MOONS'
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MU100MxxxAQ_CP   General-Outdoor

Features
Input voltage: 90-305Vac
Built-in active PFC function 0.98 Typ.
High efficiency: up to 91% Typ.
Built-in Lightning protection
Waterproof (IP67)
Constant Current / 0-10V Dimming
Clock Dimming(CLK)/PWM Dimming
Protection: OVP, SCP, OTP
Full Power at 65%Iomax 100%Iomax (Constant Power)
UL Type TL, Type HL

Specification

| Model (MU100MxxxAQ_CP)		080	105	150	210	320	480
Input	Efficiency(120Vac)	89.0%	88.0%	88.0%	87.0%	86.0%	85.0%
	Efficiency(230Vac)	91.0%	90.0%	90.0%	89.0%	88.0%	87.0%
	Voltage Range (Vac)	90 305					
	Rated Input Voltage (Vac)	100-277					
	Frequency Range (Hz)	47~63					
	Power Factor	0.98 Typical at 230Vac; >0.9 with 55%~100% load, at 100~277Vac					
	THD	<15% with 80% 100% load, at 100~277Vac; <20% with 50%~100% load, at 100~277Vac					
	AC Current(Typ.)	1.35A MAX at 110VAC					
	Inrush Current(Typ.)	65A at 230Vac input 25 Cold Start (time wide=500uS, measured at 50% Ipeak,Not applicable for the inrush current to Noise Filter for less than 0.2ms)					
	Leakage Current(max.)	0.75mA at 277Vac 50Hz input					
Output	Rated Output Voltage (V)	189-125	143-95	100-66	71-47	50-31	33-21
	Output Voltage Range (V)Note.1	189-75	143-57	100-40	71-29	50-19	33-13
	Rated Current(mA)	530-800	700-1050	1000-1500	1400-2100	2000-3200	3000-4800
	Output Current Range(mA)	53-800	70-1050	100-1500	140-2100	200-3200	300-4800
	Rated Power (W)	100(max)					
	Output Current Set Range	6.5%Io_max 100%Io_max					
	Constant Power Output Set	65%Io_max 100%Io_max					
	Ripple Current(PK-AV /AV)	10% max. (peak-to-average value) at 100% Iout					
	Current ToleranceNote.2	±5%					
	Line Regulation	±1%					
	Load Regulation	±3%					
	Setup, Rise Time	0.5s(typ.), measured at 230Vac input					
	Hold Up Time	10ms at 230Vac 100% load					
Dimming Control	12Vdc Output Voltage (Vdc)	10.8Vmin. 12Vtyp. 13.2Vmax.					
	12Vdc Output Current(Vdc)	0mA~20mA max.					
	0~10V/DMI+ Voltage	Absolute maximum voltage -10Vmin~20Vmax					
	0~10V/DMI+ Short Current	280uA~450uA (DIM(+)=0)					
	DIMMING FUNCTION	0~10V/10%Io~100%Io ref. Dimming module diagram and dimming cruve					
Protection	Over Voltage(V)	250	200	130	100	70	43
		Hiccup mode.The power supply shall be self-recovery when the fault is removed.					
	Short Circuit	Hiccup mode.The power supply shall be self-recovery when the fault is removed.					
	Over Temperature	Protection type: Resumable mode.when the inside temperature of PSU rise to 100 (Typ.), decreases output current,returning to normal after over temperature is removed.					
Environment	Operating Temp.	-40~+70 (Refer to 'Derating Curve')					
	Tcase	90 max					
	Operating Humidity	20~95%RH, non-condensing					
	Storage Temp., Humidity	-40~+85 , 10-95%RH					
	Temp. Coefficient	0.03%/ 0~50					
	Vibration	10~500Hz, 5G 12min/cycle, period for 72min each along X Y Z axes					
Safety & EMC	Safety Standard	UL8750, UL1012, CAN/CSA-C22.2No.107.1-01,EN61347-1, EN61347-2-13					
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:1.875KV O/P-FG:1.5KV					
	Isolation Resistance	I/P-O/P ,I/P-FG,O/P-FG:100M Ohms/500VDC/25 /70%RH					
	EMC Emission	EN55015 EN61000-3-2 Class C EN61000-3-3					
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11 EN61547 Surge L,N-FG 10KV L-N 10KV					
Others	MTBF	300,000 hours, measured at full load, 25 ambient temperature MIL-HDBK-217F(25)					
	Lifetime	>=100 KHrs lifetime (continous) at Tcase = 65 >=50 KHrs lifetime (continous) at Tcase = 75					
	Dimension	183 x67.5 x37 mm LxWxH					
	Weight	0.85kg					

Note.1: refer to V/I curve
Note.2: At Rated Current ,Includes set up tolerance, line regulation and load regulation.
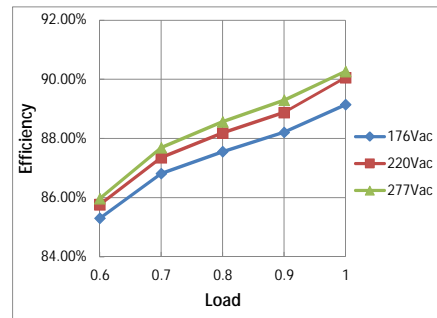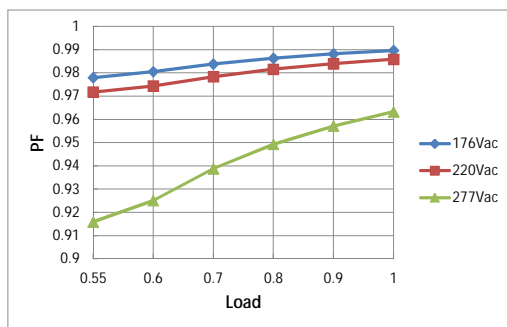
Curve

Derating Curve
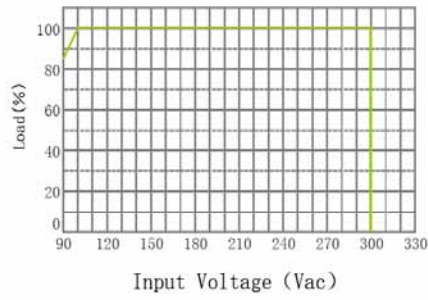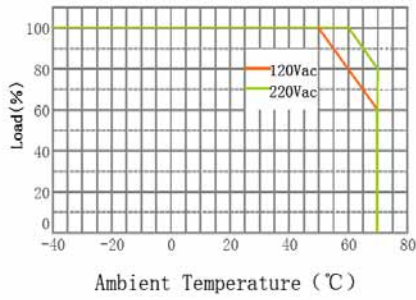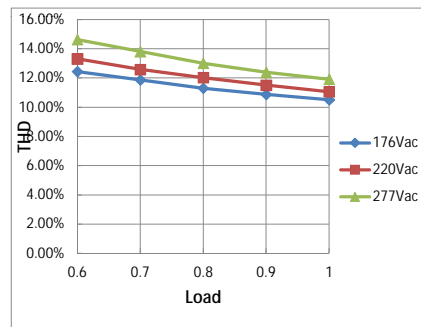

V/I Curve
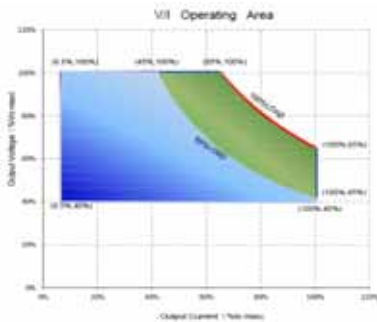
Efficiency VS. Load Curve   MU100M105AQ_CP
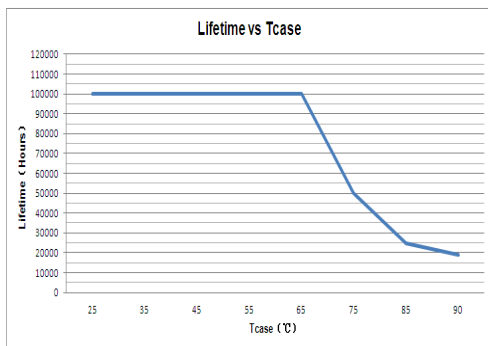

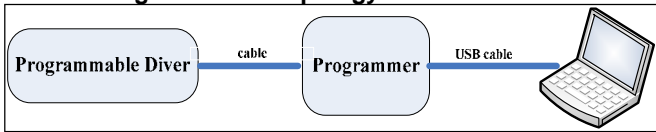### Power Factor VS. Load Curve

THD Curve

Life Time VS. Tcase (Ref.)

Instruction

1.Field Programmable Topology

The programmable driver can be programmed by using special PC software and the programmer module.

2.Dimming Interface Description

Pin description

Pin	Name	Value	Description
1	Vaux 12V	10.8V-13.2V	Passive dimmers power supply
2	Dim+/Program	0-10V	Dimming/Programming input
3	Dim-	0V	DC Ground

3.Dimming Software Function Instruction

■ Adjustable Output Current(AOC)

Adjustable Output Current(AOC)

Module Current 75 %

Users can set the rated current between 10%~100% by 1% per step.

■ Adjustable Startup Time(AST)

Adjustable Startup Time(AST)

Start Fadeup Time 5 s

At power ON, the fast fade-up of light can be unpleasant in certain applications. To avoid such a situation, the driver fade-up time at start-up can be programmed to a value among 0s 1s 2s 5s 10s 20s 40s. The default start fade

■ Set Module Working Hrs

Set Module Working hrs(SMW)

Set Module Working hrs 0 hrs

Use to reset the working hour counting in the microcontroller of the driver and collaborate with CLO.

■ 1-10V

Allow users to set the max and min output current and corresponding output voltage to clarify the 1-10V dimming curve. Input a 0~10V signal from 2nd pin of the dimming interface. Default: input 1V, output current 10%; input 8.5V, output current 100%.
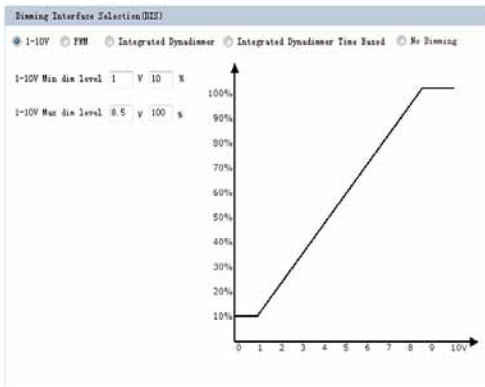
PWM

Input a PWM signal from the 2nd pin(Dim+/Program) of the dimming interface to change the output current. PWM duty circle: 1%~99%(it has both positive and negative logics), frequency: 500Hz~5kHz, 3V~10V is high,-0.3V~0.8V is low.

PWM Logic(PWML)

Positive Or Negative Logic +

Dimming Interface Selection(DIS)

○ 1-10V ● PWM ○ Integrated Dynadimmer ○ Integrated Dynadimmer Time Based ○ No Dimming

PWM Logic(PWML)

Positive Or Negative Logic -

Dimming Interface Selection(DIS)

○ 1-10V ● PWM ○ Integrated Dynadimmer ○ Integrated Dynadimmer Time Based ○ No Dimming
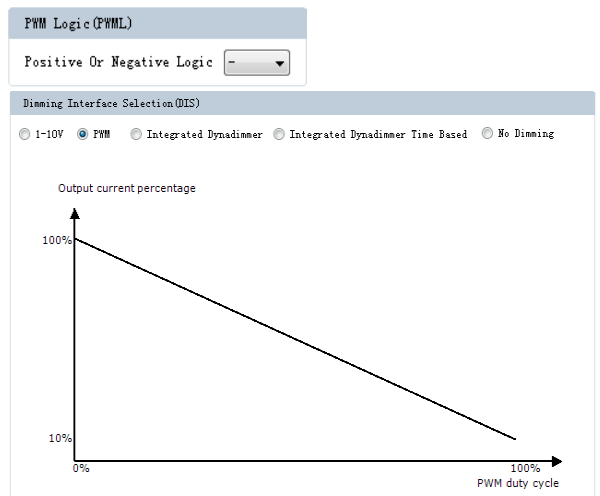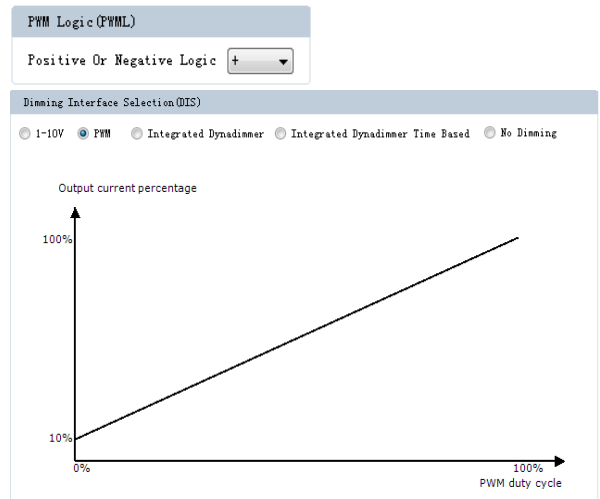
Instruction

■ Integrated Dynadimmer
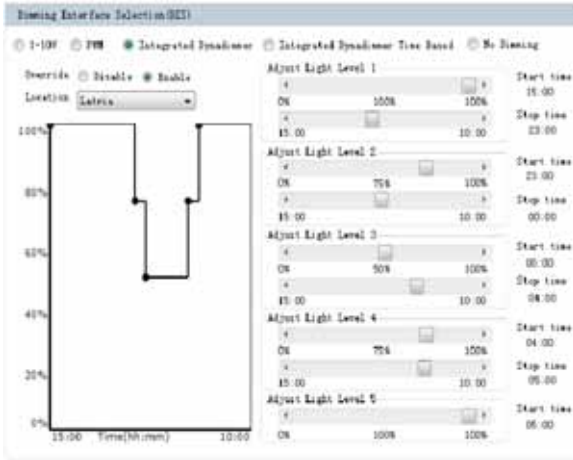
Integrated Dynadimmer allows dimming to predefined light levels based on the nightly operating time. With flexibility in setting time and light levels, the user can configure the driver for specific locations and application needs. Using Integrated Dynadimmer, it is possible to set up to 5 dim levels and time intervals. The driver does not have a real time clock. Instead it runs a virtual clock, determined by the length of nightly operating hours. After 3 ON-OFF cycles, the driver will calculate the virtual clock time. A valid ON-time is defined as a period during which the driver operates continuously for   4 hours to   24 hours. For example, if the requirement in summer is: 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75% (other time 100% or Off). The driver should be powered on for 7h, so it can calculate the virtual clock time as 22:00. Then we can set the dimming plan: 22:00~23:00: 100%, 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75%. From summer to winter, the val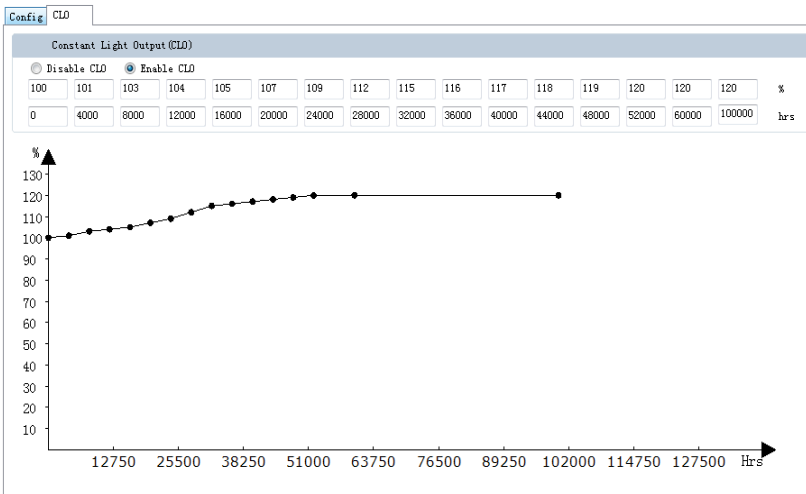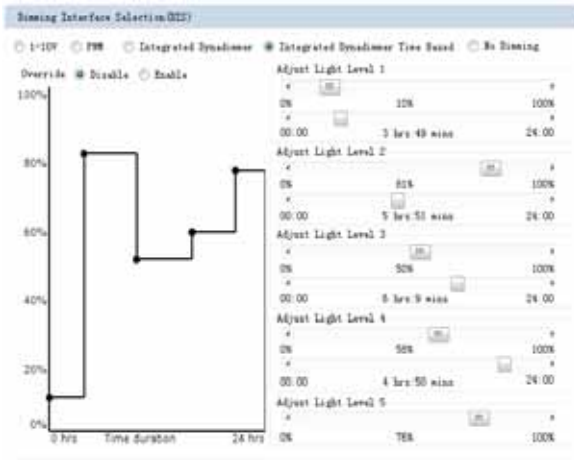id ON-time changes day by day. The driver should be powered on for 17h in winter, and it also can calculate the virtual clock time as 17:00. Then the dimming plan is 17:00~23:00: 100%, 23:00-00:00: 75%, 00:00-04:00: 50%, 04:00-05:00: 75%, 05:00~10:00: 100%. From the above, if we set the dimming plan as shown in the picture, after repeating the driver ON-time for 3 consecutive days, the dimming plan takes effect from the 4th day onwards. Each day the driver powered on, it has a different start time according to the virtual clock time. So the driver can satisfy different requirements for different seasons.

■ Constant Light Output(CLO)

■ Integrated Dynadimmer Time Based

Allow users to separate 24hrs into 5 sections and corresponding output current.

■ No Dimming

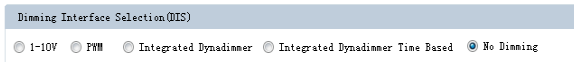The driver will be in constant output mode.

Traditional light sources suffer from depreciation in light output over time. This applies to LED light sources as well. The CLO feature enables LED solutions to deliver constant lumen output through the life of the light engine. Based on the type of LEDs used, heat sinking and driver current, it is possible to estimate the depreciation of light output for specific LEDs and this information can be entered into the driver. The driver counts the number of light source working hours and will increase output current based on this input to enable CLO. When the CLO feature is enabled, the driver nominal output current will be defined by the CLO percentage as shown by the equation below: Driver target nominal output current = CLO percentage * AOC. For example, in the CLO profile shown in Figure, between 52,000-60,000 working hours, the CLO percentage is set at 120%. Assuming the nominal AOC is set to 500mA, the driver output current with CLO enabled will be 1.20 x 500 = 600 mA. The CLO percentage can be set to a value between 100%-120%, in increments of 1%. The LED module working hours can be set at any value between (0-100,000 hours).

Mechanical Specification

Dimensions(Unit:mm)

170±1
167±1
34±0.5
50±0.5
5
8
5

YELLOW(Vaux 12V)
PURPLE (DIM+)
GRAY   (DIM-)
DIMMING CONTROL WIRE UL 2517
PVC (3*AWG#22)ODØ4.5±0.3

AC INPUT UL SJTW PVC
(3*AWG#18) ODØ7.8±0.3
WHITE(ACN)
BLACK(ACL)
GREEN(GND)

DC OUTPUT UL SJTW PVC
(2*AWG#18) ODØ7.3±0.3
RED (V+)
BLUE (V-)

37

220±20
50±5
10±2
37±1
67.5±1

TC=90°C

10±2
50±5

10±2
50±5
220±20

650±20
152
157
183±1
25
12
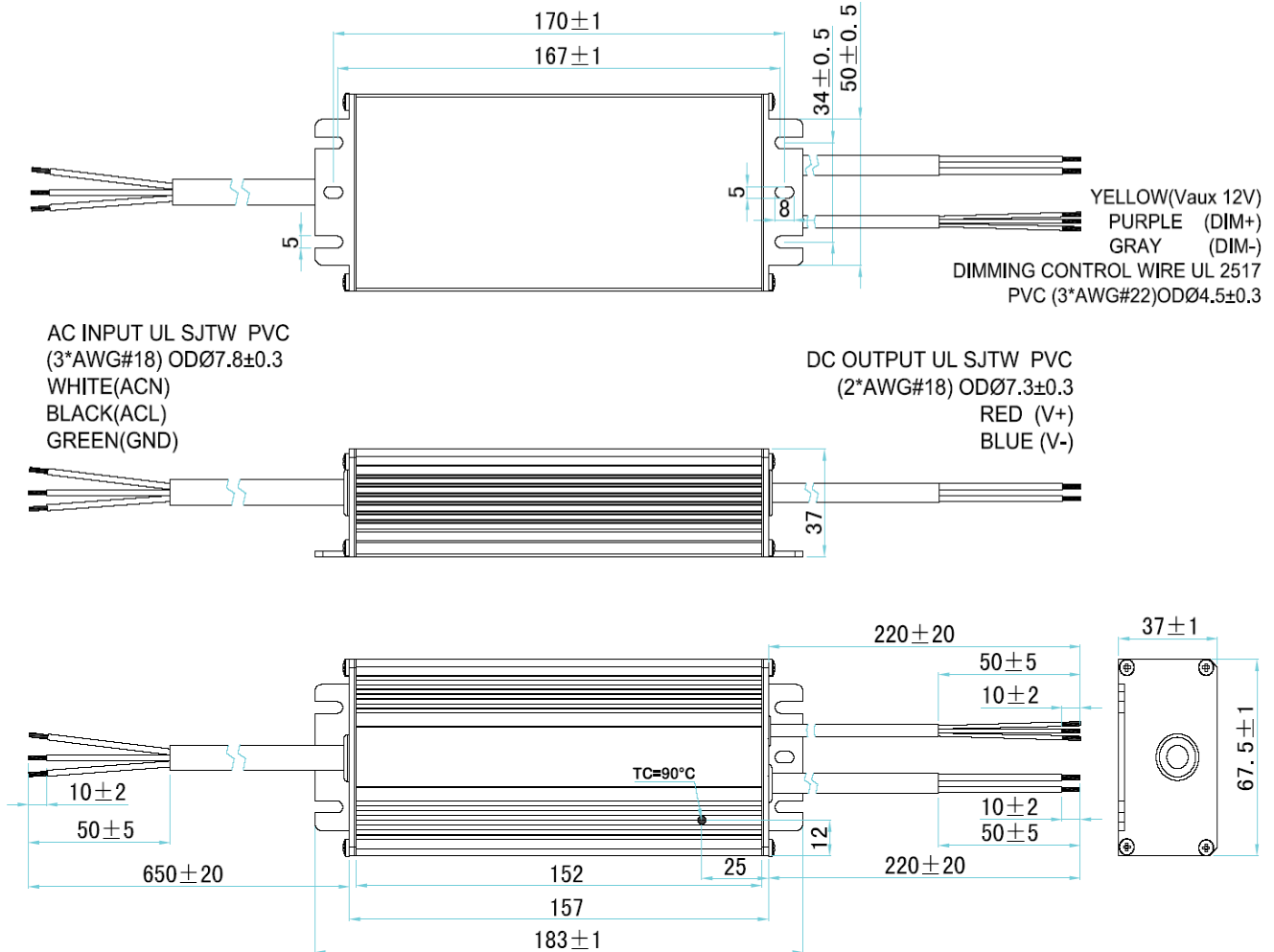
RoHS Compliance:

Our products comply with the European Directive of LVD (2014/35/EU), WEEE (2012/19/EU) and ROHS (2011/65/EU and   EU   2015/863),

calling for the elimination of lead and other hazardous substances from electronic products.