

■ Features

- Power Rating: 50W
- Input Voltage: 120-277Vac
- Constant current design
- Output current settable(700mA-2100mA)
- +/-2% Output Current Accuracy (Programmable Model)
- Near Field Communication Programmability
- High-Efficiency @ 90% and above
- 0-10V/PWM/Timer/DALI/DMX (Optional) Dimming
- Dim to Off with 0.5W Standby Power
- Optional External Thermal Protection NTC
- UL Class P, Type HL, Class 2
- OVP, SCP, & OTP
- Tc = 90°C
- IP67
- 5+ year warranty
- Surge Immunity 10kV



*Product images are for illustrative purposes only and may vary from actual design.

■ Application

- Bay lights, Street lights, Tunnel lights, Flood lights, Horticultural lighting

■ Model List

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

Ordering Options	XY=	Dimming Method	Programmable	12Vaux	Dim-off	Body Size
	NN	-	-	-	-	109.0x67.5x33.5 mm
	DN	0-10V	-	-	-	109.0x67.5x33.5 mm
	EN	0-10V	-	√	√	109.0x67.5x33.5 mm
	TR	Timer	√	-	-	109.0x67.5x33.5 mm
	DR	0-10V/PWM/Timer	√	-	-	109.0x67.5x33.5 mm
	ER	0-10V/PWM/Timer	√	√	√	131.0x67.5x33.5 mm
	AN	DALI	-	-	√	131.0x67.5x33.5 mm
	MX	DMX	√	-	√	131.0x67.5x33.5 mm
Cable Options	Z=	K=UL cable with ground wire (green), S=VDE cable/Class I, D=VDE cable/Class II				
External Thermal Protection NTC Option	-THR	LWA040-C070-XYZ-THR				

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50W, 120-277Vac Input, Constant Current Programmable LED Driver

DMX Notes: Works with DMX-512 Presently. DMX Dimming range 10-100% (1% DMX command will be treated as 10% Dimming). Recommended number of LED drivers per DMX channel is ~32, and ~40 meter (132 ft) drop length. You may need a DMX signal amplifier for quantities above 32 drivers per channel, with a maximum allowed of 150 drivers per single channel.

■ Technical Data

Input Voltage	120-277Vac 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% lo 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 $T_c \leq 70 \pm 10^\circ\text{C}$ 105 +/- 10°C (relates to internal component temperature / optional settings are possible, contact Autec sales)
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 (ER, AN, DMX)	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 (NN, DN, EN, TR, DR)	4.29x2.66x1.32 by inch (body), 5.35x2.66x1.32 by inch (endcaps included) 109.0x67.5x33.5 by mm (body), 136.0x67.5x33.5 by mm (endcaps included)
Net Weight (ER, AN, DMX)	600g
Net Weight (NN, DN, EN, TR, DR)	500g
Packing	25pcs/Carton/17.3kg, 490x370x230mm

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

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

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■ Safety/EMC Compliance

Safety Standards	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 DC or AC 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

Disclaimer:

Autec Power Systems' (Autec) LED Drivers are Hi-Pot tested during the manufacturing process. Autec assumes no responsibility for secondary Hi-Pot testing at customer location or designated production line(s). Should customer require further Hi-Pot testing, at their own production line, following assembly of the LED Driver into the customer's assembled fixture, Autec requests advance notice. This request must be communicated to Autec in a timely manner and is recommended to be requested at time of issuing each purchase order.

■ 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

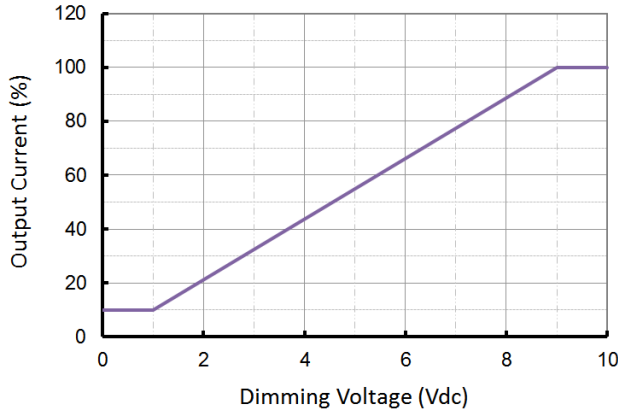
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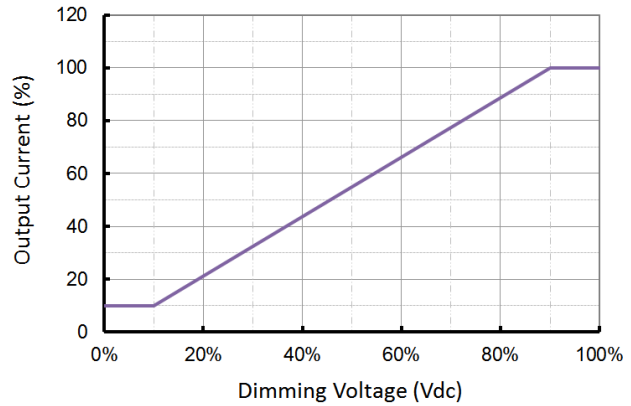
■ **Dimming Curve**

a. **Without dim-off**

0-10V Dimming Curve

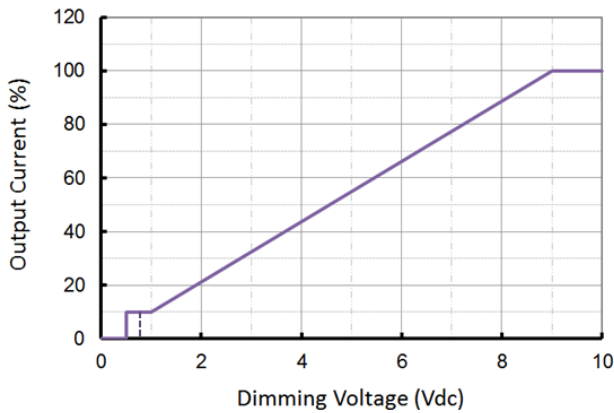


PWM Dimming Curve

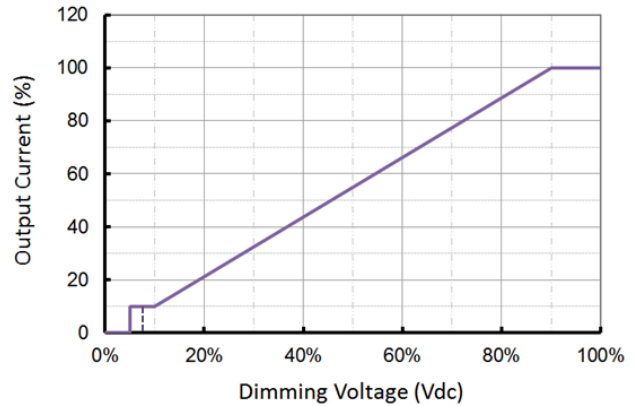


b. **With dim-off**

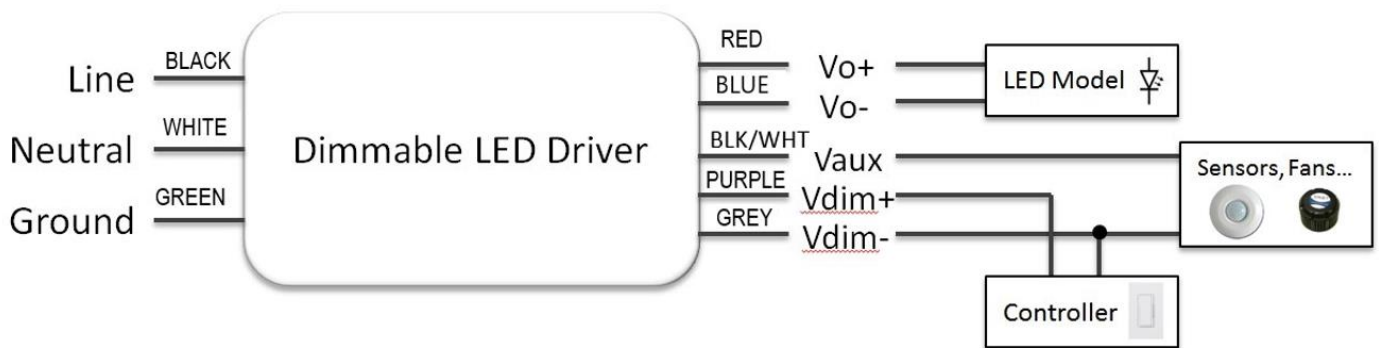
0-10V Dimming Curve



PWM Dimming Curve



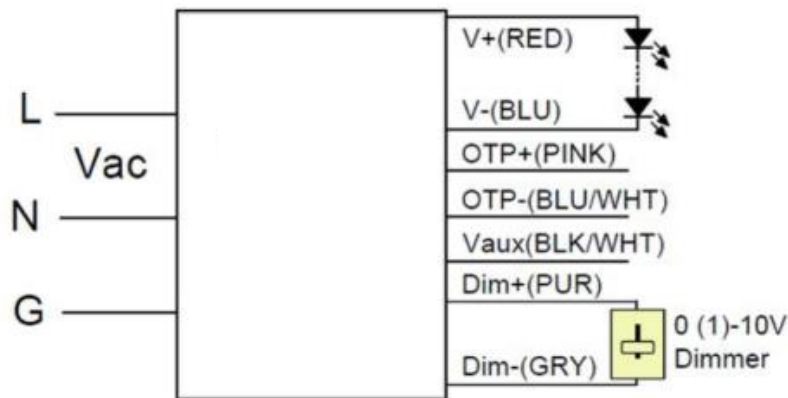
■ **Wiring Diagram**



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■ Wiring Diagram/Optional External Thermal Protection



■ External Thermal Protection Table(optional)

Parameter	Min.	Typ.	Max.	Notes	
External Thermal Protection NTC	R1	-	7.81 kOhm	-	When R_NTC falls below R1, External Thermal Protection is triggered, reducing output current until R2 is reached.
	R2	-	4.16 kOhm	-	When R_NTC is less than R2, output current is reduced to the programmed "Protection Current Floor."
	Protection Current Floor	10%loset	60%loset	100%loset	10%loset > I _{omin} (default setting is 60%)
I _{omin}		60%loset	100%loset	10%loset ≤ I _{omin} (default setting is 60%)	

■ **Near Field Communication Programmability**

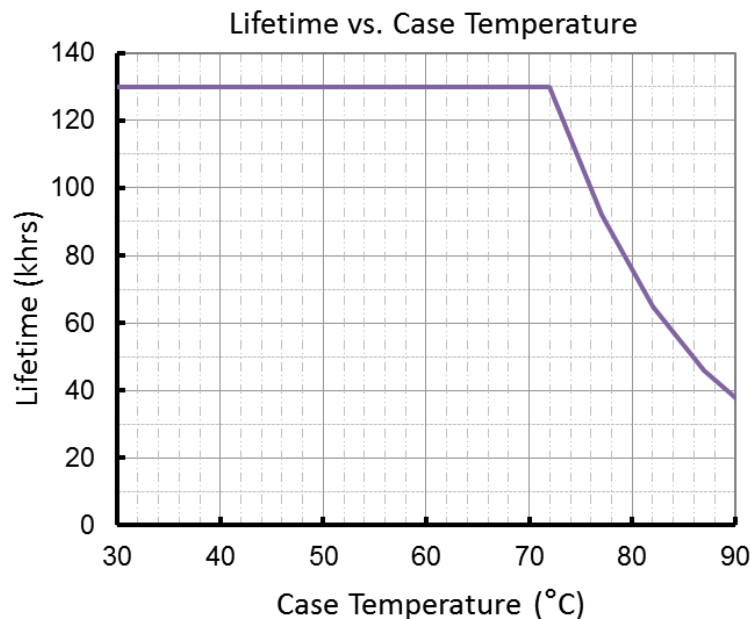


Programming Module
REF. Part# UPRG-NFC

NOTES:

1. The Near Field Communication programming module is used to program the output current, voltage, dimming, and timer settings.
2. The programming function is a non-contact process, which is safer and more efficient compared to traditional programming methods.
3. During programming the LED Driver does not require any external power source.
4. REF. Ordering part number UPRG-NFC (includes programming module, USB cable, and *software).
5. Contact Autec Sales for User Guide and programming software for complete programming instructions.

■ **Lifetime vs. Case Temperature**

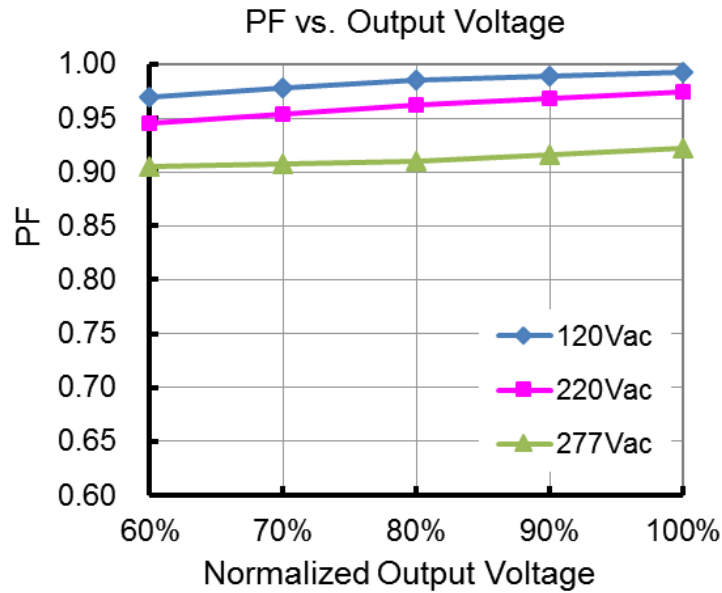


(End of Life: Maximum Failure Rate=10%)

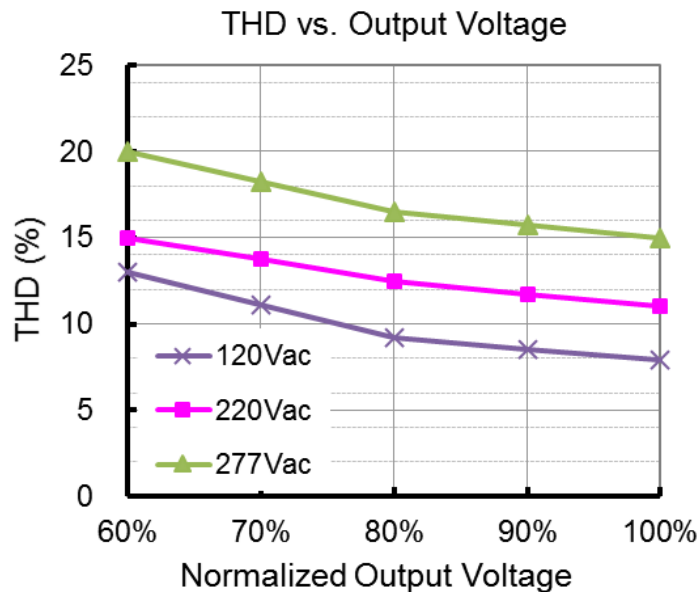
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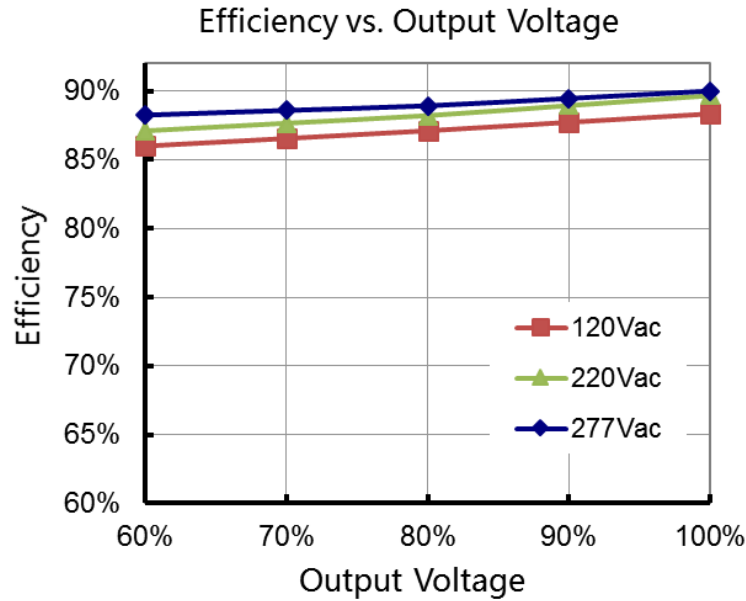
■ Power Factor vs. Load



■ THD vs. Load

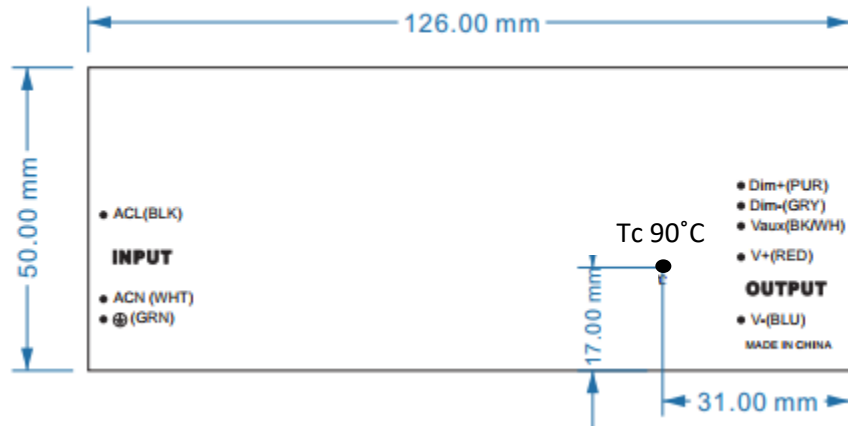


■ Efficiency vs. Load (1.05A Model)



■ Tc Location(LED Driver Label)

LWA050-Cxxx-ERK/ARK

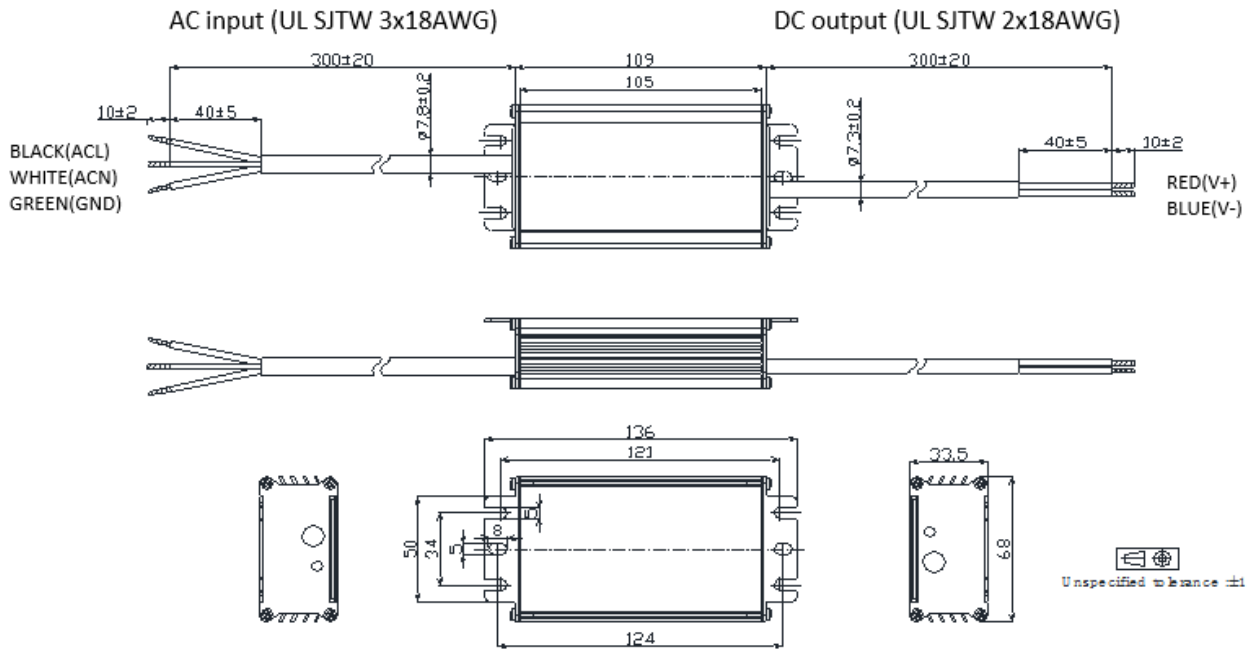


LWA050-Cxxx-DRK/TRK

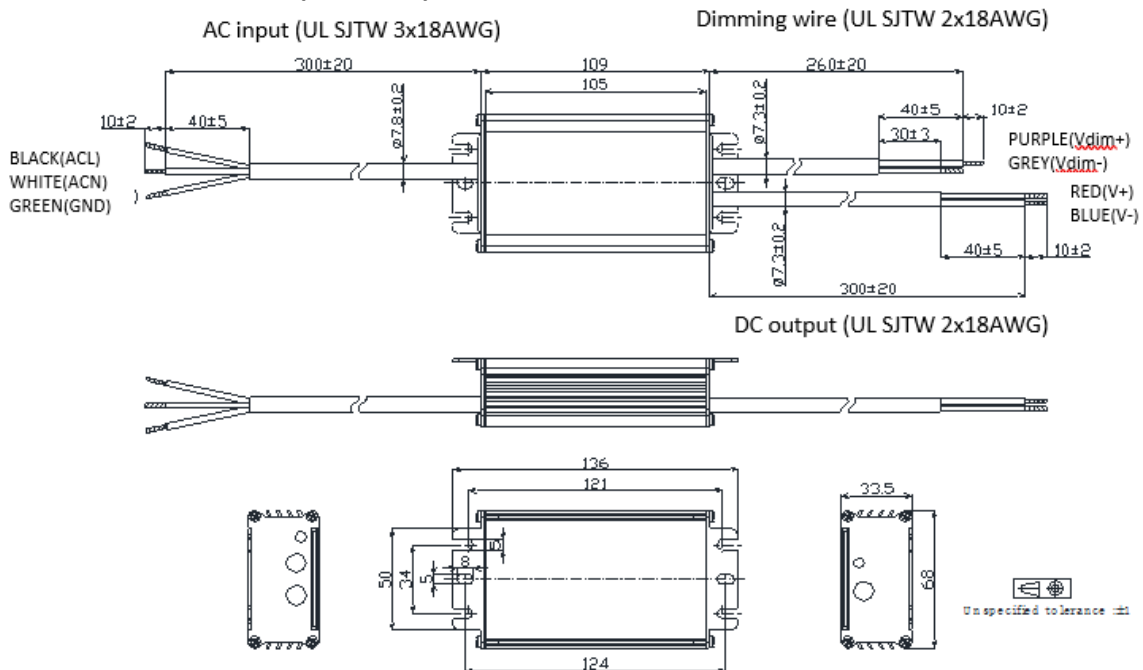
Contact Autec Sales for Tc location

■ **Mechanical Design**

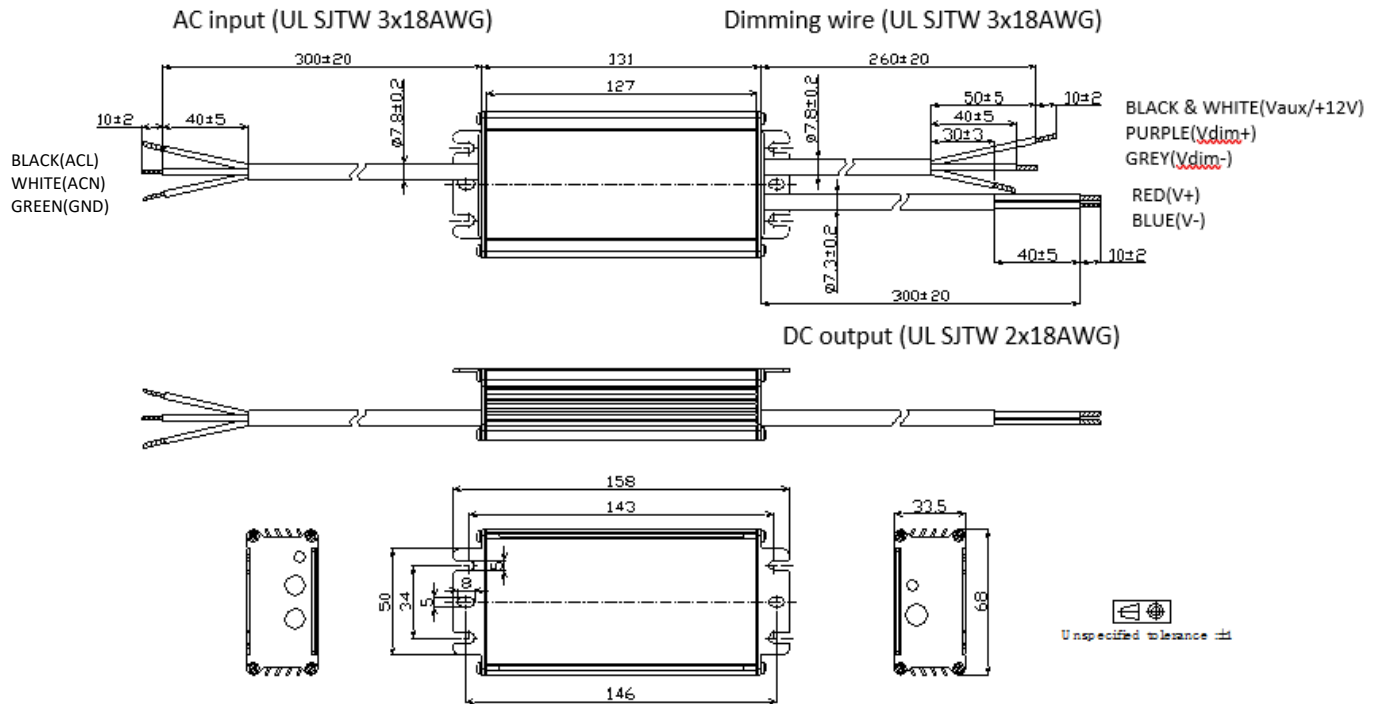
- **LWA050-Cxxx-NN/TRK (UL Cable)**



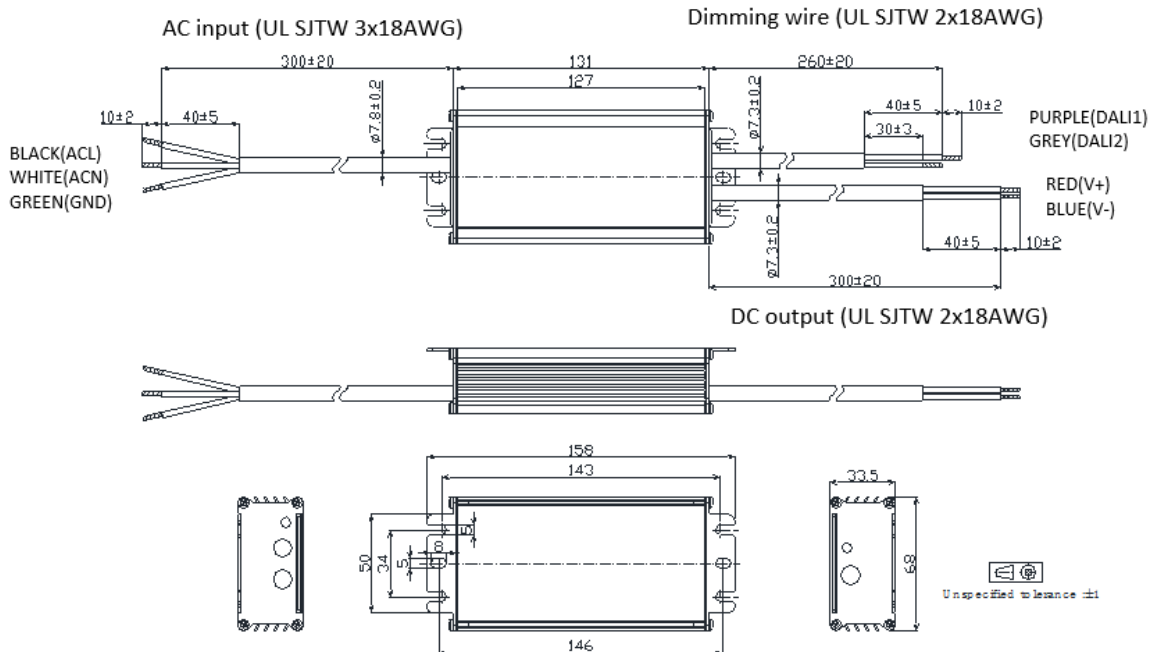
- **LWA050-Cxxx-DN/DRK (UL Cable)**



- **LWA050-Cxxx-ERK (UL Cable)**



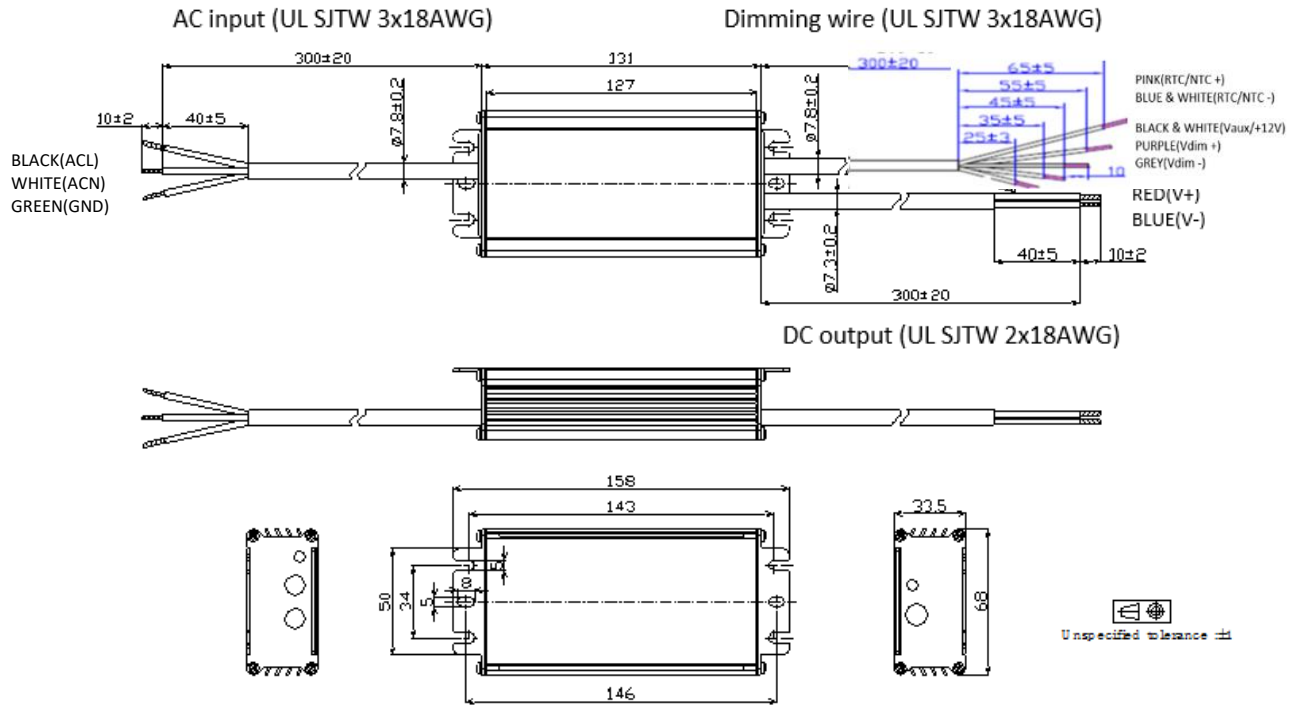
- **LWA050-Cxxx-ANK (UL Cable)**



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- **LWA050-Cxxx-ERK (UL Cable)**



***Contact Autec Sales for non UL Mechanical Diagrams**

■ **Operation Range**

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LWA050-C105-XYZ	1050	50	29	48	105
	1000	50	30	50	100
	950	50	32	53	95
	900	50	33	56	90
	850	50	35	59	85
	800	50	38	63	80
	750	50	40	67	75
	700	50	43	71	70
	650	46	43	71	70
	600	43	43	71	70
	550	39	43	71	70
	500	36	43	71	70

70	5	5	43	71	70

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Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LWA050-C140-XYZ	1400	50	21	36	140
	1300	50	23	38	130
	1200	50	25	42	120
	1100	50	27	45	110
	1050	50	29	48	105
	1000	48	29	48	105
	950	45	29	48	105
	900	43	29	48	105
	850	40	29	48	105
	800	38	29	48	105
	750	36	29	48	105
	700	33	29	48	105

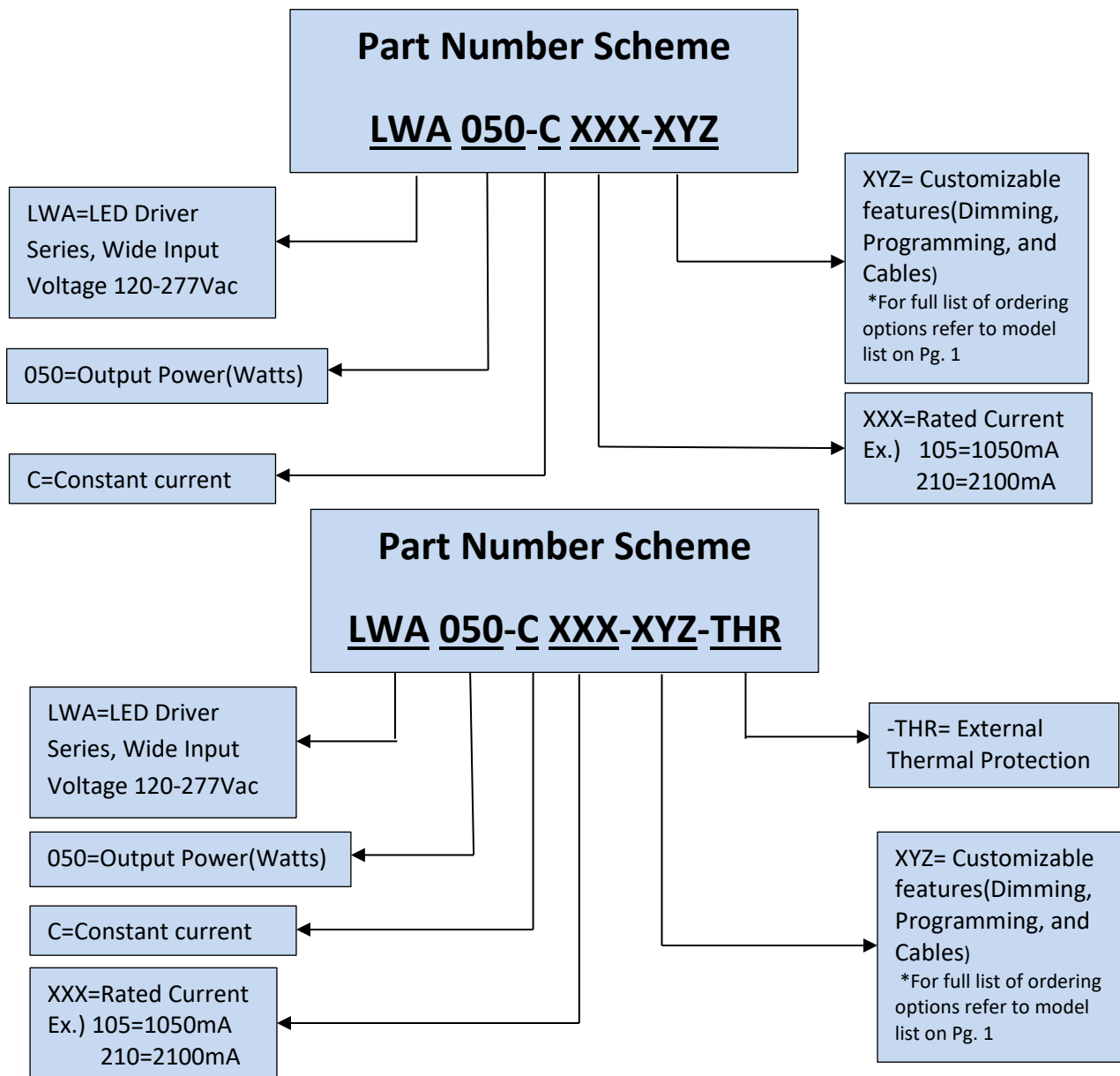
	105	5	29	48	105

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LWA050-C210-XYZ	2100	50	14	24	210
	2000	50	15	25	200
	1900	50	16	26	190
	1800	50	17	28	180
	1700	50	18	29	170
	1600	50	19	31	160
	1500	50	20	33	150
	1400	50	21	36	140
	1300	46	21	36	140
	1200	43	21	36	140
	1100	39	21	36	140
	1000	36	21	36	140

	140	5	21	36	140

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