

400W DALI dimming constant voltage waterproof led driver



■ Features

- Constant Voltage (C.V.) output
- Built-in active PFC function, High efficiency up to 92%
- Input voltage/Full range(up to 305VAC)
- Protections:Short circuit/Over voltage/Over load/Over temperature
- THD≤15%, Dimming range:0-100% or 10-100%
- Comply with DALI V0 IEC60929 and DALI V1 V2 IEC62386 standards
- Noise free,flicker free,5 years warranty
- OEM & ODM, no MOQ, Support customization

■ Applications

- LED outdoor lighting
- LED strip light
- LED kitchen light
- LED wall washer light
- LED underground light
- LED tunel light
- LED garden lights
- LED line light
- LED stage lights
- LED Spot light

■ Description

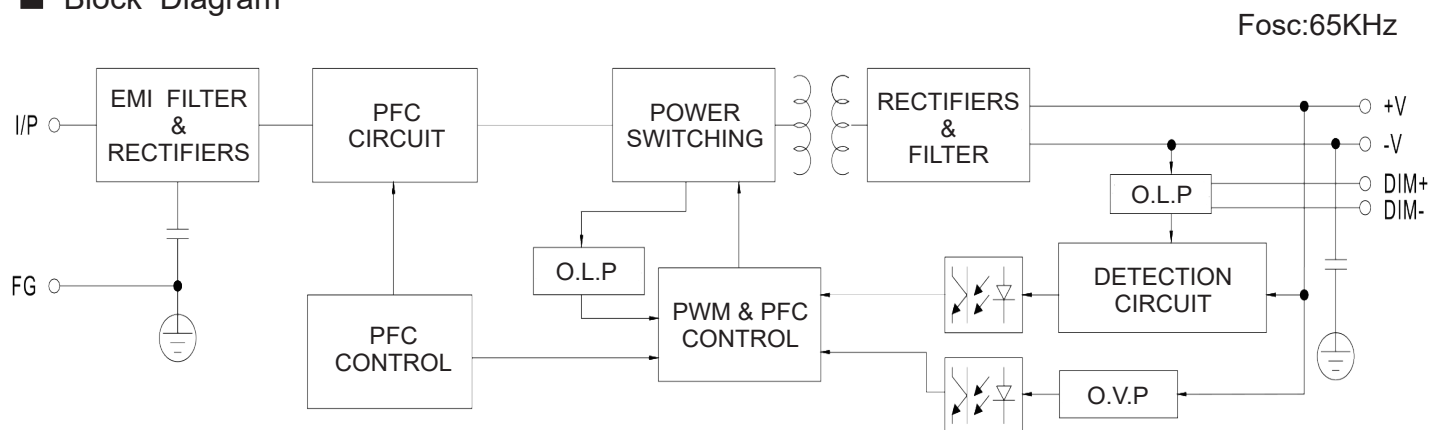
The DALI constant voltage series produced by Zoran Technology is an AC-to-DC dimming driver.operates from 90~305VAC and offers models with different rated voltage ranging ~between 12V/24V/36V/48V/54V/60V etc. Thanks to the high efficiency up to 92%, with the fanless design, the entire series is able to operate for -40~ +80 C case temperature under free air convection. It can be widely matched with all European dimmers and lighting control systems, Australian mainstream dimmers and lighting control systems, such as: Philips, Osram, Lutron, Leviton and Tridonic dimmers and systems, flicker free,achieve perfect soft dimming.

■ Electrical Specification

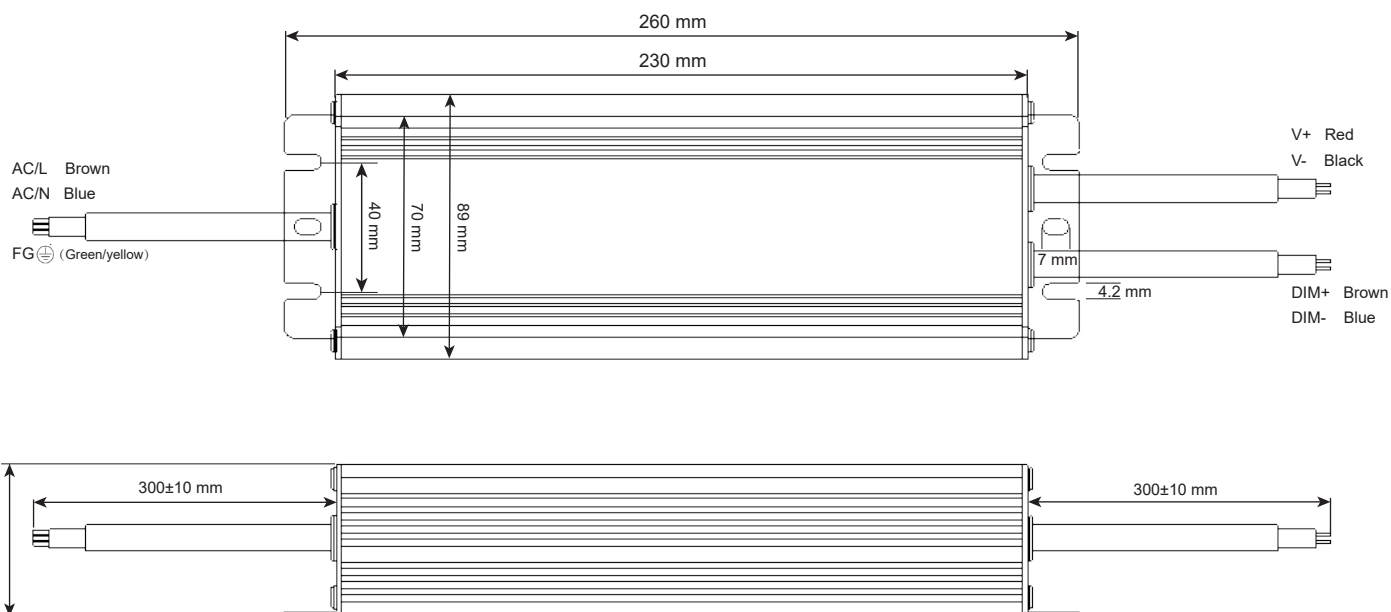
MODEL		ZR-HVM24ND-400W	ZR-HVM36ND-400W	ZR-HVM48ND-400W	ZR-HVM54ND-400W	ZR-HVM60ND-400W
Output	Output Voltage Note.1	24 VDC	36 VDC	48 VDC	54 VDC	60 VDC
	Opout Current Note.2	16700 mA	11100 mA	8330 mA	7400 mA	6670 mA
	Rated Power	400 W	400 W	400 W	400 W	400 W
	Voltage Tolerance Note.4	±3%	±3%	±3%	±3%	±3%
	Auxiliary output(customizable)	12VDC	12VDC	12VDC	12VDC	12VDC
	Setup,Rise Time Note.6	500ms,100ms/115VAC 500ms,100ms/230VAC				
	Hold Up Time (Typ.)	10ms/115VAC 230VAC				
Input	Rate Voltage Note.5	90~265VAC OR 100-277VAC				
	Frequency Rance	48-62Hz				
	Power Factor	PF≥0.98/115VAC PF≥0.96/230VAC PF≥0.95/265VAC at full load				
	THD	THD≤15%(Bipolar)				
	Full load Efficiency	≥90%	≥91%	≥91%	≥91%	≥92%
	AC Current (Typ.)	3.83A/115VAC 1.92A/230VAC 1.66A/265VAC				
	Input signal (Typ.)	DALI or PUSH dim				
	No-load power consumption	≤1.0W				
Protection	Over Current	95-108%				
		Protection type:Constant current limiting,recoveres automatically after fault condition is removed				
	Over Load	≤120% Recovers automatically after fault condition is removed				
	Short Circuit	Hiccup Mode,Recovers automatically after fault condition is removed				
	Over Voltage	Protection type:Shut down O/P voltage,re-power on to recover				
	Over Temperature	Shut down O/P voltage,re-power on to recover				
Environmen	Working Temperature	Tcase=-40~+80℃ (Refer to “Derating curve”)				
	Max Case Temperature	Tcase=+90℃				
	Working Humidity	20-95%RH non-condensing				
	Storage TEMP. Humidity	-40~+80℃ 10-95%RH				
	TEMP. Coefficient	±0.03%/℃ (0-50℃)				
Safety & EMC	Safe Standards	U8750,CSA C22.2 No.250.13-12;ENEC AS/NZS IEC EN61347-1;AS/NZS IEC EN61347-2-13 independent EN62348;GB19510.14 IP65 or IP67				
	DALI Standards	Compliance to IEC-62386-101,102,207(only to YD/ND series)				
	Withstand Voltage	I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.0KVAC				
	Isolation Resistance	I/P-O/P,I/P-FG,O/P-FG:100M ohms/500VDC/25℃ /70%RH				
	EMC Emission	Compliance to EN55015,EN61000-3-2 Class C(≥60% load);EN61000-3-3;GB17743;GB17625.1				
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11;EN61547 heavy industry level(surge 4KV)				
Others	Dimension(L*W*H)	260*89*43 mm				
	Weight	2000g				
	Packing	10pcs/21kg/ctn				
Note	1.All parameters Not specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2.Ripple&Noise are measured at 20MHz of bandwidth by using a 12”twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3.Tolerance: includes set up tolerance, line regulation and load regulation. 4.The power supply 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 manufactures must re-qualify EMC Directive on the complete installation again. 5.Please refer to the product warranty on Zoran Technology website http://www.zorantech.com . 6.If you need other special parameters, please contact our customer service for consultation!					



■ Block Diagram

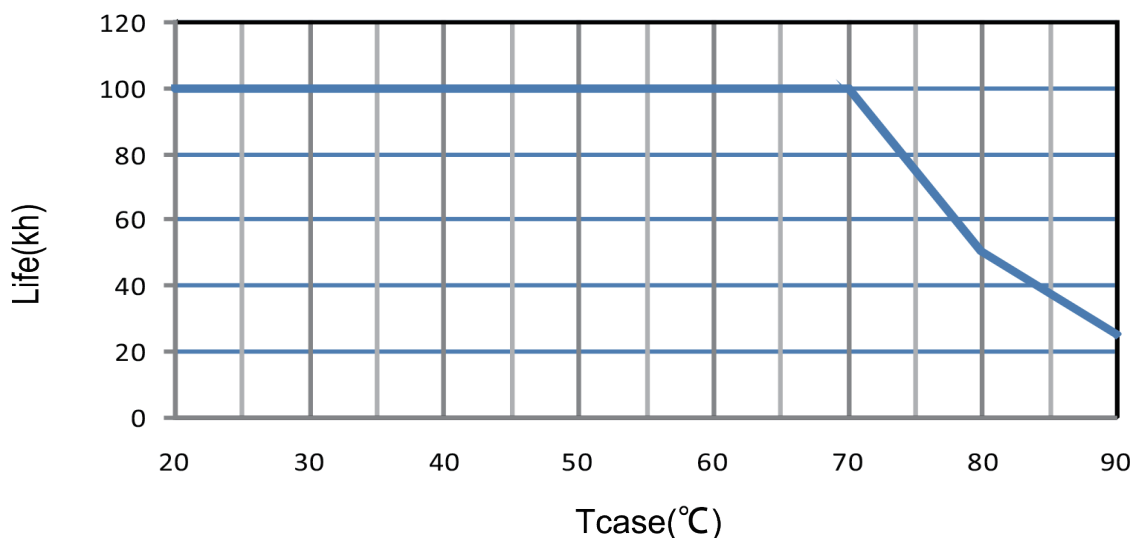


■ Mechanical Specification



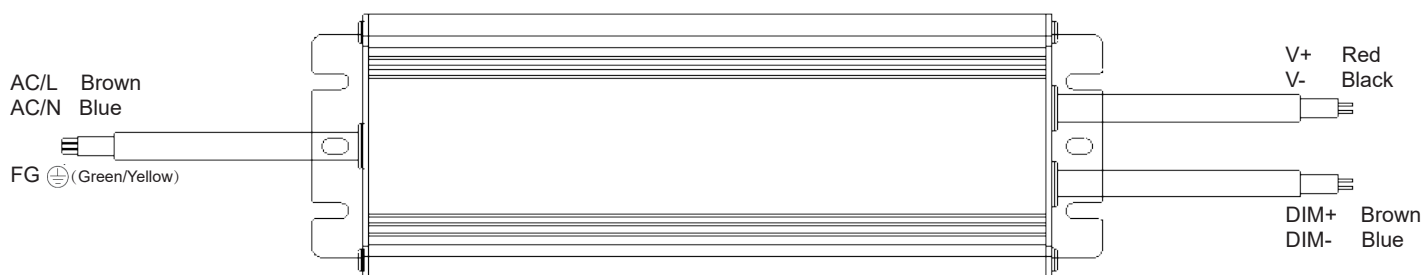
- ※ The yellow-green wire at the input is the ground (FG), the brown wire is the AC phase wire(L), and blue wire is the AC neutral wire (N);
- ※ The brown wire at the output is the positive dimming signal (DIM+) and the blue wire is the dimming signal negative (DIM-), the red wire is the positive output voltage(V+) and black wire is the negative output voltage(V-);
- ※ In addition, the length and thickness of the input and output lines can be customized according to customer requirements. Please contact Zoran Customer Service for details;

■ Life





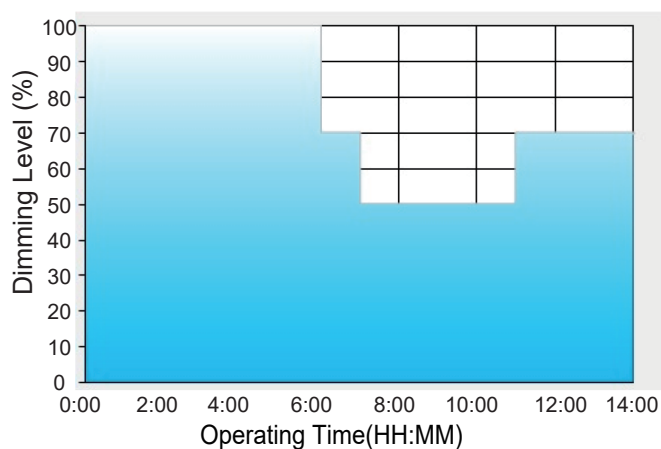
■ Dimming Operation



※ DALI Interface

- Add DALI signal between DA+ and DA- ;
- DALI protocol 16 groups and 64 addresses ;
- Can set any output current to boot ;

◎ D01-Type: the profile recommended for residential lighting



Set up for D01-Type in Smart time dimming software program:

	T1	T2	T3	T4
TIME **	06:00	07:00	11:00	----
LEVEL **	100%	70%	50%	70%

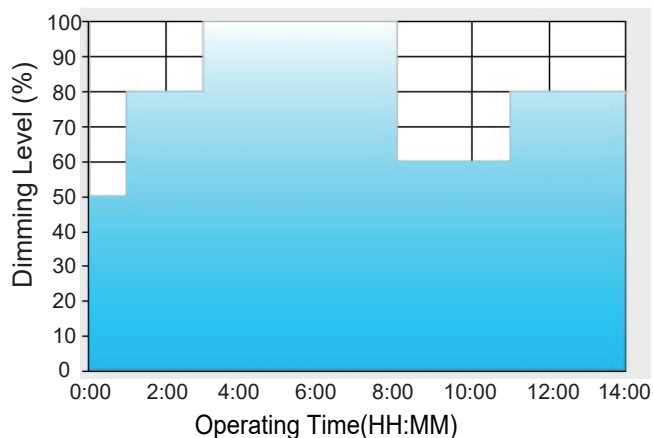
** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

- [1] The power supply will switch to the constant current level at 100% starting from 6:00pm.
- [2] The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.
- [4] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.

The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

◎ D02-Type: the profile recommended for street lighting



Set up for D02-Type in Smart time dimming software program:

	T1	T2	T3	T4	T5
TIME **	01:00	03:00	08:00	11:00	----
LEVEL **	50%	80%	100%	60%	80%

** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

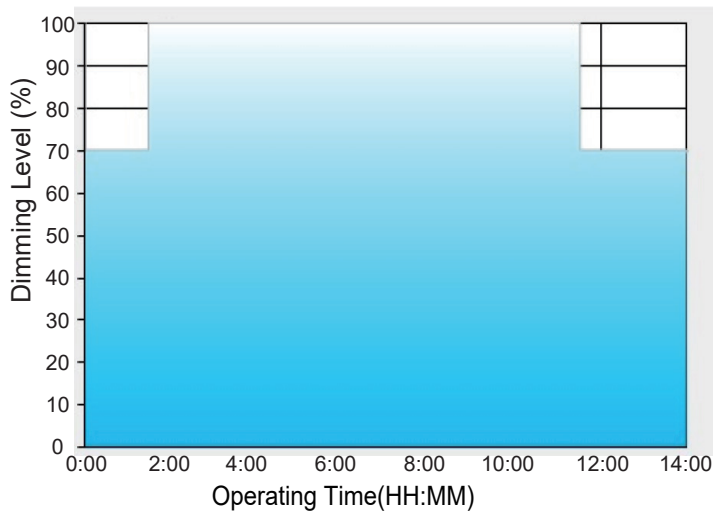
Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

- [1] The power supply will switch to the constant current level at 50% starting from 5:00pm.
- [2] The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.
- [4] The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.
- [5] The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on.

The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.



◎ D03-Type: the profile recommended for tunnel lighting:



Set up for D03-Type in Smart time dimming software program:

	T1	T2	T3
TIME **	01:30	11:00	----
LEVEL **	70%	100%	70%

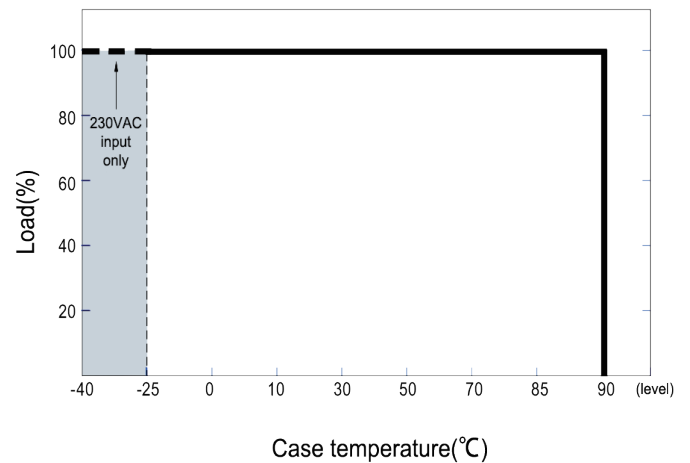
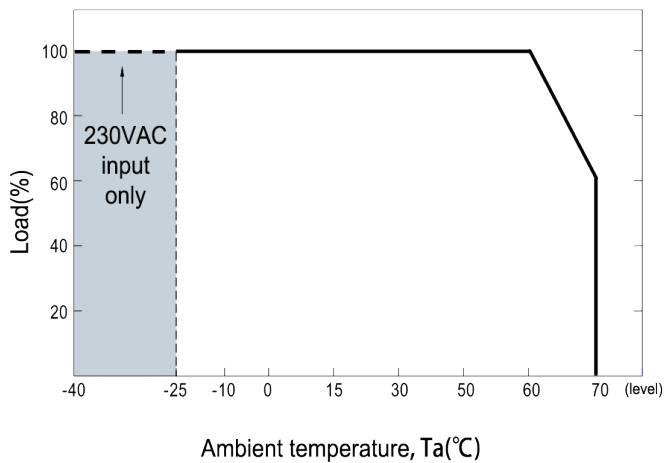
** : Time matches Operating Time in the diagram whereas LEVEL matches Dimming level.

Example: If a residential lighting application adopts D03-Type, when turning on the power supply at 4:30pm,for instance:

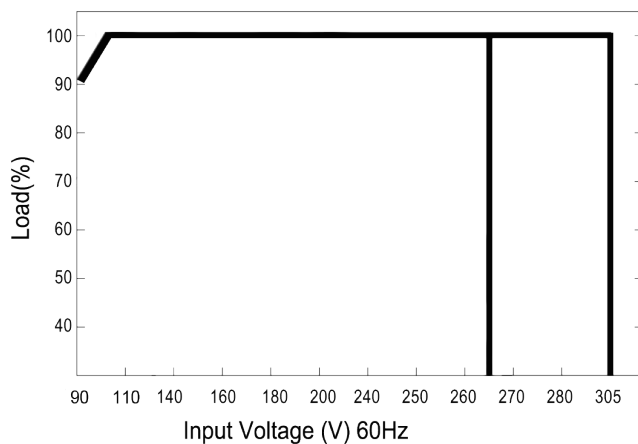
- [1] The power supply will switch to the constant current level at 70% starting from 4:30pm.
- [2] The power supply will switch to the constant current level at 100% in turn,starting from 6:00pm,which is 01:30 after the power supply turns on.
- [3] The power supply will switch to the constant current level at 70% in turn,starting from 5:00am,which is 11:00 after the power supply turns on.
The constant current level remains till 6:30am ,which is 14:00 after the power supply turns on.



Output load VS Temperature



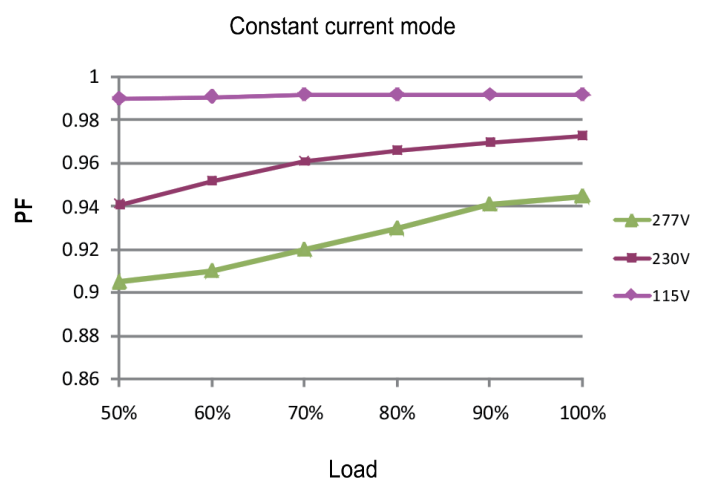
Static characteristic curve



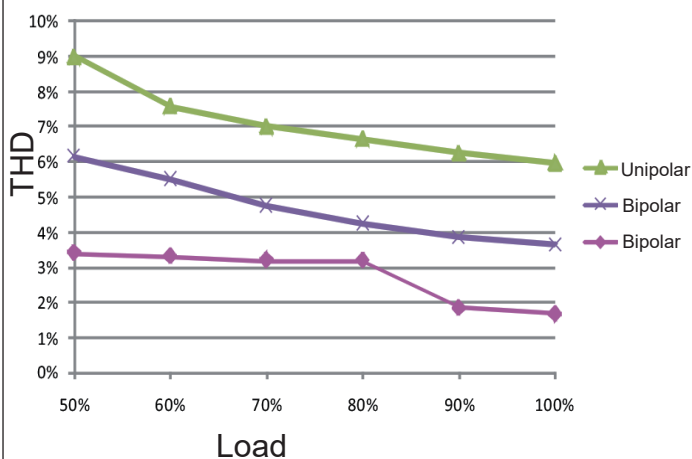
※ Derating output at low input voltage

PF characteristic curve

※ Tcase at 80°C



THD characteristic curve



Efficiency VS Load

