AC - DC 80W~90W LED Driver
MDC080 Single Output Series

Features

Built-in 10KV lightning surge protection (EN61000-4-5)
90 ~ 305Vac full range input; Active PFC
Output voltage range up to 257Vdc for outdoor lighting
Aluminum case IP65/ IP67 waterproof
Dual mode over temperature thermal design
Output voltage automatic tracing & fixing function
Built-in 3 in 1 output current dimming function (Type B)
Optional timer dimming function (contact Darfon)
Class 2 power unit / Pass LPS ; Long lasting life time
All Series approved to UL/CB/CCC/CE/PSE
Outdoor LED luminaries rugged driver solutions
5 years warranty

SELV IP65 IP67 RoHS

MDC-080-XXXX ☐ Type A : IP65 grade · Adjust current by variable resistor internal

Type B: IP67 grade · Output current dimming by 0~10V/10V PWM signal/Resistor

Model	Rated Output Current	Output Current Adj. Range(1)	Output Voltage Range	Output Voltage @ No Load (2)	OVP level	Rated Output Power	Efficiency(3)
MDC-080-0350	350mA	210~350mA	128~257V	269V	290~330V	90W	91%
MDC-080-0700	700mA	420~700mA	64~129V	136V	162~185V	90W	91%
MDC-080-1400	1400mA	840~1400mA	29~58V	62V	70~85V	82W	90%
MDC-080-1750	1750mA	1050~1750mA	25~49V	55V	50~70V	86W	90%
MDC-080-2100	2100mA	1260~2100mA	21~42V	47V	50~65V	88W	90%
MDC-080-2450	2450mA	1470~2450mA	18~35V	40V	45~60V	86W	90%

1. For Type A only
2. Please refer to " LED Driving Output Mode " chart
3. Efficiency test condition please refer to "Efficiency v.s. Load " chart

◆ Input Specification

Input voltage range (1)	90~305VAC
Input Frequency	47~63Hz
Power Factor (2) **(Typ.)**	PF>0.98 / 115VAC, PF>0.96 / 230VAC, PF>0.94 / 264VAC, @ full load
Total Harmonic Distortion	THD<20% @230VAC / 50Hz, @ full load
Input Current (Typ.)	1.1A / 115VAC, 0.55A / 230VAC, 0.5A / 277VAC
Inrush current (Typ.)	60A peak @230VAC, Cold Start

Leakage current	< 0.75mA / 277VAC

1. Please refer to "Input Voltage v.s. De-Rating Curve "chart
2. Please refer to " PFC v.s. Load Curve" chart

◆ Output Specification

Output Current Tolerance	± 5%
Ripple & Noise (1)	MDC-080-0350 0.5V p-p ; MDC-080-0350/0700/1400/1750/2100/2450 0.2V p-p
Output Ripple Current	± 5%
Line Regulation	± 1%
Turn-on Time	< 1.0s @115VAC , 0.5S@230VAC, @ full Load
Hold up Time	> 12ms/115VAC, @ full load

1. Ripple current is measured at 20MHz of bandwidth. The measured terminal is paralleled with a 22uF E-cap and a 0.1uF Ceramic cap.

◆ General Specification

MTBF	320Khrs min. MIL-HDBK-217F(25℃)
Life Time	> 50,000hrs , 230VAC , 100% Load, @ T-Case 70℃
Dimension	191 * 63 * 40mm (L*W*H)
Weight	830g

◆ Protections

Short Circuit	Auto recovery
Over Voltage	Power reset
Over Temperature De-rated (1)	Over 70℃ , automatic de-rate to 75% of rated load current
Over Temperature (1)	85℃±10℃ , Auto recovery

1. Please refer to "Temperature v.s. De-Rating Curve "chart

◆ Environment, Safety and EMC

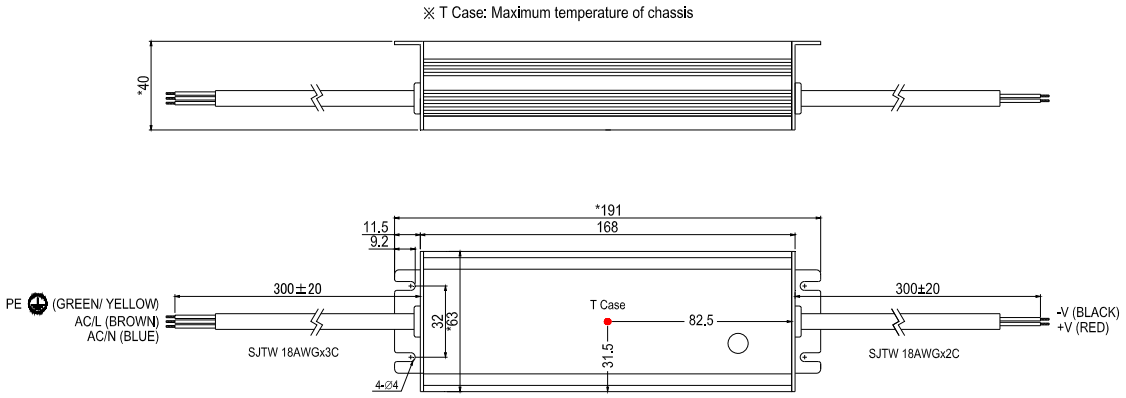
Operating Temperature & Humidity (1)	-40℃~70℃ ; 10%~95% RH , Non-condensing
Storage Temperature & Humidity	-40℃~85℃ ; 10%~95% RH
Vibration	IEC 68-2-2-1995/CNS-3629-C6016/GB/T 2423.10-2008 ; 5-500Hz , 1.0G , 1 Oct/min , 2cycle X , Y , Z, 75 minutes
Safety standards	UL 8750, EN 61347-1, EN 61347-2-13 , GB 19510.1, GB 19510.14
EMI	EN 55015, EN 61000-3-2, EN 61000-3-3, FCC Part18; CNS 14115
EMS	EN 61547, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11
Surge	10KV(L/N-PE) & 5KV(L-N) /1.2*50μ sec
Hi-Pot	I/P-O/P: 3.75KVAC, I/P-PE: 2KVAC, O/P-PE: 0.5KVAC

Insulation Resistance	I/P-O/P, I/P-PE, O/P-PE: >100MΩ /500VDC/25℃/70%RH

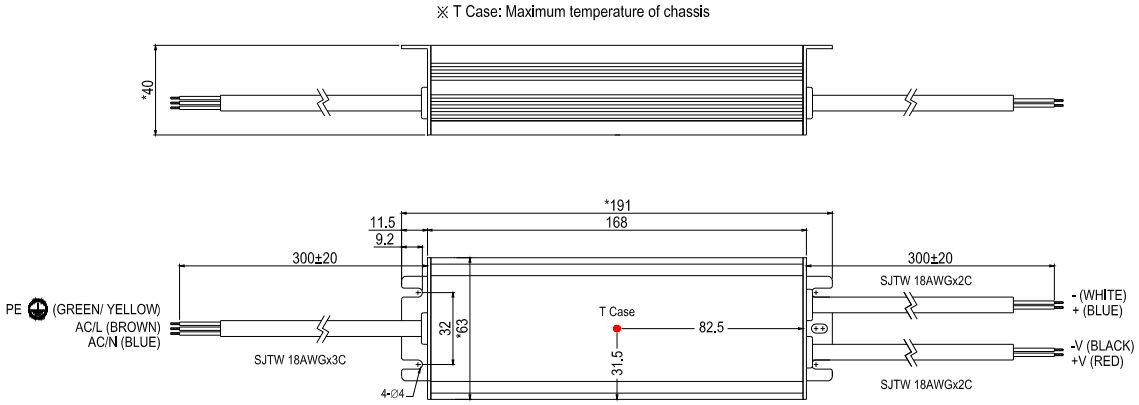
1. Please refer to "Temperature v.s. De-Rating Curve "chart

◆ Mechanical Drawing

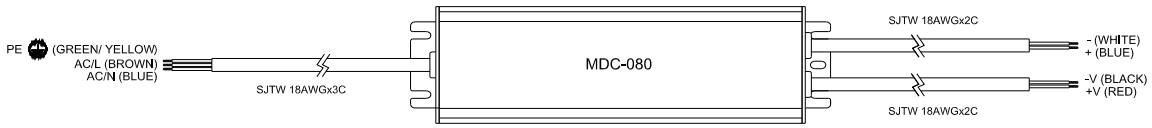
Type A



Type B



◆ Dimming Mode (Type B only)



* Do not put **"-V (BLACK)"** & **" – (WHITE)"** in connection

* Short ~100KΩ adjust output current (MDC0802450)

Resistor value	Short	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
Rated Current rate	1.4%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

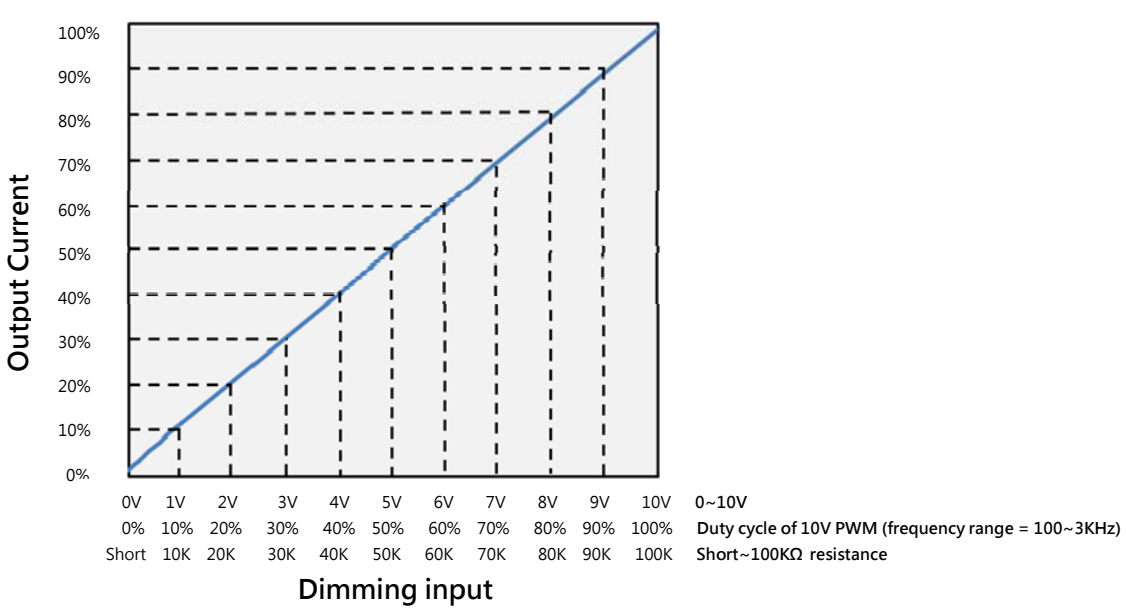
* 0~10Vdc adjust output current (MDC0802450)

Vdc	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Rated Current rate	1.4%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

* 10V PWM adjust output current ; Frequency range 100Hz~3KHz (MDC0802450)

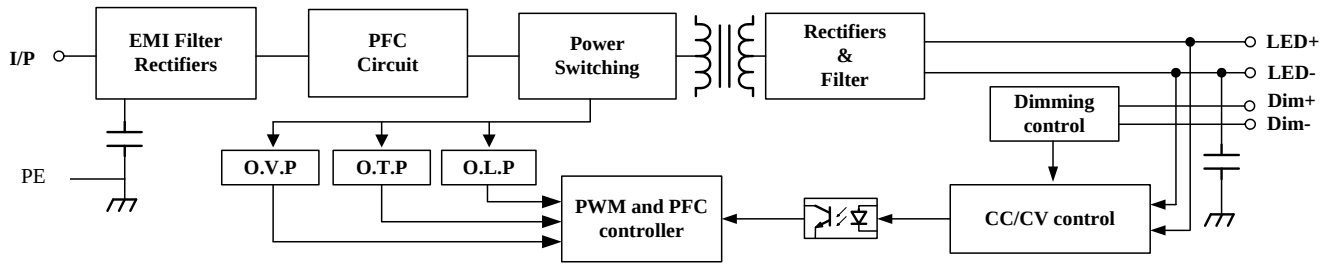
Duty	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Rated Current rate	1.4%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95~105%

◆ Dimming Curve (MDC0802450)



※Note : 1. The output current drops down to 1.4% when the dimming input is short or 0Vdc.
2. 0V ~ 1V dimming application please consult Darfon.

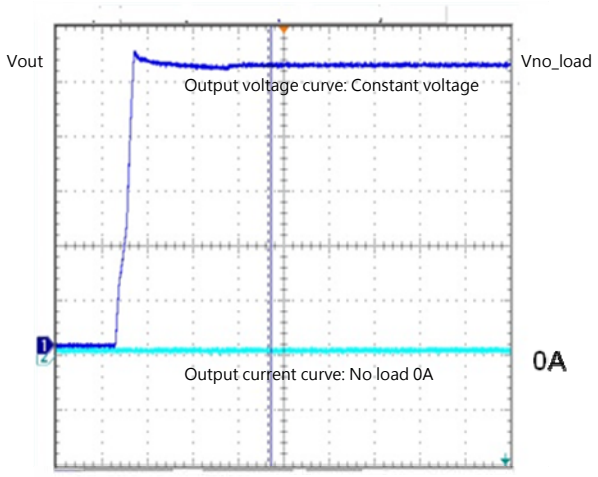
◆ Function Block



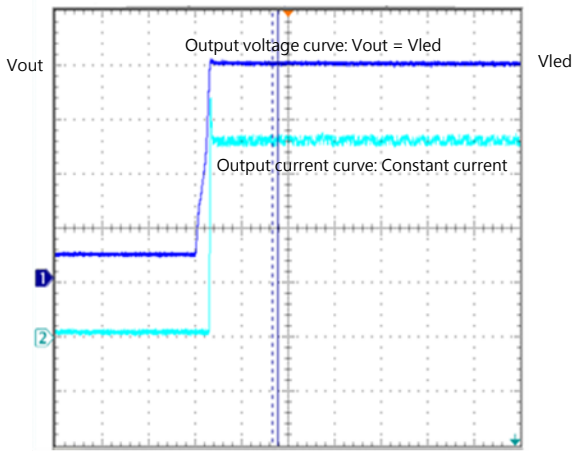
◆ LED Driving Output Mode

Darfon LED driver output characteristics with constant voltage mode (CV) & constant current mode (CC) to direct drive all kinds of LED lighting correctly

No load start up waveform:
Vout = Vno_Load (CV)



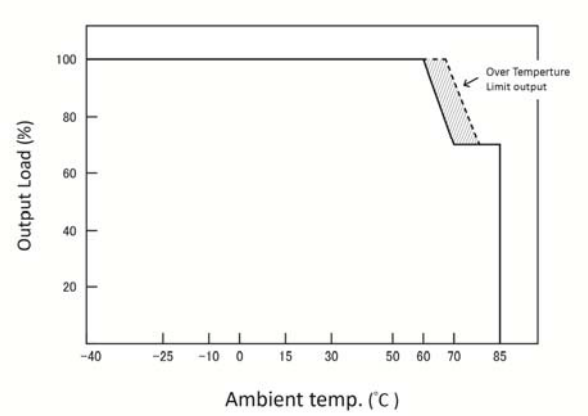
Connecting LED load start up waveform:
Vout = Vled ; Iout = Iset (CC)
(Iset = Default output current)



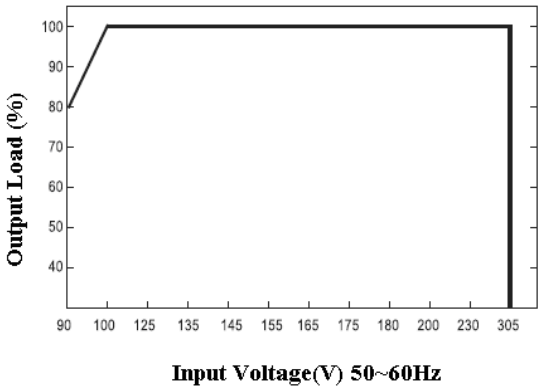
Welcome to consult Darfon to optimize your LED driving configuration!!

◆ Output Load De-Rating Curve

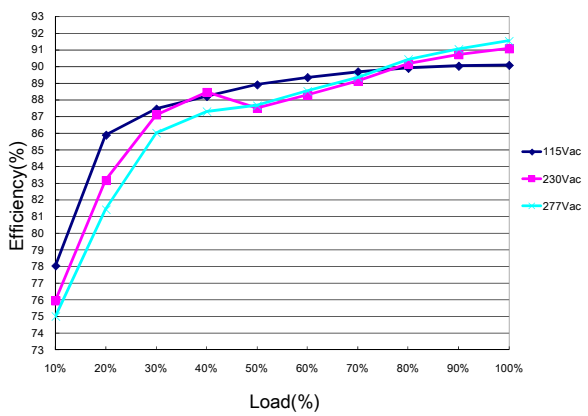
Temperature v.s. De-Rating Curve



Input Voltage v.s. De-Rating Curve



Efficiency v.s. Load(MDC-080-0700)



Power Factor v.s. Load(MDC-080-0700)