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外部供电电源实施措施278/2009介绍

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COMMISSION REGULATION (EC) No 278/2009 of 6 April 2009

2009年4月6日欧共体委员会规章(EC) No 278/2009

Implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of **external power supplies**

贯彻欧洲议会和欧洲理事会的指令2005/32/EC中关于外部供电电源的空载功耗和平均工作效率的生态化设计要求

Enters into force: 26.04.2009 2009年4月26日强制执行

Keypoint:要点

- Scope (Article 1) 范围 (第1条)
- Ecodesign requirement (Article 3, Annex II) 生态化设计要求 (第3条, 附件II)
- Conformity assessment (Article 4) 符合性评定 (第4条)
- Verification (Article 5, Annex III) 验证 (第5条, 附件III)
- Benchmark (Article 6, Annex IV) 基准 (第6条, 附件IV)



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1. This regulation establishes ecodesign requirements related to electric **power consumption in no-load condition and average active efficiency of external power supplies.**

此规章确定了涉及到外部供电电源的空载功耗和平均工作效率生态化设计要求。

2. This Regulation shall **not** apply to: 此规章不适用于
 - (a) voltage converters; 电压转换器 (例如230V转110V)
 - (b) uninterruptible power supplies; 不间断供电电源
 - (c) battery chargers; 电池充电器
 - (d) halogen lighting converters; 卤素灯转换器
 - (e) external power supplies for medical devices; 医学设备的外部供电电源



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1, ‘external power supply’ means a device which meets all of the following criteria:

“外部供电电源” 是指符合全部以下条件的设备：

- (a) it is designed to convert alternating current (AC) power input from the mains power source input into lower voltage direct current (DC) or AC output;
用于把从主电源的交流输入转换为低压直流或交流输出
- (b) it is able to convert to only one DC or AC output voltage at a time;
一次仅可转换一个直流或交流输出电压
- (c) it is intended to be used with a separate device that constitutes the primary load;
和单独提供主负载的设备一起使用
- (d) it is contained in a physical enclosure separate from the device that constitutes the primary load;
装在物理外壳内并与提供主负载的设备分离



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- (e) it is connected to the device that constitutes the primary load via a removable or hard-wired male/- female electrical connection, cable, cord or other wiring;
通过可拆卸的或硬线连接的公母插，电线或其它配线与提供主负载的设备连接
- (f) it has nameplate output power not exceeding 250 Watts;
标称的输出功率不超过250瓦
- (g) it is intended for use with electrical and electronic household and office equipment as referred to in Article 2(1) of Regulation (EC) No 1275/2008;
参照规章(EC) No 1275/2008的条款2(1)用于电气，电子家用和办公设备的产品



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‘electrical and electronic household and office equipment’

电气和电子家用及办公设备

(hereafter referred to as ‘equipment’), means any energy using product which: (之后用“产品”表示) 代表所有耗能产品

- (a) is made commercially available as a single functional unit and is intended for the end-user;
市场上可以买到的, 具有单一功能的和专为最终用户而设计的
- (b) falls under the list of energy-using products of Annex I;
在附件I列表中的耗能产品
- (c) is dependent on energy input from the mains power source in order to work as intended; and
为实现预期的工作方式,通过主电源输入能量的产品;和
- (d) is designed for use with a nominal voltage rating of 250 V or below,
为在250V 或以下的额定电压使用而设计的产品
- also when marked for non-household or non-office use
也适合标识为“非家用”或“非办公使用”的产品



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1. Household appliances 家用电器

- Washing machines, Clothes dryers, Dish washing machines,
洗衣机、干衣机、洗碗机
- Cooking: Electric ovens, Electric hot plates, Microwave ovens, Toasters, Fryers
烹饪设备：电烤箱、电炉/电磁炉、微波炉、烤面包机、油炸锅
- Grinders, coffee machines and equipment for opening or sealing containers or
packages, Electric knives
研磨机、咖啡机和用于开启或密封容器或、包装的设备，电刀
- Other appliances for cooking and other processing of food, cleaning, and maintenance
of clothes
其他用于烹饪或加工食物的产品，清洁，和维护衣物的产品
- Appliances for hair cutting, hair drying, tooth brushing, shaving, massage and other
body care appliances, Scales
剪发、干发、刷牙、剃须、按摩和其他身体护理产品,电子秤

2. Information technology equipment intended primarily for use in the domestic environment 主要用于家用的信息技术设备



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3. Consumer equipment 消费性产品

- Radio sets, Television sets, Videocameras, Video recorders, Hi-fi recorders, Audio amplifiers, Home theatre systems, Musical instruments, and other equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image other than by telecommunications
收音机、电视机、摄像机、录像机、高保真录音机、音频放大器、家庭影院系统、乐器和其他用于录制或处理声音图像的设备，包括除了通讯外的用于发送声音图像信号或技术的设备

4. Toys, leisure and sports equipment 玩具，休闲运动设备

- Electric trains or car racing sets, Hand-held video game consoles 电动火车或电跑车，掌上电子游戏机
- Sports equipment with electric or electronic components 带电气或电子元件的运动设备
- Other toys, leisure and sport equipment 其他玩具，休闲运动设备



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2. “**low voltage external power supply**” 低压外部供电电源

means 表示

– an external power supply with

外部供电电源带有

- a nameplate output voltage of **less** than 6 volts and
标称输出电压少于6 伏 和
- a nameplate output **current greater than or equal** to 550
milliamperes.

标称输出电流大于或等于550毫安



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3. **‘average active efficiency’** means the average of the active mode efficiencies at 25 %, 50 %, 75 % and 100 % of the nameplate output power.

“平均工作效率”是指在标称输出功率的25%，50%，75%和100%时工作模式效率的平均数





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Requirements 要求	Stage1 阶段一 26.04.2010	Stage2 阶段二 26.04.2011		
		AC-AC except LVEPS 交流-交流 除低电压外部电源供应器	AC-DC except LVEPS 交流-直流 除低电压外部电源供应器	Low voltage external power supplies (LVEPS) 低电压外部电源供应器
No load condition 空载模式				
$P_o \leq 51.0 \text{ W}$	$\leq 0.50 \text{ W}$	$\leq 0.50 \text{ W}$	$\leq 0.30 \text{ W}$	$\leq 0.30 \text{ W}$
$P_o > 51.0 \text{ W}$	$\leq 0.50 \text{ W}$	$\leq 0.50 \text{ W}$	$\leq 0.50 \text{ W}$	n/a
Average active efficiency 平均工作效率				
$P_o < 1.0 \text{ W}$	$\geq 0.500 * P_o$	$\geq 0.480 * P_o + 0.140$		$\geq 0.497 * P_o + 0.067$
$1.0 \text{ W} \leq P_o \leq 51.0 \text{ W}$	$\geq 0.090 * \ln(P_o) + 0.500$	$\geq 0.063 * \ln(P_o) + 0.622$		$\geq 0.075 * \ln(P_o) + 0.561$
$P_o > 51.0 \text{ W}$	≥ 0.850	≥ 0.870		≥ 0.860



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Annex II: Verification procedure 附件二：验证程序

- For market surveillance 市场监督
- Production variation should not exceed the limits as set by Annex I for 产品偏差应不超过附录一的限值
 - no-load condition by 0.10W and 空载模式下0.10W
 - average efficiency by 5% 平均效率5%

Annex III: Benchmark 附件三：基准

- Compare to best technology 与最好的技术比较
- No-load condition: 0.1W or less for $P_o \leq 90W$
空载模式： $P_o \leq 90W$ 时0.1W或更少
- Average active efficiency : 平均工作效率：
 - $0,090 \cdot \ln (P_o) + 0,680$, for $1,0 W \leq P_o \leq 10,0 W$,
 - $0,890$, for $P_o > 10,0 W$.

1, 有如下开关电源输出**24V**直流, **13A**, 请问需不需要满足**278/2009**?



答: 此电源的额定输出达到**312W(24X13)**,超过**250W**, 所以不在**278/2009**的指定范围。

2, 有如下给微型潜水泵供电的电源, 请问需不需要满足278/2009?

答: 水泵不在1275/2008附录1的范围, 所以该电源也不在278/2009的指定范围。



3, 有如下移动式DVD, 请问需要满足哪个法规的要求?

答: 该DVD连同电源一起测试需要满足1275/2008的要求。而且该电源单独测试要满足278/2009的要求。

