


**Class P**

## Features

- Wide input range: 90-305Vac
- Constant power mode operation
- Constant lumen output
- 3-in-1 dimming function (0-10Vdc, PWM Signal, Timer), dim-to-off
- Surge protection: Line-Line 5KV / Line-Earth 10KV
- Output and dimming signal isolated
- Output over-voltage, over-temperature and short-circuit protections
- IP67 enclosure for indoor and outdoor applications
- UL 8750 listed

## Applications

- Roadway lighting, industrial lighting, plant lighting and landscape lighting

## Selection Guide

Part Number	Max. Output Power (W)	Output Voltage Range (Vdc)	Full Power Output Voltage Range (Vdc)	Full Power Current Adjustable Range (A)	Default Output Current (A)	Typical Efficiency
LUB200X-041CP	200	20-41	30-41	4.88-6.67	5.56	91%
LUB200X-062CP		38-62	40-62	3.23-5.00	4.90	92%
LUB200X-096CP		48-96	67-96	2.10-3.00	2.80	92%
LUB200X-143CP		70-143	95-143	1.40-2.10	1.40	93%
LUB200X-191CP		96-191	133-191	1.05-1.50	1.05	93%
LUB200X-286CP		143-286	191-286	0.70-1.05	0.70	93%

Note: X in the Part Number can be either M or V, M means 3-in-1 dimming function and offline programmable; V means non-dimmable and output current adjustable via built-in potentiometer.

## Input Specifications

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Input Voltage Range	AC input	90	100-277	305	Vac
Input Frequency Range		47	50/60	63	Hz
Input Current	100-277Vac input, full load	-	-	2.8	A
Power Factor	120Vac input, full load	0.97	0.99	-	-
	230Vac input, full load	0.95	0.97	-	
	277Vac input, full load	0.91	0.93	-	
Inrush Current	230Vac input, full load, cold start	-	-	75	A
Leakage Current	277Vac input, 60Hz	-	-	0.7	mA
Standby Power Consumption	M types (dim-to-off)	-	-	3	W
THD	100-240Vac input, 50-100% of full load	-	5	10	%
	277Vac input, 70-100% of full load	-	-	15	

**Output Specifications**

Parameter	Notes & Conditions	Min	Typical	Max	Unit
Output Current Tolerance	Full load	-5	-	+5	%Iset
Output Current Set Point Range LUB200M-041CP LUB200M-062CP LUB200M-096CP LUB200M-143CP LUB200M-191CP LUB200M-286CP		0.67 0.50 0.30 0.21 0.15 0.11	- - - - - -	6.67 5.00 3.00 2.10 1.50 1.05	A
Output Current Set Point Range LUB200V-041CP LUB200V-062CP LUB200V-096CP LUB200V-143CP LUB200V-191CP LUB200V-286CP		3.34 2.50 1.50 1.05 0.75 0.53	- - - - - -	6.67 5.00 3.00 2.10 1.50 1.05	A
Output Current Set Point Range LUB200X-041CP LUB200X-062CP LUB200X-096CP LUB200X-143CP LUB200X-191CP LUB200X-286CP	Constant power	4.88 3.23 2.10 1.40 1.05 0.70	- - - - - -	6.67 5.00 3.00 2.10 1.50 1.05	A
Total Output Current Ripple	230Vac input, full load & LED load, peak-peak	-	5	10	%
Startup Overshoot Current	120-277Vac input, full load & LED load	-	-	10	%Iset
Output Voltage LUB200X-041CP LUB200X-062CP LUB200X-096CP LUB200X-143CP LUB200X-191CP LUB200X-286CP	No load	- - - - - -	- - - - - -	50 70 120 160 210 310	V
Line Regulation	100-277Vac input	-1	-	+1	%
Load Regulation	230Vac input, 60-100% of full load	-3	-	+3	%
Turn-on Delay	120Vac input, full load	-	1	2	s
	230Vac input, full load	-	-	0.5	
Efficiency LUB200X-041CP I <sub>o</sub> = 4.88A I <sub>o</sub> = 6.67A LUB200X-062CP I <sub>o</sub> = 3.23A I <sub>o</sub> = 5.00A LUB200X-096CP I <sub>o</sub> = 3.00A I <sub>o</sub> = 2.10A LUB200X-143CP I <sub>o</sub> = 2.10A I <sub>o</sub> = 1.40A LUB200X-191CP I <sub>o</sub> = 1.05A I <sub>o</sub> = 1.50A LUB200X-286CP I <sub>o</sub> = 0.70A I <sub>o</sub> = 1.05A	120Vac input, full load	88 88 88 88 88 88 88 88 88.5 88.5 88 88	90 90 90 90 89.5 89.5 90 90 90.5 90.5 89 89	- - - - - - - - - - - -	%
Efficiency LUB200X-041CP I <sub>o</sub> = 4.88A I <sub>o</sub> = 6.67A LUB200X-062CP I <sub>o</sub> = 3.23A	230Vac input, full load	90 90 90	92 92 92	- - -	%

Io = 5.00A LUB200X-096CP		90	92	-		
Io = 3.00A		91	92.5	-		
Io = 2.10A LUB200X-143CP		91	92.5	-		
Io = 2.10A		91	93	-		
Io = 1.40A LUB200X-191CP		91	93	-		
Io = 1.05A		91	93	-		
Io = 1.50A LUB200X-286CP		91	93	-		
Io = 0.70A		91	93	-		
Io = 1.05A		91	93	-		
Efficiency						
LUB200X-041CP						
Io = 4.88A		90.5	92.5	-		
Io = 6.67A		90.5	92.5	-		
LUB200X-062CP						
Io = 3.23A		90.5	92.5	-		
Io = 5.00A		90.5	92.5	-		
LUB200X-096CP						
Io = 3.00A	277Vac input, full load	91.5	92.5	-	%	
Io = 2.10A		91.5	92.5	-		
LUB200X-143CP						
Io = 2.10A		91.5	93.5	-		
Io = 1.40A		91.5	93.5	-		
LUB200X-191CP						
Io = 1.05A		91	93	-		
Io = 1.50A		91	93	-		
LUB200X-286CP						
Io = 0.70A		91	93	-		
Io = 1.05A		91	93	-		

Note: Unless otherwise specified, data in this datasheet should be tested under the conditions of 230Vac 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, 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
Ambient Temperature	Ta	-40	-	+60	°C
Operating Case Temperature	Tc	-40	-	+90	°C
Storage Temperature		-40	-	+85	°C
Storage Relative Humidity		5	-	100	%RH
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
Life Time	230Vac, full load, 75°C case temperature	-	50	-	10 <sup>3</sup> hrs

MTBF(MIL-HDBK-217F)	230Vac input, 80% of full load	-	200	-	10 <sup>3</sup> hrs
Dimensions (L*W*H)	193.6 x 68.0 x 39.0 mm				
Weight	1200±100g				

### Dimming Specifications

Parameter		Notes & Conditions	Min	Typical	Max	Unit
Absolute Maximum Voltage		0-10V on the DIM +	-	10	-	V
Source Current		0-10V on the DIM +	-	0.2	0.4	mA
Dimming Output Range		LUB200M-041CP	0.67	-	6.67	A
		LUB200M-062CP	0.50	-	5.00	
		LUB200M-096CP	0.30	-	3.00	
		LUB200M-143CP	0.21	-	2.10	
		LUB200M-191CP	0.15	-	1.50	
		LUB200M-286CP	0.11	-	1.05	
Dimming Range			0	-	10	V
PWM	High Level	Default 0-10V / PWM Dimming	9.7	-	10.3	V
	Low Level		0	-	0.3	V
	Frequency Range		300	-	2,000	Hz
	Duty Cycle		1	-	99	%

### EMC Specifications

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



## Typical V-I Characteristic Curves

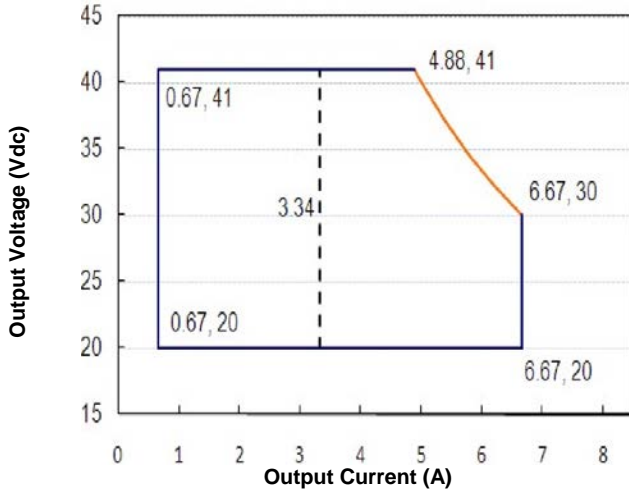


Figure 1: Typical V-I Characteristic Curve (LUB200X-041CP)

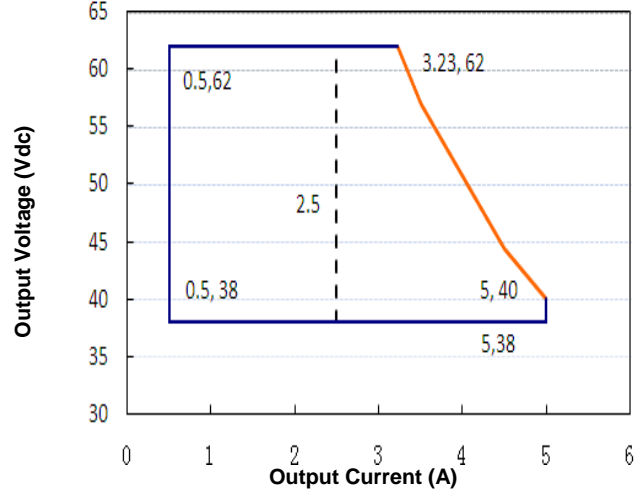


Figure 2: Typical V-I Characteristic Curve (LUB200X-062CP)

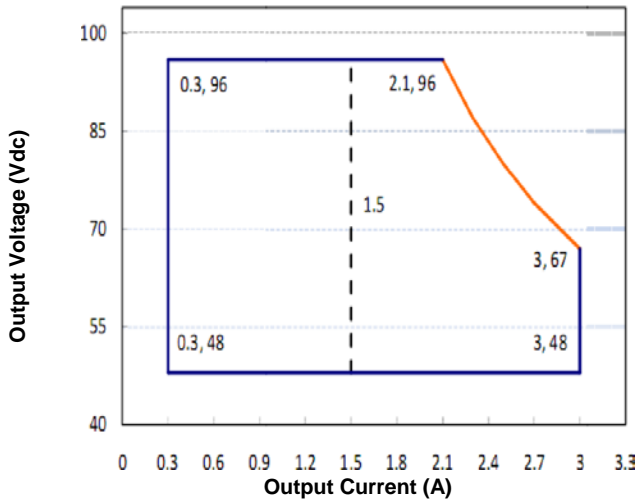


Figure 3: Typical V-I Characteristic Curve (LUB200X-096CP)

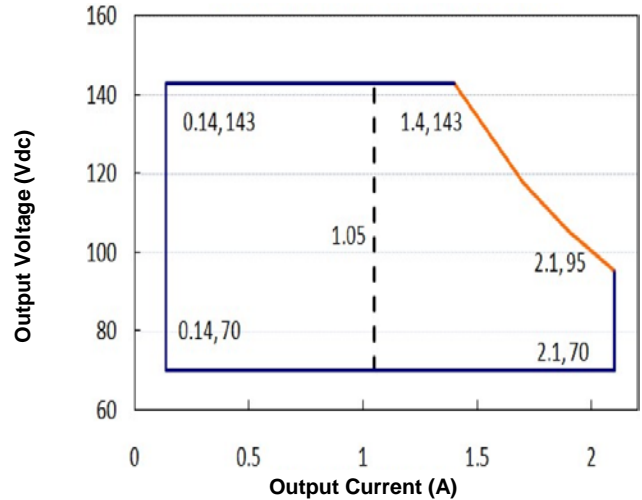


Figure 4: Typical V-I Characteristic Curve (LUB200X-143CP)

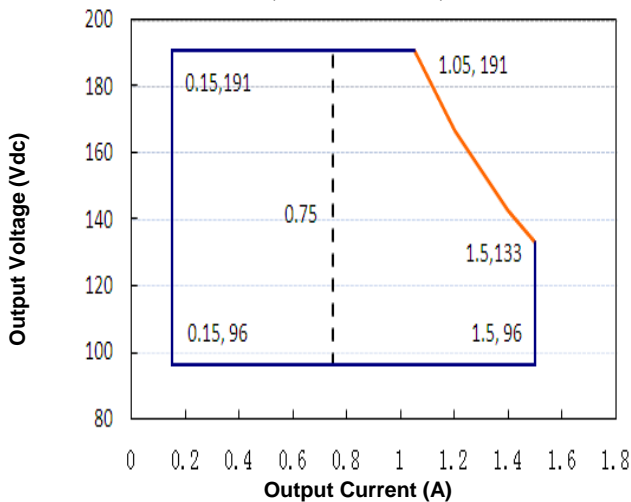


Figure 5: Typical V-I Characteristic Curve (LUB200X-191CP)

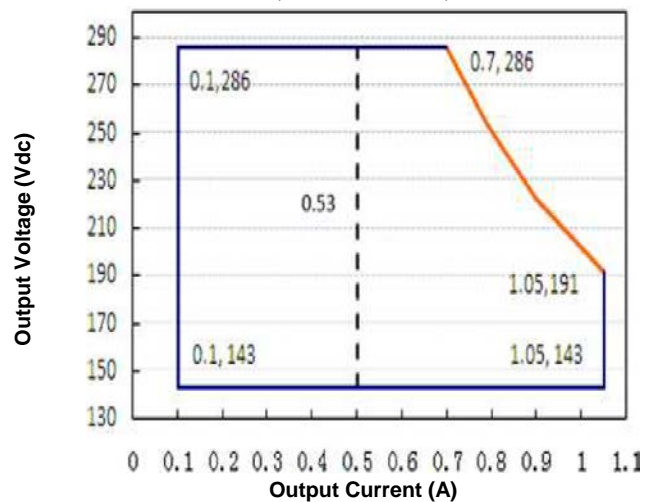


Figure 6: Typical V-I Characteristic Curve (LUB200X-286CP)

Note: X=V is suitable for the right area of dotted line, X=M is suitable for the solid line contained area.

## Characteristic Curves

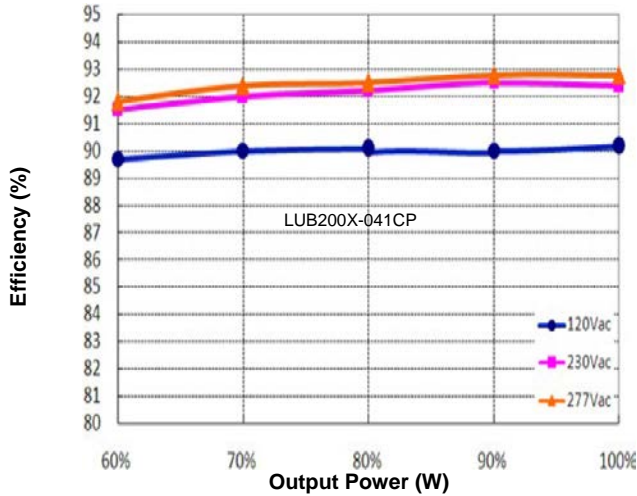


Figure 7: Efficiency vs. Output Power (Io=4.88A)

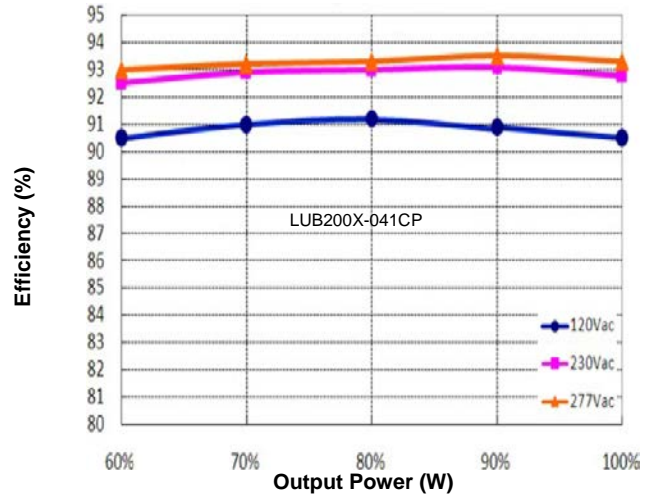


Figure 8: Efficiency vs. Output Power (Io=6.67A)

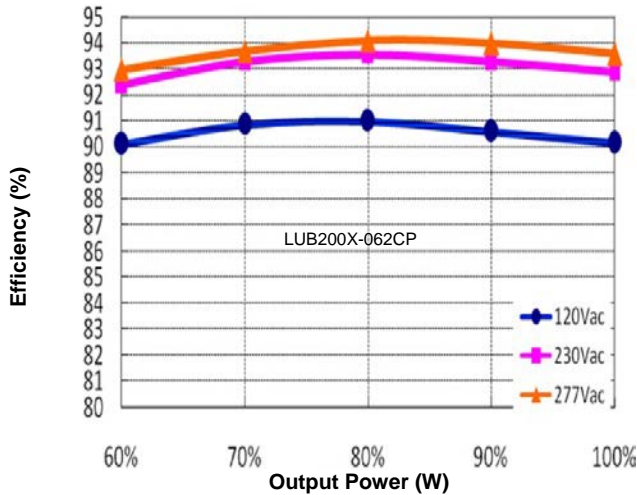


Figure 9: Efficiency vs. Output Power (Io=3.23A)

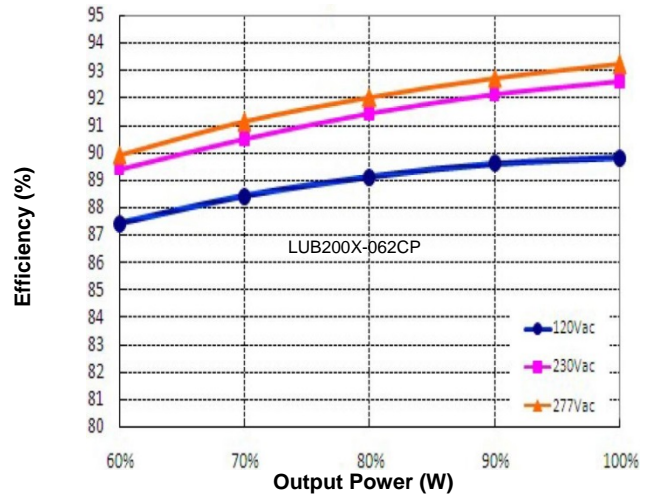


Figure 10: Efficiency vs. Output Power (Io=5.00A)

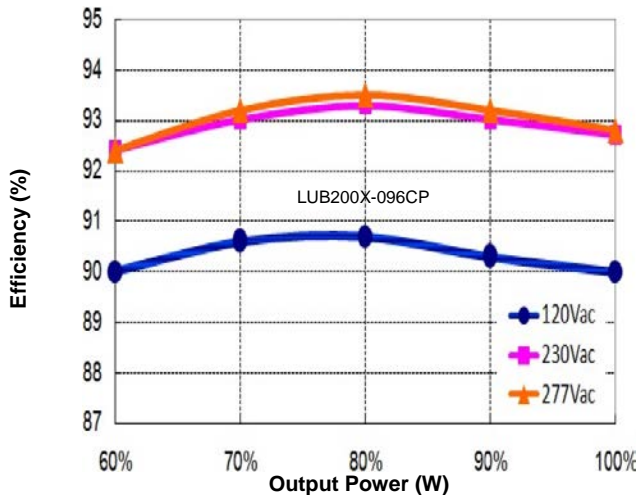


Figure 11: Efficiency vs. Output Power (Io=2.10A)

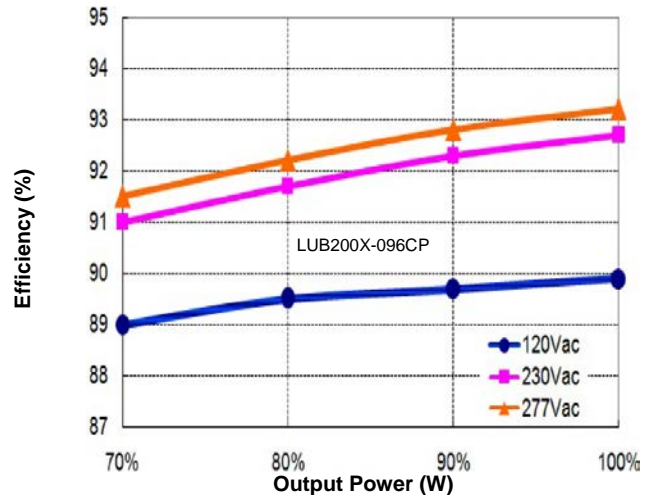


Figure 12: Efficiency vs. Output Power (Io=3.00A)

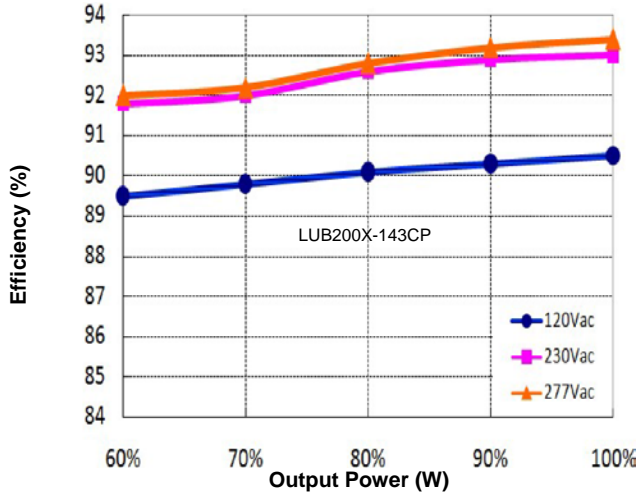


Figure 13: Efficiency vs. Output Power (Io=1.40A)

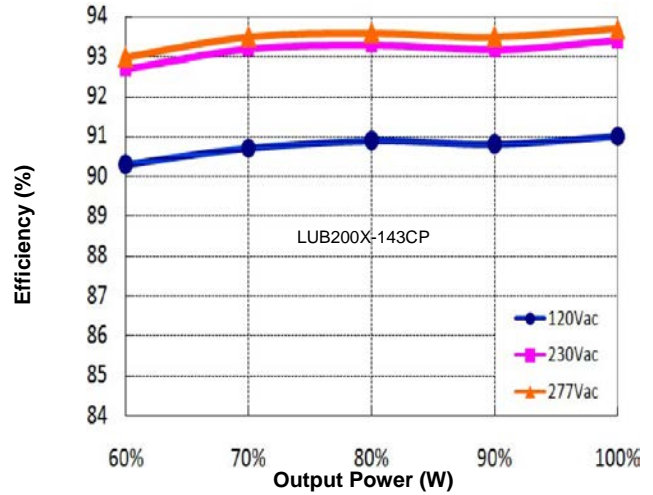


Figure 14: Efficiency vs. Output Power (Io=2.10A)

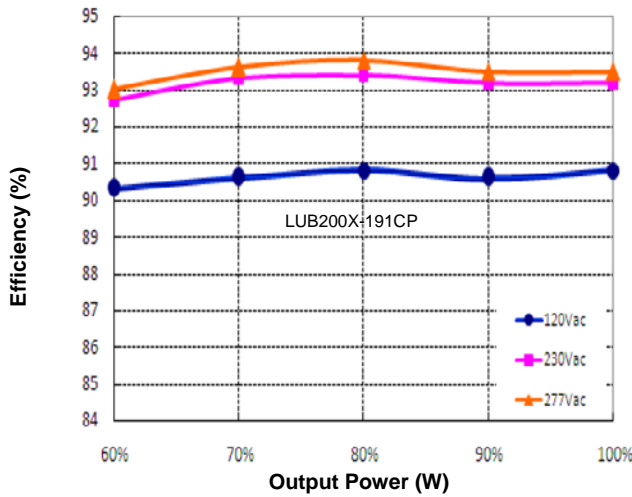


Figure 15: Efficiency vs. Output Power (Io=0.70A)

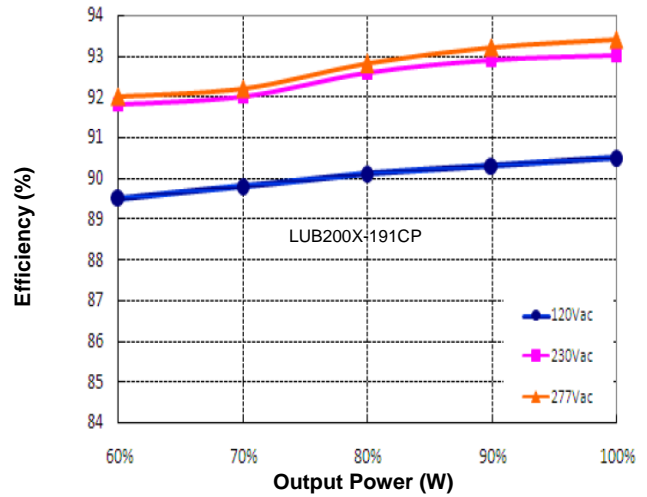


Figure 16: Efficiency vs. Output Power (Io=1.05A)

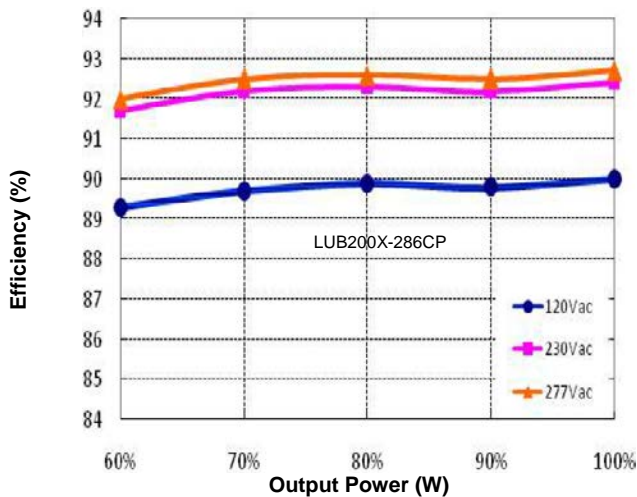


Figure 17: Efficiency vs. Output Power (Io=0.70A)

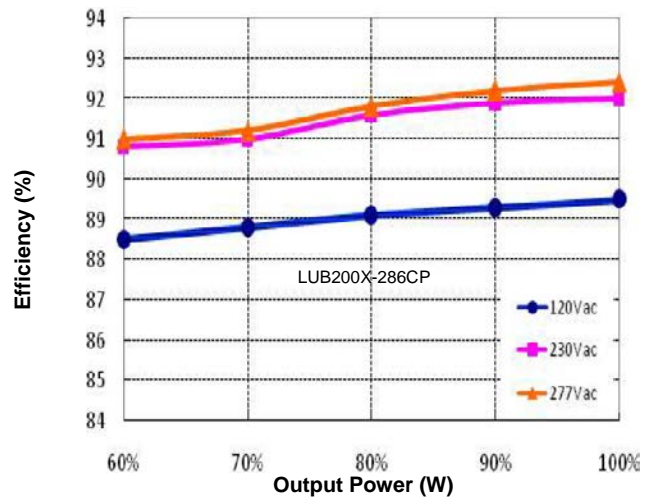


Figure 18: Efficiency vs. Output Power (Io=1.05A)

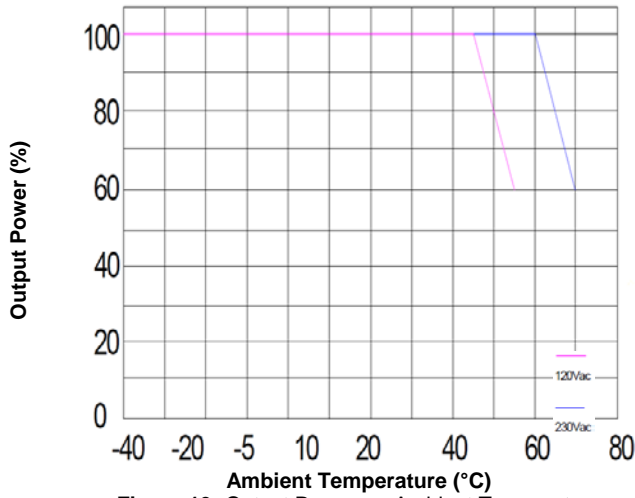


Figure 19: Output Power vs. Ambient Temperature

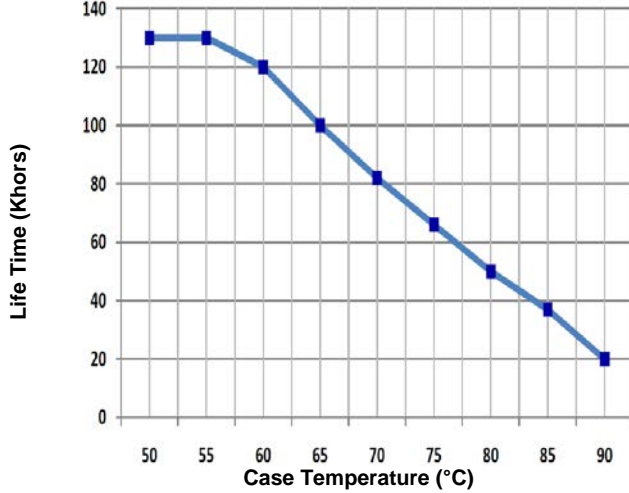


Figure 21: Life Time vs. Case Temperature

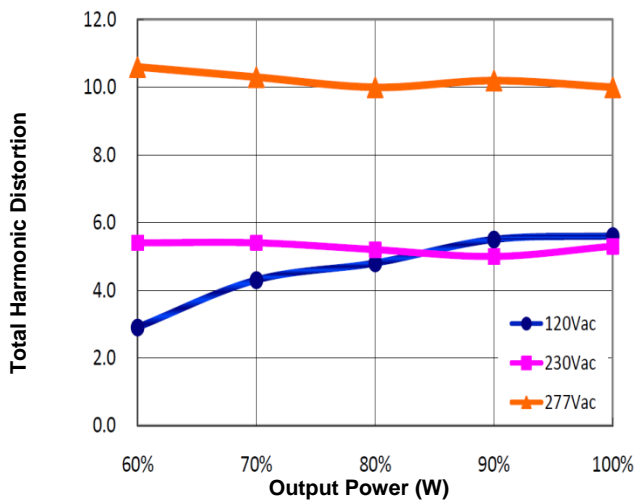


Figure 23: Total Harmonic Distortion vs. Output Power

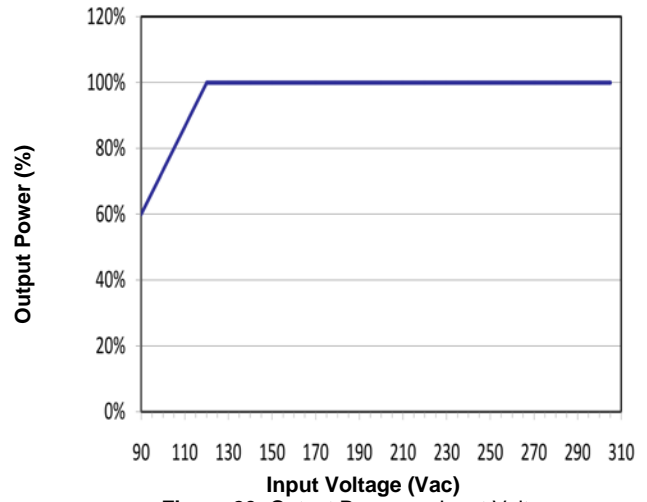


Figure 20: Output Power vs. Input Voltage

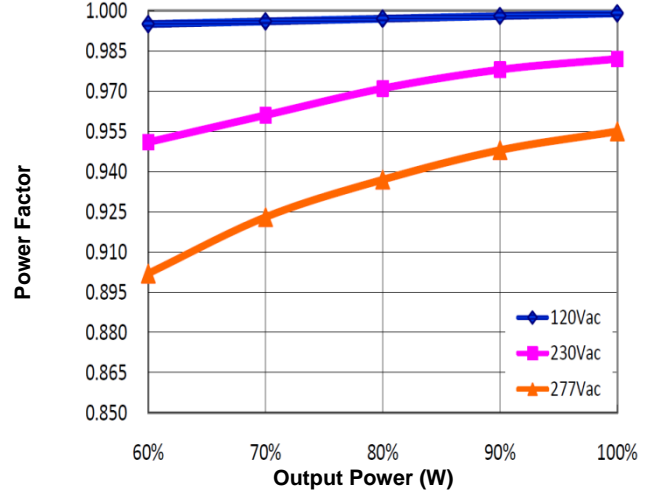


Figure 22: Power Factor vs. Output Power

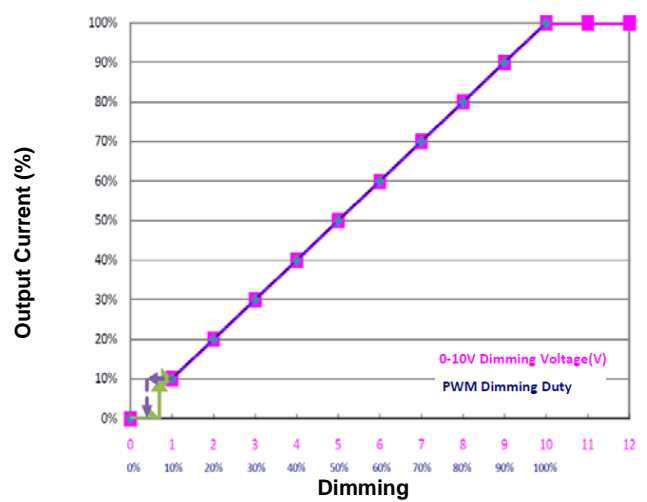
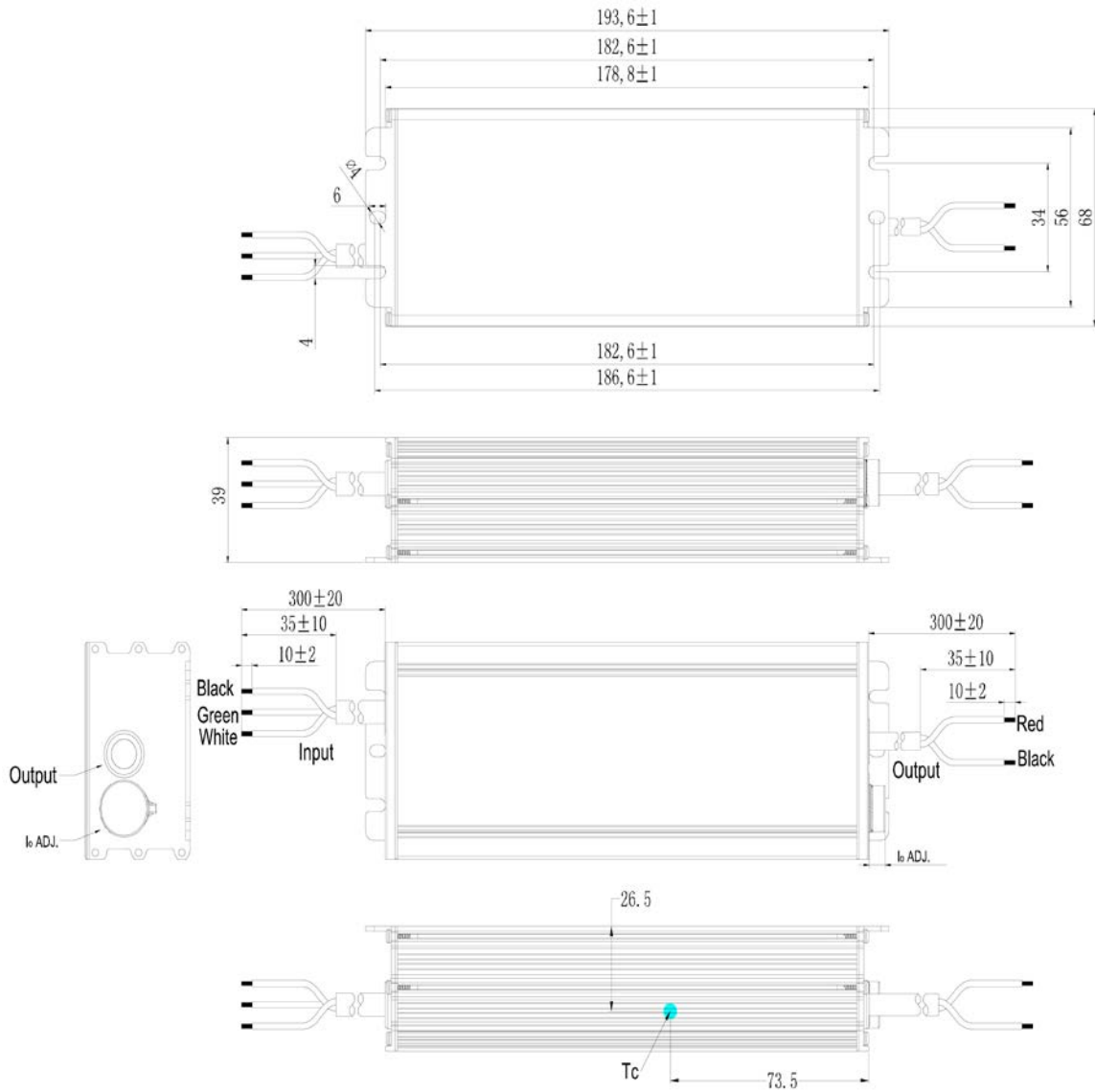


Figure 24: 0-10V/PWM Dimming Curve

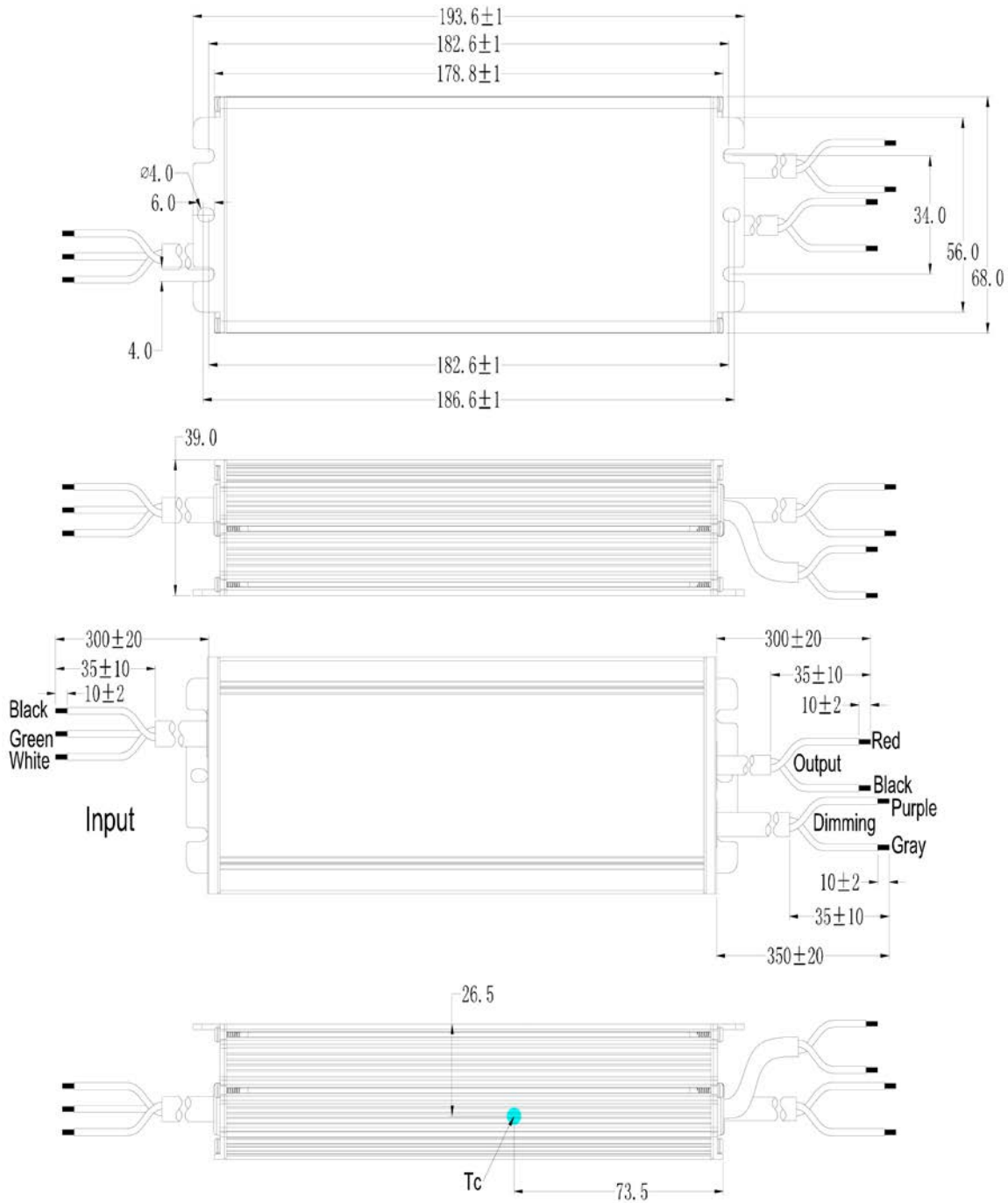


## Mechanical Drawing

LUB200V types (Unit: mm)



LUB200M types (Unit: mm)



Wire	Specification
Input	SJOW 18AWG*3C, 7.8mm external diameter
Output	SJOW 18AWG*2C, 7.3mm external diameter
Dimming (M types)	UL2733 22AWG*2C, 5.45mm external diameter