DH080 Series

80W Long Lifetime LED Driver

■Features

- Constant voltage and current output
- Universal AC input 100~305VAC
- Built-in active PFC function
- High efficiency
- Output protections: Short circuit/Over voltage/Over load
- Fixed derating-cutoff type temperature protection
- Digital, analog or DALI control dimming function
- Suitable for inside of the outdoor LED luminaries
- IP65 with Vo/Io adjusting screws, IP67 without Vo/Io adjusting screws
- Class 2 power unit
- Compliance to worldwide safety regulations for lighting
- Suitable for dry/damp/wet locations
- Eight years warranty

E346360 IP65/67 RoHS

■General functions

Output Power	80W	Input Frequency	50/60Hz
Input Voltage Range	100~305Vac	Operating Temperature	-40℃~+60℃
Storage Temperature	-45℃~+85℃	Safety & EMC	UL8750, UL1310 Class 2, IEC61347, EN55015
Turn-on Delay Time	3.0S max.	Inrush Current	40A at 230Vac, Cold start
Over Temp Protection	Fixed derating-cutoff type temperature protection	Waterproof	IP65/IP67

■Detailed Specification

TABLE 1:

Model		DH080-057S140X-YY	DH080-048S160X-YY	DH080-036S220X-YY	DH080-024S330X-YY	DH080-020S400X-YY
Output	DC Voltage	54Vdc	48Vdc	36Vdc	24Vdc	20Vdc
	Constant Current Operation Voltage note.5	33~54Vdc	29~48Vdc	22~36Vdc	15~24Vdc	12~20Vdc
	Rated DC Current	1400mA	1600mA	2200mA	3300mA	4000mA
	Current Range	0~1400mA	0~1600mA	0~2200mA	0~3300mA	0~4000mA
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	200mVp-p	200mVp-p	200mVp-p	200mVp-p	150mVp-p
	Voltage ADJ. Range note.3	49~57Vdc	43~50Vdc	32~38Vdc	22~25Vdc	18~21Vdc
	Current ADJ. Range note.3	900~1400mA	960~1600mA	1320~2200mA	1980~3300mA	2400~4000mA
	Voltage Tolerance	±1%	±1%	±1%	±1%	±1.5%
	Voltage Line Regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Voltage Load Regulation	±0.5%	±0.5%	±0.5%	±0.5%	±1%
Input	Efficiency	91%	91%	91%	90.5%	90%
	Power Factor	0.97/230Vac	0.97/230Vac	0.97/230Vac	0.97/230Vac	0.97/230Vac
	AC Current	1.0A/100Vac, 0.5A/230Vac				
	Leakage Current	<0.75mA/230Vac; <0.5mA/120Vac				
Output Protection	Over Current	Constant current limiting				
	Short Circuit	Non-dimmer type: recover automatically at hiccup; Dimmer type: Short-circuit power ≤10W.				
	Over Voltage	Shut down at 140% Vo and latch off o/p voltage, re-power on to recover				
Environmental	Operating Humidity	20~95% RH, non-condensing				
	Storage Humidity	10~95% RH				
	Temperature Coefficient	±0.03%/℃ (0~50℃)				
	Vibration	10~300Hz, 1G, Period for 60min, each along X、Y、Z axes.				
Safety＆EMC	Withstand Voltage	I/P-OP: 3.75KVac; IP-FG: 1.56KVac/2.00KVac (remove discharge tube); O/P-FG: 2.00KVac				
	Isolation Resistance	IP-OP, IP-FG, O/P-FG: 100M Ohms/500Vdc/25℃/70% RH				
	EMC Interference	Compliance to EN55015, EN55022 (CISPR22) Class B				
	EMC Emission	Compliance to EN61000-3-2 Class C (≥50%load); EN61000-3-3				
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN61547, EN55024				
Others	Authentication	UL class 2/TUV/CE/FCC/RoHS/CQC				
	MTBF	374k Hrs at full load and 30℃ ambient conditions per MIL-HDBK-217F				
	Input Over-voltage	Can survive input over-voltage stress of 320Vac for 48 hours				
	Dimensions (mm)	185×68×40				
	Max. Case Temp.	Tc max=80℃				
	Net Weight	0.89Kg/pcs				
Note	1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.					
	2. Ripple & noise are measured: at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.					
	3. Output voltage and current can be adjusted by internal potentiometer (“A” type only).					
	4. Tolerance: includes set up tolerance, voltage line regulation and voltage load regulation.					
	5. Constant current operation region is within 60% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.					
	6. Derating may be needed under low input voltages. Please check the Static Characteristics for more details.					
	7. Safety and EMC design refer to EN60598-1, subject 8750 (UL), CNS15233, GB7000.1, FCC part18.					
	8. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.					
	9. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.					
	10. Canada (output voltage: 42-60V) : suitable for class 2 wiring method.					

TABLE 2：

Model		DH080-016S500X-YY	DH080-012S500X-YY	DH080-229S035X-YY	DH080-114S070X-YY	DH080-076S105X-YY
Output	DC Voltage	16Vdc	12Vdc	229Vdc	114Vdc	76Vdc
	Constant Current Operation Voltage note.5	10~16Vdc	8~12Vdc	138~229Vdc	69~114Vdc	46~76Vdc
	Rated DC Current	5000mA	5000mA	350mA	700mA	1050mA
	Current Range	0~5000mA	0~5000mA	0~350mA	0~700mA	0~1050mA
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	150mVp-p	150mVp-p	2%Vo	2%Vo	2%Vo
	Voltage ADJ. Range note.3	14~17Vdc	11~13Vdc	20~23Vdc	103~120Vdc	68~80Vdc
	Current ADJ. Range note.3	3000~5000mA	3000~5000mA	210~350mA	420~700mA	630~1050mA
	Voltage Tolerance	±1.5%	±1.5%	±1%	±1%	±1%
	Voltage Line Regulation	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	Voltage Load Regulation	±1%	±1%	±0.5%	±0.5%	±0.5%
Input	Efficiency	90%	90%	93%	92%	92%
	Power Factor	0.97/230Vac	0.97/230Vac	0.97/230Vac	0.97/230Vac	0.97/230Vac
	AC Current	1.0A/100Vac, 0.5A/230Vac				
	Leakage Current	<0.75mA/230Vac; <0.5mA/120Vac				
Output Protection	Over Current	Constant current limiting				
	Short Circuit	Non-dimmer type: recover automatically at hiccup; Dimmer type: Short-circuit power ≤10W.				
	Over Voltage	Shut down at 140% Vo and latch off o/p voltage, re-power on to recover				
Environmental	Operating Humidity	20~95% RH, non-condensing				
	Storage Humidity	10~95% RH				
	Temperature Coefficient	±0.03%/℃ (0~50℃)				
	Vibration	10~300Hz, 1G, Period for 60min, each along X、Y、Z axes.				
Safety＆EMC	Withstand Voltage	I/P-OP: 3.75KVac; IP-FG: 1.56KVac/2.00KVac (remove discharge tube); O/P-FG: 2.00KVac				
	Isolation Resistance	IP-OP, IP-FG, O/P-FG: 100M Ohms/500Vdc/25℃/70% RH				
	EMC Interference	Compliance to EN55015, EN55022 (CISPR22) Class B				
	EMC Emission	Compliance to EN61000-3-2 Class C (≥50%load); EN61000-3-3				
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN61547, EN55024				
Others	Authentication	UL class 2/TUV/CE/FCC/RoHS/CQC		TUV/CE/RoHS		
	MTBF	374k Hrs at full load and 30℃ ambient conditions per MIL-HDBK-217F				
	Input Over-voltage	Can survive input over-voltage stress of 320Vac for 48 hours				
	Dimensions (mm)	185×68×40				
	Max. Case Temp.	Tc max=80℃				
	Net Weight	0.89Kg/pcs				
Note	1. All parameters NOT specially mentioned are measured at 230Vac input, rated load and 25℃ of ambient temperature.					
	2. Ripple & noise are measured: at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.					
	3. Output voltage and current can be adjusted by internal potentiometer (“A” type only).					
	4. Tolerance: includes set up tolerance, voltage line regulation and voltage load regulation.					
	5. Constant current operation region is within 60% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.					
	6. Derating may be needed under low input voltages. Please check the Static Characteristics for more details.					
	7. Safety and EMC design refer to EN60598-1, subject 8750 (UL), CNS15233, GB7000.1, FCC part18.					
	8. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.					
	9. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.					
	10. Canada (output voltage: 42-60V) : suitable for class 2 wiring method.					

TABLE3：

Model		DH080-042S190X-YY	DH080-030S260X-YY			
Output	DC Voltage	42Vdc	30Vdc			
	Constant Current Operation Voltage note.5	26~42Vdc	18~30Vdc			
	Rated DC Current	1900mA	2600mA			
	Current Range	0~1900mA	0~2600mA			
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	200mVp-p	200mVp-p			
	Voltage ADJ. Range note.3	38~44Vdc	27~32Vdc			
	Current ADJ. Range note.3	1140~1900mA	1560~2600mA			
	Voltage Tolerance	±1%	±1%			
	Voltage Line Regulation	±0.5%	±0.5%			
	Voltage Load Regulation	±0.5%	±0.5%			
Input	Efficiency	91%	91%			
	Power Factor	0.97/230Vac	0.97/230Vac			
	AC Current	1.0A/100Vac, 0.5A/230Vac				
	Leakage Current	<0.75mA/230Vac; <0.5mA/120Vac				
Output Protection	Over Current	Constant current limiting				
	Short Circuit	Non-dimmer type: recover automatically at hiccup; Dimmer type: Short-circuit power ≤10W.				
	Over Voltage	Shut down at 140% Vo and latch off o/p voltage, re-power on to recover				
Environmental	Operating Humidity	20~95% RH, non-condensing				
	Storage Humidity	10~95% RH				
	Temperature Coefficient	±0.03%/℃ (0~50℃)				
	Vibration	10~300Hz, 1G, Period for 60min, each along X、Y、Z axes.				
Safety＆EMC	Withstand Voltage	I/P-OP: 3.75KVac; IP-FG: 1.56KVac/2.00KVac (remove discharge tube); O/P-FG: 2.00KVac				
	Isolation Resistance	IP-OP, IP-FG, O/P-FG: 100M Ohms/500Vdc/25℃/70% RH				
	EMC Interference	Compliance to EN55015, EN55022 (CISPR22) Class B				
	EMC Emission	Compliance to EN61000-3-2 Class C (≥50%load); EN61000-3-3				
	EMC Immunity	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN61547, EN55024				
Others	Authentication	TUV/CE/RoHS				
	MTBF	374k Hrs at full load and 30℃ ambient conditions per MIL-HDBK-217F				
	Input Over-voltage	Can survive input over-voltage stress of 320Vac for 48 hours				
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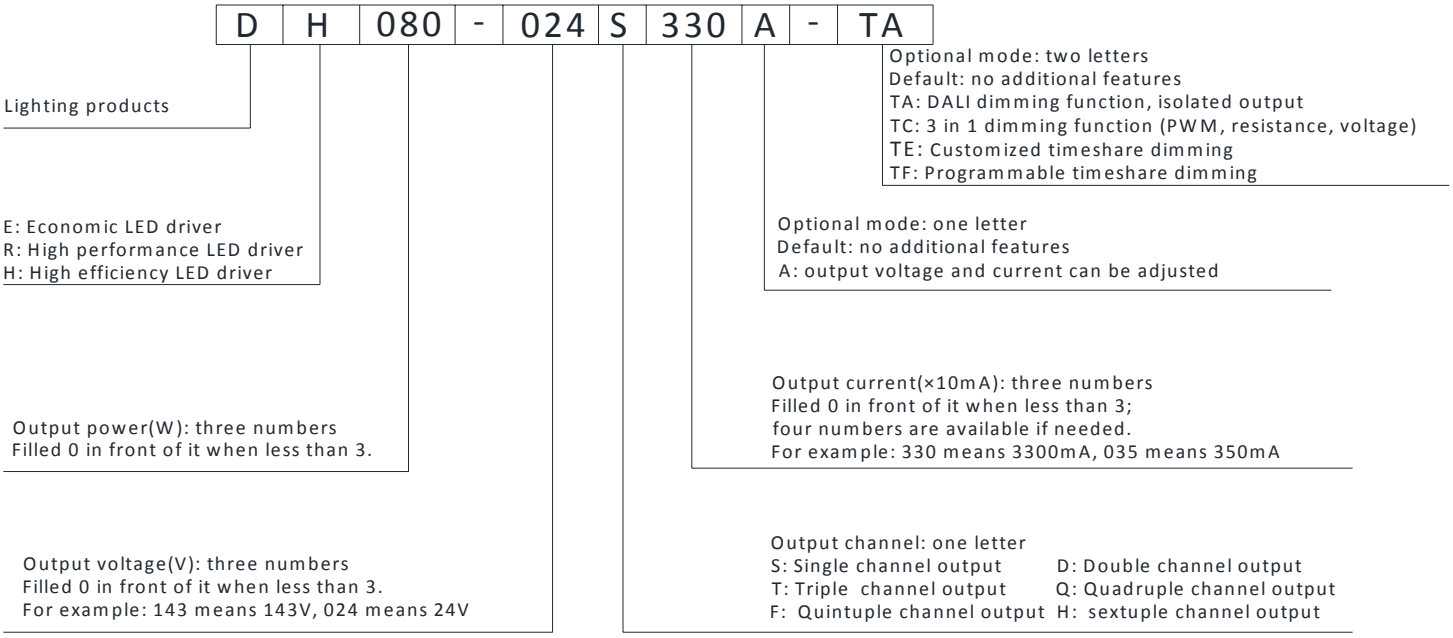
	10. Canada (output voltage: 42-60V) : suitable for class 2 wiring method.					

DH080 Series

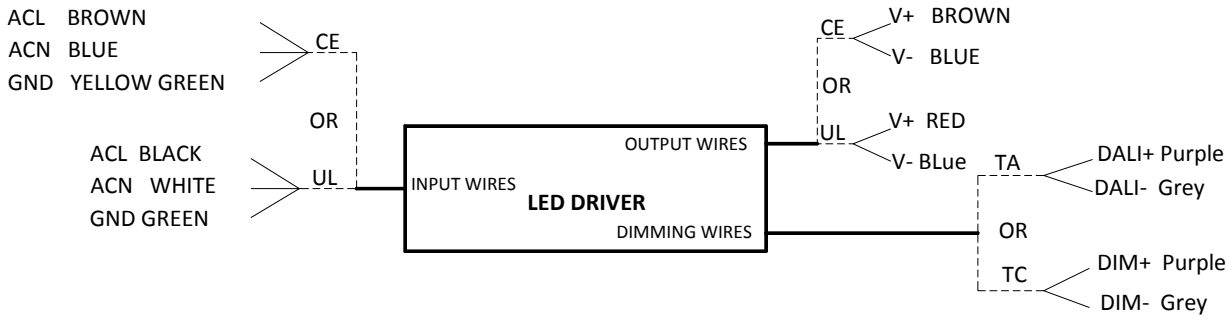
80W Long Lifetime LED Driver

■Part number code

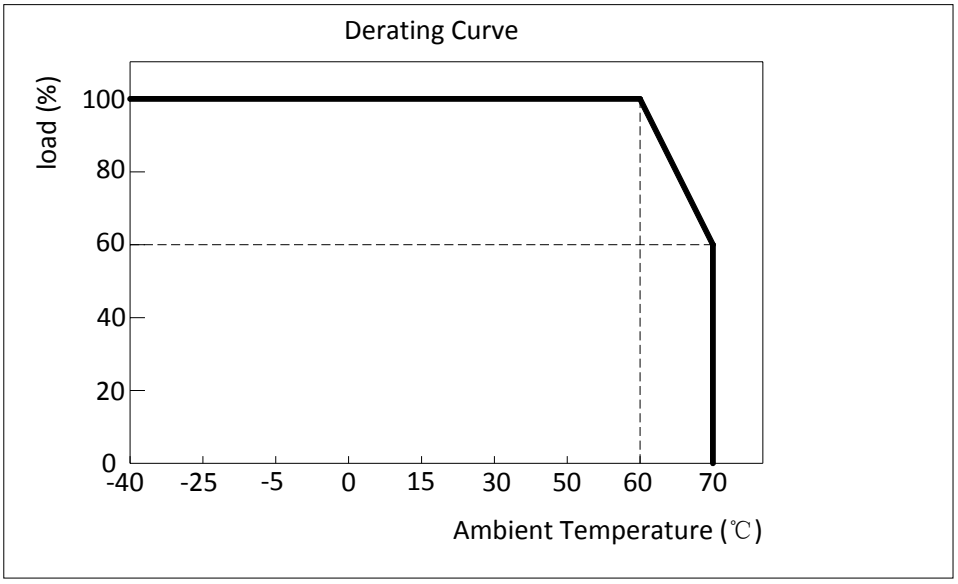


For example: DH080-024S330A-TA means: high efficiency LED driver; output power 80W; output voltage 24Vdc; output current 3300mA; single output; output voltage and current can be adjusted; with DALI dimming function and isolated output.

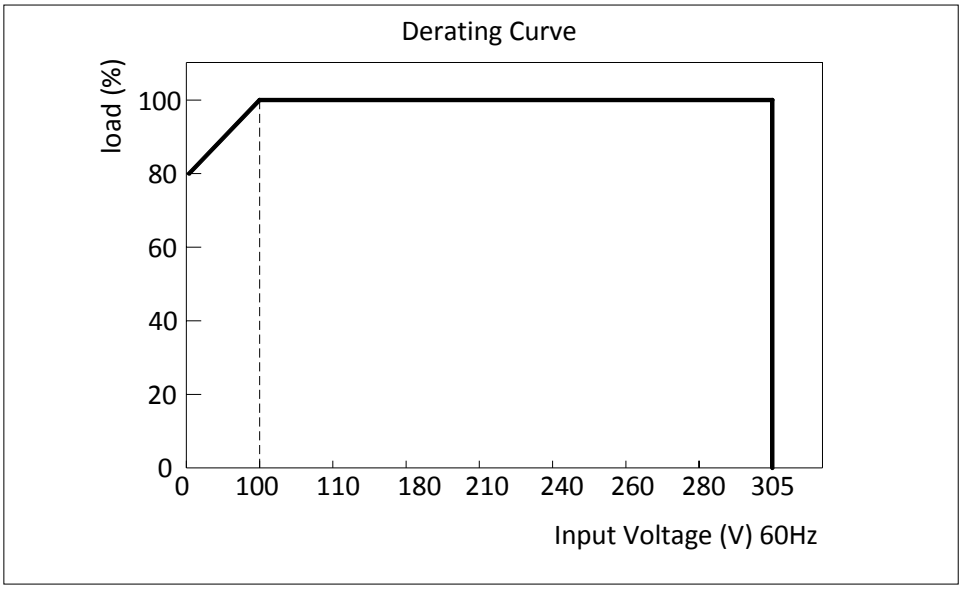
■wiring diagram



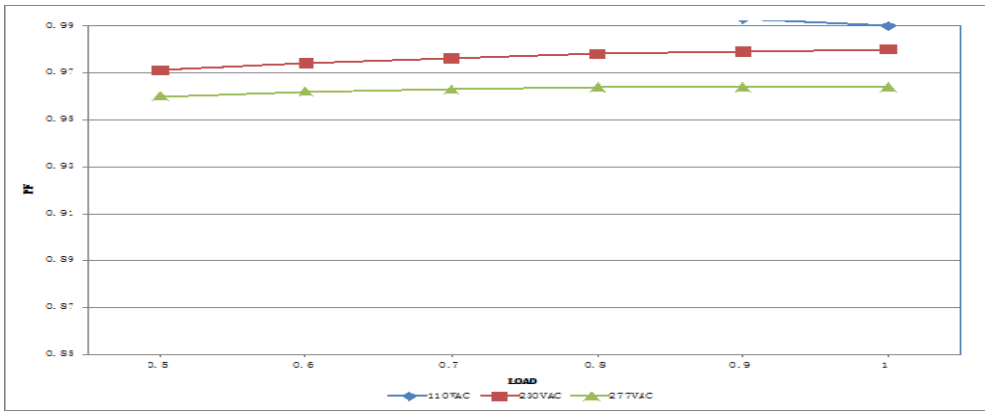
■Derating Curve



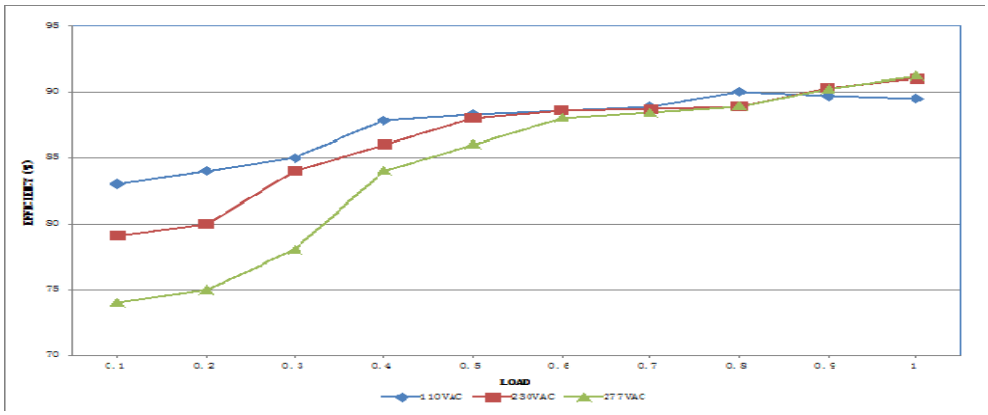
■Static Characteristics



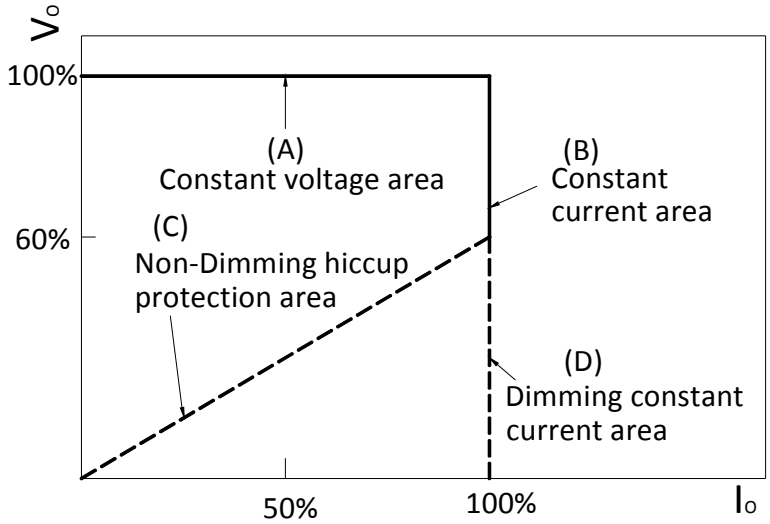
■Power Factor Characteristic (DH080-036S220)



■EFFICIENCY vs LOAD (DH080-036S220)

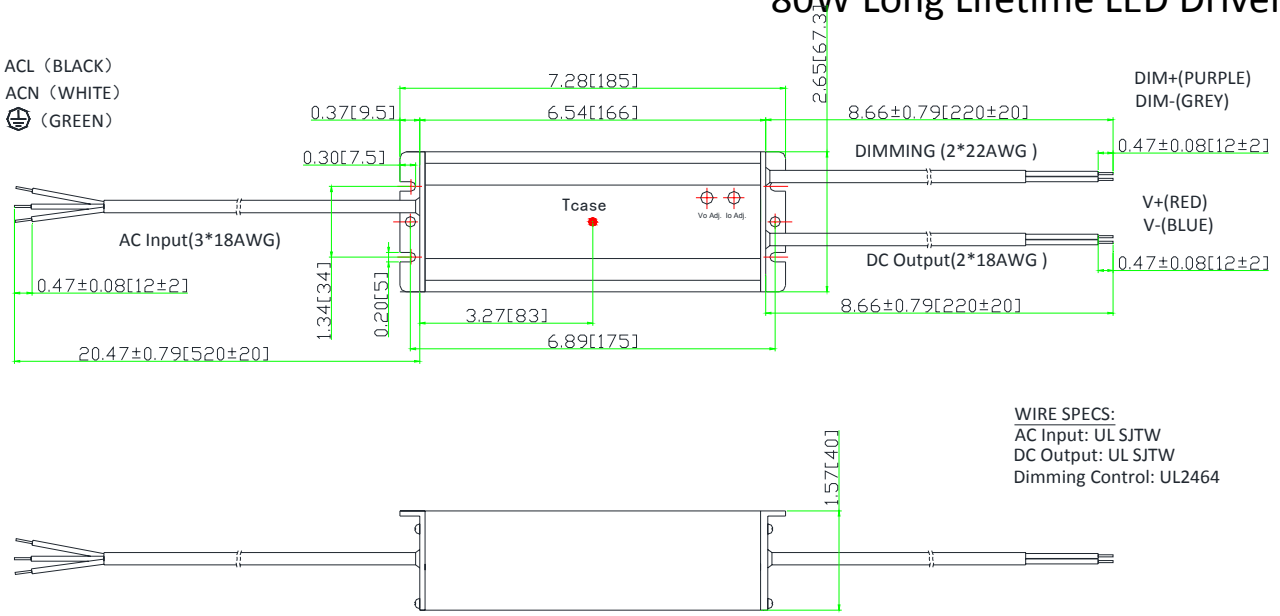


■Typical LED power supply I-V curve



■Mechanical Outline

Unit: inches[mm]



※Tcase: Max. Case Temperature
※Power's internal temperature is 10 ℃ warmer than case temperature.
※No dimming control wire if without dimming function.

■“A” option

a. Output voltage and current can be adjusted by internal potentiometer.

b. IP65.

c. These products shall be enclosed in the end product, when the unit provided with voltage and current adjustable holes.

■“-TA” option: DALI dimming

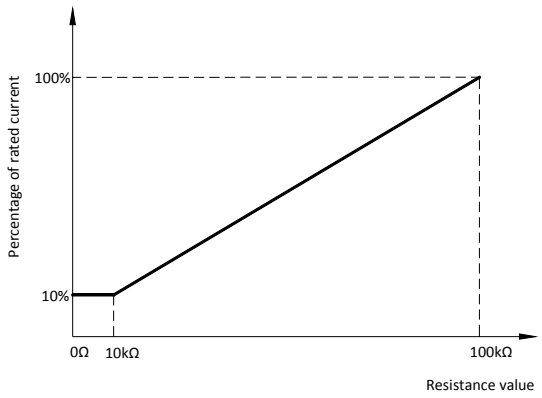
a. DALI Testing Software: Please refer to www.brightway-tech.com for downloading.

b. Percentage of rated current: 10%~100%.

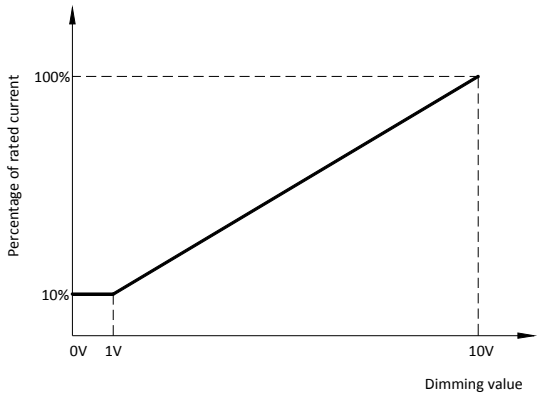
c. “TA” version LED driver shall work with a DALI Master and DALI Master control software.

■"-TC" option: 0-10V, resistance & PWM dimming

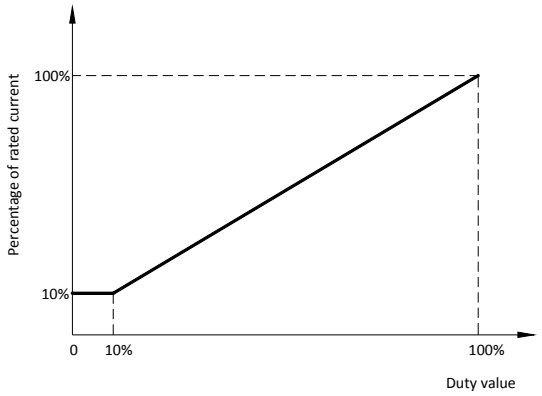
a. Reference resistance value for output current adjustment (Typical)



b. *0-10*V dimming function for output current adjustment (Typical)



c. *10*V PWM signal for output current adjustment (Typical): Frequency range: 200Hz~1.5KHz



Dimming control details:

Parameters		Minimum	Typical	Maximum
Dimming Type	Resistance	0kΩ	0-100kΩ	∞
	Voltage	-2V	0-10V	15V
	PWM(10%~100% f=200Hz~1.5KHz)	-2V	0-10V	15V
Dimming Current		-0.5mA	-	0.5mA

■"-TE" option: Customized timeshare dimming.

a. Different output current (10% - 100% rate output current) can be set for different time periods.

b. Maximum 4 sections is available. The minimum length is 0 to maximum 12 hours for each section.

c. The parameter can't be changed after shipping.

■"-TF" option: Programmable timeshare dimming.

a. Output current is programmable with the range of 10%~100% of rated output current.

b. Maximum 4 sections timeshare dimming is available. The minimum length is 0 to maximum 12 hours for each section.

For example:

The first section: the time period is 0~1h, the output current is 40% of rated output current.

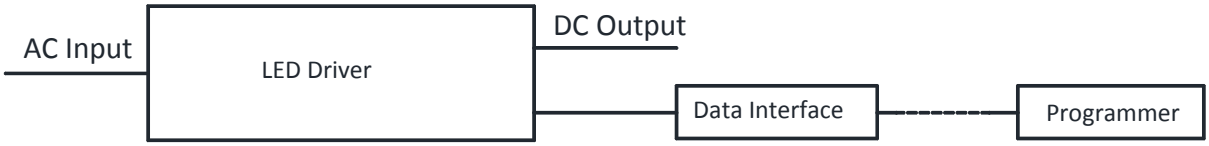
The second section: the time period is 1h~4h, the output current is 100% of rated output current.

The third section: the time period is 4h~8h, the output current is 40% of rated output current.

The fourth section: the time period is 8h~12h, output current is 60% of rated output current.

c. The parameters are set by a programmer.

d. The data interface is waterproof.



■Input and output Dielectric strength

Isolation	Input Wires	Output Wires	Isolated Dimming Control Wires	Chassis
Input Wires	NA	3750	2000	1560/2000(remove discharge tube)
Output Wires	3750	NA	2000	2000
Isolated Dimming Control Wires	2000	2000	NA	2000
Chassis	1560/2000(remove discharge tube)	2000	2000	NA

■Fixed derating-cutoff type temperature protection