


## SPECIFICATION

Product name : HAE-40W

Release date : 2024/01/12

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HAE-40W Series	REV	V1.0

Features.

- Class I type for insulation
- Input voltage range:120-277V ~ 50/60Hz
- Efficiency 87% (Typ.)
- Constant current output ,with power limitation for control mode
- Metal material case, protection grade against water and dust: IP65
- Surge level:
 

differential mode : 4kV

common mode :6kV
- guaranteed Lifetime : 5 years
- It is recommended that this product be installed inside a lamp with waterproof function



Applications

Street lighting、Industrial lighting、Stadium lighting

Floodlight lighting、Landscape lighting 、Plant lighting

Model list

Model NO.	Rated Input voltage	Max Output power	Output voltage	The default current	Eff.
HAE-40W-38V	120-277V 50/60Hz	40W	19-38V	1.050A	≥87%
HAE-40W-42V			21-42V	0.900A	
HAE-40W-58V			29-58V	0.700A	
HAE-40W-66V			33-66V	0.600A	
HAE-40W-80V			40-80V	0.500A	
HAE-40W-88V			44-88V	0.450A	

**Note:**


1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load .

2.When the input is lower than 95±10Vac, the output power gradually derates. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

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## Input characteristics

Parameter	Min	Typ.	Max	Remark
Rated input voltage	120Vac	230Vac	277Vac	-
Input voltage range	100Vac	-	305Vac	-
Rated frequency range	47Hz	50/60Hz	63Hz	-
Power factor	0.95	-	-	@230Vac input ,with full load
Power factor	0.9	-	-	@120-277Vac input ,with 70%-100%
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	20%	@120-277Vac input ,with 70%-100%
Input current	-	-	0.4A	@200Vac input ,with full load
Inrush current	-	-	100A	230Vac, cold start (25°C)

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## Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current				Rated Load :
HAE-40W-38V	1000mA	1050mA	1100mA	38VDC
HAE-40W-42V	855mA	900mA	945mA	42VDC
HAE-40W-58V	665mA	700mA	735mA	58VDC
HAE-40W-66V	570mA	600mA	630mA	66VDC
HAE-40W-80V	475mA	500mA	525mA	80VDC
HAE-40W-88V	430mA	450mA	470mA	88VDC
Output current range				Without potentiometer, the current error is typical $\pm 5\%$
HAE-40W-38V		1050mA		
HAE-40W-42V		900mA		
HAE-40W-58V	-	700mA	-	
HAE-40W-66V	-	600mA	-	
HAE-40W-80V		500mA		
HAE-40W-88V		450mA		
Output voltage range				
HAE-40W-38V	19V		38V	
HAE-40W-42V	21V		42V	
HAE-40W-58V	29V	-	58V	
HAE-40W-66V	33V		66V	
HAE-40W-80V	40V		80V	
HAE-40W-88V	44V		88V	
Available power(95 $\pm$ 10Vac)	-	-	-	When the input voltage is less than 95 $\pm$ 10Vac, linear derating begins
Rated power(120-277Vac)	-	40W	-	-
No-load voltage				
HAE-40W-38V			50V	
HAE-40W-42V	-	-	50V	
HAE-40W-58V	-	-	70V	
HAE-40W-66V	-	-	80V	
HAE-40W-80V			100V	
HAE-40W-88v			100V	
Efficiency@230Vac	-	87%	-	@230Vac input ,with full load
Accuracy of output current	-5%	-	+5%	For constant-power range , with full load
Output current Ripple (PK-AV)	-	80%	100%	100% load, 20 MHz BW
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	500ms	Full load@230Vac

**Note: 1.The output current is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details;**

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## Protections


Protection	description
under-voltage protection	When the input voltage is less than $95 \pm 10\text{Vac}$ , the output power decreases.Refer to derating curve for details
Output overload protection	Protection mode:hiccup mode,and recovers automatically when the fault condition is removed.
Output short circuit protection	Hiccup mode,and recovery automatically when the fault condition is removed.
Over temperature protection	Could recover automatically; when the temperature of the case is greater than $90^{\circ}\text{C}$ , the output power decreases to a half.
Output over-voltage protection	Protection mode:Hiccup or clamp at a certain output highest voltage state, the product will not be damaged, when the fault is removed, the driver works normally

### Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of  $25^{\circ}\text{C}$ ;
2. Including setting error, linear adjustment rate and load adjustment rate;

## Environmental characteristics

Environmental categories	Parameter
Working temperature	$-40 \sim +55^{\circ}\text{C}$ @100-277Vac((Refer to "Service Life Curve"))
Safety case temperature	$-40 \sim 90^{\circ}\text{C}$
Working humidity	20 ~ 95% RH,non-condensing
Storage temperature、humidity	$-40 \sim +80^{\circ}\text{C}$ , 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F ( $T_a=25^{\circ}\text{C}$ )
Lifetime	70000 hours @230Vac,80% load, $T_{\text{case}}=75^{\circ}\text{C}$ .,Refer to” $T_{\text{case}}$ VS Lifetime” curve for details.


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## Safety and EMC

Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 4\text{KV}(2\Omega)$ , common mode L, N-PE $\pm 6\text{KV}(12\Omega)$ Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P: $3.75\text{KVac}$ I/P-PE : $1.5\text{KVac}$ O/P-PE : $0.5\text{KVac}$
Insulation impedance	I/P-PE: $100\text{M}\Omega / 500\text{VDC}$ ; I/P-O/P: $100\text{M}\Omega / 500\text{VDC} / 25^\circ\text{C} / 70\% \text{RH}$
Leakage current	$<0.7\text{mA}@277\text{Vac}$

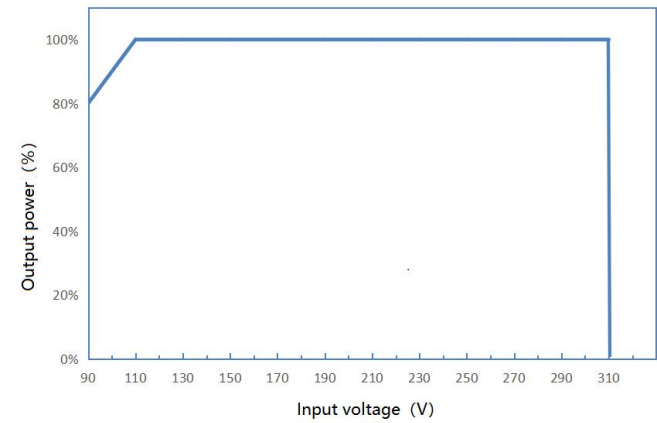
### Note:

**1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.**

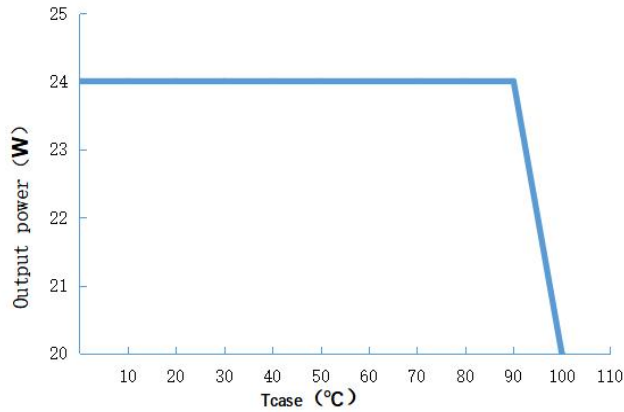
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characteristic curve

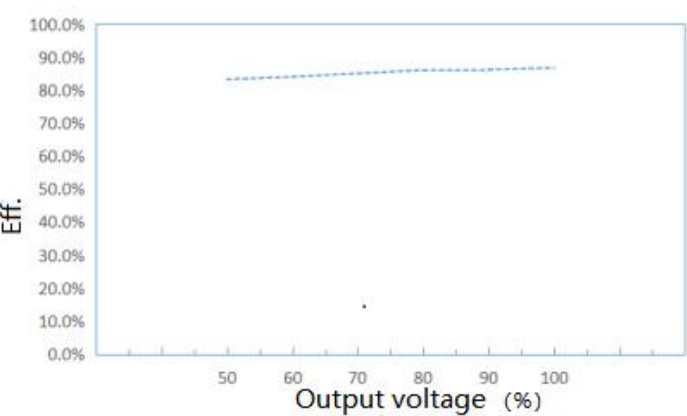
Output power vs. input voltage



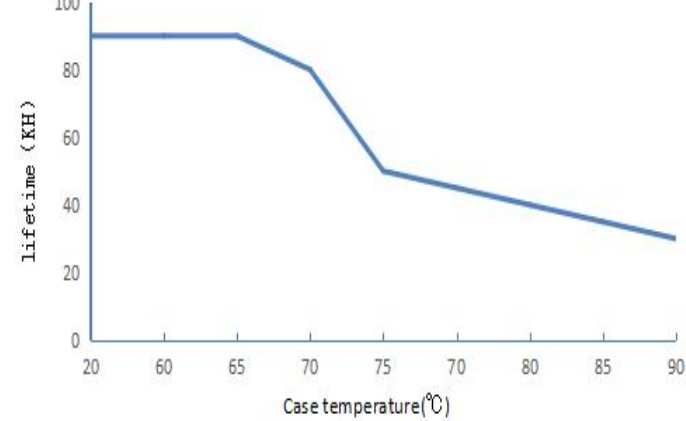
Output power vs. ambient temperature curve



Efficiency vs. output power



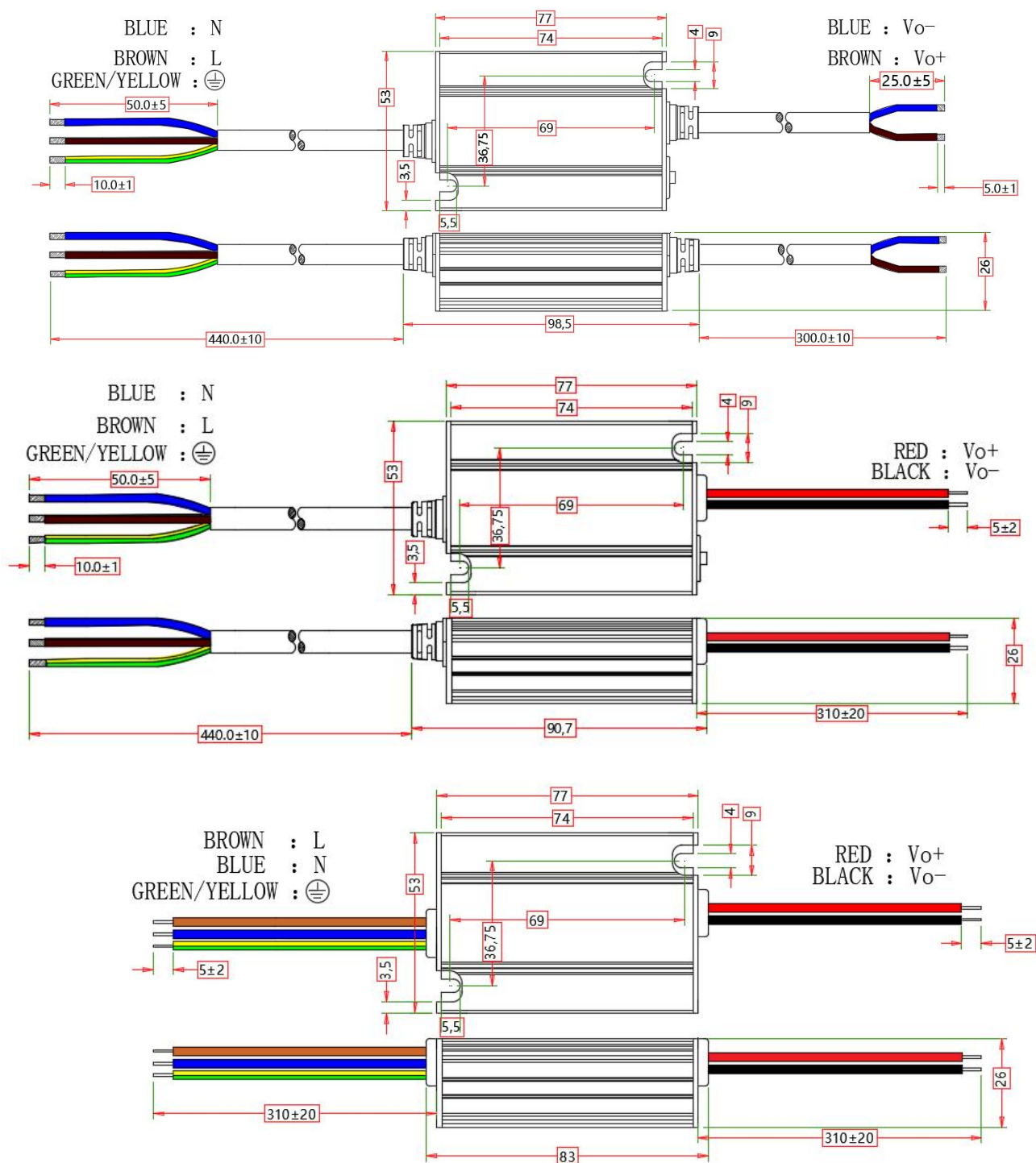
Tc VS Life (HAE-40W)



## Mechanical specification


Size (mm)	L77mm*W53mm*H26mm
Weight (Kg)	0.21g
Packaging (mm)	

### HAE-40W-38/42/58/66/80/88V



The input electronic line has not yet obtained the certificate yet



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Version

DATE	DESCRIPTION	REV.	CHECK
2024.01.12	Initial version.	V1.0	