LED DRIVER SPECIFICATIONS

Customer's Part Number: _____

MOONS' Part Number: _____

Model: ME250H105AQ_CP

P/N: _____

CUSTOMER'S APPROVAL STAMP

Please sign back after your approval. The specifications will come into force when we receive purchase order.

DWG	CHK	STANDARD	APPD.

SHANGHAI MOONS' AUTOMATION CONTROL CO., LTD.
Add: No.168, Mingjia Road, Shanghai 201107, P.R.China
Tel: +86 (0)21 52634688 Website: www.moons.com.cn

Rev.	Date	Contents	ECO NO.	DWG	CHK	APPR
A0	2016/10/10	New release		Zhi Yang	Bilin Tu	Bilin Tu

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■ Features

- Input voltage: 176-305Vac
- Built-in active PFC function 0.98 Typ.
- High efficiency: up to 93% Typ.
- Built-in Lightning protection
- Three dimming in one operation modes(0-10V Dimming / Clock Dimming(CLK)/PWM Dimming)
- Protection: OVP, SCP, OTP
- Full Power at 65%Iomax～100%Iomax (Constant Power)
- IP67 design for indoor or outdoor installations

Version: A0

■ Specification

Model		ME250H105AQ_CP
Input	Efficiency(220Vac) Typ.	93%
	Voltage Range (Vac)	176～305
	Rated Input Voltage (Vac)	200-240
	Frequency Range (Hz)	47~63
	Power Factor	>0.9 at 176～277Vac input, with 80%～100% load conditions
	THD	< 15%, at 176～277Vac input, with 80%～100% load conditions
	AC Current(Typ.)	1.5A
	Inrush Current(Typ.)	65A at 230Vac input 25℃ cold start
	Leakage Current(max.)	0.75mA at 277Vac 50Hz input
Output	Rated Output Voltage (V)	357-238
	Output Voltage Range (V) Note.1	357-143
	Rated Current(mA)	700-1050
	Output Current Range(mA)	70-1050
	Rated Power (W)	250(max)
	Output Current Set Range	6.5%Io_max～100%Io_max
	Constant Power Output Set	65%Io_max～100%Io_max
	Ripple Current(Idc (pk-av)/av)	10% max. (Idc (pk-av)/av) at 100% Iout
	Current Tolerance Note.2	±5%
	Line Regulation	±1%
	Load Regulation	±3%
	Setup, Rise Time	1s(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	Default 0-10V dimming mode. Other dimming modes sets to PWM/Clock Dimming(CLK) by software configuration
Protection	Over Voltage(V)	430V max
		No damage.The power supply shall be self-recovery when the fault is removed.
	Short Circuit	No damage.The power supply shall be self-recovery when the fault is removed.
	Over Temperature	Decrease output current .returning to normal after over temperature is removed.
Environment	Operating Temp.	-40~+60℃ (Refer to 'Derating Curve') , (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./1cycle, period for 72min. each along X, Y, Z axes
Safety & EMC	Safety Standard	EN61347-1, EN61347-2-13 ,EN60598-1,EN62384
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:1.875KV O/P-FG:1.8KV
	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 Line to FG:±10KV,Neutral to FG:±10KV,Line to Neutral :±10KV
Others	MTBF	250,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃)
	Dimension	234 x74.5 x 40mm（LxWxH）
	Weight	1.27kg(Typ.)

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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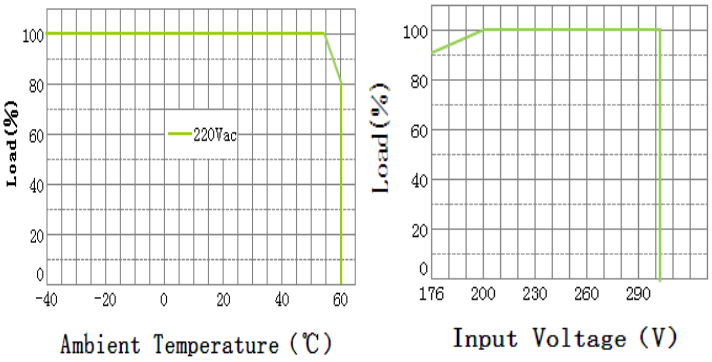
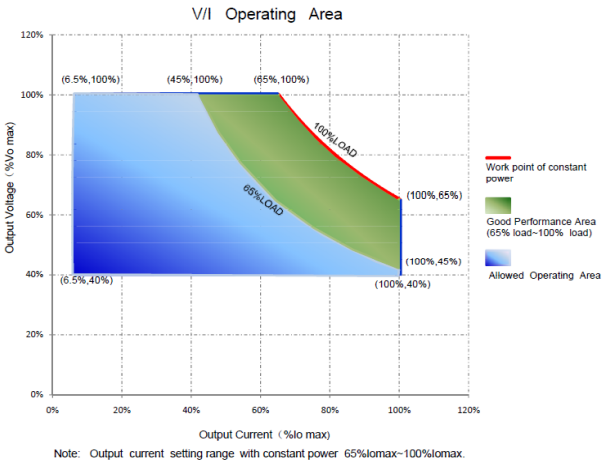
■ Curve

Derating Curve

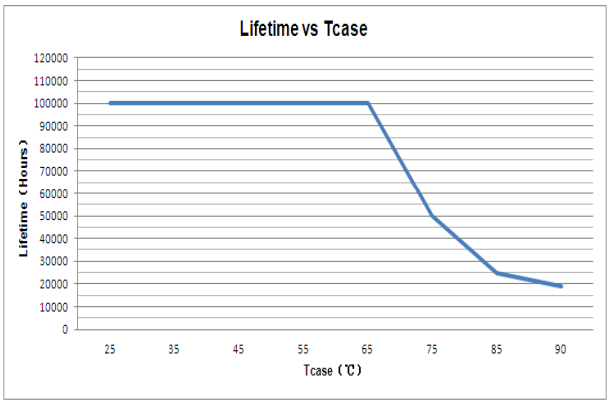


V/I Curve

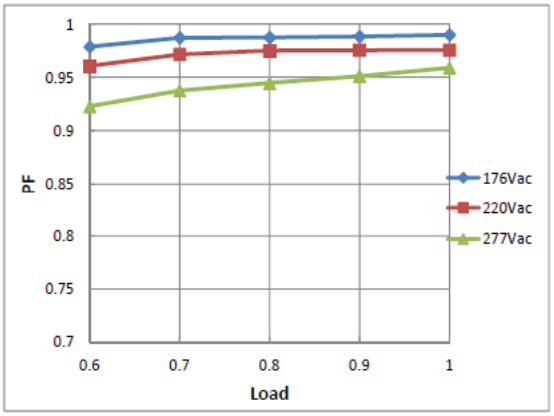


Note: Output current setting range with constant power 65%Iomax~100%Iomax.

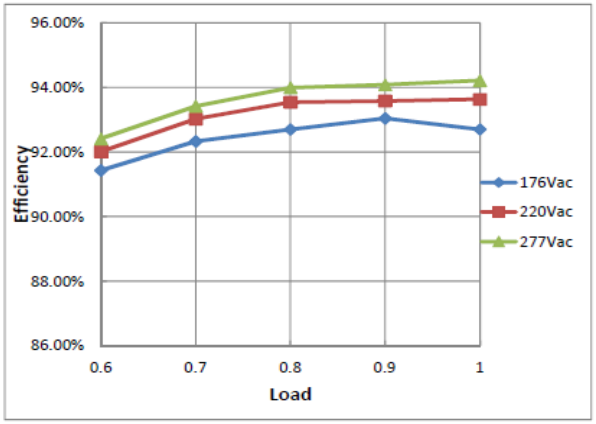
Lifetime vs. Case Temperature



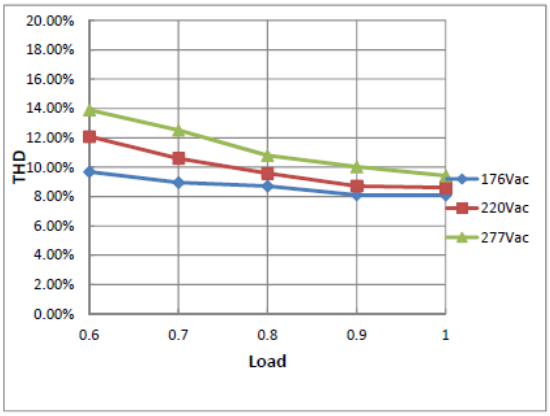
Power Factor Curve



Efficiency VS. Load Curve (Model 850mA)



THD Curve



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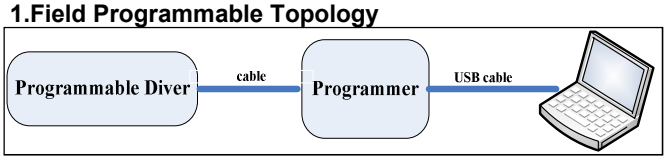
■ Instruction

1.Field Programmable Topology

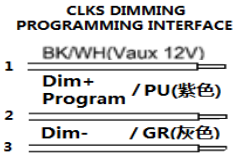


The programmable driver can be programmed by using special PC software and the programmer module.

2.Dimming Interface Description

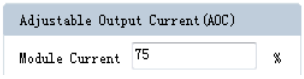
Pin description

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



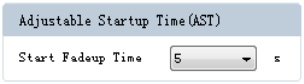
3.Dimming Software Function Instruction

■ Adjustable Output Current(AOC)



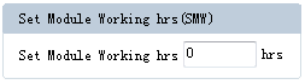
Users can set the rated current between 10%~100% by 1% per step.

■ Adjustable Startup Time(AST)



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 up time is 1s.

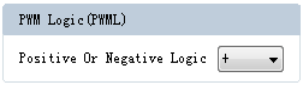
■ Set Module Working Hrs

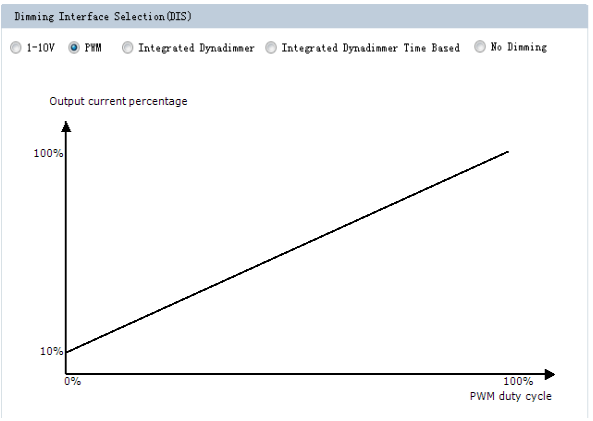


Use to reset the working hour counting in the microcontroller of the driver and collaborate with CLO.

■ PWM

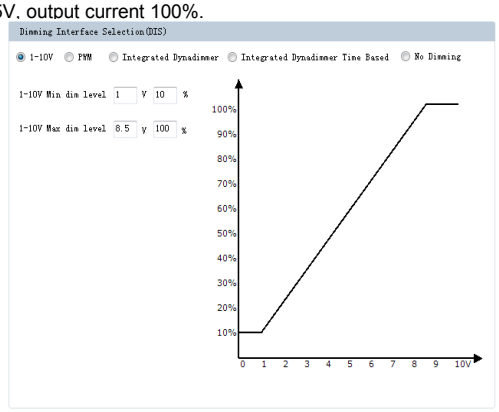
Input a PWM signal from the 2nd pin(Dim+/Program) of the dimming interface to change the output current. PWM duty circle: 1%~99%(it has both positive and negative logics), frequency: 500Hz~5kHz, 3V~10V is high,-0.3V~0.8V is low.

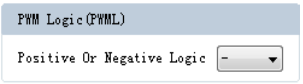


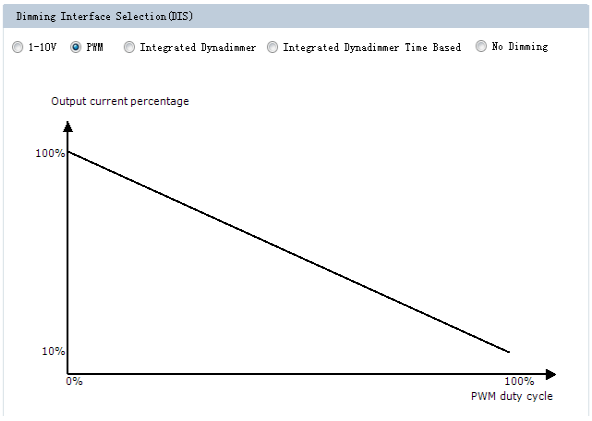


■ 1-10V

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%.







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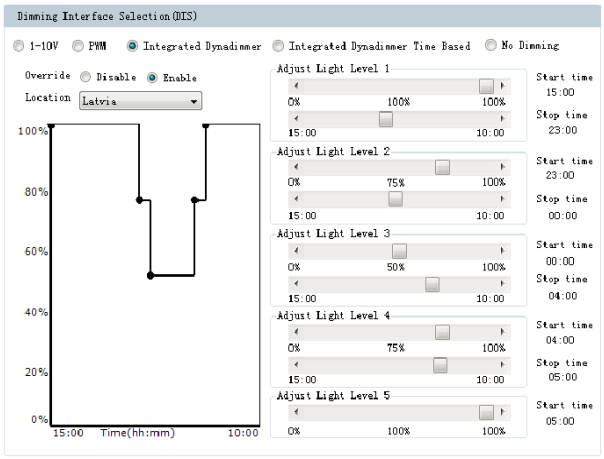
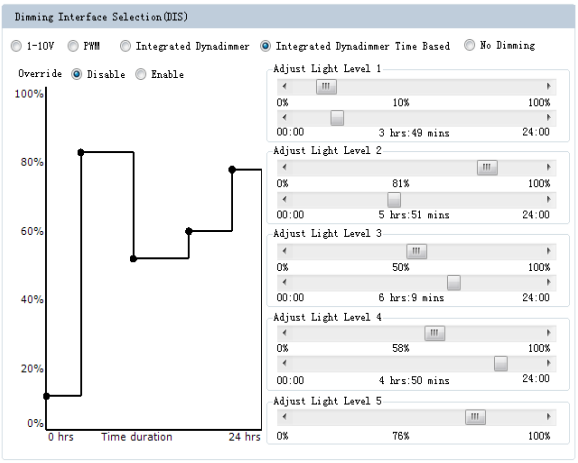
■ Instruction

■ Integrated Dynadimmer



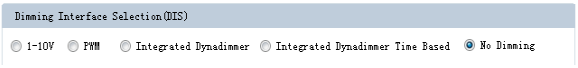
Integrated Dynadimmer allows dimming to predefined light levels based on the nightly operating time. With flexibility in setting time and light levels, the user can configure the driver for specific locations and application needs. Using Integrated Dynadimmer, it is possible to set up to 5 dim levels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

■ Integrated Dynadimmer Time Based



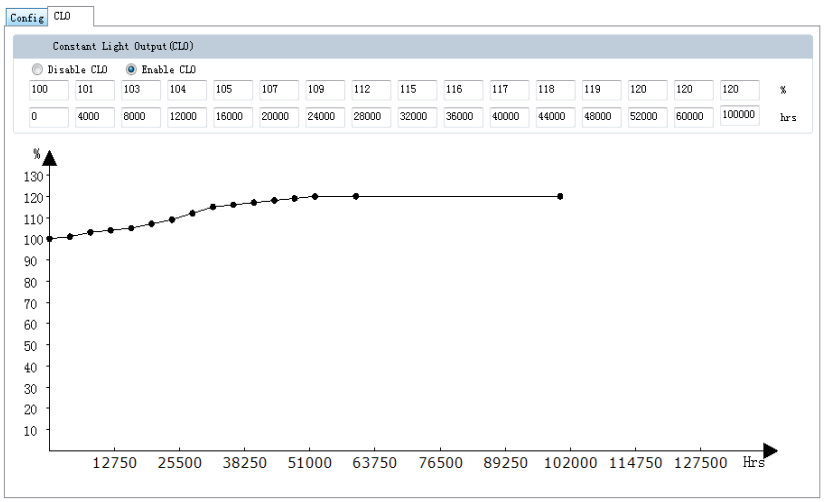
Allow users to separate 24hrs into 5 sections and corresponding output current.

■ No Dimming



The driver will be in constant output mode.

■ 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 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).

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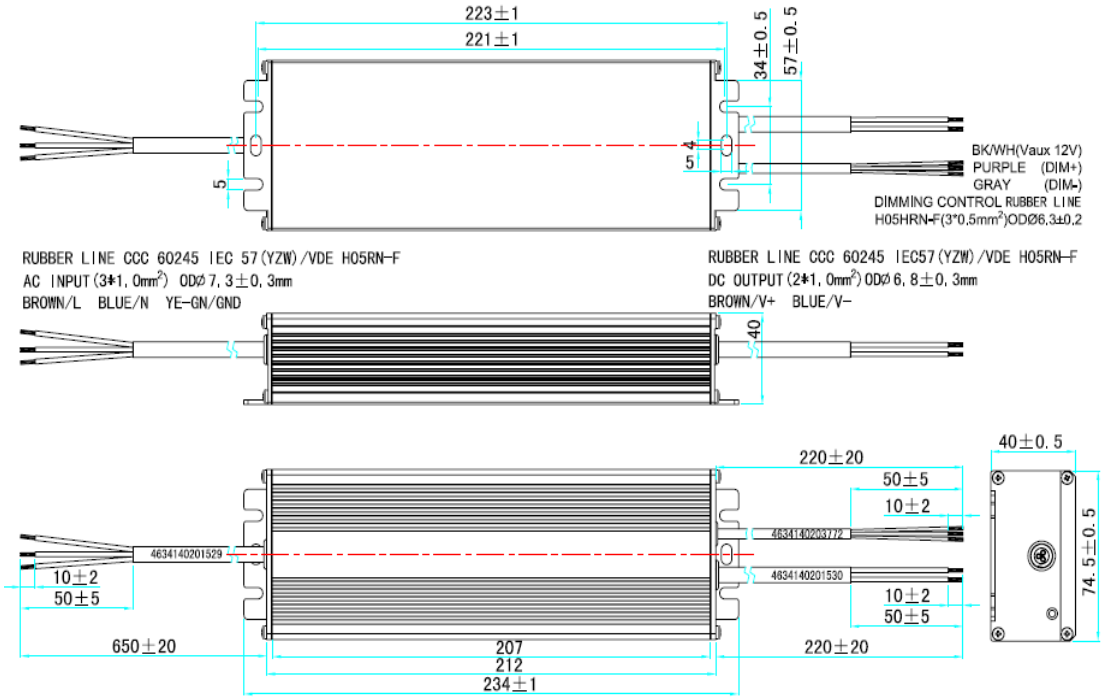
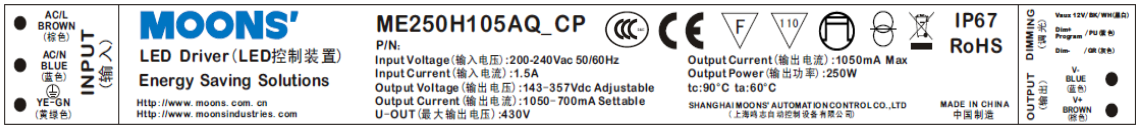
■ Mechanical Specification

Dimensions(Unit:mm)



Nameplate:



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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