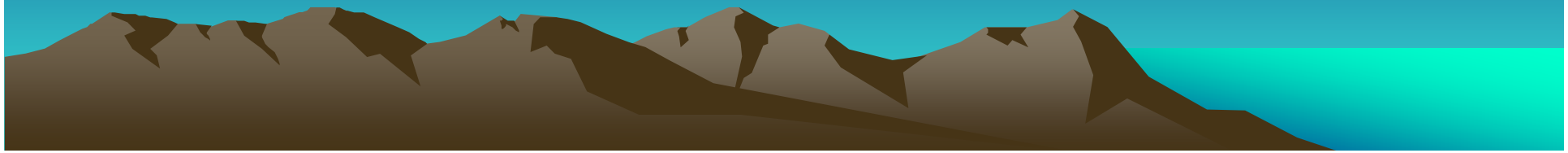
全球能效介绍

——制作：Ken



美国(能源之星2.0)

Mark	Performance Requirements				
	Nameplate Power Output (P_{no})[1]	No- Load Power[2]	Nameplate Power Output (P_{no})	Average Active Efficiency[3]	Power Factor
I	Used if none of the other criteria are met.				
II	0 to ≤ 10 watts	≤ 0.75	0 to < 1 watt	≥ 0.39 x P_{no}	Not applicable
	> 10 to 250 watts	≤ 1.0	1 to < 49 watts	≥ 0.107 x Ln(P_{no}) + 0.39	
			> 49 watts	≥ 0.82	
III	0 to < 10 watts	≤ 0.5	0 to 1 watt	≥ 0.49 x P_{no}	Not applicable
	10 to 250 watts	≤ 0.75	> 1 to 49 watts	≥ 0.09 x Ln(P_{no})+0.49	
			> 49 to 250 watts	≥ 0.84	
IV	0 to 250 watts	≤ 0.5	0 to < 1 watt	≥ 0.5 x P_{no}	Not applicable
			1 to 51 watts	≥ 0.09 x Ln(P_{no})+0.5	
			> 51 to 250 watts	≥ 0.85	
V	0 to < 50 watts	≤ 0.5 for ac-ac; ≤ 0.3 for ac-dc	0 to ≤ 1 watt	Standard: ≥ 0.480 * P_{no} + 0.140 Low Voltage[4]: ≥ 0.497 * P_{no} + 0.067	Power supplies with greater than or equal to 100 watts **input** power must have a true power factor of 0.9 or greater at 100% of rated load when tested at 115 volts @ 60Hz.
	≥ 50 to ≤ 250 watts	≤ 0.5	> 1 to ≤ 49 watts	Standard: ≥ [0.0626 * Ln (P_{no})] + 0.622 Low Voltage: ≥ [0.0750 * Ln (P_{no})] + 0.561	
			> 49 to 250 watts	Standard: ≥ 0.870 Low Voltage: ≥ 0.860	
VI and higher	Reserved for future use.				

美国(能源之星2.0)

注意:

LOW Voltage是指输出电压小于6V并且输出电流大于或等于550mA ,众所周知,低电压高电流产品能效比较难以提升,因此在能源之星第5等级里面,有特别划出,相对于普通产品而言,它的要求有所降低.

能源之星2.0

美国(能源之星2.0)

2008.11.1后自愿执行

Table 1: Energy-Efficiency Criteria for Ac-Ac and Ac-Dc External Power Supplies in Active Mode: Standard Models

Nameplate Output Power (P_{no})	Minimum Average Efficiency in Active Mode (expressed as a decimal) [2]
0 to ≤ 1 watt	≥ 0.480 * P_{no} + 0.140
> 1 to ≤ 49 watts	≥ [0.0626 * Ln (P_{no})] + 0.622
> 49 watts	≥ 0.870

Table 2: Energy-Efficiency Criteria for Ac-Ac and Ac-Dc External Power Supplies in Active Mode: Low Voltage Models

Nameplate Output Power (P_{no})	Minimum Average Efficiency in Active Mode (expressed as a decimal) [2]
0 to ≤ 1 watt	≥ 0.497 * P_{no} + 0.067
> 1 to ≤ 49 watts	≥ [0.0750 * Ln (P_{no})] + 0.561
> 49 watts	≥ 0.860

Low Voltage External Power Supply: For the purposes of this specification, a low voltage model is an EPS with a nameplate output voltage of less than 6 volts and a nameplate output current greater than or equal to 550 milliamps.

Table 4: Energy Consumption Criteria for No-Load

Nameplate Output Power (P_{no})	Maximum Power in No-Load	
	Ac-Ac EPS	Ac-Dc EPS
0 to < 50 watts	≤ 0.5 watts	≤ 0.3 watts
≥ 50 to ≤ 250 watts	≤ 0.5 watts	≤ 0.5 watts

美国(CEC)

执行状况:

CEC

Table U-2
Standards for State-Regulated External Power Supplies
Effective January 1, 2007 for external power supplies used with laptop computers, mobile phones, printers, print servers, scanners, personal digital assistants (PDAs), and digital cameras.

Effective July 1, 2007 for external power supplies used with wireline telephones and all other applications.

Nameplate Output	*Minimum Efficiency in Active Mode*
0 to < 1 watt	0.49 * Nameplate Output
≥ 1 and ≤ 49 watts	0.09 * Ln(Nameplate Output) + 0.49
> 49 watts	0.84
	Maximum Energy Consumption in No-Load Mode
0 to <10 watts	0.5 watts
≥ 10 to ≤ 250 watts	0.75 watts
Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.	

Table U-3
Standards for State-Regulated External Power Supplies
Effective July 1, 2008

Nameplate Output	*Minimum Efficiency in Active Mode*
<1 watt	0.5 * Nameplate Output
≥ 1 and ≤ 51 watts	0.09*Ln(Nameplate Output) + 0.5
> 51 watts	0.85
	Maximum Energy Consumption in No-Load Mode
Any output	0.5 watts
Where Ln (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.	

欧盟(Erp)

2009.4.6 欧盟公报第278/2009 号(OfficialJournal ofthe EuropeanUnion，Commission Regulation (EC) No 278/2009) 正式公布针对"外接式电源供应器生态化设计"实施第2005/32/EC 指令，简称EuP 指令(Eco-design Requirements for Energy-Using Product Directive,2005/32/EC)，此规章已于2009.4.26 正式生效，立法要求自生效后一年后开始正式执行此法令，强制要求进入欧盟市场的外接式电源适配器须分两阶段达到以下节能要求，第一阶段(2010.4.26 起执行)：无载待机消耗瓦数<0.5W
(Po≦250W) 平均工作效率

输出功率P_o (W)	平均效率%
$P_o < 1W$	$0.50 \cdot P_o$
$1W \leqslant P_o \leqslant 51W$	$0.09 \cdot \ln(P_o)+0.50$
$P_o > 51W$	0.85

欧盟(Erp)

第二阶段(2011.4.26 起执行)：无载待机消耗瓦数<0.3W(Po≦51W) 与<0.5W(51W<Po≦250W) 平均工作效率

输出功率P_o(瓦特)	平均效率% (输出电压≧6V)	平均效率% (输出电压<6V)
$P_o \leqq 1W$	$0.48 \cdot (P_o)+0.14$	$0.497 \cdot (P_o)+0.067$
$1W < P_o \leqslant 51W$	$0.063 \cdot \ln(P_o)+0.622$	$0.075 \cdot \ln(P_o)+0.561$
$P_o > 51W$	0.87	0.86

注意：

2009年10月31日，欧盟委员会在其官方公报上公布了EuP指令（2005/32/EC）的改写指令：《确立能源相关产品生态设计要求的框架》（2009/125/EC）（简称ErP），并在公布之日起20日生效。新指令如今已正式生效。

ErP指令（2009/125/EC）与EuP相比，最鲜明的变化就是将原EuP指令中的耗能产品扩展为能源相关产品（Energy-related Products）。其他一些内容例如实施措施的确立方法、一般及特殊生态设计要求的设立方法、合格评定程序、工作计划及咨询论坛的设立等，没有较大的变化。

欧盟(Erp)

同样,Erp外置电源适配器,也分低电压,类同于美国能源之星

具体标准及更新可参考如下欧盟官方网站:

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009R0278:EN:NOT

Erp

能效计算公式

澳州(MEPS)

性质:强制,执行时间澳大利亚2008-12-1,新西兰2009-4-1,要求等级III

IV,V等级未定位具体执行时间

Table 1: MEPS required minimum efficiency level- Performance mark III

Nameplate Power Output (P_{no})	Average Efficiency
0 to 1 watt	≥ 0.49 x P_{no}
>1 to 49 watts	≥ 0.09Ln(P_{no})+0.49
>49 to 250 watts	≥ 0.84

Table 2: MEPS required maximum no-load power

Nameplate Power Output (P_{no})	AC - DC	AC-AC
0 to <10 watts	≤ 0.5	N/A
10 to 250 watts	≤ 0.75	N/A

澳州(MEPS)

High Efficiency Products - Performance mark IV

To be eligible to be promoted as a 'high efficiency' product, external power supplies sold in Australia and New Zealand must meet the following criteria:

Table 3: Requirements for 'high efficiency' external power supplies

Nameplate Power Output (P_{no})	Average Efficiency
0 to 1 watt	$\geq 0.5 \times P_{no}$
>1 to 51 watts	$\geq 0.09 Ln(P_{no}) + 0.5$
>51 to 250 watts	≥ 0.85
Type and Nameplate Power Output (P_{no})	**No Load Power**
AC – DC 0 to 250 watts	≤ 0.5
AC – AC 0 to 250 VA	N/a

MEPS

手机充电器星级标志

2008年11月，世界主要手机供应商，诺基亚、三星、LG、摩托罗拉以及索尼爱立信，共同宣布推出了一项新的更为严格的手机充电器待机分级制度，超越了当今世界任何机构现行或提议中的待机功耗规范。根据诺基亚的数据，手机在待机模式下所消耗的电能占到其电能使用总量的60%以上。新的分级制度将以零到五颗星的标志图案来区分待机能耗。例如，待机功耗小于或等于30mW的手机充电器属于最高星级，在其标签上印有五颗星。相反，如果待机功耗≤500mW，则充电器标签上将无任何星级标记。我们可以做下比较：对于输出功率相同的充电器，新版”能源之星”EPS2.0规范所规定的最为严格的最大空载功耗为300mW，若用新的星级标准进行评级的话，则只能评定为二星级。

五级能效

Thank you!!