

FIXTURE TYPE \_\_\_\_\_

PROJECT NAME \_\_\_\_\_

LOCATION \_\_\_\_\_



## Mini HLV96

96 WATT-24 VOLT |  
CLASS 2 POWER SUPPLY



### | Description

The HLV96-M is a versatile 96W power supply for lighting applications, with a 120-347V AC input. Its compact, linear design is suitable for all environments, with an IP66 rating for various locations. Engineered for consistent voltage output and robust protection, it offers flicker-free performance and supports multiple dimming methods, including 0-10V dimming down to 0.1%

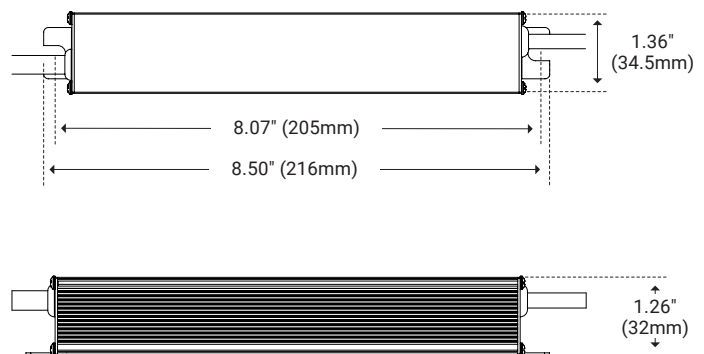
### | Specifications

Series/Ordering Code	HLV96-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)

### | Features

- Universal AC Input Voltage (120-347V)
- Linear Form Factor, Compact Design
- Flicker Free, Spec-Grade Smoothness. Title-24 Compliant
- IP66 Design for Indoor and Outdoor Installations, Dry, Damp, and Wet Location UL Approved
- Constant Voltage Universal Dimming: ELV, MLV, Triac, or Isolated 0-10V down to 0.1%
- 5-Year Warranty

### | Dimensions



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



## I Series Data

Model Name	Rated Input Voltage	Rated Input Voltage (Triac Dimming)	Max Output Power	Output Current	Rated Output Voltage	Wet Location	Note
HLV96-M	120-347V AC	120V AC	96W	0-4000mA	24V DC	Yes	TRIAC + 0-10V PWM Style Output

## I Specification

Parameters	Symbols	Test Conditions / Comment	Min	Type	Max	Units
<b>Input</b>						
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	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	
<b>General Characteristics</b>						
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	$\eta$	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



## I Specification

Parameters	Symbols	Test Conditions / Comment	Min	Type	Max	Units
<b>Output</b>						
Output Voltage Tolerance	$t_{OUT}$	No Dimming			3	%
No Load Output Voltage Tolerance	$t_{NO\,LOAD}$	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	%
<b>0-10V or Resistor Dimming</b>						
The 0-10 V or resistor dimming 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		$\mu$ A
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	$V_{AC}$
<b>Triac Dimming</b>						
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	%
<b>Protection</b>						
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	$^{\circ}$ F
Over Power		CC/CV mode				
Short Circuit		The unit can recover automatically after fault conditions are removed.				



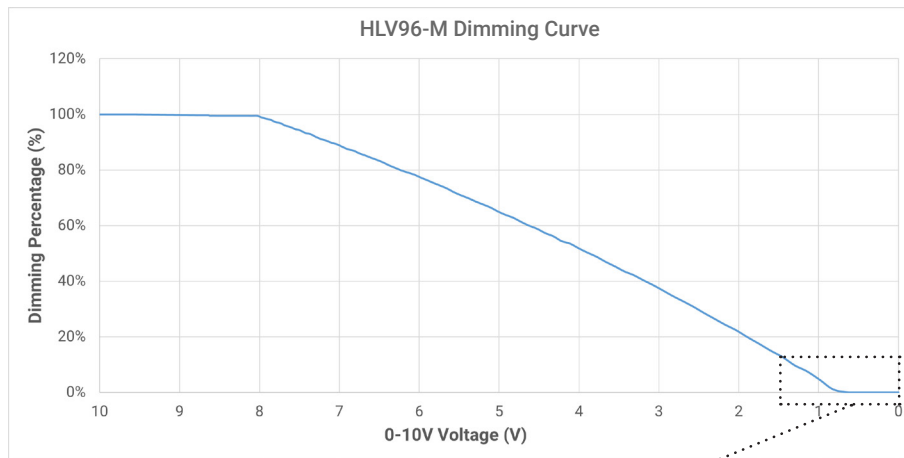
## I Specification

<b>Environment</b>						
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	IP66 - Dry, Damp, and Wet Location UL approved					
<b>Others</b>						
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	$W_{NET}$			450		g
Warranty	5 Years Warranty at $T_c \leq 176$ °F					
Flicker	IEEE 1789( $\geq 1\%$ dimming), Title 24					
<b>Safety Compliance</b>						
CUL/UL	UL8750, CAN/CSA-C22.2 No. 250.13					
EMC Requirements	Standard			Conditions		
<b>Electromagnetic Compliance</b>						
EMI Emissions	FCC Title 47 Part 15			Class A		
Voltage Fluctuations and Flicker	IEC 61000-3-3					
Immunity Compliance	IEC 61000-4-2			$\pm 8$ kV Air Discharge, $\pm 6$ kV Contact Discharge		
	IEC 61000-4-5 or ANSI/IEEE C62.41-2002			$\pm 4$ kV Common Mode (12 $\Omega$ ), $\pm 2$ kV Differential Mode (2 $\Omega$ ), 5 strikes/1 minute interval (40 total strikes)		
	ANSI/IEEE C62.41.1-2002			2.5kV Ring Wave, test at 30 $\Omega$ , 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			$\pm 2$ kV Direct couple to Line input, 5kHz repetition 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.						

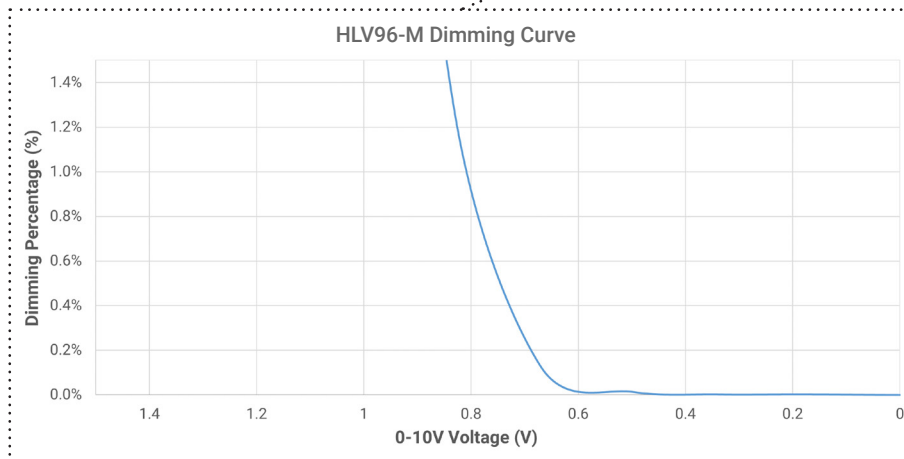


## Charts

### Dimming Curve (Full)



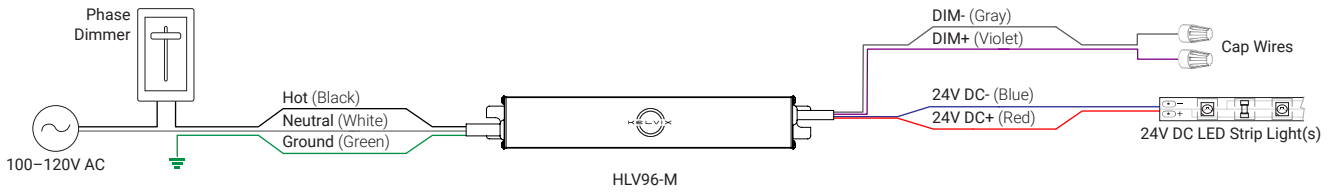
### Dimming Curve (Exploded)





# I Wiring Diagram

## Primary Side Dimming (120V Only)



## Secondary Side Dimming (0-10V)

