

Checklist for the Measurement of Office Equipment Power Consumption

- Explanation -

For every piece of equipment and every working condition measured, you can write down the performance and energy consumption. On the first line, you can write in which piece of equipment you have measured.

1. Photocopiers

With the use of photocopiers, power can be saved when

- during the stand-by mode, the energy-saving mode is used as often as possible,
- in the switched off condition, the copier is disconnected from the mains.

In order to calculate the saving effects, the power consumption in **three different work conditions** must be determined:

- (1) Operation in "stand-by": when the copier is running without making copies.
- (2) Power saving mode: when the copier is on stand-by with the energy-saving button pressed.
- (3) Network switch "off": when the copier is switched off but it is still connected to the mains.

(It is only important to determine values (1) and (2) when the copier has an energy saving button. Then the user can contribute with his behaviour to energy saving).

With these measured values, you can then determine how much energy will be saved if the copier more hours in the day:

- a) is placed in stand-by mode using the energy-saving mode instead of the normal working-mode,
- b) is disconnected from the mains instead of only being switched off at the mains switch.

Formula for a):	
Saving potential in energy-saving mode	= (2) - (1) x h/day x 220 WD
Formula for b):	
Saving potential mains disconnection	= (3) x h/day x 220 WD + (3) x 3480 h

Legend: h/day: Hours per day in the energy saving mode
 WD: Work days
 3480 h: Yearly number of hours outside working time

Comparison value:

With the E2000-Energy saving label '96 excellent pieces of equipment fulfil the following standards:

Consumption in the "off" condition: < 2 Watt
 (Source: Humm / Jehle, 1996, p. 66)

2. Computers

Computers also belong in that category of office equipment that consume power in the switched off condition. So it is important not only to measure the power consumption in the working condition.

Comparison value:

With the E2000-Energy saving label '96 excellent pieces of equipment fulfil the following standards:

Consumption in the "off" condition: < 5 Watt
 Consumption in the "stand-by" mode: < 25 Watt
 (Source: Humm / Jehle, 1996, p. 66)

3. Monitors

The consumption values should be measured and compared here in normal operation, in operation with the so-called "Screen-Saver" and in the stand-by mode.

Comparison value:

With the E2000-Energy saving label '96 excellent pieces of equipment fulfil the following standards:

Consumption in "stand-by" mode: 8 Watt

(Source: Humm / Jehle, 1996, p. 66)

4. Printers

Printers actually only need to be switched on in order to print. Therefore it is particularly interesting to determine how much energy a printer consumes when it is in "stand-by" mode. The printer should also be taken off the mains after being switched off because even then it will consume power.

Comparison value:

With the E2000-Energy saving label '96 excellent pieces of equipment fulfil the following standards:

Consumption in the "off" condition: < 2 Watt

Consumption in the "stand-by" mode (Laser printer): < 18 Watt

Consumption in the "stand-by" mode (normal printer): < 6 Watt

(Source: Humm / Jehle, 1996, p. 66)

5. Coffee Machines

For the comparison between individual coffee machines it is important always to measure the consumption using the same quantity of boiling water. Perhaps there are some energy squanderers in terms of these machines that one can do without.

The value for the consumption in the "keeping hot" condition is important in order to calculate how much energy a thermos pot will save.

Comparison value:

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6. Hot-Water Boilers

One could determine in this case what difference it makes whether one brings to the boil 0.8 litres or 0.5 litres of water. These values deliver a good basis for the tip, only bring the amount of water to the boil that is really necessary.

Comparison value:

?

7. Refrigerators

The consumption value for **one work day -24 hours- (1)** and **a weekend (2)** should be ascertained. You can then estimate the annual consumption.

Formula:	Annual consumption	=	(1) x 220 WD/year + (2) x 72
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Legend: WD: Work days
72: multiplier, in order to include the time outside the working time

Comparison value:

Energy saving refrigerators should consume no more than 0.4 kWh per day and 100 litres filled volume.

(Source: Humm / Jehle, 1996, p. 66)

8. Dictation System's Playback Units

Determine in these cases the consumption in the "off" working condition.

Comparison value:

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9. External Transformers for Dictation Systems

Measure the consumption of the charged equipment if these are not pulled out from the socket.

Comparison value:

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10. Answering Machines

If in these cases the measured consumption value is all too high, then consider whether one can do without the answering machine over a established time frame.

Comparison value:

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11. Desk lamps

A great number of desk lamps are likewise fitted with a transformer. Here determine the consumption value in the "off" condition. One should then take desk lamps off the mains if they are not being used.

Comparison value:

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Literature

Humm, Othmar / Jehle, Felix (1996): Strom optimal nutzen. Effizienz steigern und Kosten senken in Haushalt, Gewerbe und Industrie, Staufen bei Freiburg