

■ 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 |
|-----------------|---------------------|--------------|----------------|--------------------|--------------------|------------|---------------|
| LWA710-C160-XYZ | 90-305Vac | 710W | 30-56Vdc | 1250mA | 1600mA | >95% | UL/cUL |
| LWA710-C860-XYZ | 90-305Vac | 710W | 49-118Vdc | 6000mA | 8600mA | >95% | UL/cUL |
| LWA710-C600-XYZ | 90-305Vac | 710W | 71-169Vdc | 4200mA | 6000mA | >95% | UL/cUL |
| LWA710-C420-XYZ | 90-305Vac | 710W | 101-254Vdc | 2800mA | 4200mA | >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 |

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710W, 90-305Vac Input, Long Life High Quality Driver

| | | | | | |
|---|-------------|--|--------------|-------|---|
| | ER | 0-10V/PWM/Timer | NFC Wireless | 300mA | √ |
| | AR | DALI | NFC Wireless | - | √ |
| | 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 | LWA710-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 127-420Vdc, 380Vac for 2 hours |
| 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 | 6.1Amax@120Vac & Full-Load, 2.9Amax@277Vac & Full-Load |
| Inrush Current | 10A peak, 2.2ms duration, <0.15A2s@220Vac, Cold Start 15A peak, 2.3ms duration, <0.35A2s@2770Vac, Cold Start |
| Leakage Current | 1mA max @277Vac 60Hz, UL8750, 0.75mA max @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%Io for non programmable models, ±2%Io for programmable models |
| Ripple Current | Ip-p:5%Io max |
| Setup Time | 1.2s max |
| Overshoot | 10% Io max & LED Load |
| Output Over Voltage | 110% 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 | $\geq 320,000$ 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 | 13.22x3.54x1.63 by inch (body), 14.29x3.54x1.63 by inch (endcaps included) 336x 90 x 41.5 by mm (body), 363 x 90 x 41.5 by mm (endcaps included) |
| Net Weight | 2600g |
| Packing | 8pcs/Carton/22.8kg, 490 x 370 x 250 by mm |

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

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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% |
| 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 |

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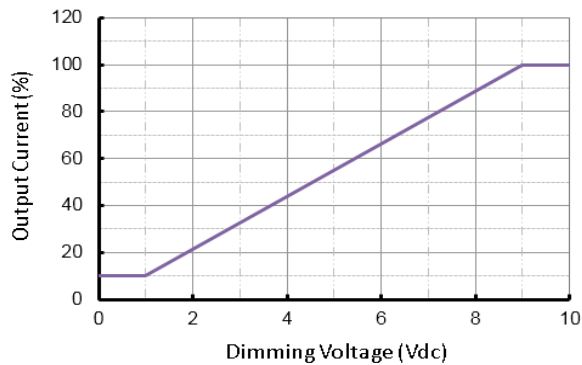
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| | | | |
|--|-------|----------|------|
| PWM Frequency | 300Hz | - | 2kHz |
| External PWM Controller Current Sinking Capability | 300uA | - | - |
| DALI Interface Standard | - | IEC62386 | - |
| DA1,DA2 High Level | 9.5 | 16 | 22.5 |
| DA1,DA2 Low Level | -6.5 | 0 | 6.5 |
| DA1,DA2 Current | 0 | - | 2mA |

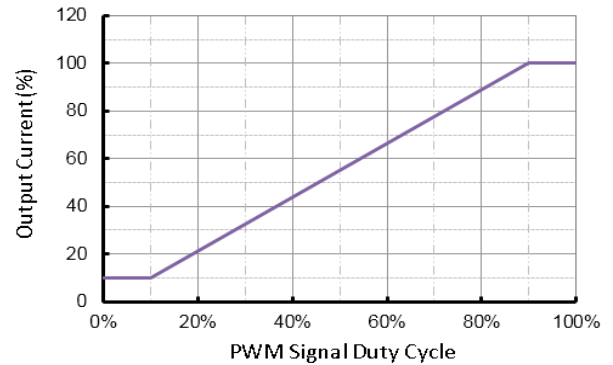
Dimming Curve

a. Without dim-off

0-10V Dimming Curve

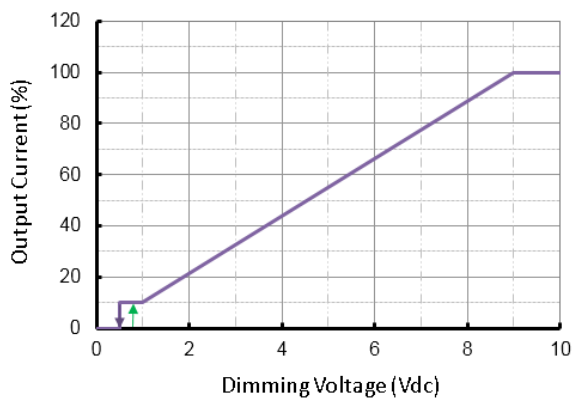


PWM Dimming Curve

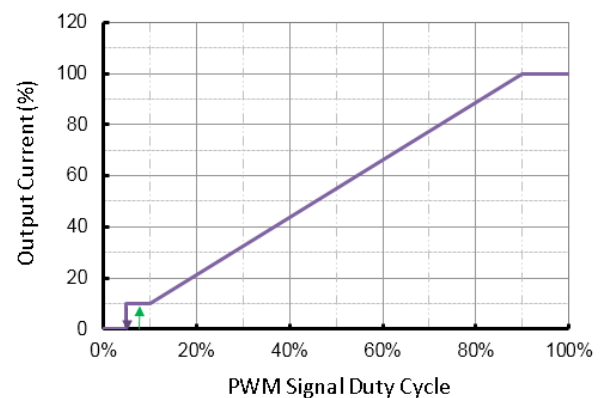


b. With dim-off

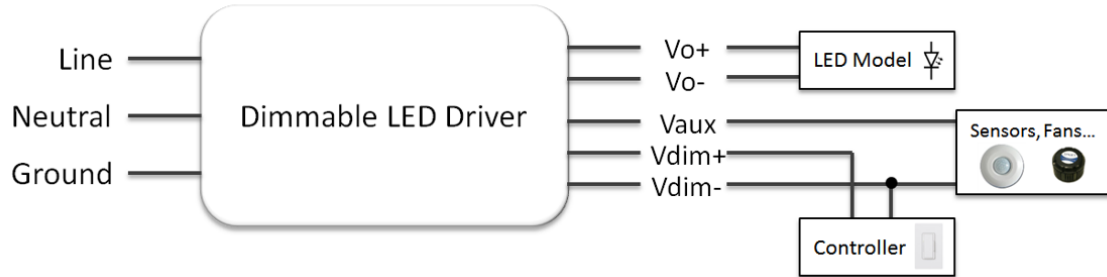
0-10V Dimming Curve



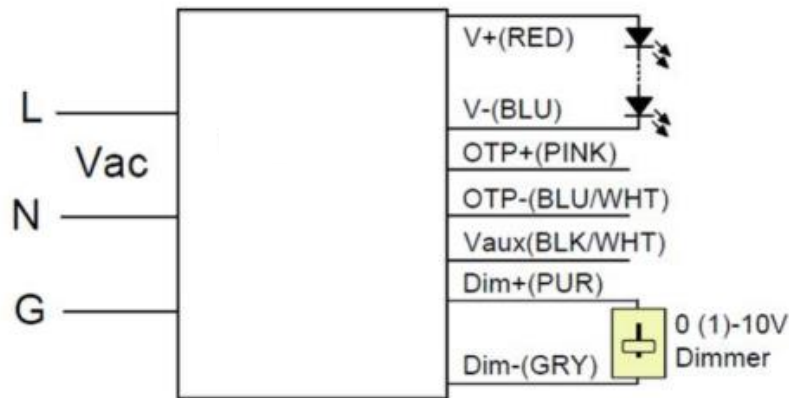
PWM Dimming Curve



- 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

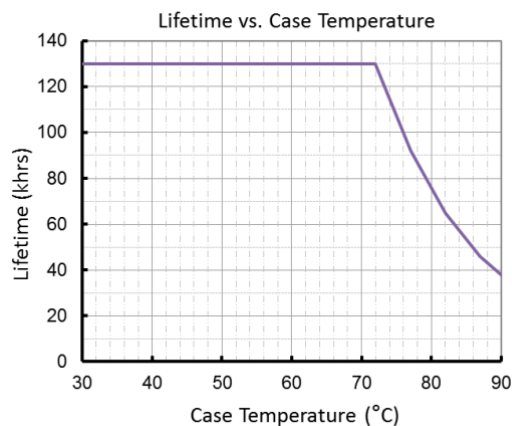


Programming Module
REF. Part# UPRG-NFC

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



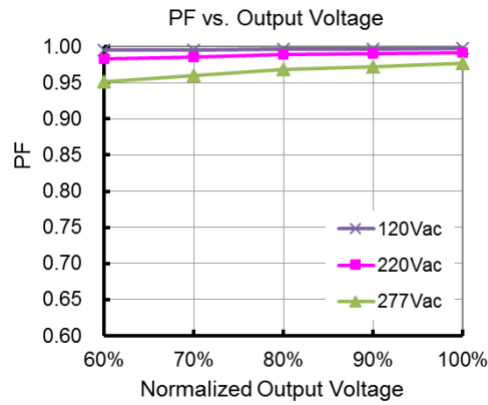
(End of Life: Maximum Failure Rate=10%)

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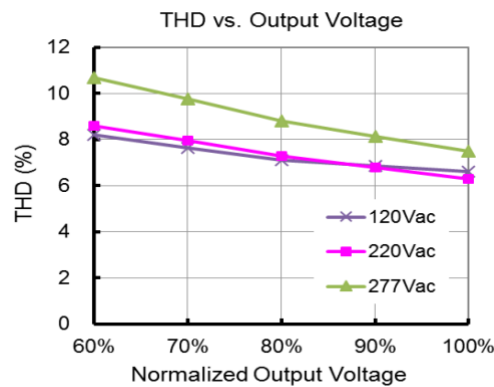
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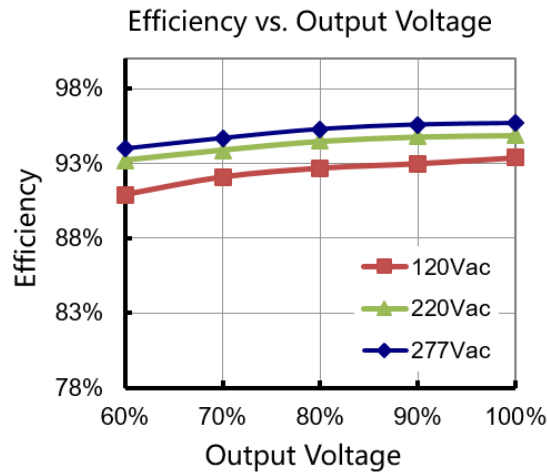
■ Power Factor vs. Load



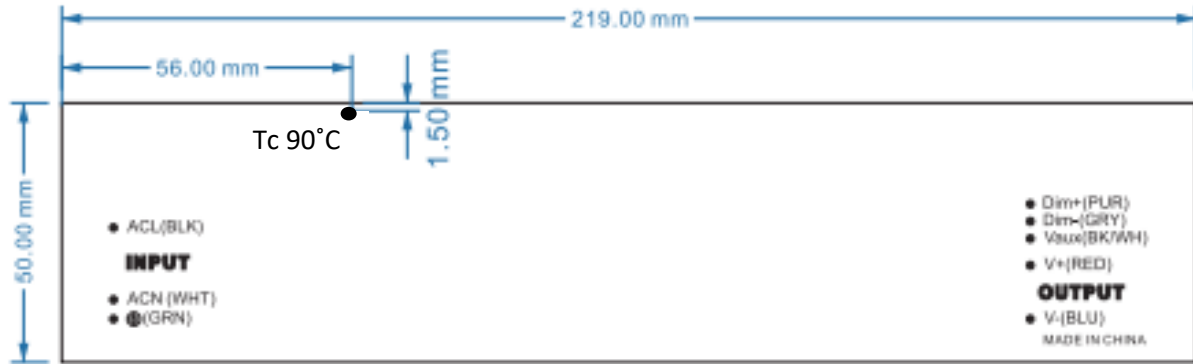
■ THD vs. Load



■ Efficiency vs. Load (14A Model)

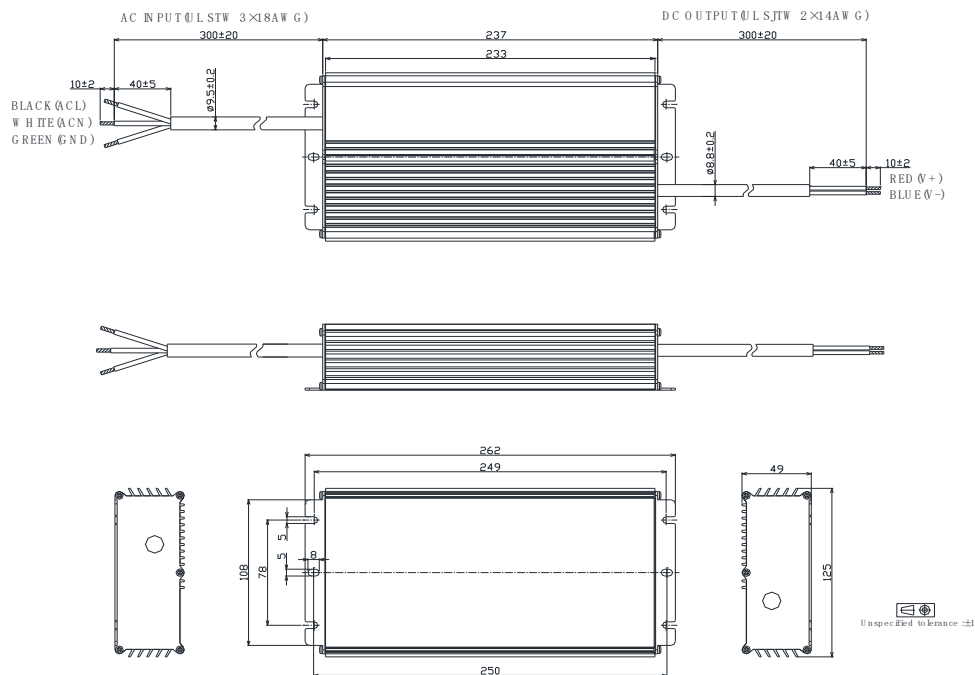


■ Tc Location (LED Driver Label)

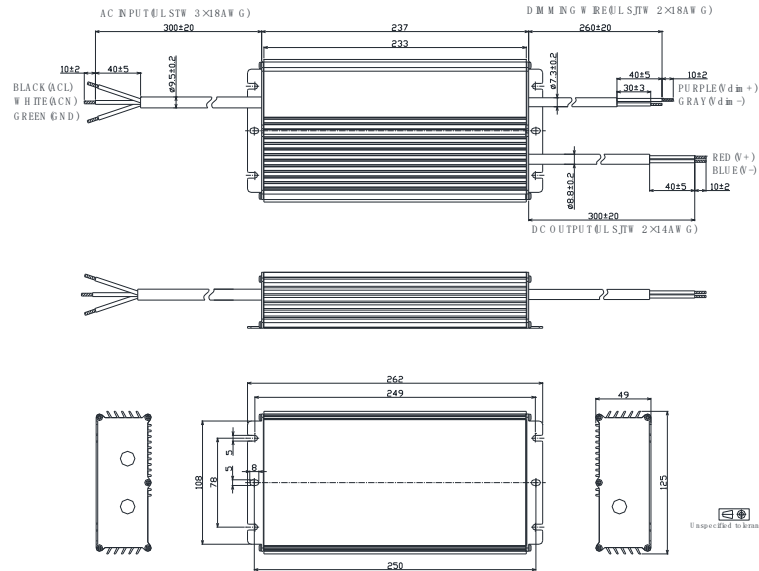


■ Mechanical Design

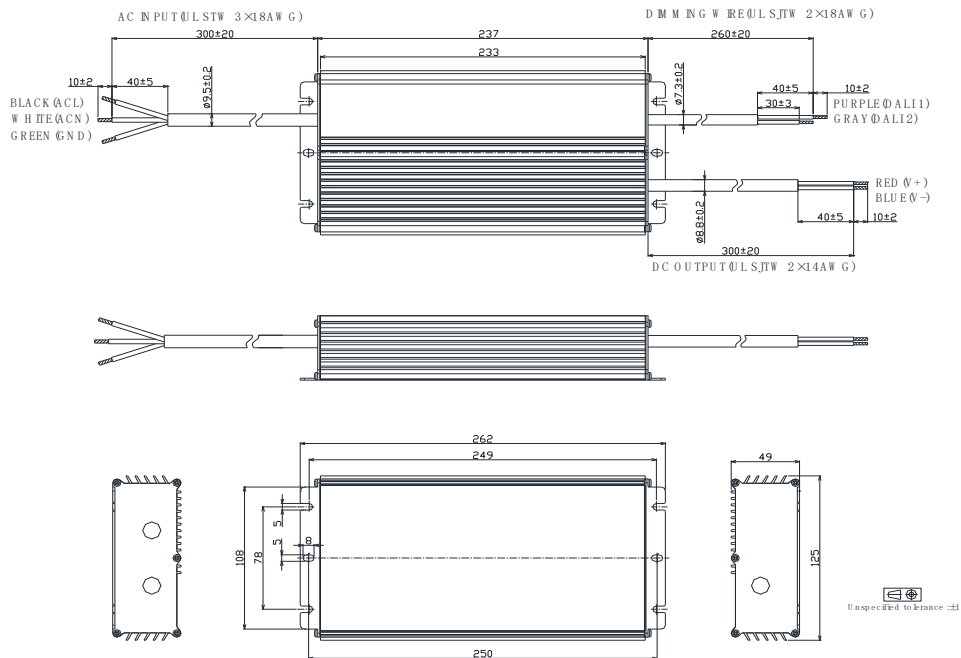
- LWA710-Cxxx-NN/TRK (UL Cable)



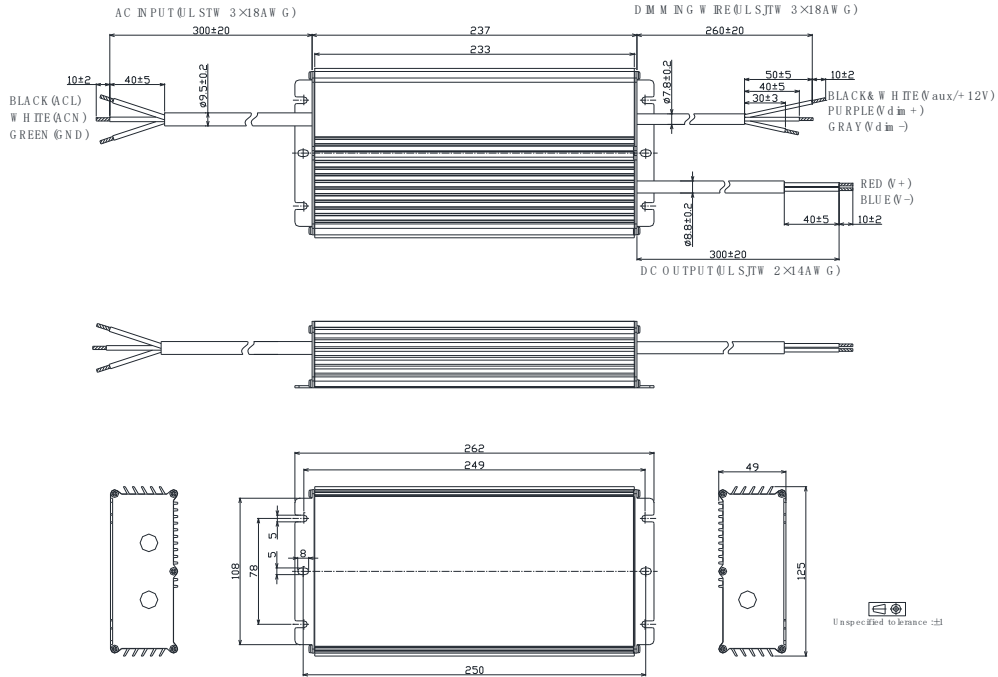
- LWA710-Cxxx-DNK/DRK (UL Cable)



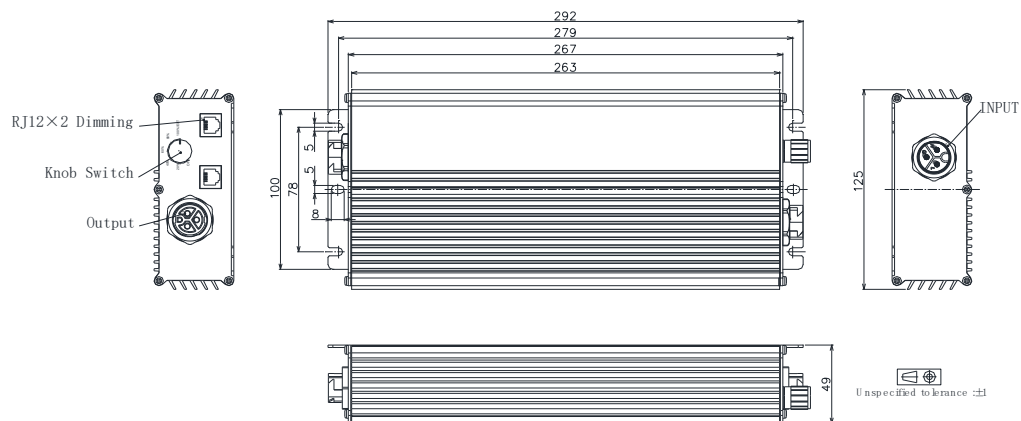
- LWA710-Cxxx-ANK/ARK (UL Cable)



- LWA710-Cxxx-ENK/ERK (UL Cable)



- Customized Functional End Cap Version

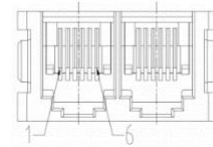


- Add suffix –abcd00 to the end of part number to indicate different configuration.

| 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 |

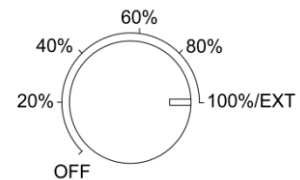
- RJ12 Pin Description

| 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) |
|-------|---------------------------------|----------------------|------------------------|-----------------------|------------------------------|
| -C160 | 1600 | 710 | 30 | 44 | 1600 |
| | 1500 | 710 | 30 | 47 | 1500 |
| | 1450 | 710 | 30 | 49 | 1450 |
| | 1400 | 710 | 30 | 51 | 1400 |
| | 1350 | 710 | 32 | 53 | 1350 |
| | 1300 | 710 | 33 | 55 | 1300 |
| | 1250 | 710 | 34 | 56 | 1250 |
| | 1200 | 672 | 34 | 56 | 1250 |
| | ... | ... | ... | ... | ... |
| | 1250 | 71 | 34 | 56 | 1250 |

| Model | Typical Set Output Current (mA) | Max Output Power (W) | Output Voltage Min (V) | Output Voltage Max(V) | Minimum Dimming Current (mA) |
|-------|---------------------------------|----------------------|------------------------|-----------------------|------------------------------|
| -C860 | 8600 | 710 | 49 | 82 | 860 |
| | 8500 | 710 | 50 | 84 | 850 |
| | 8400 | 710 | 51 | 85 | 840 |
| | 8200 | 710 | 52 | 87 | 820 |
| | 8000 | 710 | 53 | 89 | 800 |
| | 7800 | 710 | 54 | 91 | 780 |
| | 7600 | 710 | 56 | 93 | 760 |
| | 7400 | 710 | 57 | 96 | 740 |
| | 7200 | 710 | 60 | 98 | 720 |
| | 7000 | 710 | 61 | 101 | 700 |
| | 6800 | 710 | 63 | 104 | 680 |
| | 6600 | 710 | 65 | 108 | 660 |
| | 6400 | 710 | 67 | 111 | 640 |
| | 6200 | 710 | 69 | 115 | 620 |
| | 6000 | 710 | 71 | 118 | 600 |
| | 5800 | 686 | 71 | 118 | 600 |
| | ... | ... | ... | ... | ... |
| | 600 | 71 | 71 | 118 | 600 |

710W, 90-305Vac Input, Long Life High Quality Driver

| Model | Typical Set Output Current (mA) | Max Output Power (W) | Output Voltage Min (V) | Output Voltage Max(V) | Minimum Dimming Current (mA) |
|-------|---------------------------------|----------------------|------------------------|-----------------------|------------------------------|
| -C600 | 6000 | 710 | 71 | 118 | 600 |
| | 5800 | 710 | 73 | 122 | 580 |
| | 5600 | 710 | 76 | 126 | 560 |
| | 5400 | 710 | 79 | 132 | 540 |
| | 5200 | 710 | 81 | 137 | 520 |
| | 5000 | 710 | 86 | 142 | 500 |
| | 4800 | 710 | 89 | 148 | 480 |
| | 4600 | 710 | 93 | 155 | 460 |
| | 4400 | 710 | 97 | 162 | 440 |
| | 4200 | 710 | 101 | 169 | 420 |
| | 4000 | 677 | 101 | 169 | 420 |
| | 3800 | 642 | 101 | 169 | 420 |
| | 3600 | 609 | 101 | 169 | 420 |
| | ... | ... | ... | ... | ... |
| | 420 | 71 | 101 | 169 | 420 |

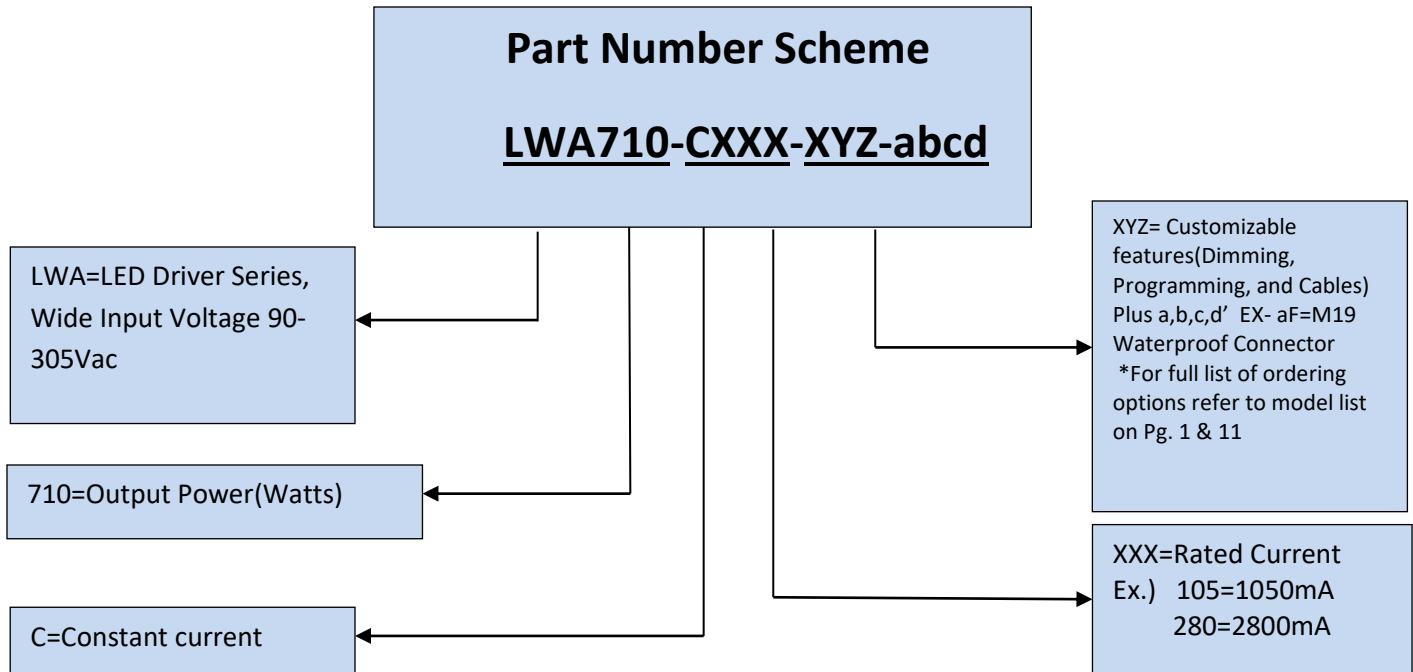
| Model | Typical Set Output Current (mA) | Max Output Power (W) | Output Voltage Min (V) | Output Voltage Max(V) | Minimum Dimming Current (mA) |
|-------|---------------------------------|----------------------|------------------------|-----------------------|------------------------------|
| -C420 | 4200 | 710 | 101 | 169 | 420 |
| | 4000 | 710 | 107 | 178 | 400 |
| | 3800 | 710 | 112 | 187 | 380 |
| | 3700 | 710 | 115 | 192 | 370 |
| | 3600 | 710 | 118 | 197 | 360 |
| | 3500 | 710 | 122 | 203 | 350 |
| | 3400 | 710 | 125 | 209 | 340 |
| | 3300 | 710 | 129 | 215 | 330 |
| | 3200 | 710 | 134 | 222 | 320 |
| | 3100 | 710 | 138 | 229 | 310 |
| | 3000 | 710 | 142 | 237 | 300 |
| | 2900 | 710 | 147 | 244 | 290 |
| | 2800 | 710 | 152 | 254 | 280 |
| | 2700 | 685 | 152 | 254 | 280 |
| | ... | ... | ... | ... | ... |
| | 280 | 71 | 152 | 254 | 280 |

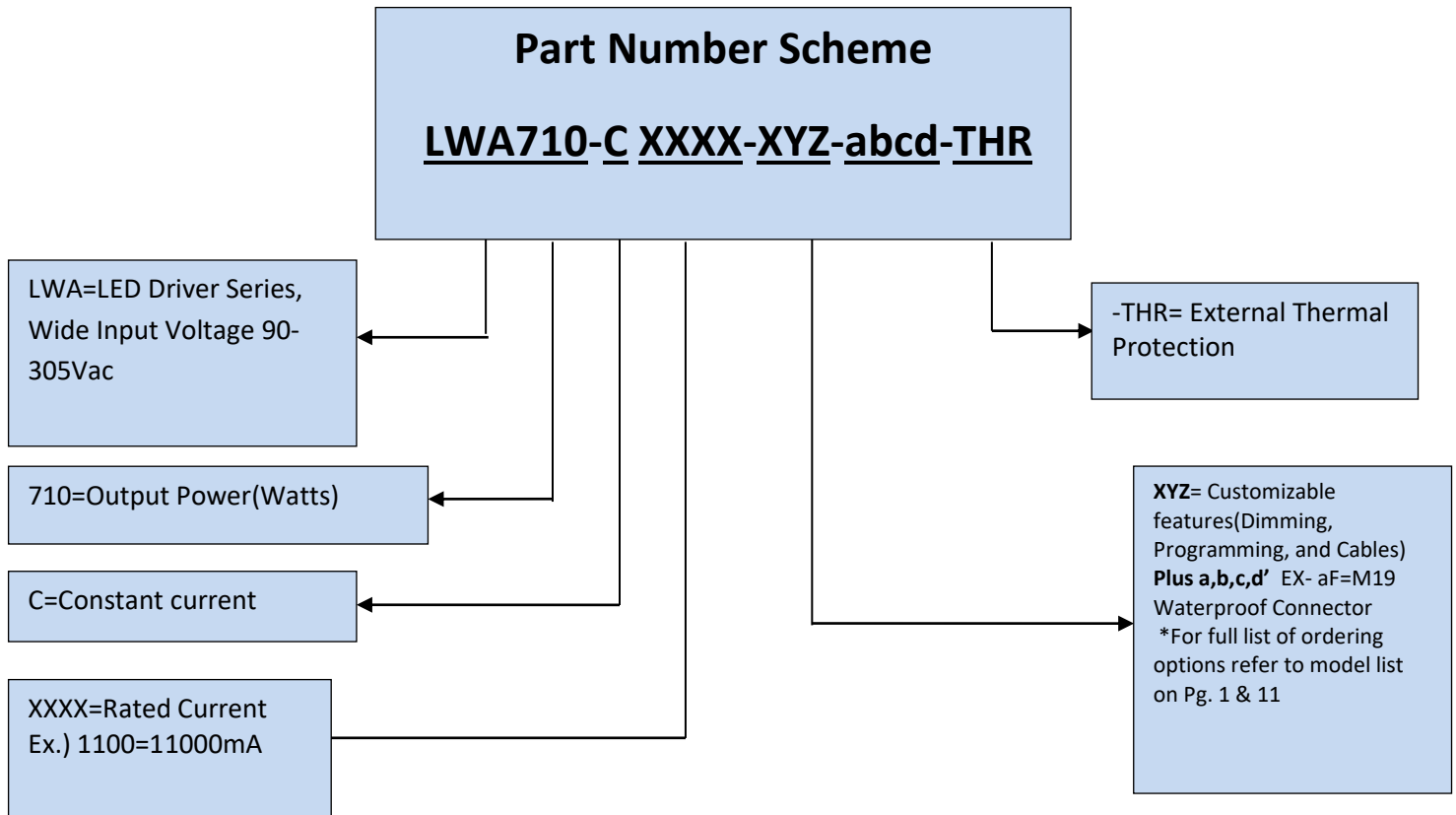
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Contact Autec Sales for non UL Mechanical Diagrams





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