FIXTURE TYPE _____

PROJECT NAME _____

LOCATION _____

Mini ULV96

96 WATT–24 VOLT |
CLASS 2 POWER SUPPLY

RoHS COMPLIANT · c UL us LISTED · CLASS 2 · Supports TITLE 24 JA8-2016 Compliant · Dry Rated · Damp Rated

Description

The ULV96-M is a compact linear power supply specifically engineered for efficient lighting control. It allows for universal dimming down to 0.1% with flicker-free performance and is suitable for indoor installations, providing reliable protection in various environments.

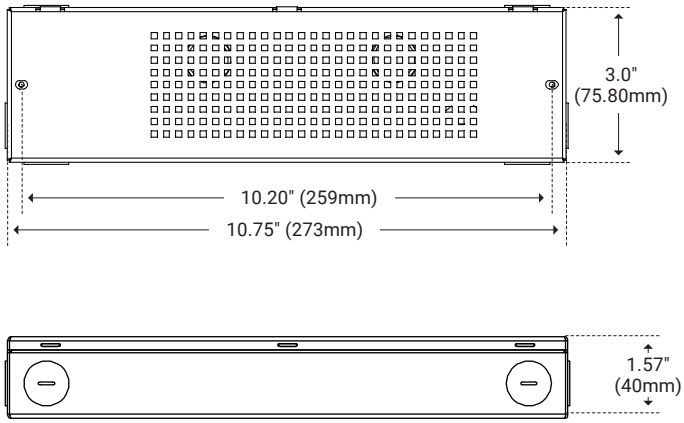
Features

- Universal AC Input Voltage (120-347V)
- Linear Form Factor, Compact Design, Suitable for Field Installation
- Flicker Free, Spec-Grade Smoothness. Title-24 Compliant
- Designed for Indoor Installations, Dry and Damp UL Approved
- Constant Voltage Universal Dimming: ELV, MLV, Triac, or Isolated 0–10V down to 0.1%
- Logarithmic Dimming Curve
- 10-Year Warranty

Specifications

Series/Ordering Code	ULV96-M
Input Voltage	120-347V
Output Voltage	24V DC Constant Voltage
Max Wattage	96W
Dimming Options	ELV, MLV, 0–10V, Triac
Operating Temp	-31°F (-35°C) – 131°F (55°C)
Storage Temp	-40°F (-40°C) – 185°F (85°C)

Dimensions



Conforms to UL8750
Certified to CAN/CSA Standard C22.2 NO. 250.13

Series Data

Model Name	Rated Input Voltage	Rated Input Voltage (Triac Dimming)	Max Output Power	Output Current	Rated Output Voltage	Note
ULV96-M	120-347V AC	120V AC	96W	0-4000mA	24V DC	TRIAC + 0-10V PWM Style Output

Specification

Parameters	Symbols	Test Conditions / Comment	Min	Type	Max	Units
Input						
Input Voltage	V_{IN}		108		382	VAC
Rated Input Voltage	$V_{IN\ RATED}$		120		347	VAC
Input Frequency	f_{line}		47	50 / 60	63	Hz
Input Current	I_{IN}	Full Load, V_{IN} = 120V AC			1.0	A
		Full Load, V_{IN} = 277V AC			0.4	
		Full Load, V_{IN} = 347V AC			0.36	
Inrush Current	I_{INRUSH}	Cold Start, V_{IN} = 120V AC			30	A
		Cold Start, V_{IN} = 277V AC			65	
		Cold Start, V_{IN} = 347V AC			82	
Leakage Current	$I_{LEAKAGE}$	V_{IN} = 120V AC, 60Hz			0.5	mA
		V_{IN} = 277V AC, 60Hz			0.6	
		V_{IN} = 347V AC, 60Hz			0.75	
General Characteristics						
Power Factor	PF	30% – 100% Load, V_{IN} = 120V AC	0.9			PF
		50% ~ 100% Load, V_{IN} = 277V AC	0.9			
		65% ~ 100% Load, V_{IN} = 347V AC	0.9			
Total Harmonic Distortion	THD	30% – 100% Load, V_{IN} = 120V AC			20	%
		50% ~ 100% Load, V_{IN} = 277V AC			20	
		65% ~ 100% Load, V_{IN} = 347V AC			20	
Efficiency	η	Full Load, V_{IN} = 120V AC, Steady State	87	88		%
		Full Load, V_{IN} = 277V AC, Steady State	89	90		
		Full Load, V_{IN} = 347V AC, Steady State	89	90		
Turn On Delay Time	T_{on_delay}	Cold Start			0.5	S

Specification

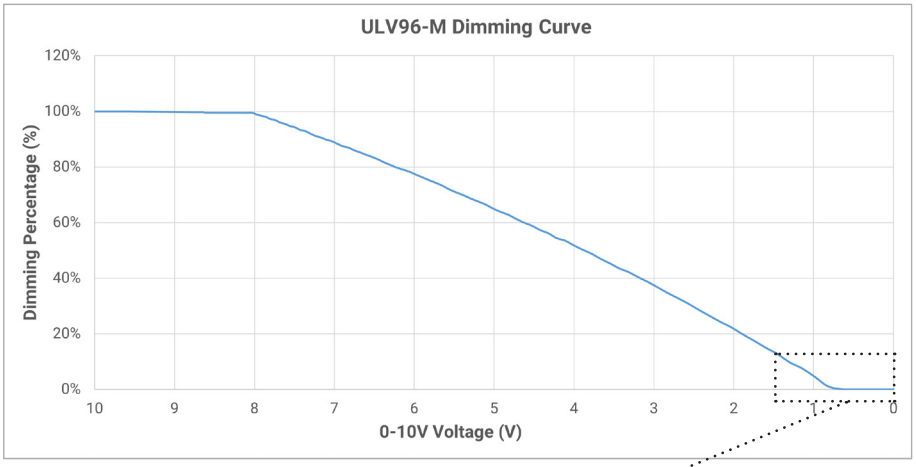
Parameters	Symbols	Test Conditions / Comment	Min	Type	Max	Units
Output						
Output Voltage Tolerance	t_{OUT}	No Dimming			3	%
No Load Output Voltage Tolerance	t_{NOLOAD}	No Load, No Dimming			1.5	%
Output Current	I_{OUT}		0		4000	mA
Output Power	P_{OUT}				96	W
Line Regulation	$V_{OUT-LINE}$				1	%
Ripple Voltage	$V_{OUT-LINE}$	Full Load, (pk-to-pk) / Average			5	%
Output Voltage Overshoot	$V_{OVERSHOOT}$	Turning Power ON			10	%
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 (0-10V DC) or an external control voltage source (0-10V DC) or external resistor. The unit can be compatible with both sink and source current dimmers.						
Absolute Maximum Voltage on 0-10V Pin	V_{DIM}		0		10	V
Source Current on 0-10V Dimming Pin	I_{DIM}			200		uA
Light On	V_{DIM-ON}			0.6		V
Light Off	$V_{DIM-OFF}$			0.5		V
Dimming Voltage for Full Bright	$V_{DIM-MAX}$		8			V
Leakage Voltage	V_{LEAK_RMS}	Voltage between DIM- and Ground			10	V_{AC}
Triac 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	% out of V_{OUT}
Suggest Load Range	$P_{SUGGEST}$	V_{IN} = 120V AC	10		100	%
Protection						
Over Voltage	V_{OVP}	Latch mode	28		36	V
Over Current	I_{OCP}	Hiccup mode	4000		4500	mA
Over Temperature	T_{OTP}	If the case temperature exceeds OTP point, the output voltage of the driver is automatically reduced.	194	203	212	°F
Over Power	CC/CV mode					
Short Circuit	The unit can recover automatically after fault conditions are removed.					

Specification

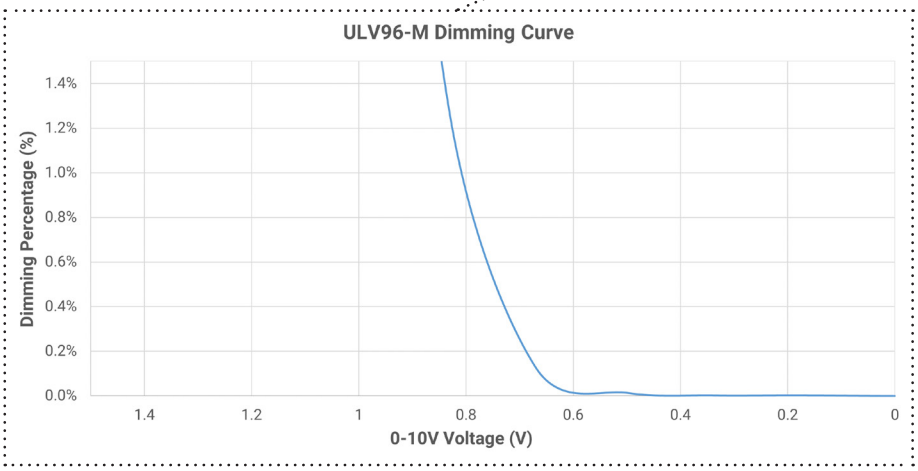
Environment						
Storage Temperature	$T_{Storage}$	Humidity: 5% RH to 95% RH	-40		185	°F
Ambient Operating Temperature	T_a		-31		122	°F
Max Case Temperature	T_c	Hot spot on case			194	°F
Operating Relative Humidity	H_a	Non-condensing	10		90	%
Acoustic Noise		Measured from 1m without dimmer			24	dBA
Cooling	Convection cooling					
IP Rating	Dry and damp UL approved					
Others						
Life Time	T_{Life}	Full Load, 176 °F case temperature	50			kHrs
MTBF	T_{MTBF}	Full Load, 77 °F case temperature	200			kHrs
Net Weight	W_{NET}			673		g
Warranty	10 Years Warranty at $T_c \leq 176$ °F					
Flicker	IEEE 1789(≥ 1°% dimming), Title 24					
Safety Compliance						
CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13					
EMC Requirements	**Standard**		**Conditions**			
Electromagnetic Compliance						
EMI Emissions	FCC Title 47 Part 15B		Class A			
Voltage Fluctuations and Flicker	IEC 61000-3-3					
Immunity Compliance	IEC 61000-4-2		±8kV Air Discharge, ±6kV Contact Discharge			
	IEC 61000-4-5 or ANSI/IEEE C62.41-2002		±4kV Common Mode (12 Ω), ±2kV Differential Mode (2 Ω), 5 strikes/1 minute interval (40 total strikes)			
	ANSI/IEEE C62.41.1-2002		2.5kV Ring Wave, test at 30Ω, 7 strikes/1 minute interval, Common and Differential Mode, 56 total strikes			
	IEC 61000-4.11		>95% dip, 0.5 period; 30% dip, 25 periods; 95% reduction, 250 periods			
	IEC 61000-4.4		±2kV Direct couple to Line input, 5kHz repitition rate, 15mS duration, 300mS period. 7 coupling paths, 1 minute per path (14 total combinations)			
Note: Unless otherwise specified, all the above parameters are measured at ambient temperature of 77 °F and rated voltage.						

Charts

Dimming Curve (Full)

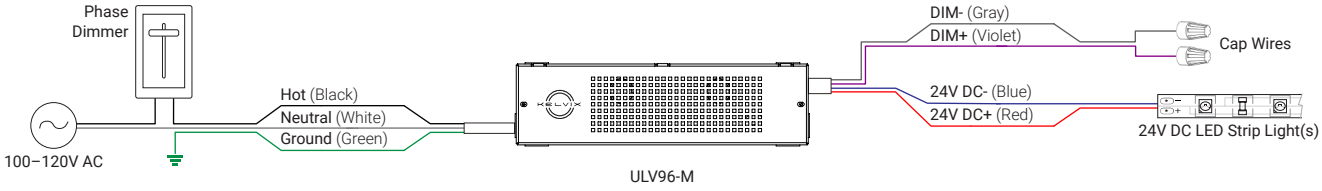


Dimming Curve (Exploded)



Wiring Diagram

Primary Side Dimming (120V Only)



Secondary Side Dimming (0–10V)