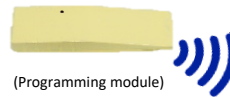


■ Features

- Power Rating: 200W
- Input Voltage: 180-528Vac
- Constant current design
- Output current settable(700mA-6300mA)
- +/-2% Output Current Accuracy (Programmable Model)
- Near Field Communication Programmability
- High-Efficiency @ 90% and above
- 0-10V/PWM/Timer/DALI/DMX (Optional) Dimmable
- Dim to Off with 1.5W Standby Power
- Optional External Thermal Protection NTC
- UL Class P, Type HL
- 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, Pole lights, Stadium lights, Horticultural lighting

■ Model List

Model Number	Input Voltage Range	Output Power	Output Voltage	Output Current Min	Output Current Max	Certification
LHA200-C105-XYZ	180-528Vac	200W	114-286Vdc	700mA	1050mA	UL/cUL
LHA200-C140-XYZ	180-528Vac	200W	86-190Vdc	1050mA	1400mA	UL/cUL
LHA200-C210-XYZ	180-528Vac	200W	57-143Vdc	1400mA	2100mA	UL/cUL
LHA200-C420-XYZ	180-528Vac	200W	29-71Vdc	2800mA	4200mA	UL/cUL
LHA200-C630-XYZ	180-528Vac	200W	19-45Vdc	4400mA	6300mA	UL/cUL

Ordering Options	XY=	Dimming Method	Programmable	12Vaux	Dim-off
	NN	-	-	-	-
	EN	0-10V	-	√	√
	TR	Timer	√	-	-
	ER	0-10V/PWM/Timer	√	√	√
	AR	DALI	√	-	√
	AN	DALI	-	-	√
	MX*	DMX	√	-	√
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	LHA200-C105-XYZ-THR			

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.

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■ Technical Data

Input Voltage	180-528Vac or 250-740Vdc
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	0.90Amax@277Vac & Full-Load, 0.45Amax@480Vac & Full-Load
Inrush Current	65A peak, 1.2ms duration, <0.25A2s@277Vac, Cold Start 70A peak, 1.3ms duration, <0.5A2s@480Vac, Cold Start
Leakage Current	1mA max @480Vac 60Hz, UL8750, 0.75mAmax @220Vac 50Hz, IEC61347-1
Input Under Voltage	Shut down and auto-restart
Surge Protection	Line to line 6kV, line to ground 10kV, IEC 61000-4-5
Current Accuracy	±5%lo
Ripple Current	Ip-p:5%Io 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 $T_c \leq 70 \pm 10^\circ\text{C}$ 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	≥280,000 hours, 75°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	8.85x2.68x1.51 by inch (body), 9.88x2.68x1.51 by inch (endcaps included) 225x68x38.5 by mm (body), 251x68x38.5 by mm (endcaps included)
Net Weight	1200g
Packing	16pcs/Carton/20.2kg, 490x370x210 by mm

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.

■ Safety/EMC Compliance

Safety Standards	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 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.

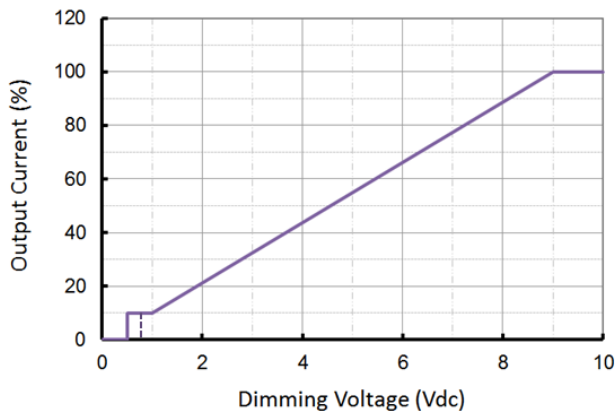
■ Dimming

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	0.4V or 4%	0.5V or 5%	0.6V or 6%
Dim-on threshold	0.6V or 6%	0.7V or 7%	0.8V or 8%
PWM High	3V		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

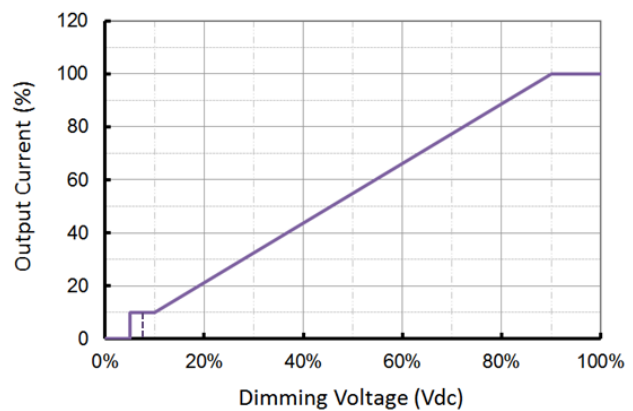
■ Dimming Curve

a. With dim-off (default)

0-10V Dimming Curve

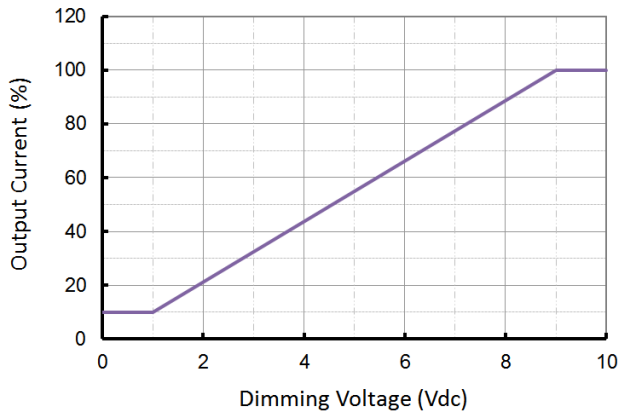


PWM Dimming Curve

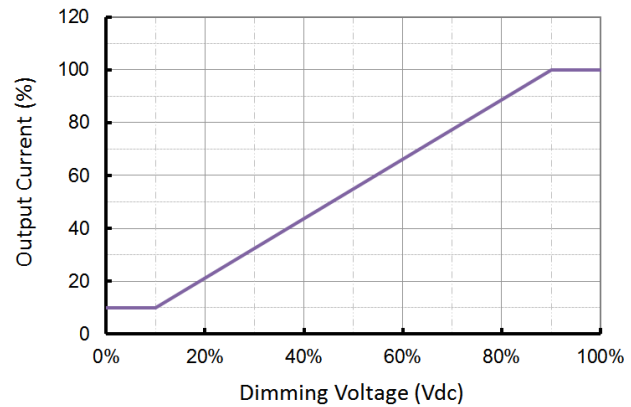


b. Without dim-off (contact sales to get this feature)

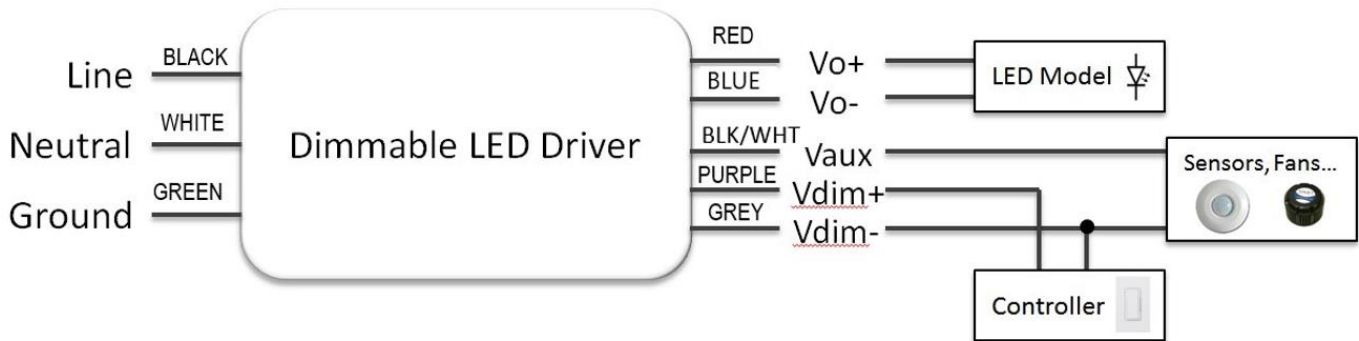
0-10V Dimming Curve



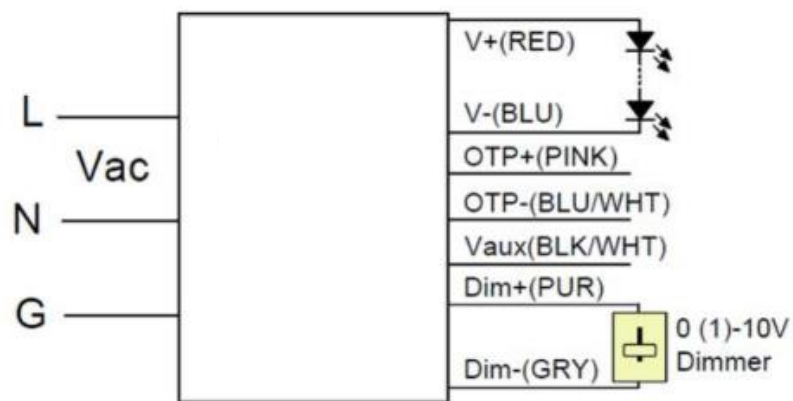
PWM Dimming Curve



■ Wiring Diagram



■ Wiring Diagram/Optional External Thermal Protection



External Thermal Protection Table

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%I _{oSet}	60%I _{oSet}	100%I _{oSet}	10%I _{oSet} > I _{oMin} (default setting is 60%)
		I _{oMin}	60%I _{oSet}	100%I _{oSet}	10%I _{oSet} ≤ I _{oMin} (default setting is 60%)

Near Field Communication Programmability


Programming Module
REF. Part# UPRG-NFC

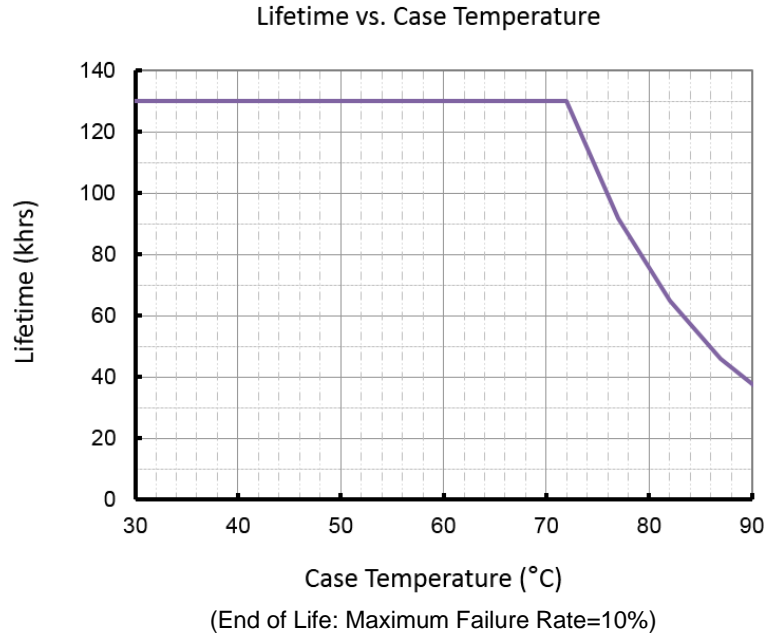
NOTES:

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 Autech Sales for User Guide and programming software for complete programming instructions.

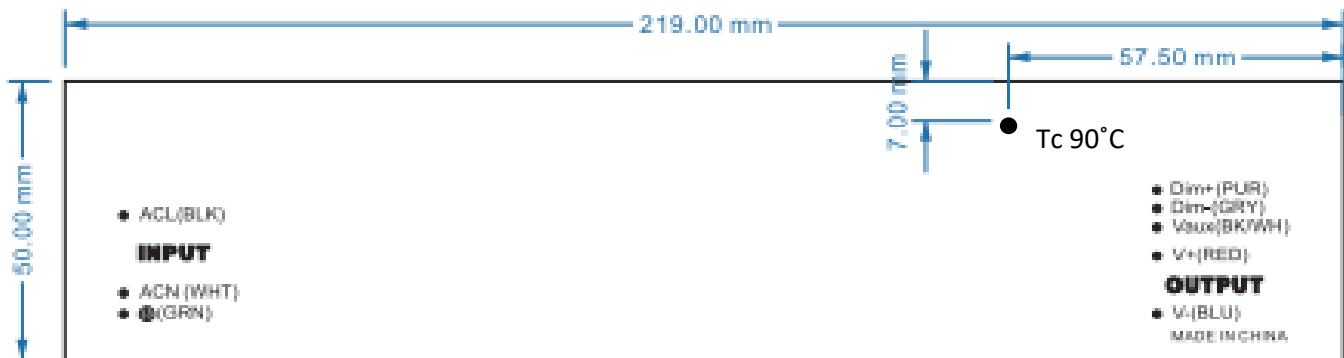
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■ **Lifetime vs. Case Temperature**

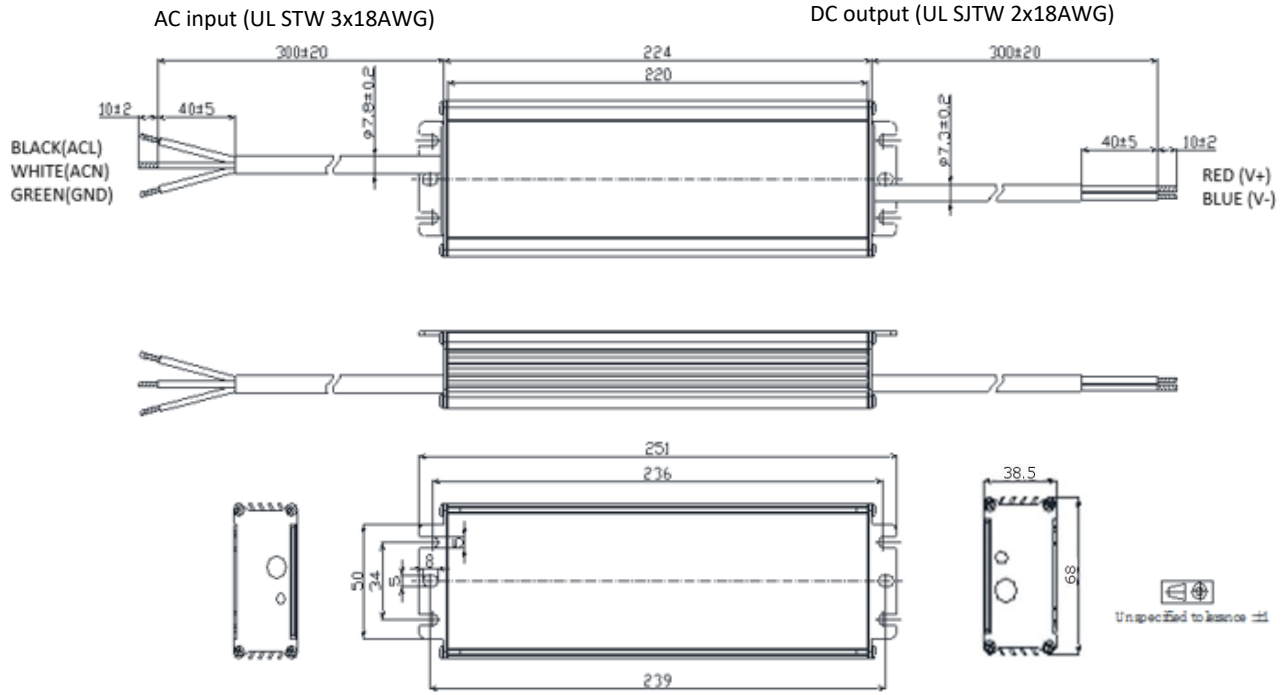


■ **Tc Location(LED Driver Label)**

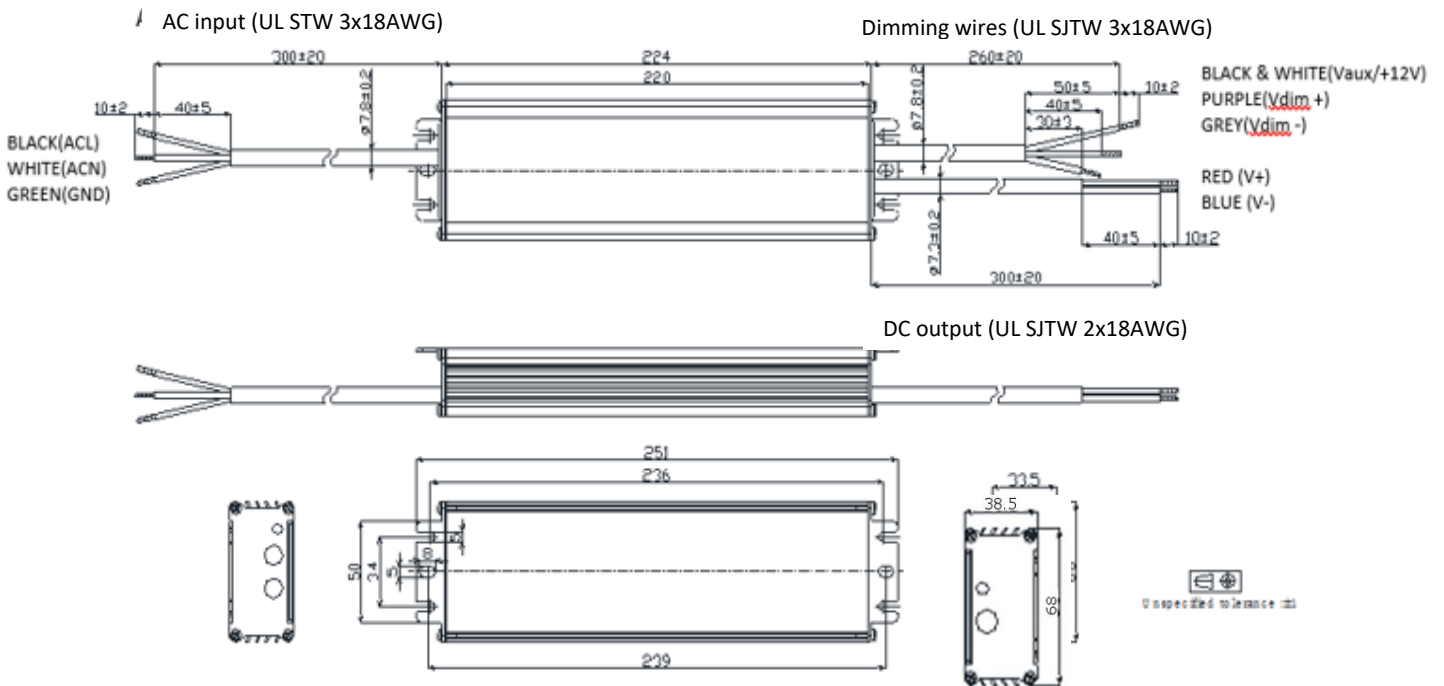


■ Mechanical Design

- LHA200Cxxx-NN/TRK (UL Cable)



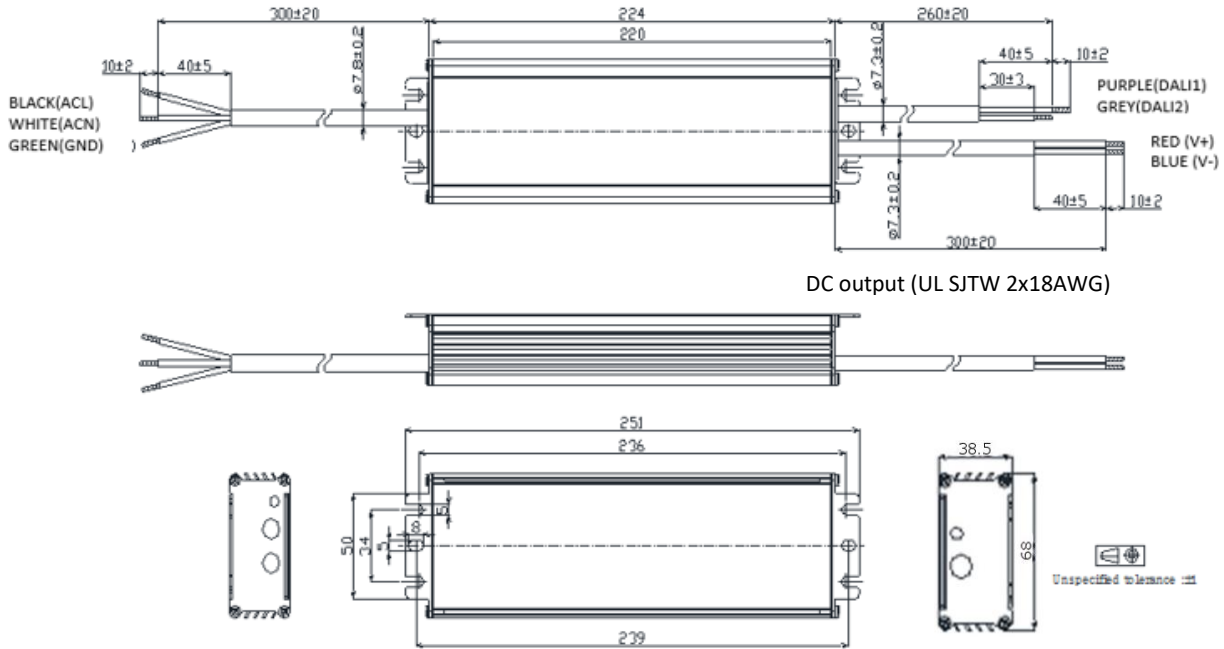
- LHA200-Cxxx-EN/ERK (UL Cable)



- **LHA200-Cxxx-ANK (UL Cable)**

AC input (UL STW 3x18AWG)

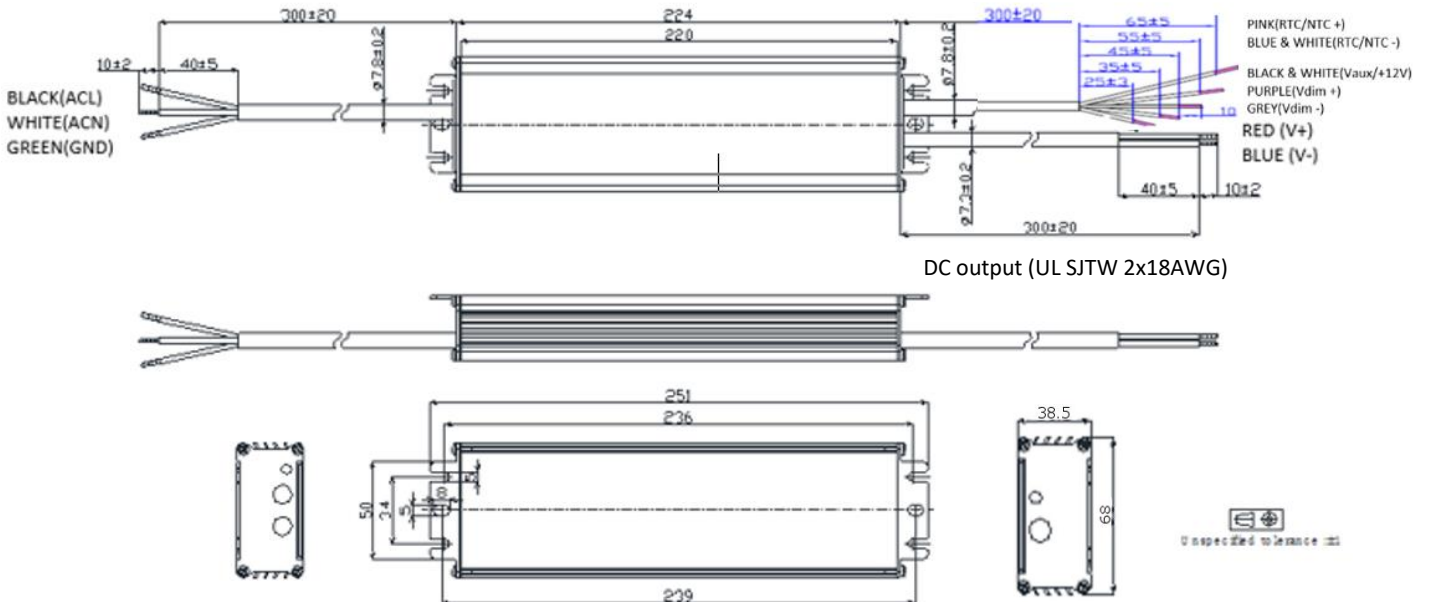
Dimming wires (UL SJTW 2x18AWG)



- **LHA200-Cxxx-ANK (UL Cable)**

AC input (UL STW 3x18AWG)

Dimming wires (UL SJTW 3x18AWG)



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

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■ Operation Range

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LHA200-C105	1050	200	114	190	105
	1000	200	120	200	100
	950	200	126	211	95
	900	200	133	222	90
	850	200	141	235	85
	800	200	150	250	80
	750	200	160	267	75
	700	200	171	286	70
	650	186	171	286	70
	600	171	171	286	70
	550	157	171	286	70
	500	143	171	286	70

	70	20	171	286	70

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LHA200-C140	1400	200	86	143	140
	1300	200	92	154	130
	1200	200	100	167	120
	1100	200	109	182	110
	1050	200	114	190	105
	1000	190	114	190	105
	950	181	114	190	105
	900	171	114	190	105
	850	162	114	190	105
	800	152	114	190	105
	750	143	114	190	105
	700	133	114	190	105

	105	20	114	190	105

200W, 180-528Vac Input, Constant Current 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)
LHA200-C210	2100	200	57	95	210
	2000	200	60	100	200
	1900	200	63	105	190
	1800	200	67	111	180
	1700	200	71	118	170
	1600	200	75	125	160
	1500	200	80	133	150
	1400	200	86	143	140
	1300	186	86	143	140
	1200	171	86	143	140
	1100	157	86	143	140
	1000	143	86	143	140

	140	20	86	143	140

Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LHA200-C420	4200	200	29	48	420
	4100	200	29	49	410
	4000	200	30	50	400
	3900	200	31	51	390
	3800	200	32	53	380
	3700	200	32	54	370
	3600	200	33	56	360
	3500	200	34	57	350
	3400	200	35	59	340
	3300	200	36	61	330
	3200	200	38	63	320
	3100	200	39	65	310
	3000	200	40	67	300
	2900	200	41	69	290
	2800	200	43	71	280
	2700	193	43	71	280
	2600	186	43	71	280

280	20	43	71	280	

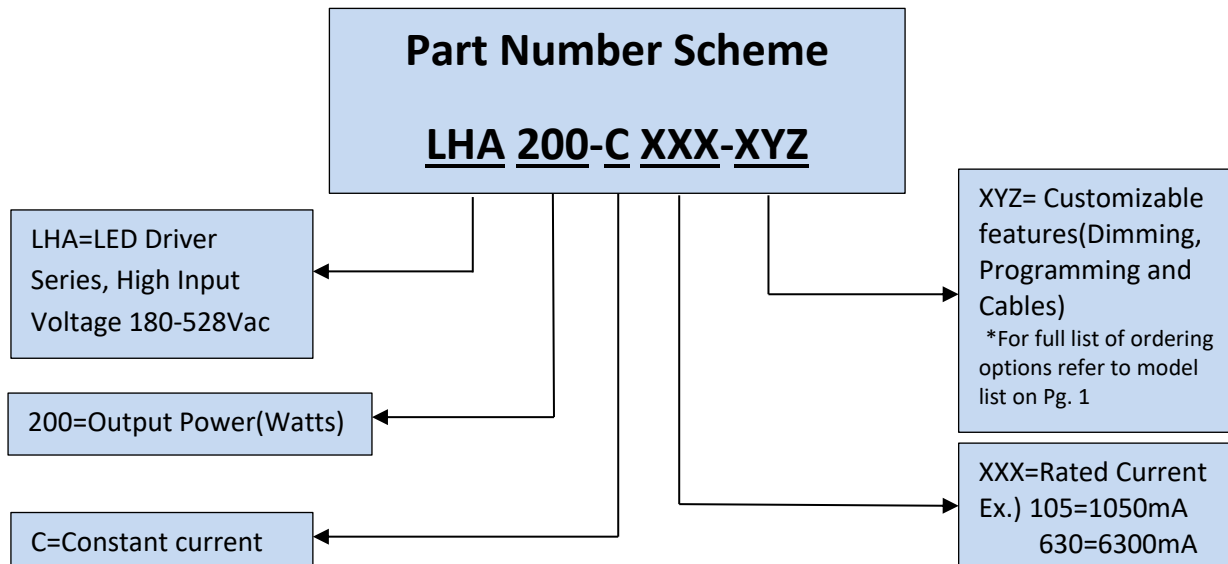
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200W, 180-528Vac Input, Constant Current Programmable LED Driver

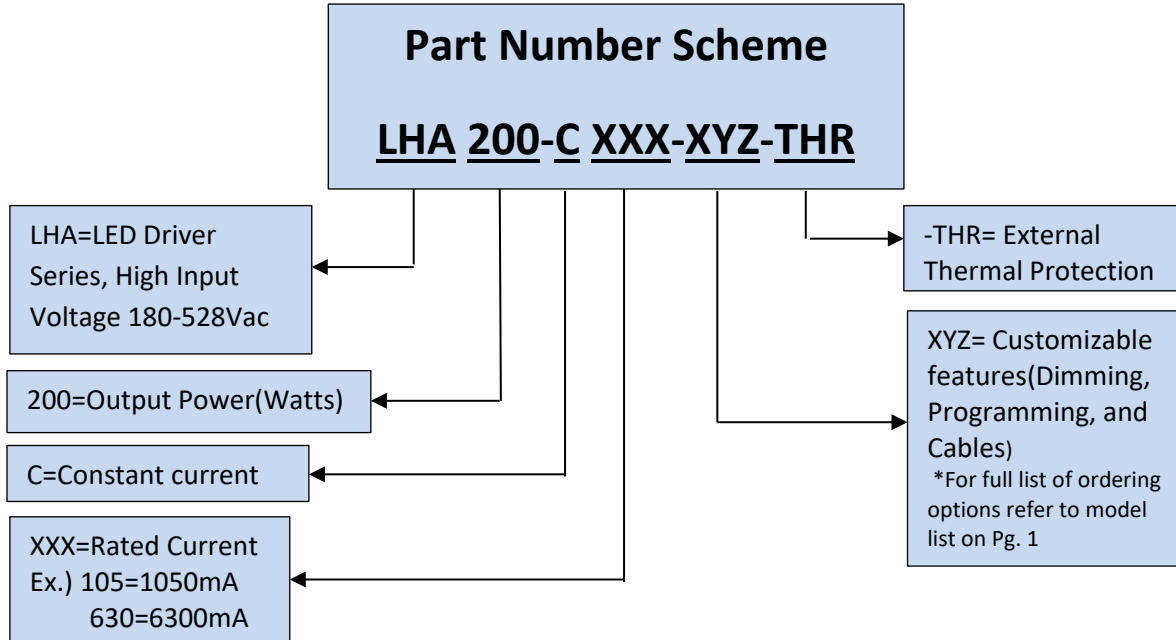
Model	Typical Set Output Current (mA)	Max Output Power (W)	Output Voltage Min (V)	Output Voltage Max(V)	Minimum Dimming Current (mA)
LHA200-C630	6300	200	19	32	630
	6100	200	20	33	610
	5900	200	20	34	590
	5700	200	21	35	570
	5500	200	22	36	550
	5300	200	23	38	530
	5100	200	24	39	510
	4900	200	24	41	490
	4700	200	26	43	470
	4500	200	27	44	450
	4400	200	27	45	440
	4300	195	27	45	440
	4200	191	27	45	440
	4100	186	27	45	440
	4000	182	27	45	440
	3900	177	27	45	440
	3800	173	27	45	440

	440	20	27	45	440



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