



25W Multiple-Stage Constant Current Mode LED Driver

LCM-25KN series



■ 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

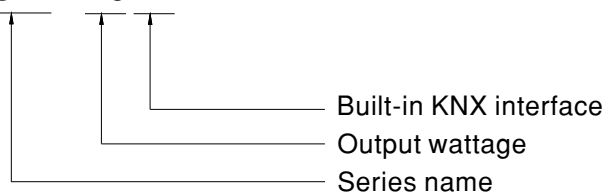
- LED indoor lighting
- LED office lighting
- LED architectural lighting
- LED panel lighting

■ 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°C~+85°C 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

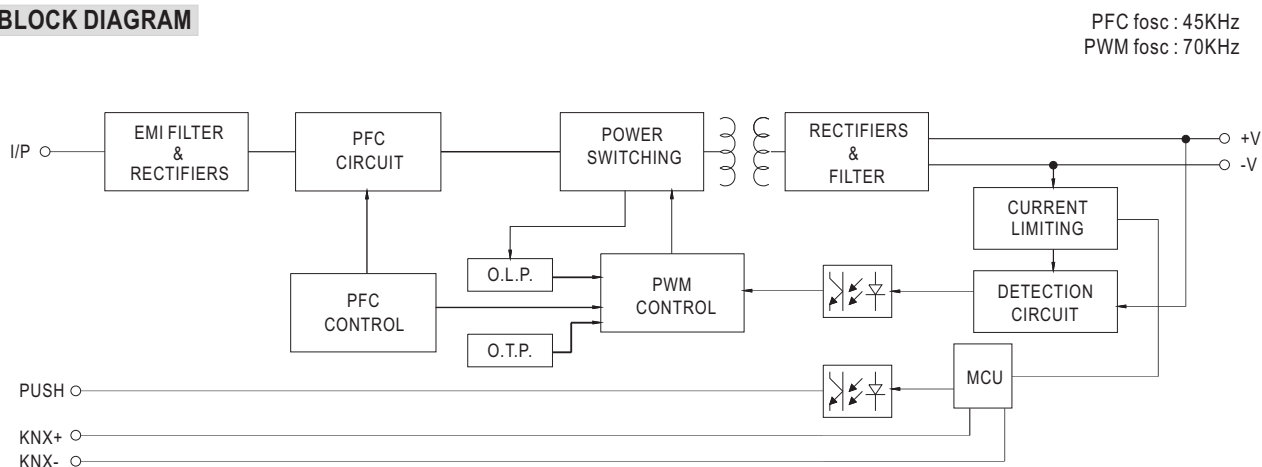




SPECIFICATION

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 ~ 392VDC (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 EN61347-1, EN61347-2-13, EN62384 independent, GB19510.14,GB19510.1, 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 EN55015, EN61000-3-2 Class C(@load ≥ 50%) ; EN61000-3-3; GB17625.1,GB17743, EAC TP TC 020					
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level(surge immunity Line-Line 2KV), EAC TP TC 020					
OTHERS	MTBF	213.3K 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. 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).						

BLOCK DIAGRAM



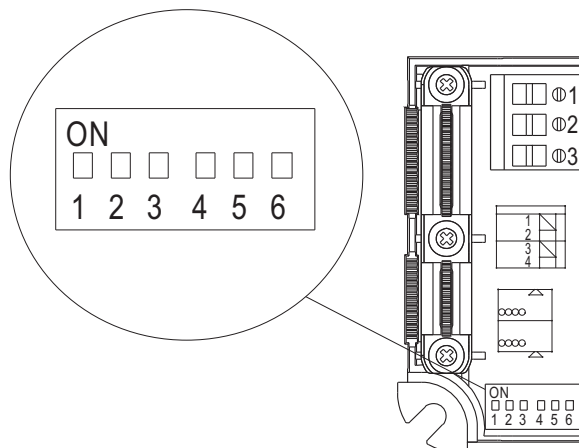
DIP SWITCH TABLE

LCM-25KN is a multiple-stage constant current driver, selection of output current through DIP switch is exhibited below.

I _o	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.

I _o	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

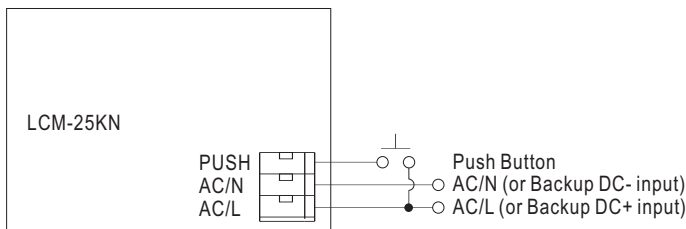
※ KNX interface

- 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	• Turn on brightness • Dimming speed for turn on/off • Switch telegram and status • Switch on/off delay
Dimming	• Dimming speed for 0~100% • Allow switch on via relative dimming • Push dimming with AC input port • Block object for push dimming
Brightness value	• Dimming speed for transition brightness values • Permit set switch on and off brightness via value • Brightness value and status
Fault message	• Lamp fault • AC/DC input monitor fault messages
Other functions	• 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	• Cyclic monitoring telegram(In operation)
8 Scenes	• Recall and save via KNX with 8-bit telegram
Operating hours & CLO	• Operating hours counter • Constant light out(5 scheduled divisions)
Power consumption feedback	• Power consumption report

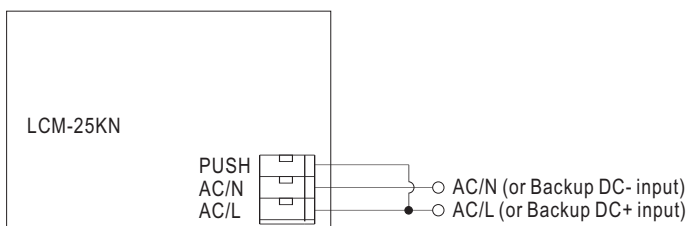
※PUSH dimming or AC/DC input monitor(Primary side)

◎ 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.

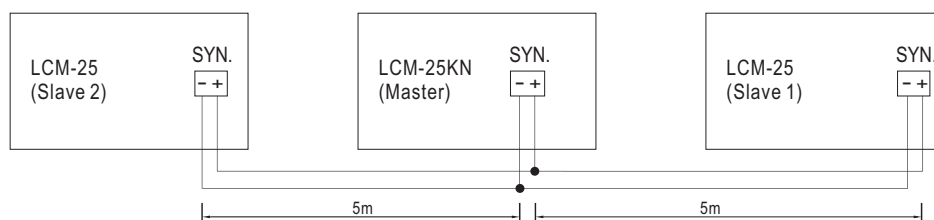
◎ AC/DC input monitor



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

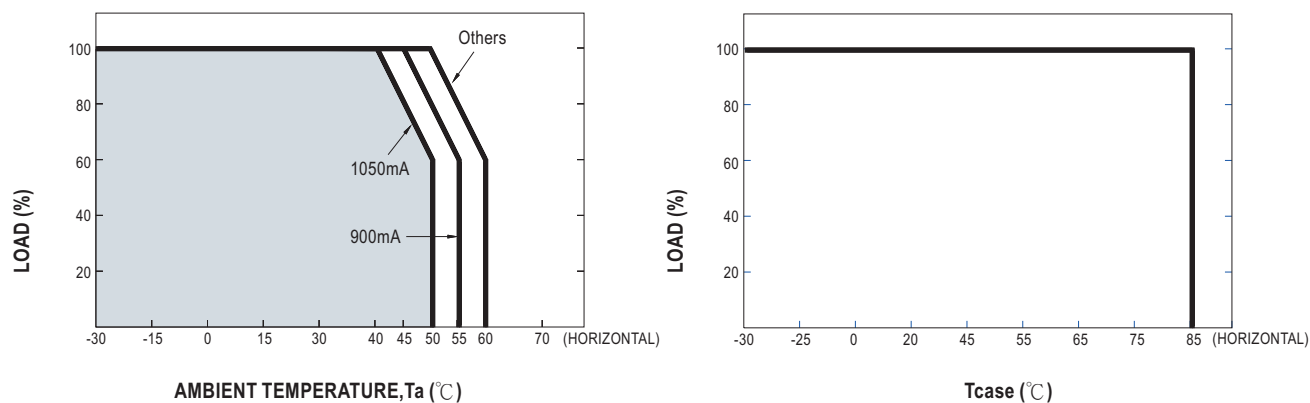
■ SYNCHRONIZATION OPERATION

- 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)

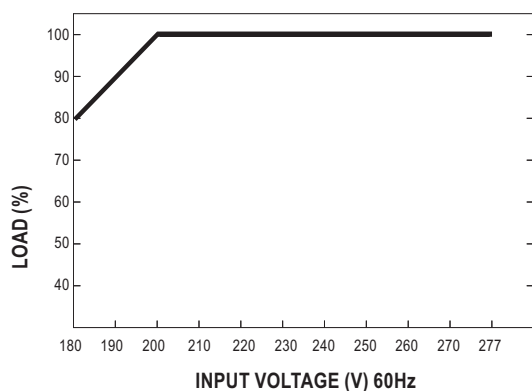


NOTE: 1. Please make sure all units are set to 100% dimming setting (factory default) before synchronizing.
2. Min. Dimming operating range depends on database setting.

■ OUTPUT LOAD vs TEMPERATURE



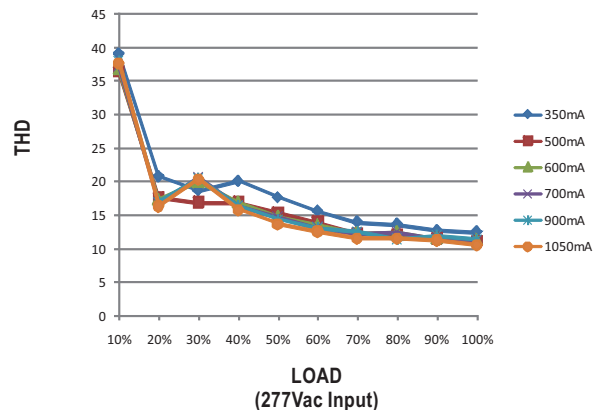
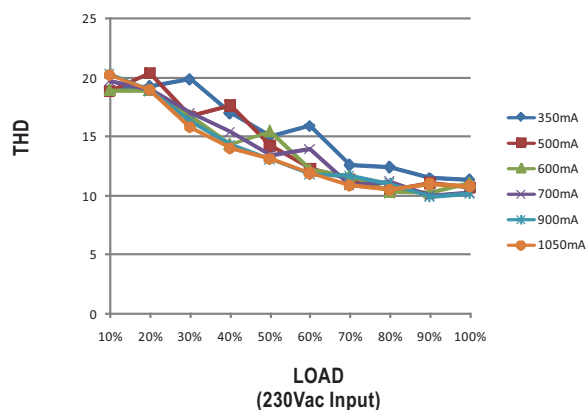
■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

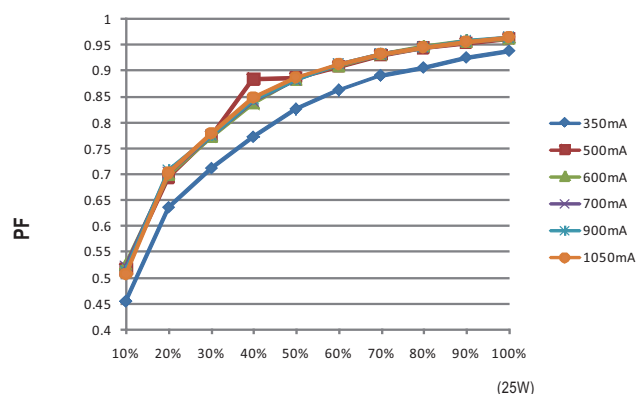
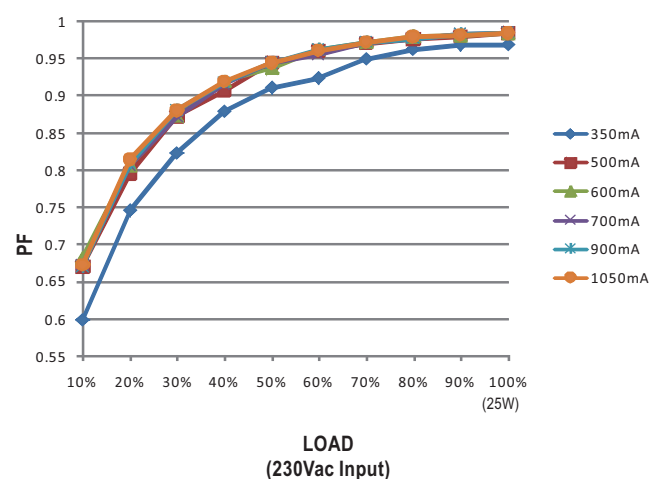
TOTAL HARMONIC DISTORTION (THD)

※ Tcase at 75°C



POWER FACTOR (PF) CHARACTERISTIC

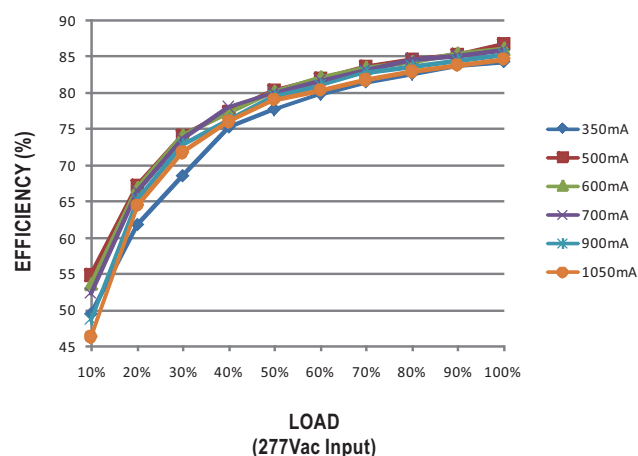
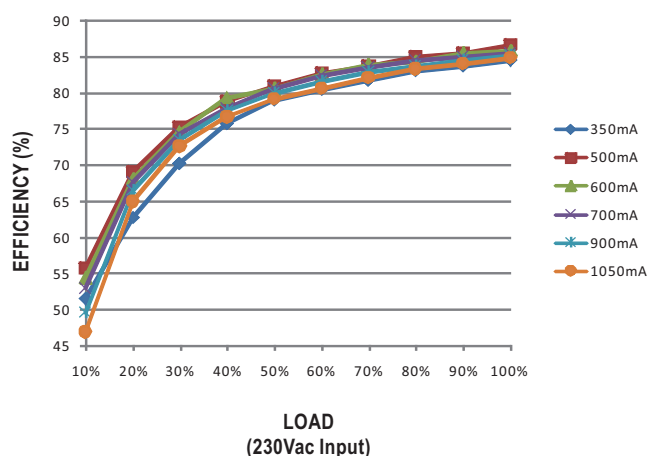
※ Tcase at 75°C



EFFICIENCY vs LOAD

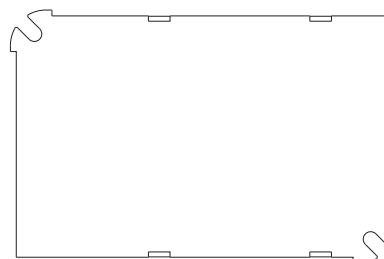
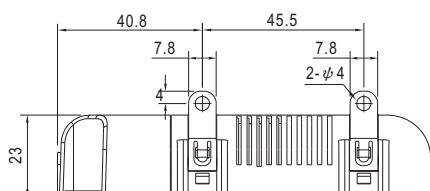
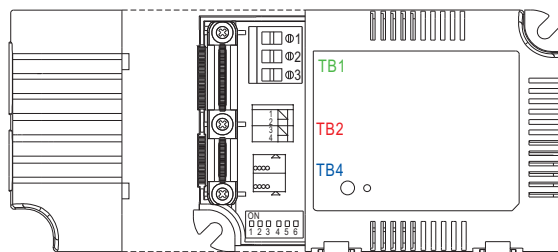
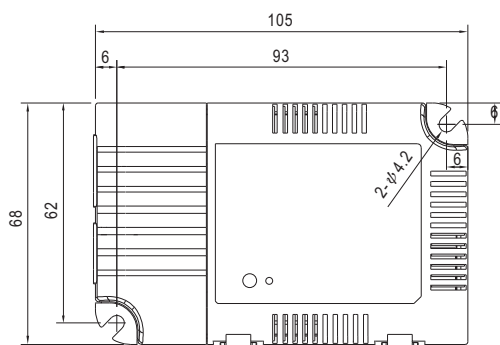
LCM-25KN series possess superior working efficiency that up to 86% can be reached in field applications.

※ Tcase at 75°C



MECHANICAL SPECIFICATION

Case No.LCM-25 Unit:mm



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+

INSTALLATION MANUAL

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