



■ Features

- Constant voltage and current output
- Universal AC input 100~305VAC
- Built-in active PFC function
- High efficiency
- Protections: Short circuit/Over voltage/Over load/Over temperature
- Over temperature Protection: Shut down and latch off o/p voltage, re-power on to recover
- Cooling by free air convection
- Digital, analog or remote control dimming function
- Suitable for LED lighting and LED Electronic display applications
- IP66/67 with Vo/Lo adjusting screws, internal use, avoid ultraviolet irradiation
IP67 without Vo/Lo adjusting screws, external use
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations



IP67



■ General functions

Output Power	120W	Input Frequency	50/60Hz
Input Voltage Range	100~305Vac	Operating Temperature	-40°C~+60°C
Storage Temperature	-45°C~+85°C	Safety & EMC	UL8750,IEC61347,EN55015
Turn-on Delay Time	3.0S max.	Inrush Current	65A
Over Temp Protection	Shut down and latch off o/p voltage	Waterproof	IP66/IP67

■ Detailed Specification

TABLE 1:

Model		DR120-343S035	DR120-267S045	DR120-172S070	DR120-110S110	DR120-086S140	DR120-081S148
Output	DC Voltage	343Vdc	267Vdc	172Vdc	110Vdc	86Vdc	81Vdc
	Constant Current Range	206 ~343Vdc	160 ~267Vdc	103 ~172Vdc	66 ~110Vdc	52 ~86Vdc	49~81Vdc
	Rated DC Current	350 mA	450 mA	700 mA	1100 mA	1400 mA	1480 mA
	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	10%Vo
	Voltage Tolerance	±5%	±5%	±5%	±5%	±5%	±5%
	Voltage Line Regulation	±1%	±1%	±1%	±1%	±1%	±1%
	Voltage Load Regulation	±5%	±5%	±5%	±5%	±5%	±5%
Input	Efficiency	92%	92%	92%	91%	91%	91%
	Power Factor	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac
	AC Current	1.5A/100VAC,0.7A/220VAC					
	Leakage Current	<0.75mA/230VAC;<0.5mA/120VAC					
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%/°C (0~50°C)					
	Vibration	10~300HZ,1G ,Period for 60min,each along X、 Y、 Z axes.					
Safety&EMC	Withstand Voltage	I/P-OP:3.75KVAC; IP-FG:1.56KAC/2.00KVAC(remove discharge tube); O/P-FG:2.00KVAC					
	Isolation Resistance	IP-OP,IP-FG,O/P-FG:100MOhms/500VDC/25°C/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/CE					
	MTBF	500Khrs					
	Dimensions (mm)	211x68x40					
	Max. Case Temp.	Tc max=80°C					
	Net Weight	1.013Kg/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 0.1uf & 47uf parallel capacitor.						
	3.Tolerance : includes set up tolerance, v oltage line regulation and v oltage load regulation.						
	4. 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.						
	5. Derating may be needed under low input voltages. Please check the Static Characteristics for more details.						
	6. Safety and EMC design refer to EN60598-1, subject8750(UL),CNS15233, GB7000.1, FCC part18.						
	7. 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.						
	8. 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		DR120-069S175	DR120-058S210	DR120-054S222	DR120-048S250	DR120-042S280	DR120-038S315
Output	DC Voltage	69Vdc	58Vdc	54Vdc	48Vdc	42Vdc	38Vdc
	Constant Current Range	41~69Vdc	35~58Vdc	33~54Vdc	29~48Vdc	26~42Vdc	23~38Vdc
	Rated DC Current	1750 mA	2100 mA	2220 mA	2500 mA	2800 mA	3150 mA
	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	10%Vo
	Voltage Tolerance	±5%	±5%	±5%	±5%	±5%	±5%
	Voltage Line Regulation	±1%	±1%	±1%	±1%	±1%	±1%
	Voltage Load Regulation	±5%	±5%	±5%	±5%	±5%	±5%
Input	Efficiency	91%	91%	91%	91%	91%	90%
	Power Factor	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac
	AC Current	1.5A/100VAC,0.7A/220VAC					
	Leakage Current	<0.75mA/230VAC;<0.5mA/120VAC					
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%/°C (0~50°C)					
	Vibration	10~300HZ,1G ,Period for 60min,each along X、Y、Z axes.					
Safety&EMC	Withstand Voltage	IP-OP:3.75KVAC; IP-FG:1.56KAC/2.00KVAC(remove discharge tube); O/P-FG:2.00KVAC					
	Isolation Resistance	IP-OP,IP-FG,O/P-FG:100MOhms/500VDC/25°C/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/CE					
	MTBF	500Khrs					
	Dimensions (mm)	211x68x40					
	Max. Case Temp.	Tc max=80°C					
	Net Weight	1.013Kg/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 0.1uf & 47uf parallel capacitor.						
	3.Tolerance : includes set up tolerance, voltage line regulation and voltage load regulation.						
	4. 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.						
	5. Derating may be needed under low input voltages. Please check the Static Characteristics for more details.						
	6. Safety and EMC design refer to EN60598-1, subject8750(UL),CNS15233, GB7000.1, FCC part18.						
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TABLE 3:

Model		DR120-036S350	DR120-029S420	DR120-024S500	DR120-020S600	DR120-015S800	DR120-012S1000
Output	DC Voltage	36Vdc	29Vdc	24Vdc	20Vdc	15Vdc	12Vdc
	Constant Current Range	22~36Vdc	17~29Vdc	15~24Vdc	12~20Vdc	9~15Vdc	8~12Vdc
	Rated DC Current	3500 mA	4200 mA	5000mA	6000mA	8000mA	10000mA
	Dimming Current Range	10~100%rated output current ($\geq 50\%$ rated output voltage)					
	Ripple and Noise	10%Vo	10%Vo	10%Vo	10%Vo	10%Vo	10%Vo
	Voltage Tolerance	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
	Voltage Line Regulation	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
	Voltage Load Regulation	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$
Input	Efficiency	90%	90%	89%	88%	88%	88%
	Power Factor	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac	0.96/220Vac
	AC Current	1.5A/100VAC,0.7A/220VAC					
	Leakage Current	<0.75mA/230VAC;<0.5mA/120VAC					
Protection	Over Current	Constant current limiting					
	Short Circuit	Non-dimmer type: recover automatically at hiccup ;Dimmer type: Short-circuit power $\leq 10W$.					
	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	$\pm 0.03\%/^{\circ}C$ (0~50 $^{\circ}C$)					
	Vibration	10~300HZ,1G ,Period for 60min,each along X、 Y、 Z axes.					
Safety& EMC	Withstand Voltage	I/P-OP:3.75KVAC; IP-FG:1.56KAC/2.00KVAC(remove discharge tube); O/P-FG:2.00KVAC					
	Isolation Resistance	IP-OP,IP-FG,O/P-FG:100MOhms/500VDC/25 $^{\circ}C$ /70%RH					
	EMC Interference	Compliance to EN55015, EN55022 (CISPR22) Class B					
	EMC Emission	Compliance to EN61000-3-2 Class C ($\geq 50\%$ load) ;EN61000-3-3					
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11;ENV50204, EN61547, EN55024,					
Others	Authentication	UL/CE					
	MTBF	500Khrs					
	Dimensions (mm)	211x68x40					
	Max. Case Temp.	Tc max=80 $^{\circ}C$					
	Net Weight	1.013Kg/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 0.1uf & 47uf parallel capacitor.						
	3.Tolerance : includes set up tolerance, voltage line regulation and voltage load regulation.						
	4. 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.						
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	8. 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 120 - 024 S 500 TA

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

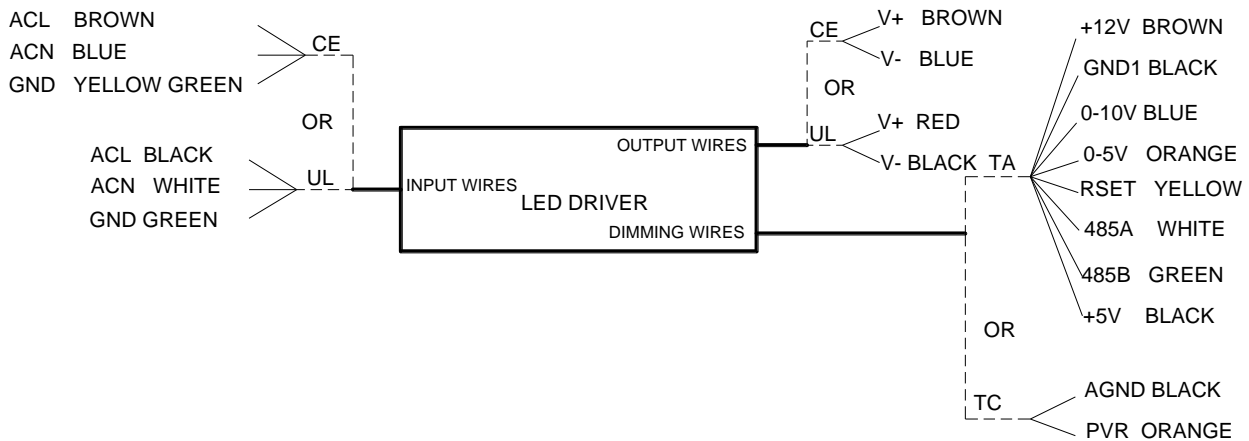
Optional mode: two letters
Default: no additional features, output voltage and current can regulation
TA: intelligent wire dimming function,isolated output
TB: intelligent wireless dimming function
TC: 3 in 1 dimming function(PWM、resistance, voltage)

Output current(*10mA): three numbers
Filled 0 in front of it when less than 3;
four numbers are available if need.
For example:500means5000mA, 035 means 350mA

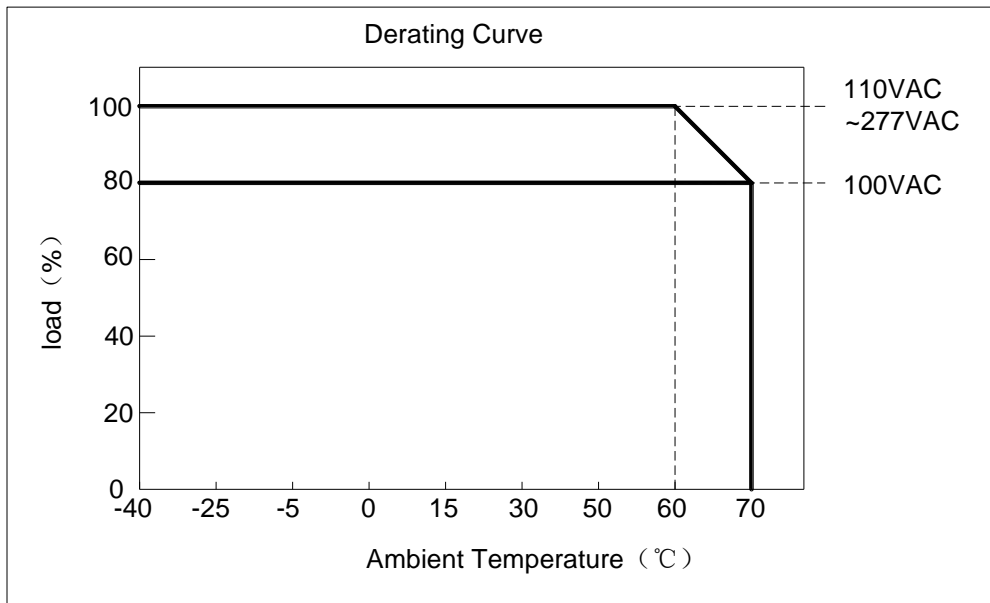
Output channel: one letter or number
S: Single channel output D: Double channel output
T: Triple channel output Q: Quadruple channel output
F: Quintuple channel output H: sextuple channel output

For example: DR120-024S500TA means it is a high performance LED driver, output power 120W, output voltage 24Vdc, output current 5000mA, single output, with intelligent wire dimming function and isolated output.

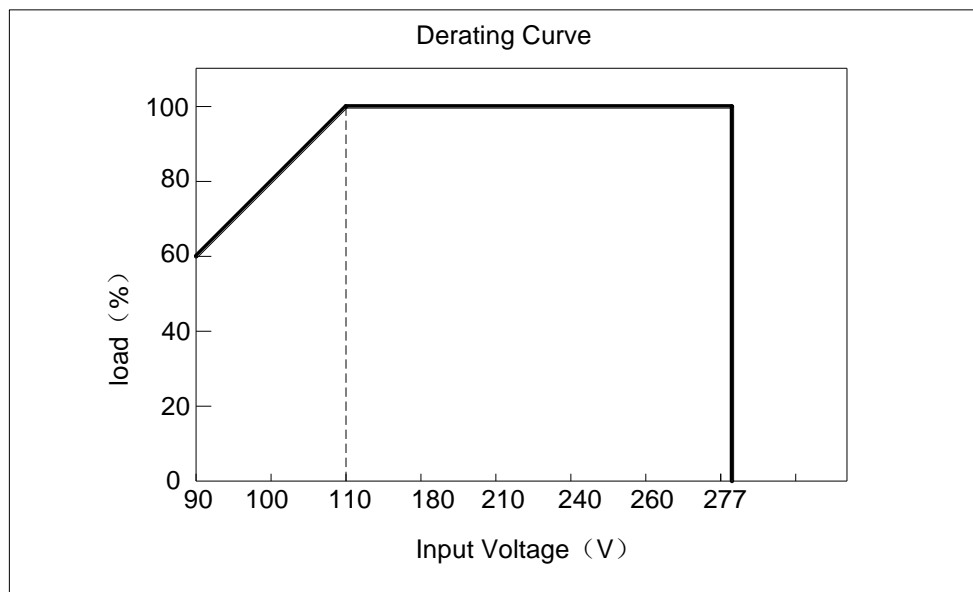
wiring diagram



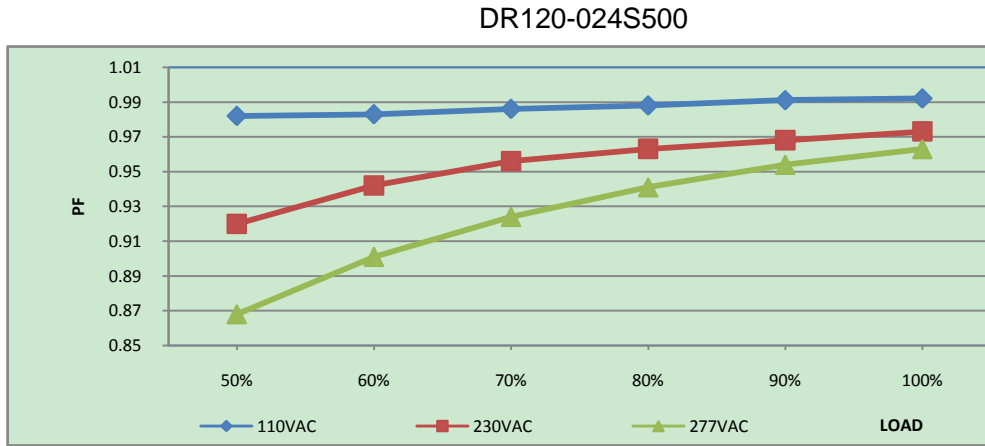
■ Derating Curve



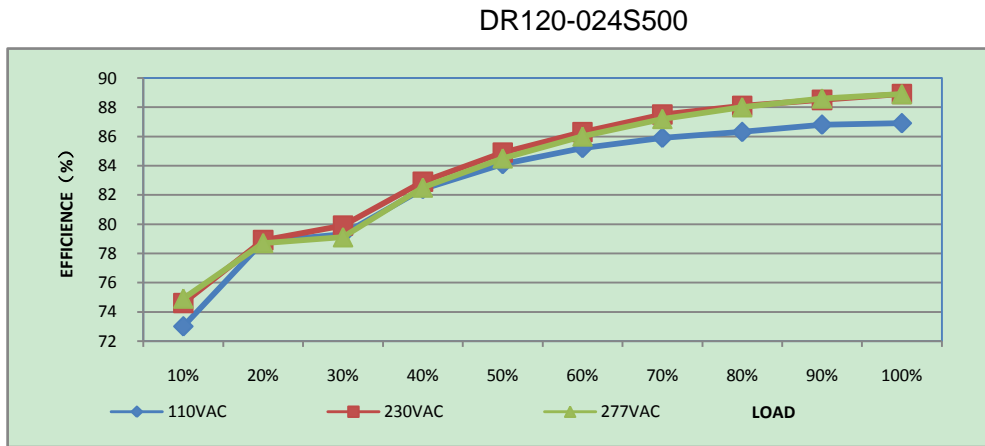
■ Static Characteristics



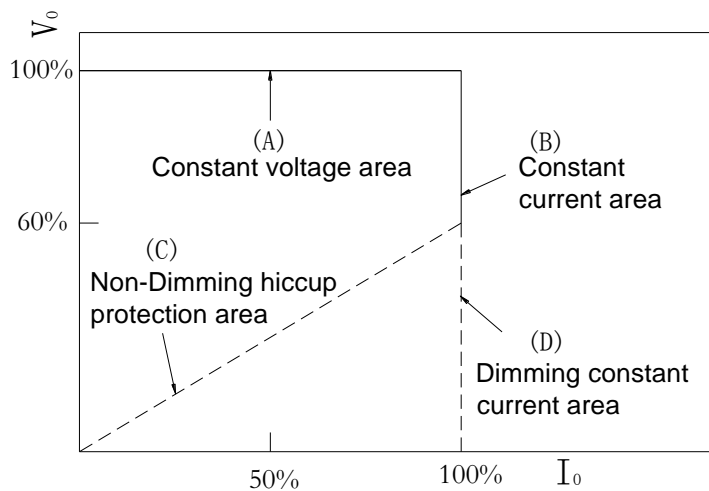
■ **Power Factor Characteristic**



■ **EFFICIENCY vs LOAD**

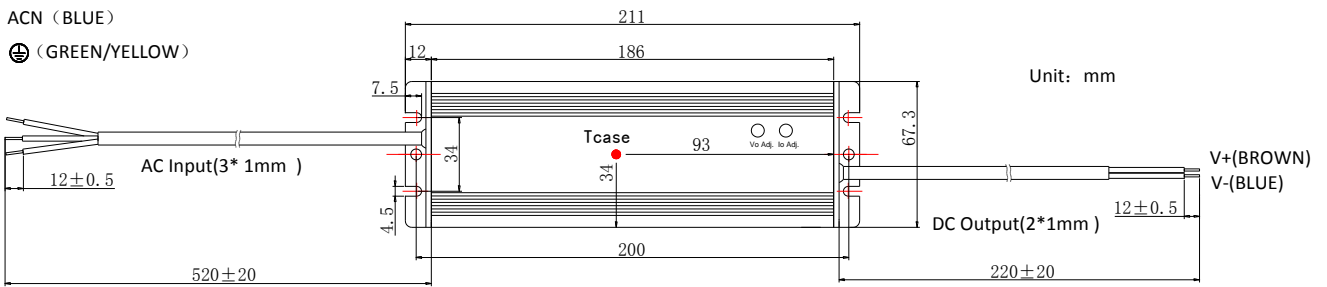


■ **Typical LED power supply I-V curve**



■ Mechanical Outline

ACL (BROWN)
ACN (BLUE)
⊕ (GREEN/YELLOW)



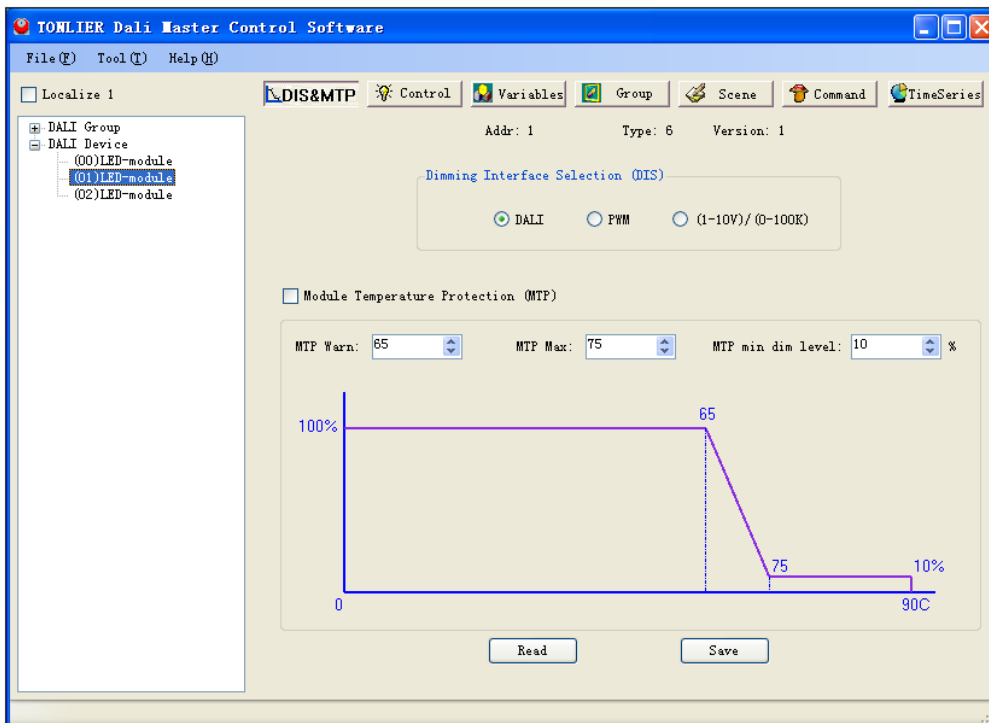
※Tcase: Max. Case Temperature



※Power's internal temperature is 15 °C warmer than case temperature.

■ Isolated intelligent dimming and control

- intelligent dimming
- LED Light attenuation compensation
- Derating Temperature Protection



Programming Tool: Please refer to www.tonlier.com for downloading .

■ Non-isolated 3 in 1 dimming function

Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers	10KΩ /N	20KΩ /N	30KΩ /N	40KΩ /N	50KΩ /N	60KΩ /N	70KΩ /N	80KΩ /N	90KΩ /N	100KΩ /N	OPEN
Percentage of rated current		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

1 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

10V PWM signal for output current adjustment (Typical): Frequency range: 100HZ ~ 3KHz

Duty value	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	98%~108%

■ 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

