

TOMCARLINE

50W Single Output LED Driver

50H Series



■ Features:

- Universal AC input/Full rang 90~305VAC
- Built-in PFC function
- Protections: Short circuit/Over current/Over voltage
- Cooling by free air convection
- Built-in 3 in 1 dimming function (1~10VDC or 10V PWM signal or resistance)
- Metal case, IP65 design for indoor or outdoor installations
- Suitable for outdoor LED street lighting, outdoor LED and moving sign applications
- Ultra-long life



50H-42 □ V: IP65Level, I_o adjustable through potentiometer
 D: IP65Level, 3 in 1 dimming function (1~10VDC, 10V PWM signal and resistance), I_o adjustable through potentiometer

SPECIFICATION

Parameter Name	Min.	Typ.	Max.	Unit
Input Voltage	100	230	277	Vac
Input Current	---	0.4	0.8	A
Power Factor	0.95	0.98	0.99	PF
THD	5	10	18	%
Frequency Rang	47	50\60	63	Hz
Output no-load Voltage	43	45	47	Vdc
Output Serving Voltage	36	42	43	Vdc
Output Current	-3%	1.2	+3%	Adc
Overshoot	---	---	10	%
No Load Power	---	0.5	2	W
Efficiency	88	90	---	% (230VA)
Over Current Protection	---	---	110	%
Short Circuit Protection	Constant Current limiting, recovers automatically after fault condition is removed			
Inrush Current(Max.)	Cold Start 50A(twidth=280us measured at 50% I _{peak}) at 230Vac			
MAX. No. of PSUs on 16A Circuit Breaker	9 units (circuit breaker of type B)/16 units (circuit breaker of type C) at 230VAC			

WORKING ENVIRONMENT

Item	Min.	Typ.	Max.	Unit
Working Temp.	-40~+70℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)			
IP Rating	IP65			
MAX. Working Humidity	20~95%RH non-condensing			
Cooling Method	Cooling by free air convection, External LED Driver can improve the lifespan.			
Storage Temp. , Humidity	-40~+80℃, 10~95%RH			
Working Atmosphere	70	---	106	Kpa

SAFETY

Item	Min.	Typ.	Max.	Unit
I/P-O/P	3750	---	---	V(AC)
I/P-FG	2000	---	---	V(AC)
O/P-FG	500	---	---	V(DC)
Surge: L-N	2000	---	---	V
Surge :L,N-FG	4000	---	---	V

OTHER

MTBF	≥362.5Khrs	MIL-HDBK-217F (25℃)
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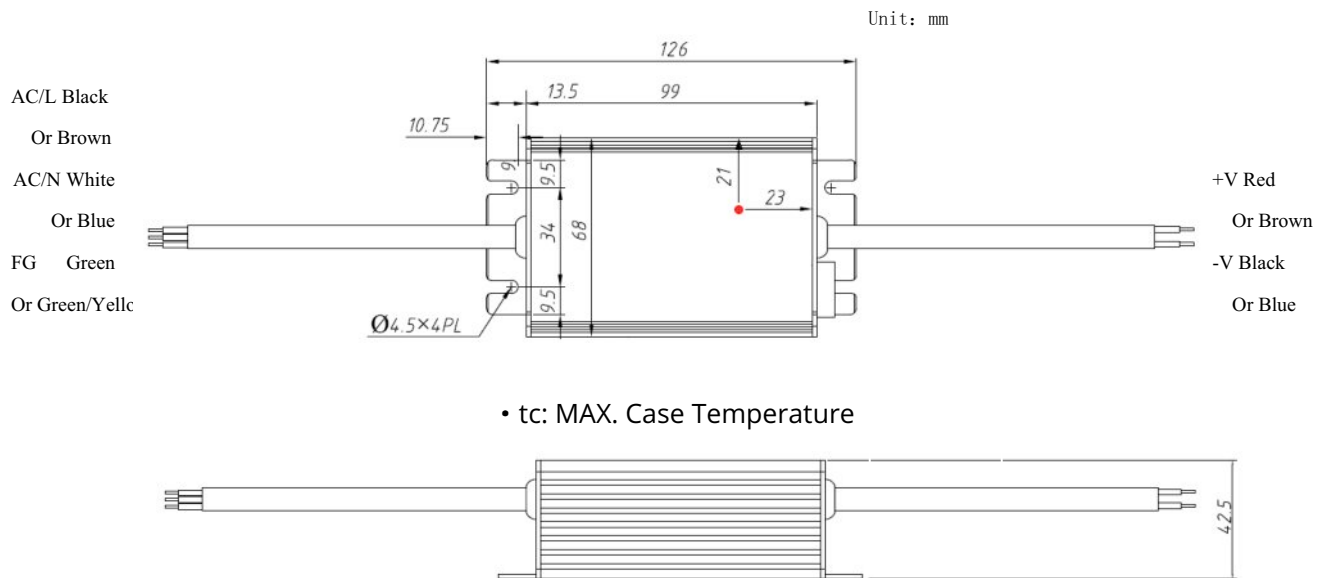
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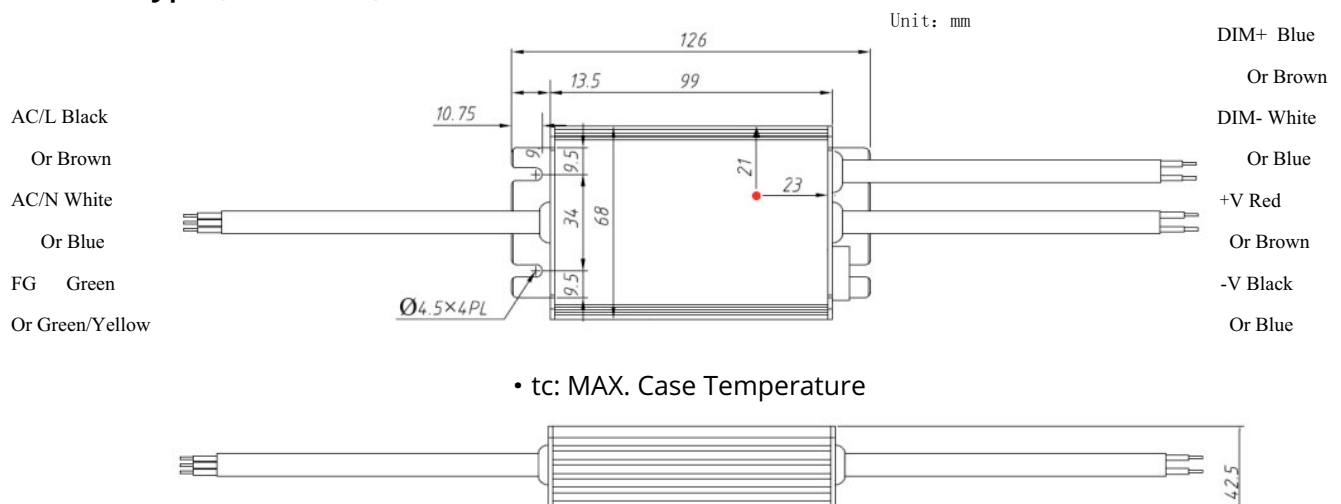
50H Series

MECHANIC SPECIFICATION

※ V-Type:(50H- 42V)



※ D-Type:(50H- 42D)



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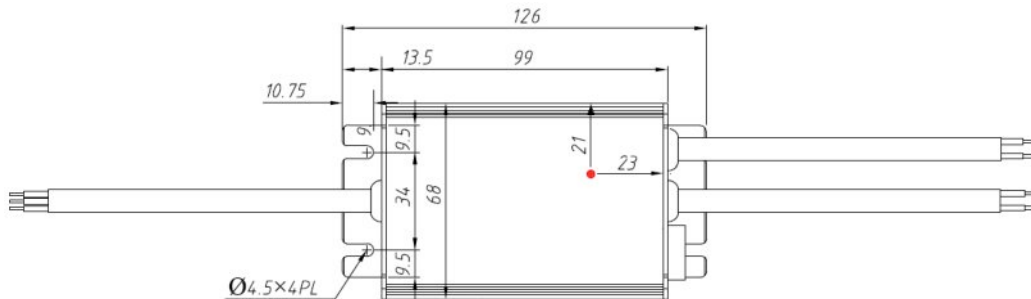
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DIMMING OPERATION

Unit: mm

AC/L Black
Or Brown
AC/N White
Or Blue
FG Green
Or Green/Yellow

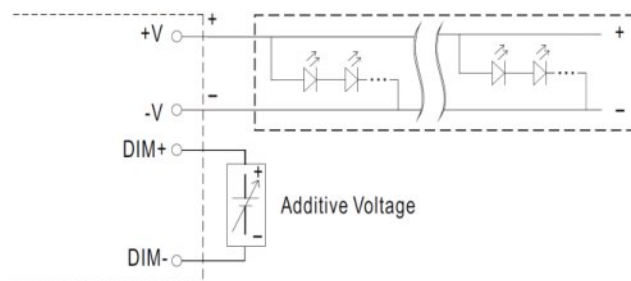


DIM+ Blue
Or Brown
DIM- White
Or Blue
+V Red
Or Brown
-V Black
Or Blue

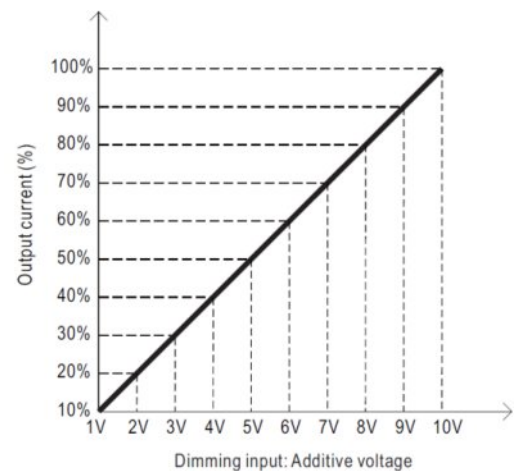
※ 3 in 1 dimming function(for D-Type)

- 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: 100uA (typ.).

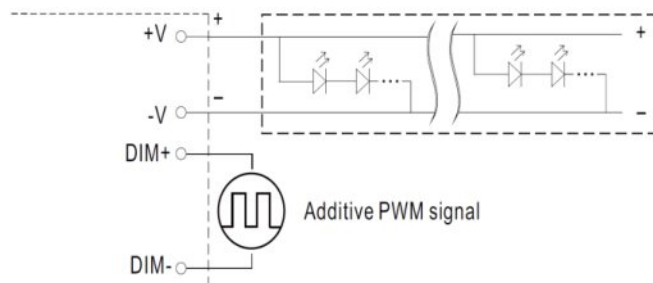
◎ Applying additive 1~10VDC



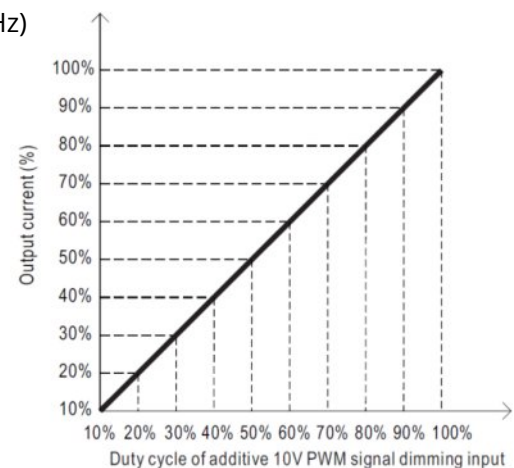
DO NOT connect "DIM- to V"



◎ Applying additive 10V PWM signal(frequency rang 100Hz~3KHz)



DO NOT connect "DIM- to V"

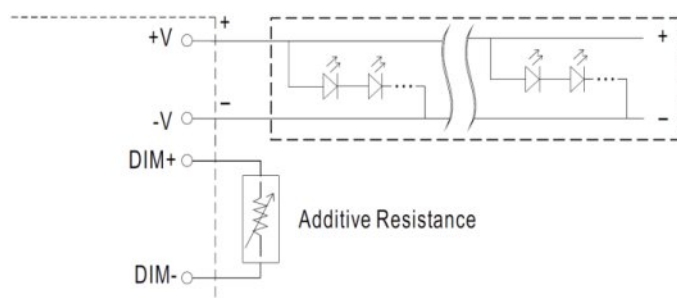


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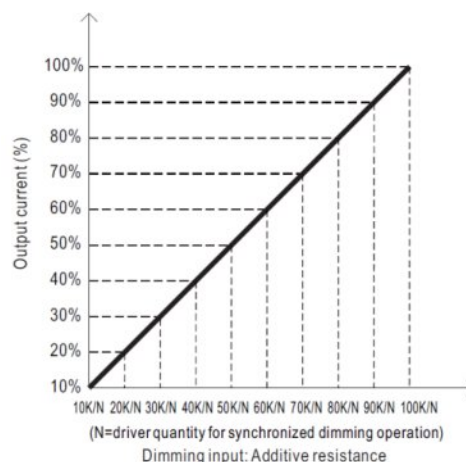
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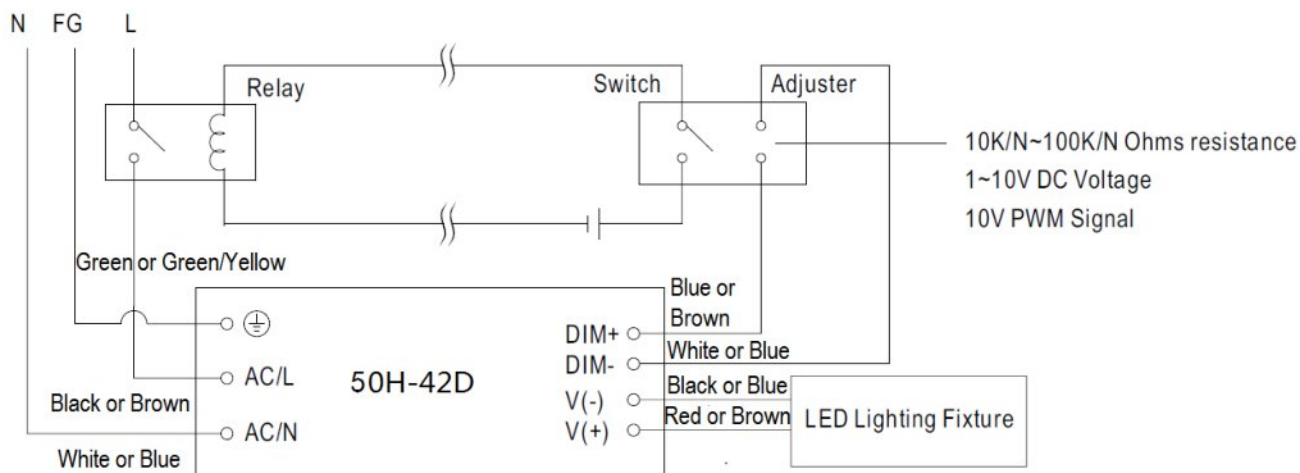
© Applying additive resistance:



DO NOT connect "DIM- to V-"



Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow:



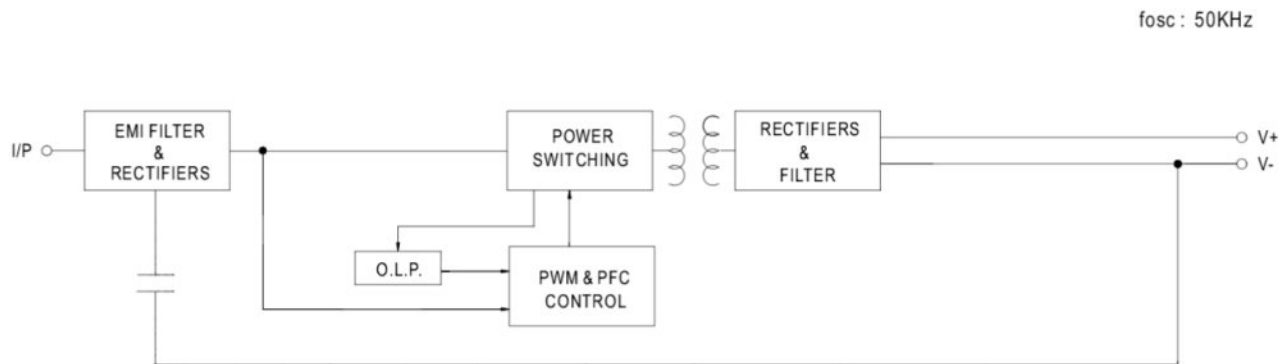
※ Using a switch and relay can turn ON/OFF the lighting fixture.

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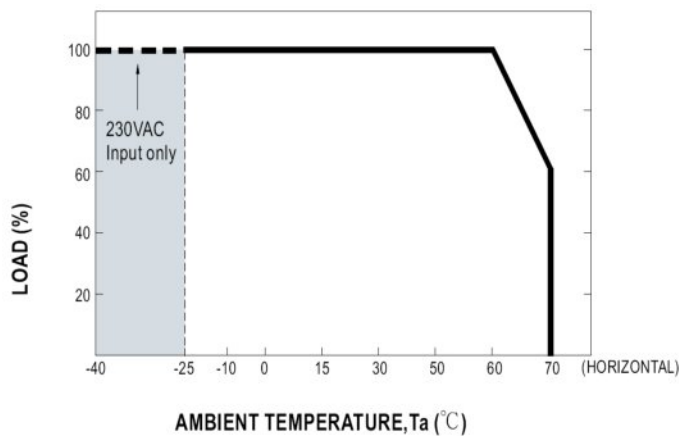
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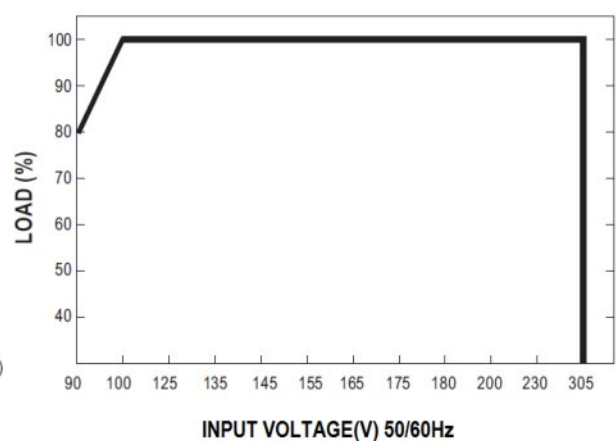
BLOCK DIAGRAM



OUTPUT LOAD vs TEMPERATURE

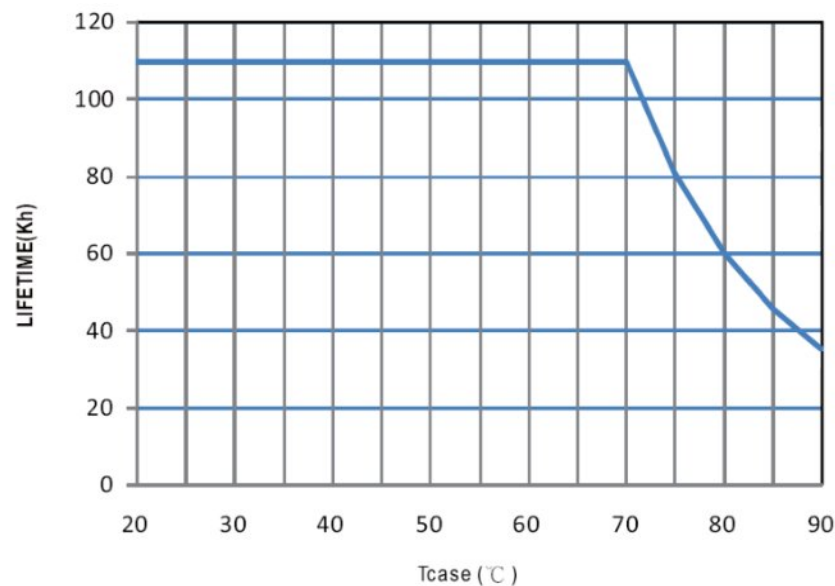


STATIC CHARACTERISTICS



※ De-rating is needed under low input voltage.

LIFETIME

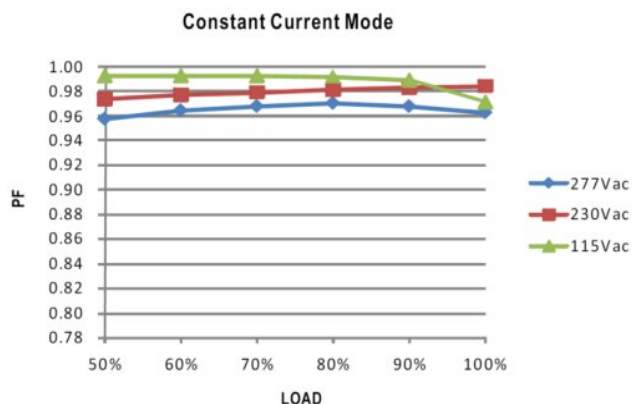


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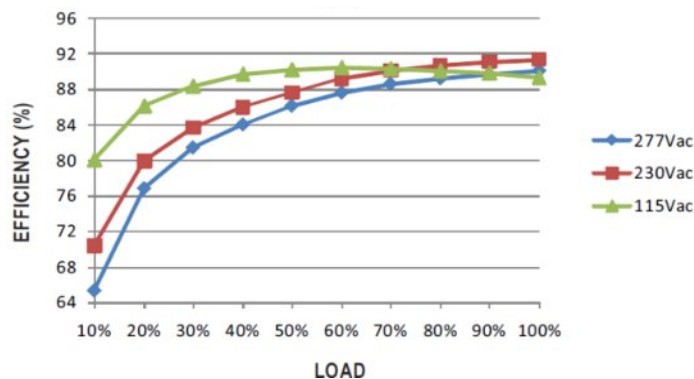
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POWER FACTOR (PF) CHARACTERISTIC



EFFICIENCY vs LOAD

50H series possess superior working efficiency that up to 90% Can be reached in field applications.



DRIVING METHODS OF LED MODULE

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

