

■ Features

- Absolute Supply Voltage: 90-305Vac or 127-420Vdc, 380Vac for 2 hours
- Horticultural Customizable Configuration
- Constant Current Design
- 95% Efficiency Max.
- Low Inrush Current
- 100,000Hour Life @ Tc=75°C
- 7 Year Warranty @ Tc<=75°C
- NFC Programmability and Isolated Dimming
- +/-2% Output Current Accuracy (Programmable Model)
- 0-10V/PWM/Time/DALI /DMX (Optional) Dimmable
- Dim Off with 0.5W Standby Power
- 12V 300mA Auxiliary Power to Power Controllers and Fans
- UL Class P, ENEC/CB/CCC SELV Output
- Safety according to EN 61347-1, 61347-2-3, 61347-2-13, 623847
- 5+ year warranty
- Near Field Communication Programmability

RoHS
Compliant



■ Application

- Bay lights, Pole lights, Stadium lights, Horticultural lighting

■ Model List (See appendix for more details about the operation range)

Model Number	Input Voltage Range	Output Power	Output Voltage	Output Current Min	Output Current Max	Efficiency	Certification
LWA480-C210-XYZ	90-305 Vac	480W	137-228Vdc	2100mA	2100mA	>95%	UL/cUL
LWA480-C420-XYZ	90-305 Vac	480 W	69-115Vdc	4200mA	4200mA	>95%	UL/cUL
LWA480-1200-XYZ	90-305 Vac	480 W	24-40Vdc	12000mA	12000mA	>95%	UL/cUL

Ordering Options	XY=	Dimming Method	Programmable	12Vaux	Dim-off
	NN	-	-	-	-
	DN	0-10V	Cable	-	No Dim-off as default status, programmed to have Dim-off
	EN	0-10V	Cable	300mA	√
	TR	Time/Set Current	NFC Wireless	-	-
	DR	0-10V	NFC Wireless	-	No Dim-off as default status, programmed to have Dim-off
	ER	0-10V/PWM/Timer	NFC Wireless	300mA	√

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	AR	DALI	NFC Wireless	-	√
	MX	DMX	√	-	√
Cable Options	Z=UL cable with ground wire, S=VDE cable/Class I, D=VDE cable/Class II				
External Thermal Protection NTC Option	-THR	LWA480-C1100-XYZ-THR			

*If ordering DMX, Customer must specify DMX512 or RDM

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	90~305Vac or 127V-420Vdc, 380Vac for 2 hours
Input Frequency	47~63Hz
Power Factor	>0.95@60-100%load, refer to PF vs. Load curve
THD	<15%@60-100%load, refer to THD vs. Load curve
Input Current	4.5Amax@120Vac & Full-Load, 2.7Amax@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	1mAmax @277Vac 60Hz, UL8750,0.75mAmax @220Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-restart
Input Over Voltage	*Optional: Shutdown @320Vac
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Current Accuracy	±5%lo
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	Case Temperature $T_c = -40^\circ\text{C} \sim +90^\circ\text{C}$; 10%RH~100%RH
Storage Temperature	$-40^\circ\text{C} \sim +85^\circ\text{C}$; 5%RH~100%RH
MTBF	$\geq 280,000$ hours, 75°C case temperature (MIL-HDBK-217F)
Lifetime	$\geq 100,000$ hours, 75°C case temperature, refer to life vs. T_c curve
Case Temperature	90°C max, marked in the T_c point of label
Dimensions	8.82x3.54x1.63by inch (body), 9.88x3.54x1.63by inch(endcaps included) 224 x 90 x 41.5by mm (body), 251 x 90 x 41.5by mm (endcaps included)
Net Weight	1600g

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Packing	12pcs/Carton/21.3kg, 490 x 370 x 345 by mm
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Notes: Unless specified, all the test results are measured in 25°C room temperature.

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.

■ Safety/EMC Compliance

Safety Standard	Description
UL8750	Light emitting diode (LED) equipment for use in lighting products
UL1012	Power units other than class 2
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	0.4V or 4%	0.5V or 5%	0.6V or 6%

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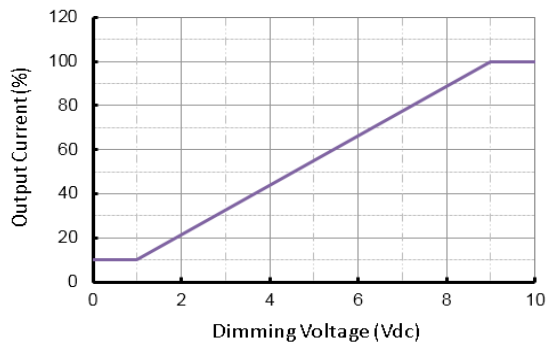
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Dim on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	3.8V	-	10V
PWM Low	0V	-	0.6V
PWM Frequency	300Hz	-	2kHz
External PWM Controller Current Sinking Capability	300uA	-	-
DALI Interface Standard		IEC62386	-
DA1,DA2 High Level	9.5	16	22.5
DA1,DA2 Low Level	-6.5	0	6.5
DA1,DA2 Current	0	-	2mA

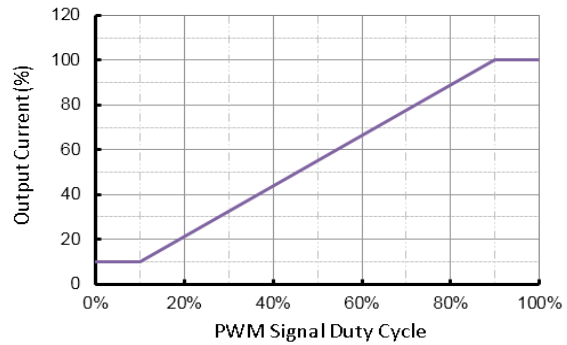
- Dimming Curve

a. Without dim-off

0-10V Dimming Curve

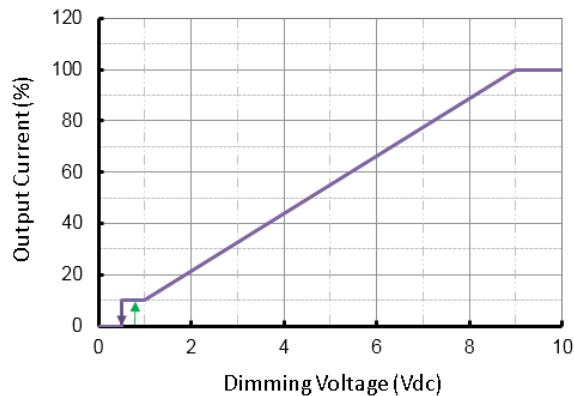


PWM Dimming Curve

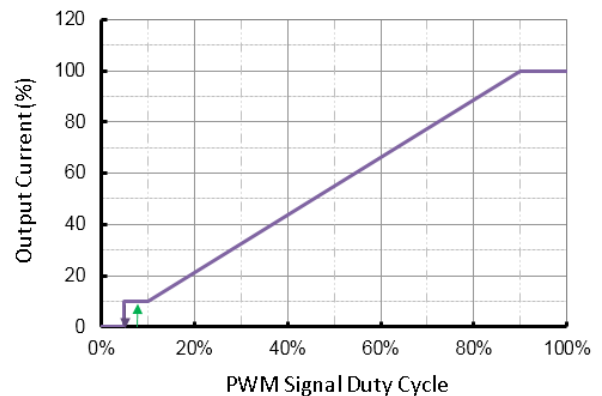


b. With dim-off

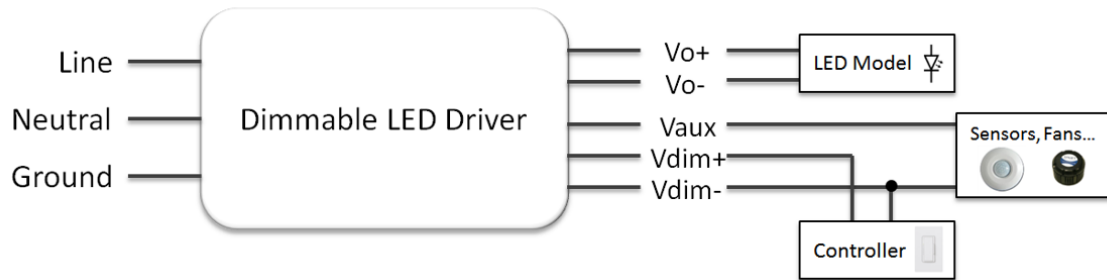
0-10V Dimming Curve



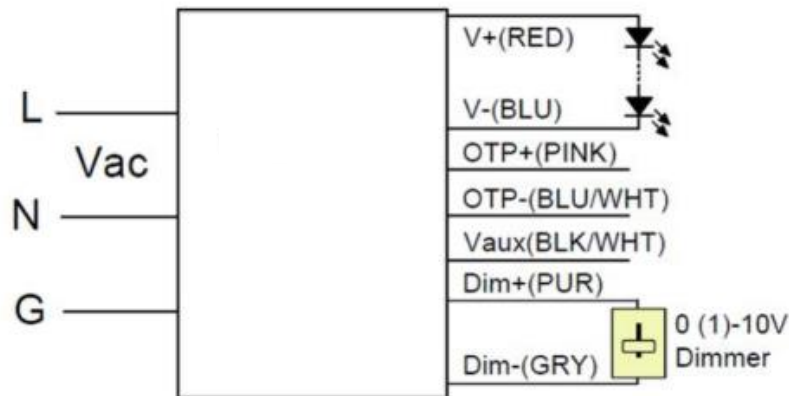
PWM Dimming Curve



- Dimming Wiring



■ 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>lomin (default setting is 60%)
lomin		60%loset	100%loset	10%loset≤lomin (default setting is 60%)	

■ Near Field Communication Programmability

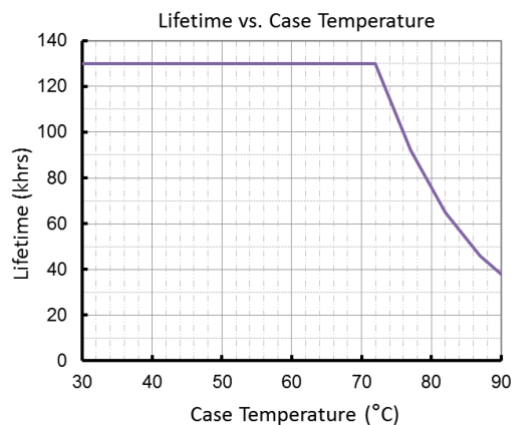


Programming Module
REF. Part# UPRG-NFC

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%)

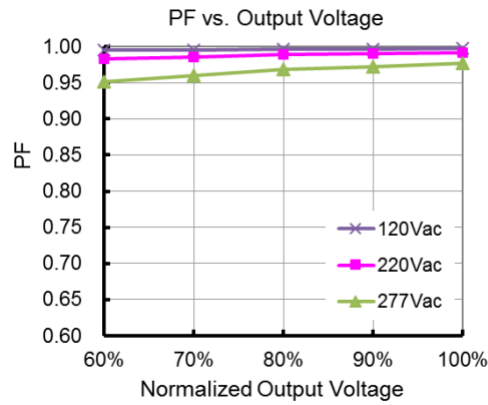
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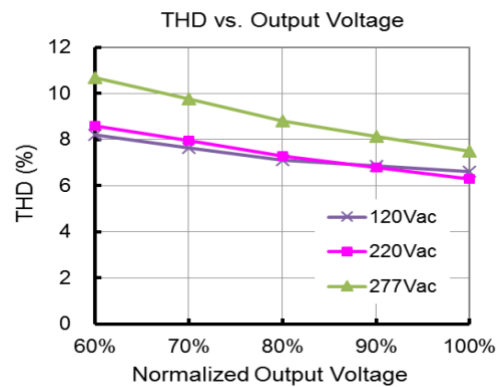
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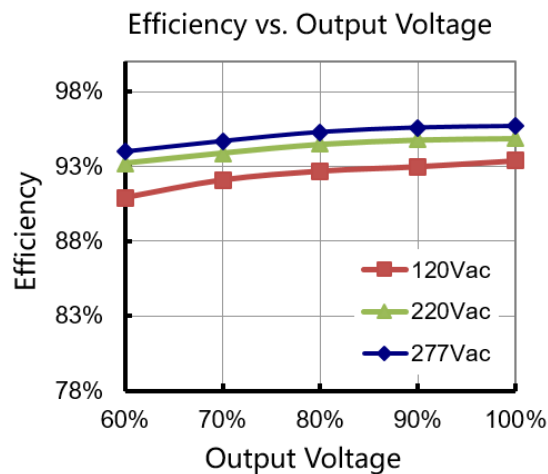
■ Power Factor vs. Load



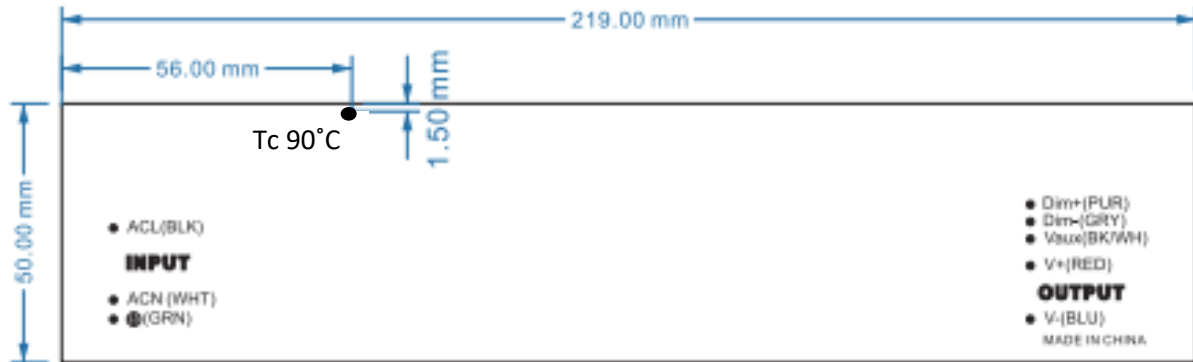
■ THD vs. Load



■ Efficiency vs. Load (14A Model)

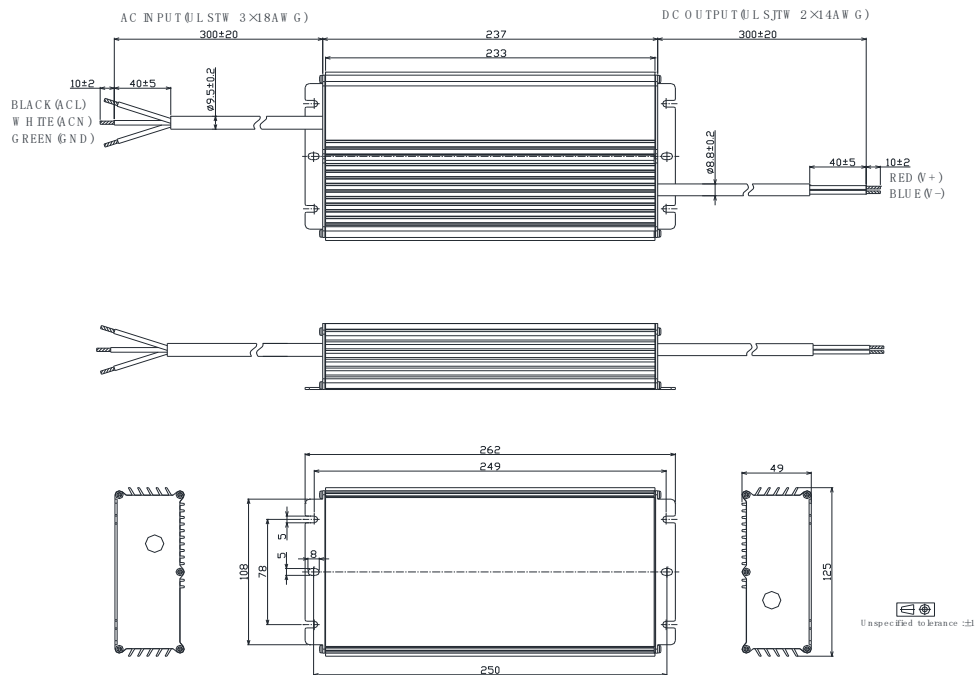


■ Tc Location(LED Driver Label)

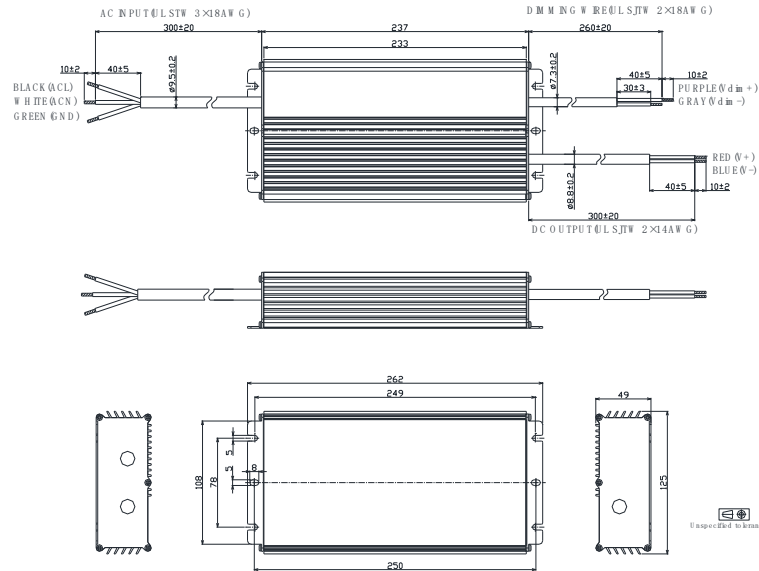


■ Mechanical Design

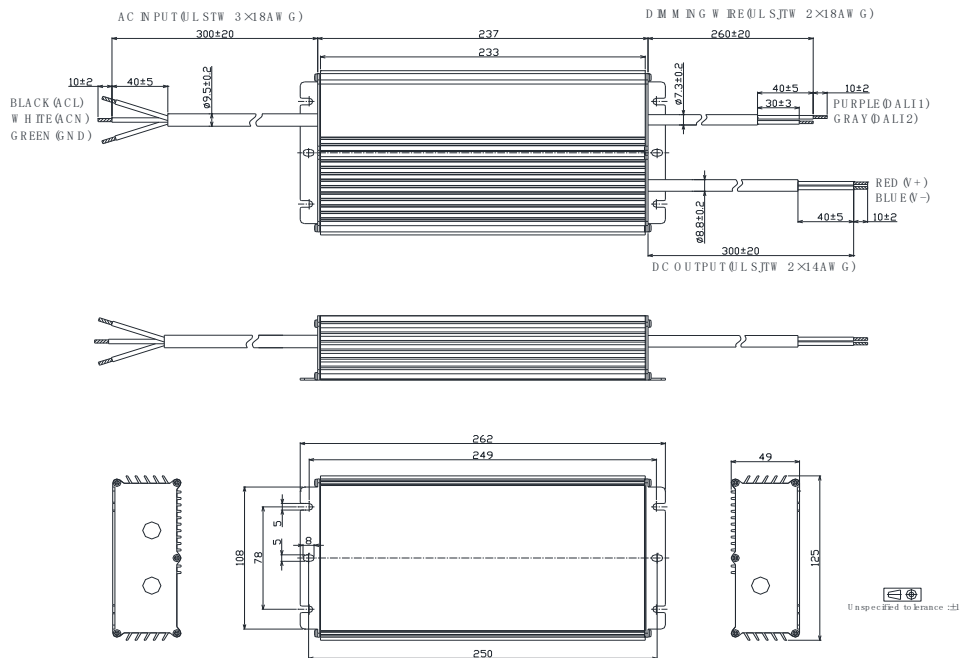
- LWA480-Cxxx-NN/TRK (UL Cable)



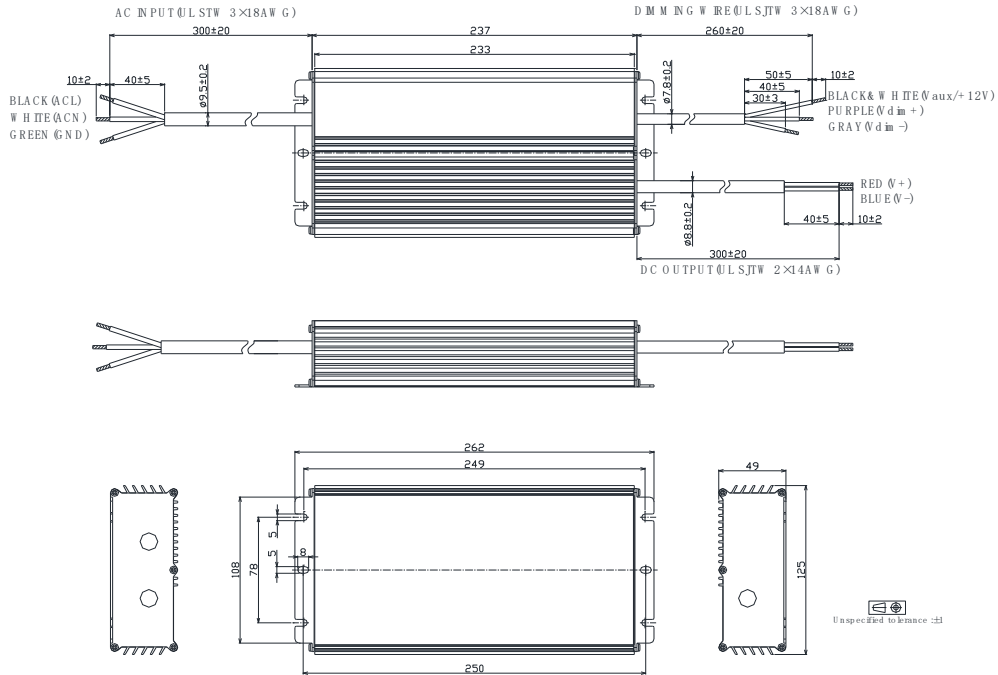
- LWA480-Cxxx-DNK/DRK (UL Cable)



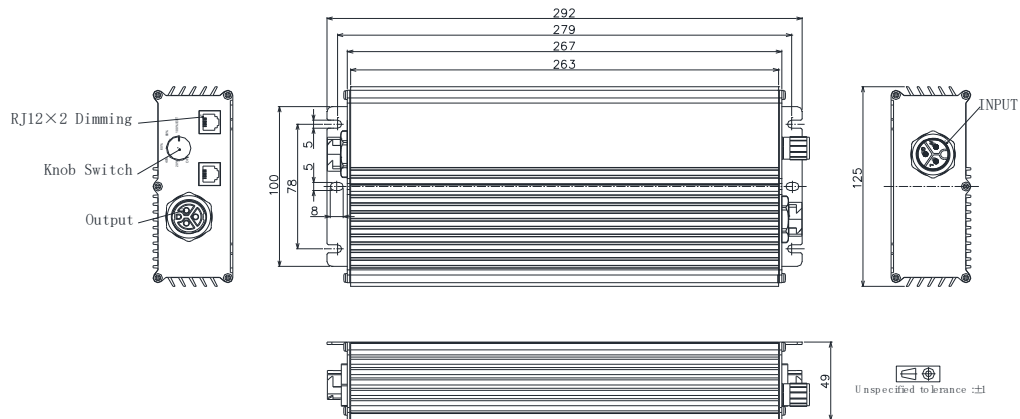
- LWA480-Cxxx-ANK/ARK (UL Cable)



- LWA480-Cxxx-ENK/ERK (UL Cable)



- Customized Functional End Cap Version

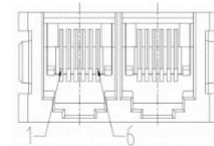


- Add suffix –abcd00 to the end of part number to indicate different configuration.

Item	Value Definition	Description
Input	a	F: M19 Waterproof Connector P: C14 plug N: Same cable as standard version
Output	b	F: M19 Waterproof Connector N: Same cable as standard version
Dimming	c	F: M12 Waterproof Connector R: RJ12 x 2 S: 3.5mm multi-media plug N: Same cable as standard version
Knob	d	K: Knob with steps B: Knob without steps N: No knob

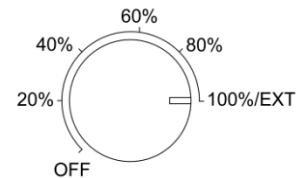
- RJ12 Pin Description

Pin	Description
1,6	12V Aux-power
2,5	Dim+
3,4	Dim-/RTN



- Knob Description:

Position	Description
P1 =100%/EXT	If there is no external control, 100% output. If there is external control, output is controlled by external signal.
P2 =Off,20%,40%60%80%	External signal invalid.



■ Appendix – Operation Range

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C210	2100	480	114	190	210
	2000	480	120	200	200
	1900	480	126	211	190
	1800	480	133	222	180
	1700	480	141	235	170
	1600	480	150	250	160
	1500	480	160	267	150
	1480	480	171	286	140
	1300	371	171	286	140
	1200	343	171	286	140
	1100	314	171	286	140
	1000	286	171	286	140
	171	286	...
	140	40	171	286	140

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C280	2800	480	86	143	280
	2700	480	89	148	270
	2600	480	92	154	260
	2500	480	96	160	250
	4800	480	100	167	240
	2300	480	104	174	230
	2200	480	109	182	220
	2100	480	114	190	210
	2000	381	114	190	210
	1900	362	114	190	210
	1800	343	114	190	210
	1700	324	114	190	210

	210	40	114	190	210

480W, 90-305 Vac Input, Isolated Dimming, NFC Programmable LED Driver

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C420	4200	480	57	95	420
	4100	480	59	98	410
	4800	480	60	100	480
	3900	480	62	103	390
	3800	480	63	105	380
	3700	480	65	108	370
	3600	480	67	111	360
	3500	480	69	114	350
	3480	480	71	118	340
	3300	480	73	121	330
	3200	480	75	125	320
	3100	480	77	129	310
	3000	480	80	133	300
	2900	480	83	138	290
	2800	480	86	143	280
	2700	386	86	143	280
	86	143	...
	280	40	86	143	280

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
-C990	9900	480	24	40	990
	9600	480	25	42	960
	9300	480	26	43	930
	9000	480	27	44	900
	8700	480	28	46	870
	8480	480	29	48	840
	8100	480	30	49	810
	7800	480	31	51	780
	7500	480	32	53	750
	7200	480	33	56	720
	6900	480	35	58	690
	6600	480	35	58	690
	6300	480	35	58	690
	6000	480	35	58	690
	5700	480	35	58	690
	5480	379	35	58	690

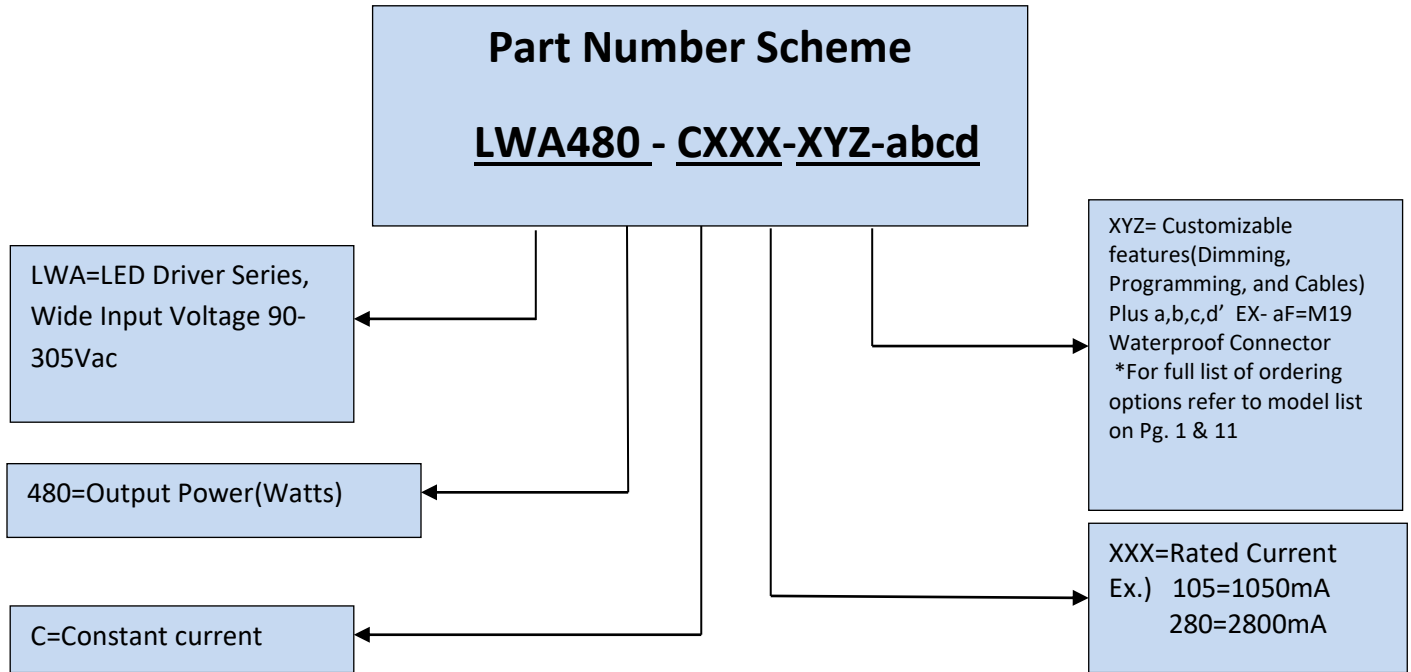
	690	48	35	58	690

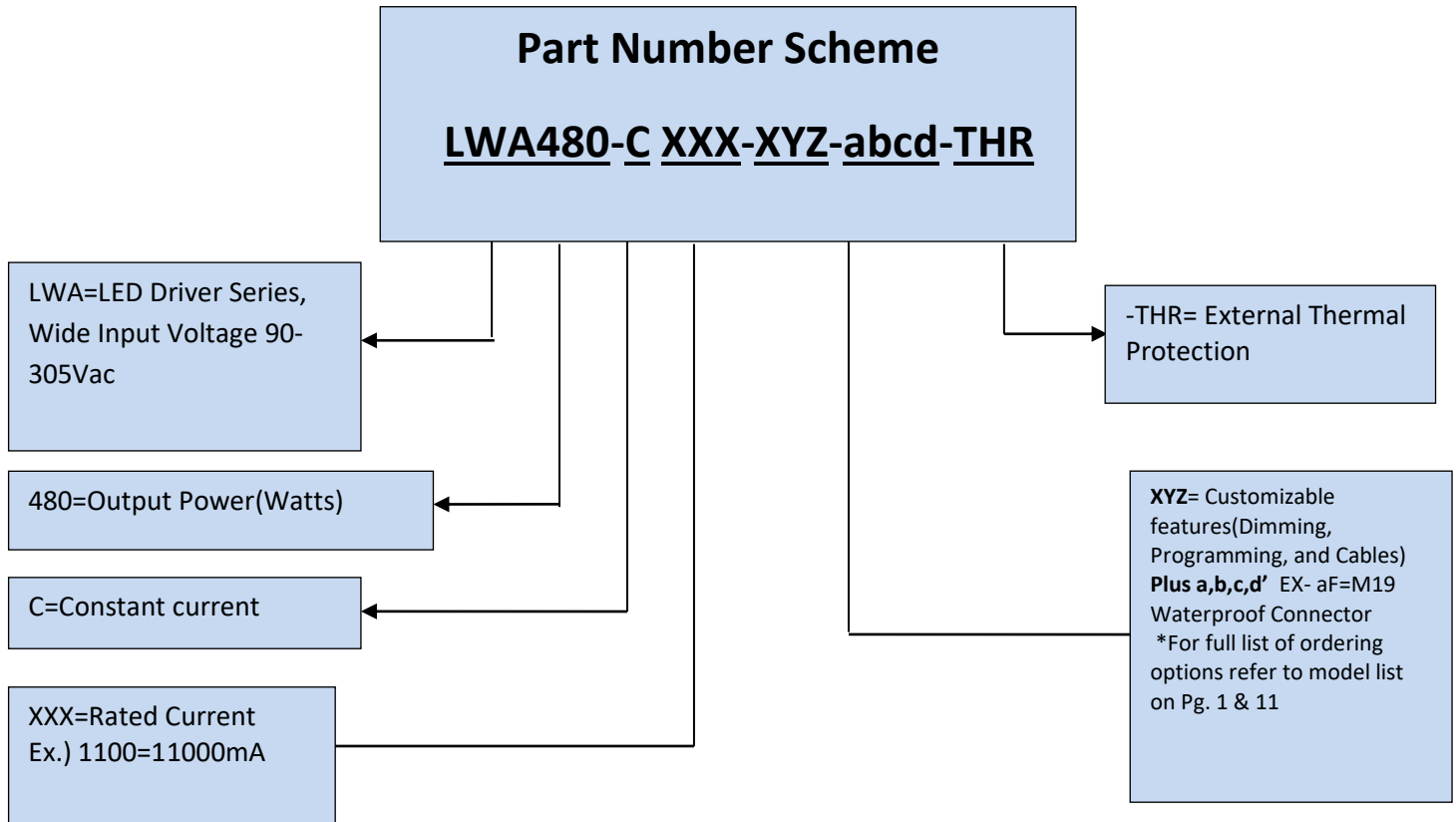
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Contact Autec Sales for non UL Mechanical Diagrams





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