

**Features**

- Constant Current mode output with multiple levels selectable by dip switch
- Flicker free design
- Plastic housing with class II design
- Temperature compensation function by external NTC
- Functions: Bluetooth low energy mesh Synchronization up to 10units
- 3 years warranty

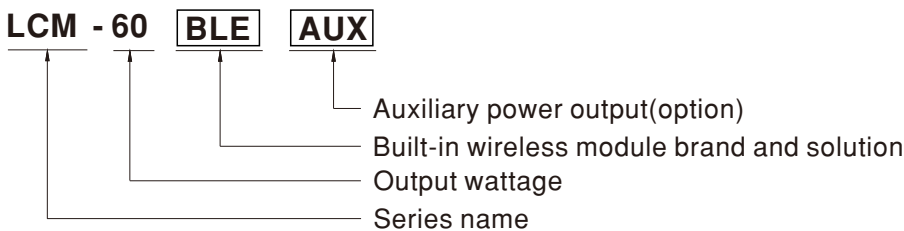
**Applications**

- LED indoor lighting
- LED office lighting
- LED panel lighting
- LED commercial lighting
- Intelligent lighting control

**Description**

LCM-60 IoT series is a 60W AC/DC constant current mode output LED driver featuring the multiple levels selectable by dip switch and integration with Bluetooth control solution. LCM-60 IoT operates from 180~295VAC and offers different current levels ranging between 500mA and 1400mA. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -20°C ~+90°C case temperature under free air convection. In addition, LCM-60 IoT is designed with freely assignable input and synchronization function, so as to provide the optimal design flexibility for LED lighting system and upgrade lighting to be an intelligent lighting system.

**Model Encoding**



IoT wireless Module brand and solution

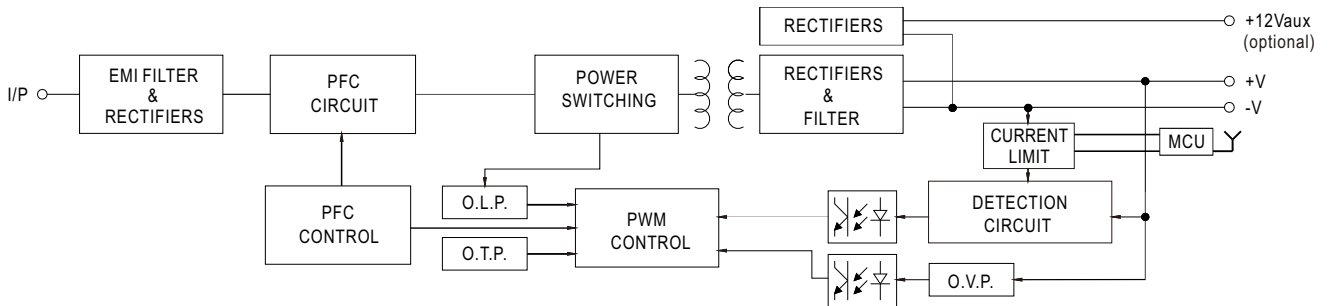
| Brand   | Solution | Wireless standard                         | Note       |
|---------|----------|---|------------|
| Casambi | BLE      | Bluetooth low energy mesh 2.4GHz protocol | By request |
| Tuya    | TY1      | Bluetooth low energy mesh 2.4GHz protocol | By request |
| Silvair | SVA      | Bluetooth low energy mesh 2.4GHz protocol | By request |

**SPECIFICATION**

|   |  |   |         |                |         |         |         |
|---|--|---|---------|----------------|---------|---------|---------|
| <b>MODEL</b>                            |  | LCM-60 <input type="checkbox"/>   |         |                |         |         |         |
| <b>OUTPUT</b>                           | <b>CURRENT LEVEL</b>   | Current level selectable via DIP switch, please refer to "DIP SWITCH TABLE" section   |         |                |         |         |         |
|   |  | 500mA   | 600mA   | 700mA(default) | 900mA   | 1050mA  | 1400mA  |
|   | <b>RATED POWER</b>   | 60.3W   |         |                |         |         |         |
|   | <b>DC VOLTAGE RANGE</b>  | 2 ~ 90V   | 2 ~ 90V | 2 ~ 86V        | 2 ~ 67V | 2 ~ 57V | 2 ~ 42V |
|   | <b>OPEN CIRCUIT VOLTAGE (max.)</b>   | 95V   |         |                | 73V     |         |         |
|   | <b>CURRENT RIPPLE</b> Note.5   | 5.0% max. @rated current  |         |                |         |         |         |
|   | <b>CURRENT TOLERANCE</b>   | ±5%   |         |                |         |         |         |
| <b>AUXILIARY DC OUTPUT</b>              | Nominal 12V(deviation 11.4~12.6V)@50mA for AUX-Type only(option)   |   |         |                |         |         |         |
| <b>INPUT</b>                            | <b>VOLTAGE RANGE</b> Note.2  | 180 ~ 295VAC 254 ~ 392VDC<br>(Please refer to "STATIC CHARACTERISTIC" section)  |         |                |         |         |         |
|   | <b>FREQUENCY RANGE</b>   | 47 ~ 63Hz   |         |                |         |         |         |
|   | <b>POWER FACTOR (Typ.)</b>   | PF ≥ 0.975/230VAC, PF ≥ 0.96/277VAC@full load<br>(Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)   |         |                |         |         |         |
|   | <b>TOTAL HARMONIC DISTORTION</b>   | THD < 20% (@load ≥ 75%)<br>(Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)   |         |                |         |         |         |
|   | <b>EFFICIENCY (Typ.)</b> Note.4  | 91%   |         |                |         |         |         |
|   | <b>AC CURRENT (Typ.)</b>   | 0.32A/230VAC  |         | 0.27A/277VAC   |         |         |         |
|   | <b>INRUSH CURRENT (Typ.)</b>   | COLD START 20A(twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410  |         |                |         |         |         |
|   | <b>MAX. No. of PSUs on 16A CIRCUIT BREAKER</b>   | 25 units (circuit breaker of type B) / 32 units (circuit breaker of type C) at 230VAC   |         |                |         |         |         |
|   | <b>LEAKAGE CURRENT</b>   | <0.5mA / 240VAC   |         |                |         |         |         |
| <b>STANDBY POWER CONSUMPTION</b> Note.8 | <1W  |   |         |                |         |         |         |
|   |  |   |         |                |         |         |         |
| <b>PROTECTION</b>                       | <b>SHORT CIRCUIT</b>   | Constant current limiting, recovers automatically after fault condition is removed  |         |                |         |         |         |
|   | <b>OVER VOLTAGE</b>  | 105 ~ 125V<br>Shutdown o/p voltage, re-power on to recover  |         |                |         |         |         |
|   | <b>OVER TEMPERATURE</b>  | Shutdown o/p voltage, re-power on to recover  |         |                |         |         |         |
| <b>FUNCTION</b>                         | <b>WIRELESS PROTOCOL</b>   | Bluetooth low energy 2.4GHz protocol  |         |                |         |         |         |
|   | <b>DIMMING RANGE</b> Note.9  | 0~100% Minimum dimming level:6%, dim to off   |         |                |         |         |         |
|   | <b>SYNCHRONIZATION</b>   | Please refer to "SYNCHRONIZATION OPERATION" section   |         |                |         |         |         |
|   | <b>TEMP. COMPENSATION</b>  | By external NTC, please refer to "TEMPERATURE COMPENSATION OPERATION" section   |         |                |         |         |         |
| <b>ENVIRONMENT</b>                      | <b>WORKING TEMP.</b>   | Tcase=-20 ~ +90°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)  |         |                |         |         |         |
|   | <b>MAX. CASE TEMP.</b>   | Tcase=+90°C   |         |                |         |         |         |
|   | <b>WORKING HUMIDITY</b>  | 20 ~ 90% RH non-condensing  |         |                |         |         |         |
|   | <b>STORAGE TEMP., HUMIDITY</b>   | -40 ~ +80°C, 10 ~ 95% RH  |         |                |         |         |         |
|   | <b>TEMP. COEFFICIENT</b>   | ±0.03%/°C (0 ~ 50°C)  |         |                |         |         |         |
|   | <b>VIBRATION</b>   | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes   |         |                |         |         |         |
| <b>SAFETY &amp; EMC</b>                 | <b>SAFETY STANDARDS</b>  | UL8750, 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, EAC TP TC 004 approved |         |                |         |         |         |
|   | <b>WITHSTAND VOLTAGE</b>   | I/P-O/P:3.75KVAC  |         |                |         |         |         |
|   | <b>ISOLATION RESISTANCE</b>  | I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH   |         |                |         |         |         |
|   | <b>EMC EMISSION</b> Note.7   | Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C(@load ≥ 40%) ; BS EN/EN61000-3-3; GB17625.1, GB17743, EAC TP TC 020                                      |         |                |         |         |         |
| <b>EMC IMMUNITY</b>                     | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61547, light industry level(surge immunity Line-Line 2KV), EAC TP TC 020   |   |         |                |         |         |         |
| <b>OTHERS</b>                           | <b>MTBF</b>  | 193.6K hrs min. MIL-HDBK-217F (25°C)  |         |                |         |         |         |
|   | <b>DIMENSION</b>   | 123.5*81.5*23mm (L*W*H)   |         |                |         |         |         |
|   | <b>PACKING</b>   | 0.24Kg ; 54pcs/15Kg/1.12CUFT  |         |                |         |         |         |
| <b>NOTE</b>                             | <ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.</li> <li>De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</li> <li>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.</li> <li>Efficiency is measured at 900mA/67V output set by DIP switch.</li> <li>Current ripple is measured 60%~100% of maximum voltage under rated power delivery.</li> <li>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.</li> <li>The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</li> <li>The standby power consumption does not need to meet ErP due to the integrated wireless transmitter which is working all the time.</li> <li>The dimming memory function needs at least 5 seconds to complete.</li> <li>The matching mode of TY1 type is on-off-on-off-on by AC or DC power</li> <li>To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.</li> </ol> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |   |         |                |         |         |         |

## ■ BLOCK DIAGRAM

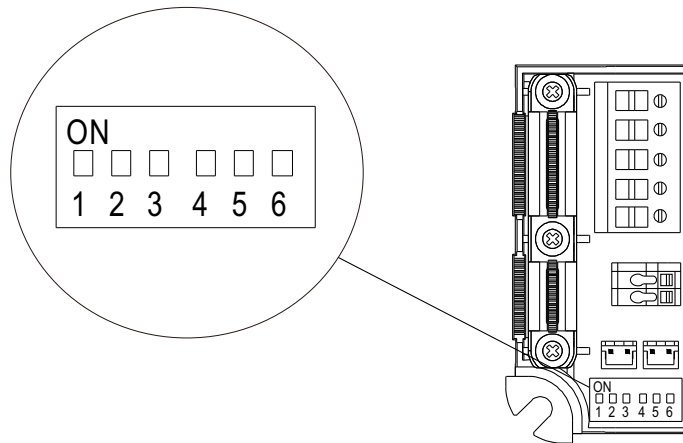
PFC fosc : 60KHz  
PWM fosc : 80KHz



## ■ DIP SWITCH TABLE

LCM-60 IoT series 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    |
|------------------------|----------|------|------|------|------|------|------|
| 500mA                  |          | ---- | ---- | ---- | ---- | ---- | ---- |
| 600mA                  |          | ON   | ---- | ---- | ---- | ---- | ---- |
| 700mA(factory default) |          | ON   | ON   | ---- | ---- | ---- | ---- |
| 900mA                  |          | ON   | ON   | ON   | ---- | ---- | ON   |
| 1050mA                 |          | ON   | ON   | ON   | ON   | ---- | ON   |
| 1400mA                 |          | ON   | ON   | ON   | ON   | ON   | ON   |



NOTE: For more output current is selectable, please contact MEANWELL for details

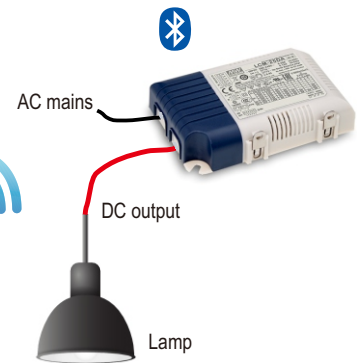
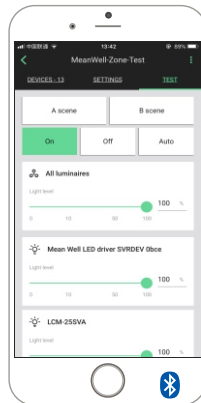
**DIMMING OPERATION**

※Bluetooth control

- To be used through APP available on Apple Store and Google Play Store for iOS and Android.  
Search: BLE with Casambi/TY1 with Smart Life/SVA with Silvair  
Example:



The APP for BLE type is "Casambi" The APP for TY1 type is "Smart Life" The APP for SVA type is "Silvair"



**OFFICIAL WEBSITE AND ECOSYSTEM INFORMATION**

**CASAMBI**

The real time Bluetooth IC temperature is shown in the APP. In case it reaches above 72 °C (equivalent to Tc 85°C), the driver will be turn off to provide a protection. In case the units is cooled down, it can be manually turn ON and back to normal operation again.

NOTE: 1.This software temperature protection is an extra independent function from driver its own hardware over temperature protection(when it is enabled, it needs re-AC power on to recover).

2.In general the software temperature protection is triggered before the hardware one when in over temperature.

3.Website: <https://www.casambi.com>

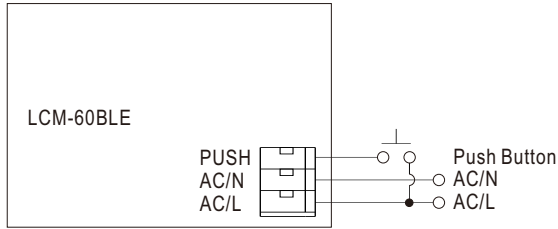


NOTE: 1.Website: <https://www.tuya.com>

**SILVAIR**

NOTE: 1.Website: <https://www.silvair.com>

**■ PUSH DIMMING FUNCTION**

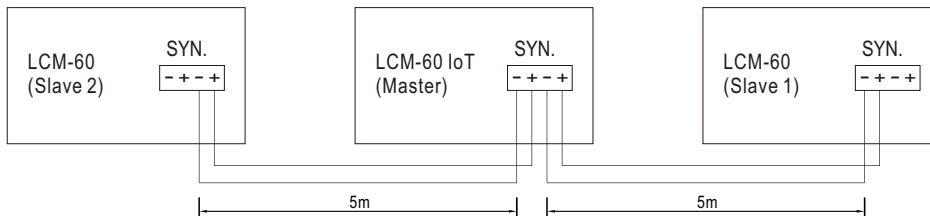


**※Freely assignable (push) input(Push dimming function only for BLE)**

- The LCM BLE series also has one freely assignable AC mains (push) input. As with a CASAMBI sensor module, control pulses can be defined here (e.g. “controls a luminaire”; “controls an element”; “controls a group”; “controls scenes”; “controls all luminaires”; “change scenes”). See the reference connection figure in the above.

**■ 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 (0.2~0.3mm<sup>2</sup>)

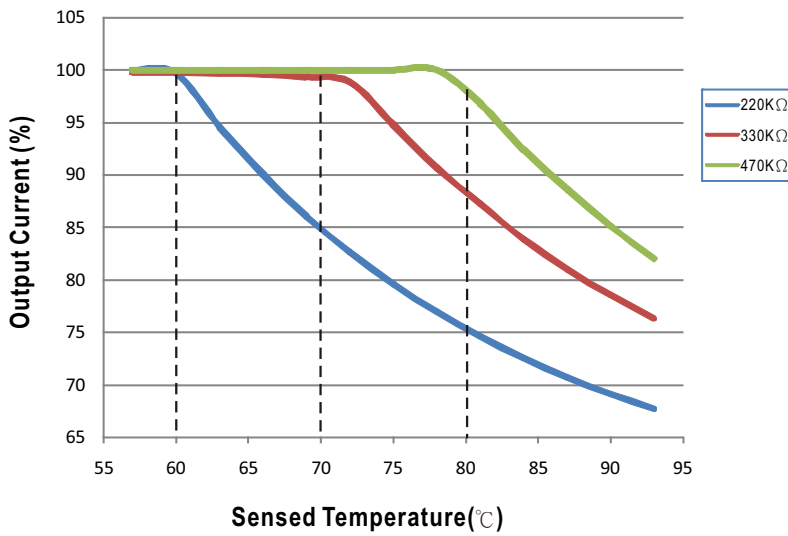


NOTE: 1. Please make sure all units are set to 100% dimming setting (factory default) before synchronizing.  
 2. Min. Dimming operating range depends on dimmer setting.

**TEMPERATURE COMPENSATION OPERATION**

LCM-60 IoT series have the built-in temperature compensation function ; by connecting a temperature sensor (NTC resistor) between the +NTC / -NTC terminal of LCM-60 IoT series and the detecting point on the lighting system or the surrounding environment, output current of LCM-60 IoT could be correspondingly changed, based on the sensed temperature, to ensure the long life of LED.

**NTC derating curve**



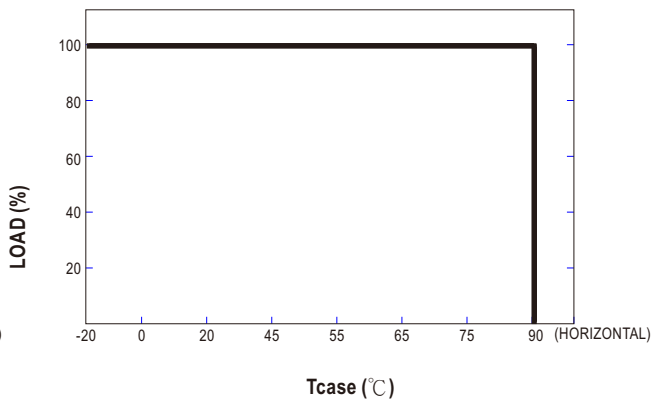
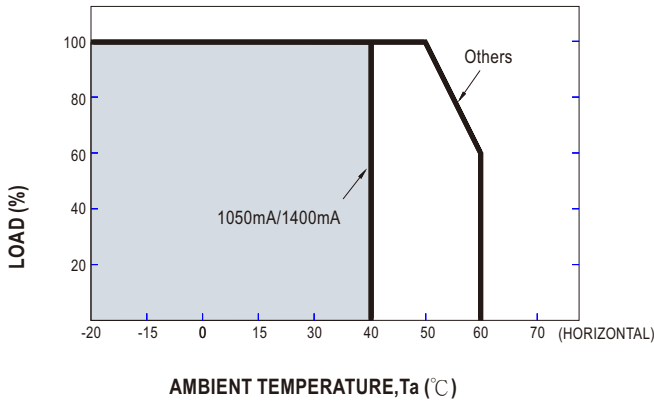
- ⊙ LCM-60 IoT series can still be operated normally when the NTC resistor is not connected and the value of output current will be the current level selected through the DIP switch.
- ⊙ NTC reference:

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

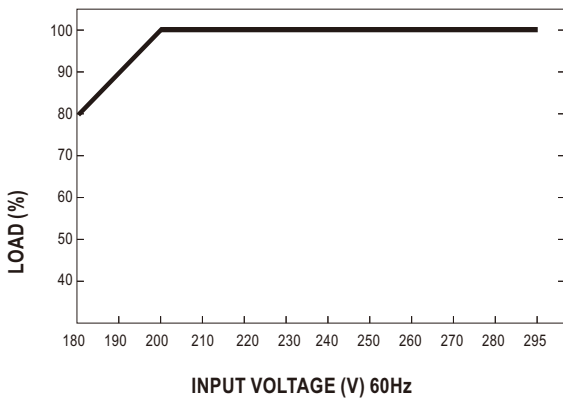
Notes: 1. MEAN WELL does not offer the NTC resistor and all the data above are measured by using THINKING TTC03 series.  
2. If other brands of NTC resistor is applied, please check the temperature curve first.

- ⊙ 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.

**Bluetooth mesh LED driver for intelligent lighting Application**

**LCM-25/40/60 Series**

**Multi-Dimming Function LED Driver and Wireless IoT Solutions**

- 0-10V
- PWM
- Resistance
- Push Dimming
- DALI / DALI 2.0
- EnOcean
- KNX
- PIR
- Bluetooth Mesh
- WiFi.....and so on

3rd Party APPS

APP

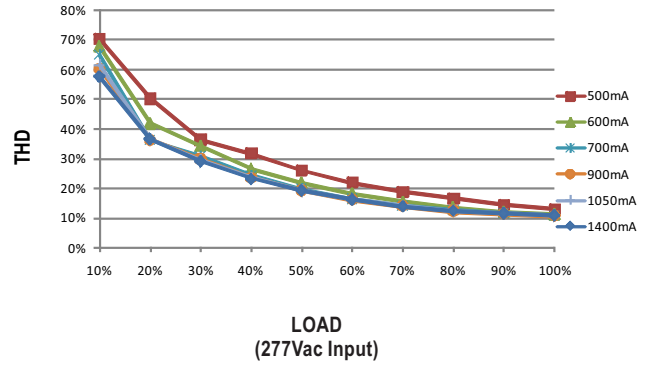
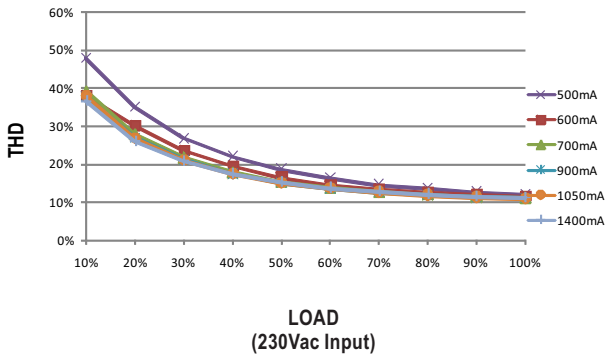
Gateway Router

APP

Building Lighting with IoT Bluetooth Mesh Solution

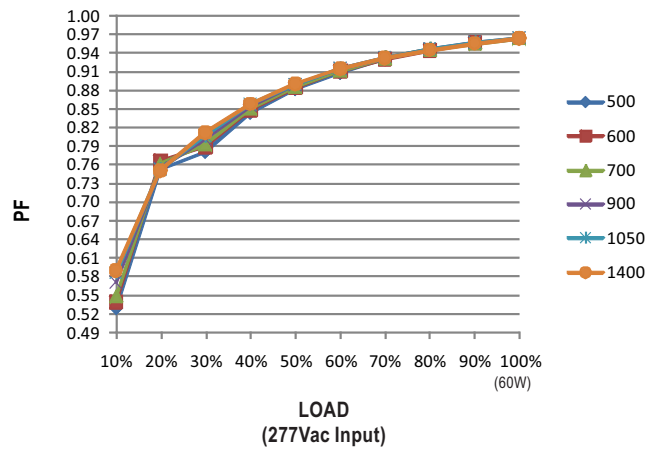
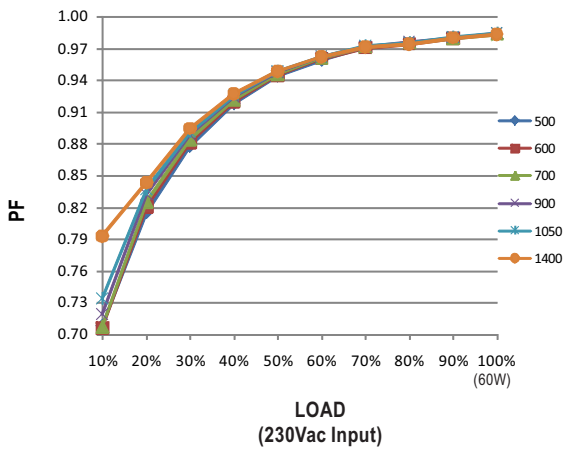
**TOTAL HARMONIC DISTORTION (THD)**

※ Tcase at 80°C



**POWER FACTOR (PF) CHARACTERISTIC**

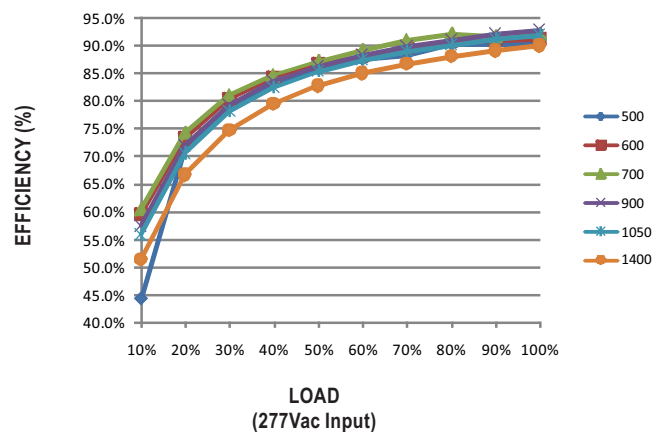
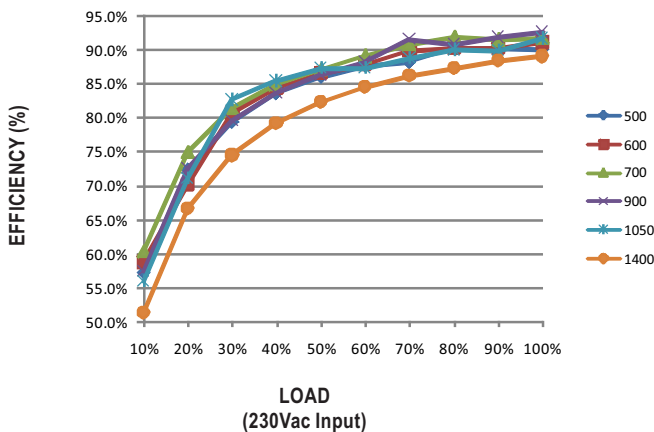
※ Tcase at 80°C



**EFFICIENCY vs LOAD**

LCM-60 IoT series possess superior working efficiency that up to 91% can be reached in field applications.

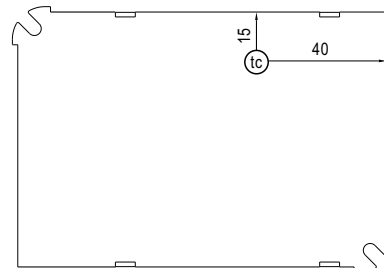
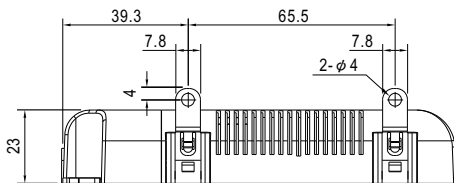
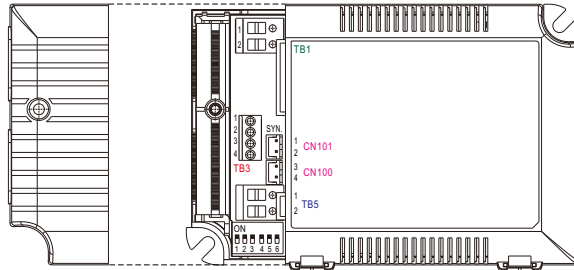
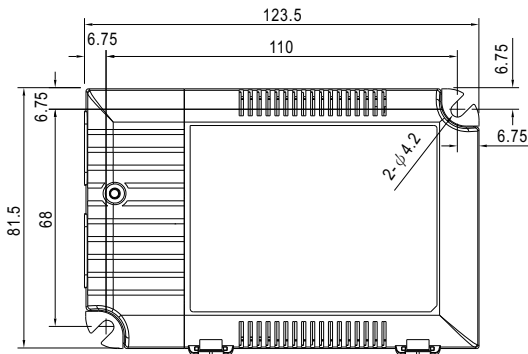
※ Tcase at 80°C





**MECHANICAL SPECIFICATION**

Case No.LCM-60A Unit:mm



Bottom View

•  $\odot$  : Max. Case Temperature < 90°C

※ Terminal Pin No. Assignment(TB1)(Input)

| Pin No. | Assignment     |
|---------|----------------|
| 1       | AC/L           |
| 2       | AC/N           |
| 3       | PUSH(BLE only) |

※ Terminal Pin No. Assignment(TB3)

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

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

※ Terminal Pin No. Assignment(TB5)(Output)

| Pin No. | Assignment |
|---------|------------|
| 1       | +V         |
| 2       | -V         |

※ SYN. Connector(CN101/CN100):

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

**Installation Manual**

Please refer to : <http://www.meanwell.com/manual.html>