

DALIDR25LCM

DALI Driver Configured 25W

orlight®

FROM SOURCE TO SITE



■ Features

- Constant Current mode output with multiple levels selectable by dip switch
- Plastic housing with class II design
- Built-in active PFC function
- Standby power consumption <0.5W
- Functions: DALI interface(logarithm or linear dimming curve selectable), push dimming, synchronization up to 10units
- 3 years warranty

■ Applications

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

■ Description

LCM-25DA series is a 25W AC/DC constant current mode output LED driver featuring the multiple levels selectable by dip switch and the DALI interface with the compliance to IEC62386-207. LCM-25DA operates from 180~277VAC and offers different current levels ranging between 350mA and 1050mA. Thanks to the efficiency up to 86%, 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-25DA is equipped with push dimming and synchronization so as to provide the optimal design flexibility for LED lighting system.

SPECIFICATION

MODEL		DALI DR25 LCM					
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 <small>Note.3</small>	500ms / 230VAC					
INPUT	VOLTAGE RANGE <small>Note.2</small>	180 ~ 277VAC 254 ~ 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.) <small>Note.4</small>	86%					
	AC CURRENT (Typ.)	0.17A/230VAC		0.15A/277VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A(twidth=260µs measured at 50% I _{peak}) 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 <small>Note.5</small>	<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.	T _{case} =-30 ~ +85°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)					
	MAX. CASE TEMP.	T _{case} =+85°C					
	WORKING HUMIDITY	20 ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)					
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 NO.250.0-08, ENEC EN61347-1, EN61347-2-13, EN62384 independent, GB19510.14, GB19510.1 approved					
	DALI STANDARDS	Comply with IEC62386-101, 102, 207					
	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC; I/P-DA ±: 1.875KVAC; O/P-DA ±: 1.875KVAC					
	ISOLATION RESISTANCE	I/P-O/P: >100M Ohms / 500VDC / 25°C / 70% RH					
	EMC EMISSION <small>Note.6</small>	Compliance to EN55015, EN61000-3-2 Class C (@load ≥ 50%); EN61000-3-3: GB17625.1, GB17743					
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, light industry level (surge immunity Line-Line 2KV)					
OTHERS	MTBF	213.3K hrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	105*68*23mm (L*W*H)					
	PACKING	0.17Kg; 72pcs/13.2Kg/1.04CUFT					
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 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. Efficiency is measured at 500mA/50V output set by DIP switch. Standby power consumption is measured at 230VAC. 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. 						

DALIDR25LCM

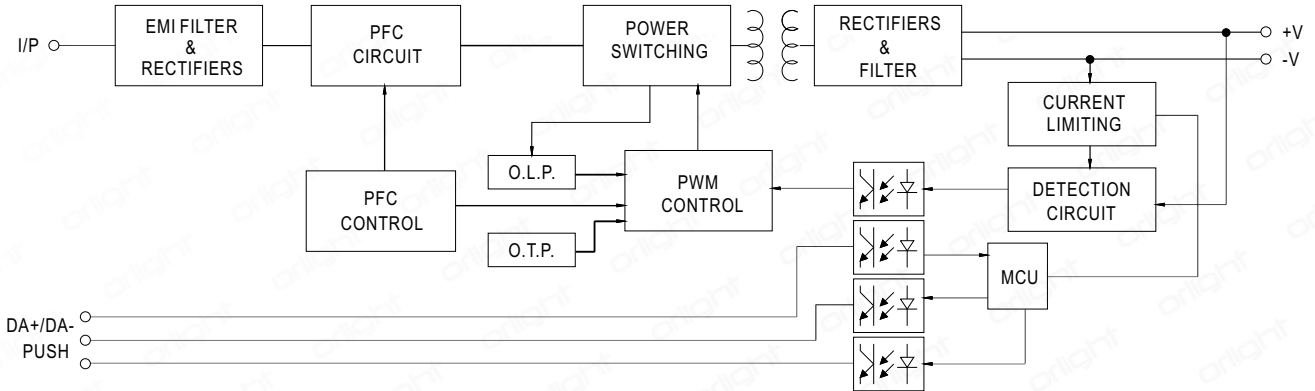
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FROM SOURCE TO SITE

■ BLOCK DIAGRAM

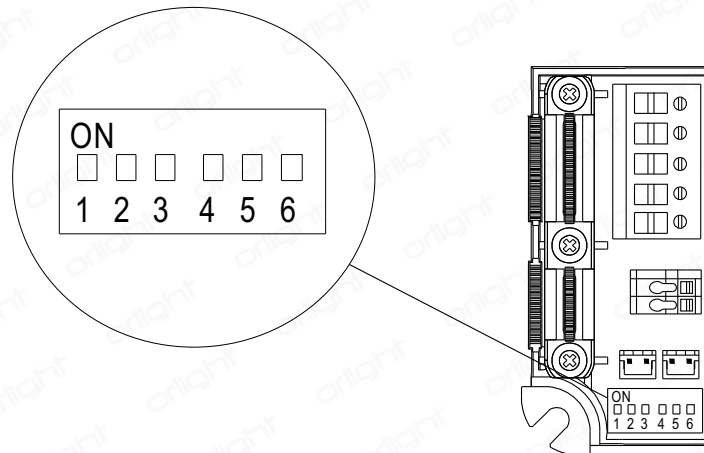
PFC fosc : 45KHz
PWM fosc : 70KHz



■ DIP SWITCH TABLE

DALI DR25 LCM 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



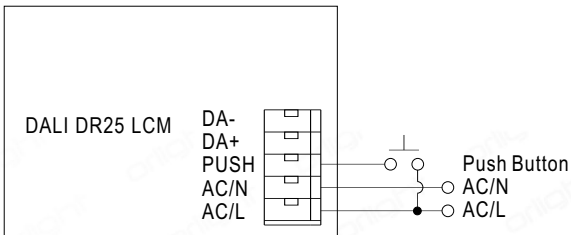
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■ DIMMING OPERATION



※ 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%

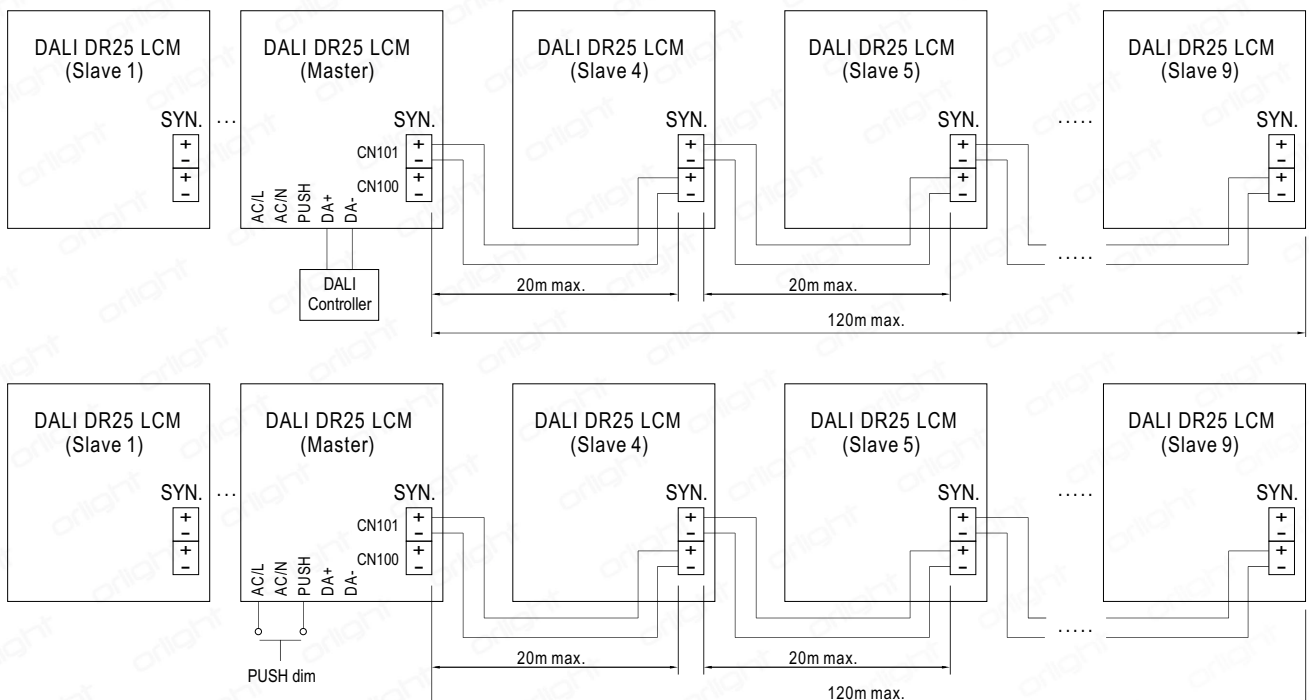
- The factory default dimming level is at 100%.
- If the push action lasts less than 0.05 sec., it will not lead to a change for the status of the driver.
- Up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button.
- The maximum length of the cable from the 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)

- 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

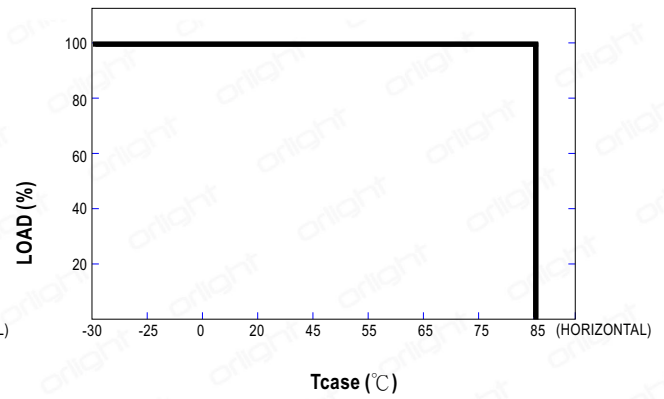
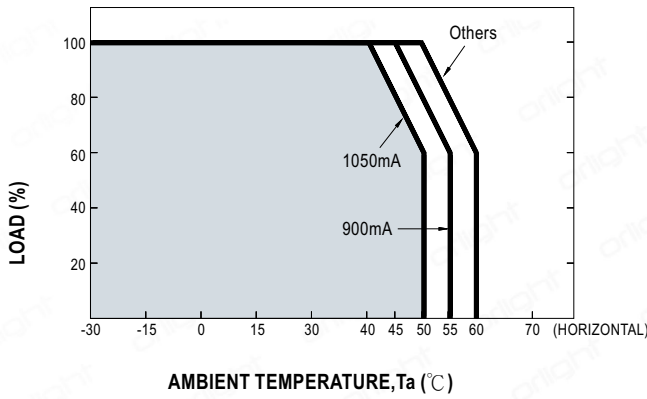
- Synchronization up to 10 drivers (1 master + 9 slaves)
- Maximum cable length between each unit : 20 meter.
- Maximum cable length from the master unit to each end of the last slave units : 120 meters.
- The lighting units driven by DR25 units(Slaves) can be dimmed synchronously through a LCM unit(the master) directly controlled via DALI or push dim dimming function. The wiring is shown as follows.



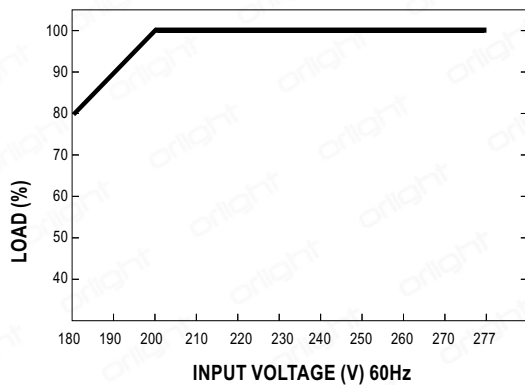
• CN100, CN101 : used to synchronously control the LCM units in parallel.

※ Please make sure all units are set to 100% dimming setting (factory default) before synchronization.

OUTPUT LOAD vs TEMPERATURE



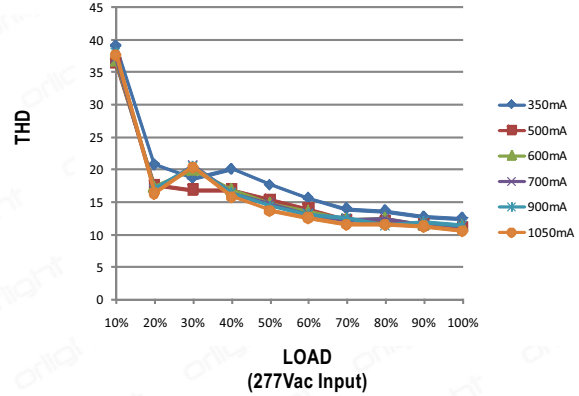
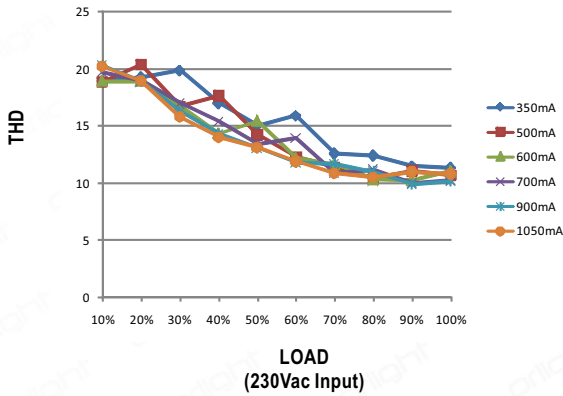
STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

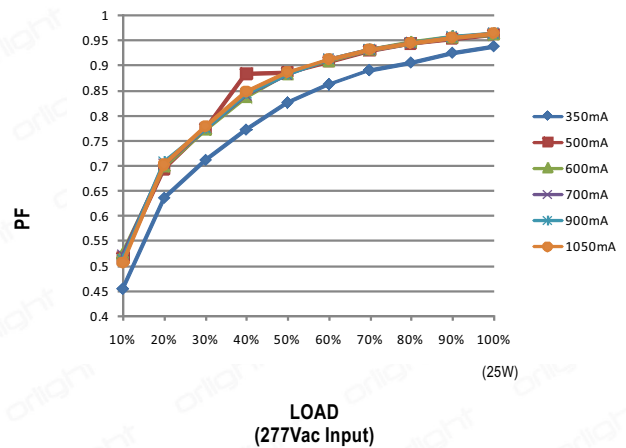
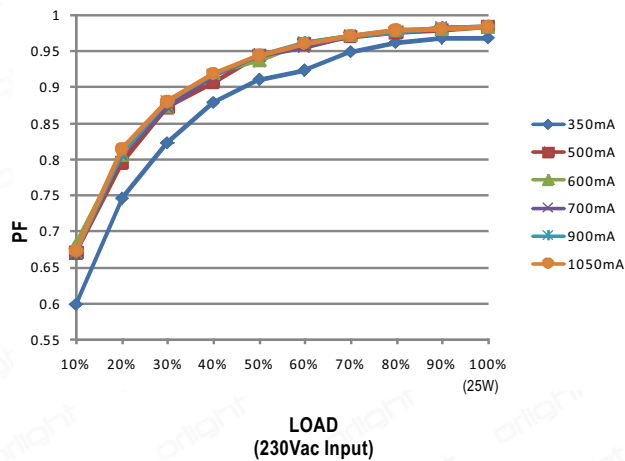
TOTAL HARMONIC DISTORTION (THD)

※ Tcase at 75°C



POWER FACTOR (PF) CHARACTERISTIC

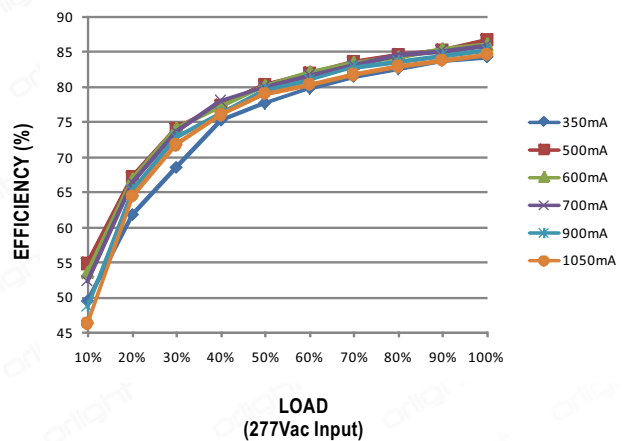
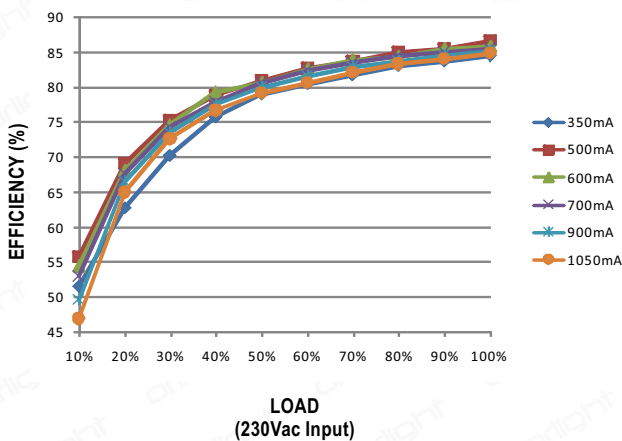
※ Tcase at 75°C



EFFICIENCY vs LOAD

DALI DR25 LCM series possess superior working efficiency that up to 86% can be reached in field applications.

※ Tcase at 75°C



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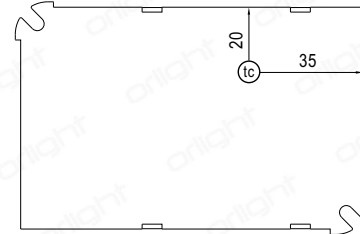
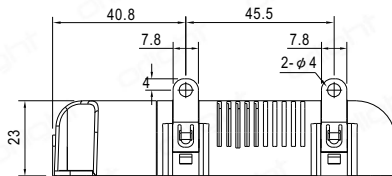
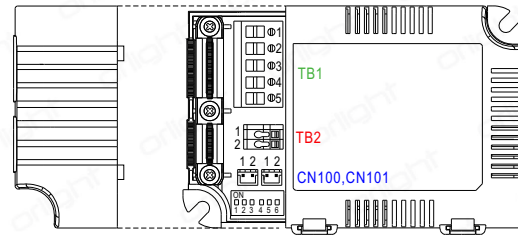
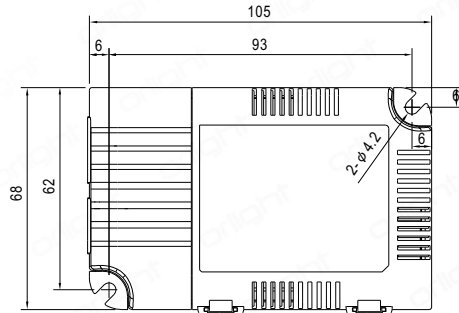
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MECHANICAL SPECIFICATION

Case No. DALI DR25 LCM Unit:mm



Bottom View

• (tc) : Max. Case Temperature

※ Terminal Pin No. Assignment(TB1)

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

※ Terminal Pin No. Assignment(TB2)

Pin No.	Assignment
1	+V
2	-V

※ SYN. Connector(CN100/CN101):JST B2B-PH-KL or equivalent

Pin No.	Assignment	Mating Housing	Terminal
1	-	JST PHR-2 or equivalent	JST SPH-002T-P0.5S or equivalent
2	+		

Note:Please use wires with a cross section of 0.5~2.5mm²(14~20AWG) for TB1 and wires with a cross section of 0.5~1.5 mm²(16~20AWG) for TB2.
Please use wires with a cross section of 0.126~0.205mm²(24~26AWG) for CN100/CN101