FIXTURE TYPE _____

PROJECT NAME _____

LOCATION _____

ULV96

96 WATT–24 VOLT |
CLASS 2 POWER SUPPLY

RoHS COMPLIANT · cULus LISTED · CE · CLASS 2 · 24V DC · Dry Rated · Wet Rated

Description

The ULV96 is the most versatile power supply on earth. It accepts 100-277V input voltage, and can dim on all dimming systems (MLV, ELV, INC), plus 0-10V and DMX. With sophisticated over-load protection, and a dry/damp enclosure, it is the perfect unit to specify because it works on every system, every time.

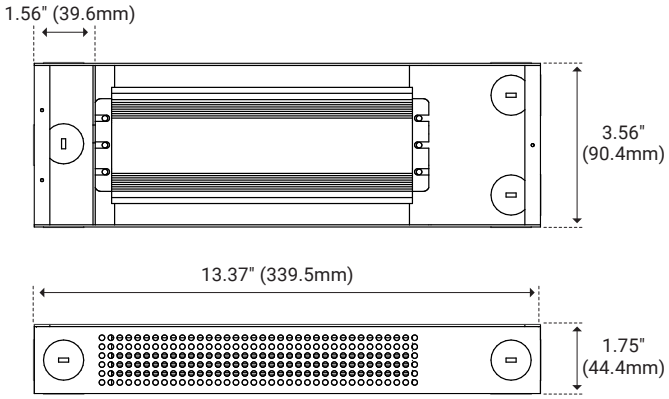
Specifications

Series	ULV96
Input Voltage	100–277V AC
Output Voltage	24V DC / Constant Voltage
Max Wattage	96W
Temp Range	-20°F(-28°C) – 158°F (70°C)
Dimensions	13.37" × 3.56" × 1.75"
Classification	Class 2

Features

- 431 Hz / Flicker-free Dimming Down to 1%
- Universal Dimming: 0-10V, DMX, TRIAC, MLV, ELV, Incandescent
- Unlimited Overload Protection / Auto Reset Short Circuit Protection
- Free Air Convection Cooling
- Suitable for Dry / Damp Location
- UL-Listed Class 2

Dimensions



Model List

Model Name	Rated Input Voltage	Rated Output Power	Rated Output Voltage	Output Current	Note
ULV96	120 – 277 VAC	96 W	24 V	0-4000 mA	3 In 1 Dimming

Specification

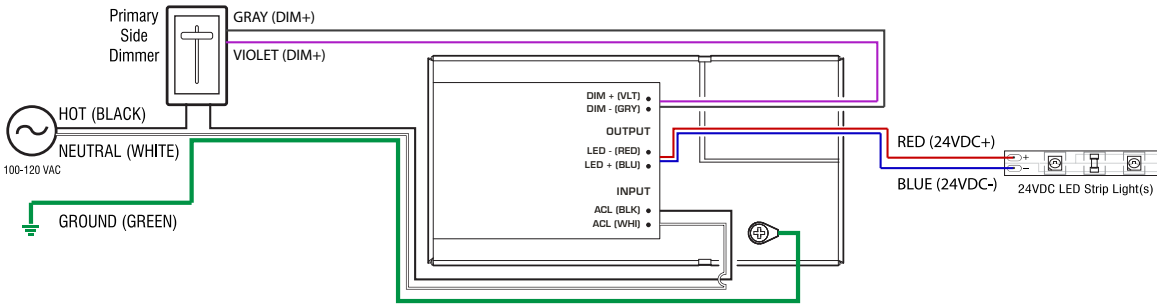
Parameters	Symbols	Test Conditions / Comment	Min	Typ	Max	Units
INPUT						
Input Voltage	V_{IN}		108		305	VAC
Rated Input Voltage	$V_{IN\ RATED}$	Dimming w/ TRIAC / ELV / CL Dimmer		120		VAC
		No Phase Cut Dimming	100		277	VAC
Input Frequency	fline		47	50 / 60	63	Hz
Input Current	I_{IN}	Full Load,V_{IN} = 120 VAC			1	A
		Full Load,V_{IN} = 230 VAC			0.53	A
		Full Load,V_{IN} = 277 VAC			0.46	A
GENERAL CHARACTERISTICS						
Power Factor	PF	30% – 100% Load, V_{IN} = 120 VAC	0.95			PF
		60% – 100% Load, V_{IN} = 230 VAC	0.9			PF
		70% – 100% Load, V_{IN} = 277 VAC	0.9			PF
Total Harmonic Distortion	THD	30% – 100% Load, V_{IN} = 120 VAC			20	%
		60% – 100% Load, V_{IN} = 230 VAC			20	%
		70% – 100% Load, V_{IN} = 277 VAC			20	%
Efficiency	η	Full Load, V_{IN} = 120 VAC	85	87		%
		Full Load, V_{IN} = 230 VAC	87	89		%
		Full Load, V_{IN} = 277 VAC	87	89		%
Turn On Delay Time	T_{on_delay}	Cold Start, No TRIAC Dimmer		0.5	0.75	S
OUTPUT						
Output Voltage	V_{OUT}	No Dimming	23.3	24	24.7	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.			3	%
Ripple Voltage	$V_{OUT-RIPPLE}$	Full Load, (pk-to-pk) / 2 × Average			3	%
Output Voltage Overshoot	$V_{OVERSHOOT}$	Turning Power ON			3	%
0-10V OR RESISTOR DIMMING						
The 0-10 V 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 0.3 V, the output voltage is 1 % V_{OUT}.						
Absolute Maximum Voltage on 0-10 V Pin	V_{DIM}		-2		15	V
Source Current on 0-10 V Dimming Pin	I_{DIM}			100		uA
V_{DIM} Voltage for Full Bright	$V_{DIM-MAX}$		8			V
Output Duty Cycle	D_{0-10V}	PWM Output	5		100	%
External Resistor Value at Full Bright	$R_{External-MAX}$			50		kΩ

Specification

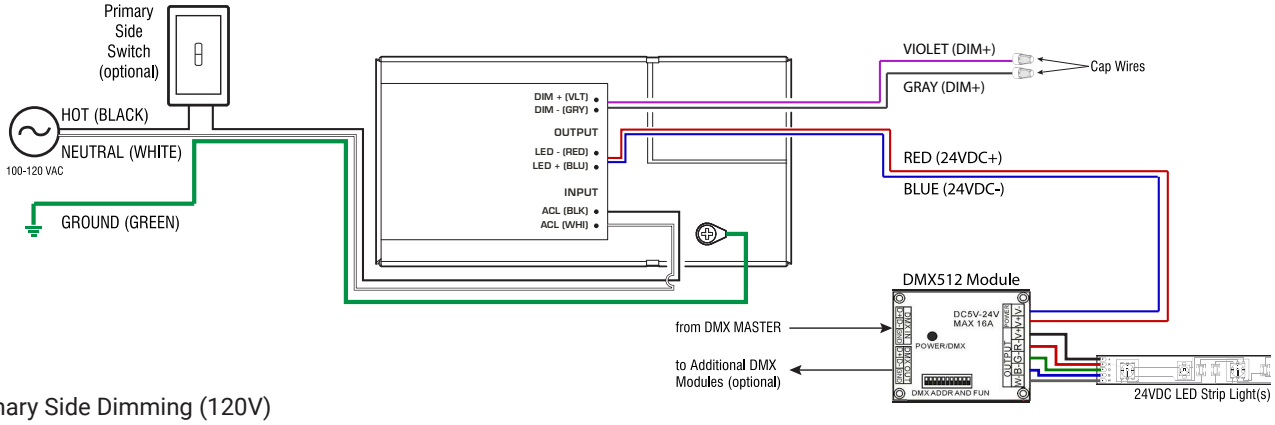
Parameters	Symbols	Test Conditions / Comment	Min	Typ	Max	Units
PWM DIMMING						
The PWM dimming is a dimming manner that can be used to dim the output voltage via the duty cycle of PWM signal. The dimming range is 100 % V_{OUT} to 5 % V_{OUT}. When the duty cycle is 80 % to 100 %, the output voltage reaches 100 % V_{OUT}, and the output voltage maintains 5 % V_{OUT} when the duty cycle below 6 %.						
PWM Frequency	f_{PWM}		0.1		1	KHz
High Level Voltage of PWM Signal	$V_{PWM-High}$	$V_{PWM-High}$ Affect Output Voltage	8	10	12	V
Lower Level Voltage of PWM Signal	$V_{PWM-Low}$	$V_{PWM-Low}$ Affect Output Voltage	0		1	V
Output Duty Cycle	D_{PWM}	PWM Output	5		100	%
PHASE CUT DIMMING						
The unit is compatible with leading-edge and trailing-edge dimmer.						
Input Voltage	$V_{IN-TRIAC\ DIM}$			120		VAC
Dim Output Voltage	$V_{OUT-TRIAC}$	PWM Output	0	-	100	% of V_{OUT}
Suggest Load Range	$P_{Suggest}$	V_{IN} = 120 VAC	9.6		96	W
PROTECTION						
Over Voltage Protection	V_{OVP}	Latch Off Mode			36	V
Over Current Protection	I_{OCP}	Hiccup Mode	4.0	4.1	4.2	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	Hiccup mode, 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		90	%
OTHERS						
Life Time	T_{Life}					
MTBF	T_{MTBF}					
Dimension L × W × H	400 mm × 31.5 mm × 31.5 mm (15.75" × 1.24" × 1.24")					
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.						

Typical Application

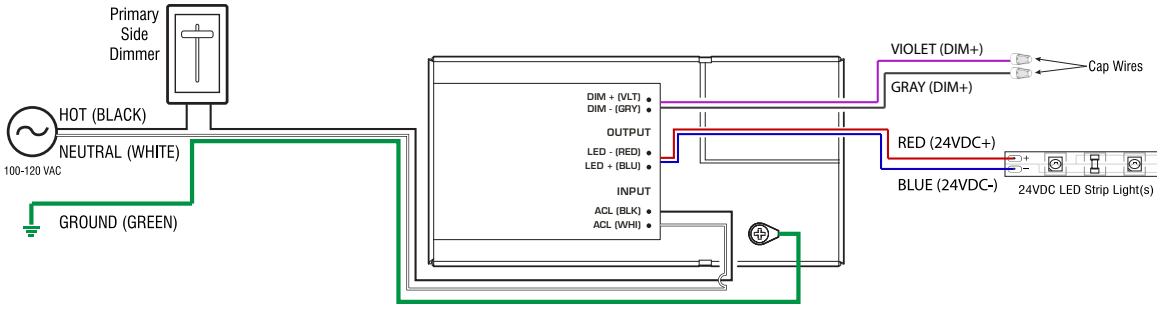
0–10V Dimming (120–277V)



DMX Control (120–277V)



Primary Side Dimming (120V)



Primary Side Dimming (120–277V)