

GEHC-042 series

42W Constant Current LED Driver

Features:

- AC input voltage range: 108-305VAC
- Built-in active PFC function
- Protections: Short Circuit / Over Voltage / Over Temperature
- Cooling by free air convection
- Surge immunity: Differential Mode - 4kV, Common Mode - 6kV
- IP67 design for indoor and outdoor applications
- Suitable for dry/damp/wet locations

Application:

- LED street
- Industrial lighting
- Landscape lighting



DESCRIPTION

The GEHC-042W is a 42W, constant-current, IP67 LED driver that operates from 108-305 Vac input with excellent power factor and low THD. It is created for industrial lights, tunnel and street lights. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, input over voltage, output over voltage, short circuit, and over temperature.

MODEL INFORMATION

MODEL NUMBER	INPUT VOLTAGE RANGE [VAC]	OUTPUT POWER [W]	OUTPUT VOLTAGE RANGE [VDC]	OUTPUT CURRENT [A]	TYPICAL EFFICIENCY	TYPICAL THD	POWER FACTOR	
							120VAC	230VAC
GEHC-042B084	108 ÷ 305	42	42 ÷ 84	0.50	88%	10%	0.99	0.97
GEHC-042B060	108 ÷ 305	42	30 ÷ 60	0.70	88%	10%	0.99	0.97
GEHC-042B049	108 ÷ 305	42	25 ÷ 49	0.86	87%	10%	0.99	0.97
GEHC-042B040	108 ÷ 305	42	20 ÷ 40	1.05	87%	10%	0.99	0.97

Notes:

1. All specifications are measured at 25°C ambient temperature if no specific note.

INPUT SPECIFICATIONS

PARAMETER	Min.	Typ.	Max.	Notes
INPUT VOLTAGE	108VAC	120 ÷ 277VAC	305VAC	Refer to derating curve for more details
INPUT FREQUENCY	47Hz	50 ÷ 60Hz	63Hz	-
LEAKAGE CURRENT	-	-	0.75mA	240VAC/60Hz
INPUT AC CURRENT	-	-	0.60A	120 ÷ 277VAC, full load
INRUSH CURRENT (I ² t) ENERGY	-	-	0.01A ² s	230VAC, 25°C ambient temperature (cold start)
POWER FACTOR	0.95	0.97	-	230VAC, full load
THD	-	-	20%	120 ÷ 230VAC, 70 ÷ 100% load
	-	-	15%	120 ÷ 230VAC, 100% load

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Ⓢ OUTPUT SPECIFICATIONS

PARAMETER	Min.	Typ.	Max.	Notes
OUTPUT CURRENT TOLERANCE	-8% I _{SET}	-	+8% I _{SET}	Full load
TOTAL OUTPUT CURRENT RIPPLE (PK-PK)	-	150%	200%	Full load and LED load, ripple is different with difference LED load. 20MHz BW.
STARTUP OVERTHROTT CURRENT	-	-	10% I _o	120 ÷ 277VAC, full load and LED load
NO LOAD OUTPUT VOLTAGE GEHC-042B084 GEHC-042B060 GEHC-042B049 GEHC-042B040	-	-	100V 80V 80V 70V	-
LINE REGULATION	-	-	±8%	25°C ± 10°C ambient temperature, input voltage changes from 120VAC to 277VAC
LOAD REGULATION	-	-	±8%	25°C ± 10°C ambient temperature, 230 VAC input load changes from 60% to 100%
TURN-ON DELAY TIME	-	-	3s	120VAC, full load
	-	-	0.5s	230VAC, full load

Ⓢ GENERAL SPECIFICATIONS

PARAMETER	Min.	Typ.	Max.	Notes
EFFICIENCY AT 115VAC GEHC-042B084 GEHC-042B060 GEHC-042B049 GEHC-042B040	85.0% 85.0% 84.0% 84.0%	86.0% 86.0% 85.0% 85.0%	-	25°C ambient temperature, full load
EFFICIENCY AT 230VAC GEHC-042B084 GEHC-042B060 GEHC-042B049 GEHC-042B040	87.0% 87.0% 86.0% 86.0%	88.0% 88.0% 87.0% 87.0%	-	25°C ambient temperature, full load
EFFICIENCY AT 277VAC GEHC-042B084 GEHC-042B060 GEHC-042B049 GEHC-042B040	86.0% 86.0% 85.0% 85.0%	87.0% 87.0% 86.0% 86.0%	-	25°C ambient temperature, full load
MTBF	-	200 000 hours	-	230VAC, 80% load (MIL-HDBK-217F)
LIFETIME	-	50 000 hours	-	230VAC, 100% load, 70°C case temperature, refer to lifetime vs Tc curve for more details
OPERATING CASE TEMPERATURE FOR SAFETY T_{c_s}	-40°C	-	+90°C	-
OPERATING CASE TEMPERATURE FOR SAFETY T_{c_w}	-40°C	-	+75°C	5 years warranty Humidity: 10% to 95% RH
STORAGE TEMPERATURE	-40°C	-	+90°C	Humidity: 10% to 95% RH
DIMENSIONS (L x W x H)	105 x 64 x 33mm			-
NET WEIGHT	360 ± 20g / pc.			-
PACKAGE (L x W x H)	480 x 275 x 208mm; 24pcs/ctn; G.W.: 9.2kg			-

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◎ SAFETY STANDARDS

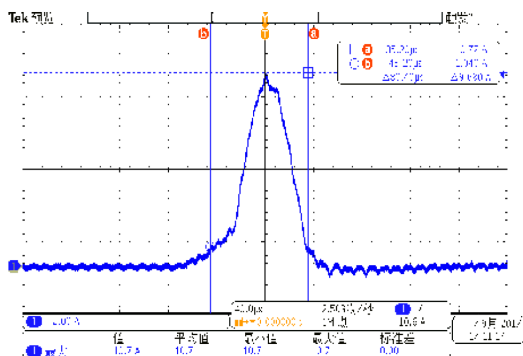
SAFETY CATEGORY	COUNTRY / TERRITORY	STANDARDS
CCC	China	GB19510.1; GB19510.14
CE	Europe	EN61347-1; EN61347-2-13
CB	CB Countries	IEC61347-1; IEC61347-2-13
UL	USA	UL8750; UL1310 (Class 2 Power Units); UL1012
CUL	Canada	CSA C22.2 No.107.1-01
		CSA C22.2 No.223-M91 (Power Supplies with Extra-Low Voltage Class 2 Outputs)
KC	South Korea	K61347-1; K61347-2-13; K62384
PSE	Japan	J61347-1; J61347-2-13
SAA	Australia	AS/NZS IEC61347-2-13; AS/NZS IEC61347.1

◎ EMC STANDARDS

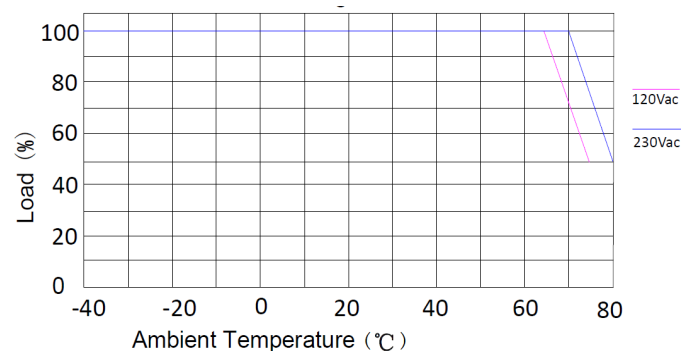
EMC CATEGORY	COUNTRY / TERRITORY	STANDARDS
CCC	China	GB17743; GB17625.1
CE	Europe	EN55015; EN61000-3-2; EN61000-3-3
		EN61000-4-2, -3, -4, -5, -6, -8, -11; IEC61547
KC	South Korea	K61547; K00015
PSE	Japan	J55015
FCC	USA	FCC part 15

Note: This LED driver meets the EMC specifications above, but EMC performance of luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

◎ INRUSH CURRENT WAVEFORM



◎ DERATING CURVE

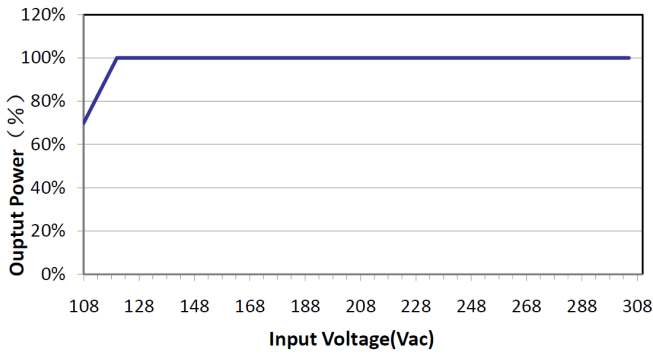


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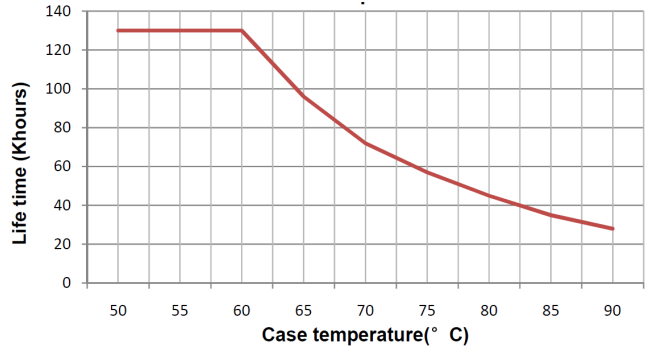
42W Constant Current LED Driver



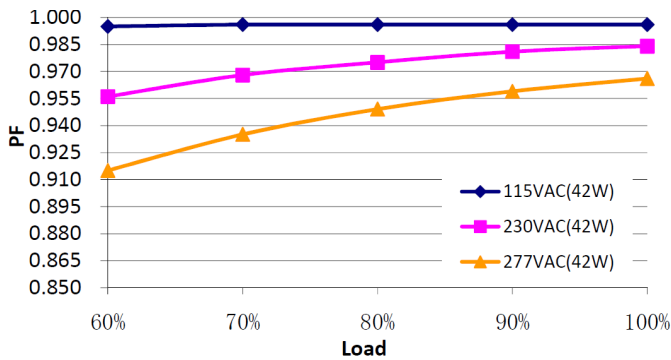
© P_O / P_{MAX} vs. INPUT VOLTAGE CURVE



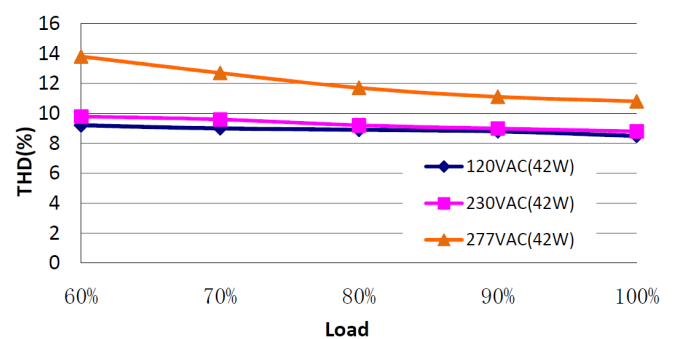
© LIFETIME vs. CASE TEMPERATURE CURVE



© POWER FACTOR vs. LOAD CURVE

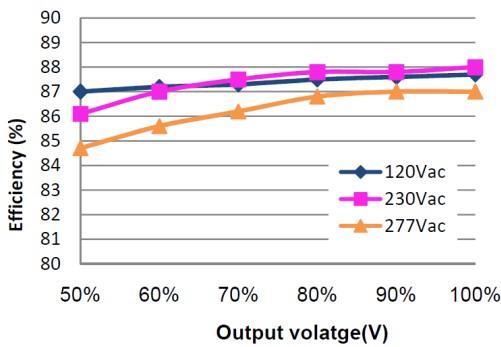


© THD vs. LOAD CURVE

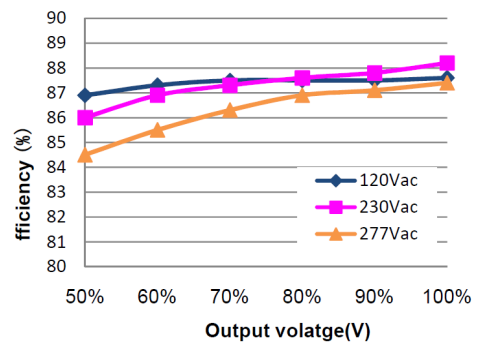


© EFFICIENCY vs. LOAD CURVE

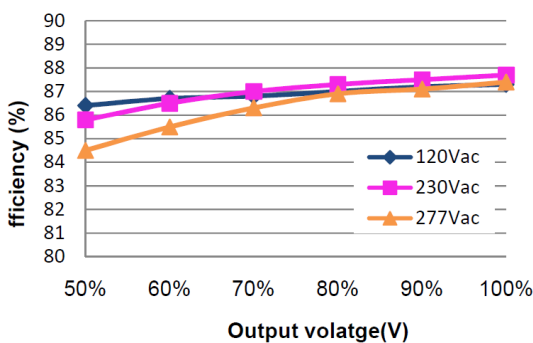
GEHC-042B084 (I = 0.50A)



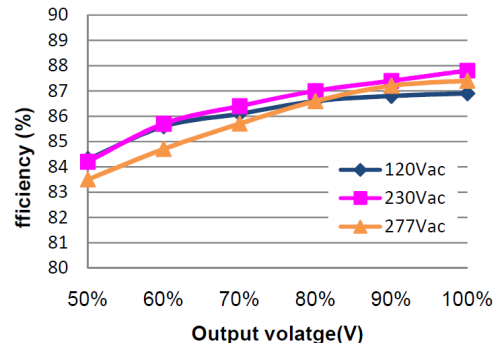
GEHC-042B060 (I = 0.70A)



GEHC-042B049 (I = 0.86A)



GEHC-042B040 (I = 1.05A)



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© PROTECTIONS

PARAMETER	Min.	Typ.	Max.	NOTES	
INPUT OVER VOLTAGE PROTECTION	INPUT PROTECTION VOLTAGE	320VAC	330VAC	340VAC	Turn off the output when the input voltage exceeds protection voltage.
	RECOVERY VOLTAGE	300VAC	320VAC	340VAC	Auto recovery. The driver will restart when the input voltage falls below recovery voltage.
	MAX. OF INPUT OVER VOLTAGE	-	-	440VAC	The driver can survive for 48 hours with input over-voltage of 440VAC.
OVER TEMPERATURE PROTECTION	Decreases output current, returning to normal operation after over temperature is removed.				
SHORT CIRCUIT PROTECTION	Hiccup mode and auto recovery. No damage will occur when output is under short circuit condition. The output shall return to normal operation when the fault condition is removed.				
OVERT VOLTAGE PROTECTION	Limit output voltage at no load and in case the normal voltage limit fail.				

© MECHANICAL SPECIFICATIONS

