Astrodyne TDI
Now you have power.

150W Single Output LED Driver with PFC

DR150 series

- Constant Voltage and Current Output
- Universal AC Input of 100~305VAC
- Built-in Active PFC function
- Protections: Short Circuit/Over Voltage/Over Load
- Cooling by Free Air Convection
- 3 in 1 Dimming Function (optional)
- Adjustable Output Voltage and Current (optional)
- Suitable for LED Lighting and LED Electronic Display Applications
- IP65 ~ IP67 Design for Indoor or Outdoor Installations
- Suitable for Dry / Damp / Wet Locations
- 5 Year Warranty

c UL us CE FC IP67 RoHS

■ General functions

Output Power	150W	Input Frequency	50/60Hz
Input Voltage Range	100~305Vac	Operating Temperature	-40℃~+60℃
Storage Temperature	-45℃~+85℃	Safety & EMC	UL8750, IEC61347, EN55015
Turn-on Delay Time	3.0S max.	Inrush Current	65A at 230Vac, Cold start
Over Temp Protection	Fixed derating-cutoff type temperature protection	Waterproof	IP65/IP67

All specifications are typical at nominal input, full load, and 25°C unless otherwise noted

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DR150 series

TABLE 1:

Model		DR150-215S070X-YY	DR150-143S105X-YY	DR150-108S140X-YY	DR150-072S210X-YY	DR150-054S280X-YY
Output	DC Voltage	215Vdc	143Vdc	108Vdc	72Vdc	54Vdc
	Constant Current Operation Voltage note.5	129 ~215Vdc	86 ~143Vdc	64 ~108Vdc	43~72Vdc	32 ~54Vdc
	Rated DC Current	700 mA	1050 mA	1400 mA	2100 mA	2800 mA
	Current Range	0~700mA	0~1050mA	0~1400mA	0~2100mA	0~2800mA
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	10%Vo	10%Vo	10%Vo	10%Vo	10%Vo
	Voltage ADJ. Range note.3	194~226Vdc	129~150Vdc	97~113Vdc	65~76Vdc	49~57Vdc
	Current ADJ. Range note.3	420~700mA	630~1050mA	840~1400mA	1260~2100mA	1680~2800mA
	Voltage Tolerance	±5%	±5%	±5%	±5%	±5%
	Voltage Line Regulation	±1%	±1%	±1%	±1%	±1%
	Voltage Load Regulation	±5%	±5%	±5%	±5%	±5%
Input	Efficiency	92%	92%	91%	91%	91%
	Power Factor	0.96/230Vac	0.96/230Vac	0.96/230Vac	0.96/230Vac	0.96/230Vac
	AC Current	1.8A/100Vac, 0.9A/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/TUV/CE/FCC/RoHS/CQC/REACH				
	MTBF	319k 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)	226×68×40				
	Max. Case Temp.	Tc max=80℃				
	Net Weight	1.09Kg/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.					

TABLE 2:

Model		DR150-048S315X-YY	DR150-036S420X-YY	DR150-024S625X-YY	DR150-086S175X-YY	DR150-062S245X-YY
Output	DC Voltage	48Vdc	36Vdc	24Vdc	86Vdc	62Vdc
	Constant Current Operation Voltage note.5	28 ~48Vdc	21~36Vdc	14~24Vdc	52 ~86Vdc	37~62Vdc
	Rated DC Current	3150 mA	4200 mA	6250 mA	1750 mA	2450 mA
	Current Range	0~3150mA	0~4200mA	0~6250mA	0~1750mA	0~2450mA
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	10%Vo	10%Vo	10%Vo	10%Vo	10%Vo
	Voltage ADJ. Range note.3	43~50Vdc	32~38Vdc	22~25Vdc	77~90Vdc	56~65Vdc
	Current ADJ. Range note.3	1890~3150mA	2520~4200mA	3750~6250mA	1050~1750mA	1470~2450mA
	Voltage Tolerance	±5%	±5%	±5%	±5%	±5%
	Voltage Line Regulation	±1%	±1%	±1%	±1%	±1%
	Voltage Load Regulation	±5%	±5%	±5%	±5%	±5%
Input	Efficiency	91%	91%	90%	91%	91%
	Power Factor	0.96/230Vac	0.96/230Vac	0.96/230Vac	0.96/230Vac	0.96/230Vac
	AC Current	1.8A/100Vac, 0.9A/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/TUV/CE/FCC/RoHS/CQC/REACH			TUV/CE/ RoHS/REACH	
	MTBF	319k 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)	226×68×40				
	Max. Case Temp.	Tc max=80℃				
	Net Weight	1.09Kg/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.					

TABLE 3:

Model		DR150-043S350X-YY	DR150-031S490X-YY	DR150-026S595X-YY	DR150-020S750X-YY	
Output	DC Voltage	43Vdc	31Vdc	26Vdc	20Vdc	
	Constant Current Operation Voltage note.5	26~43Vdc	18~31Vdc	15~26Vdc	12~20Vdc	
	Rated DC Current	3500 mA	4900 mA	5950 mA	7500 mA	
	Current Range	0~3500mA	0~4900mA	0~5950mA	0~7500mA	
	Dimming Current Range	10~100% rated output current (≥50% rated output voltage)				
	Ripple and Noise	10%Vo	10%Vo	10%Vo	10%Vo	
	Voltage ADJ. Range note.3	39~45Vdc	28~33Vdc	23~27Vdc	18~21Vdc	
	Current ADJ. Range note.3	2100~3500mA	2940~4900mA	3570~5950mA	4500~7500mA	
	Voltage Tolerance	±5%	±5%	±5%	±5%	
	Voltage Line Regulation	±1%	±1%	±1%	±1%	
	Voltage Load Regulation	±5%	±5%	±5%	±5%	
Input	Efficiency	91%	91%	90%	90%	
	Power Factor	0.96/230Vac	0.96/230Vac	0.96/230Vac	0.96/230Vac	
	AC Current	1.8A/100Vac, 0.9A/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/REACH				
	MTBF	319k 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)	226×68×40				
	Max. Case Temp.	Tc max=80℃				
	Net Weight	1.09Kg/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.					

Part number code

D	R	150	-	024	S	625	TC	A

Lighting products

R：High performance LED driver
E：Economical LED driver

Output power(W): three numbers
Filled 0 in front of it when less than 3.

Output voltage(V)：three numbers
Filled 0 in front of it when less than 3.
For example:105 means 105V， 024means24V

Output channel：one letter or number
S: Single channel output D: Double channel output
T: Triple channel output Q: Quadruple channel output
F: Quintuple channel output H: sextuple channel output

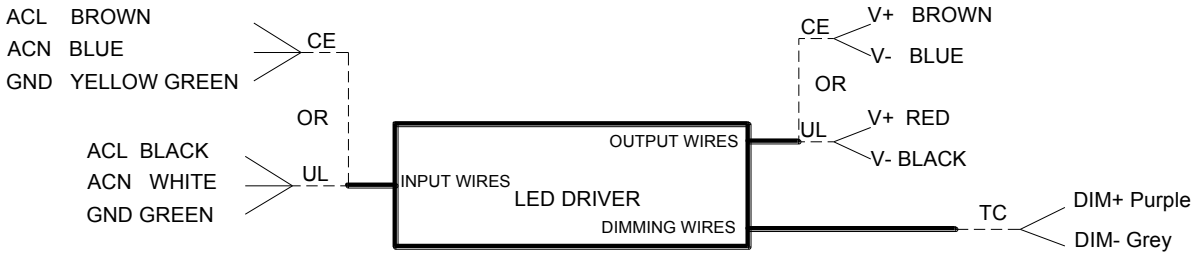
Output current(*10mA)：three numbers
Filled 0 in front of it when less than 3;
four numbers are available if needed.
For example:625 means 6250mA， 035 means 350mA

Optional mode：two letters
Default：no additional features， output voltage and current can regulation
TC: 3 in 1 dimming function (PWM， resistance, voltage)

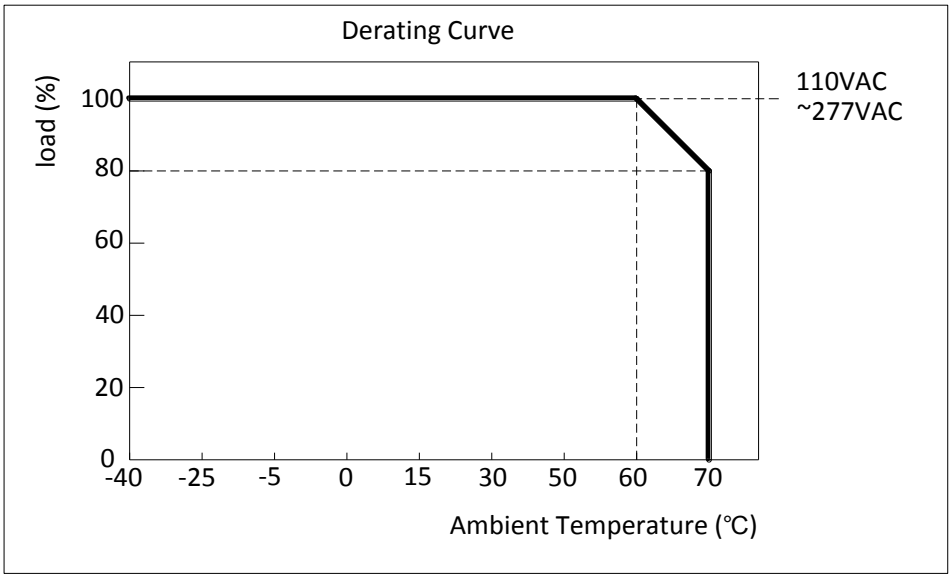
Optional mode: output voltage and current are adjustable (IP66 rated)

For example: DR150-024S625TC means it is a high performance LED driver, output power 150W, output voltage 24Vdc, output current 6250mA ，single output, with 3 in 1 dimming function.

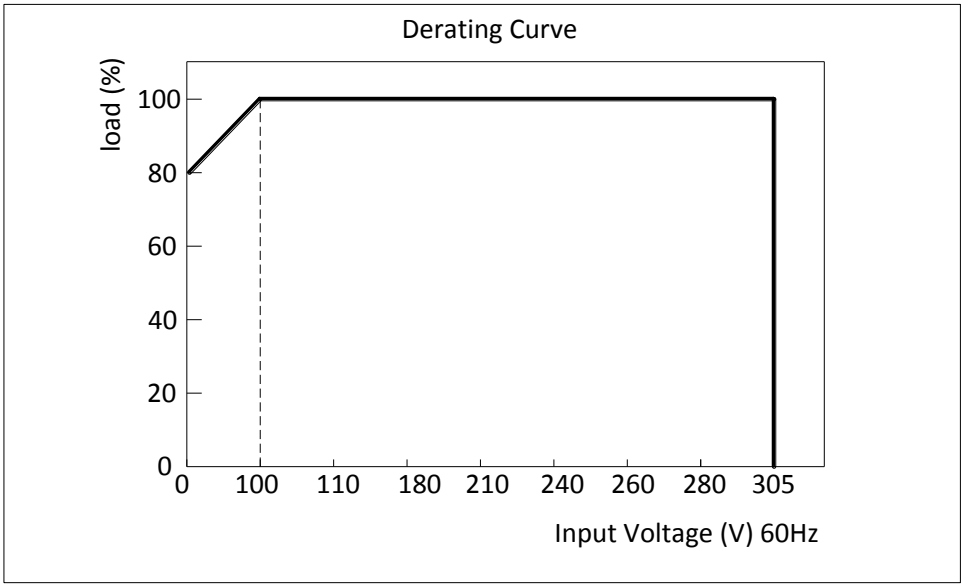
wiring diagram



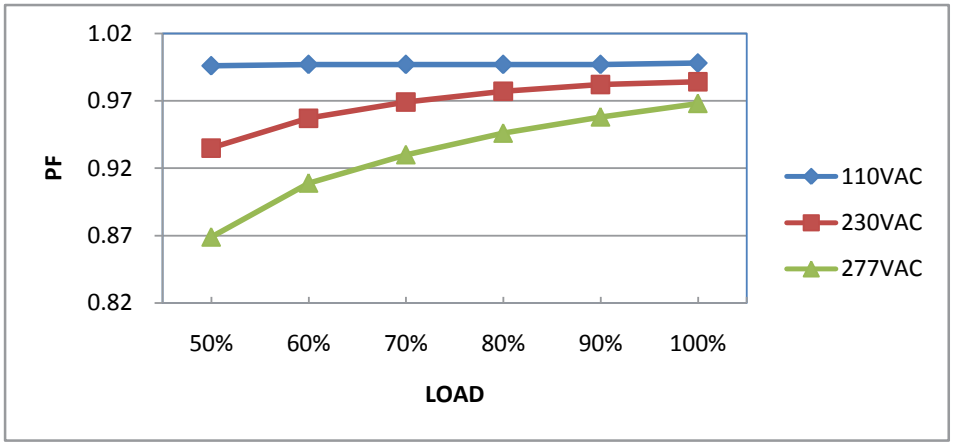
■ Derating Curve



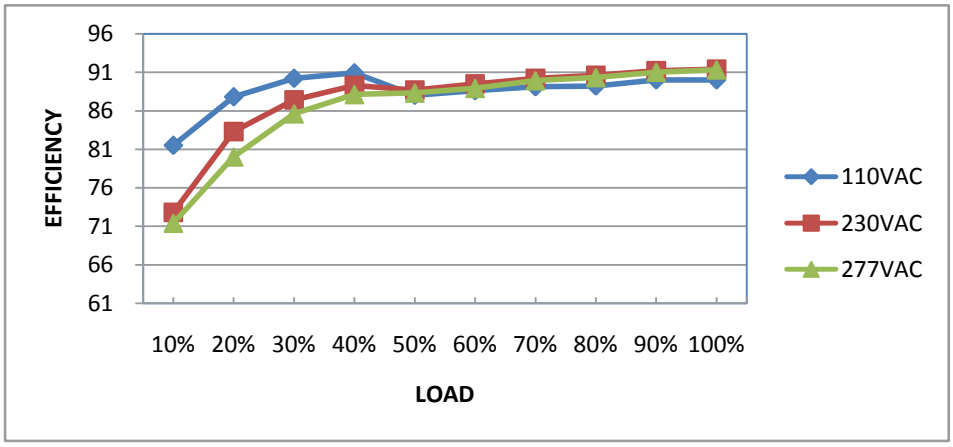
■ Static Characteristics



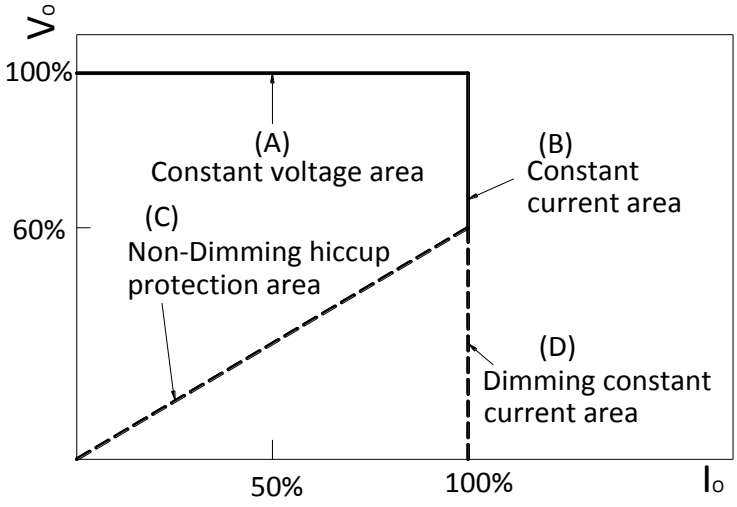
■ Power Factor Characteristic (DR150-054S280)



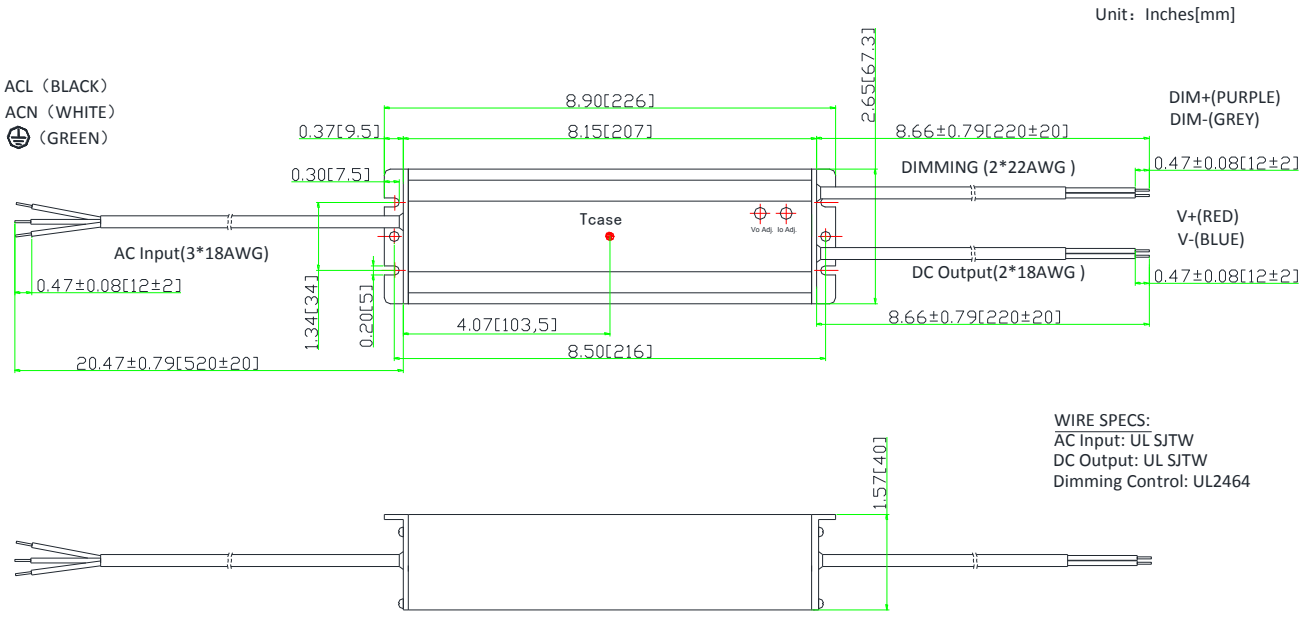
■ EFFICIENCY vs LOAD (DR150-054S280)



■ Typical LED power supply I-V curve



■ Mechanical Outline



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

NO.	DC Output Current	Wire Number	Wire specfication
1	≤5A	1	2×AWG18
2	5~12A(Including 12A)	1	2×AWG16

■ “A” option

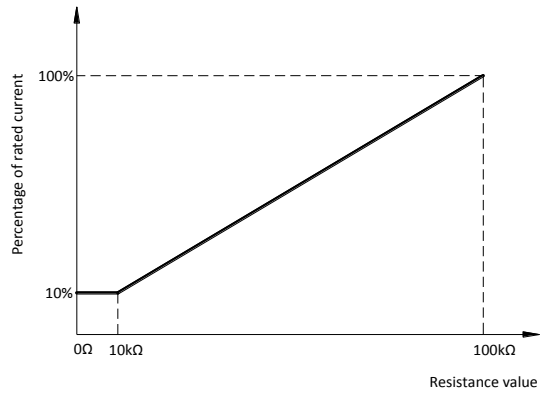
a. Output voltage and current can be adjusted by internal potentiometer.

b. IP65.

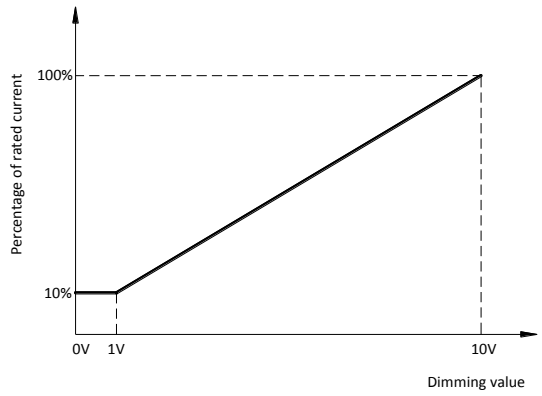
c. These products shall be enclosed in the end product, when the unit provided with voltage and current adjustable holes.

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

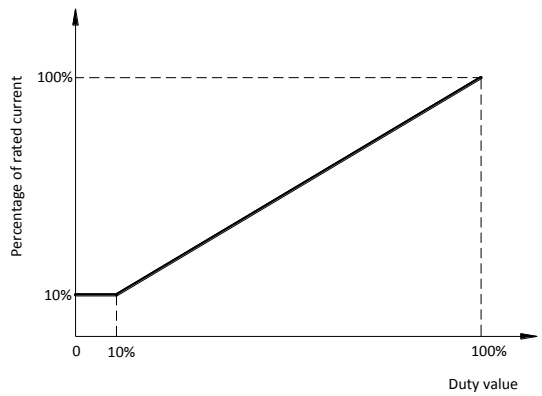
a. Reference resistance value for output current adjustment (Typical)



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

Input and output Dielectric strength

Isolation	Input Wires	Output Wires	Isolated Dimming Control Wires	Chassis
Input Wires	NA	3750	2000	1560
Output Wires	3750	NA	2000	2000
Isolated Dimming Control Wires	2000	2000	NA	2000
Chassis	1560	2000	2000	NA

Fixed derating-cutoff type temperature protection