



25W Multiple-Stage Constant Current Mode LED Driver

LCM-25KN series



User's Manual



Video



■ Features

- Constant Current mode output with multiple levels selectable by dip switch
- KNX/EIB protocol
- Flicker free design
- Support emergency lighting(EL)
- Integrated constant light output
- Integrated KNX push button interface
- Synchronization up to 10units
- Functions: Manual dim, operation hours, power consumption feedback, log/linear curve selection...etc
- 3 years warranty

■ Applications

- LED indoor lighting
- LED office lighting
- LED architectural lighting
- LED panel lighting
- Industrial lighting

■ GTIN CODE

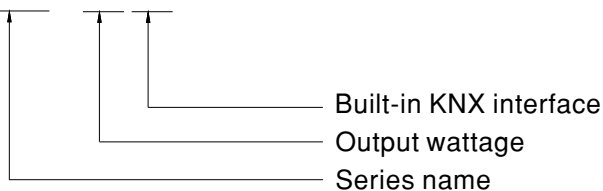
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

LCM-25KN series is a 25W AC/DC constant current mode output LED driver featuring the multiple levels selectable by dip switch and the KNX interface to avoid using the complicated KNX-DALI gateway. LCM-25KN operates from 180~277VAC and offers different current levels ranging between 350mA and 1050mA. Thanks to the efficiency up to 85%, with the fanless design, the entire series is able to operate for -30℃~+85℃ case temperature under free air convection. In addition, LCM-25KN is equipped with push dimming and synchronization so as to provide the optimal design flexibility for LED lighting system.

■ Model Encoding

LCM - 25KN

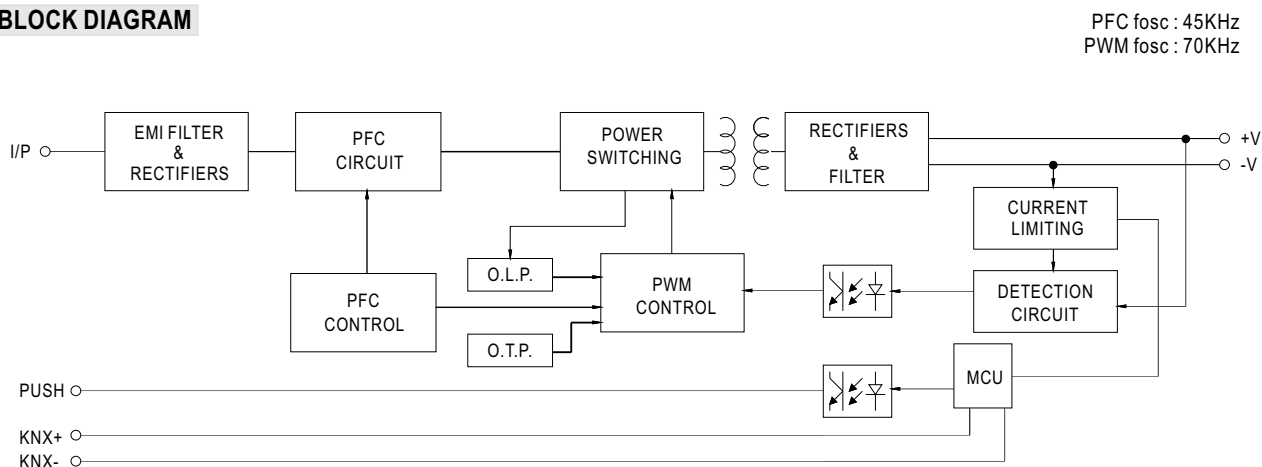




SPECIFICATION

| MODEL | | LCM-25KN | | | | | |
|--------------|---|--|---------|---------|----------------|---------|---------|
| OUTPUT | CURRENT LEVEL | Current level selectable via DIP switch, please refer to "DIP SWITCH TABLE" section | | | | | |
| | | 350mA | 500mA | 600mA | 700mA(default) | 900mA | 1050mA |
| | RATED POWER | 18.9W | 25.2W | | | | |
| | DC VOLTAGE RANGE | 6 ~ 54V | 6 ~ 50V | 6 ~ 42V | 6 ~ 36V | 6 ~ 28V | 6 ~ 24V |
| | OPEN CIRCUIT VOLTAGE (max.) | 59V | 41V | | | | |
| | CURRENT RIPPLE | 5.0% max. @rated current | | | | | |
| | CURRENT TOLERANCE | ±5% | | | | | |
| | SETUP TIME Note.3 | 500ms / 230VAC | | | | | |
| INPUT | VOLTAGE RANGE Note.2 | 180 ~ 277VAC 220 ~ 380VDC (Please refer to "STATIC CHARACTERISTIC" section) | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | |
| | POWER FACTOR (Typ.) | PF ≥ 0.94/230VAC, PF ≥ 0.91/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section) | | | | | |
| | TOTAL HARMONIC DISTORTION | THD< 20%(@load≥50%/230VAC; @load≥75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section) | | | | | |
| | EFFICIENCY (Typ.) Note.4 | 85% | | | | | |
| | AC CURRENT (Typ.) | 0.17A/230VAC 0.15A/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.5 | <0.5W | | | | | |
| PROTECTION | SHORT CIRCUIT | Constant current limiting, recovers automatically after fault condition is removed | | | | | |
| | OVER TEMPERATURE | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | |
| FUNCTION | DIMMING | Please refer to "DIMMING OPERATION" section | | | | | |
| | SYNCHRONIZATION | Please refer to "SYNCHRONIZATION OPERATION" section | | | | | |
| ENVIRONMENT | WORKING TEMP. | Tcase=-30 ~ +85℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) | | | | | |
| | MAX. CASE TEMP. | Tcase=+85℃ | | | | | |
| | WORKING HUMIDITY | 20 ~ 90% RH non-condensing | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80℃, 10 ~ 95% RH | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 50℃) | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | | |
| SAFETY & EMC | SAFETY STANDARDS | 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(Part2/Sec13), EAC TP TC 004 approved | | | | | |
| | KNX STANDARDS | certification | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC; O/P-KN±:500VDC | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P:>100M Ohms / 500VDC / 25℃ / 70% RH | | | | | |
| | EMC EMISSION Note.6 | Compliance to BS EN/EN55015, BS EN/EN61000-3-2 Class C(@load ≥ 50%); 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 level(surge immunity Line-Line 2KV), EAC TP TC 020 | | | | | |
| OTHERS | MTBF | 1994.5K hrs min. Telcordia SR-332 (Bellcore); 201.1K hrs min. MIL-HDBK-217F (25℃) | | | | | |
| | DIMENSION | 105*68*23mm (L*W*H) | | | | | |
| | PACKING | 0.173Kg; 72pcs/13.5Kg/1.04CUFT | | | | | |
| 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" sections 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/50V output set by DIP switch. 5. Standby power consumption is measured at 230VAC. 6. 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) 7. 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). 8. 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. ※ Product Liabilityv Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx | | | | | | |

BLOCK DIAGRAM



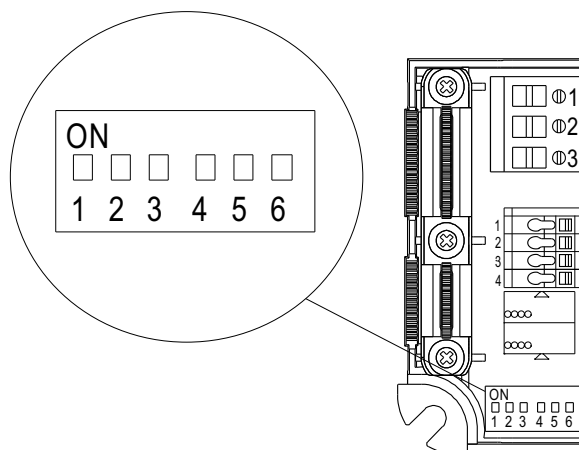
DIP SWITCH TABLE

LCM-25KN 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 | Max.LED voltage |
|------------------------|----------|------|------|------|------|------|------|-----------------|
| 350mA | | ---- | ---- | ---- | ---- | ---- | ---- | 54V |
| 500mA | | ON | ---- | ---- | ---- | ---- | ---- | 50V |
| 600mA | | ON | ON | ---- | ---- | ---- | ---- | 42V |
| 700mA(factory default) | | ON | ON | ON | ---- | ---- | ON | 36V |
| 900mA | | ON | ON | ON | ON | ---- | ON | 28V |
| 1050mA | | ON | ON | ON | ON | ON | ON | 24V |

More current options through DIP switch are listed below.

| Io | DIP S.W. | 1 | 2 | 3 | 4 | 5 | 6 | Max.LED voltage |
|-------|----------|------|------|------|------|------|------|-----------------|
| 450mA | | ---- | ON | ---- | ---- | ---- | ---- | 54V |
| 550mA | | ---- | ---- | ---- | ON | ---- | ---- | 46V |
| 800mA | | ON | ON | ---- | ON | ---- | ---- | 31V |



Note: The Max. LED voltage connected at the output should be always less than the table above.

DIMMING OPERATION

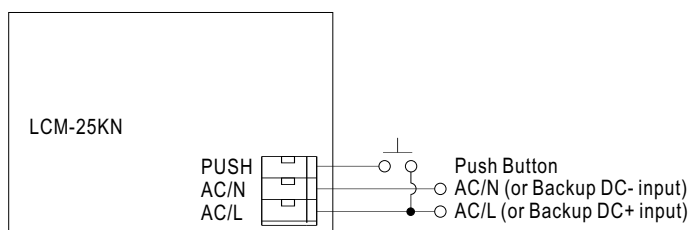
※ KNX interface

- Apply KNX Bus cable between KNX+ and KNX-
- The application program(database) can be downloaded via Online Catalogs from ETS or via <http://www.meanwell.com/productCatalog.aspx>

| Parametrization options | Description |
|----------------------------|--|
| Switch functions | <ul style="list-style-type: none"> • Turn on brightness • Dimming speed for turn on/off • Switch telegram and status • Switch on/off delay |
| Dimming | <ul style="list-style-type: none"> • Dimming speed for 0~100% • Allow switch on via relative dimming • Push dimming with AC input port • Block object for push dimming |
| Brightness value | <ul style="list-style-type: none"> • Dimming speed for transition brightness values • Permit set switch on and off brightness via value • Brightness value and status |
| Fault message | <ul style="list-style-type: none"> • Lamp fault • AC/DC input monitor fault messages |
| Other functions | <ul style="list-style-type: none"> • Reaction on KNX voltage failure/recovery • Power-On level • Dimming curve select(linear/log) • Synchronous dimming output • Block function(Block1&Block2) • Staircase lighting function(multi-stage switch-off) |
| General function | <ul style="list-style-type: none"> • Cyclic monitoring telegram(In operation) |
| 8 Scenes | <ul style="list-style-type: none"> • Recall and save via KNX with 8-bit telegram |
| Operating hours & CLO | <ul style="list-style-type: none"> • Operating hours counter • Constant light out(5 scheduled divisions) |
| Power consumption feedback | <ul style="list-style-type: none"> • Power consumption report |

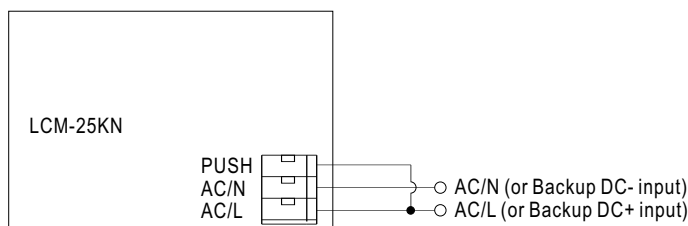
※ PUSH dimming or AC/DC input monitor(Primary side)

◎ PUSH dimming



- The detail function of PUSH dimming, please refer to the database.
- 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.
- In case the PUSH dimming is set locally, up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button.
- In case the PUSH dimming is set independently via ETS, the number of drivers is done through group address and determined by the ETS project designer.

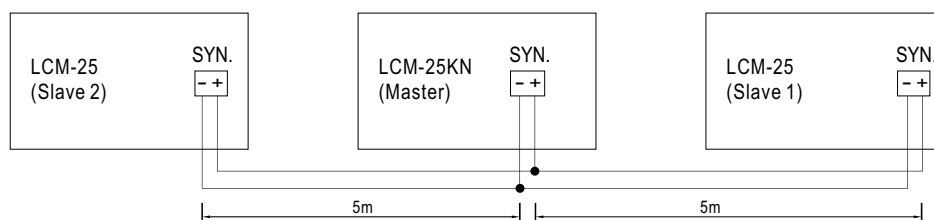
◎ AC/DC input monitor



- KNX Bus need to connected when using AC/DC input monitor
- The detail function of AC/DC input monitor, please refer to the database.

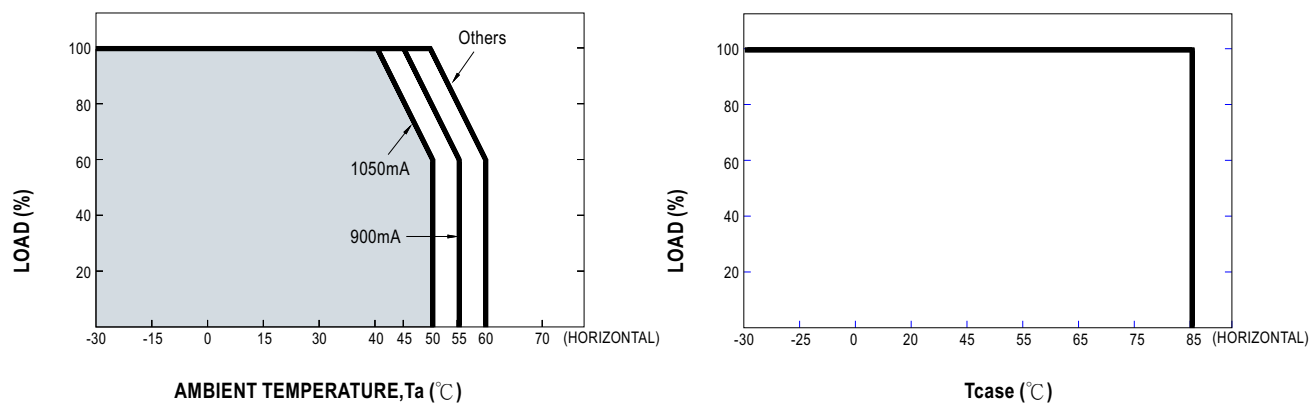
■ SYNCHRONIZATION OPERATION

- 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)

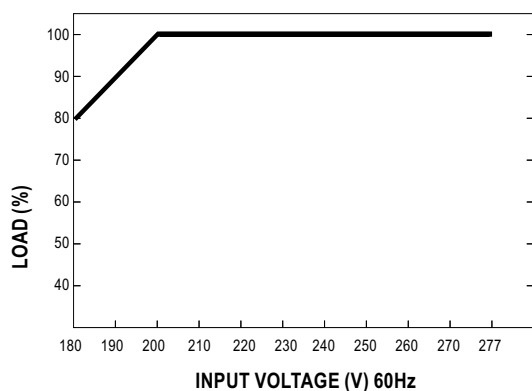


NOTE: 1. Please make sure all units are set to 100% dimming setting (factory default) before synchronizing.
2. Min. Dimming operating range depends on database setting.

OUTPUT LOAD vs TEMPERATURE



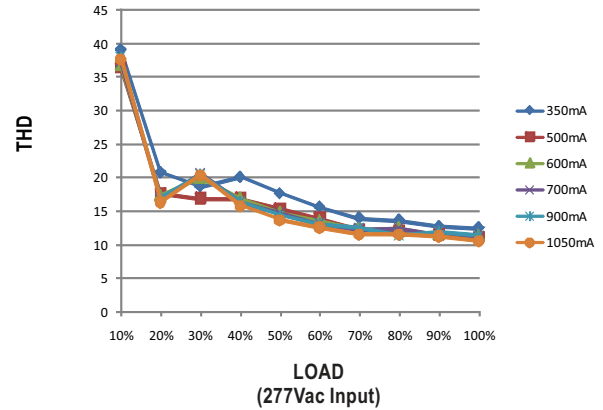
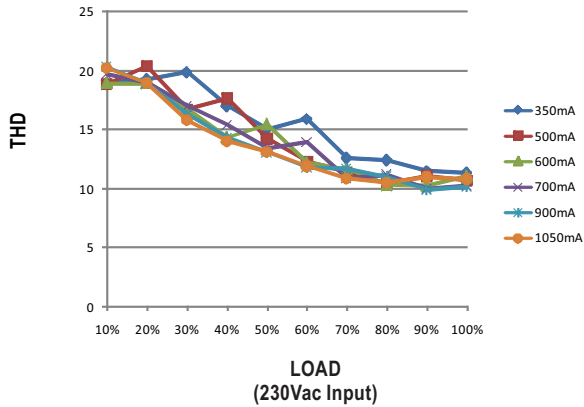
STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

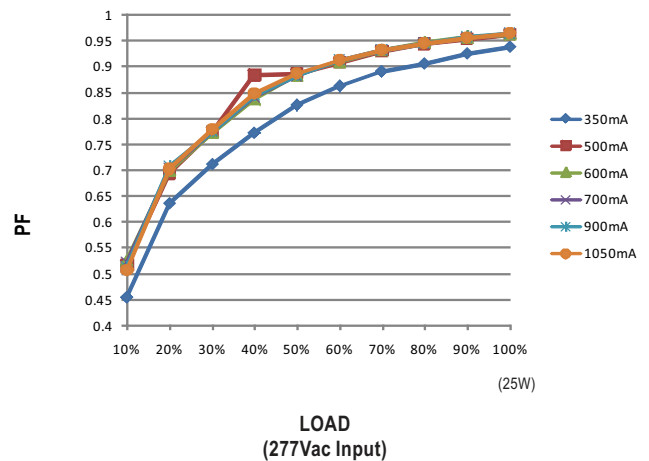
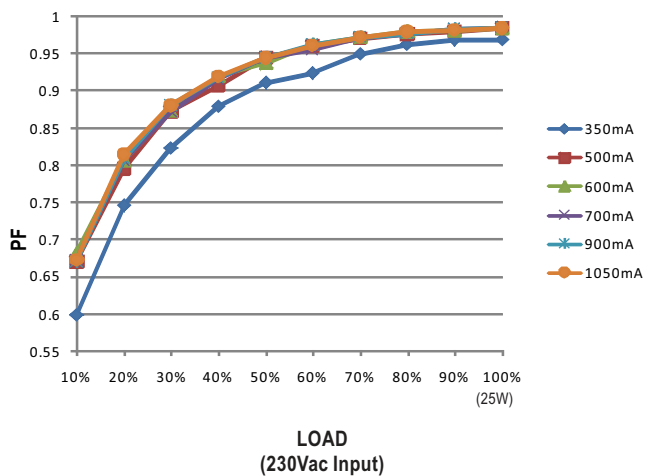
TOTAL HARMONIC DISTORTION (THD)

※ Tcase at 75°C



POWER FACTOR (PF) CHARACTERISTIC

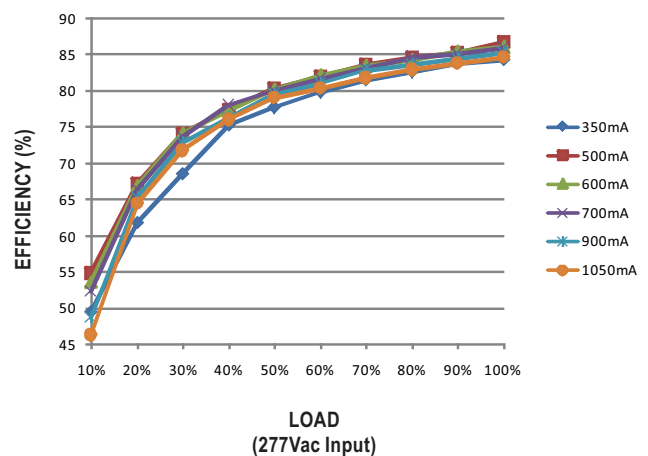
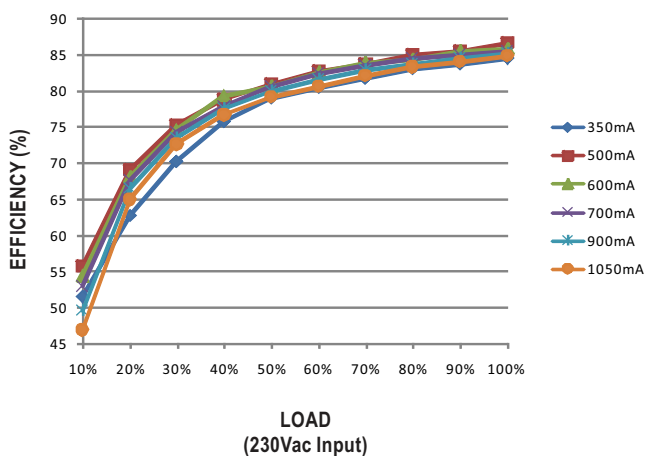
※ Tcase at 75°C



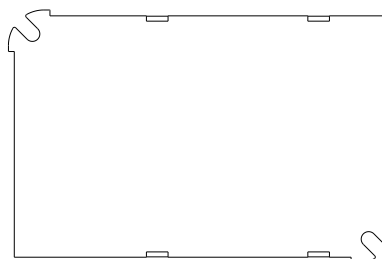
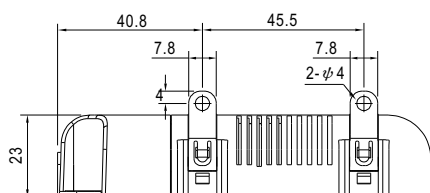
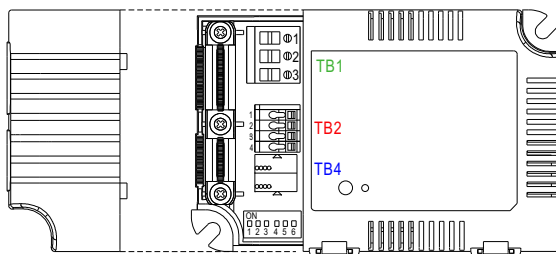
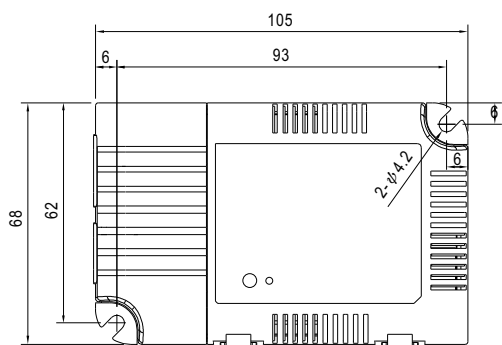
EFFICIENCY vs LOAD

LCM-25KN series possess superior working efficiency that up to 86% can be reached in field applications.

※ Tcase at 75°C



MECHANICAL SPECIFICATION

Case No. LCM-25 Unit: mm Tolerance: ± 1


Bottom View

※ Terminal Pin No. Assignment(TB1)

| Pin No. | Assignment |
|---------|------------|
| 1 | AC/L |
| 2 | AC/N |
| 3 | PUSH |

※ Terminal Pin No. Assignment(TB2)

| Pin No. | Assignment | Pin No. | Assignment |
|---------|------------|---------|------------|
| 1 | +Vo | 3 | -SYN. |
| 2 | -Vo | 4 | +SYN. |

※ Terminal Pin No. Assignment(TB4)

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

Note: Please use wires with a cross section of $0.5 \sim 2.5 \text{ mm}^2$ (14~20AWG) for TB1 and wires with a cross section of $0.5 \sim 1.5 \text{ mm}^2$ (16~20AWG) for TB2.

INSTALLATION MANUAL

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