



SERIES: VLED15

DESCRIPTION: LED DRIVER

FEATURES

- constant current
- high efficiency
- 120 and 230 V ac inputs available
- 0.35 ~ 1.5 A output current
- operates with industry standard dimmers
- compact encapsulated assembly
- active power factor correction
- over voltage, over current, over temperature, short circuit protection: auto recovery
- high temperature operation (up to 90°C case)
- UL approved, ENEC approved, CE Mark
- long life > 50,000 hours



MODEL

MODEL	output voltage ¹		output current	output power	input voltage
	min. (V dc)	max. (V dc)	max. (mA)	max. (W)	nominal load (V ac)
VLED15-120-350	24	48	350	16.8	115
VLED15-120-480	10	13.5	480	6.5	115
VLED15-120-600	8	12	600	7.2	115
VLED15-120-700	16	24	700	16.8	115
VLED15-120-800	8	12	800	9.6	115
VLED15-120-900	10	16	900	14.4	115
VLED15-120-900L	8	12	900	10.8	115
VLED15-120-1000	10	16	1,000	16	115
VLED15-120-1200	10	14.1	1,200	16.92	115
VLED15-120-1250	8	12	1,250	15	115
VLED15-120-1400 ²	8	11.5	1,400	16.1	115
VLED15-120-1500	5	10	1,500	15	115
VLED15-230-350	24	48	350	16.8	230
VLED15-230-480	10	13.5	480	6.5	230
VLED15-230-600	8	12	600	7.2	230
VLED15-230-700	16	24	700	16.8	230
VLED15-230-800	8	12	800	9.6	230
VLED15-230-900	10	16	900	14.4	230
VLED15-230-900L	8	12	900	10.8	230
VLED15-230-1000	10	16	1,000	16	230
VLED15-230-1200	10	14.1	1,200	16.92	230
VLED15-230-1250	8	12	1,250	15	230
VLED15-230-1400 ²	8	11.5	1,400	16.1	230
VLED15-230-1500	5	10	1,500	15	230

notes: 1. total LED forward voltage must be within these ratings under all conditions including dimming
2. 80°C maximum case rating



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INPUT

parameter	conditions/description	min	nom	max	units
current	115 V ac			0.22	A
frequency range		47		63	Hz
power factor	120 V ac	90			%
harmonics	meets EN61000-3-2, 3				
inrush current	25°C			5	A

OUTPUT

parameter	conditions/description	min	nom	max	units
voltage accuracy	of set point		±5		%
load regulation			±5		%
over voltage protection	auto restart				
over current protection	auto restart				
short circuit protection	auto restart				
control	output dims without any flicker				
dimming range (conduction angle/output)	use with incandescent dimmer	30		147	degrees

SAFETY & COMPLIANCE

parameter	conditions/description	min	nom	max	units
safety approvals	UL60950-1, LPS, UL8750, EN61347-2-13				
EMC/EMI	EN55015 class B, FCC class 47 CFR part 15 class B, EN61000-4-(2,3,4,5,6,11), IEC 61000-3-(2,3) ANSI c62.41-1991 category A1, 2.5 kV Ringwave				
RoHS compliant	yes				
leakage current	120 V ac			0.25	mA

ENVIRONMENTAL

parameter	conditions/description	min	nom	max	units
operating temperature	case temperature without derating	-30		90	°C
operating humidity	non-condensing	5		95	%
storage temperature		-40		85	°C
surface temperature	exposed surfaces, under all operating conditions			90	°C
over temperature protection	auto restart				

RELIABILITY

parameter	conditions/description	min	nom	max	units
MTBF	at 90°C case temperature, electrolytic life	50,000			hours



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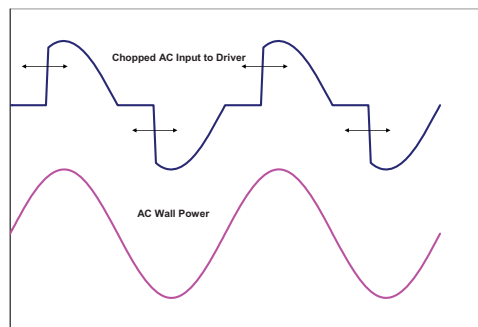
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ISOLATION SPECIFICATIONS

parameter	conditions/description	min	nom	max	units
isolation	meets the UL60950-1 reinforced, double insulation NEC (Class 2) EN60598-1 class II				

DIMMING REQUIREMENTS

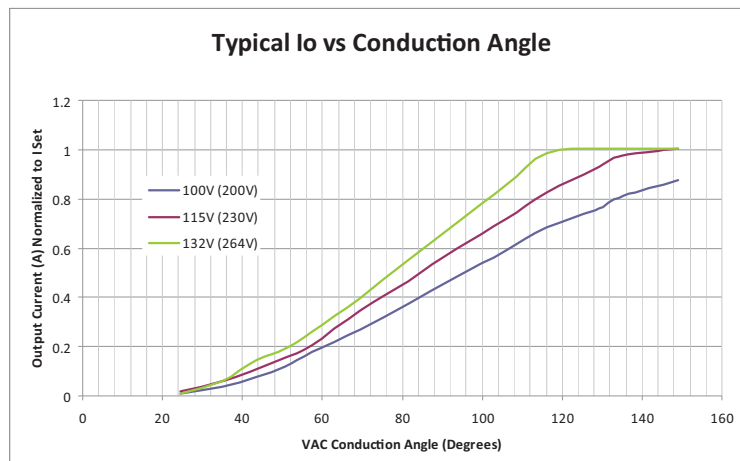
Dimming of the driver shall be possible with standard triac based incandescent dimmers that chops the AC voltage as shown below or with Electronic Low Voltage dimmers that employ reverse phase control.



During the rapid rise time of the AC voltage when the dimmer turns on, the driver shall not generate any voltage or current oscillations and inrush current shall be controlled. During the on time of the AC input, the driver shall regulate the output. The RMS value of the driver output current shall be proportional to the on time of the AC input voltage. Care must be taken to assure that the minimum load requirements are met. Multiple drivers/LEDs may be connected to the dimmer in order to meet the minimum load requirement.

DIMMING RANGE

When operating with an incandescent dimmer, the RMS output current shall vary depending upon the conduction angle and RMS value of the applied AC input voltage. The following graph shows the typical output versus conduction angle at various line voltages.



The specified dimming range shall be from 30 degrees through 147 degrees conduction angle. Operation throughout this dimming range shall be monotonic and produce a smooth transition of light output in both directions of the dimming range. At 120 V ac or 240 V ac input, the driver shall achieve full rated output current at less than 147 degree conduction angle.



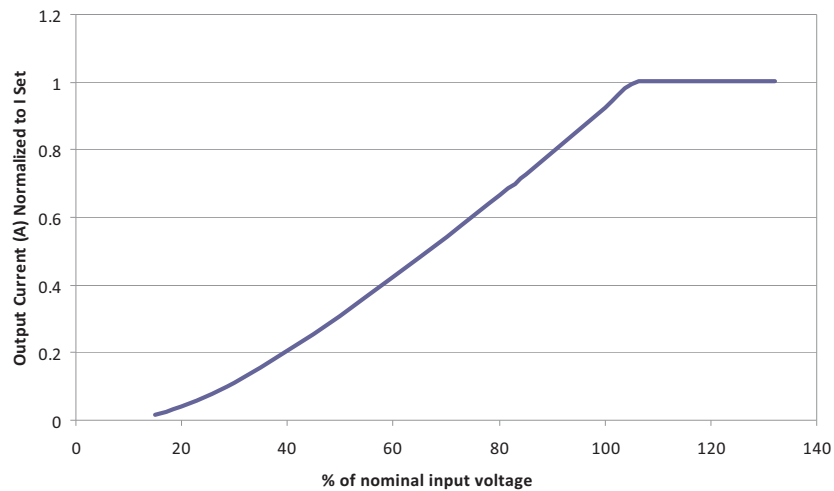
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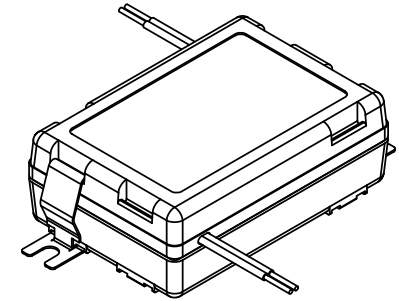
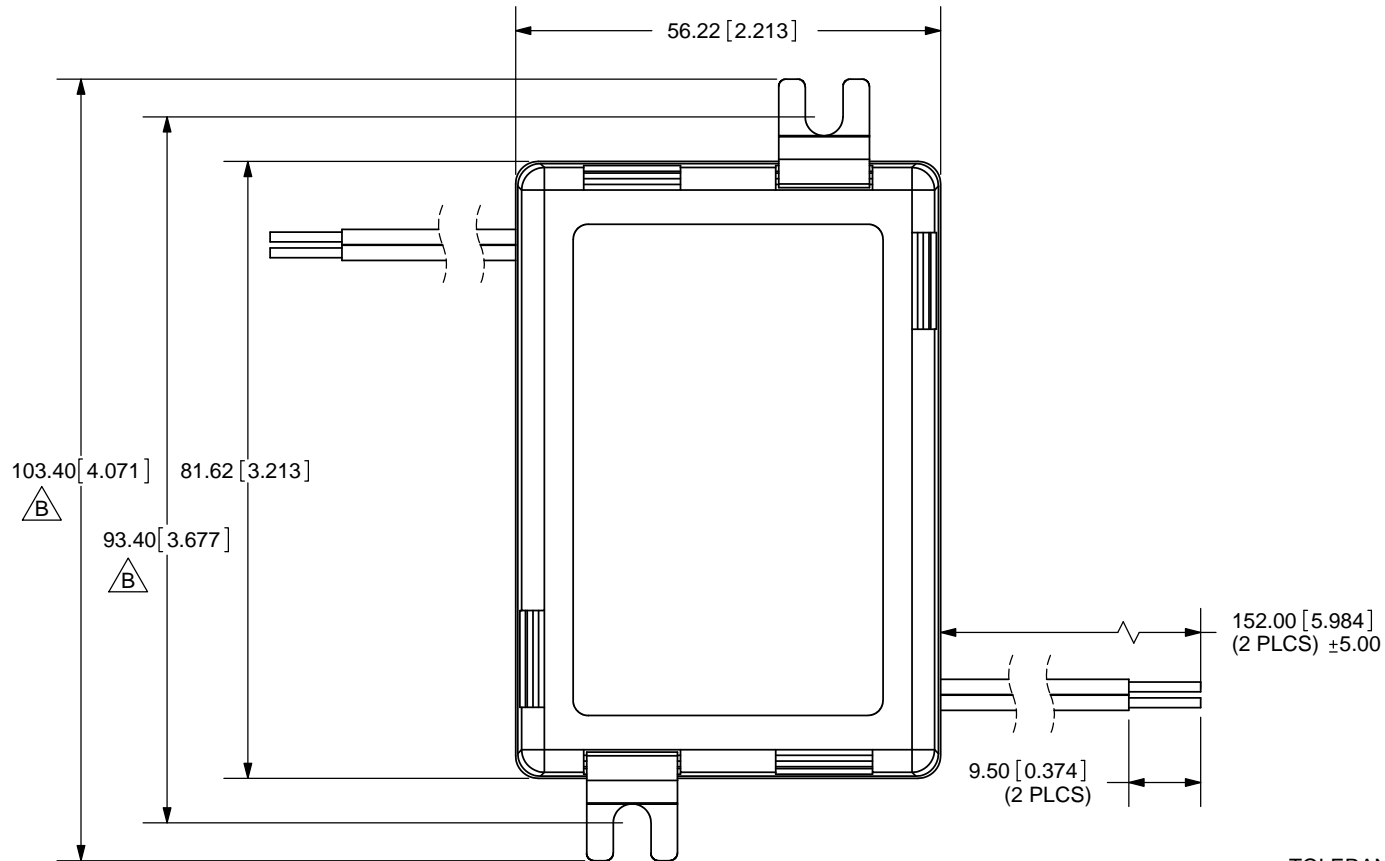
DIMMING REQUIREMENTS

The VLED15 series of drivers operate from either 90VAC to 135 V ac or 176 V ac to 265 V ac, at 47 to 63 Hz. The drivers will operate at voltages down to 20 V ac for the 120 V versions and 40 V for the 240 V ac versions. The following graph shows the typical output current versus AC input voltage without a dimmer attached and with a typical LED as the load. Nominal output current shall be achieved at <115 V ac and <230 V ac when the output voltage is at the nominal of the particular range. When the output voltage is at the maximum value, nominal current must be achieved at <120 V ac and <240 V ac.

Typical Vac(V) vs Io(A)



REV.	DESCRIPTION	DATE
A	NEW DRAWING	7/29/2010
B	model update and added dimensions	3/21/2011



SCALE: 1:2

TOLERANCE:
±0.3mm UNLESS OTHERWISE
SPECIFIED

Input	Output
AC/N (white)	Vout + (red)
AC/L (black)	Vout - (black)



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TITLE: LED DRIVER		REV: B
PART NO. VLED15	UNITS: MM [INCHES]	
DRAWN BY: ZRJ	APPROVED BY:	SCALE: 1:1

PC FILE NAME:
VLED15

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