MEAN WELL LCM-40 Multiple Stage Constant Current Mode LED Driver Owner's Manual

Contents

MEAN WELL LCM-40 Multiple Stage Constant Current Mode LED Driver

Product Specifications

- Model: LCM-40
- Output Current Level:
  - 350mA
  - 500mA
  - 600mA
  - 700mA (default)
- Rated Power: 42W
- DC Voltage Range:
  - 2 ~ 100V
  - 2 ~ 80V
  - 2 ~ 67V
  - 2 ~ 57V
- Open Circuit Voltage (max.): 110V
- Current Ripple: 5.0% max. @ rated current
- Current Tolerance
- Auxiliary DC Output: Nominal 12V @ 50mA for AUX-Type only
- Setup Time: 500ms / 230VAC
- Voltage Range: 180 ~ 295VAC, 254 ~ 392VDC
- Frequency Range: 47 ~ 63Hz

Product Usage Instructions

Setting the Current Level:

The current level can be selected via the DIP switch. Please refer to the DIP SWITCH TABLE section in the user manual for instructions on how to adjust the current level.

Connecting the Driver:

Ensure the AC input is within the specified range (200-240VAC for DA2-Type). Connect the LED load to the driver according to the specified DC voltage range based on the desired current level.

Powering On:

Apply power to the driver within the specified voltage and frequency ranges. Verify that the setup time requirements are met before connecting the load.

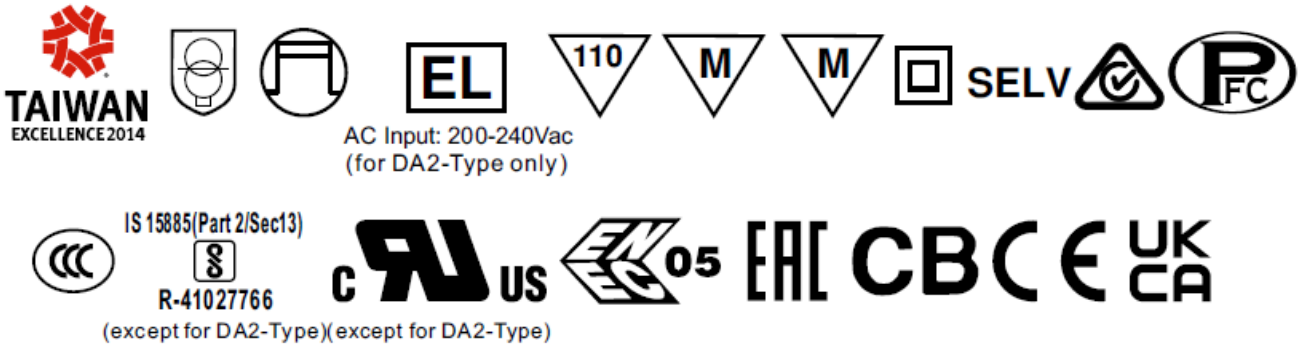
Auxiliary DC Output:

If using the AUX-Type driver, connect any auxiliary devices requiring a nominal 12V output to the designated output port on the driver.

Frequently Asked Questions (FAQ)

- Q: How do I change the current level on the LED driver?
  A: The current level can be adjusted using the DIP switch on the driver. Refer to the DIP SWITCH TABLE section in the user manual for detailed instructions.
- Q: What is the maximum number of LED drivers that can be connected to a 16A circuit breaker?
  A: You can connect up to 26 units with a circuit breaker of type B or up to 44 units with a circuit breaker of type C at 230VAC

Features



- Constant Current mode output with multiple levels selectable by dip switch
- Emergency lighting application is available according to IEC61347-2-13
- Built-in active PFC function and class II design
- Standby power consumption <0.5W
- Functions: DALI interface(logarithm or linear dimming curve selectable), push dimming synchronization up to 10 units
- 3 years warranty

Description

LCM-40DA series is a 40W AC/DC constant current mode output LED driver featuring the multiple levels selectable by dip switch and the DALI interface with compliance to IEC62386. LCM-40DA operates from 180 ~

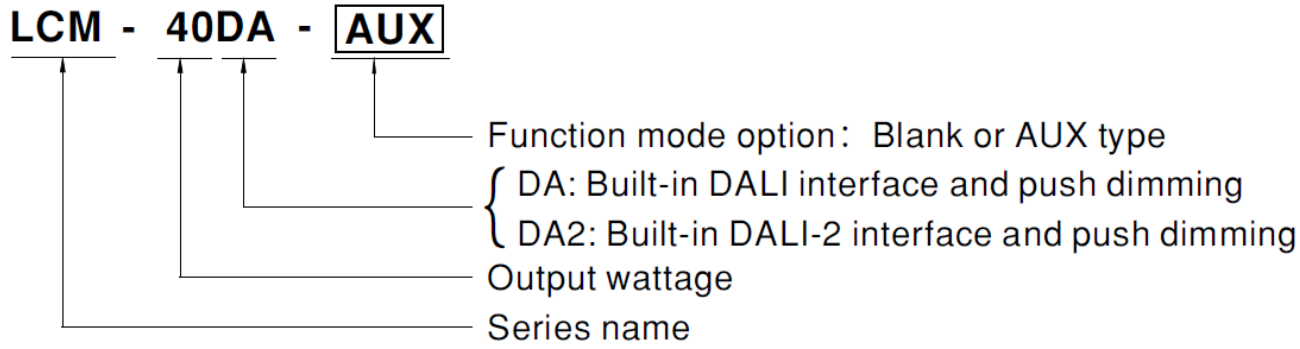
295VAC and offers different current
levels ranging between 350mA and 1050mA. Thanks to the high efficiency up to 91%, with the fanless design, the entire series can operate for -30°C ~+90°C case temperature under free air convection. In addition, LCM-40DA is equipped with push dimming and synchronization functions, so as to provide the optimal design flexibility for LED lighting systems.

Applications

- LED indoor lighting
- LED office lighting
- LED commercial lighting
- LED panel lighting
- Industrial lighting

GTIN CODE
MW Search: **https://www.meanwell.com/serviceGTIN.aspx**

Model Encoding



Type	Function	Note
Blank	standby power consumption <0.5W	In Stock
AUX	standby power consumption <1.2W and Auxiliary DC output(12V/50mA)	By request

SPECIFICATION

MODEL		LCM-40 –					
OUTP	CURRENT LEVEL	Current level selectable via DIP switch, please refer to"DIP SWITCH TABLE" section					
		350mA	500mA	600mA	700mA(default)	900mA	1050mA
	RATED POWER	42W					
	DC VOLTAGE RANGE	2 ~ 100V	2 ~ 80V	2 ~ 67V	2 ~ 57V	2 ~ 45V	2 ~ 40V
	OPEN CIRCUIT VOLTAGE (max.)	110V			65V		
	CURRENT RIPPLE Note.5	5.0% max. @rated current					

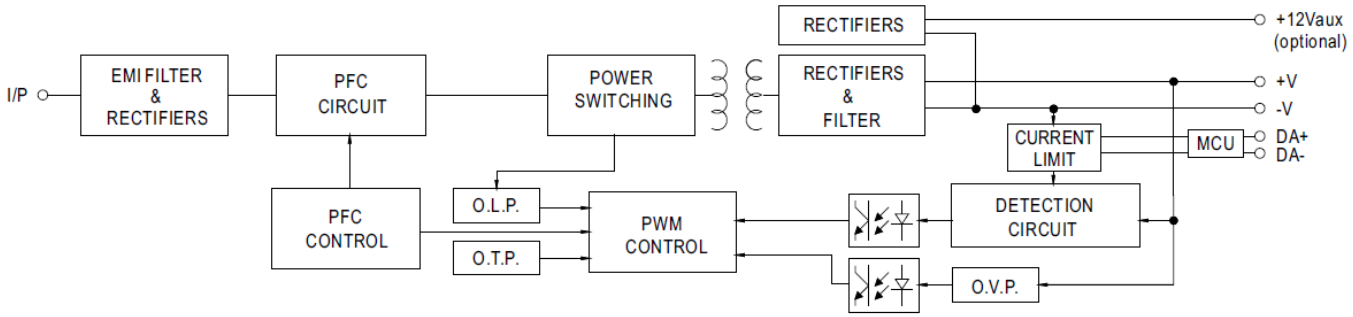
UT	**CURRENT TOLERANCE**	±5%
	AUXILIARY DC OUTPUT	Nominal 12V(deviation 11.4~12.6V)@50mA for AUX-Type only
	SETUP TIME **Note.3** **Note.9**	500ms / 230VAC
INPUT	**VOLTAGE RANGE** **Note.2**	180 ~ 295VAC 254 ~ 392VDC (Please refer to “STATIC CHARACTERISTIC” section)
	FREQUENCY RANGE	47 ~ 63Hz
	POWER FACTOR (Typ.)	PF≧0.975/230VAC, PF≧0.95/277VAC@full load (Please refer to “POWER FACTOR (PF) CHARACTERISTIC” section)
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧75%) (Please refer to “TOTAL HARMONIC DISTORTION(THD)” section)
	EFFICIENCY (Typ.) **Note.4**	91%
	AC CURRENT (Typ.)	0.23A/230VAC 0.2A/277VAC
	INRUSH CURRENT (Typ.)	COLD START 20A(twidth=260μs measured at 50% Ipeak) at 230VAC*;* Per NEMA 410
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	26 units (circuit breaker of type B) / 44 units (circuit breaker of type C) at 230VAC
	LEAKAGE CURRENT	<0.5mA / 240VAC
	STANDBY POWER CONSUMPTION Note.6	<0.5W for Blank-Type, <1.2W for AUX-Type
PROTECTION	**SHORT CIRCUIT**	Constant current limiting, recovers automatically after fault condition is removed
	OVER VOLTAGE	110 ~ 130V
		Shutdown o/p voltage, re-power on to recover
	OVER TEMPERATURE	Shutdown o/p voltage,re-power on to recover
FUNC	**DIMMING**	Please refer to “DIMMING OPERATION” section
	SYNCHRONIZATION	Please refer to “SYNCHRONIZATION OPERATION” section

TION	**TEMP. COMPENSATION**	By external NTC, please refer to “TEMPERATURE COMPENSATION OPERATIO N”section
ENVI RON MENT	**WORKING TEMP.**	Tcase=-30 ~ +90℃ (Please refer to “ OUTPUT LOAD vs TEMPERATURE” section)
	MAX. CASE TEM P.	Tcase=+90℃
	WORKING HUMI DITY	20 ~ 90% RH non-condensing
	STORAGE TEMP. , HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH
	TEMP. COEFFICI ENT	±0.03%/℃ (0 ~ 50℃)
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes
SAFE TY & EMC	**SAFETY STAND ARDS**	UL8750(except for DA2-Type), CSA C22.2 No.250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384 independent, GB19510.14, GB19510.1, BIS IS15885(except for DA2-Type), EAC TP TC 004 approved; According to BS EN/EN61347-2-13 appendix J suitable for emergency installations(EL)(AC Input: 200-240Vac)(for DA2-Type only)
	DALI STANDARD S	IEC62386-101, 102, 207,251
	WITHSTAND VO LTAGE	I/P-O/P:3.75KVAC;I/P-DA:1.5KVAC; O/P-DA:1.5KVAC
	ISOLATION RESI STANCE	I/P-O/P:>100M Ohms / 500VDC / 25℃/ 70% RH
	EMC EMISSION Note.7	Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C(@load≧40%) ; BS EN/EN61000-3-3; GB/T 17743, GB17625.1, EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, light industry l evel(surge immunity Line-Line 2KV), EAC TP TC 020
OTHE RS	**MTBF**	2271.4K hrs min. Telcordia SR-332 (Bellcore) ; 193.7K hrs min. MIL-HDBK-2 17F (25℃)
	DIMENSION	123.5*81.5*23mm (L*W*H)
	PACKING	0.24Kg ; 54pcs/15Kg/1.12CUFT

NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature. 2. De-rating may be needed under low input voltages. Please refer to “STATIC CHARACTERISTIC” se ctions for details. 3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time. 4. Efficiency is measured at 500mA/80V output set by DIP switch. 5. Current ripple is measured 50%~100% of maximum voltage under rated power delivery. 6. Standby power consumption is measured at 180~230VAC. 7. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. (as available on **https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf**) 8. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). 9. Based on IEC 62386-101/102 DALI power on timing and interruption regulations, the set up time ne eds to test with a DALI controller which can support for DALI power on function, otherwise the set up time will be higher than 0.5 second for DA 2-type. 10. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can on ly be used behind a switch without permanently connected to the mains. ※ Product Liability Disclaimer For detailed information, please refer to **https://www.meanwell.com/serviceDisclaimer.aspx**

BLOCK DIAGRAM

PFC fosc : 60KHz
PWM fosc : 80KHz



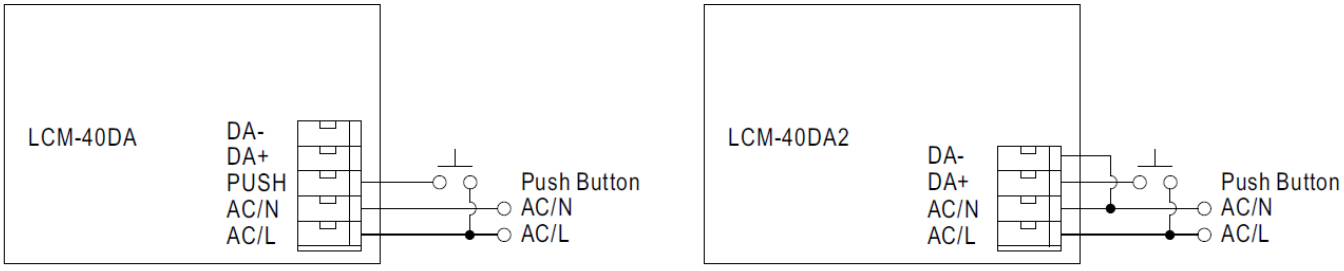
DIP SWITCH TABLE

LCM-40DA/DA2 is a multiple-stage constant current driver, selection of output current through DIP switch is exhibited below.

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

Note: For more current setting,please contact MW's sales.

DIMMING OPERATION



PUSH dimming(primary side)

Action	Action duration	Function
Short push	0.1~1 sec.	Turn ON-OFF the driver
Long push	1.5~10 sec.	Every Long Push changes the dimming direction, dimming up or down
Reset	>11 sec.	Set up the dimming level to 100%

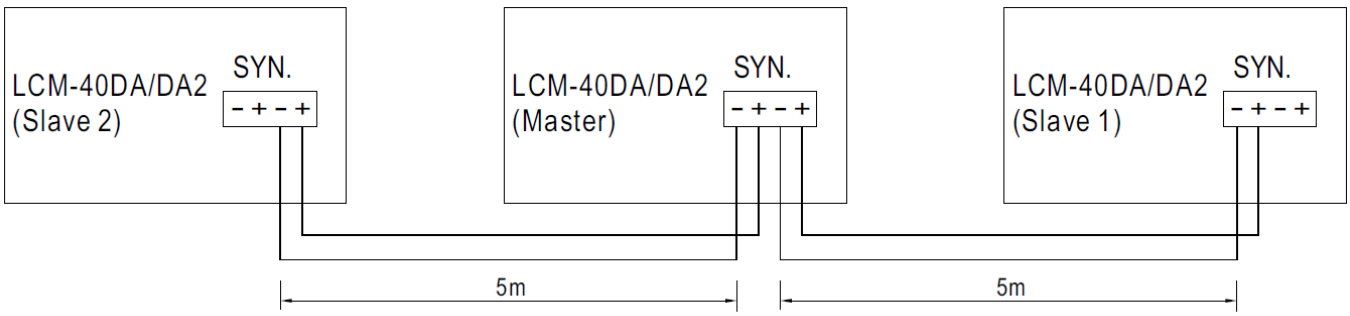
- The factory default dimming level is at 100%.
- If the push action lasts less than 0.05 sec., it will not lead to a change for the status of the driver.
- Up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button.
- The maximum length of the cable from the push button to the last driver is 20 meters.
- The additive push button can be connected only between the PUSH terminal, as displayed in the diagram, and AC/L (in brown or black); it will lead to short circuit if it is connected to AC/N.

DALI interface(primary side; for DA/DA2-Type)

- Apply DALI signal between DA+ and DA-
- DALI protocol comprises 16 groups and 64 addresses
- First step is fixed at 6% of output.

SYNCHRONIZATION OPERATION

- Synchronization up to 10 drivers (1 master + 9 slaves)
- Dimming operating range: 10%~100%
- Sync cable length: < 5m
- Sync cable type: Flat cable
- Sync cable cross-section area: 22 – 24 AWG (0.2~0.3mm2)



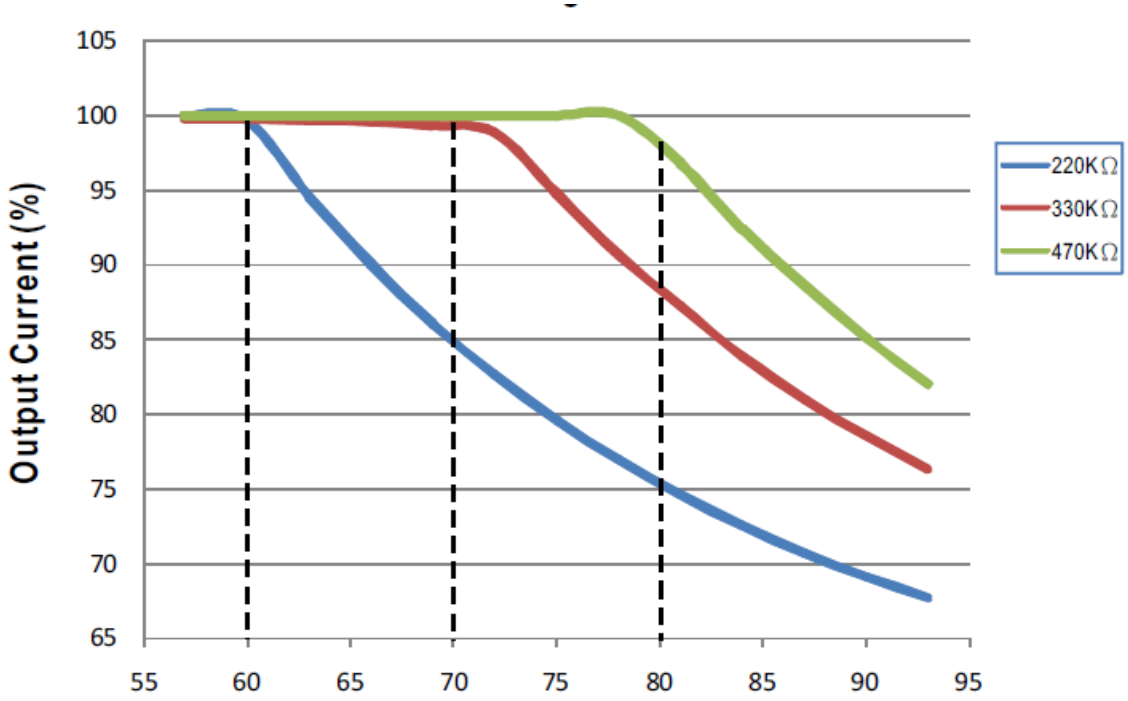
NOTE:

1. Please make sure all units are set to 100% dimming setting (factory default) before synchronizing.
2. Min. Dimming operating range depends on a dimmer setting.

TEMPERATURE COMPENSATION OPERATION

LCM-40DA/DA2 has the built-in temperature compensation function; by connecting a temperature sensor (NTC resistor) between the +NTC / -NTC terminal of LCM-40DA/DA2 and the detecting point on the lighting system or

the surrounding environment, the output current of LCM-40DA/DA2 could be correspondingly changed, based on the sensed temperature, to ensure the long life of LED.



LCM-40DA/DA2 can still be operated normally when the NTC resistor is not connected and the value of the output current will be the current level selected through the DIP switch.

NTC reference:

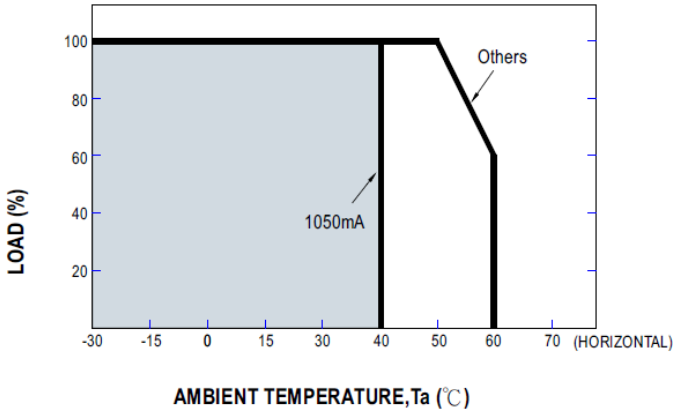
NTC resistance	Output Current
220K	< 60°C, 100% of the rated current (corresponds to the setting current level) > 60°C, output current begins to reduce, please refer to the curve for details.
330K	< 70°C, 100% of the rated current (corresponds to the setting current level) > 70°C, output current begins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

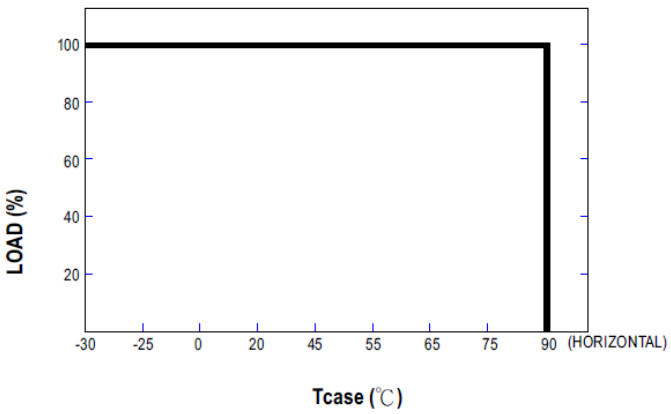
Notes:

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

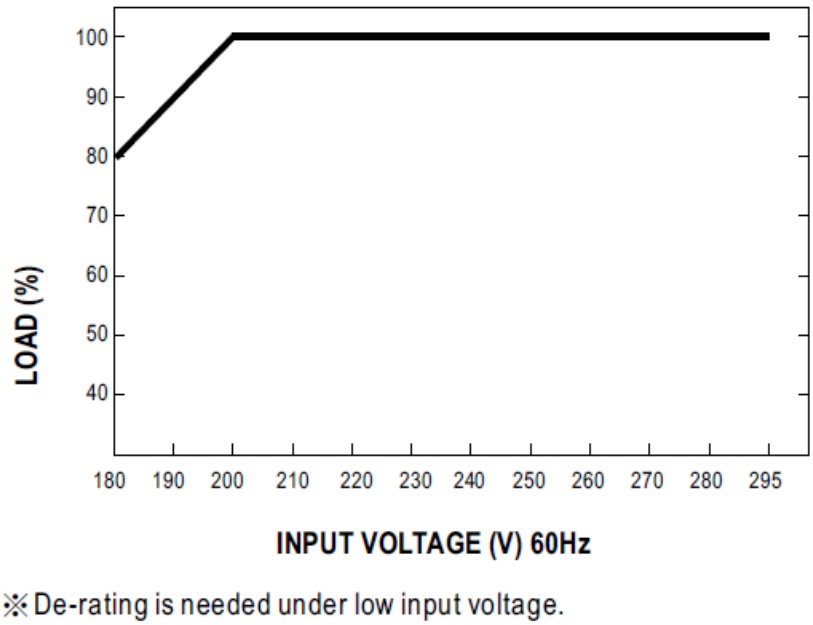
Dimming and synchronization function of the driver will be invalid when the “temperature compensation” function is in use.

OUTPUT LOAD vs TEMPERATURE





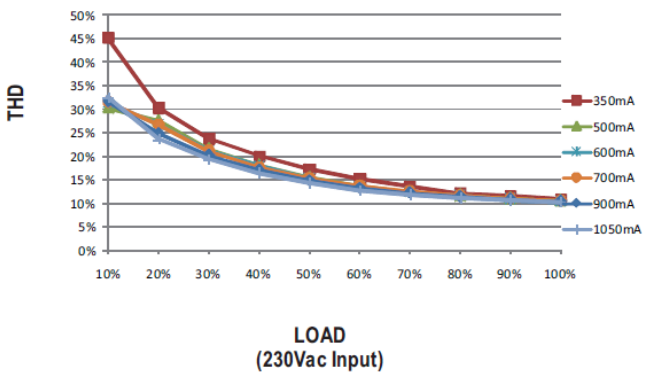
STATIC CHARACTERISTIC

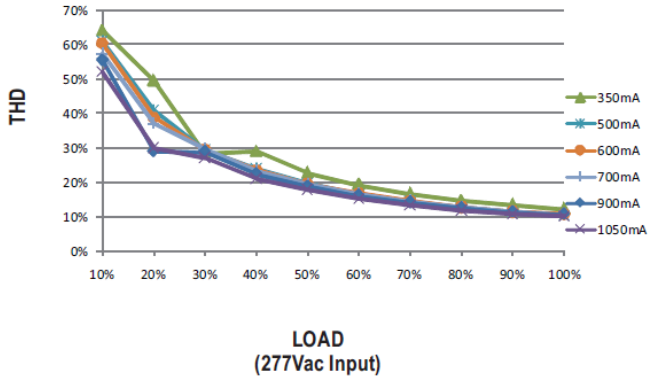


De-rating is needed under low input voltage.

TOTAL HARMONIC DISTORTION (THD)

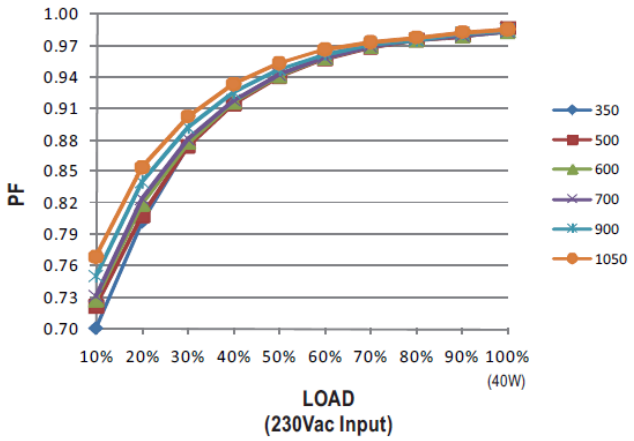
※Tcase at 80℃

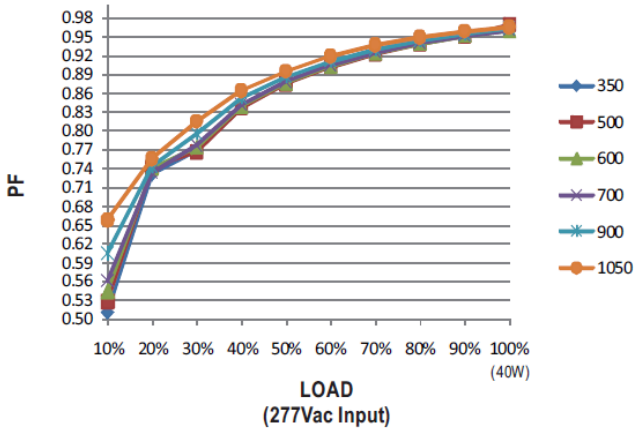




POWER FACTOR (PF) CHARACTERISTIC

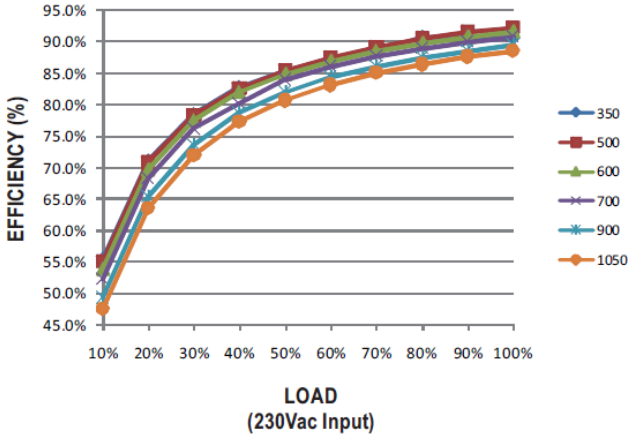
※ Tcase at 80℃

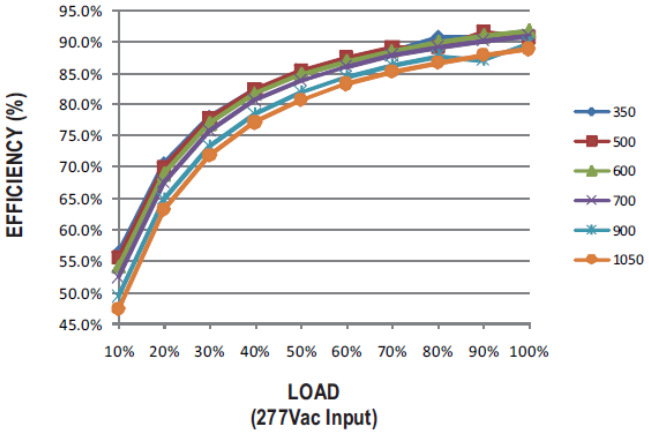




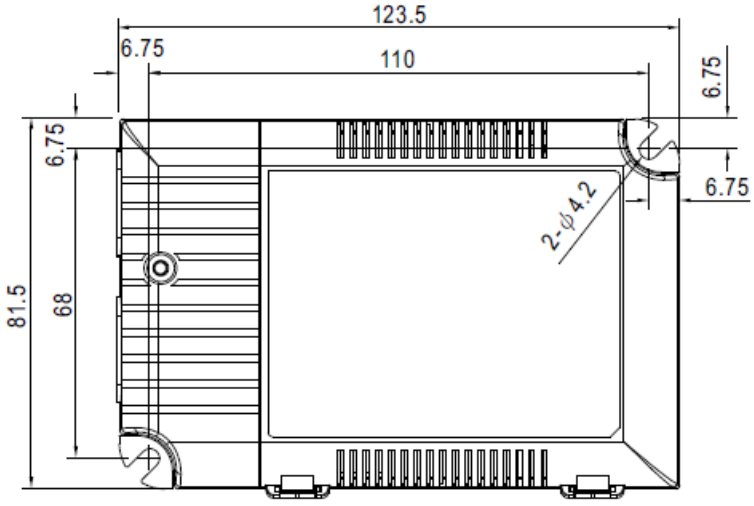
EFFICIENCY vs LOAD

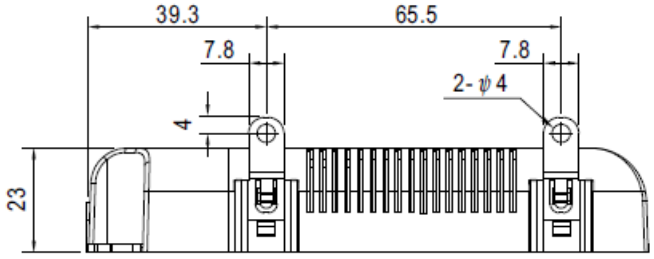
LCM-40DA series possess superior working efficiency that up to 91% can be reached in field applications.
Tcase at 80°C





MECHANICAL SPECIFICATION





※Terminal Pin No. Assignment(TB1)(LCM-40DA)

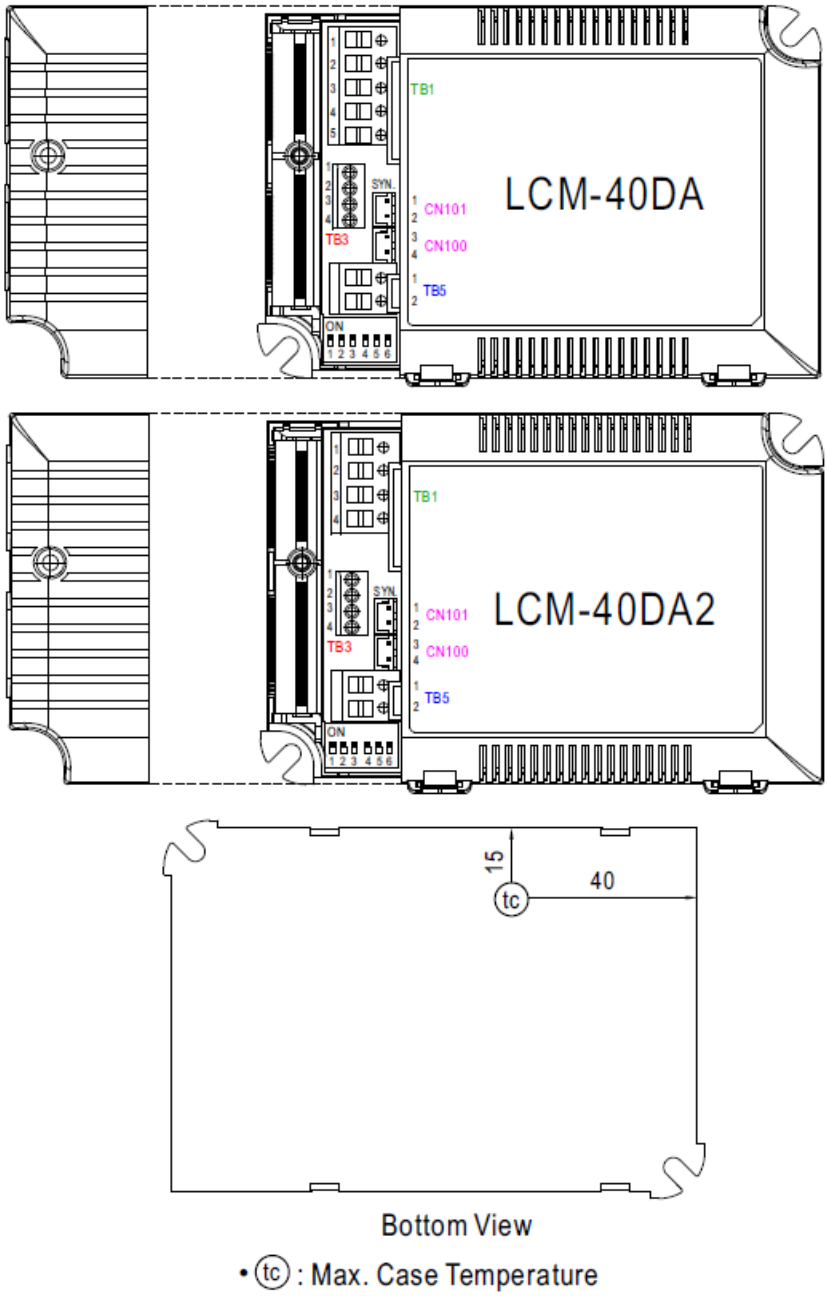
Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DA+
2	AC/N	5	DA-
3	PUSH		

※Terminal Pin No. Assignment(TB1)(LCM-40DA2)

Pin No.	Assignment	Pin No.	Assignment
1	AC/L	4	DA-
2	AC/N		
3	DA+		

※Terminal Pin No. Assignment(TB3)

Pin No.	Assignment	Pin No.	Assignment
1	+FAN(+AUX)	3	+NTC
2	-FAN(-AUX)	4	-NTC



Bottom View

• ⓣⓒ : Max. Case Temperature

Pin1(+FAN) / Pin2(-FAN) is the Auxiliary DC output for the optional model LCM-40DA-AUX; it can be used to drive fan

※Terminal Pin No. Assignment(TB5)

Pin No.	Assignment
1	+V
2	-V

※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	-		

Installation Manual

Please refer to : http://www.meanwell.com/manual.

Documents / Resources

	MEAN WELL LCM-40 Multiple Stage Constant Current Mode LED Driver [pdf] Owner's Manual LCM-40 Multiple Stage Constant Current Mode LED Driver, LCM-40, Multiple Stage Constant Current Mode LED Driver, Constant Current Mode LED Driver, Mode LED Driver, LED Driver

References

- User Manual