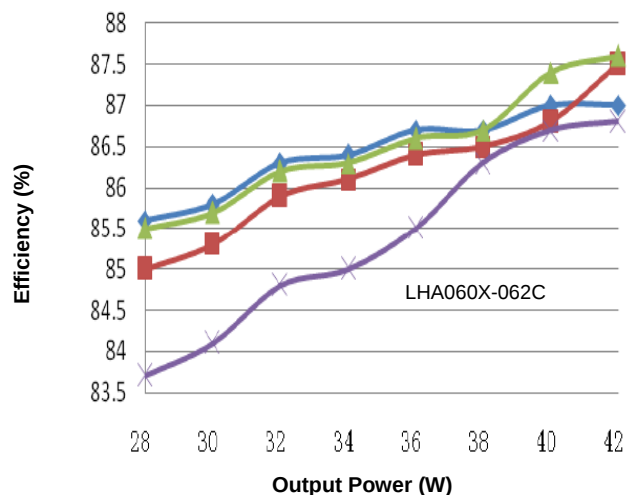


Figure 7: Efficiency vs. Output Power ($I_o=1.40A$)

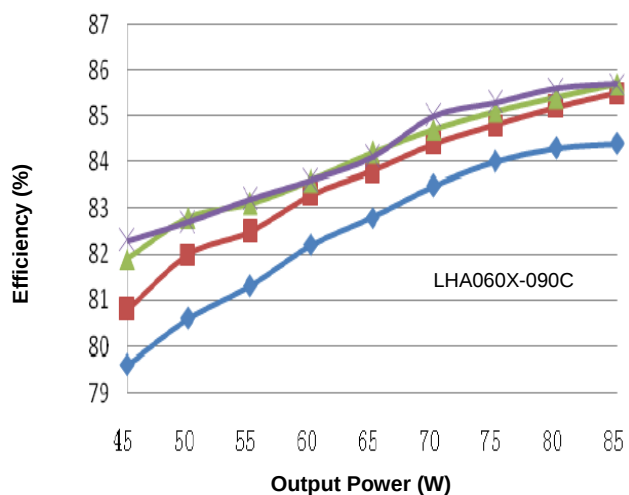


Figure 8: Efficiency vs. Output Power ($I_o=0.70A$)

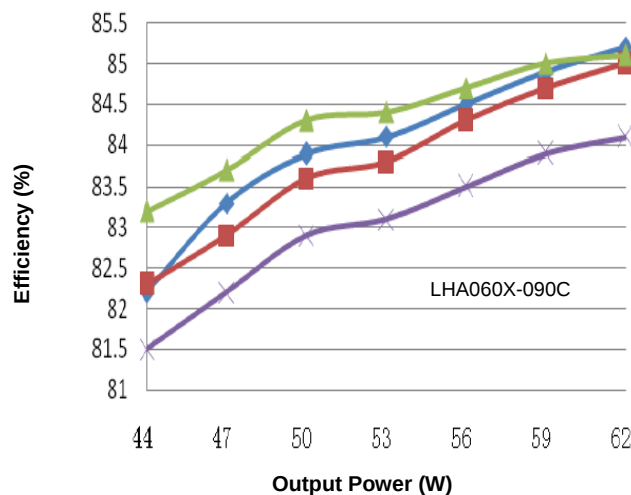


Figure 9: Efficiency vs. Output Power ($I_o=0.95A$)

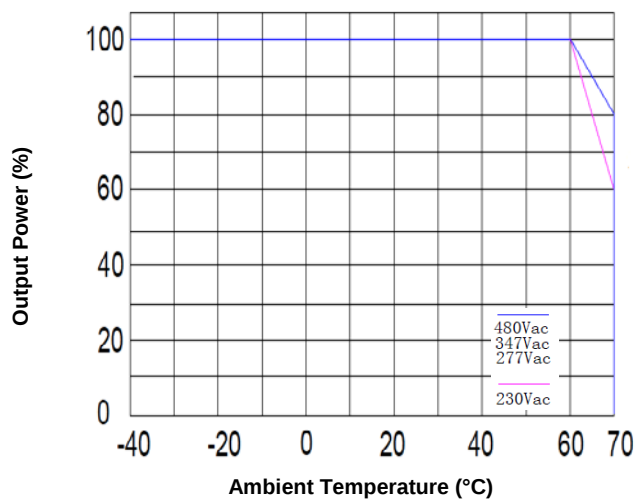


Figure 10: Output Power vs. Ambient Temperature

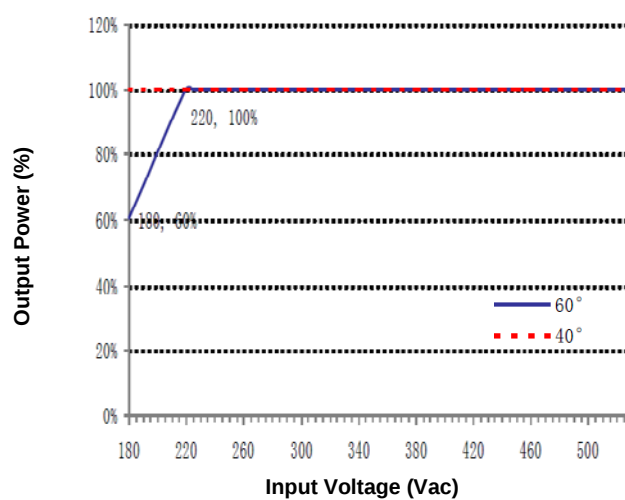


Figure 11: Output Power vs. Input Voltage

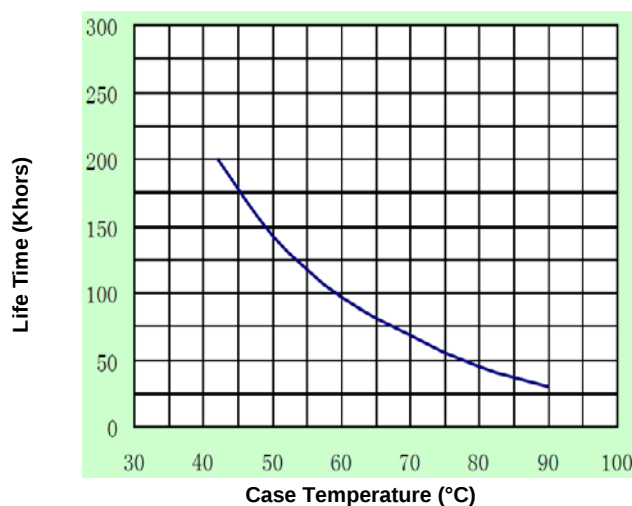


Figure 12: Life Time vs. Case Temperature

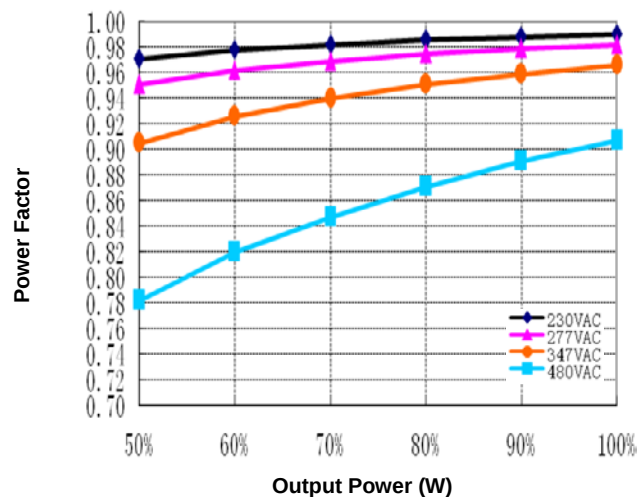


Figure 13: Power Factor vs. Output Power

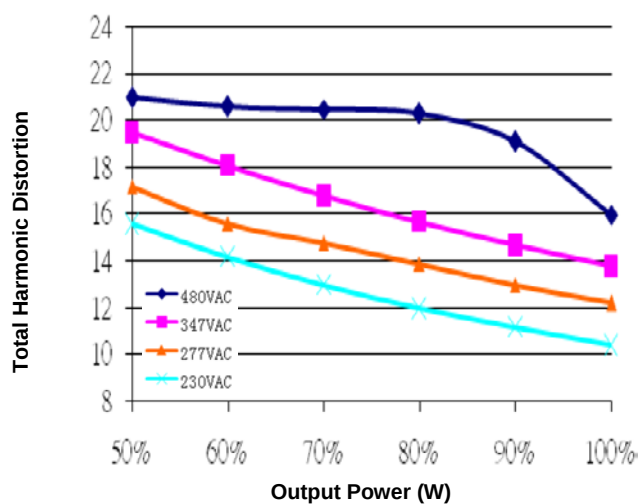


Figure 14: Total Harmonic Distortion vs. Output Power

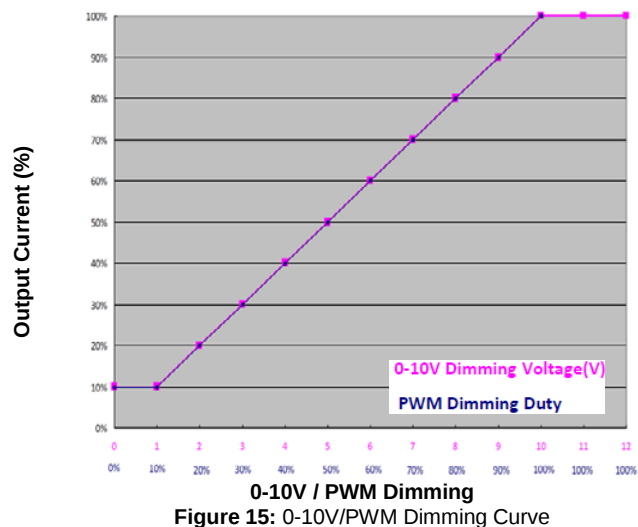
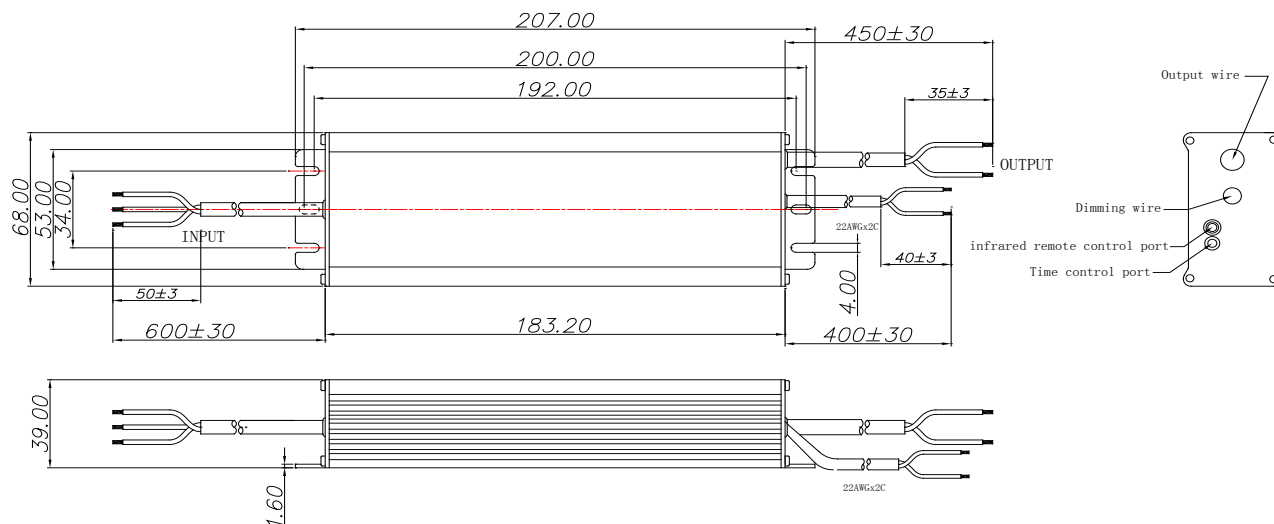


Figure 15: 0-10V/PWM Dimming Curve

Mechanical Drawing

Unit: mm



Wire	Specification
Input	STW 18AWG*3C
Output	SJOW 18AWG*2C
Dimming (M types)	22AWG*2C