DESCRIPTIONS

550W, AC-DC Open Frame Power Supply





RoHS

CE Report EN62368-1

UKCA Report BS EN62368-1

cULus UL62368-1

FEATURES

- Universal 90 - 264VAC or 127 - 370VDC input voltage
- Operating ambient temperature range: -40℃ to +70℃
- Built-in active PFC function
- Output short circuit, over-current, over-voltage protection, over-temperature protection
- 320W with air cooling, 550W with 25CFM
- 5VDC standby output, 12VDC fan supply
- PG signal and remote sensing function
- Safety according to medical certification, suitable for BF application
- The base plate with conformal coating
- Operating altitude up to 5000m
- Safety according to IEC62368, GB4943, IEC/EN60335

APPLICATIONS

- Industrial
- LED
- Street Light Control
- Electricity
- Security
- Telecommunications
- Smart Home
- Medical

Selection Guide

Certification	Part No.*	Cooling Method*	Output Power (W)*	Nominal Output Voltage and Current (Vo/Io)	Output Voltage Adjustable Range (V)	Efficiency at 230VAC (%) Typ. *	Capacitive Load (μF) Max.
EN/BS EN	AOF550-2B-12-C	Air cooling	309.6	12V/25.8A	11.4 -12.6	91	6000
		25CFM	499.2	12V/41.6A			
EN/BS EN/UL	AOF550-2B-15-C	Air cooling	310.5	15V/20.7A	14.25 -15.75	92	6000
		25CFM	499.5	15V/33.3A			
--	AOF550-2B-18-C	Air cooling	320.4	18V/17.8A	17.1-19.9	92.5	6000
		25CFM	500.4	18V/27.8A			
EN/BS EN	AOF550-2B-19-C	Air cooling	319.2	19V/16.8A			
		25CFM	499.7	19V/26.3A			
EN/BS EN/UL	AOF550-2B-24-C	Air cooling	309.6	24V/12.9A	22.8 - 25.2	93	6000
		25CFM	549.6	24V/22.9A			

--	AOF550-2B-27-C	Air cooling	310.5	27V/11.5A	25.65 - 28.35	93.5	4000
		25CFM	550.8	27V/20.4A			
	AOF550-2B-36-C	Air cooling	309.6	36V/8.6A	34.2 - 37.8	94	3000
		25CFM	550.8	36V/15.3A			
	AOF550-2B-48-C	Air cooling	312.0	48V/6.5A	45.6 - 50.4	94	2000
		25CFM	550.0	48V/11.46A			
	AOF550-2B-54-C	Air cooling	310.5	54V/5.75A	51.3 - 56.7	94	1500
		25CFM	550.8	54V/10.2A			
	AOF550-2B-12-CF	Forced air cooling	499.2	12V/41.6A	11.4 -12.6	91	6000
UL	AOF550-2B-15-CF	Forced air cooling	499.5	15V/33.3A	14.25 -15.75	92	6000
--	AOF550-2B-18-CF	Forced air cooling	500.4	18V/27.8	17.1-19.9	92.5	6000
	AOF550-2B-19-CF	Forced air cooling	499.7	19V/26.3			
EN/BS EN/UL	AOF550-2B-24-CF	Forced air cooling	549.6	24V/22.9A	22.8 - 25.2	93	6000
EN/BS EN	AOF550-2B-27-CF	Forced air cooling	550.8	27V/20.4A	25.65 - 28.35	93.5	4000
--	AOF550-2B-36-CF	Forced air cooling	550.8	36V/15.3A	34.2 - 37.8	94	3000
EN/BS EN	AOF550-2B-48-CF	Forced air cooling	550.0	48V/11.46A	45.6 - 50.4	94	2000
--	AOF550-2B-54-CF	Forced air cooling	550.8	54V/10.2	51.3 - 56.7	94	1500

Notes: 1.*Under any conditions, the total power of the product should not exceed the rated power. When the output voltage is increased, the total output power cannot exceed the rated output power, when the output voltage is decreased, the output current cannot exceed the rated output current;

2.*When measuring the full load efficiency, the fan should be connected to an external power supply. Fan loss is not included in the input power;

3.*AOF open frame series is also available, named AOF550-2B-xx ;

4.*25CFM refers to AOF550-2B-xx-C series external fan speed, fored air cooling 25CFM refers to the built-in fan speed, which automatically starts when the AOF550-2B-xx-CF series are turned on.

5.*The product picture is for reference only. For details, please refer to the actual product.

Specifications

Product Specifications	Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Specifications	Input Voltage Range	AC input		90	--	264	VAC
		DC input		127	--	370	VDC
	Input Frequency			47	--	63	Hz
	Input Current	115VAC		--	--	6.5	A
		230VAC		--	--	4.0	
	Inrush Current	115VAC	Cold start	--	50	--	
		230VAC		--	80	--	
	Power Factor	115VAC	Full load	0.98	--	--	--
		230VAC		0.95	--	--	--
	Leakage Current	264VAC, 50Hz	Contact leakage current	<0.1mA			
			Earth leakage current	<0.5mA			
	Hot Plug			Unavailable			

Output Specifications	Output Voltage Accuracy*	Full load	12V/15V/18V/19V/24V/27V	--	±2	--	%
			36V/48V/54V	--	±1	--	
	Line Regulation	Rated load		--	±0.5	--	
	Load Regulation	0%-100% load		--	±1	--	
	Ripple & Noise*	20MHz bandwidth (peak-to-peak value)		--	--	200	mV
	Temperature Coefficient			--	±0.03	--	%/℃
	Minimum Load			0	--	--	%
	Hold-up Time	115VAC input		10	--	--	ms
		230VAC input		10	--	--	
	Stand-by Power Consumption	Room temperature, 230VAC input (PS_ON Low level)	18V/19V/27V/36V	--	--	0.5	W
			12V/15V/24V/48V/54V	--	--	0.6	
	Short Circuit Protection	Recover time <5s after the short circuit disappear	18V/19V/27V/36V	Hiccup, continuous, self-recover			
		Recover time <10s after the short circuit disappear	12V/15V/24V/48V/54V	Hiccup mode, constant current works 1s, turn off 10s, continuous, self-recover			
	Over-current Protection	≥105%Io, hiccup, self-recover					
	Over-voltage Protection	12V		≤15.6V	Output voltage turn off, re-power on for recover		
		15V		≤19.5V			
		18V		≤23.4V			
		19V					
		24V		≤31.2V			
	Over-voltage Protection	27V		≤35.1V	Output voltage turn off, re-power on for recover		
		36V		≤46.8V			
		48V		≤60.0V			
		54V		≤63.0V			
	Over-temperature Protection			Protection when over-temperature, recover automatically after the temperature drops.			
	Fan Power*			Offer output power of 12V/0.5A			
	PS_ON Input Signal*	Power on	PS_ON high	2	--	5	V
		Power off	PS_ON low	0	--	0.5	
	PG Signal*	Power on	The PG signal goes high with 10ms to 500ms delay after power set up	10	--	500	ms
		Power off/Power fail	The TTL signal goes low at least 1ms before output below 90% of rated value	1	--	--	
		High level	High	2	--	6	V
		Low level	Low	0	--	0.6	

	Remote Sense		When RS+ and RS- are connected to the system, with function of remote voltage compensation, if not needed, left RS+ and RS- open					
	5V Standby		5Vsb: The load capacity is 0.6A without fan, the load capacity is 1A with fan 25CFM; tolerance 2%, ripple: 120mVp-p(max.)					
General Specifications	Isolation Test	Input - output	Electric Strength Test for 1min. Leakage current < 5mA			4000	--	--	VAC
		Input - ⏚				2000	--	--	
		output - ⏚				1500	--	--	
	Insulation Resistance	Input - output	Environment temperature: 25 ± 5℃, Relative humidity: <95%RH, non-condensing Testing voltage: 500VDC			100	--	--	MΩ
		Input - ⏚				100	--	--	
		output - ⏚				100	--	--	
	Isolation level	Input-output				2 × MOPP			
		Input - ⏚				1 × MOPP			
		output - ⏚				1 × MOPP			
	Operating Temperature					-40	--	+70	℃
	Storage Temperature					-40	--	+85	
	Storage Humidity		Non-condensing			10	--	95	%RH
	Operating Humidity					20	--	90	
	Switching Frequency					--	--	--	KHz
	Power Derating	Operating Temperature derating	AOF550-2B-12/15/18/19-CF		+50℃ to +70℃	3.1	--	--	%/℃
			AOF550-2B-24/27/36/48/54-CF		+50℃ to +70℃	3.25	--	--	
			25CFM	AOF550-2B-12/15/18/19-C	+50℃ to +70℃	2.5	--	--	
				AOF550-2B-24/27/36/48/54-C	+50℃ to +70℃	2.75	--	--	
			Air cooling (310W)	230VAC	+30℃ to +40℃	1	--	--	W/℃
					+40℃ to +60℃	5	--	--	
				115VAC	+30℃ to +50℃	4.5	--	--	
					+50℃ to +60℃	6	--	--	
		Input voltage derating	90VAC -115VAC			1.0	--	--	%/VAC
			127VDC -160VDC			0.76	--	--	%/VDC
	Safety Class					CLASS I			
	MTBF		MIL-HDBK-217F@25℃			>200,000 h			
Mechanical Specifications	Case Material		Metal (AL5052, SUS304)						
	Dimension		130.00mm × 86.00mm × 43.00mm AOF550-2B-xx-C series			160.00mm × 86.00mm × 43.00mm AOF550-2B-xx-CF series			

	Weight	605g (Typ.) AOF550-2B-xx-C series	645g (Typ.) AOF550-2B-xx-CF series
	Cooling Method*	Air cooling (310W) / 25CFM (500W/550W)	

Note: 1.*Output Voltage Accuracy: including setting error, line regulation, load regulation;
2.*The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor (Low ESR) and 0.1uF ceramic capacitor;
3.*For fan power connection method, please refer to 5, 6 in the external dimension drawing;
4.*For PS_ON, 5V standby connection method, please refer to CN6 in the external dimension drawing;
5.*For PG standby connection method, please refer to CN2 in the external dimension drawing;
6. *Please refer to the product characteristic curve for cooling method and power derating.

Electromagnetic Compatibility (EMC)

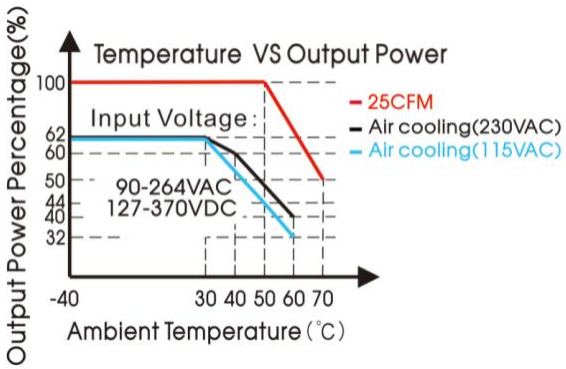
Electromagnetic Compatibility (EMC)	Emissions (EMI)	CE	EN55032(CISPR32)/EN55011(CISPR11) CLASS B	
		RE	EN55032(CISPR32)/EN55011(CISPR11) CLASS B	
		Harmonic Current	IEC/EN61000-3-2 CLASS A and CLASS D	
		Flicker	IEC/EN61000-3-3	
	Immunity (EMS)	ESD	IEC/EN61000-4-2 Contact ±8KV/Air ±15KV	Perf. Criteria A
		RS	IEC/EN61000-4-3 10V/m	Perf. Criteria A
		EFT	IEC/EN61000-4-4 ±2KV	Perf. Criteria A
		Surge	IEC/EN61000-4-5 line to line ±2KV/line to ground ±4KV	Perf. Criteria A
		CS	IEC/EN61000-4-6 10 Vr.m.s	Perf. Criteria A
		DIP	IEC/EN61000-4-11 0%, 70%	Perf. Criteria B

Note: *The power supply should be considered as a part of the components in the system. All EMC performance are been tested on a metal plate with a thickness of 1mm and a length of 360mm × 360mm. The power supply must be combined with the terminal equipment for electromagnetic compatibility confirmation.

Characteristic Curve

12/15/18/19-C

(full load 500W with 25CFM)

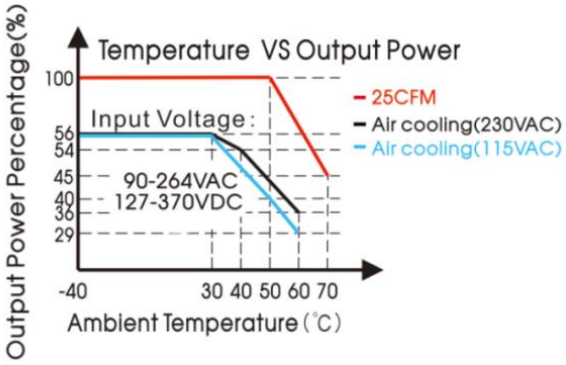


12/15/18/19-CF

(full load 500W with 25CFM)

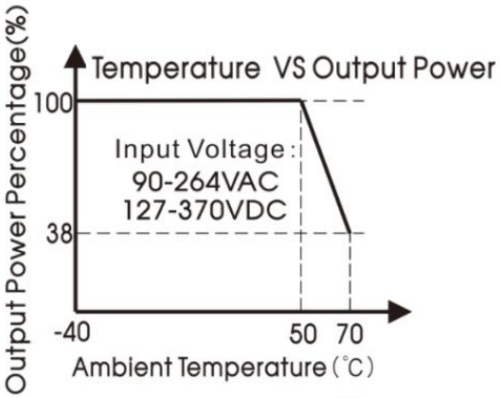
24/27/36V/48/54-C

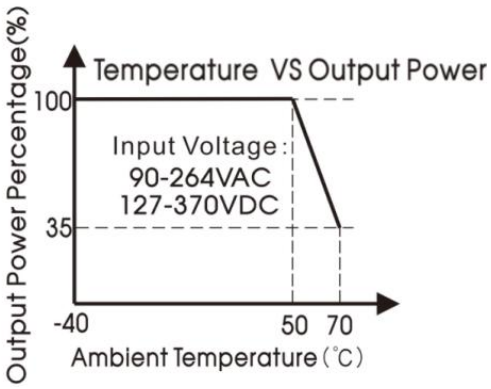
(full load 500W with 25CFM)

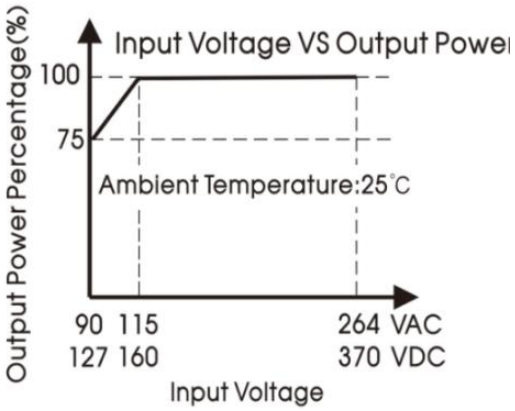


24/27/36V/48/54-CF

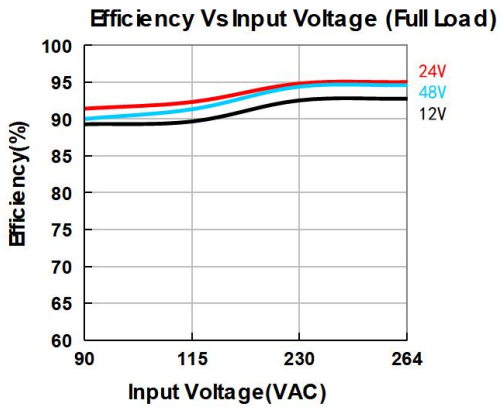
(full load 500W with 25CFM)

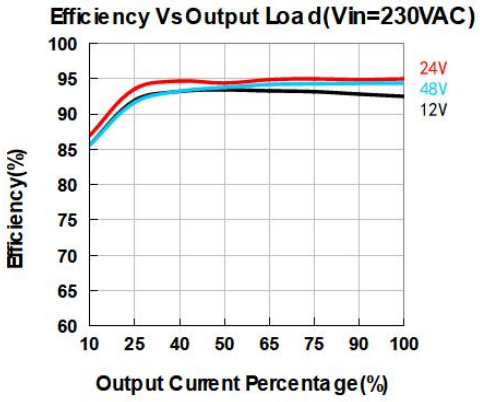






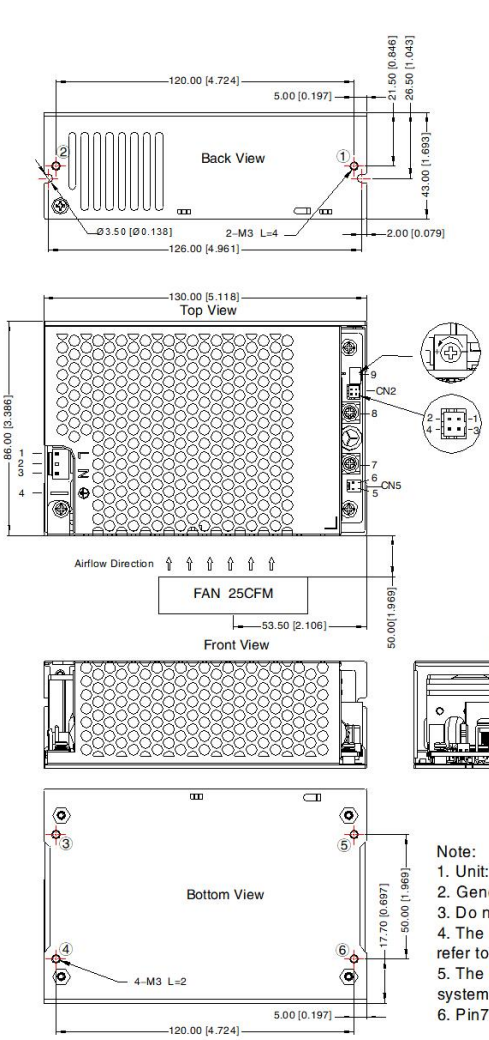
Note: With an AC input voltage between 90 - 115VAC and a DC input between 127 - 160VDC the output power must be derated as per the temperature derating curves





Dimensions and Recommended Layout

AOF550-2B-xx-C Series



Pin-Out		Customer Connector	
Pin	Mark		
1	AC(L)	Housing: JST VHR-3 or equivalent Contact: JST SVH-21T-P1.1 or CPJ-016(Optional Accessory)	
2	NC		
3	AC(N)		
4	⏚	Contact: JST SPS-21T-250	
5	FAN+	CN5: Fan power output port Housing: TKP 2502 or Molex0511910200 or equivalent Contact: TKP 54T or Molex0508028100 or equivalent	
6	FAN-		
7	+Vo	Output connector (Optional Accessory)	CPJ-021(Red wire)
8	-Vo		CPJ-020(Black wire)
9	ADJ Output adjustable resistor		

CN6: PS_ON signal input port(3-4)
5VDC Standby output(1-2)

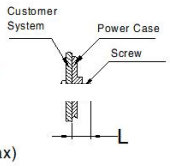
Pin-Out		Customer Connector
Pin	Mark	
1	+5V	Housing: TKP DH2-4P or HRS DF11-4DS-2C or equivalent Contact: TKP DHT or HRS DF11-22SC or equivalent
2	GND	
3	PS-ON	
4	GND	

CN2: Remote sensing signal input port(1-2)
PG signal(3-4)

Pin-Out		Customer Connector
Pin	Mark	
1	RS-	Housing: TKP DH2-4P or HRS DF11-4DS-2C or equivalent Contact: TKP DHT or HRS DF11-22SC or equivalent
2	RS+	
3	GND	
4	PG	

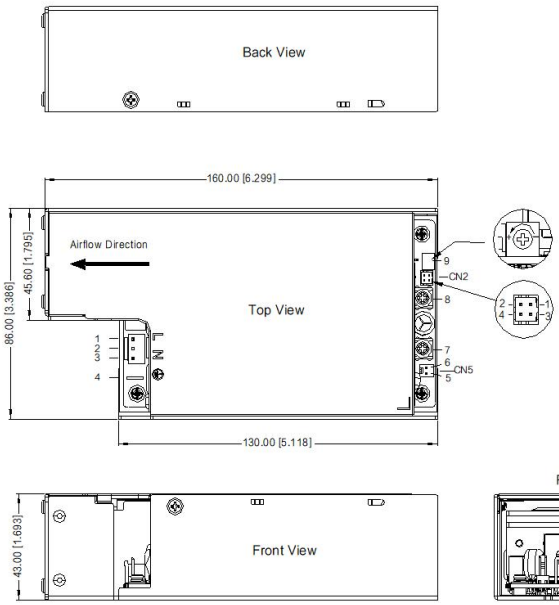
Position	Screw Spec.	L(max)	Torque(max)
①-②	M3	4mm	0.4N・m
③-⑥	M3	2mm	0.4N・m

Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00[± 0.039]
3. Do not use fan power to power other devices
4. The layout of the device is for reference only, please refer to the actual product
5. The out case needs to be connected to the earth of system when the terminal
6. Pin7,8 connector tightening torque: M4, 1.2N・m(max)



AOF550-2B-xx-CF Series

THIRD ANGLE PROJECTION



Pin-Out		Customer Connector	
Pin	Mark		
1	AC(L)	Housing: JST VHR or equivalent Contact: JST SVH-21T-P1.1 or CPJ-016(Optional Accessory)	
2	NC		
3	AC(N)		
4	⏚		
5	FAN+	CN5: Fan power output port Housing: TKP 2502 or equivalent Contact: TKP 8811 or equivalent	
6	FAN-		
7	+Vo	Output connector (Optional Accessory)	CPJ-021(Red wire)
8	-Vo		CPJ-020(Black wire)
9	ADJ Output adjustable resistor		

CN6: PS_ON signal input port(3-4)
5VDC Standby output(1-2)

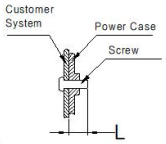
Pin-Out		Customer Connector
Pin	Mark	
1	+5V	Housing: JST PHD-2*2Y or HRS DF11-4DS-2C or equivalent Contact: JST PHD-TE or HRS DF11-22SC or equivalent
2	GND	
3	PS-ON	
4	GND	

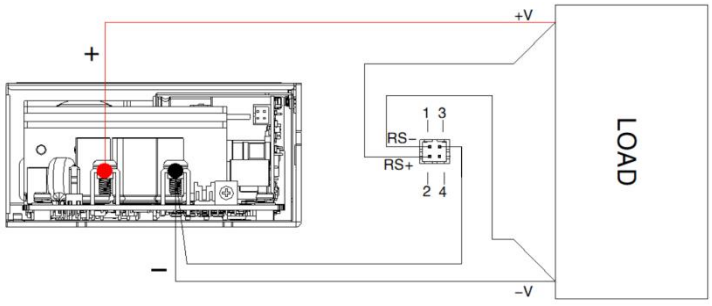
CN2: Remote sensing signal input port(1-2)
PG signal(3-4)

Pin-Out		Customer Connector
Pin	Mark	
1	RS-	Housing: JST PHD-2*2Y or HRS DF11-4DS-2C or equivalent Contact: JST PHD-TE or HRS DF11-22SC or equivalent
2	RS+	
3	GND	
4	PG	

Position	Screw Spec.	L(max)	Torque(max)
① - ④	M3	2mm	0.4N · m

Note:
1. Unit: mm[inch]
2. General tolerances: ± 1.00[± 0.039]
3. Do not use fan power to power other devices
4. The layout of the device is for reference only, please refer to the actual product
5. The out case needs to be connected to the earth of system when the terminal
6. Pin7,8 connector tightening torque: M4, 1.2N · m(max)





Remote sensing function wiring diagram

Note:

1. RS- and RS+ cannot be shorted or reversed, otherwise the power module will be damaged;

2. The remote compensation function can compensate the voltage drop on the output cable, which includes the sum of the cable drop connected to the output positive terminal and the output negative terminal;

3. If you need to use remote compensation function, the signal pin needs to be connected with the load and with a twisted pair.

4. The CPJ-XXX series is the accessories of products, quotation is available.

CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.

ATTENTION: Double pôle/fusible sur le neutre. Débrancher lalimentation avant lentretien

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
2. All index testing methods in this datasheet are based on our company corporate standards;
3. In order to improve the efficiency, there will be audible noise generated when working at light load, but it does not affect product performance and reliability;
4. Products are related to laws and regulations: see "Features" and "EMC";
5. The out case needs to be connected to PE (⏚) of system when the terminal equipment in operating;
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
7. The power supply is considered a component which will be installed into a terminal equipment. All EMC tests should be confirmed with the final equipment.
8. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.