



## LCM-40-SPEC

### Features

- Output current level selectable by DIP S.W.
- 180~295VAC input only
- Built-in active PFC function
- Protections: Short circuit / Over voltage / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Class II power unit, no FG
- Built-in 0~10Vdc or PWM signal or resistance dimming function (NTC is not used)
- Built-in 12V/50mA auxiliary output
- IP20 design
- Temperature compensation function by external NTC
- No load power consumption <1W (Note.7)
- Power supplies synchronization function up to 10 units
- Suitable for indoor LED lighting applications
- 3 years warranty

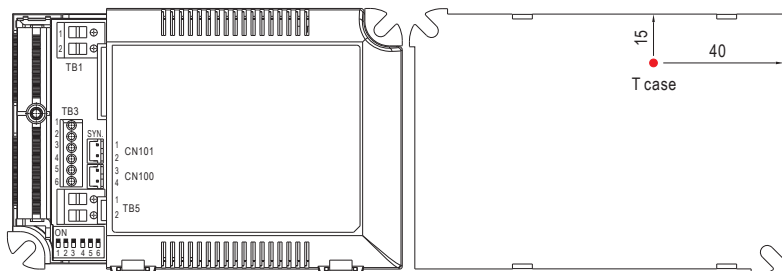
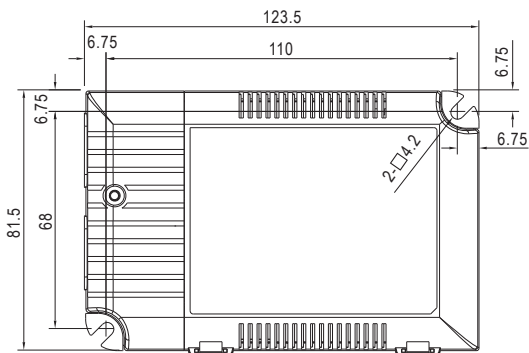
## SPECIFICATION

MODEL		LCM-40					
OUTPUT	SELECTABLE CURRENT <small>Note.3</small>	350mA	500mA	600mA	700mA	900mA	1050mA
	DC VOLTAGE RANGE	2 ~ 100V	2 ~ 80V	2 ~ 67V	2 ~ 57V	2 ~ 45V	2 ~ 40V
	RATED POWER	42W					
	RIPPLE CURRENT	±5.0%					
	RIPPLE & NOISE (max.) <small>Note.2</small>	700mVp-p					
	NO LOAD OUTPUT VOLTAGE (max.)	110V				65V	
	CURRENT ACCURACY	±5.0%					
	SETUP, RISE TIME <small>Note.5</small>	500ms, 80ms / 230VAC at rated power					
	HOLD UP TIME (Typ.)	16ms/230VAC at rated power					
INPUT	VOLTAGE RANGE <small>Note.4</small>	180 ~ 295VAC		254 ~ 417VDC			
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF≥0.975/230VAC, PF≥0.96/277VAC at rated power (Please refer to "Power Factor Characteristic" curve)					
	TOTAL HARMONIC DISTORTION	Total harmonic distortion will be lower than 20% when output loading is 75% or higher					
	EFFICIENCY (Typ.) <small>Note.6</small>	91%					
	AC CURRENT (Typ.)	0.23A/230VAC		0.2A/277VAC			
	INRUSH CURRENT(Typ.)	COLD START 20A(t <sub>width</sub> =260μs measured at 50% I <sub>peak</sub> ) at 230VAC					
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	26 units (circuit breaker of type B) / 44 units (circuit breaker of type C) at 230VAC					
PROTECTION	LEAKAGE CURRENT	<0.5mA / 240VAC					
	SHORT CIRCUIT	Constant current limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	110 ~ 130V Protection type : Shutdown o/p voltage, re-power on to recover					
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover					
FUNCTION	AUXILIARY POWER	12V @ 50mA for driving fan; Tolerance±5%					
	TEMP. COMPENSATION	By external NTC(not provide with the power supply), please see "Temperature Compensation Operation"					
	DIMMING	Please see "Dimming Operation"					
	SYNCHRONIZATION	Please see "Synchronization Operation"					
ENVIRONMENT	WORKING TEMP.	-30 ~ +60°C (Refer to "Derating Curve")					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/ (0 ~ 50 )					
SAFETY & EMC	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
	SAFETY STANDARDS	UL8750, ENEC EN61347-1, EN61347-2-13, EN62384 independent, GB19510.14, GB19510.1 approved					
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC					
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C/ 70% RH					
	EMC EMISSION	Compliance to EN55015, EN61000-3-2 Class C(≥40% rated power) ; EN61000-3-3; GB17625.1,GB17743					
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547 light industry level (surge 2KV), criteria A					
	MTBF	260.6K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	123.5*81.5*23mm (L*W*H)					
	PACKING	0.24Kg ; 54pcs/15Kg/1.12CUFT					

- NOTE**
- All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
  - Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
  - Tolerance : includes set up tolerance, line regulation and load regulation.
  - Line regulation is measured from low line to high line at rated load.
  - Load regulation is measured from 0% to 100% rated load.
  - Length of set up time is measured at cold first start. Turning ON/OFF the power supply very quickly may lead to increase of the set up time.
  - 5V when the load factor 0~50%, the switching power less is reduced by burst operation, which will cause ripple and ripple noise to go beyond the specifications.
  - The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m(6500ft).
  - The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to EMI testing of component power supplies. (as available on <http://www.meanwell.com>)

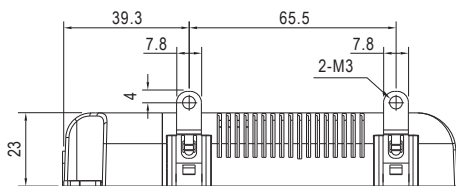
## Mechanical Specification

Case No. LCM-60A Unit:mm



※ T case: Max. Case Temperature.

Bottom View



Terminal Pin No. Assignment(TB1)

Pin No.	Assignment
1	AC/L
2	AC/N

Terminal Pin No. Assignment(TB3)

Pin No.	Assignment	Pin No.	Assignment
1	+FAN	4	-NTC
2	-FAN	5	DIM+
3	+NTC	6	DIM-

Terminal Pin No. Assignment(TB5)

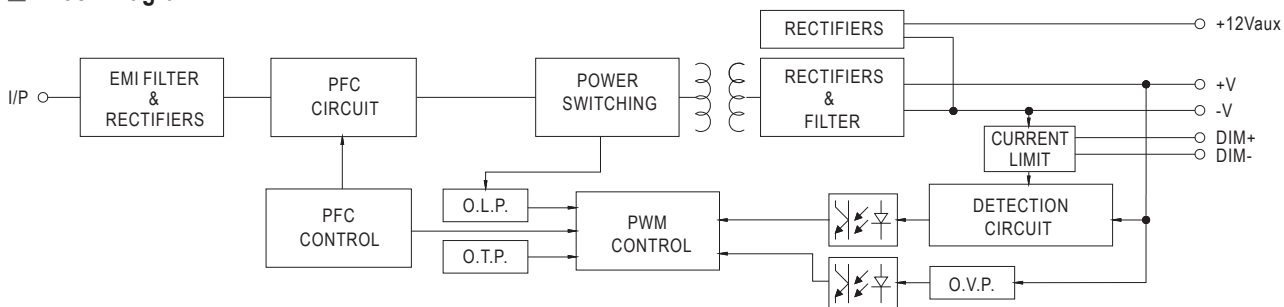
Pin No.	Assignment
1	+Vo
2	-Vo

SYN. Connector(CN101/CN100):JST B2B-XH or equivalent

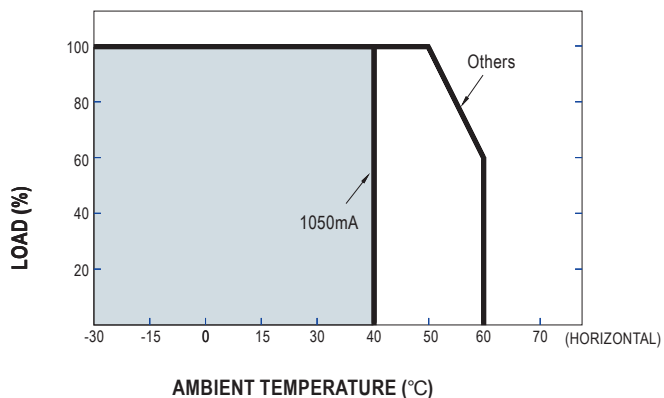
Pin No.	Assignment	Mating Housing	Terminal
1,3	+	JST XHP or equivalent	JST SXH-001T-P0.6 or equivalent
2,4	-		

PFC fosc : 60KHz  
PWM fosc : 80KHz

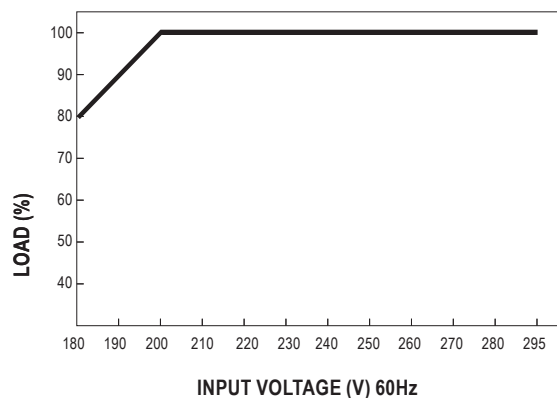
## Block Diagram



## Derating Curve



## Static Characteristics



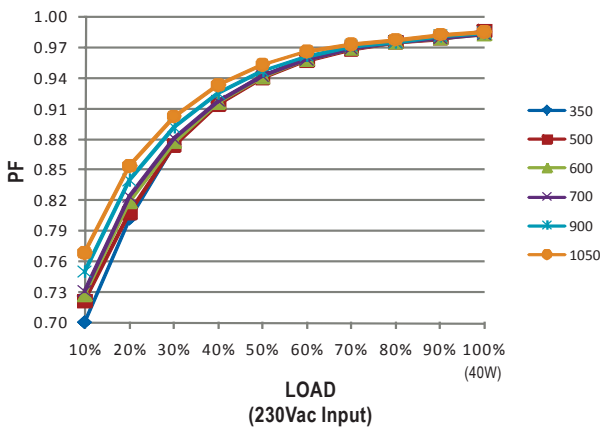
## DIP Switch Table

LCM-40 is a multiple-stage output current supply, selection of output current through DIP switch as table below.

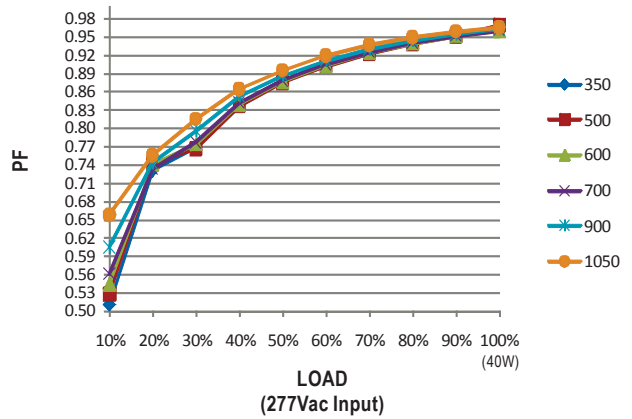
Io \ DIP S.W.	1	2	3	4	5	6
350mA	----	----	----	----	----	----
500mA	ON	----	----	----	----	----
600mA	ON	ON	----	----	----	----
700mA(Factory Setting)	ON	ON	ON	----	----	ON
900mA	ON	ON	ON	ON	----	ON
1050mA	ON	ON	ON	ON	ON	ON

## Power Factor Characteristic

### Constant Current Mode

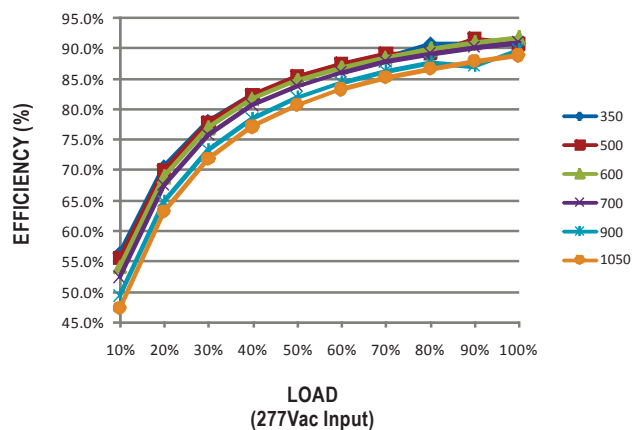
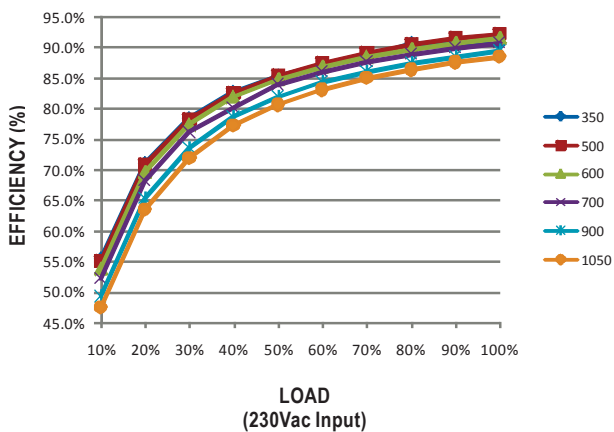


### Constant Current Mode

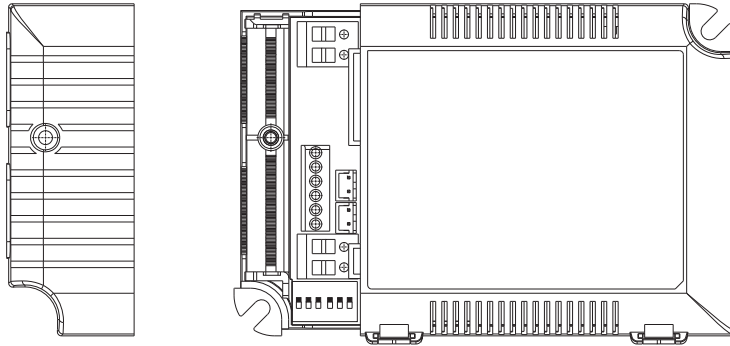


## EFFICIENCY vs LOAD

LCM-40 series possess superior working efficiency that up to 91% can be reached in field applications.



## ■ DIMMING OPERATION



Built-in 3 in 1 dimming function, output constant current level can be adjusted through output terminal by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

Please DO NOT connect "DIM-" to "-Vo".

Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	Short	10KΩ	20KΩ	30KΩ	40KΩ	50KΩ	60KΩ	70KΩ	80KΩ	90KΩ	100KΩ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	Short	10KΩ /N	20KΩ /N	30KΩ /N	40KΩ /N	50KΩ /N	60KΩ /N	70KΩ /N	80KΩ /N	90KΩ /N	100KΩ /N	-----
Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%~108%

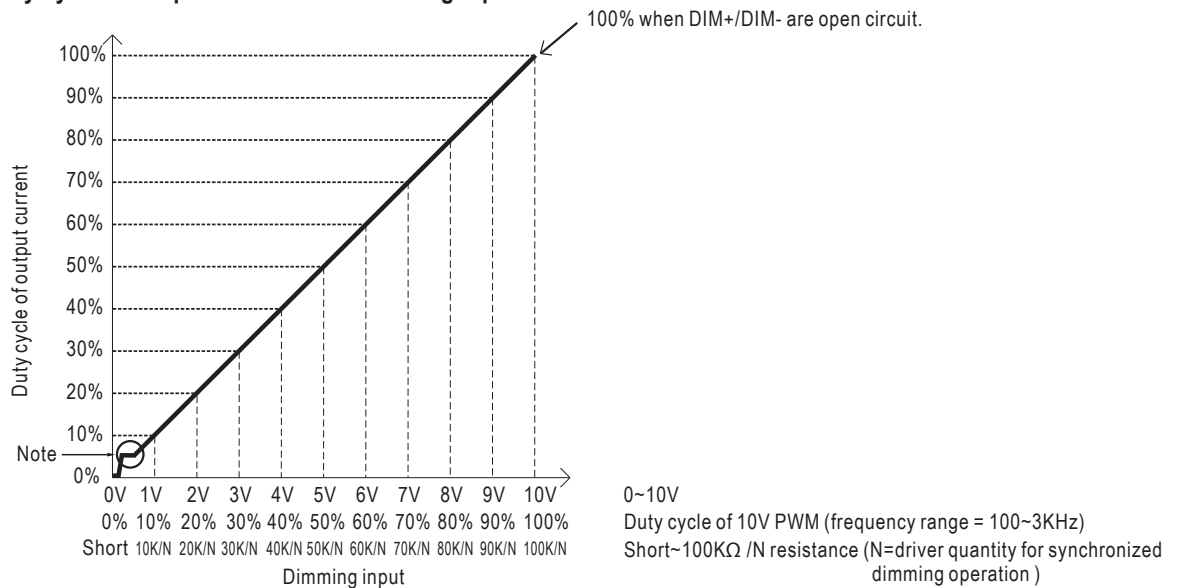
0 ~ 10V dimming function for output current adjustment (Typical)

Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%~108%

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

Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Output current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	100%~108%

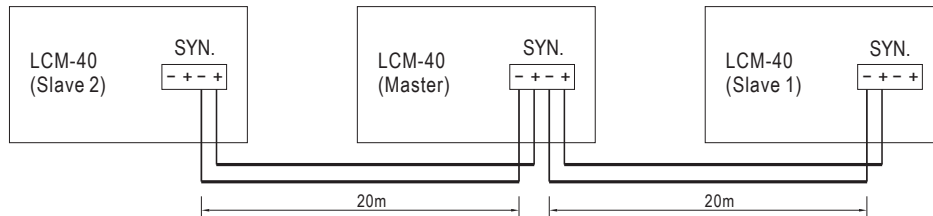
### Duty cycle of output current VS Dimming input



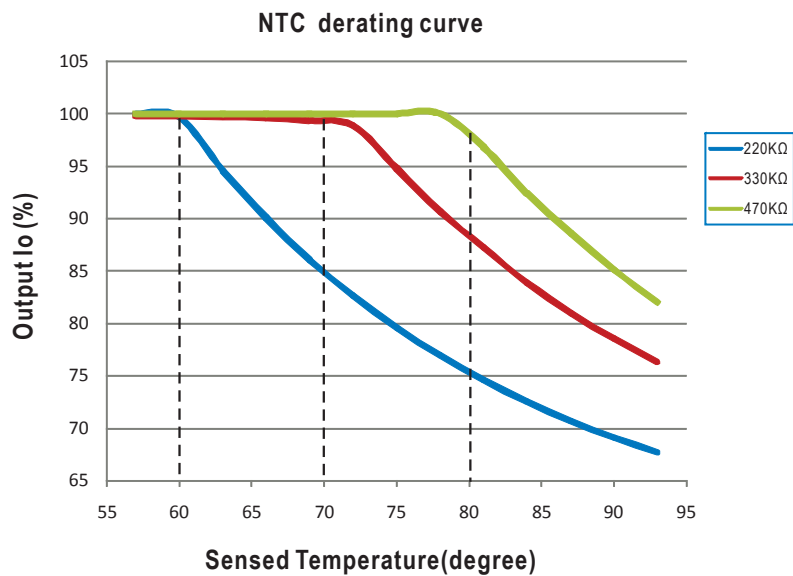
- Note : 1. Min. dimming level is about 6%
2. The output current is not defined when  $0% < I_{out} < 6%$
3. The output current could drop down to 0% when dimming input is about 0KΩ or 0Vdc, or 10V PWM signal with 0% duty cycle

## ■ SYNCHRONIZATION OPERATION

- 10 drivers(max.) synchronization (1 master + 9 slaves)
- Maximum cable length between each units : 20 meter.



## ■ TEMPERATURE COMPENSATION OPERATION



LCM-40 have the built-in temperature compensation function ( $T \uparrow, I_o \downarrow$ ). By connecting a temperature sensor (NTC resistor) between the NTC +/- terminal of LCM-40 and the detecting point on the lighting system or the surrounding environment, output current of LCM-40 could be correspondingly changed to ensure the long life of LED.

- 1.LCM-40 can still be operated well when the NTC resistor is not connected and the value of output current will be the current level that you set through the DIP switch.
- 2.

NTC resistance	Output Current
220K	< 60°C, 100% of the rated current (corresponds to the setting current level) > 60°C, output current begin to reduce, details please refer to the curve.
330K	< 70°C, 100% of the rated current (corresponds to the setting current level) > 70°C, output current begin to reduce, details please refer to the curve.
470K	< 80°C, 100% of the rated current (corresponds to the setting current level) > 80°C, output current begin to reduce, details please refer to the curve.

- Notes: 1. MW does not offer the NTC resistor and all the data above are measured by using THINKING TTC03 series.  
2. If other brands of NTC resistor is applied, please check the temperature curve first.