

# High Line Input Programmable LED Driver



## APS680-H series

*High reliability super high power LED driver*



### Highlights:

- Up to 680W output
- Constant Voltage and Constant Current
- Dimming Options
- IP67
- Up to 95% Efficiency
- Wide range input 277VAC~480VAC
- -35°C to +90°C Operation, up to +50°C without derating
- Light Weight
- 5 Years Life
- Programmable through NFC

### Key Specifications

Model	680AHP36	680AHP48	680AHP56	680AHP80	680AHP140	680AHP180	680AHP240	680AHP300	680AHP375	680AHP460
	CV	CV	CV	CV	CV	CV	CV	CV	CV	CV
Output Voltage	18-36V	25-48V	28-56V	38-80V	67-140V	84-180V	115-240V	144-300V	180-375V	225-460V
Output Current	8.0-20.0A	5.7-14.2A	5.0-12.5A	3.75-9.37A	2.14-5.36A	1.71-4.28A	1.25-3.13A	1.0-2.5A	0.8-2.0A	0.4-1.6A
Output Power	680W									
Auxiliary Output	12V@200mA									
Line Regulation	±1%									
Ripple & Noise	1%									
Dimming	0-10V/PWM									
Vin	277VAC~480VAC (L-N)									
Iin	<2.1A									
PF	>0.95 @ Rated Load									
THD	<20% @ 120Vac & 80~100% full load, <20% @ 277Vac & 80~100% full load									
η	Up to 95%									
Inrush	<65A									
Case Temp	Tcase from -35to +90°C									
MTBF	>200K Hrs to Mil-HDBK-217@25 °C									
Size	280mmx90.1mmx47.2mm									
Weight	2.25KG									

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## Model Name

**APS** - **680** - **AHP** **36** **CV**  
Internal Use      Rated Power      Series      Output Voltage      Output mode

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## Specifications

All specifications are for rated input/output and 25 °C

unless otherwise specified

Output Characteristics	
Output Voltage Total Regulation	±1%
Turn on delay	<1 second
Rise Time	<100ms
Holdup Time	>8ms
Protections	
Over Current Protection (OCP)	Yes
Short Circuit Protection (SCP)	Yes
Over Voltage Protection (OVP)	Yes
Over Temperature Protection (OTP)	Yes
Control	
0~10V Dimming	0(0.05)~10V, PWM, External Resistor, Clock, DMX
NFC	Through NFC controller
Environmental	
No Load Power Consumption	<0.5W
Operation Ambient Temperature	-35°C to 70°C, see derating curves
Operation Case Temperature	-35°C to 90°C
Operation Humidity	20%~95% RH non-condensing
Storage Ambient Temperature	-40°C to 85°C
Storage Humidity	10%~95% RH non-condensing
Shock (Non-Operation)	50G, 11ms, 3 shocks for each direction
Vibration (Operation)	5-500Hz, 2G <sub>RMS</sub> , 15 Minutes for each three axis

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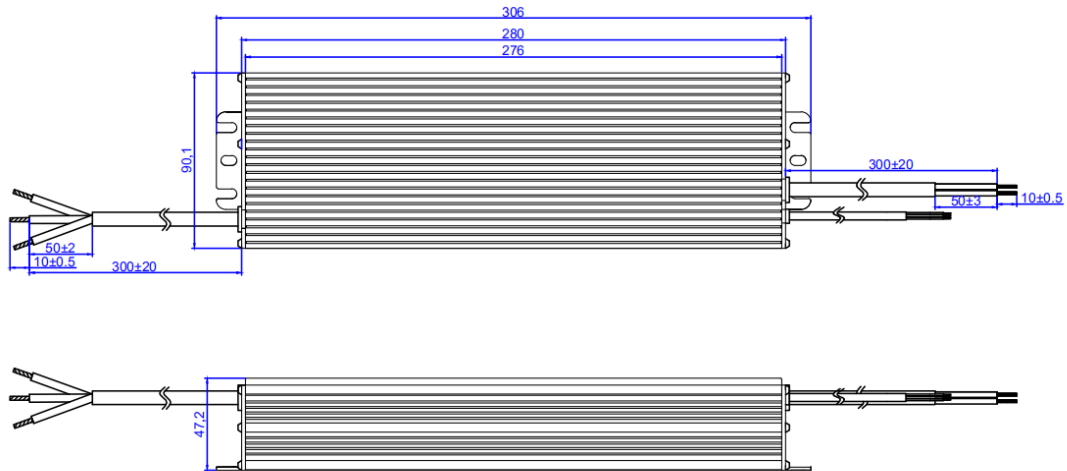
## Specifications

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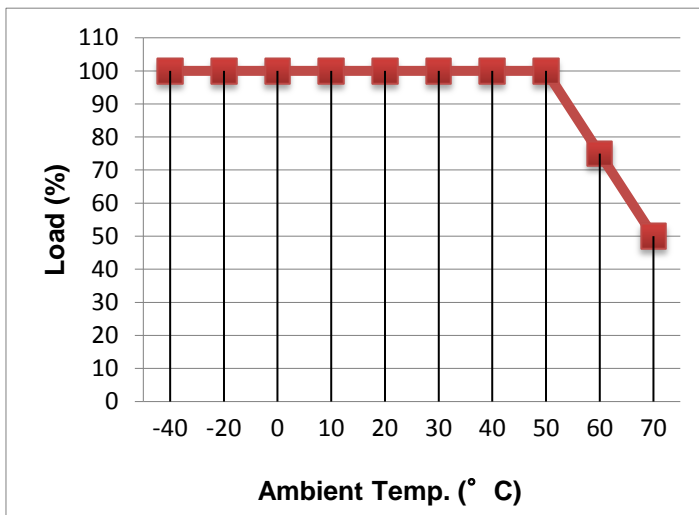
unless otherwise specified

Reliability	
MTBF	>200Khrs. MIL-HDBK-217F. 25°C
Life	>5 Years @ Tc = 75°C
Safety & Directives	
Safety Standards, compliance only	UL8750, CAN/CSA-C22.2 No. 250.13-12 EN 61347-1, EN61347-2-13
Directives, Compliance only	RoHS Directive 2011/65/EU Compliant
Dielectric Voltage	Primary to Secondary: 3750VAC/ 1 minute Primary to Earth: 1875VAC/ 1 minute Secondary to Earth: 500kVAC/ 1 minute @10mAMax
EMC	
Emissions	Per Title 47 CFR Part 15 Class A
Harmonic Current Emissions	IEC61000-3-2, Class D
Voltage Flicker	IEC61000-3-3
Electrostatic Discharge	IEC61000-4-2, Level 3, Criteria A. Air Discharge 8kV, Contact Discharge 4kV
Electrical Fast Transient / Burst	IEC61000-4-4, Level 3 Criteria A. 2kV
Surge	IEC61000-4-5, Criteria A. Common mode 10kV, Differential Mode6kV
Conducted Immunity	IEC61000-4-6, Level 2 Criteria A. 150kHz-80MHz, 3Vrms, 6Vrms at ISM Band sand Amateur radio bands
Power Frequency Magnetic Fields	IEC61000-4-8, Criteria A. 30A/m
Voltage Dips	IEC61000-4-11 Criteria A: 30% 10ms Criteria B: 60% 100ms, 100% 5000ms
Electromagnetic Immunity	EN61547 applies to Lighting Equipment

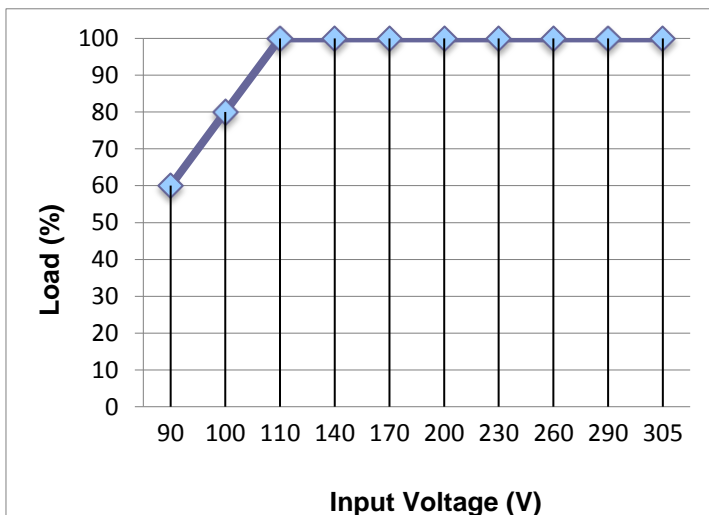
## Mechanical Drawing



Output Vs Operating Temp

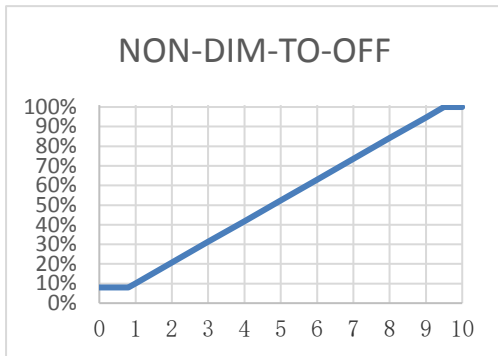


Output Vs Input voltage

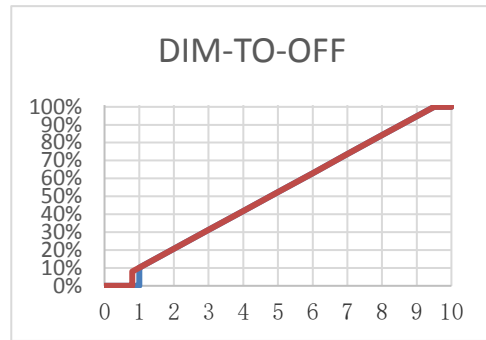


## 0-10V Dimming/PWM Dimming

*I<sub>o</sub>/I<sub>r</sub> vs V<sub>dim</sub>*

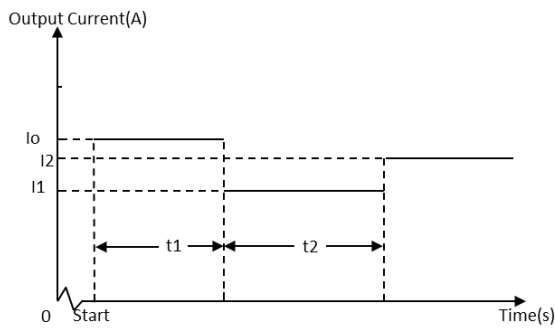


*I<sub>o</sub>/I<sub>r</sub> vs V<sub>dim</sub>*



<b>GND</b>	Grey
<b>Dimming wire 0-10V&amp;PWM</b>	Purple
<b>12V AUX</b>	Yellow
<b>Input Dimming Voltage</b>	0-10V
<b>DIM+ Source Current</b>	0-1mA
<b>12V AUX Source Current</b>	200mA
<b>PWM Frequency Range</b>	0.5 ~ 3 KHZ
<b>PWM high level</b>	10V

## Timer Dimming



1. The dimming time can be programmed by the NFC controller.
2. The time of  $t_1$  and  $t_2$  can be set by the NFC programmer.(0.5h step)
3. The value of  $I_1$  and  $I_2$  can be set by the NFC programmer.
4. Current change from  $I_1$  to  $I_2$  need a few minutes.

## NFC Controller

1. The NFC controller can program the output current, voltage and timer delays.
2. The NFC programming is a non-contact process, therefore much safer compared to traditional programming methods.
3. Power devices can be programmed without AC power applied to the driver.

