

50W, 90-305Vac Input, Constant Current Programmable LED Driver

■ Features

- Supply Voltage: 90-305Vac or 127-420Vdc
- Surge Immunity 10kV
- -60°C Cold Ambient Startup (Optional)
- 100,000Hour Life @ Tc=75°C
- 5 Year Warranty @ Tc<=80°C
- +/-2% Output Current Accuracy (Programmable Model)
- Near Field Communication Programmability
- High-Efficiency @ 90% and above
- 0-10V/PWM/Timer/DALI Dimmable (Model Depending)
- Dim Off with 0.5W Standby Power (Model Depending)
- 12V 300mA Auxiliary Power to Power Controllers and Fans (Model Depending)
- Input Over Voltage Protection (Optional)
- Class II Model Available
- UL Class P, Class 2
- ENEC/CB/CCC SELV Output
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 62384



■ Application

- Bay lights, Street lights, Tunnel lights, Flood lights

■ Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Full Power Settable Current Min	Full Power Settable Current Max	Efficiency	Certification
LWA050-C105-XYZ	90 ~ 305Vac	50 W	29-71Vdc	700mA	1050mA	87% @ 120Vac 90% @ 277Vac	UL/FCC/CB ENEC/CCC
LWA050-C140-XYZ	90 ~ 305Vac	50 W	21-48Vdc	1050mA	1400mA	86.5% @ 120Vac 89.5% @ 277Vac	UL/FCC/CB ENEC/CCC
LWA050-C210-XYZ	90 ~ 305Vac	50 W	14-36Vdc	1400mA	2100mA	86% @ 120Vac 88.5% @ 277Vac	UL/FCC/CB ENEC/CCC

XY=	Dimming Method	Programmable	12Vaux	Dim-off	Body Size
NN	-	-	-	-	109.0x67.5x33.5 mm
DN	0-10V	-	-	-	109.0x67.5x33.5 mm
TR	Timer	√	-	-	109.0x67.5x33.5 mm
DR	0-10V/PWM/Time	√	-	-	109.0x67.5x33.5 mm
ER	0-10V/PWM/Time	√	√	√	131.0x67.5x33.5 mm
AR	DALI	√	-	√	131.0x67.5x33.5 mm

Z = K , UL cable with ground wire	S , VDE cable/Class I	D , VDE cable/Class II
--	------------------------------	-------------------------------

Technical Data

Input Voltage	90~305Vac or 127V-420Vdc
Input Frequency	47~63Hz
Power Factor	>0.9@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	0.5 Amax@120Vac & Full-Load, 0.25Amax@220Vac & Full-Load
Inrush Current	65A peak, 1.2ms duration, <0.25A2s@230Vac, Cold Start 70A peak, 1.3ms duration, <0.5A2s@277Vac, Cold Start
Leakage Current	1mA max @277Vac 60Hz, UL8750, 0.75mAmax @220Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-recovery
Input Over Voltage	*Optional: Shutdown @320Vac
Surge Protection	Line to line 4kV, line to ground 10kV, IEC 61000-4-5
Current Accuracy	±2%lo for programmable model, ±5%lo for non-programmable model
Ripple Current	Ip-p:5%lo max
Setup Time	1.2s max
Overshoot	10% Io max & LED Load
Output Over Voltage	120% Vomax, typ.
Short Circuit	Auto recovery. The output recovers when short is removed.
Over Temperature	Lower the output current when $T_c \geq 105 \pm 10^\circ\text{C}$; Auto Recovery When $T_c \leq 70 \pm 10^\circ\text{C}$
Auxiliary Power (Vaux)	12V+/-5%, 300mA max
Operating Temperature	-40°C~+70°C ; 10%RH~100%RH (See Derating Curve for more details)
Storage Temperature	-40°C~+85°C; 5%RH~100%RH
MTBF	≥320,000 hours, 50°C case temperature (MIL-HDBK-217F)
Lifetime	≥100,000 hours, 75°C case temperature, refer to life vs. Tc curve
Case Temperature	90°C max, marked in the Tc point of label
Dimensions (-ERZ, -ARZ)	5.16x2.66x1.32 by inch (body), 6.22x2.66x1.32 by inch (endcaps included) 131.0x67.5x33.5 by mm (body), 158.0x67.5x33.5 by mm (endcaps included)
Dimensions (-NNZ, -DNZ, -TRZ, -DRZ)	5.16x2.66x1.32 by inch (body), 6.22x2.66x1.32 by inch (endcaps included) 109.0x67.5x33.5 by mm (body), 136.0x67.5x33.5 by mm (endcaps included)
Net Weight (-ERZ, -ARZ)	600g
Net Weight (-NNZ, -DNZ, -TRZ, -DRZ)	500g
Packing	20pcs/Cartron/12.5kg, 500x320x315mm

Notes: Unless specified, all the test results are measured in 25°C room temperature.

* Marked items are optional. Please contact Sales to specify the required functions.

■ Safety/EMC Compliance

Safety Standard	Description
UL8750	Light emitting diode(LED) equipment for use in lighting products
UL1012/1310	Power units other than class 2 / Class 2 power units
IEC 61347-1	Lamp control gear Part 1: general and safety requirements
IEC 61347-2-13	Lamp control gear Part 2-13: particular requirement for d.c. or a.c. supplied electronic control gear for LED modules
EMI Standards	Description
IEC 55015	Conducted emission test & radiated emission test
IEC 61000-3-2	Harmonic current emissions; Class C
IEC 61000-3-3	Voltage fluctuations & flicker
FCC Part 15	ANSI C63.4:2009 Class B
EMS Standards	Description
IEC 61000-4-2	Electrostatic discharge (ESD): 8 kV air discharge, 4 kV contact discharge
IEC 61000-4-3	Radio frequency electromagnetic field susceptibility test (RS)
IEC 61000-4-4	Electrical fast transient (EFT)
IEC 61000-4-5	Surge immunity test
IEC 61000-4-6	Conducted radio frequency disturbances test (CS)
IEC 61000-4-8	Power frequency magnetic field test
IEC 61000-4-11	Voltage dips
IEC 61547	Electromagnetic immunity requirements applies to lighting equipment

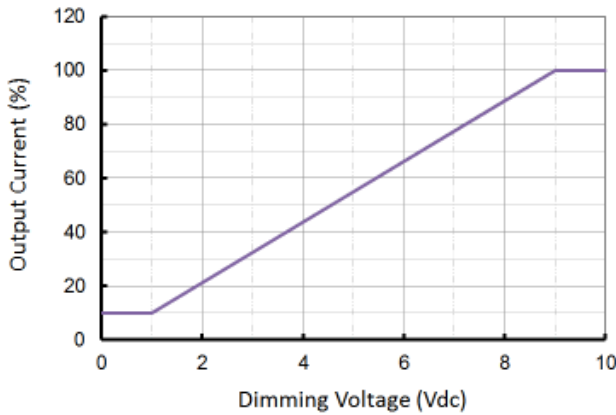
■ Dimming

Parameter	Min.	Typ.	Max.
Vdim Sourcing Current	200uA	300uA	450uA
Vdim Allowed Input Voltage	-20 V		20 V
0-10V Dimming Range	10% (Vdim=1V)	Linear	100% (Vdim=9~10V)
PWM Dimming Range	10% (Duty=10%)	Linear	100% (Duty=90-100%)
Dim off threshold		0.5V or 5%	0.6V or 6%
Dim on threshold	0.6V or 6%	0.7V or 7%	
PWM High	3V		10V
PWM Low	0V		0.6V
PWM Frequency	300Hz		2kHz
External PWM Controller Current Sinking Capability	300uA		
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0		2mA

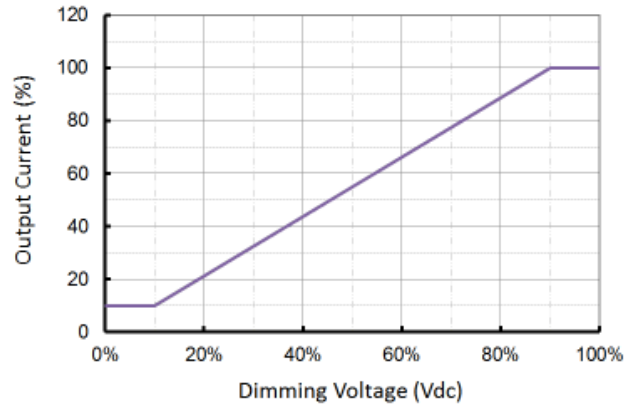
- Dimming Curve

a. Without dim-off

0-10V Dimming Curve

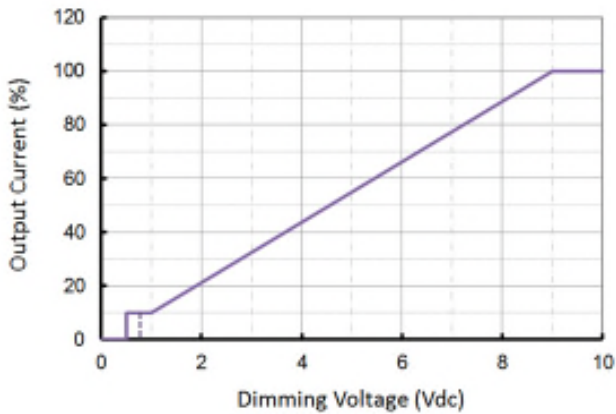


PWM Dimming Curve

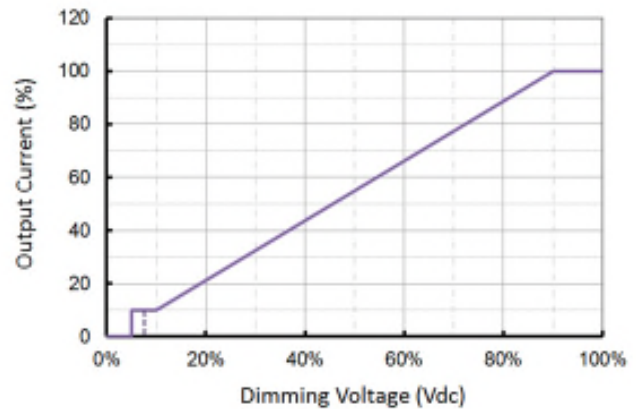


b. With dim-off

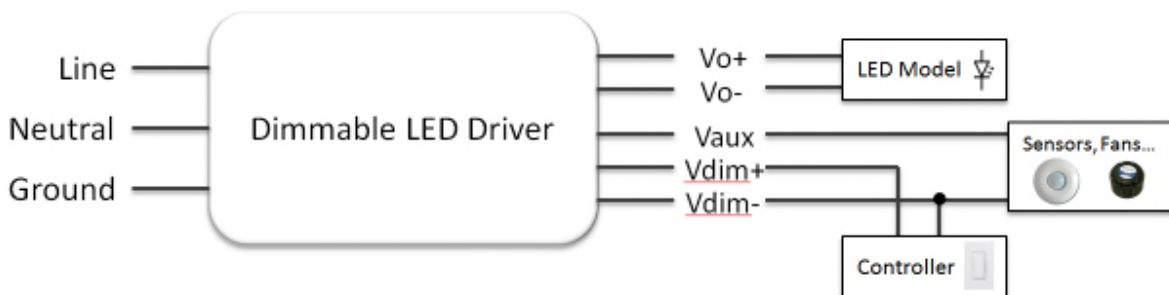
0-10V Dimming Curve



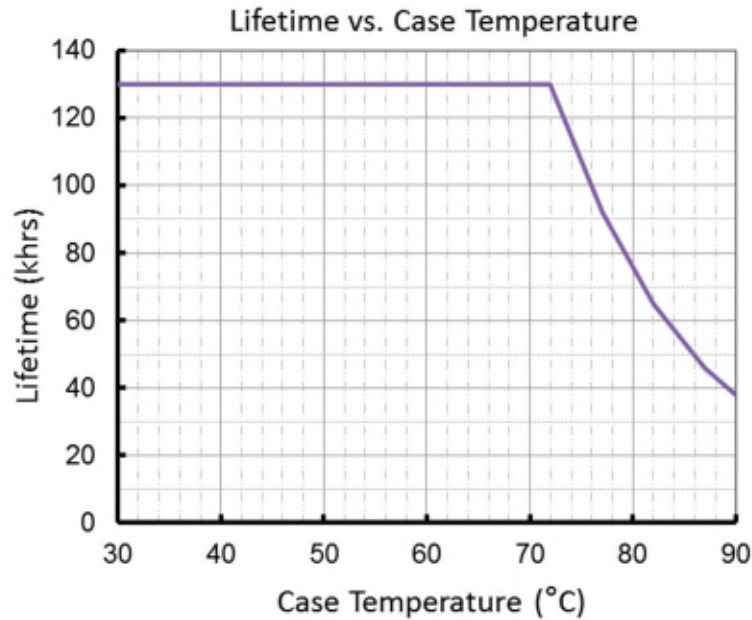
PWM Dimming Curve



- Dimming Wiring

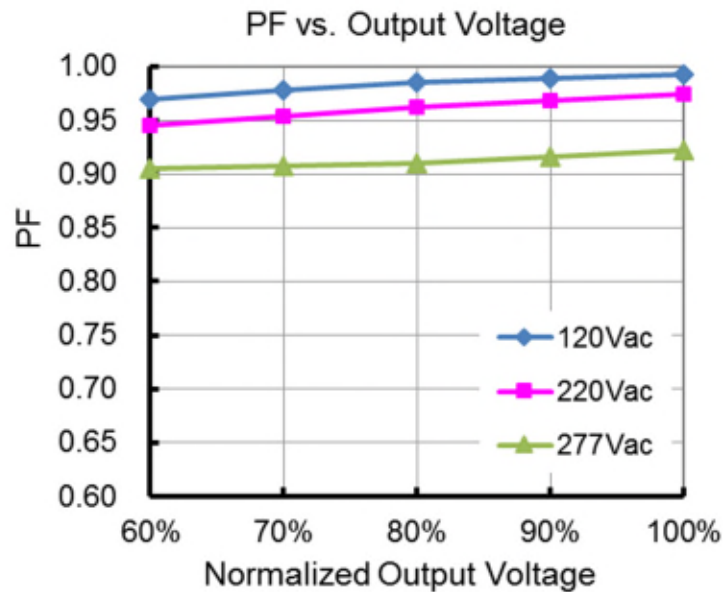


■ Lifetime vs. Case Temperature

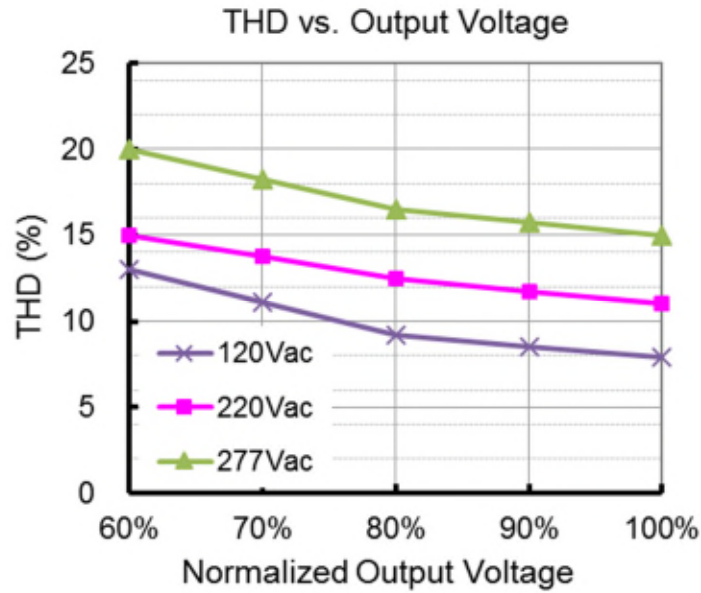


(End of Life: Maximum Failure Rate=10%)

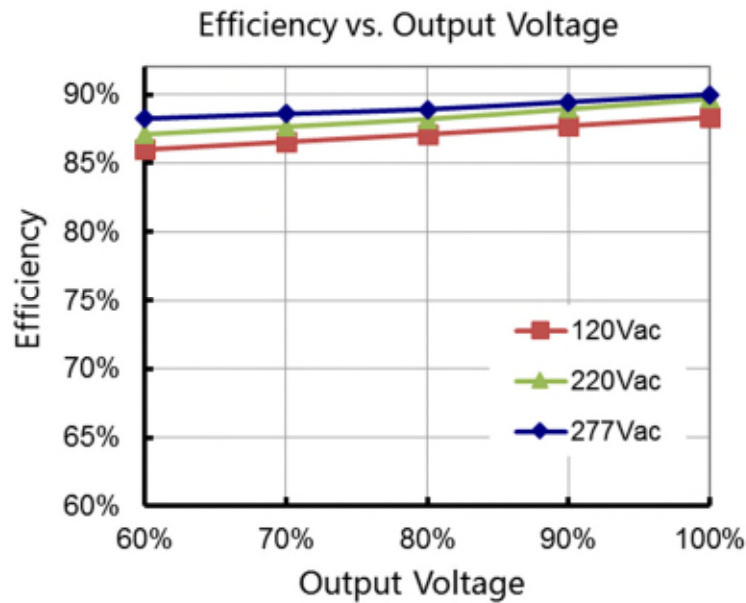
■ Power Factor vs. Load



■ THD vs. Load

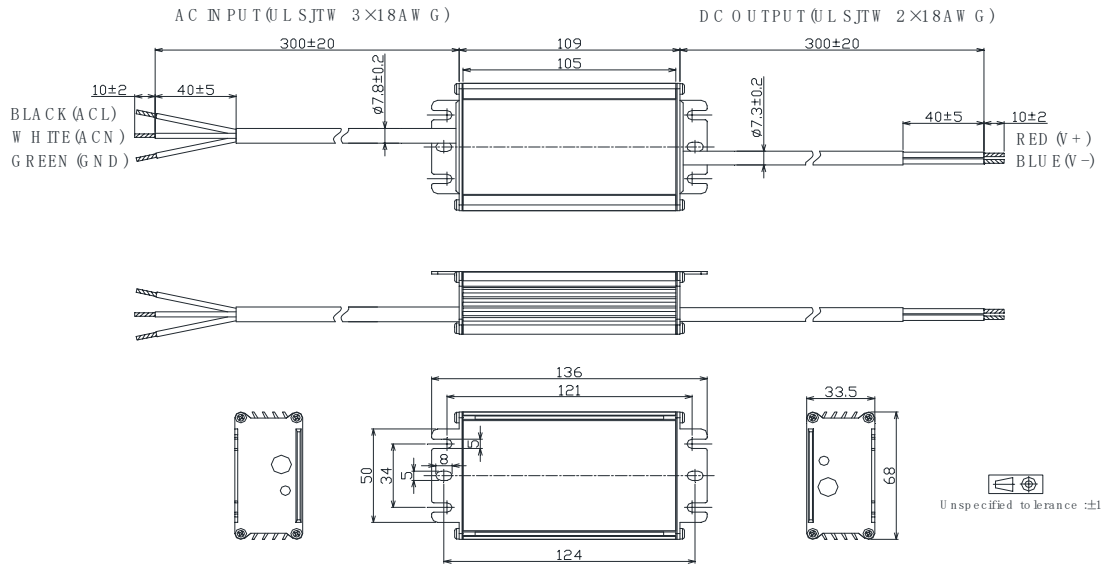


■ Efficiency vs. Load (1.05A Model)

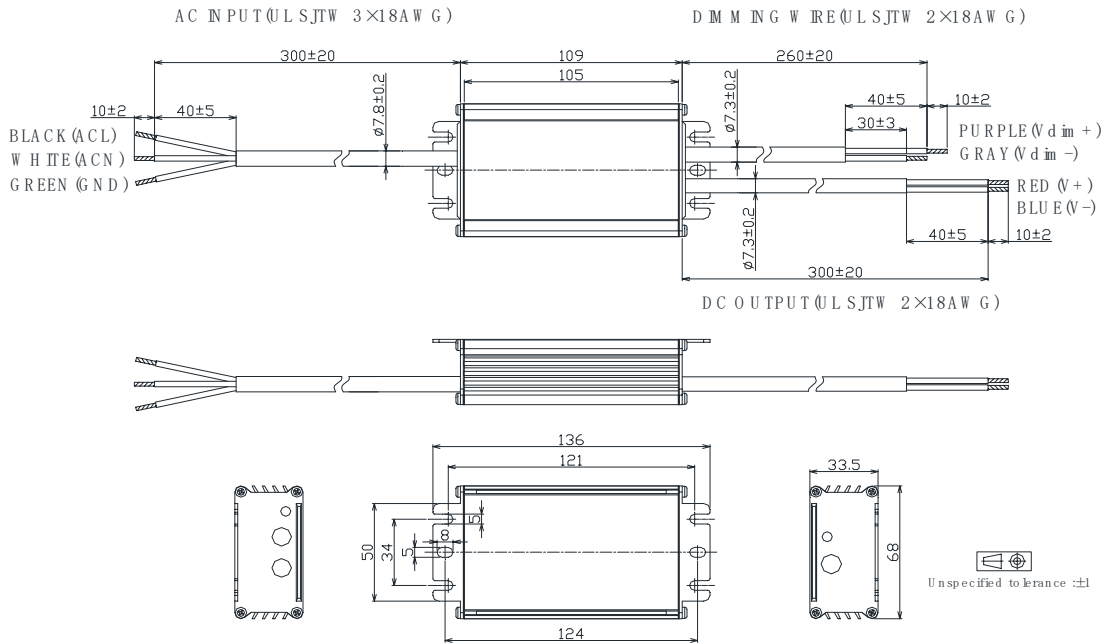


■ Mechanical Design

- LWA050-Cxxx-NN/TRK (UL Cable)

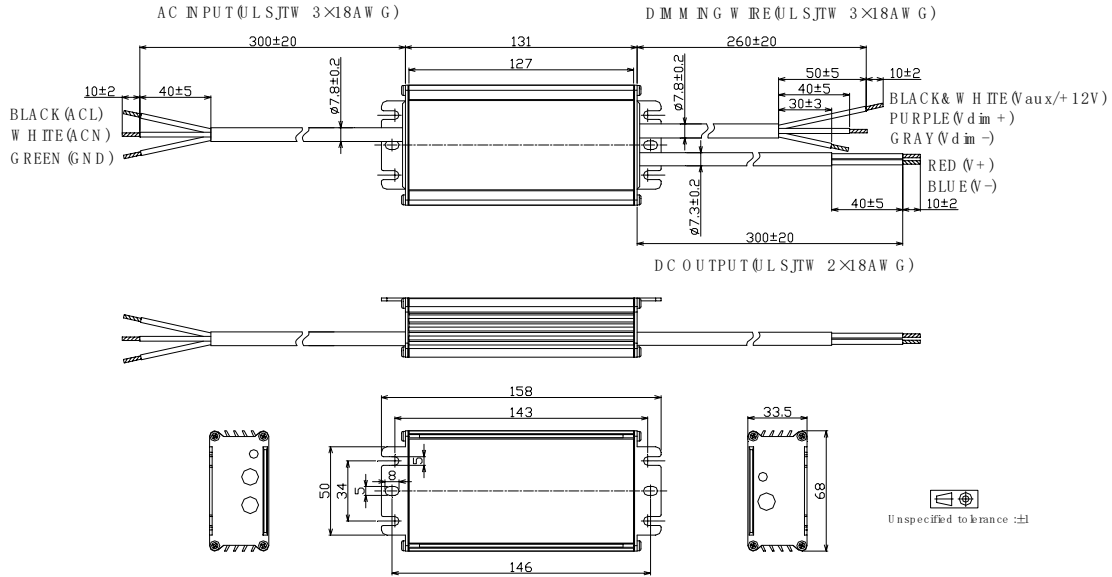


- LWA050-Cxxx-DN/DRK (UL Cable)

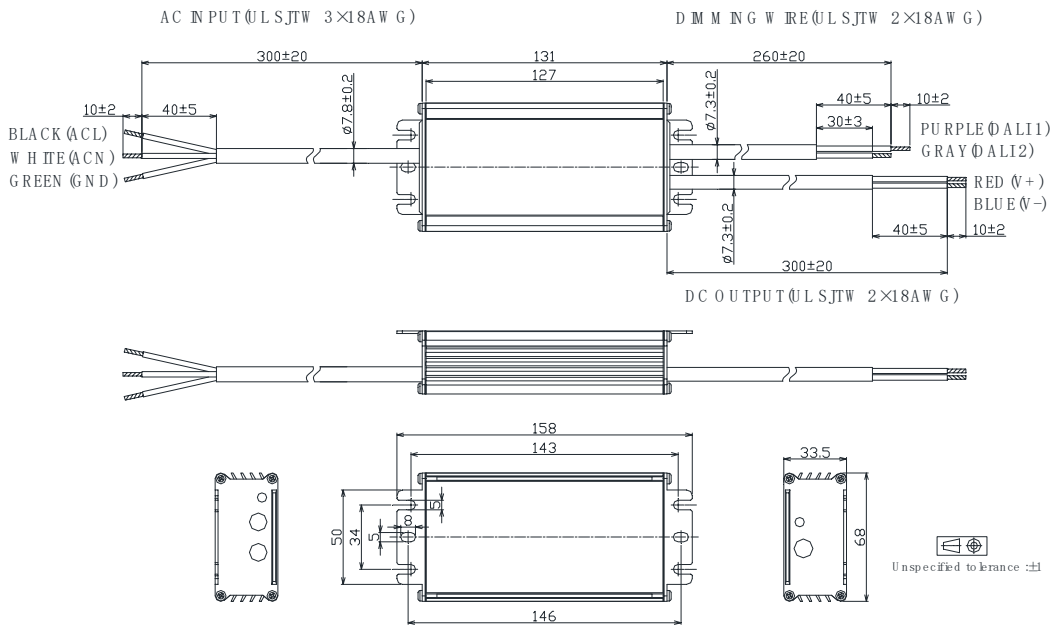


50W, 90-305Vac Input, Constant Current Programmable LED Driver

- LWA050-Cxxx-ERK (UL Cable)

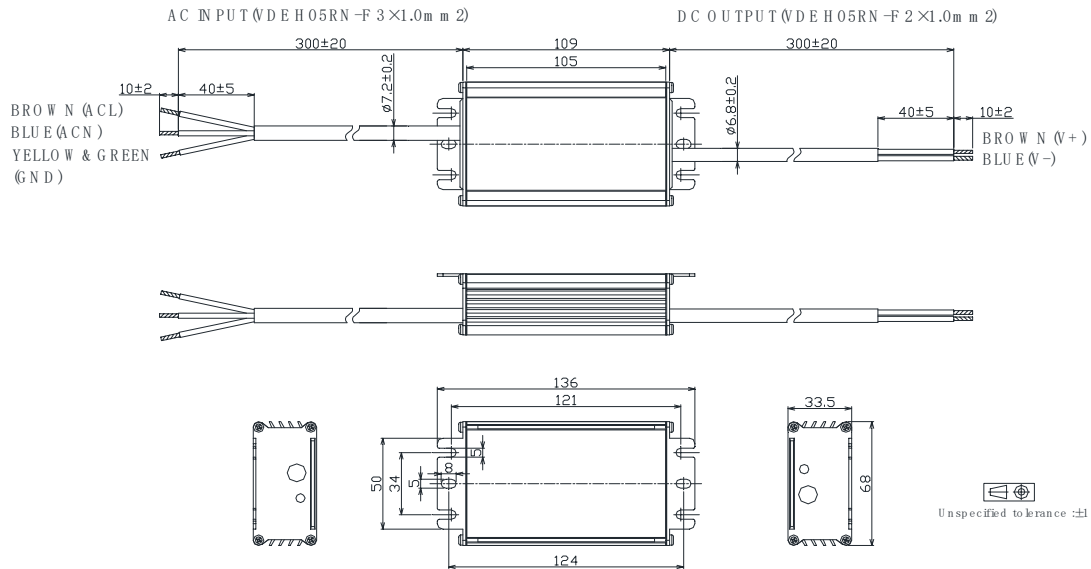


LWA050-Cxxx-ARK (UL Cable)

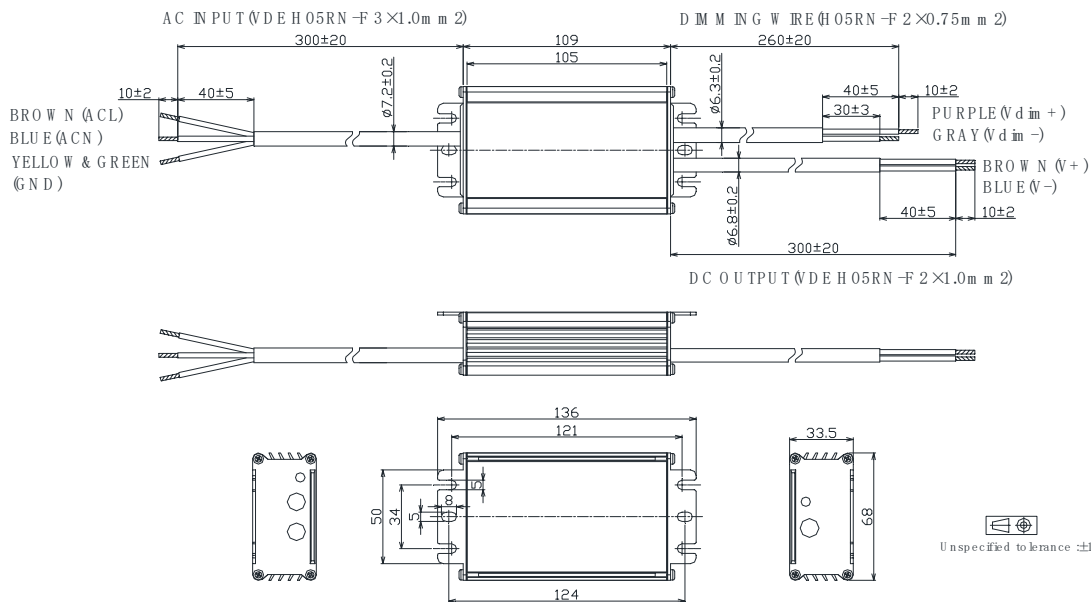


50W, 90-305Vac Input, Constant Current Programmable LED Driver

- LWA050-Cxxx-NN/TRS (VDE Cable)

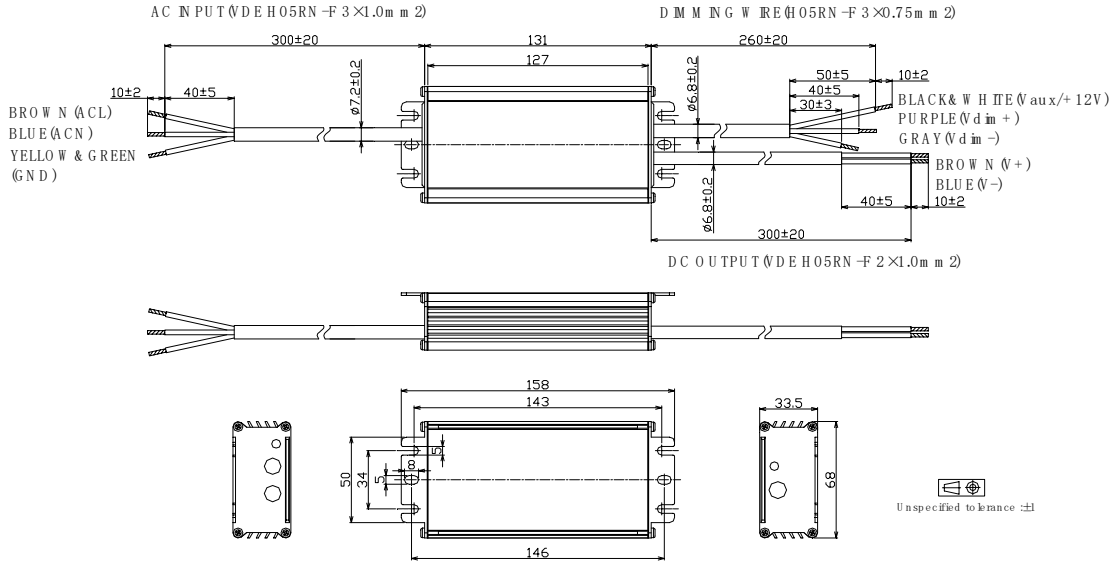


- LWA050-Cxxx-DN/DRS (VDE Cable)



50W, 90-305Vac Input, Constant Current Programmable LED Driver

- LWA050-Cxxx-ERS (VDE Cable)



- LWA050-Cxxx-ARS (VDE Cable)

