



HLV96

96 WATT-24 VOLT | CLASS 2 SUPPLY

Fixture Type: _____

Project: _____

Location: _____

UL-LISTED FOR WET LOCATIONS

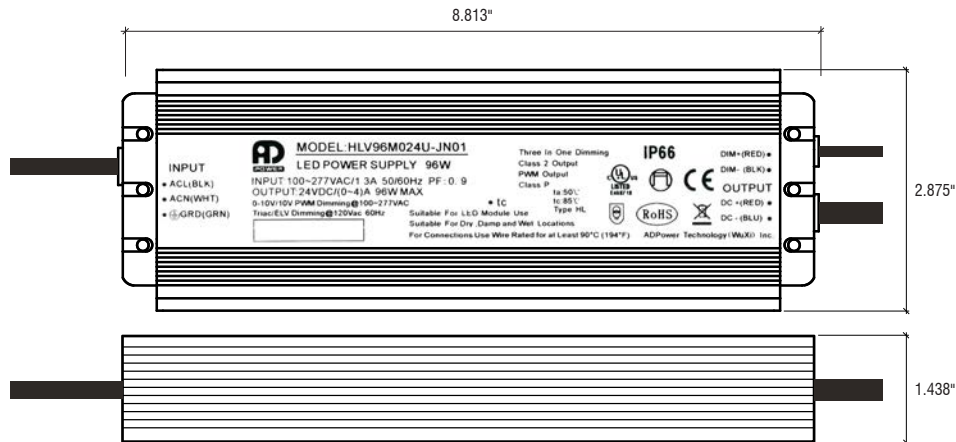
PRODUCT FEATURES

- 431 Hz/Flicker-free Dimming Down to 1%
- Incandescent, ELV, MLV, or 0-10V Dimming
- Protections: Short Circuit/Over Current/Over Voltage
- Free Air Convection Cooling
- Dry/Damp/Wet Rated
- UL-listed Class 2 for Indoor/Outdoor Use



SPECIFICATIONS

Model	HLV96
Input Voltage	100-277 VAC
Output Voltage	24VDC/Constant Voltage
Max. Wattage	96W
Temp Range	-20°F-158°F
Dimensions	8.813" x 2.875" x 1.438"
Classification	Class 2



Conforms to ANSI/UL Standard 2108
Certified to CAN/CSA Standard C22.2 No. 250.0





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MODEL LIST

Model Name	Rated Input Voltage	Rated Output Power	Rated Output Voltage	Output Current	Note
HLV96	100-277 VAC	96 W	24 V	0-4000 mA	3 In 1 Dimming
	100-120 VAC				

SPECIFICATION

Parameters	Symbols	Test Conditions / Comment	Min	Typ	Max	Units
INPUT						
Input Voltage	V_{IN}		90		305	VAC
Rated Input Voltage	$V_{IN \text{ RATED}}$	Dimming with TRIAC/ELV/CL Dimmer	100		120	VAC
		No Phase Cut Dimming	100		277	VAC
Input Frequency	f_{line}		47	50/60	63	Hz
Input Current	I_{IN}	Full Load, $V_{IN} = 100 \text{ VAC}$			1.3	A

GENERAL CHARACTERISTICS						
Power Factor	PF	30% – 100% Load, $V_{IN} = 120 \text{ VAC}$	0.95			PF
		60% – 100% Load, $V_{IN} = 230 \text{ VAC}$	0.9			PF
		70% – 100% Load, $V_{IN} = 277 \text{ VAC}$	0.9			PF
Total Harmonic Distortion	THD	30% – 100% Load, $V_{IN} = 120 \text{ VAC}$			20	%
		60% – 100% Load, $V_{IN} = 230 \text{ VAC}$			20	%
		70% – 100% Load, $V_{IN} = 277 \text{ VAC}$			20	%
Efficiency	η	Full Load, $V_{IN} = 120 \text{ VAC}$	81	83		%
		Full Load, $V_{IN} = 230 \text{ VAC}$	83	85		%
		Full Load, $V_{IN} = 277 \text{ VAC}$	82	84		%
Turn On Delay Time	T_{on_delay}	Cold Start, No TRIAC Dimmer		0.3	0.5	S

OUTPUT						
Output Voltage	V_{OUT}	No Dimming	23.3	24	24.7	V
No Load Output Voltage	$V_{NO \text{ LOAD}}$	No Load, No Dimming	23.7	24	24.3	V
Output Current	I_{OUT}		0		4000	mA
Line Regulation	$V_{OUT-LINE}$				1	%
Load Regulation	$V_{OUT-LOAD}$	I_{OUT} from MIN. to MAX.			2	%
Ripple Voltage	$V_{OUT-RIPPLE}$	Full Load, (pk-to-pk) / Average			3	%
Output Voltage Overshoot	$V_{OVERSHOOT}$	Turning Power ON			3	%
No Load Power Dissipation	$P_{NO-LOAD}$				4	W

0-10V OR RESISTOR DIMMING
 The 0-10V or resistor dimming is a dimming manner that can be used to dim the output voltage via a standard commercial wall dimmer (0-10 VDC) or an external control voltage source (0-10 VDC) or external resistor.
 The dimming range is 100% V_{OUT} to 1% V_{OUT} . When V_{DIM} is 9-10 VDC, the output voltage maintains 100% V_{OUT} , and when V_{DIM} is below 0.3V, the output voltage is 1% V_{OUT} .

Absolute Maximum Voltage on 0-10V Pin	V_{DIM}		-2		15	V
Source Current on 0-10V Dimming Pin	I_{DIM}			100		μA
V_{DIM} Voltage for Full Bright	$V_{DIM-MAX}$		9			V
Minimum Output Voltage	$V_{OUT-MAX}$	$V_{DIM} = 0.3\text{V}$				% of V_{OUT}
External Resistor Value at Full Bright	$R_{External-MAX}$			90		k Ω



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SPECIFICATION (CONT.)

Parameters	Symbols	Test Conditions/ Comment	Min	Typ	Max	Units
PWM DIMMING						
The PWM dimming is a dimming manner that can be used to dim the output voltage via the duty cycle of PWM signal.						
The dimming range is 100% V_{OUT} to 1% V_{OUT} . When the duty cycle is 90% to 100%, the output voltage reaches 100% V_{OUT} , and the output voltage maintains 1% V_{OUT} when the duty cycle below 3%.						
PWM Frequency	f_{PWM}		0.1		1	KHz
High Level Voltage of PWM Signal	$V_{PWM-High}$	$V_{PWM-High}$ Affect Output Voltage	-	10	-	V
Lower Level Voltage of PWM Signal	$V_{PWM-Low}$	$V_{PWM-Low}$ Affect Output Voltage	0		1	V
Minimum Output Voltage	$V_{OUT-MIN}$			1		% of V_{OUT}
TRIAC DIMMING						
The unit is compatible with leading-edge and trailing-edge dimmer.						
Input Voltage	$V_{IN-TRIAC DIM}$		100		120	VAC
Dim Output Voltage	$V_{OUT-TRIAC}$	PWM Output	0	-	100	% of V_{OUT}
Suggest Load Range	$P_{Suggest}$	V_{IN} from 100 VAC to 120 VAC	9.6		96	W
PROTECTION						
Over Voltage Protection	V_{OVP}	Latch Off Mode	28	32	36	V
Over Current Protection	I_{OCP}	It will recover automatically after fault condition is removed.	4.0	4.1	4.5	A
Over Temperature Protection	T_{OTP}	If the case temperature exceeds OTP point, the output voltage of the driver is automatically reduced.	90	95	100	°C
Short Circuit Protection		It will recover automatically after fault conditions is removed.				
ENVIRONMENT						
Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40	-	+85	°C
Operating Relative Humidity	H_a	Non Condensing	10		95	%
OTHERS						
Life Time	T_{Life}	Full load, 65 °C Case Temperature	30			kHrs
MTBF	T_{MTBF}	Full Load, 120 VAC Input, 25 °C Ambient Temperature	200			kHrs
Dimension L x W x H		224 mm x 73 mm x 36.5 mm (8.813" x 2.875" x 1.438")				
SAFETY COMPLIANCE						
UL Listed		UL8750 Compliance to UL1310 Class 2, CSA-C22.2 No. 107.1				
EMC COMPLIANCE						
FCC Part 15B		Conducted Emission Test and Radiated Emission Test				
Note: Unless otherwise specified, all the above parameters are measured at ambient temperature of 25 °C and $V_{IN} = 100-277$ VAC.						



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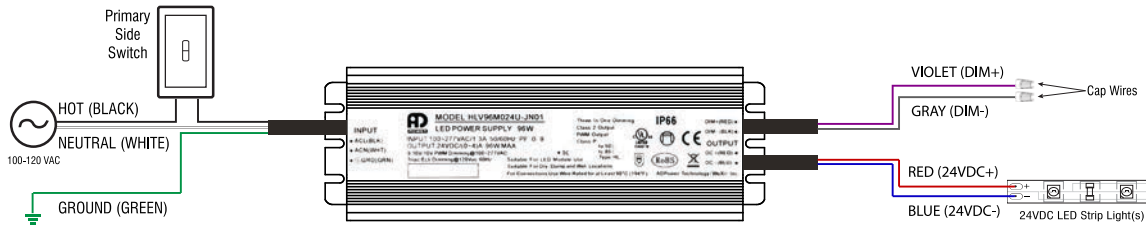


TYPICAL APPLICATION

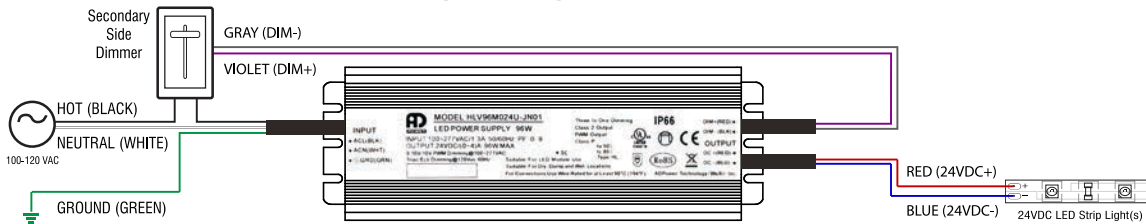
PRIMARY SIDE DIMMING (120V ONLY)



SECONDARY SIDE SWITCHING (120-277V)



SECONDARY SIDE DIMMING (0-10V)



SECONDARY SIDE DIMMING (DMX)

