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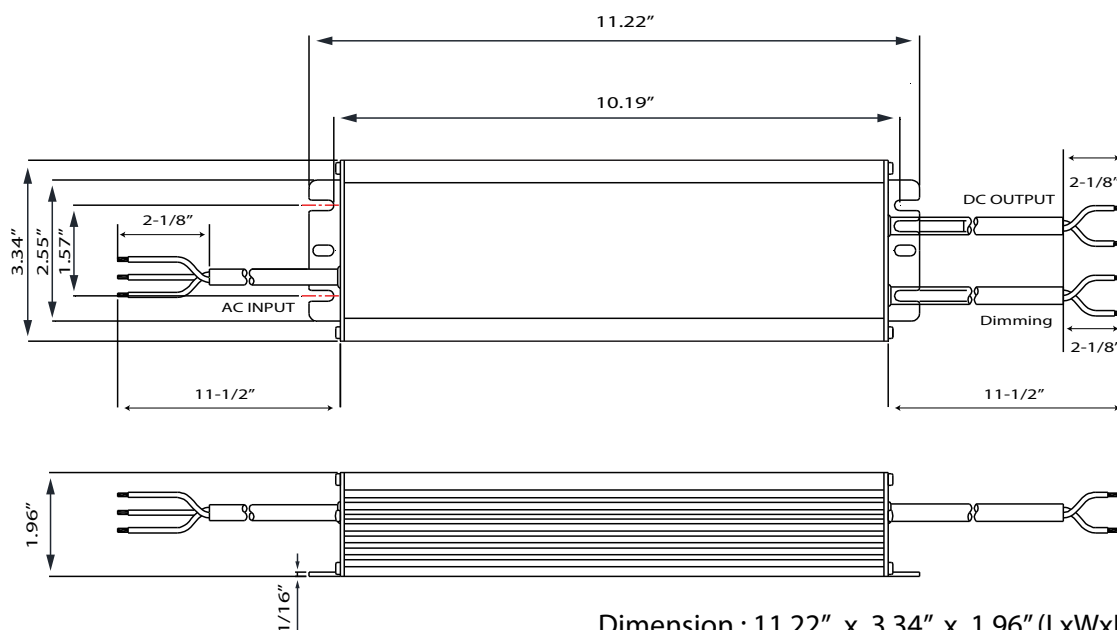


Product Features

- Universal input voltage / Full range: 108~305Vac
- Constant power Design, output current programming adjustable
- M Types: Off-line programmable / Constant lumen output
- 3-in-1 dimmable: 0~10Vdc/PWM/Timer dimming (Dim-to-off)
- Output and dimming signal isolating
- Surge protection: 4KV Line-Line, 6KV Line-Earth
- Protections: SCP/OVP/OTP
- IP67 design for indoor and outdoor applications
- Metal case, suitable for dry, damp and wet locations
- 5 Years warranty
- Best use in, LED roadway lighting, industrial lighting, landscape lighting etc.

Model N°	Max Output Power (W)	Output Volt. (Vdc)	Full Power Output Volt. (Vdc)	Full Power Current Adjustable (A)	Default Output Current Setting (A)	Typical Efficiency	Power Factor
P1-400M056A12	400W	38-56V	48-56V	7.15-8.33A	48V/8.33A	94%	0.97

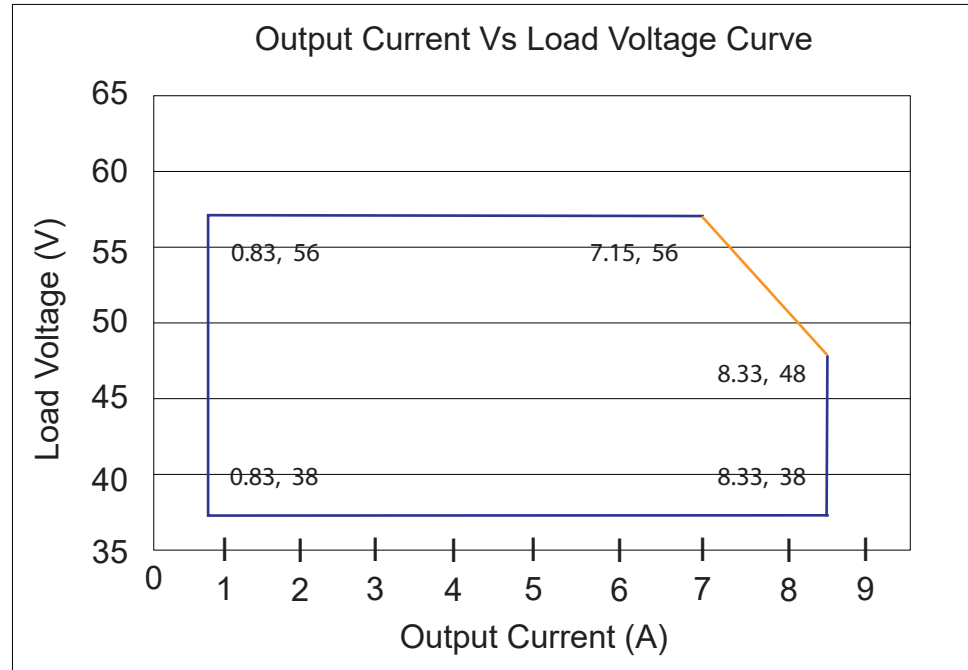
Physical



Dimension : 11.22" x 3.34" x 1.96" (LxWxH)

Weight : 4.40±0.22 lbs

Operating Area



Note: The drivers are not allowed to work in overloaded condition, otherwise warranty will expire.

General Specifications

Parameter		Description			Notes
		Min.	Typ.	Max.	
Efficiency @120Vac	Io: 8.33	89.0%	91%	–	Measured at full load and 25°C - ambient temperature
Efficiency @230Vac	Io: 8.33	92.0%	94%	–	Measured at full load and 25°C - ambient temperature
Efficiency @277Vac	Io: 8.33	92.50%	94.50%	–	Measured at full load and 25°C - ambient temperature
Dielectric Strength	Input-Output	–	3750Vac	–	Maximum 5mA/60S
	Input-PE	–	1600Vac	–	
	Output-PE	–	1600Vac	–	
	Input-DIM	–	3750Vac	–	
Grounding Resistance		–	–	0.1Ω	25A/60S, under 25°C ± 10°C ambient temperature
Insulation Resistance		10MΩ	–	–	Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH
MTBF		–	200000Hrs	–	25°C ± 10°C ambient temperature (230Vac, 80% load) MIL-HDBK-217F
Lifetime		–	50000Hrs	–	230Vac & 100% load, 75°C case temperature, refer to lifetime curve for details.
Ambient Temperature		-40°C	–	+60°C	
Operating Case Temp for Safety Tc_S		-40°C	–	+90°C	
Operating Case Temp for Warranty Tc_S		-40°C	–	+75°C	5 years warranty case temp. Humidity: 10% to 95% RH
Storage Temperature		-40°C	–	+85°C	Humidity: 5% to 100% RH
Net Weight		4.40 ± 0.22 Lbs/pc			
Dimensions		11.22" * 3.34" * 1.96" (L*W*H)			

Input Specifications

Parameter	Description			Notes
	Min.	Typ.	Max.	
Input Voltage	108Vac	100-277Vac	305Vac	
Input Frequency	47Hz	50/60Hz	63Hz	
Leakage Current	–	–	0.70mA	277Vac / 60Hz
Input AC Current	–	–	5.0A	100-277Vac & Full load
Inrush Current	–	–	75A	230Vac & Full load
Standby Power Consumption	–	–	0.75W	25°C @DIM-to-Off
Power Factor	0.97	0.99	–	120Vac, 50/60Hz, full load
	0.95	0.97	–	230Vac, 50/60Hz, full load
	0.92	0.95	–	277Vac, 50/60Hz, full load
THD	–	8%	15%	100-240Vac, 50-60Hz, 70%-100% load
	–	–	20%	277Vac, 50-60Hz, 70%-100% load

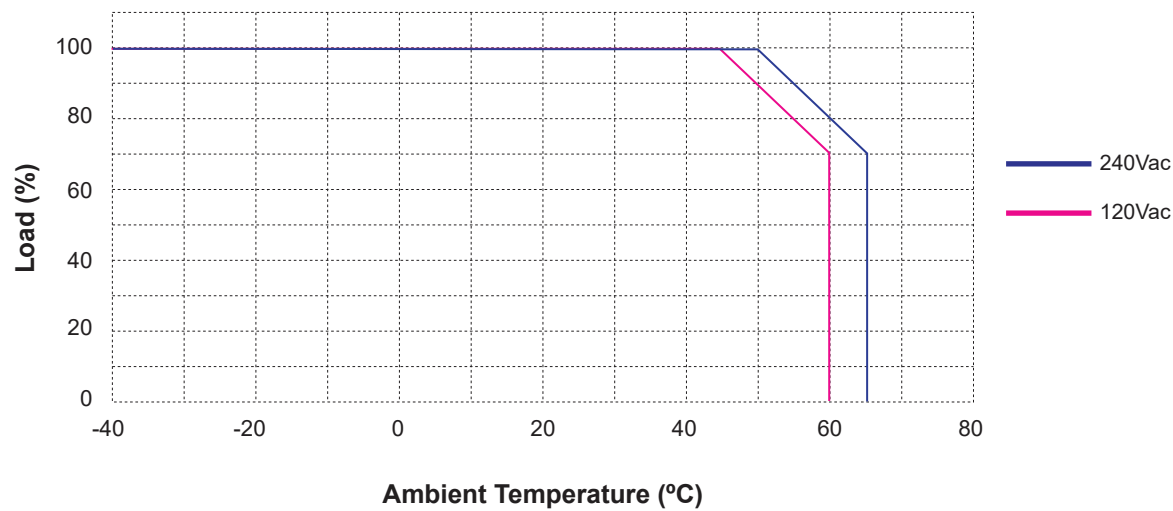
Output Specifications

Parameter	Description			Notes
	Min.	Typ.	Max.	
Output Current Tolerance	-5%	–	5%	
Output Current Setting Range (A)	0.83	–	8.33	
Total output Current Ripple (Pk-Pk)	–	5%	10%	20MHz BW, Full load & LED load ripple would be tiny different under
Starup Overshoot Current	–	–	10%	100~277Vac & 100% load
Line Regulation	-1%	–	1%	25°C± 10°C ambient temperature, input voltage changes from 100Vac
Load Regulation	-3%	–	3%	25°C± 10°C ambient temperature, input voltage 230Vac, load changes
Turn-on Delay time	–	–	3S	120Vac, 100% load
	–	–	2S	230Vac, 100% load
12V Auxiliary Output Voltage	11.4V	12V	12.6V	25°C± 10°C ambient temperature, 230Vac, 100% Load
12V Auxiliary Output Source Current	0mA	–	200mA	

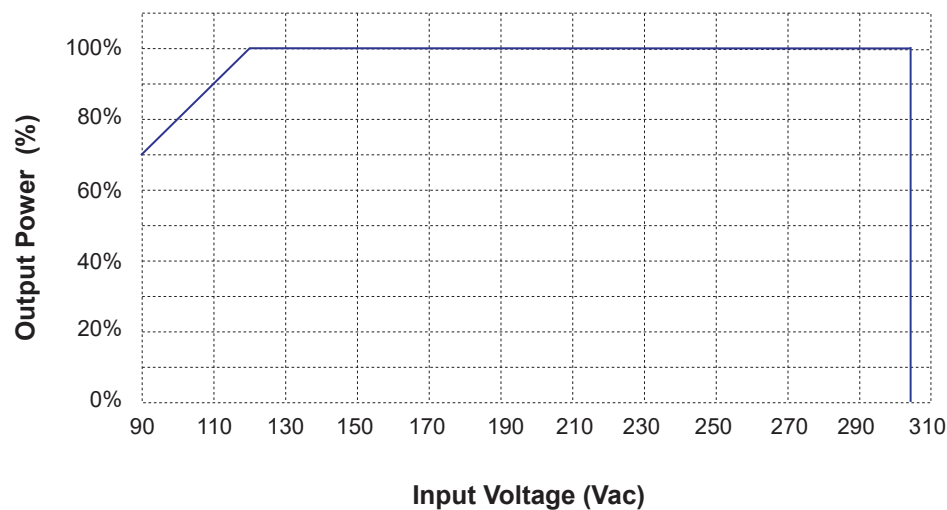
Dimming Specifications

Parameter		Description			Notes
		Min.	Typ.	Max.	
0~10V Absolute Maximum Voltage on the Vdim (+) Pin		–	10V	–	
0~10V Source Current on Vdim (+) Pin		–	200μA	400μA	
Dimming Output Range	P1-400M056A12	10%Imax	–	100%Imax	Imax = 8.33A
	P1-400M056A12	0.83A	–	8.33A	
Recommended Dimming Range for 0-10V		0V	–	10V	Default 0-10V/PWM Dimming (0-10V, 0-9V)
PWM_in high level		9.7V	–	10.3V	
PWM_in low level		0V	–	0.3V	
PWM_in frequency range		300Hz	–	2KHz	
PWM_in Duty Cycle		1%	–	99%	

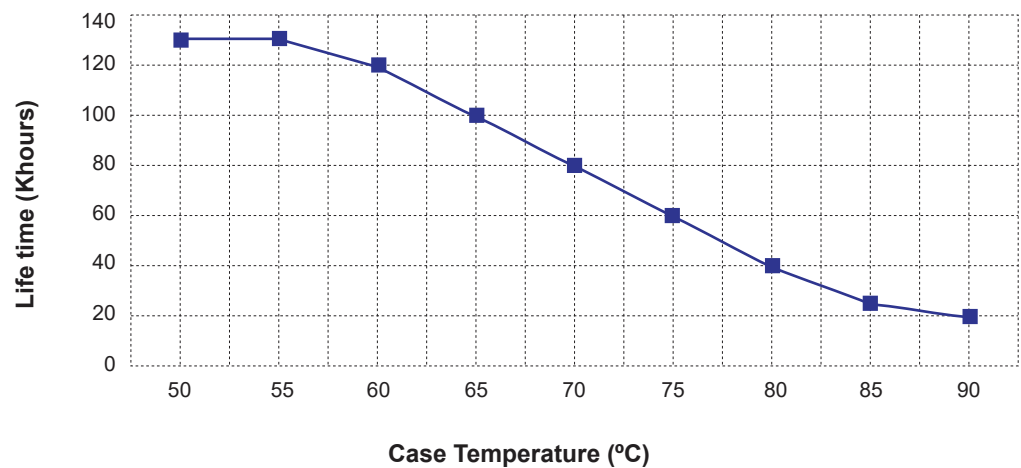
Derating Curve



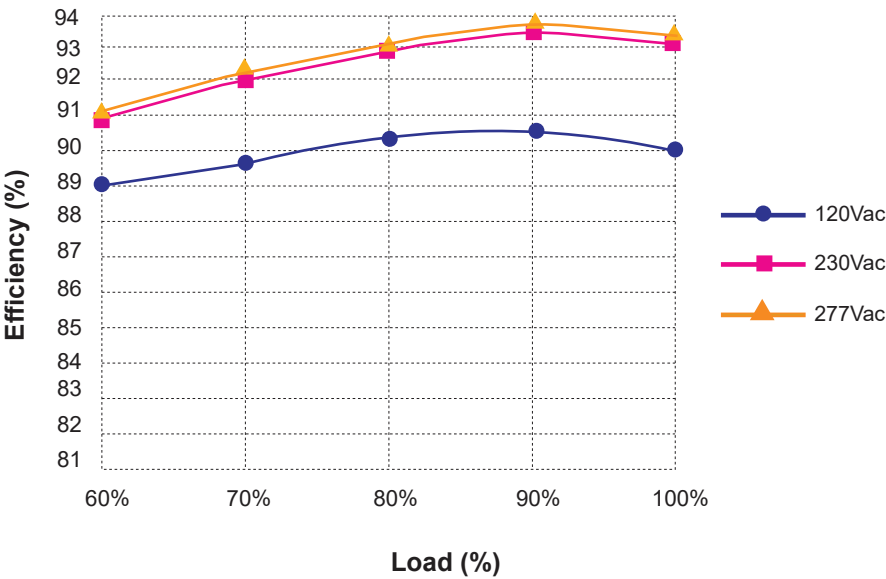
Output Power Vs Input Voltage



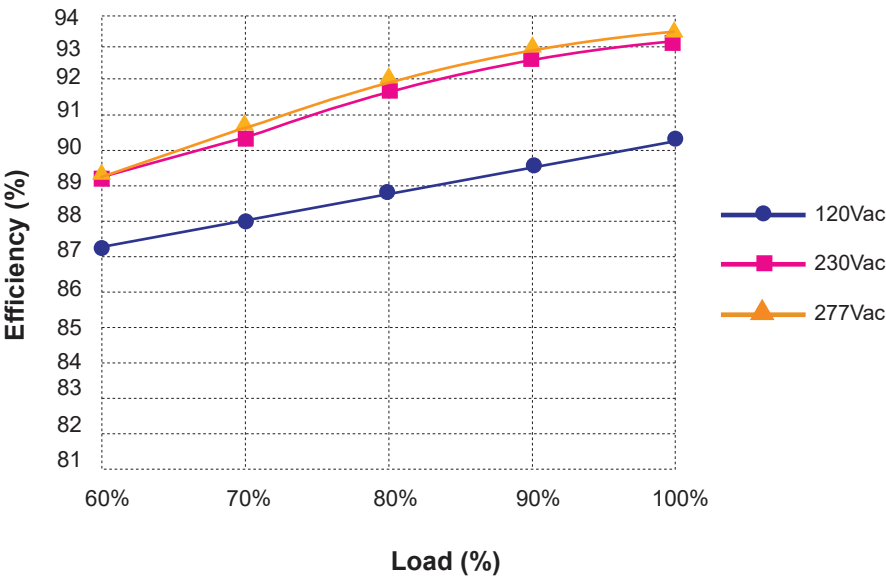
Lifetime Vs Case Temperature



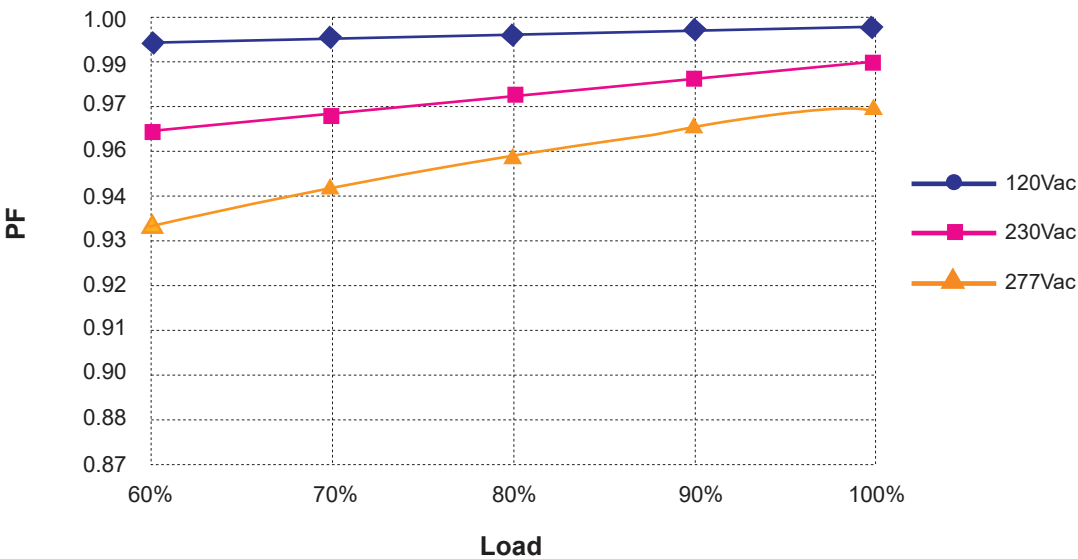
Efficiency Vs Load: $I_o = 7.15A$



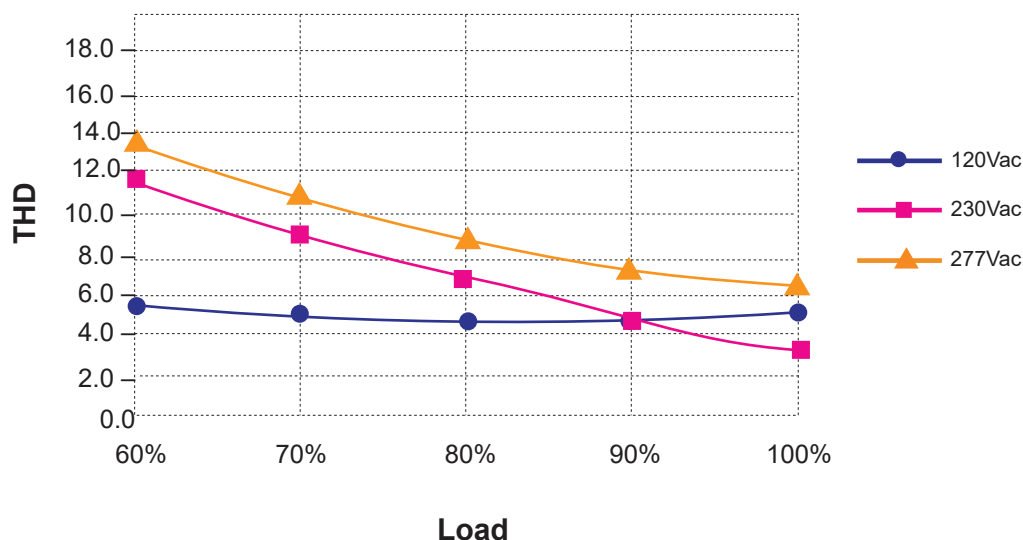
Efficiency Vs Load: $I_o = 8.33A$



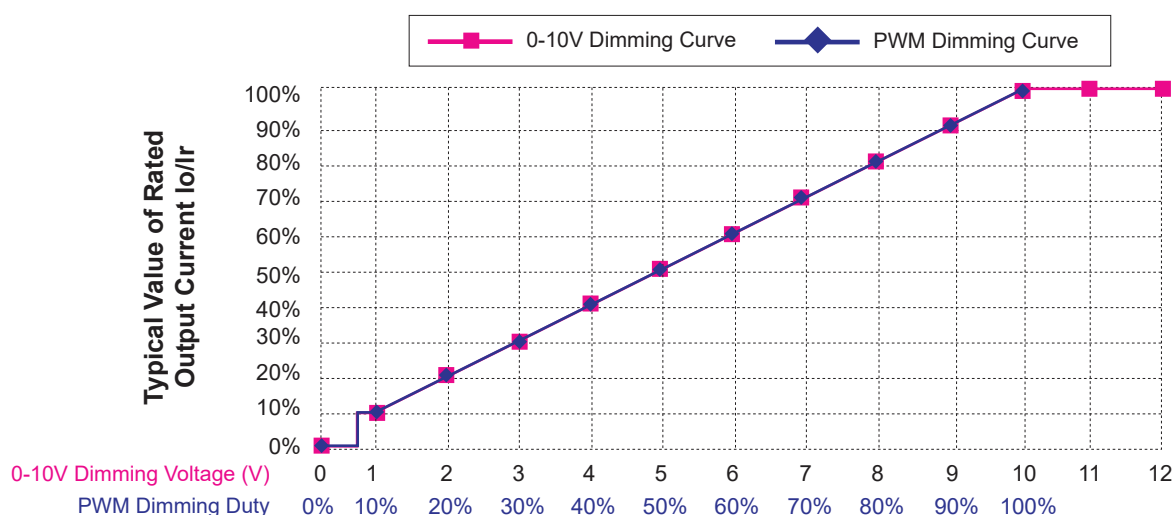
Power Factor Vs Load



Total Harmonic Distortion



0-10V/PWM Dimming Curve



Note: Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage

Protections

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Constant current mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Run into protection mode when output voltage exceeds limit, and return to normal when the fault is eliminated and restart the power supply.

- * Ensure the power has been cut off before making any connection.
- * All wiring and installation of this product is required to be manipulated by a professional

Safety Standards Approved

- USA
 - Category: UL
 - Standards: UL 8750
- Canada
 - Category: CUL
 - Standards: CSA C22.2 No.250.13
- Europe
 - Category: CE/ENEC
 - Standards:
 - EN61347-1
 - EN61347-2-13
 - EN62493
 - EN62384
- CB Countries
 - Category: CB
 - Standards
 - IEC61347-1
 - IEC61347-2-13
- China
 - Category: CCC
 - Standards:
 - GB19510.1
 - GB19510.14
- Australia
 - Category: SAA
 - Standards:
 - AS/NZS IEC 61347.2.13
 - AS/NZS 61347.1
- Russia
 - Category: EAC
 - Standards:
 - ГОСТ Р МЭК 61347-1-2011
 - ГОСТ IEC 61347-2-13-2013
 - ГОСТ IEC 62493-2014
 - СТБ EH 55015-2006
 - ГОСТ IEC 61547-2013
 - ГОСТ 30804.3.2-2013 (IEC 61000-3-2:2009)
 - ГОСТ 30804.3.3-2013 (IEC