

Appendix E-I to DE-UZ 219

Energy – User information

The contents of the Basic Award Criteria, Appendix B-M and Appendix E-M must also be taken into account.

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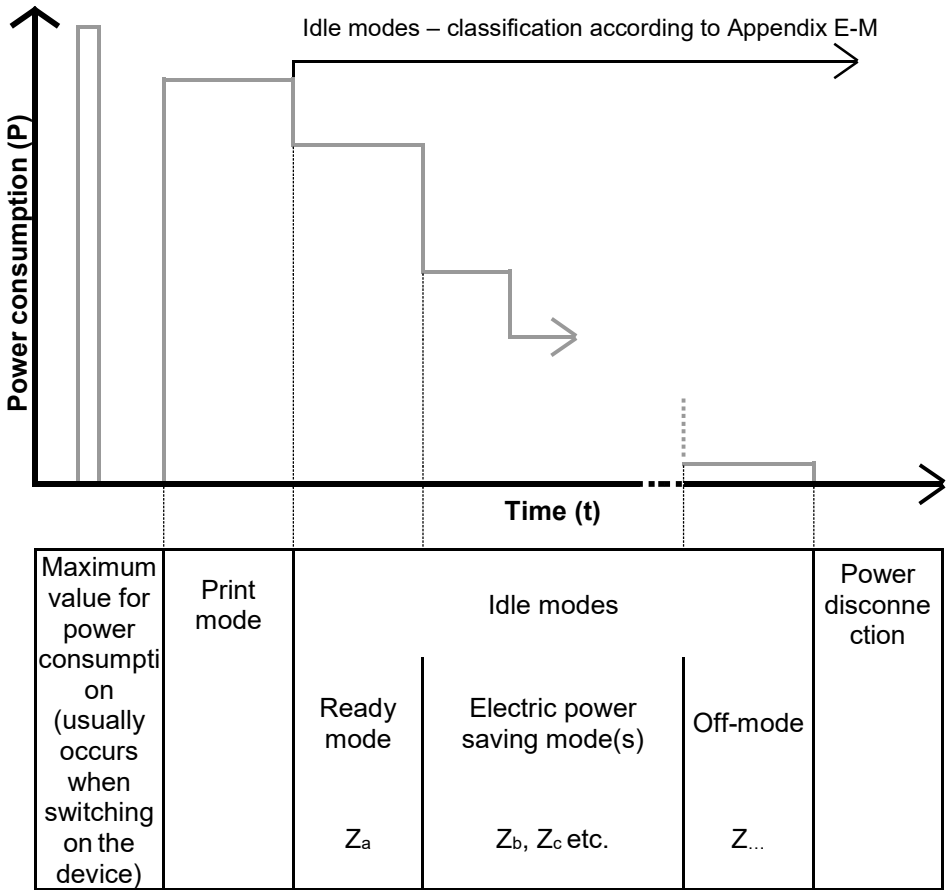
Note: If a term is preceded by an arrow (↑), it means that this term is defined in Paragraph 1.5 of the Basic Award Criteria.

1 General requirements

- One requirement for creating the information and data sheet (Annex 12) according to Paragraph 4 of the Basic Award Criteria is that the ↑ idle modes Z_i of the device are classified according to Appendix E-M and their measurement values are determined according to Appendix E-M.
- The information and data sheet must contain at least the information stated in Section 2 of this Appendix E-I. If required, further information can be added. The information should also be contained in the product documentation.
- If individual operating modes are deactivated in the ↑ delivery status of the device and have to be activated by the user before they become operational, the requirements also apply to these modes.

2 Requirements for the scope and content of the required information

One section of the requirements refers to all operating modes, another section just to the idle modes and a further section to only those modes to which the device can switch after the end of the printing process. The following table describes the individual requirements and the operating modes to which they apply.



— Example curve for the power consumption of a device

Explanations regarding the following table:

- M = requirement which must be fulfilled
- S = requirement which should be fulfilled
- = requirement does not apply

	Maximum value for power consumption	Print mode	Ready mode Z _a	Idle modes Electric power saving mode(s) Z _b , Z _c etc.	Off-mode Z _{...}	Power disconnection
2.1. Required data						
2.1.1 Scope and content of the required information						
Page throughput (in pages per minute)	—	M	—	—	—	—
	<p>Indication of the ↑ page throughput, if applicable differentiated according to resolution.</p> <p>If the device is also capable of colour printing, the values for page throughput must be differentiated according to colour and monochrome printing, i.e. using ↑ S_M and ↑ S_F if ↑ S_M and ↑ S_F are different.</p> <p>If the device offers the primary functions ↑ printing and ↑ copying and if these functions have different page throughputs, a differentiation must also be made between the page throughput values for these different main functions. The copying speed for devices with ADF must be determined according to ISO/IEC 24735 and for devices without ADF according to ISO/IEC 29183. When determining the copying speed for electrophotographic devices, the printing test pattern according to ISO/IEC 10561 (Dr. Grauert Letter) or so-called continuous printing may also be used.</p> <p>The method used for determining the page throughput must be stated.</p>					
Power consumption (in watts)	M	—	—	—	—	—
	Indication of the highest possible power consumption (which often occurs when the device is switched on).					
	—	M	—	—	—	—

	Maximum value for power consumption	Print mode	Ready mode Z_a	Idle modes Electric power saving mode(s) Z_b, Z_c etc.	Off-mode $Z_{...}$	Power disconnection
	Indication of the highest possible average \uparrow power consumption during continuous operation at page throughput $\uparrow S_M$ (pages/minute for monochrome printing). The values must be stated for the primary function of printing.					
	—	—	M	M	M	M
	Indication of the power consumption, measured according to Appendix E-M; classification of the idle modes according to Appendix E-M. Exemption: If the maximum power consumption of an idle mode is 20% below the power consumption of the previous idle mode and the delay time for this idle mode cannot be changed by the user, it is not necessary to indicate the power consumption for this mode, its delay time and its recovery time. (A typical case is the automatic switching off of a fan following a period of time defined by the manufacturer after ready mode.)					
Delay time (in minutes)	—	—	M	M	M/— ¹	—
	<ul style="list-style-type: none"> - The values set by the manufacturer for the delivery status must be stated. - If the user can change these values, the ranges must be given in brackets. - If the delay times depend on whether the primary functions \uparrow copying or \uparrow printing were carried out last, the delay times for both of these primary functions must be stated. 					
Recovery time (in seconds)	—	—	—	M	M/S ¹	S
	- The recovery time for returning to ready mode (printing) must be stated in seconds (rounded up to the nearest integer).					

¹ The time must only be specified when the device switches to this mode automatically.

	Maximum value for power consumption	Print mode	Ready mode Z_a	Idle modes Electric power saving mode(s) Z_b, Z_c etc.	Off-mode $Z_{...}$	Power disconnection
Electric power consumption	M					—
	<p>- Indication of the value for the electric power consumption during monochrome printing (TEC_M) in kilowatt-hours/week according to the Basic Award Criteria and Appendix E-M. Indication of the standard use cycle and the printing test pattern used.²</p> <p>- Provided that other information on the electric power consumption is given, this must be provided in the units watt-hours or kilowatt-hours. The time to which the value refers must be stated in all cases, e.g. simply indicating the values in accordance with the following standards is not sufficient: DIN 33869 (August 1998, page 9) and DIN EN ISO/IEC 11159 (February 1998, page 9).</p>					
Identical construction	For products which are identical to other products in the sense of Appendix B-M, all products of identical construction must be stated and it must be indicated whether each individual product is certified with the Blue Angel. If all products are certified with the Blue Angel, this statement can also be made once for all of the products.					
Controller	If one or several † controllers – which the manufacturer provides on the market or at least permits to be used with the device – are available for the device, these controllers must be listed. A declaration must also be made that it has been guaranteed that these controllers cannot impact electric power saving features when they are connected to the device. For example, it has been guaranteed that these controllers do not have a negative effect on the progression of the power consumption of the device during the time that elapses after the † end of the printing process.					

² Please see e.g. the sample document on page 12

	Maximum value for power consumption	Print mode	Ready mode Z _a	Idle modes Electric power saving mode(s) Z _b , Z _c etc.	Off-mode Z...	Power disconnection
2.1.2 Formal requirements						
Power consumption	M	M	M	M	M	M
Delay time	<ul style="list-style-type: none">- The values for power consumption, delay time, recovery time and electric power consumption must be precisely stated; it is not sufficient to indicate ranges such as “< 45 watts”.- Exceptions: Indicating “< 1 W” ³ for power consumption and “< 1 minute” for delay time, as well as the ranges within which the user can set a value. If the delay time is less than 1 minute, it can also be described as “immediately”.- If the information and data sheet refers to several different versions of a device, the device to which the individual values refer must be stated in each case.- For devices with a switch for disconnecting the device from the mains power (2-pole), “0 watts” can be stated.- Values for power consumption P in watts which are ≤ 0.1 W <u>must</u> be rounded up as follows: 0 < P ≤ 0.1: to one digit after the decimal point in steps of 0.1 (e.g.: 0.03 → 0.1)- Values for power consumption P in watts which are > 0.1 W <u>can</u> be rounded up as follows: 0.1 < P ≤ 5: to one digit after the decimal point in steps of 0.1 (e.g.: 0.23 → 0.3) 5 < P ≤ 50: to one digit after the decimal point in steps of 0.5 (e.g.: 5.42 → 5.5; 5.55 → 6) 50 < P ≤ 100: to a whole number in steps of 1 (e.g.: 51.29 → 52) 100 < P ≤ 200: to a whole number in steps of 2 (e.g.: 102.39 → 104) 200 < P ≤ 500: to a whole number in steps of 5 (e.g.: 212.41 → 215) P > 500: to a whole number in steps of 10 (e.g.: 619.23 → 620; 621.62 → 630)					
Recovery time						
Electric power						
consumption						

³ Or smaller values

	Maximum value for power consumption	Print mode	Ready mode Z _a	Idle modes Electric power saving mode(s) Z _b , Z _c etc.	Off-mode Z...	Power disconnection
Any values [M]	<ul style="list-style-type: none">- Values for <u>physical units</u> must be given at least in the SI system. For example, it is not sufficient to only provide the information in inches (e.g. dots per inch).- For <u>decimal numbers</u>, commas and not points should be used as decimal separators as is usual in German spelling.					
2.2 Required descriptions and further explanations						
Operating modes	—	S ⁴	M	M	M	M
	<p>Information on how the device can be switched to the individual modes and how users can set these modes. The information must clearly state which user action leads to which mode and which power consumption. This includes information on the main switch, power switch and similar switches, as well as the symbols used to mark these switches.</p> <p>If a description of these modes is already provided in other sections of the user information, e.g. the user manual, it is not necessary for the distributor to also provide a description of the modes in the information and data sheet. In this case, however, the distributor must indicate in the information and data sheet where a description of the modes can be found.</p>					
Delay time	—	—	M	M	M	—
	Explanation of what “delay time” means and an explanation of the numbers in brackets ⁵ .					
Recovery time	—	—	M	M	M	M
	Explanation of what “recovery time” means.					
	M					

⁴ This mode will usually be described in the user manual and thus does not need to be explained further here.

⁵ Please see e.g. the sample document on page 10

	Maximum value for power consumption	Print mode	Ready mode Z _a	Idle modes Electric power saving mode(s) Z _b , Z _c etc.	Off-mode Z _{...}	Power disconnection
Electric power consumption	<ul style="list-style-type: none">- It must be stated that the electric power consumption of a device depends on both its features and also on the way these features are utilised by the user. It must also be stated that the device can be configured and set in such a way that the user can save electricity costs.⁶- If it is possible for the user to deactivate electric power saving modes or change their delay times themselves, the following statements are required:<ul style="list-style-type: none">- If the user reduces a delay time, the device will switch to an electric power saving mode faster and the user will save electricity costs.- However, if the user wants to extend a delay time or even deactivate an electric power saving mode, he/she should bear the following in mind: The device will switch to an electric power saving mode later or not at all. The device will thus remain in a mode with higher power consumption for a longer period of time and will consume more electric power as a result. In addition, it is possible that the device will no longer comply with the maximum value for electric power consumption specified by the Blue Angel. The manufacturer recommends that users do not extend the delay times.					
	—	—	—	—	M	—
	<ul style="list-style-type: none">- If the user cannot completely disconnect the device from the mains supply using a switch or if the device does not do this automatically, the following note is required: “This device does not have a mains power switch⁷. If you want to avoid electric power consumption and thus completely disconnect the device from the mains power, ...”. Information should be added here to explain how to avoid electric power consumption.- It must be stated that the device has been designed in such a way that switching it on and off up to twice a day⁸ into off-mode will not damage the device.					

⁶ Please see e.g. the sample document on page 10.

⁷ If the device has a mains power switch, this sentence is not required.

⁸ Or more, if this is applicable for the device

	Maximum value for power consumption	Print mode	Ready mode Z _a	Idle modes Electric power saving mode(s) Z _b , Z _c etc.	Off-mode Z...	Power disconnection
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2.3 Table of data

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- The values for page throughput, power consumption, delay time and recovery time, as well as the switch symbols, must be presented according to the template on the right (please see page 11 for a larger image of this template). The values and switch symbols shown in the template are only examples.

Übersicht über die Betriebszustände des Gerätes XY 1234				
Druckgeschwindigkeit (beim DIN-A4 Format: (emittiert nach ISO/IEC 24734))				
Bei Menscheneingabe: 55 Seiten/Minute				
Bei Fälschung: 55 Seiten/Minute				
Symbol des Schalters/Tastens	Betriebszustand	Leistungsaufnahme Watt	Aktivierungszeit Minuten	Rückkehrzeit Sekunden
	Höchstmögliche Leistungsaufnahme beim Einschalten	2000		
	Drucken (Draufentwurf bei 55 Seiten/Minute) schwarz-weiß	990		
	Bereit	195	0	12
	Warmstart	82	15 (1..60)	
	Sperrmodus	3,5	20 (1..120)	15
①	Schlafmodus	0,1	Schlafbedingung	16

- Every idle mode must be presented on a separate line.
- In the context of this table of data, the following statements must be made:
 - In the delivery status, the values presented in the table are preset.
 - The device complies with the requirements of the Blue Angel with these values.
 - The values are average values and were measured without accessories.⁹

2.4 Requirements for the terms and wording

M







- The designations for the idle modes must be chosen and used in a way that makes it possible for the user to unequivocally assign the values for power consumption, delay times and recovery times to the respective modes. This means that only one designation should be used in the information and data sheet (Annex 12) and the product documentation for one and the same idle mode. If several designations are nevertheless used, these designations must be used in such a way that it is clear that they relate to the same mode.¹⁰
- In places where the power consumption of the device is discussed, this term must also be used and not terms such as “current consumption”, “energy use” or similar.
- Abbreviations must be explained when they are mentioned for the first time, except in the case of type designations.
- Technical terms in English must be translated or at least explained.

⁹ This does not apply to the maximum value for power consumption (which usually occurs when switching on the device).

¹⁰ For example: “warm start (= low power mode)”

3 Sample document

The following example for a printer shows how the requirements in Section 2 of this Appendix E-I must be applied. If applicable, further information can be added to the content.



<div>Energy data for the device XY 1234</div> <div>according to the requirements of DE-UZ 219</div>																																							
<div>Information on the device XY 1234</div> <div><p>The electric power consumption of a device depends on both its features and also on the way these features are utilised by the user. Device XY 1234 has been designed and preset so that you can save electricity costs. It switches to ready mode after the last print. The device is able to immediately start printing again from this mode if required. If this is not required, the device will switch to electric power saving modes in two steps after a certain period of time, which is called the delay time. It consumes less power (watts) in these modes.</p><p>The device will take longer to print again from an electric power saving mode than from ready mode. This delay is called the recovery time. The device has been designed in such a way that switching it on and off up to twice a day into off-mode will not damage the device.</p><p>You can find the power consumption values for the individual modes, as well as the delay and recovery times, in the table below. The values stated in the table are preset when the device is delivered. The device complies with the requirements of the Blue Angel with these values.</p></div>																																							
<div>Übersicht über die Betriebszustände des Gerätes XY 1234</div> <div><div>Druckgeschwindigkeit beim DIN-A4 Format: (ermittelt nach ISO/IEC 24734) Bei Monochromdruck: 55 Seiten/Minute Bei Farbdruck: 55 Seiten/Minute</div><table><tr><th>Symbol des Schalters/ Tastens</th><th>Betriebszustand</th><th>Leistungsaufnahme Watt</th><th>Aktivierungszeit ** Minuten</th><th>Rückkehrzeit *** Sekunden</th></tr><tr><td></td><td>Höchst mögliche Leistungsaufnahme: beim Einschalten</td><td>2000</td><td></td><td></td></tr><tr><td></td><td>Drucken (Dauerbetrieb bei 55 Seiten/Minute) schwarz-weiß</td><td>990</td><td></td><td></td></tr><tr><td></td><td>Bereit</td><td>195</td><td>0</td><td></td></tr><tr><td></td><td>Warmstart</td><td>82</td><td>15 (1...60)</td><td>12</td></tr><tr><td></td><td>Sparmodus</td><td>3,5</td><td>20 (1...120)</td><td>15</td></tr><tr><td></td><td>Schalter-Aus</td><td>0,1</td><td>Schalterbetätigung</td><td>16</td></tr></table><div><div>* gemittelte Werte, gemessen ohne Zubehör (zum Beispiel Helfer)</div><div>** Die Aktivierungszeit ist die Zeit, die nach dem Ende des Druckvorganges vergeht, bis das Gerät in den Zustand schaltet. Die Zahlen in Klammern geben den Bereich an, in dem Sie die Aktivierungszeit einstellen können; siehe Seite 347 im Handbuch.</div><div>*** Die Rückkehrzeit ist die Zeit, die das Gerät für die Rückkehr in die Druckbereitschaft braucht.</div></div></div>					Symbol des Schalters/ Tastens	Betriebszustand	Leistungsaufnahme Watt	Aktivierungszeit ** Minuten	Rückkehrzeit *** Sekunden		Höchst mögliche Leistungsaufnahme: beim Einschalten	2000				Drucken (Dauerbetrieb bei 55 Seiten/Minute) schwarz-weiß	990				Bereit	195	0			Warmstart	82	15 (1...60)	12		Sparmodus	3,5	20 (1...120)	15		Schalter-Aus	0,1	Schalterbetätigung	16
Symbol des Schalters/ Tastens	Betriebszustand	Leistungsaufnahme Watt	Aktivierungszeit ** Minuten	Rückkehrzeit *** Sekunden																																			
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Overview of the operating modes of device XY 1234

Print speed in DIN A4 format: (determined according to ISO/IEC 24734)

For monochrome printing: 55 pages/minute

For colour printing: 55 pages/minute

Symbol on the switch/button	Operating mode	Power consumption * Watts		
	Highest possible power consumption: at switch on	2000		
	Printing (continuous operation at 55 pages/minute) monochrome	990	Delay time ** (minutes)	
	Ready	195	0	Recovery time *** (seconds)
	Warm start	82	15 (1...60)	12
	Sleep mode	3.5	20 (1...120)	15
	Switched off	0.1	Switch activation	16

* Average values, measured without accessories (e.g. stapler)

** The delay time is the time that elapses after the end of the printing process until the device switches over to the respective operating mode. The figures in brackets indicate the range within which you can change the delay time; see page 347 of the manual.

*** The recovery time is the time which the device needs to return to ready mode for printing.

Energy consumption of the device XY 1234

For the standard use cycle according to the ENERGY STAR 3.0 standard, the following assumptions are made for a device like the XY 1234: 32 print jobs per working day, each with 47 pages, single-sided using monochrome printing (1,504 pages/day).

The energy consumption for a week (7-day week with 5 working days of 8 hours each) in the standard use cycle according to ENERGY STAR 3.0, determined using printing test pattern A according to ISO 10561:1999, is **4.1 kWh/week**.

This value was measured with the settings (delivery status) stated above.

You can change the delay times for the electric power saving modes in some cases. If you shorten a delay time, the device will switch to an electric power saving mode faster and you will save electricity costs. If you nevertheless want to extend a delay time, please bear the following in mind: The device will switch to an electric power saving mode later or not at all. The device will thus remain in a mode with higher power consumption for a longer period of time and will consume more electric power as a result. In addition, it is possible that the device will no longer comply with the maximum value for electricity consumption specified by the Blue Angel. We recommend that you do not extend the delay times.