75 Watt - LP75W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

75W LP75W Series DIMMING

Model: LP75W Series

- Drive Mode: Constant Current or Constant Voltage
- Technology: PFC Corrected 2-Stage Switch Mode
- Output Power: 75W Max.
- Input Voltage: 90 to 305VAC, 47- 63Hz
- Number of Outputs: One
- Output Voltages: 4VDC - 214VDC
- Output Currents: 350mA - 6250mA
- Optional 0-10V or PWM Positive Dimming 10% ~ 100%

Environmental

1. Operating temperature: Tc 90C Maximum. Reference -30 to +65°C ambient
2. For UL Type TL (Tref Max/Meas. Tref): UL Class 2 86/63°C, UL Non Class 2 90/81°C
3. Storage temperature range: -40 to +85°C
4. Humidity (non-condensing): 5% - 95%RH
5. Cooling: Convection
6. Vibration Frequency: 5-55Hz/2g, 30 minutes
7. Impact resistance: 1g/s
8. MTBF@ 40°C: 474,000 hours @ Full Load per MIL-217F Notice 2.

Safety and Compliance

1. Class P: UL8750, EN61347, CSA 22.2 safety listed, UL Class P -or- Type TL: UL8750, EN61347, CSA 22.2, UL TL recognized
2. FCC, 47CFR Part 15 Class B certified
3. Water resistant and Dust Proof Design: IP66, NEMA6, for Dry, Damp, Wet Locations.
4. Compact Miniature, Lightweight Design.
5. Safety Isolation between Primary and Secondary
6. Meets EN61000-3-2 & EN61000-3-3 Class C
7. Protection: output over-voltage, output over-current, output short circuit, auto-recovery.
8. EN61000-4-5: 2kV/4kV 8/20 µsec surge protection.

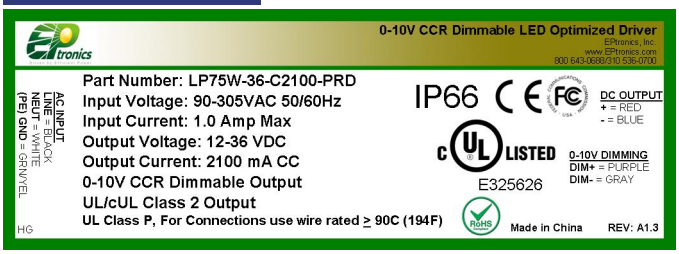
Electrical Specifications at 25°C

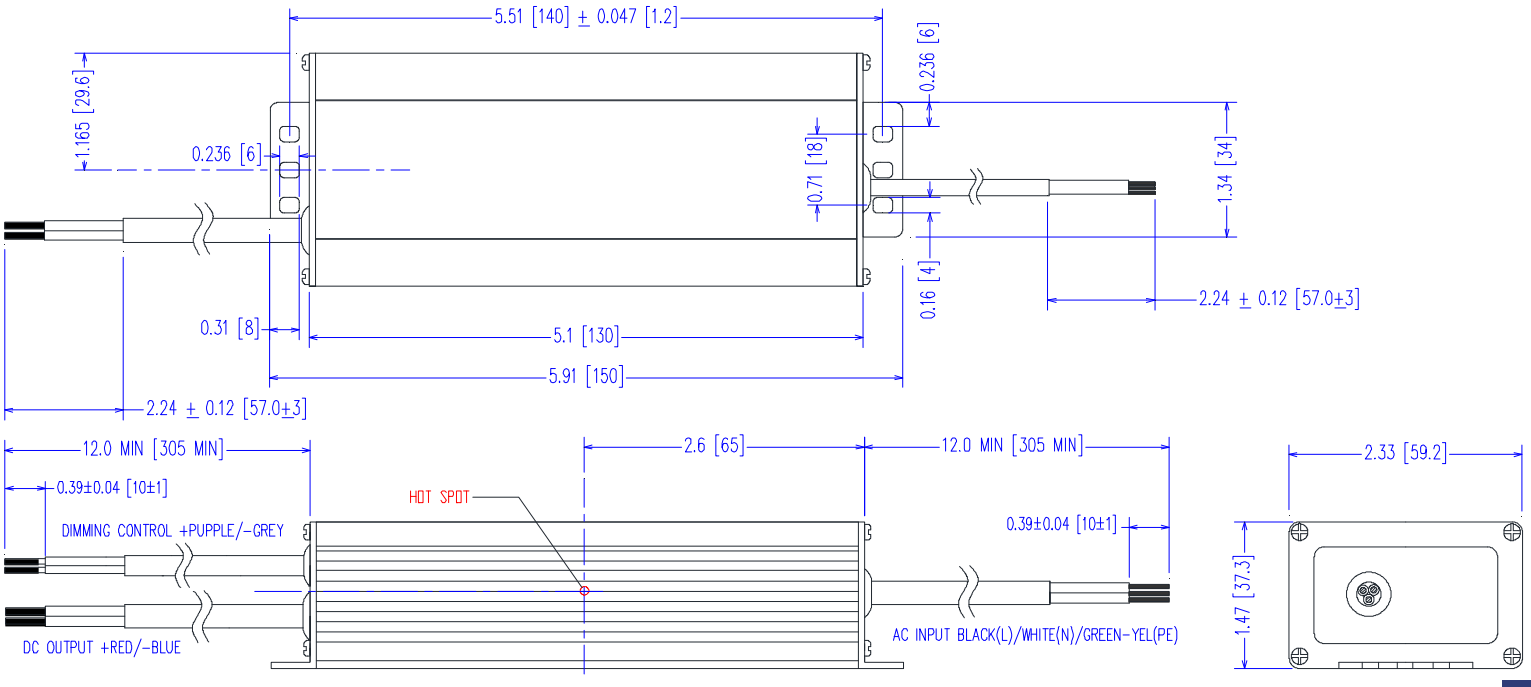
- Input voltage range: 90 to 305VAC
- Frequency: 47- 63HZ
- Power Factor: ≥ 0.90 at ≥ 75% Load, 120Vac/230Vac/277Vac 50/60Hz
- THD%: ≤ 20% at ≥ 60% Load, 120Vac/230Vac/277Vac 50/60Hz
- Inrush current: <77A at 25C, 277V, cold start, Max. Load
- Input current: 1.0A Maximum
- Efficiency: 86% typical at 230Vac Full Load
- Line regulation accuracy: ± 3%
- Load regulation accuracy: ± 4%
- Leakage current: 277Vac, 700uA typical; Hold up time: half cycle

Mechanical Dimensions: Inches [mm]

Material: Black Aluminum Housing
Fully Encapsulated
Weight: 19 oz (538 grams) Typical

Labeling Example





Custom designs available. Please consult with the factory.

Specifications subject to change without notice

EPtronics Driven by Efficient Power

LED Optimized Drivers

75 Watt - LP75W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

UL Class P Constant Current Versions

c UL LISTED E325626 | CLASS P | TYPE HL | CE | FCC | IP66 | RoHS Compliant

Part Number [2]	US Class 2	CN Class 2	UL Types	Output Voltage Range	Output Constant Current	Current Accuracy	Output Power Maximum	Typical Efficiency [1]
LP75W-214-C0350-P	NO	NO	HL	72 - 214 VDC	350 mA	± 3%	75W	91%
LP75W-166-C0450-P	NO	NO	HL	56 - 166 VDC	450 mA	± 3%	75W	91%
LP75W-108-C0700-P	NO	NO	HL	36 - 108 VDC	700 mA	± 3%	75W	90%
LP75W-72-C1050-P	NO	NO	HL	24 - 72 VDC	1050 mA	± 3%	75W	90%
LP75W-54-C1400-P	YES	YES	HL	18 - 54 VDC	1400 mA	± 3%	75W	88%
LP75W-48-C1560-P	YES	YES	HL	16 - 48 VDC	1560 mA	± 3%	75W	88%
LP75W-42-C1790-P	YES	YES	HL	14 - 42 VDC	1790 mA	± 3%	75W	86%
LP75W-36-C2100-P	YES	YES	HL	12 - 36 VDC	2100 mA	± 3%	75W	86%
LP75W-27-C2800-P	YES	YES	HL	9 - 27 VDC	2800 mA	± 3%	75W	85%
LP75W-24-C3130-P[5]	YES	YES	HL	8 - 24 VDC	3130 mA	± 3%	75W	85%
LP75W-20-C3750-P	YES	YES	HL	7 - 20 VDC	3750 mA	± 3%	75W	84%
LP75W-15-C5000-P	YES	YES	HL	5 - 15 VDC	5000 mA	± 3%	75W	84%
LP75W-12-C6250[5]	NO	NO	HL	4 - 12 VDC	6250 mA	± 3%	75W	84%

UL Class P Constant Voltage Versions

Part Number	US Class 2	CN Class 2	UL Types	Output Constant Voltage	Output Current Range	Voltage Accuracy	Output Power Maximum	Typical Efficiency [1]
LP75W-214-P	NO	NO	HL	214 VDC	88 - 350 mA	± 5%	75W	91%
LP75W-166-P	NO	NO	HL	166 VDC	113 - 450 mA	± 5%	75W	91%
LP75W-108-P	NO	NO	HL	108 VDC	175 - 700 mA	± 5%	75W	90%
LP75W-72-P	NO	NO	HL	72 VDC	263 - 1050 mA	± 5%	75W	90%
LP75W-54-P	YES	YES	HL	54 VDC	350 - 1400 mA	± 5%	75W	88%
LP75W-48-P	YES	YES	HL	48 VDC	390 - 1560 mA	± 5%	75W	88%
LP75W-42-P	YES	YES	HL	42 VDC	448 - 1790 mA	± 5%	75W	86%
LP75W-36-P	YES	YES	HL	36 VDC	525 - 2100 mA	± 5%	75W	86%
LP75W-27-P	YES	YES	HL	27 VDC	700 - 2800 mA	± 5%	75W	85%
LP75W-24-P[5]	YES	YES	HL	24 VDC	783 - 3130 mA	± 5%	75W	85%
LP75W-20-P	YES	YES	HL	20 VDC	938 - 3750 mA	± 5%	75W	84%
LP75W-15-P	YES	YES	HL	15 VDC	1250 - 5000 mA	± 5%	75W	84%
LP75W-12-P[5]	NO	NO	HL	12 VDC	1563 - 6250 mA	± 5%	75W	84%

Notes

1. Typical efficiency measured at 230VAC input, full load
2. For dimmable versions add appropriate designator to the end of the part number: For Example: LP75W-15-C5000-P**RD** is 0-10V or resistance dimmable version, LP75W-15-C5000-P**PD** is PWM dimmable version.
   -P**RD** 0-10V & Resistance dimmable version comes with an extra two wires +Purple/-Grey on the output side.
   -P**PD** PWM Dimmable version comes with an extra two wires +Purple/-Grey on the output side.
3. -P**RD** 0-10V Dimming is compatible with most quality 0-10V wall dimmers and direct 0-10V analog signal. See page 4 for details.
4. -P**PD** PWM version is PWM Dimmable via a positive 10% to 100% Duty Cycle, 500Hz to 1.5kHz, 0-10V Pulse. See page 5 for details.
5. SAM Recognized under E325626.

Specifications subject to change without notice

Custom designs available. Please consult with the factory.

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E325626 TYPE TL TYPE HL IP66

Constant Current Versions

Part Number [2]	US Class 2	CN Class 2	UL Types	Output Voltage Range	Output Constant Current	Current Accuracy	Output Power Maximum	Typical Efficiency [1]
LP75W-214-C0350	NO	NO	TL & HL	72 - 214 VDC	350 mA	± 3%	75W	91%
LP75W-166-C0450	NO	NO	TL & HL	56 - 166 VDC	450 mA	± 3%	75W	91%
LP75W-108-C0700	NO	NO	TL & HL	36 - 108 VDC	700 mA	± 3%	75W	90%
LP75W-72-C1050	NO	NO	TL & HL	24 - 72 VDC	1050 mA	± 3%	75W	90%
LP75W-54-C1400	YES	YES	TL & HL	18 - 54 VDC	1400 mA	± 3%	75W	88%
LP75W-48-C1560	YES	YES	TL & HL	16 - 48 VDC	1560 mA	± 3%	75W	88%
LP75W-42-C1790	YES	YES	TL & HL	14 - 42 VDC	1790 mA	± 3%	75W	86%
LP75W-36-C2100	YES	YES	TL & HL	12 - 36 VDC	2100 mA	± 3%	75W	86%
LP75W-27-C2800	YES	YES	TL & HL	9 - 27 VDC	2800 mA	± 3%	75W	85%
LP75W-24-C3130[5]	YES	YES	TL & HL	8 - 24 VDC	3130 mA	± 3%	75W	85%
LP75W-20-C3750	YES	YES	TL & HL	7 - 20 VDC	3750 mA	± 3%	75W	84%
LP75W-15-C5000	YES	YES	TL & HL	5 - 15 VDC	5000 mA	± 3%	75W	84%
LP75W-12-C6250[5]	NO	NO	TL & HL	4 - 12 VDC	6250 mA	± 3%	75W	84%

Constant Voltage Versions

Part Number	US Class 2	CN Class 2	UL Types	Output Constant Voltage	Output Current Range	Voltage Accuracy	Output Power Maximum	Typical Efficiency [1]
LP75W-214	NO	NO	TL & HL	214 VDC	88 - 350 mA	± 5%	75W	91%
LP75W-166	NO	NO	TL & HL	166 VDC	113 - 450 mA	± 5%	75W	91%
LP75W-108	NO	NO	TL & HL	108 VDC	175 - 700 mA	± 5%	75W	90%
LP75W-72	NO	NO	TL & HL	72 VDC	263 - 1050 mA	± 5%	75W	90%
LP75W-54	YES	YES	TL & HL	54 VDC	350 - 1400 mA	± 5%	75W	88%
LP75W-48	YES	YES	TL & HL	48 VDC	390 - 1560 mA	± 5%	75W	88%
LP75W-42	YES	YES	TL & HL	42 VDC	448 - 1790 mA	± 5%	75W	86%
LP75W-36	YES	YES	TL & HL	36 VDC	525 - 2100 mA	± 5%	75W	86%
LP75W-27	YES	YES	TL & HL	27 VDC	700 - 2800 mA	± 5%	75W	85%
LP75W-24[5]	YES	YES	TL & HL	24 VDC	783 - 3130 mA	± 5%	75W	85%
LP75W-20	YES	YES	TL & HL	20 VDC	938 - 3750 mA	± 5%	75W	84%
LP75W-15	YES	YES	TL & HL	15 VDC	1250 - 5000 mA	± 5%	75W	84%
LP75W-12[5]	NO	NO	TL & HL	12 VDC	1563 - 6250 mA	± 5%	75W	84%

Notes

1. Typical efficiency measured at 230VAC input, full load
2. For dimmable versions add appropriate designator to the end of the part number: For Example: LP75W-15-C5000-RD is 0-10V or resistance dimmable version, LP75W-15-C5000-PD is PWM dimmable version.
   -RD 0-10V & Resistance dimmable version comes with an extra two wires +Purple/-Grey on the output side.
   -PD PWM Dimmable version comes with an extra two wires +Purple/-Grey on the output side.
3. -RD 0-10V Dimming is compatible with most quality 0-10V wall dimmers and direct 0-10V analog signal. See page 4 for details.
4. -PD PWM version is PWM Dimmable via a positive 10% to 100% Duty Cycle, 500Hz to 1.5kHz, 0-10V Pulse. See page 5 for details.
5. SAM Recognized under E325626.

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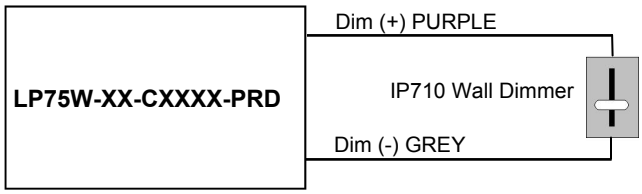
-RD 2-Wire 0-10V CCR Dimming Scheme

Parameters	Minimum	Typical	Maximum
Source Current out of 0-10V Purple Wire	0mA	—	2mA
Absolute Voltage Range on 0-10V (+) Purple Wire	-2.0V	—	+15V
Sink Current into 0-10V Purple Wire	0mA	—	1.2mA

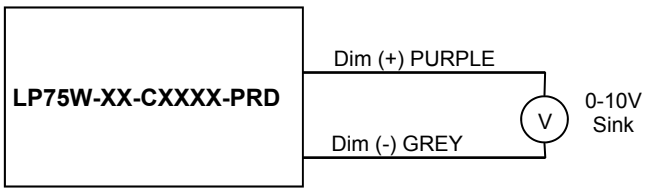
Notes

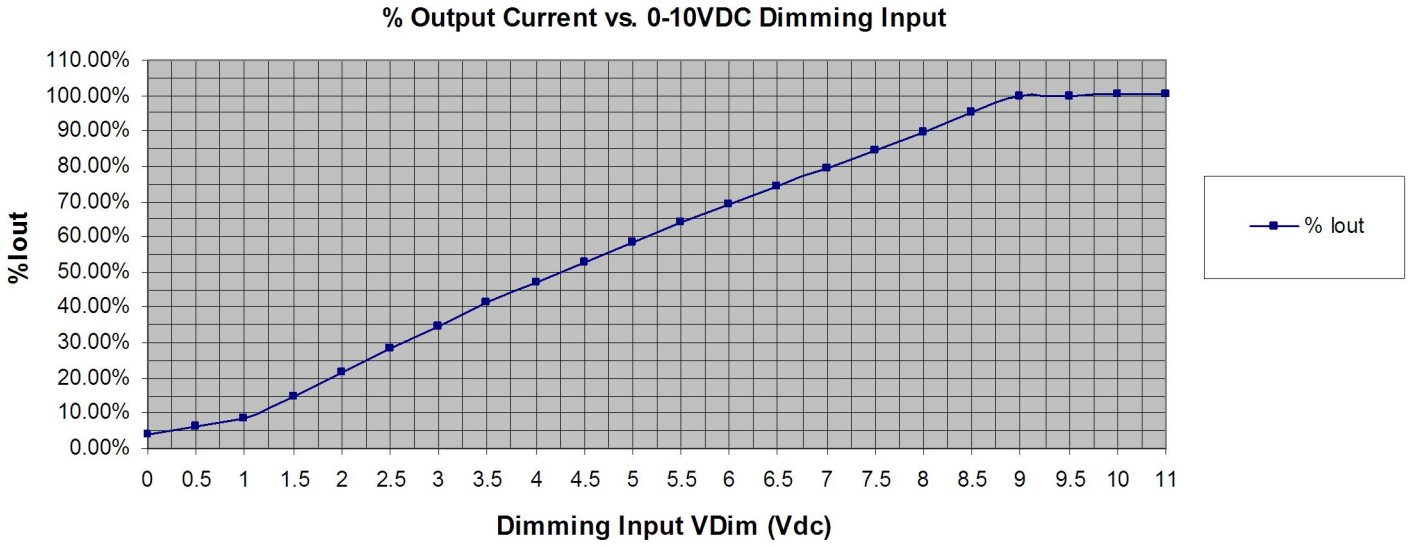
1. -RD 0-10V dimmable version comes with an extra two wires +Purple/-Grey on the output side.
2. -RD version is compatible with most 0-10V Wall Slide dimmers and direct 0-10V analog signal. Recommended wall slide dimmer is Leviton IP710 or equivalent
3. -RD 0-10V dimmable version is not intended to dim below about 5% @ 0V or 10% @ 1.0V
4. -RD 0-10V dimmable version output will be 100% with Purple/Grey open and minimum with Purple/Grey Shorted.

-RD 2-Wire Resistance Dimming Scheme



-RD 2-Wire 0-10V Analog Dimming Scheme





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75 Watt - LP75W Series

CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

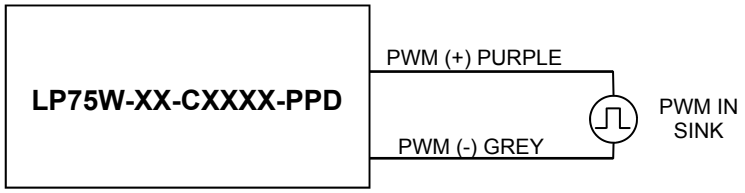
-PD 2-Wire CCR PWM Positive Dimming Scheme

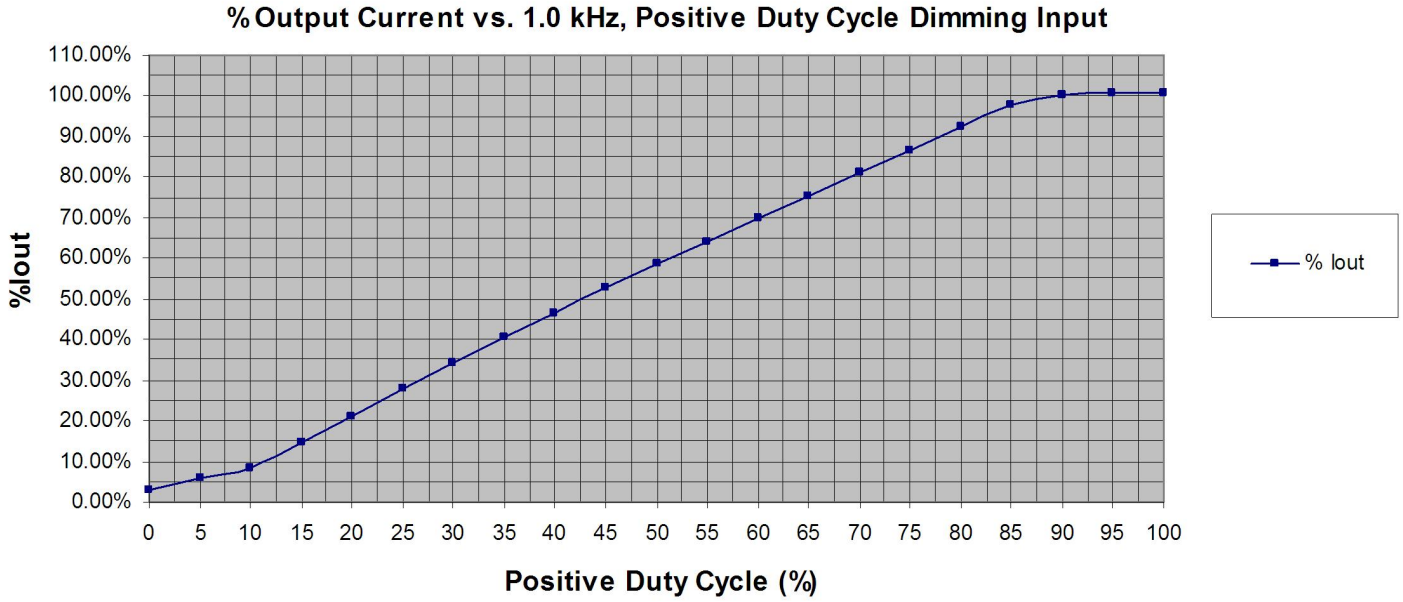
Parameters	Minimum	Typical	Maximum
Absolute Maximum Voltage Range on PWM Input (Purple Wire)	-2.0V	10V	+15V
Input LOW Level Voltage Range (Purple Wire)	-2.0V	0V	+5.5V
Input HIGH Level Voltage Range (Purple Wire)	+9.0V	10V	+15V
Current into PWM Input (Purple Wire)	0mA	—	1.2mA
Source Current out of PWM Input (Purple Wire)	0mA	—	2mA
PWM Input Signal Frequency	500Hz	—	1500Hz
PWM Input Signal Positive Duty Cycle	0%	10-90%	100%

Notes

1. -PD PWM Dimmable version comes with an extra 2 wires +Purple/-Grey on the output side.
2. -PD PWM Dimmable version is not intended to dim below about 5% @ 0% Duty Cycle or 10% @ 10% Duty Cycle
3. -PD PWM dimmable version output will be 100% with Purple/Grey open and minimum with Purple/Grey Shorted.

-PD 2-Wire PWM Positive Dimming Scheme





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CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

Input Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Input Voltage	90 Vac	——	305 Vac	120, 230, 240, 277 Vac Nominal Values
Input Frequency	47 Hz	——	63 Hz	50/60Hz Nominal
Input AC Current	——	——	0.71 A	Measured at 120Vac/60Hz Input, Output Full load.
	——	——	0.40 A	Measured at 230Vac/60Hz Input, Output Full load.
Inrush Current (Peak)	——	——	77A	Measured at 277Vac/60Hz Input, Output Full Load, Ta 25^{O}C, Cold Start 50% Ipeak duration ~250 µsec (1/2*Ip^{2}*t)
Inrush Current (I^2t)	——	——	0.74 A^2s	
Leakage Current	——	——	0.68mA	Measured at 120Vac/60Hz Input, Output Full load.
	——	——	0.75mA	Measured at 277Vac/60Hz Input, Output Full load.
THD	——	——	20%	Measured at 120, 230, 277Vac Input, Output ≥60% Load
Power Factor (PF)	0.90	——	——	Measured at 120, 230, 277Vac Input, Output ≥75% Load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
DC Output Voltage	Per Table	——	Per Table	Per Tables on Page 2 & 3
DC Output Constant Current	-3%	Per Table	+3%	Per Tables on Page 2 & 3
Output Power	——	——	Per Table	Per Tables on Page 2 & 3
Ripple & Noise (Vpk-pk)	——	——	5% Vo	20 MHz BW, Full load output in parallel with 0.1 µF ceramic & 10 µF Electrolytic.
Ripple (Ipk-pk)	——	——	5% Io	20 MHz BW, Full load output in parallel with 0.1 µF ceramic & 10 µF Electrolytic. 120 Hz component (Flicker Free)
Start-up Time	——	200 mS	500 mS	Measured at 120Vac/60Hz Input, Output Full load.
Hold-up Time	——	40 mS	——	Typical @ 277Vac Input, Output Full load.

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Case Temperature (Tc)	-30 ^{O}C	——	+90 ^{O}C	Measured at location specified on case.
Operating Temperature (Ta)	-30 ^{O}C	——	+60 ^{O}C	This is a reference range. Tc controls temperature range.
Storage Temperature (Ts)	-40 ^{O}C	——	+85 ^{O}C	Non operating temperature range.
Operating Humidity	——	——	95% RH	Relative Humidity, non-condensing.
Vibration	5 Hz	——	55 Hz	2G, 10 minutes/1 cycle, period 30 minutes, each along X, Y, Z axis.
MTBF	474,000 Hours	——	——	MIL-HDBK-217F Notice 2, Ta = 25C, Output Full Load.

Protection Specifications

Parameter	Min.	Typ.	Max.	Notes/Conditions
Output Short Circuit (SCP)	——	——	——	No Damage, Auto recovery after short is removed.
Output Over Current (OCP)	——	——	+8% Io	Constant Current Limiting circuit.
Output Over Voltage (OVP)	——	——	120% Vo	No Damage, Auto recovery after fault is removed.

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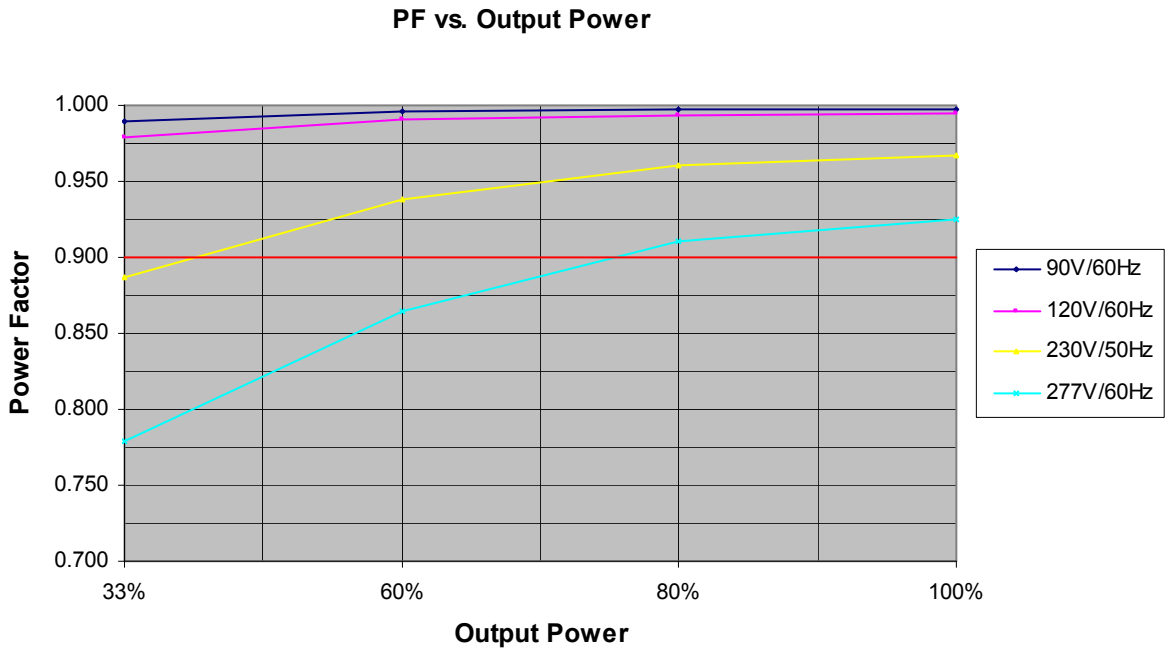
Safety Compliance

Safety	Notes/Standards
UL Class P UL/CUL Listed	UL8750 & CAN/CSA C22.2 No. 250.13, UL Class P, UL Type HL
UL Type TL UL/CUL Recognized	UL8750, UL1310 for UL Class 2 & CAN/CSA C22.2 No. 250.13, UL Type HL & UL Type TL UL Class 2 86/63°C, UL Non-Class 2 90/81°C
CE	EN61347-1, EN61347-2-13
Withstand Voltage	Input to Output: 3750 Vac. Parts use a GDT. Hipot cannot be done with Case or GND connected.
Isolation Resistance	Input to Output: >100 MΩ, 500VDC @ 25 ^{O}C, 70 % RH
Dimming Circuit	Dim+ Purple/Dim- Grey are considered part of the secondary circuit.

EMC Compliance

Standard	Notes/Conditions
FCC, 47CFR Part 15	Class B
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.
EN 61000-3-2	Part 3-2: Limits for harmonic current emissions Class C, ≥80% Rated Power
EN 61000-3-3	Part 3-3: Limitation of voltage changes, voltage fluctuations and flicker.
EN 61000-4-5	Part 4-5: Surge Immunity test, 2kV L-N, 4kV L-FG & N-FG
Energy Star	Energy Star transient protection: Ballast or driver shall comply with ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002, Category A operation. The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode.

Power Factor Curves (Typical)



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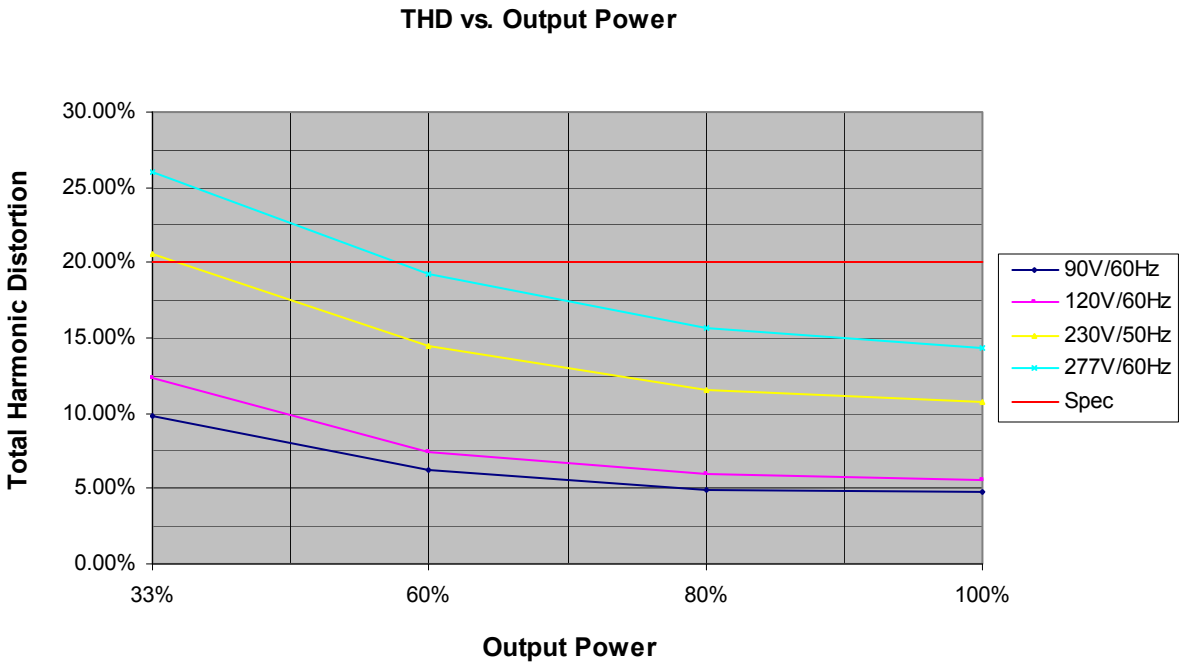
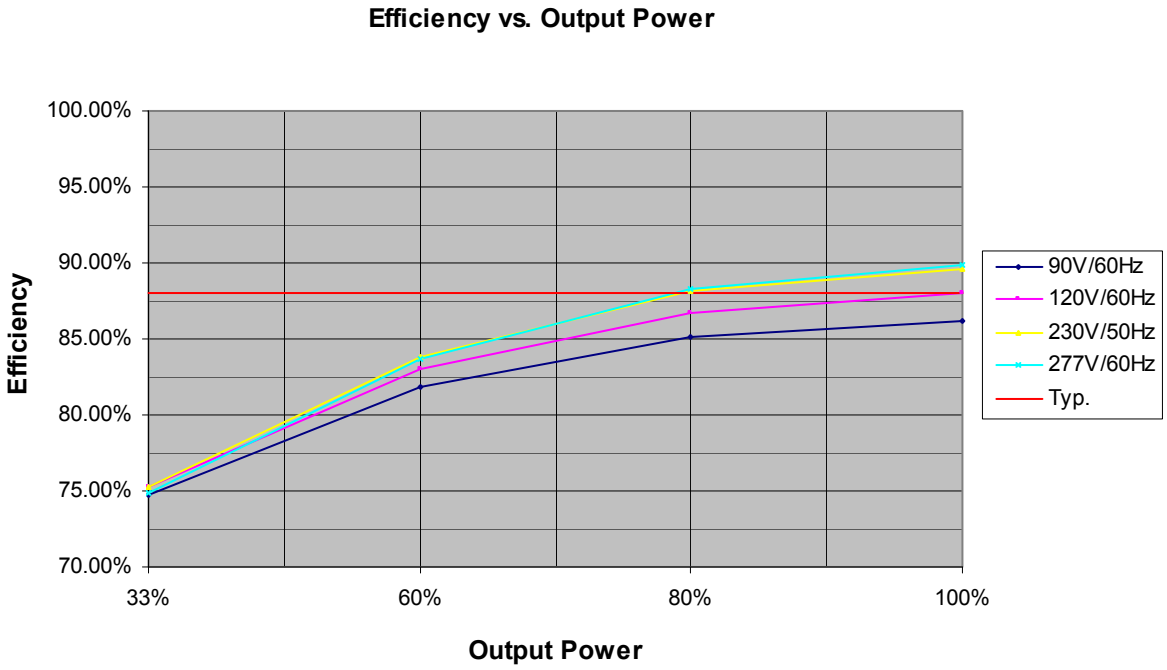
THD Curves (Typical)



Efficiency Curve (Typical)



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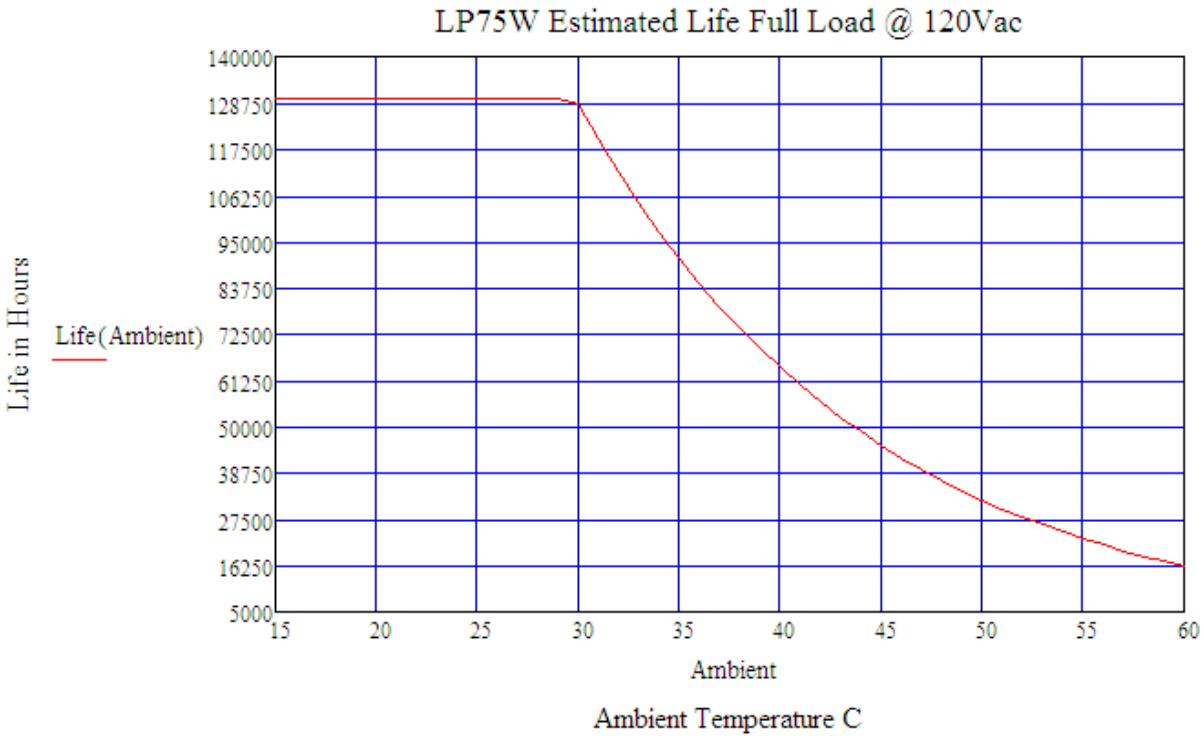
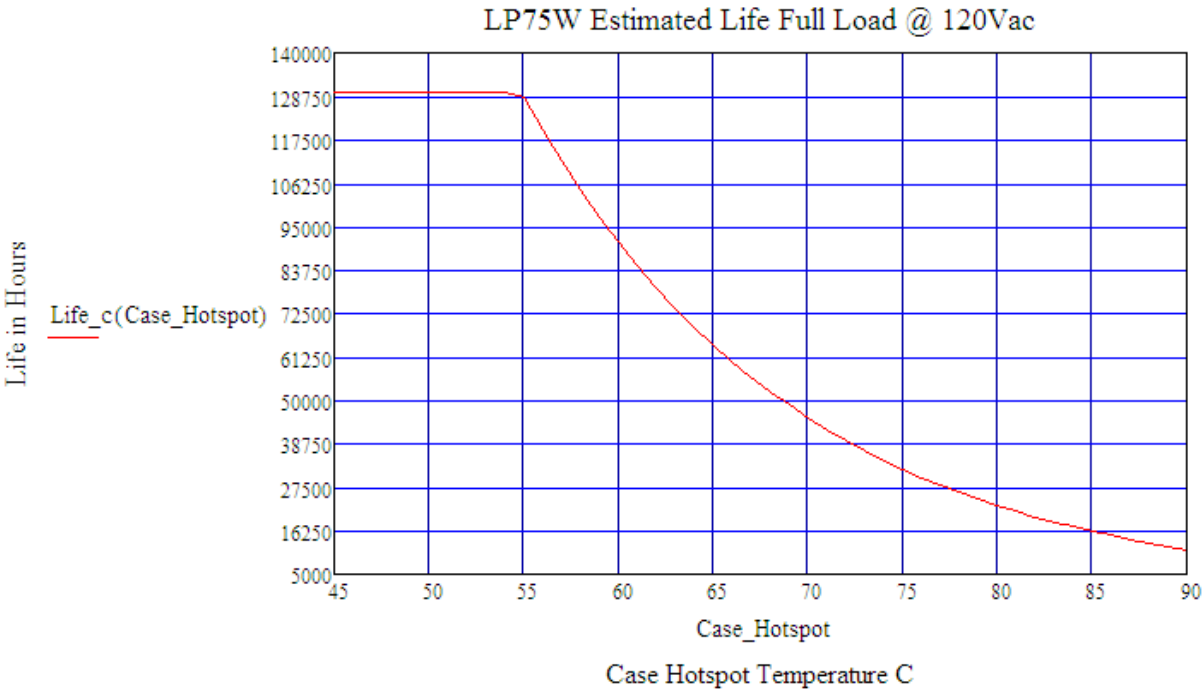
CONSTANT VOLTAGE OR CONSTANT CURRENT LED DRIVER WITH DIMMING

Life vs. Ambient Temperature



Life vs. Case (Tc) Temperature



LED Optimized Drivers

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