









Features

- · Constant Current mode output
- · Plastic housing with Class II design
- · Built-in active PFC function
- · Class 2 power unit
- IP67 rating for indoor or outdoor installations
- Function: 3 in 1 dimming
- Typical lifetime>50000 hours
- 5 years warranty

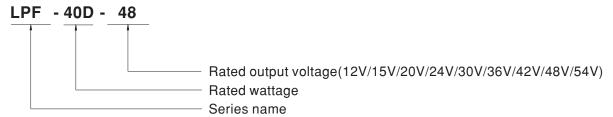
Applications

- LED panel lighting
- · LED downlight
- · LED decorative lighting
- · LED tunnel lighting
- Moving sign

Description

LPF-40D series is a 40W AC/DC LED driver featuring the constant current output. LPF-40D operates from $90 \sim 305 \text{VAC}$ and offers models with different rated voltage ranging between 12V and 54V. Thanks to the efficiency up to 89%, with the fanless design, the entire series is able to operate for -40°C \sim +80°C case temperature under free air convection. The entire series is rated with IP67 ingress protection level and is suitable to work for a variety of applications at dry, damp or wet locations. LPF-40D is equipped with the 3 in 1 dimming function so as to provide the design flexibility for LED lighting system.

■ Model Encoding





SPECIFICATION

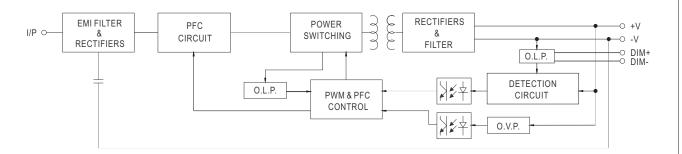
DC VOLTAGE RATED CURRENT RATED POWER Note.5 CONSTANT CURRENT REGION Note.2 CURRENT RIPPLE CURRENT TOLERANCE SETUP, RISE TIME Note.6 HOLD UP TIME (Typ.)	5.0% max. @i	15V 2.67A 40.08W 9 ~ 15V	20V 2A	24V 1.67A	30V	36V	42V	48V	54V	
RATED POWER Note.5 CONSTANT CURRENT REGION Note.2 CURRENT RIPPLE CURRENT TOLERANCE SETUP, RISE TIME Note.6	40.08W 7.2 ~12V 5.0% max. @I	40.08W		1 67 /	1.011	4.404			-	
RATED POWER Note.5 CONSTANT CURRENT REGION Note.2 CURRENT RIPPLE CURRENT TOLERANCE SETUP, RISE TIME Note.6	40.08W 7.2 ~12V 5.0% max. @I	40.08W			1.34A	1.12A	0.96A	0.84A	0.76A	
CONSTANT CURRENT REGION Note.2 CURRENT RIPPLE CURRENT TOLERANCE SETUP, RISE TIME Note.6	7.2 ~12V 5.0% max. @r		40W	40.08W	40.2W	40.32W	40.32W	40.32W	41.04W	
CURRENT RIPPLE CURRENT TOLERANCE SETUP, RISE TIME Note.6	5.0% max. @i		12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V	
CURRENT TOLERANCE SETUP, RISE TIME Note.6		5.0% max. @rated current								
SETUP, RISE TIME Note.6	±5.0%									
HOLD UP TIME (Typ.)	1000ms, 80ms / 115VAC 500ms, 80ms / 230VAC									
1,01,	16ms/230VAC 16ms/115VAC									
VOLTAGE RANGE Note.5	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)									
FREQUENCY RANGE	47 ~ 63Hz									
POWER FACTOR	$\label{eq:prediction} $									
TOTAL HARMONIC DISTORTION	THD<20%(@load≧60%/115VC,230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)									
EFFICIENCY (Typ.)	84%	85%	86%	87%	88%	88%	88.5%	89%	89%	
AC CURRENT	0.6A / 115VAC	0.3A/2	30VAC 0.	25A/277VAC						
INRUSH CURRENT(Typ.)	COLD START 50A(twidth=210µs measured at 50% lpeak) at 230VAC; Per NEMA 410									
MAX. No. of PSUs on 16A CIRCUIT BREAKER	12 units (circuit breaker of type B) / 20 units (circuit breaker of type C) at 230VAC									
LEAKAGE CURRENT	<0.75mA / 240VAC									
OVER CURRENT	95 ~ 108%									
SHORT CIRCUIT						loved				
						44 40)/	40 54)/	F4 C01/	FO 001/	
OVER VOLTAGE	Shut down o/p voltage, re-power on to recover							54 ~ 63V	59 ~ 66V	
OVER TEMPERATURE	Shut down o/	p voltage, re-p	oower on to re	cover						
WORKING TEMP.	Tcase=-40 ~ +	·80°C (Please	refer to " OUTI	PUT LOAD vs T	EMPERATUR	E" section)				
MAX. CASE TEMP.	Tcase=+80°C									
WORKING HUMIDITY	20 ~ 95% RH non-condensing									
STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH									
TEMP. COEFFICIENT	±0.03%/°C (0~50°C)									
VIBRATION	10 ~ 500Hz. 5	G 12min./1cvd	le, period for	72min, each ald	ong X. Y. Z axe	 S				
SAFETY STANDARDS Note.8	UL8750, CSA C22.2 No. 250.0-08, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384,EAC TP TC 004, IP6 GB19510.1,GB19510.14 approved; design refer to UL60950-1									
WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC									
ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH									
EMC EMISSION Note.8	Compliance to BS EN/EN55015,BS EN/EN61000-3-2 Class C (@load ≥ 60%) ; BS EN/EN61000-3-3, GB17743 and 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									
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	162.5*43*32mm (L*W*H)									
	()									
		-		ut rated aurror	ot and 25°C of	ambiant tamp	oroturo			
2. Please refer to "DRIVING M 3. Ripple & noise are measured 4. Tolerance: includes set up to 5. De-rating may be needed ur 6. Length of set up time is mea 7. The driver is considered as a complete installation, the fina 8. To fulfill requirements of the without permanently connect 9. This series meets the typical 10. Please refer to the warrant 11. The ambient temperature of	ETHODS OF I at 20MHz of boolerance, line render low input vasured at first ca component that equipment matest ErP regulated to the main I life expectance y statement on derating of 3.5%	LED MODULE andwidth by us gulation and lo voltages. Pleasold start. Turn nat will be open anufacturers lalation for lighties. y of >50,000 l MEAN WELL C/1000m with	ender services and a service services and regulation. See refer to "ST sing ON/OFF the stated in comb must re-qualifying fixtures, this mours of operates website at I fanless mode	ted pair-wire ter ATIC CHARA he driver may lination with fina EMC Directive is LED driver contion when Tca http://www.mea Is and of 5°C/1	criminated with a CTERISTIC" selead to increase all equipment are on the compan only be used se, particularly unwell.com	ections for detage of the set up. Since EMC pelete installationed behind a sw. (to point (or To models for open set)	arallel capacito ails. b time. rformance will a again. vitch TMP, per DLC) perating altitude	be affected by	or less.	
	INRUSH CURRENT(Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT SHORT CIRCUIT OVER VOLTAGE OVER TEMPERATURE WORKING TEMP. MAX. CASE TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION SAFETY STANDARDS Note.8 WITHSTAND VOLTAGE ISOLATION RESISTANCE EMC EMISSION Note.8 EMC IMMUNITY MTBF DIMENSION PACKING 1. All parameters NOT speciall 2. Please refer to "DRIVING M 3. Ripple & noise are measured 4. Tolerance: includes set up to 5. De-rating may be needed ur 6. Length of set up time is mea 7. The driver is considered as a complete installation, the fina 8. To fulfill requirements of the without permanently connec 9. This series meets the typica 10. Please refer to the warrant 11. The ambient temperature of 12. For any application note ar 12. For any application note ar	INRUSH CURRENT (Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT SHORT CIRCUIT OVER VOLTAGE OVER TEMPERATURE MAX. CASE TEMP. WORKING HUMIDITY TCASE=+80°C WORKING HUMIDITY TEMP. COEFFICIENT VIBRATION SAFETY STANDARDS Note.8 WITHSTAND VOLTAGE WITHSTAND VOLTAGE IP-O/P:3.75i ISOLATION RESISTANCE EMC EMISSION Note.8 EMC IMMUNITY Compliance to GB17743 and COMPLIANCE IP-O/P:100M ID-O/P:100M ID-O	INRUSH CURRENT(Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT OVER CURRENT OVER VOLTAGE OVER TEMPERATURE WORKING TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY VIBRATION SAFETY STANDARDS Note.8 WITHSTAND VOLTAGE WITHSTAND VOLTAGE INP-O/P:3.75KVAC ISOLATION RESISTANCE EMC IMMUNITY Compliance to BS EN/EN55. GB17743 and GB17625.1, EEMC IMMUNITY Compliance to BS EN/EN56. GB19ple & noise are measured at 20MHz of bandwidth by use 4. Tolerance: includes set up tolerance, line regulation and lc 5. De-rating may be needed under low input voltages. Plea to the mains. 9. This series meets the typical life expectancy of >50,000 10. Please refer to the warranty statement on MEAN WELL 11. The ambient temperature derating of 3.5°C/1000m with	INRUSH CURRENT(Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT SHORT CIRCUIT OVER VOLTAGE OVER TEMPERATURE WORKING TEMP. MAX. CASE TEMP. WORKING HUMIDITY STORAGE TEMP., HUMIDITY TEMP. COEFFICIENT VIBRATION SAFETY STANDARDS Note.8 WITHSTAND VOLTAGE WITHSTAND VOLTAGE INC EMISSION BOLATION RESISTANCE EMC EMISSION BOLATION RESISTANCE EMC EMISSION BOLATION BOLATION BOLATION BOLATION BOLATION Compliance to BS EN/EN55015,BS EN/EN GB17743 and GB17625.1,EAC TP TC 020 EMC IMMUNITY Compliance to BS EN/EN55015,BS EN/EN DIMENSION 10.45 Kg; 32 pcs/15.4 Kg/0.93 CUFT 1. All parameters NOT specially mentioned are measured at 230VAC inp 2. Please refer to "DRIVING METHODS OF LED MODULE". 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twist 4. Tolerance: includes set up tolerance, line regulation and load regulation. 5. De-rating may be needed under low input voltages. Please refer to "The driver is considered as a component that will be operated in comb complete installation, the final equipment manufacturers must re-qualify. 8. To fuffil requirements of the latest ErP regulation for lighting fixtures, the without permanently connected to the mains. 9. This series meets the typical life expectancy of >50,000 hours of opera 10. Please refer to the warranty statement on MEAN WELL's website at 11. The ambient temperature derating of 3.5°C/1000m with fanless mode 12. For any application note and IP water proof function installation caution and life water	INRUSH CURRENT(Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT OVER CURRENT SHORT CIRCUIT Hiccup mode, recovers automatically after fault conditions of the control of	INRUSH CURRENT(Typ.) MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT OVER CURRENT SHORT CIRCUIT Hiccup mode, recovers automatically after fault condition is removed. 15 ~ 17V 17.5 ~ 21V 23 ~ 27V 28 ~ 35V 34 ~ 40V Shut down o/p voltage, re-power on to recover WORKING TEMP. TCase= +80°C WORKING TEMP. TCase= +80°C WORKING TEMP, HUMIDITY STORAGE TEMP, HUMIDITY TO +50°C; 10 ~ 50°C) WIBRATION 10 ~ 500°Hz, 56 T22 in. 14 approved; design refer to UL60950-1 WITHSTAND VOLTAGE WIP-O/P:3.75KVAC ISOLATION RESISTANCE I/P-O/P:100M Ohms / 500VDC / 25°C / 70°W RH EMC EMISSION Note.8 Compliance to BS EN/EN5015, BS EN/EN61000-3-2 Class C (@load ≥ GB17743 and 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 in MTBF 1144.7′K hrs min. Telcordia SR-332 (Bellcore); 394.9′Khrs min. M DIMENSION 10 -50°L C DAMOND FLE DES DES DES DES DES DES DES DES DES DE	INRUSH CURRENT (Typ.) COLD START 50A(twidth=210;is measured at 50% [beak) at 230VAC; Per NEMA 410 MAX. No. of PSUs on 16A CIRCUIT BREAKER LEAKAGE CURRENT OVER CURRENT Short Circuit breaker of type B) / 20 units (circuit breaker of type C) at 230VAC OVER CURRENT Short Circuit Hiccup mode, recovers automatically after fault condition is removed Hiccup mode, recovers automatically after fault condition is removed. Short CIRCUIT OVER VOLTAGE Shut down o/p voltage, re-power on to recover OVER TEMPERATURE Shut down o/p voltage, re-power on to recover WORKING TEMP. Tcase=-40 ~ +80°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) MAX. CASE TEMP. Tcase=-40 ~ +80°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) MAX. CASE TEMP. Tcase=-40 ~ +80°C, 10 ~ 95% RH TEMP. COEFFICIENT ±0.03%**C (0 ~ 50°C) VIBRATION 10 ~ 500Hz, 5G 12min/1cycle, period for 72min. each along X, Y, Z axes SAFETY STANDARDS Note.8 SAFETY STANDARDS Note.8 UL8750, CSA C22.2No. 250.0-08, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 indepe GB 19510.1, GB 19510.1 4 approved; design refer to UL60950-1 WITHSTAND VOLTAGE I/P-O/IP:3.75K/VAC I/P-O/IP:3.75K/VAC EMC EMISSION Note.8 Compliance to BS EN/EN6100-4-2,3.4.5.6,8.11; BS EN/EN61547, light industry level (su MTBF 1144.7K hrs min. Telcordia SR-332 (Bellicore); 394.9Khrs min. MIL-HDBK-217 DIMENSION 162.543*32mm (L*W*H) A. (0.45Kg; 32pcs/15.4Kg/0.93CUFT) 1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temp 2. Please refer to "DRIVING METHODS OF LED MODULE". 3. Ripple & noise are measured at 210Hz to bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uf & 47uf p 4. Tolerance: includies set up loterance, line requisition and requisition. 5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for det 6. Length of set up time is measured at 180Hz to bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uf & 47uf p 7. The driver is	INRUSH CURRENT(Typ.) COLD START 50A(twidth=210,µs measured at 50% lpeak) at 230VAC; Per NEMA 410 MAX. No. of PSUs on 16A CIRCUIT BREAKER 12 units (circuit breaker of type B) / 20 units (circuit breaker of type C) at 230VAC LEAKAGE CURRENT OVER CURRENT Short CIRCUIT Hiccup mode, recovers automatically after fault condition is removed SHORT CIRCUIT Hiccup mode, recovers automatically after fault condition is removed. OVER VOLTAGE OVER TEMPERATURE Shut down o/p voltage, re-power on to recover WORKING TEMP. Tasse=40 ~ +80°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) MAX. CASE TEMP. Tasse=40 ~ +80°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) MAX. GASE TEMP. Tosse=480°C WORKING HUMIDITY 20 ~ 95% RH non-condensing STORAGE TEMP, HUMIDITY 10 ~ 500Hz, 56 12min/1cycle, period for 72min. each along X, Y, Z axes UL8750, CSA-C22 2 No. 250. O-8, ENEC BS ENIEN61347-1, BS ENIEN61347-2-13 independent, BS ENIE GB19510.1, GB19510.14 approved; design refer to UL60950-1 WITHSTAND VOLTAGE I/P-O/P:3.75KVAC I/P-O/P:3.75KVAC I/SOLATION RESISTANCE I/P-O/P:100M Ohms / 500VDC / 25°C/70% RH Compliance to BS ENIEN55015,BS ENVEN6100-3-2 Class C (@load ≥ 60%); BS ENIEN61000-3-3, GB17743 and GB17625.1,EAC TP TC 020 EMC IMMUNITY Compliance to BS ENIEN55015,BS ENVEN61000-3-2 Class C (@load ≥ 60%); BS ENIEN61000-3-3, GB17743 and GB17625.1,EAC TP TC 020 EMC IMMUNITY Compliance to BS ENIEN55015,BS ENCEN61000-3-2 Class C (@load ≥ 60%); BS ENIEN61000-3-3, GB17743 and GB17625.1,EAC TP TC 020 EMC IMMUNITY Compliance to BS ENIEN550015,BS ENCEN61000-3-3 (BS) SNIENS SNIEN	INRUSH CURRENT(Typ.) COLD START 50A(twidth=210µs measured at 50% [peak) at 230VAC; Per NEMA 410 MAX. No. of PSUs on 16A CIRCUIT BREAKER 12 units (circuit breaker of type B) / 20 units (circuit breaker of type C) at 230VAC LEAKAGE CURRENT OVER CURRENT SHORT CIRCUIT Hiccup mode, recovers automatically after fault condition is removed. 15 − 17V 17.5 − 21V 23 − 27V 28 − 35V 34 − 40V 41 − 49V 46 − 54V 54 − 63V Shut down of p voltage, re-power on to recover OVER TEMPERATURE Shut down of p voltage, re-power on to recover WORKING TEMP. Tasse=40 − 480°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section) MAX. CASE TEMP. WORKING HUMIDITY 20 − 95% RR H non-condensing STORAGE TEMP, HUMIDITY 10 − 550ME, 50 °C) VIBRATION 10 − 550ME, 50 °C) UISPATION 10 − 500ME, 50 °C) WITHSTAND VOLTAGE WITH	

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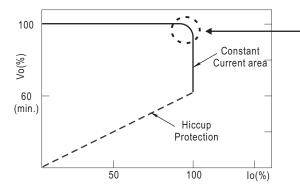
■ BLOCK DIAGRAM

fosc: 100KHz



■ DRIVING METHODS OF LED MODULE

* This series works in constant current mode to directly 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.

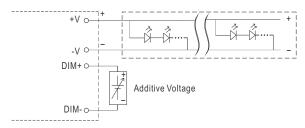


■ DIMMING OPERATION

\divideontimes 3 in 1 dimming function

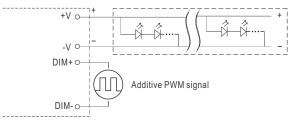


- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-:
 1 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100µA (typ.)
- O Applying additive 1 ~ 10VDC



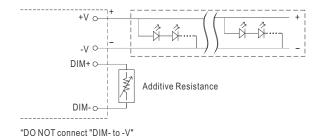
"DO NOT connect "DIM- to -V"

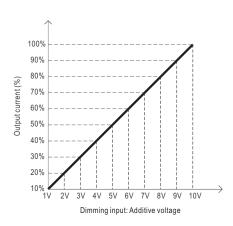
O Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):

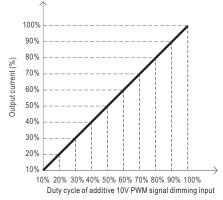


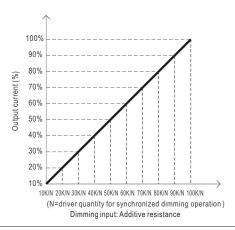
"DO NOT connect "DIM- to -V"

O Applying additive resistance:



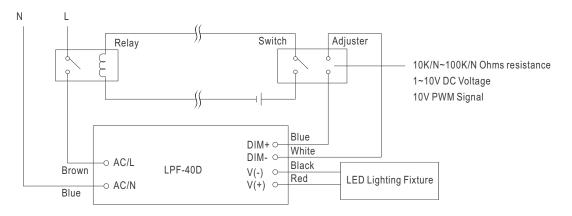






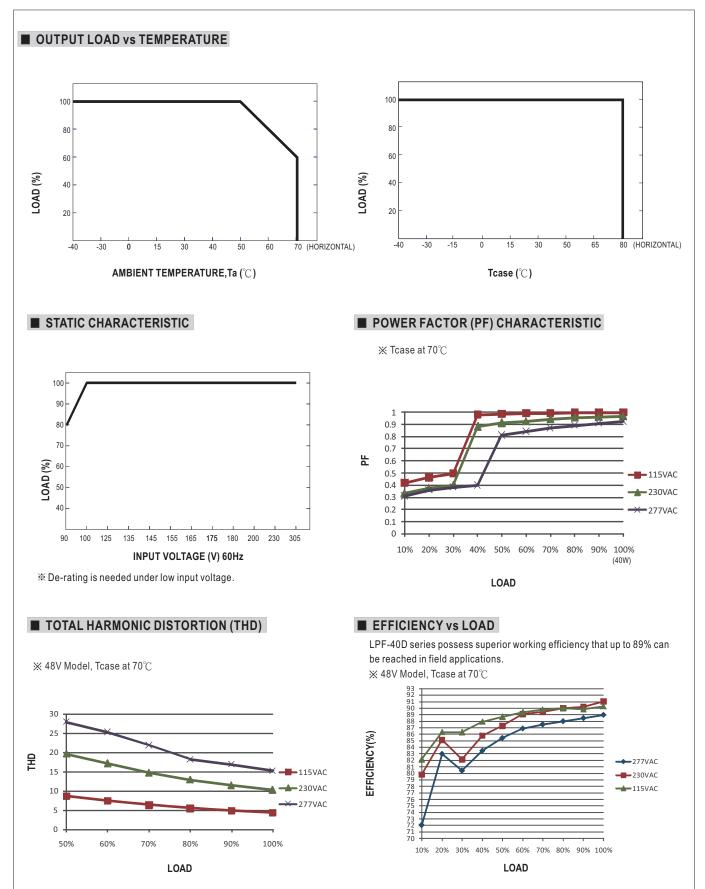


Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow, or please contact MEAN WELL for other options.



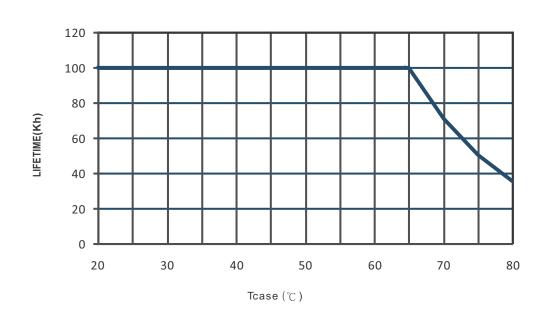
Using a switch and relay can turn ON/OFF the lighting fixture.













■ MECHANICAL SPECIFICATION CASE NO.: LPF-60B Unit:mm 162.5 300±20 AC/N(Blue) AC/L(Brown) +V(Red) -V(Black) DIM+(Blue) DIM-(White) SJOW 17AWG×2C & H05RN-F 2×1.0mm² Style 2464 18AWG×2C(+V,-V) Style 2464 22AWG×2C(DIM+,DIM-) • (tc): Max. Case Temperature ■ Recommend Mounting Direction **■ INSTALLATION MANUAL** Please refer to : http://www.meanwell.com/manual.html