

# Salcomp Proposal updated to draft1\_V2.0\_EPS\_Oct07. pdf energy star (Version 2.0) Draft 1

## 1. Proposal for energy star V2.0 table 1

updated on 15-Nov-07

Nameplate output power(Pno)	Energy star V2	Salcomp proposal	
		with 115Vac input	with 230Vac input
0 - 1W	$\geq 0.44 \cdot P_{no} + 0.145$	$\geq 0.44 \cdot P_{no} + 0.10$	$\geq 0.52 \cdot P_{no}$
1 - 36W	$\geq [0.08 \cdot \ln(P_{no}) + 0.585]$	$\geq [0.08 \cdot \ln(P_{no}) + 0.54]$	$\geq [0.09 \cdot \ln(P_{no}) + 0.51]$
> 36W but < 250W	$\geq 0.870$		

## 2. Proposal for Energy star V2.0 Table 3

Table 3: Energy Consumption Criteria for No-Load

Nameplate output power(P <sub>no</sub> )	Maximum power in No-Load from Energy star V2	Salcomp proposal	
		with 115Vac input	with 230Vac input
	Ac-Dc EPS	Ac-Dc EPS	Ac-Dc EPS
0 - 50W	≤0.3W	≤0.2W	≤0.3W
≥ 50W to ≤250W	≤0.5W		

Note:

Lower the Stand By power is more important than improved efficiency in the product that are used frequently as chargers for Mobile Phones or MP3 players.

Energy saving calculation comparison between efficiency improvement and no-load criteria from 300mW to 200mW at 115Vac is illustrated as below.

Example of cell phone charger 5V/700mA,

Typical average charging period: 1 hour / day

1 hour for charging, efficiency = 61.3% (CEC IV criteria)

23 hours for no load, St-by power: 300mW--→200mW

Energy saving at no load:  $(300\text{mW} - 200\text{mW}) \times 23\text{hours} = 2300\text{mWh}$

To get same energy saving, we need efficiency as below:

$\{(5 \times 700) / 61.3\% - (5 \times 700) / \text{Effi}\} \times 1\text{hour} = 2300\text{mWh}$

Effi = 97,4%

That means we should increase efficiency from 61.3% to 97,4 % to get same energy saving than with no load reduction from 300mW to 200mW.

There are no techniques to reach above efficiency improvement level in practice.

3. All products approved before 1- July-2008 could keep their EnergyStar status at least temporarily example two years.

#### 4. Below analysis is based on ENERGY STAR V2.0 Dataset:



Energy star V2.0  
Dataset

# Compliance rate to Salcomp proposal for Energy star V2.0 Dataset

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

Nameplate output power(Pno)	Minimum Average Efficiency in Active Mode for energy star V2.0	Salcomp proposal	
		with 115Vac input	with 230Vac input
0 - 1W	$\geq 0.44 \cdot P_{no} + 0.145$	$\geq 0.44 \cdot P_{no} + 0.10$	$\geq 0.52 \cdot P_{no}$
1 - 36W	$\geq [0.08 \cdot \ln(P_{no}) + 0.585]$	$\geq [0.08 \cdot \ln(P_{no}) + 0.54]$	$\geq [0.09 \cdot \ln(P_{no}) + 0.51]$
> 36W but < 250W	$\geq 0.870$		
compliance rate to Salcomp proposal for models < 36W		75.4%	90.3%

Table 3: Energy Consumption Criteria for No-Load

Nameplate output power(Pno)	Maximum power in No-Load fro Energy star V2	Salcomp proposal	
		with 115Vac input	with 230Vac input
	Ac-Dc EPS	Ac-Dc EPS	Ac-Dc EPS
0 - 50W	$\leq 0.3W$	$\leq 0.2W$	$\leq 0.3W$
$\geq 50W$ to $\leq 250W$	$\leq 0.5W$		
compliance rate to Salcomp proposal for models < 36W		59.3%	82.7%