

Energy Star for Computers V6.0, Draft 3

Issued by FTS Jan 16th 2013 Willi Sterzik

FTS comments

- Based on **Draft 3 Version 6.0 Specification for Computers.pdf**

Allowance for Power Supply efficiency

- Allowance for PSU are defined in sections 3.5.2
 - PSU Efficiency table vs allowance is defined in table 5

Table 5: Power Supply Efficiency Allowance

Power Supply Type	Computer Type	Minimum Efficiency at Specified Proportion of Rated Output Current ^{iv}				Minimum Average Efficiency ^v	Allowance _{PSU}
		10%	20%	50%	100%		
IPS	Desktop	0.81	0.85	0.88	0.85	-	0.015
		0.84	0.87	0.90	0.87	-	0.03
	Integrated Desktop	0.81	0.85	0.88	0.85	-	0.015
		0.84	0.87	0.90	0.87	-	0.04

- FTS comments just relates to IPS
- 20%, 50%, 100% efficiency limits are correlating with 80plus→ highly appreciated

Allowance for Power Supply efficiency

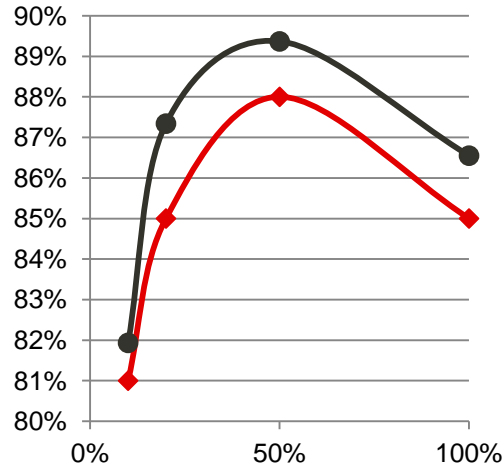
- Differences between 80plus and EPA 6.0 efficiency limit
 - FTS comments just relates to IPS

	80plus	EPA 6.0
AC-input voltage range	115V for desktop 230V for server	According target country (section 4.3)
Efficiency @ 20%/50%/100% 85/88/85 87/90/87	Silver class Gold class	Allowance for DT 1,5% 3%
Efficiency @10%	Not defined for DT	81% 84%

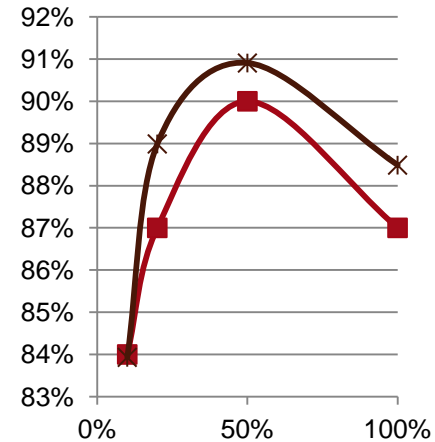
Comments to 10% efficiency values

■ Analyzing the efficiency data of www.80plus.org and comparing with EPA 6.0 Efficiency Limit (1 & 2)

■ @ 115V



◆ Limit1
● Average 80+Silver



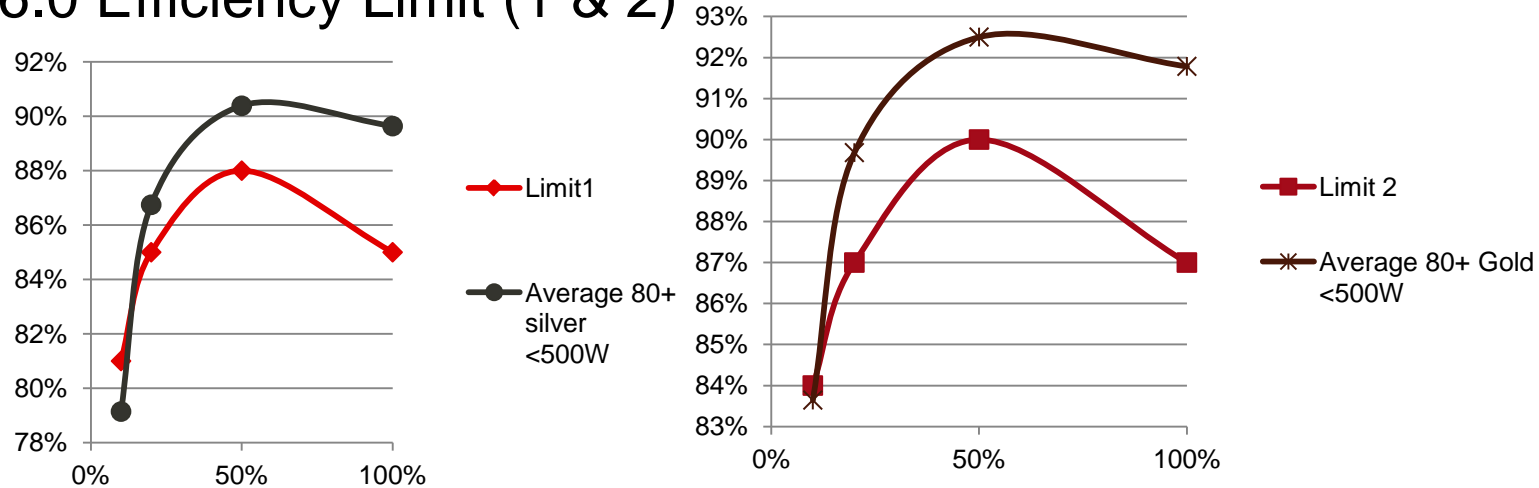
■ Limit 2
* Average 80+ Gold

- Limit1 & 2: 80plus silver and gold PSU are for 20/50/100% are ~1.5% above the limit
- 10% efficiency is just at the limit for limit 2 → Limit 2 @ 115V is ~1.5% too high

Comments to 10% efficiency values

■ Analyzing the efficiency data of www.80plus.org and comparing with EPA 6.0 Efficiency Limit (1 & 2)

■ @ 230V



■ Limit1 & 2: 80plus silver and gold PSU are for 20/50/100% are ~1.5% above the limit

■ 10% efficiency is just at the limit for limit 2 → Limit 2 @ 230V is ~3% too high

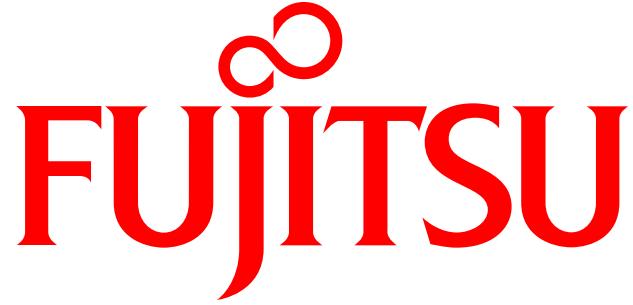
Other considerations

- Spread in efficiency at 10% load is ~ twice as much as for 20% or 50% load → e.g. standard deviation @10% is 2.0 vs @20% is 1.0
- Manufacturing tolerances for efficiency are higher 10% rather at other load conditions
- For efficiency measurements according 80plus for 230V server PSU are measured without fan. → taking fan into account for 10% load efficiency will reduce further by at least 0.5%
- It is harder to achieve 10% efficiency values with 230V than with 115V

FTS requests

- 10% target efficiency value for EPA 6.0 is not fully in line with 20% to 100% load values!
- As Europe and many other countries will measure efficiency at 230V, 10% limit value should be adjusted
- FTS suggestions for 10% Efficiencies

	EPA 6.0 draft	FTS suggestion Valid for 115V & 230V
10% : Allowance 1.5%	81%	79%
10%: Allowance 3%	84%	81%



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