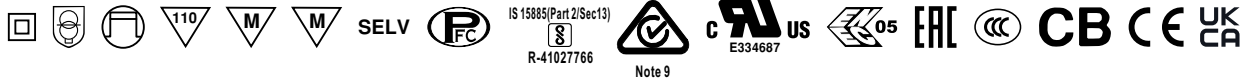




50W linear LED Driver

SLD-50 series

User's Manual



■ Features

- Constant Voltage + Constant Current mode output
- Wide input range 110-305VAC with PFC function
- Compliance with BS EN/EN61347 regulation
- Class 2/ II power unit
- Slim and Linear housing Design
- No load power consumption <0.5W
- 3 years warranty

■ Applications

- Panel lighting
- Strip lighting
- Decoration lighting
- Troffer lighting
- Signage and display
- Cove lighting

■ GTIN CODE

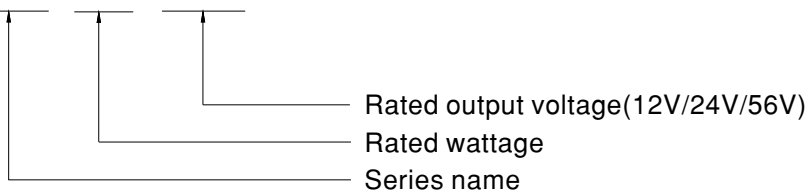
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

SLD-50 series is a 50W AC/DC LED driver featuring the dual modes constant voltage and constant current output. SLD-50 operates from 110~305VAC and offers models with different rated voltage ranging between 12V and 56V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -20°C ~ +90°C case temperature under free air convection. SLD-50 design with low profile and linear housing which is good for signage and linear luminaire applications.

■ Model Encoding

SLD - 50 - 24



SPECIFICATION

MODEL		SLD-50-12		SLD-50-24		
OUTPUT	DC VOLTAGE	12V		24V		
	CONSTANT CURRENT REGION <small>Note.2</small>	8.4 ~12V		16.8 ~24V		
	RATED CURRENT	4.2A		2.1A		
	RATED POWER <small>Note.5</small>	50.4W		50.4W		
	RIPPLE & NOISE (max.) <small>Note.3</small>	150mVp-p		240mVp-p		
	VOLTAGE TOLERANCE <small>Note.4</small>	±4.0%		±3.0%		
	LINE REGULATION	±0.5%		±0.5%		
	LOAD REGULATION	±1.5%		±0.5%		
	SETUP, RISE TIME <small>Note.6</small>	500ms, 80ms 115VAC / 230VAC				
	HOLD UP TIME (Typ.)	10ms/230VAC 10ms/115VAC				
INPUT	VOLTAGE RANGE <small>Note.5</small>	110 ~ 305VAC 155 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)				
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR	PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)				
	TOTAL HARMONIC DISTORTION	THD< 10%(@load≥60%/115VC,230VAC; @load≥75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)				
	EFFICIENCY (Typ.)	88%		90%		
	AC CURRENT	0.6A / 115VAC 0.3A / 230VAC 0.25A/277VAC				
	INRUSH CURRENT(Typ.)	COLD START 50A(twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410				
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	8 units (circuit breaker of type B) / 16 units (circuit breaker of type C) at 230VAC				
	LEAKAGE CURRENT	<0.25mA / 277VAC				
	NO LOAD POWER CONSUMPTION	<0.5W				
PROTECTION	OVER CURRENT	95 ~ 108% Constant current limiting or Hiccup mode, recovers automatically after fault condition is removed				
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed				
	OVER VOLTAGE	14 ~ 17V		28 ~ 34V		
		Shut down and latch off o/p voltage, re-power on to recover				
	OVER TEMPERATURE	Shut down output voltage, re-power on to recover				
ENVIRONMENT	WORKING TEMP.	Tcase=-20 ~ +90℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)				
	MAX. CASE TEMP.	Tcase=+90℃				
	WORKING HUMIDITY	20 ~ 95% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)				
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	UL8750,CSA C22.2 No. 250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384, EAC TP TC 004, GB19510.1,GB19510.14, IS15885(Part2/Sec13) ,EN60335-1 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC				
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH				
	EMC EMISSION	Parameter	Standard		Test Level / Note	
		Conducted	BS EN/EN55015(CISPR15) ,GB/T 17743, EN IEC 55014-1(CISPR 14-1)		-----	
		Radiated	BS EN/EN55015(CISPR15) ,GB/T 17743, EN IEC 55014-1(CISPR 14-1)		-----	
		Harmonic Current	BS EN/EN61000-3-2,GB17625.1		Class C @load≥60%	
		Voltage Flicker	BS EN/EN61000-3-3		-----	
	EMC IMMUNITY	BS EN/EN61547 ,EN IEC 55014-2				
		Parameter	Standard		Test Level / Note	
		ESD	BS EN/EN61000-4-2		Level 3, 8KV air ; Level 2, 4KV contact	
		Radiated	BS EN/EN61000-4-3		Level 2	
		EFT / Burst	BS EN/EN61000-4-4		Level 2	
		Surge	BS EN/EN61000-4-5		1KV/Line-Line	
		Conducted	BS EN/EN61000-4-6		Level 2	
		Magnetic Field	BS EN/EN61000-4-8		Level 2	
		Voltage Dips and Interruptions	BS EN/EN61000-4-11		70% residual volatge for 10 periods , 0% residual volatge for 0.5 periods , 40% residual volatge for 10 periods , 70% residual volatge for 25 periods	
OTHERS	MTBF	4150.1K hrs min. Telcordia SR-332 (Bellcore) ; 362.8K hrs min. MIL-HDBK-217F (25℃)				
	DIMENSION	280*30*16.8mm (L*W*H)				
	PACKING	0.175Kg;64pcs/12.4Kg/ 0.67CUFT				

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.
4. Tolerance : includes set up tolerance, line regulation and load regulation.
5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
6. 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.
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. This series meets the typical life expectancy of >30,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 75℃ or less.
9. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations but recommend to be used for commercial decoration/sign board/Luminaire lighting purpose.
10. Please refer to the warranty statement on MEAN WELL's website at <http://www.meanwell.com>
11. 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).

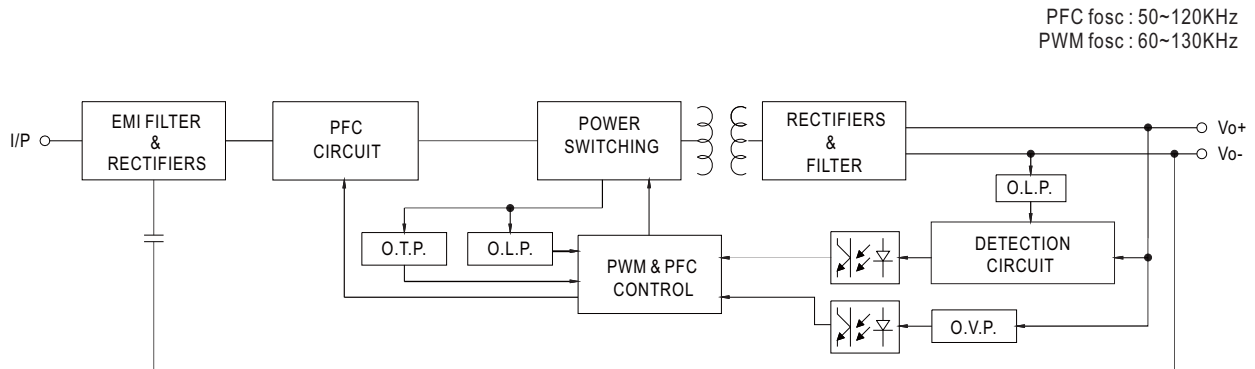
SPECIFICATION

MODEL		SLD-50-56	
OUTPUT	RATED CURRENT	1050mA	
	RATED POWER <small>Note.2</small>	50.4W	
	CONSTANT CURRENT REGION <small>Note.3</small>	30 ~56V	
	FULL POWER CURRENT RANGE	900~1400mA	
	OPEN CIRCUIT VOLTAGE (max.)	60V	
	CURRENT ADJ. RANGE	450-1400mA	
	CURRENT RIPPLE	5.0%(@rated current)	
	CURRENT TOLERANCE	±5%	
	SET UP TIME <small>Note.5</small>	500ms/230VAC, 1200ms/115VAC	
INPUT	VOLTAGE RANGE <small>Note.2</small>	110 ~ 305VAC 155VDC ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" and "DRIVING METHODS OF LED MODULE" section)	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	PF ≥ 0.97 / 115VAC, PF ≥ 0.95 / 230VAC, PF ≥ 0.92 / 277VAC at full load (Please refer to "Power Factor Characteristic" section)	
	TOTAL HARMONIC DISTORTION	THD < 10% (@ load ≥ 60% at 115VAC/230VAC, @load ≥ 75% at 277VAC) Please refer to "TOTAL HARMONIC DISTORTION (THD)" section	
	EFFICIENCY (Typ.)	90%	
	AC CURRENT (Typ.)	0.6A / 115VAC 0.3A / 230VAC 0.25A / 277VAC	
	INRUSH CURRENT(Typ.)	COLD START 50A(twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410	
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	8 unit(circuit breaker of type B) / 16 units(circuit breaker of type C) at 230VAC	
	LEAKAGE CURRENT	<0.25mA / 277VAC	
PROTECTION	NO LOAD POWER CONSUMPTION	<0.5W	
	OVER POWER	110 ~ 150% Hiccup mode, recovers automatically after fault condition is removed	
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed	
	OVER VOLTAGE	61 ~ 80V Shut down output voltage, re-power on to recovery	
	OVER TEMPERATURE	Shut down output voltage, re-power on to recovery	
ENVIRONMENT	WORKING TEMP.	Tcase=-20 ~ +90℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)	
	MAX. CASE TEMP.	Tcase=+90℃	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP.	-40 ~ +80℃	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)	
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes	
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 No. 250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384, EAC TP TC 004, GB19510.1, GB19510.14, IS15885(Part2/Sec13), EN60335-1 approved	
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC	
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH	
	EMC EMISSION	Parameter	Standard
		Conducted	BS EN/EN55015(CISPR15) ,GB/T 17743, EN IEC 55014-1(CISPR 14-1)
		Radiated	BS EN/EN55015(CISPR15) ,GB/T 17743, EN IEC 55014-1(CISPR 14-1)
		Harmonic Current	BS EN/EN61000-3-2,GB17625.1
	EMC IMMUNITY	Voltage Flicker	BS EN/EN61000-3-3
		BS EN/EN61547 ,EN IEC 55014-2	
		Parameter	Standard
		ESD	BS EN/EN61000-4-2
		Radiated	BS EN/EN61000-4-3
		EFT / Burst	BS EN/EN61000-4-4
		Surge	BS EN/EN61000-4-5
		Conducted	BS EN/EN61000-4-6
		Magnetic Field	BS EN/EN61000-4-8
		Voltage Dips and Interruptions	BS EN/EN61000-4-11
		70% residual volatge for 10 periods , 0% residual volatge for 0.5 periods , 40% residual volatge for 10 periods , 70% residual volatge for 25 periods	
OTHERS	MTBF	4150.1K hrs min. Telcordia SR-332 (Bellcore) ; 362.8K hrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	280*30*16.8mm (L*W*H)	
	PACKING	0.175Kg/64pcs/12.4Kg/ 0.67CUFT	

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. Please refer to "DRIVING METHODS OF LED MODULE".
4. This series meets the typical life expectancy of >30,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 75℃ or less.
5. 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.
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. Please refer to the warranty statement on MEAN WELL's website at <http://www.meanwell.com>
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. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations but recommend to be used for commercial decoration/sign board/Luminaire lighting purpose.
10. Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

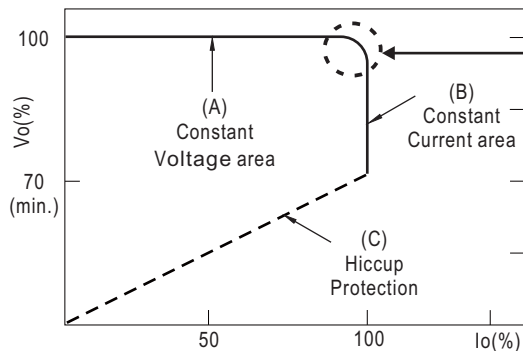
BLOCK DIAGRAM



DRIVING METHODS OF LED MODULE

SLD-50-12,24

- ✖ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.

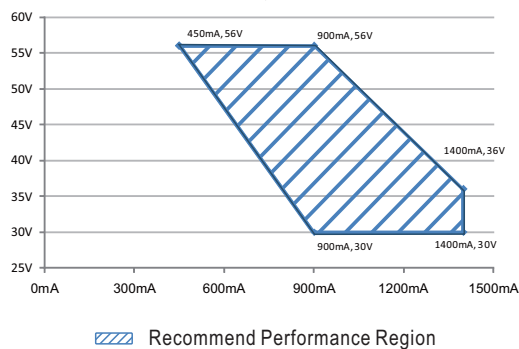


Typical output current normalized by rated current (%)

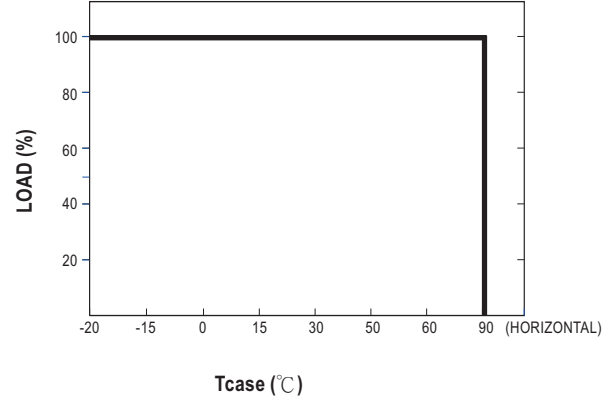
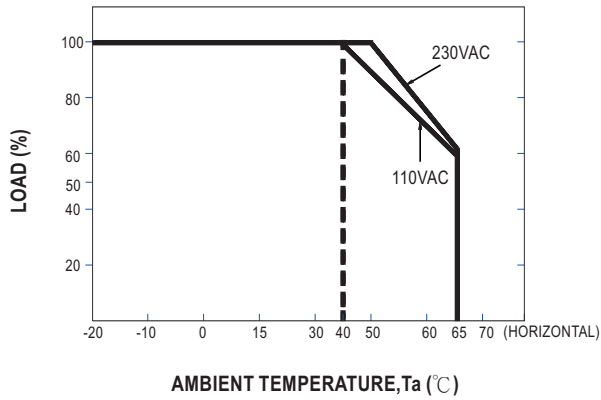
In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.

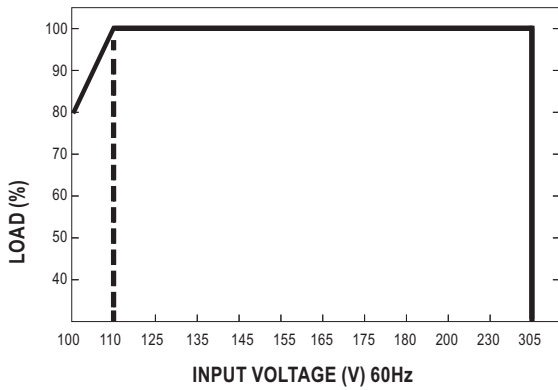
SLD-50-56



OUTPUT LOAD vs TEMPERATURE



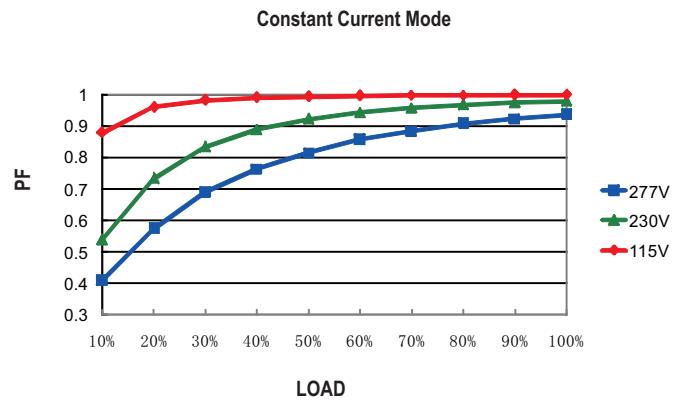
STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

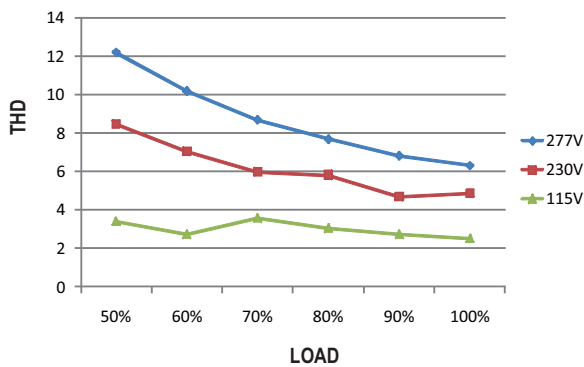
POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 75°C



TOTAL HARMONIC DISTORTION (THD)

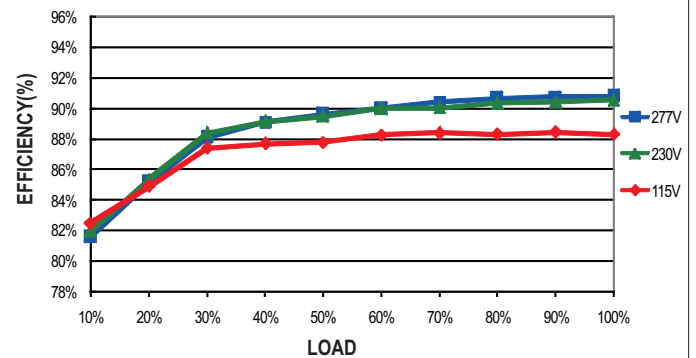
※ 24V Model, Tcase at 75°C



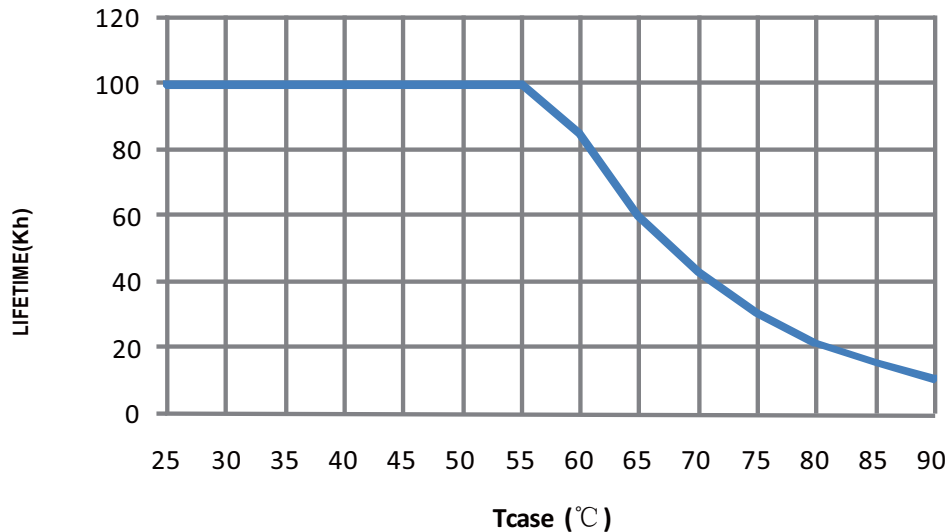
EFFICIENCY vs LOAD

SLD-50 series possess superior working efficiency that up to 90% can be reached in field applications.

※ 24V Model, Tcase at 75°C

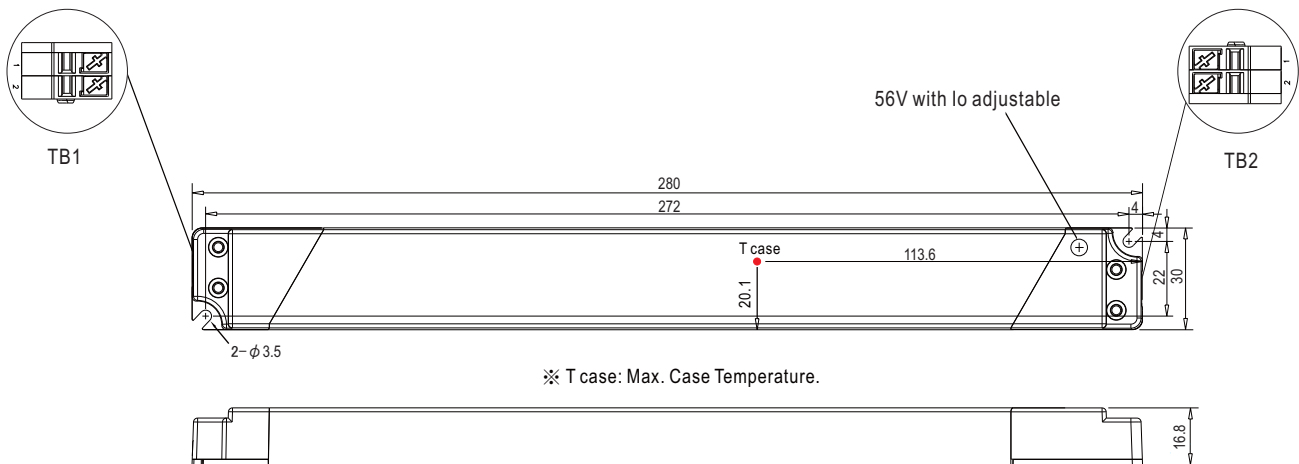


LIFE TIME



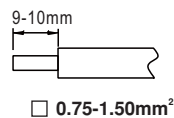
Mechanical Specification

Unit:mm



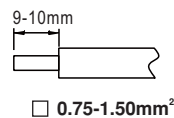
※ T case: Max. Case Temperature.

TB1 wiring:


Terminal Pin No. Assignment (TB1):
DEGSON DG219-3.5(GRAY)

Pin No.	Assignment
1	AC/L
2	AC/N

TB2 wiring:


Terminal Pin No. Assignment (TB2):
DEGSON DG219-3.5(RED/BLACK)

Pin No.	Assignment
1	+V
2	-V

INSTALLATION MANUAL

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