## ■ Features

- ◆ Input voltage: 176-305Vac
- ◆Built-in active PFC function 0.98 Typ.
- ◆ High efficiency: up to 90% 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)

## ■ Specification

| Model (ME075MxxxAQ_CP ) | | 105 | 150 | 210 | 300 | 420 |
|---|---|---|---|---|---|---|
| Input | Efficiency(220Vac) | 90.0% | 89.0% | 88.0% | 88.0% | 87.0% |
| | Voltage Range (Vac) | 176～305 | | | | |
| | Rated Input Voltage (Vac) | 200-240 | | | | |
| | Frequency Range (Hz) | 47~63 | | | | |
| | Power Factor | 0.98（Typical），>0.9 at 220～277Vac input, with 70%～100% load conditions | | | | |
| | THD | < 20%, at 220～277Vac input, with 70%～100% load conditions | | | | |
| | AC Current(Typ.) | 0.42A MAX at 220VAC | | | | |
| | Inrush Current(Typ.) | 65A at 230Vac input 25℃ cold start | | | | |
| | Leakage Current(max.) | 0.75mA at 277Vac 50Hz input | | | | |
| Output | Rated Output Voltage (V) | 108-72 | 75-50 | 54-36 | 38-25 | 27-18 |
| | Output Voltage Range (V)Note.1 | 108-43 | 75-30 | 54-22 | 38-15 | 27-11 |
| | Rated Current(mA) | 700-1050 | 1000-1500 | 1400-2100 | 2000-3000 | 2800-4200 |
| | Output Current Range(mA) | 70-1050 | 100-1500 | 140-2100 | 200-3000 | 280-4200 |
| | Rated Power (W) | 75(max) | | | | |
| | Output Current Set Range | 6.5%Io_max～100%Io_max | | | | |
| | Constant Power Output Set Range | 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 220Vac input | | | | |
| | Hold Up Time | 10ms at 220Vac 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) | 130 | 90 | 65 | 46 | 33 |
| | | 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: the PSU will keep 50% normal output（Rated current）. | | | | |
| Environment | Operating Temp. | -40~+70℃ (Tc≤ 90℃) | | | | |
| | Operating Humidity | 20~95%RH, non-condensing | | | | |
| | Storage Temp., Humidity | -40~+85℃, 5-100%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 | 250,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃) | | | | |
| | Dimension | 173x67.5 x 37mm ( LxWxH ) | | | | |
| | Weight | 0.8kg | | | | |

Note.1: refer to V/I curve

Note.2: At Rated Current ,Includes set up tolerance, line regulation and load regulation.



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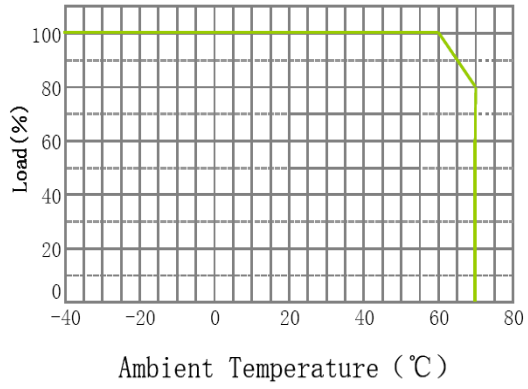
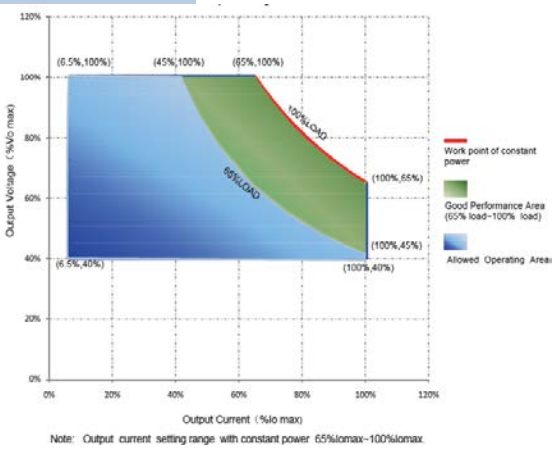
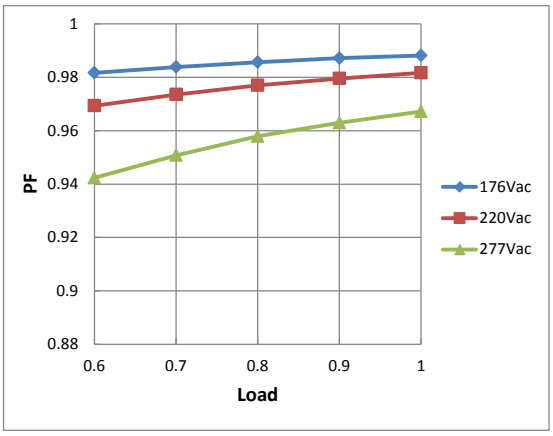
## Derating Curve



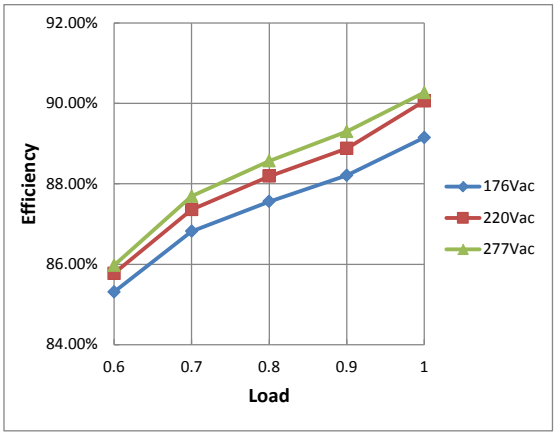

## V/I Curve



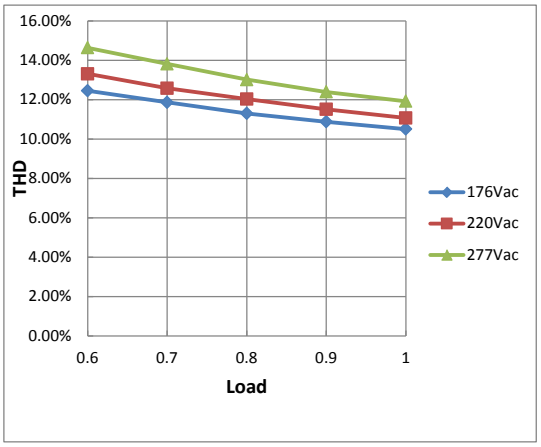

## Power Factor VS. Load Curve



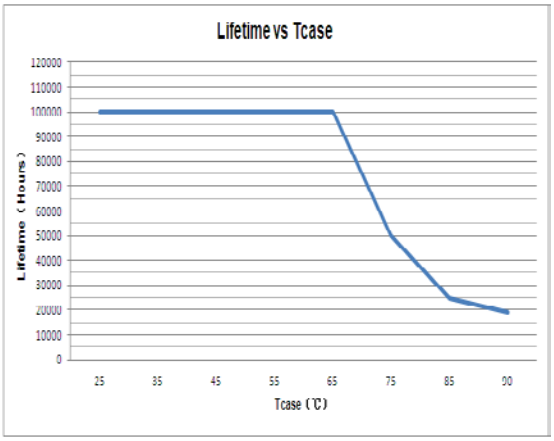

## Efficiency VS. Load Curve




## THD Curve




## Life Time VS. Tcase (Ref.)



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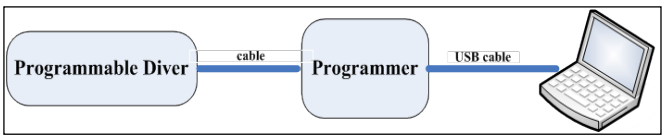
## ■ Instruction

### 1.Field Programmable Topology

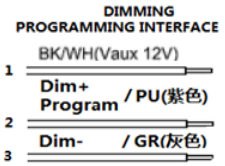



The programmable driver can be programmed by using special PC software and the programmer module.

### 2.Dimming Interface Description

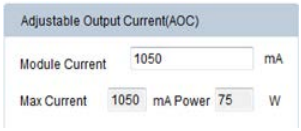
Pin description

| 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)

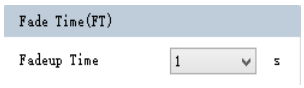



Users can set the rated current between 7%*Max Current and 100%*Max Current.

■ Adjustable Startup Time(AST)

Set driver's "Start Fade up Time". It means how much time the driver costs to achieve the "Module Current" that the user set. The valid value is 0s, 1s, 2s, 5s, 10s, 20s, 40s.

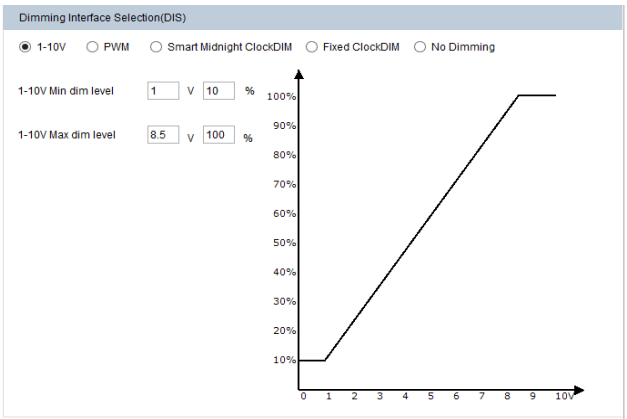
■ Fade Time(FT)




Set driver's "Fade up Time". This function is available in the Smart Midnight ClockDIM and Fixed ClockDIM mode; It means how much time the driver costs to achieve another dimming level from previous dimming level. The valid value is 0s, 1s, 2s, 5s, 10s, 20s, 40s.

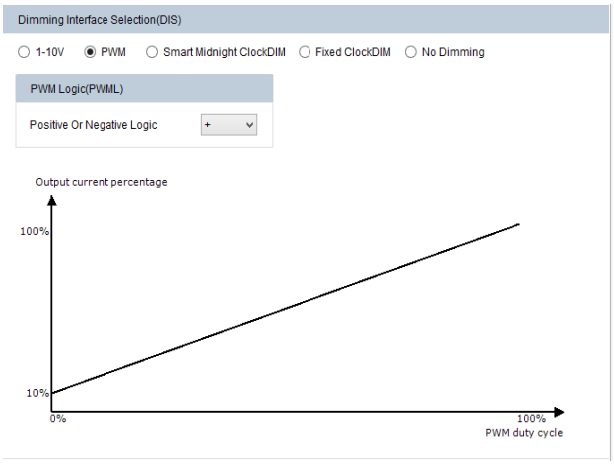
■ 1-10V

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.User can set "Positive Logic" or "Negative Logic" of the PWM signal. 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.



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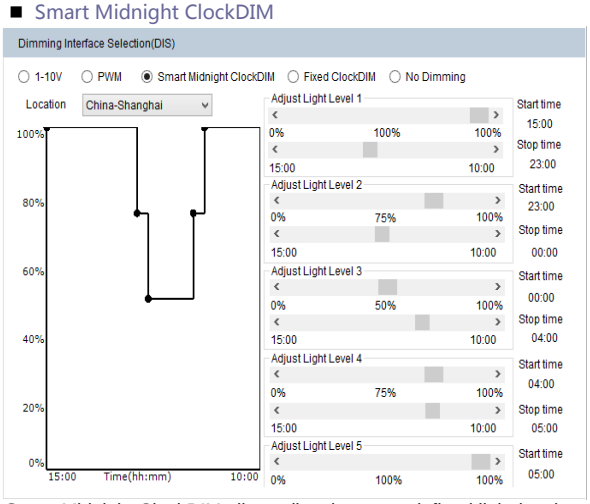
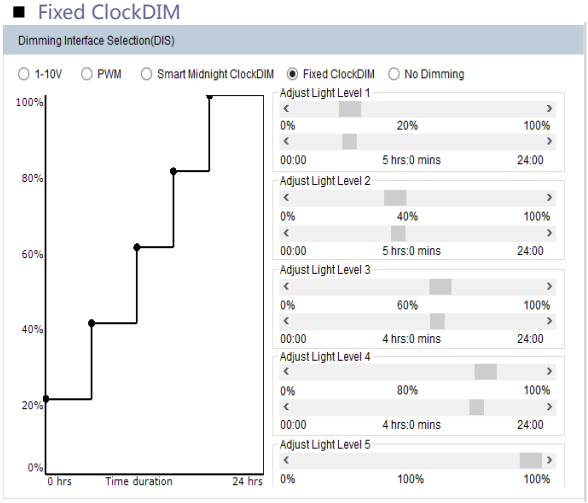
## ■ Instruction

### ■ Smart Midnight ClockDIM



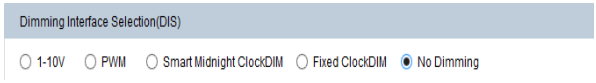

Smart Midnight ClockDIM allows dimming to predefined light levels based on the nightly operating time. With flexibility in setting time and light levels, the user can configure the driver for specific locations and application needs. Using Smart Midnight ClockDIM, it is possible to set up to 5 dim levels 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 valid 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.

### ■ Fixed ClockDIM



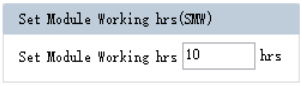

Allow users to separate 24hrs into 5 sections and corresponding output current.

### ■ No Dimming



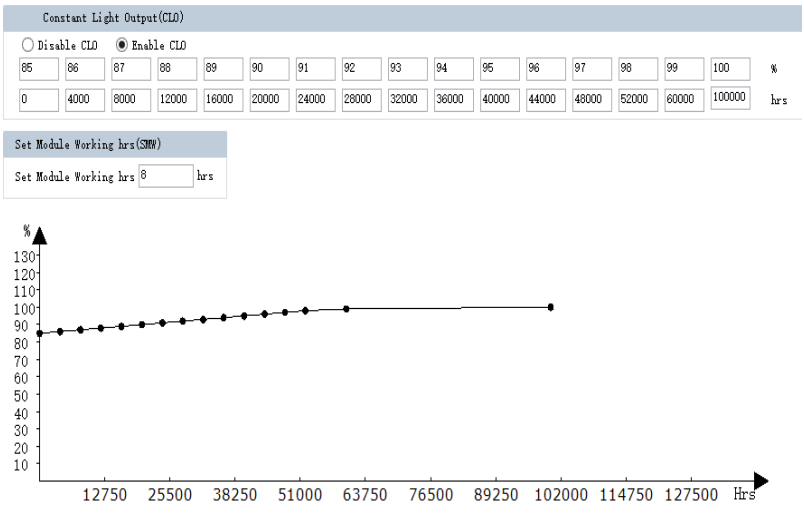

The driver will be in constant output mode.

### ■ Set Module Working hrs(SMW)




User can check how much time the driver works through this function.

### ■ Constant Light Output(CLO)




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 98%. Assuming the nominal AOC is set to 500mA, the driver output current with CLO enabled will be 0.98 x 500 = 600 mA.

The CLO percentage can be set to a value between 85%-100%, in increments of 1%. The LED module working hours can be set at any value between (0-100,000 hours).



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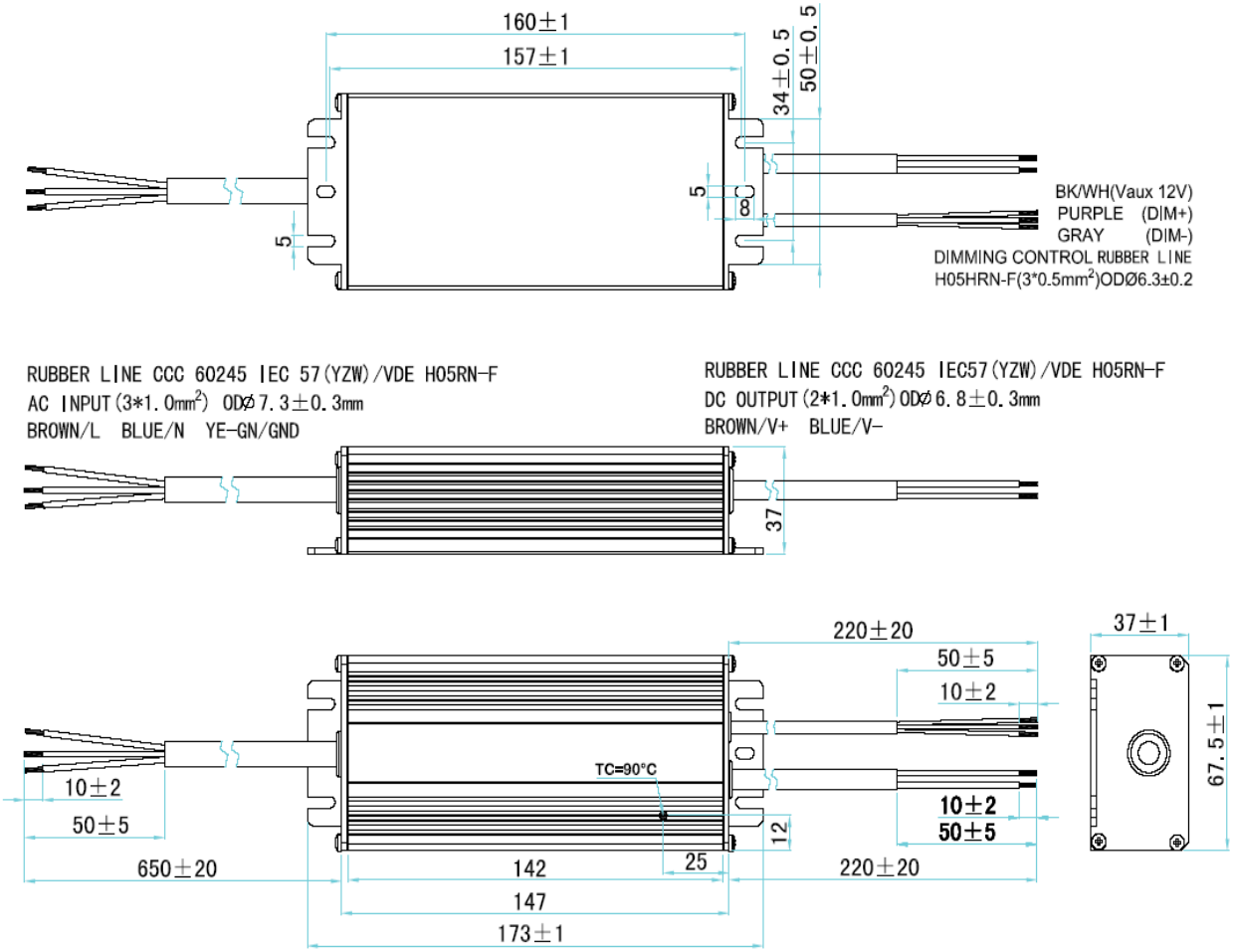
## ■ Mechanical Specification

Dimensions (Unit: mm)




RoHS Compliance:

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.



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