

# **BLUE ANGEL**

**The German Ecolabel**



## **Computer Monitors**

**DE-UZ 78c**

**Basic Award Criteria**

**Edition December 2014**

**Version 2**

## The Environmental Label is supported by the following four institutions:



The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.



The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labeling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.



The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.



The RAL gGmbH is the awarding body for the Environmental Label. It organises the process for developing the relevant award criteria in independent expert hearings – which involve all relevant interest groups.

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**This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.**

# **1 Introduction**

## **1.1 Preface**

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the German Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.

The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets this requirement.

## **1.2 Background**

Four out of five citizens of the Federal Republic of Germany (79 percent) use a computer every day. The number of computers at workplaces in enterprises, authorities and educational institutions is over 26.5 million. And there are the private households with often more than one computer. On the average, Blue Angel eco-labelled computer monitors consume 32 percent less energy than standard-efficiency devices.<sup>1</sup> Considering the great number and the frequent use, there are significant energy-saving or CO<sub>2</sub> reduction potentials, respectively.

Moreover, Blue Angel eco-labelled computer monitors meet stringent requirements for recyclable design and choice of material, thus creating good framework conditions for an efficient recovery of materials used and helping to preserve natural resources.

Last but not least the plastic parts of Blue Angel eco-labelled monitors are made of low-pollutant materials, thus reducing the release of harmful substances into the environment.

## **1.3 Objectives of the Blue Angel Eco-Label**

Climate protection, reduction of energy consumption and the avoidance of harmful substances and waste are key objectives of environmental protection.

The Blue Angel eco-label for computer monitors may be awarded to devices with the following environmental properties:

- Low energy consumption;
- Longevity of products;
- Recyclable design;
- Avoidance of environmentally harmful substances.

Therefore, following benefits for the environment and health are stated in the explanatory box:

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<sup>1</sup> Öko-Institut e.V., Final Report TOP 100 – Eco-Label for Climate-Relevant Products, Freiburg 2013



[www.blauer-engel.de/uz78c](http://www.blauer-engel.de/uz78c)

- energy saving
- durable
- recyclable design

## 1.4 Basic Legal Provisions

It is a matter of course for Blue Angel eco-labelled products to comply with current laws and regulations, especially with the following ones:

- The EU Directives 2002/96/EC<sup>2</sup> and 2002/95/EC<sup>3</sup> regulating the disposal of appliances and transposed into German law by the Elektro- und Elektronikgesetz (ElektroG) (Electrical and Electronic Equipment Act)<sup>4</sup> are complied with. For precautionary reasons, the product meets material requirements going beyond these provisions.
- The substance requirements defined by the EU Chemicals Regulation REACH (1907/2006/EC)<sup>5</sup> as well as Regulation (EC) No 1272/2008<sup>6</sup> (or Directive 67/548/EEC) are met.
- Regulation (EC) No 278/2009<sup>7</sup> (External Power Supplies Regulation) if the device comes with an external power supply.
- EMC Directive<sup>8</sup>,
- Low Voltage Directive<sup>9</sup>,
- Standby Regulation<sup>10</sup>.

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<sup>2</sup> Directive on Waste Electrical and Electronic Equipment (WEEE), Directive 2002/96/EC of the European Parliament and of the Council, dated 27 January 2003

<sup>3</sup> Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, Directive 2002/95/EC, Official Journal No L 37, 13 February 2003

<sup>4</sup> Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten (Act on the placing on the market, return and environmentally sound disposal of waste electrical and electronic equipment), Federal Law Gazette 2005, Part I, No.17 (23 May 2005)

<sup>5</sup> REGULATION (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

<sup>6</sup> Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

<sup>7</sup> Commission Regulation (EC) No 278/2009 of 6 April 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

<sup>8</sup> Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC

<sup>9</sup> DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

<sup>10</sup> COMMISSION REGULATION (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode electric power consumption of electrical and electronic household and office equipment

## 1.5 Definition

### 1.5.1 Computer Monitors

**Computer monitor** means a commercially available, electronic device with a display screen and associated electronics encased in a single housing that as its primary function displays visual information from the following units:

- Computer, workstation or server via one or more inputs, such as VGA, DVI, HDMI, DisplayPort, IEEE 1394, USB or
- External storage (e.g. USB flash drive, memory card or network connection)

Computer monitors typically come with a diagonal screen size greater than 12 inches (30.5 cm) and a pixel density greater than 5,000 pixels per square inch (in<sup>2</sup>).

## 2 Scope

These Basic Criteria apply to computer monitors, also called screens or displays, as defined in para. 1.5.1. They are hereinafter called monitors.

The monitors shall have a viewable screen diagonal not exceeding 32 inches or 81 cm. Moreover, it shall be possible to power the monitor via a separate wall outlet, an external power supply, a battery unit that is supplied with a power supply or a network connection.

Monitors with a built-in tuner/receiver may qualify for the Blue Angel eco-label under these Basic Criteria only if they are marketed and sold to consumers as a computer monitor (i.e. with the computer monitor as its primary function).

These Basic Criteria do not apply to products with tuner/receiver that may be connected to a computer but are marketed and sold by the manufacturer as television sets. Such devices fall under the scope of the DE-UZ-145 Basic Criteria for Television Sets.

Moreover, these Basic Criteria do not apply to the following products:

- digital picture frames,
- tablet computers,
- GPS navigation devices,
- electronic readers,
- smartphones.

There exist specific Basic Criteria for Award of the Blue Angel Eco-Label for some of these devices.

### 3 Requirements

#### 3.1 Harmonisation with „TCO Certified Displays“

The further development of the Basic Criteria for award of the Blue Angel eco-label is aimed at a harmonisation of the criteria with existing international standards and initiatives. For this purpose, the applicants for award of the Blue Angel eco-label may verify compliance with some of the criteria of these Basic Criteria by presenting a current „TCO Certified Displays“ certificate as issued at the time of application (currently: „TCO Certified Displays 6.0“<sup>11</sup>). RAL will accept the „TCO Certified Displays“ certificate for compliance with the following criteria in these Basic Criteria:

- 3.3 Repairability
- 3.4.2 Material Selection and Labelling
- 3.6 Ergonomics

However, the present Basic Criteria include additional requirements for computer monitors that go beyond the criteria set forth in „TCO Certified Displays“, compliance with which is to be additionally verified by the applicant.

#### 3.2 Energy Consumption

The computer monitors shall meet all requirements set forth in the Energy Star Program for Displays, as amended at the time of application, currently the Version 6.0 ENERGY STAR Program for Displays<sup>12</sup>) and labelled with the ENERGY STAR for Displays.

One or more operating elements to activate the energy saving features shall be readily visible and intuitive. The device shall be delivered with the energy saving function enabled.

#### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract and present evidence that the product is certified under the ENERGY STAR program requirements for Displays, as amended at the time of application (Annex 2).*

#### 3.3 Repairability

The product shall meet the requirements of „TCO Certified Displays 6.0“ (A.6.5.1 Warranty and Spare Parts) or comparable requirements set forth in the latest version of „TCO Certified Displays“, as amended at the time of application.

Under these requirements, the applicant must guarantee the availability of spare parts for a minimum of three years after production ceases.

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<sup>11</sup> TCO Certified Displays 6.0, <http://tcodevelopment.com/files/2013/04/TCO-Certified-Displays-6.0.pdf>, 5 March 2012 version

<sup>12</sup> ENERGY STAR® Program Requirements Product Specification for Displays Eligibility Criteria Version 6.0, [http://energystar.gov/products/specs/sites/products/files/Final\\_Version\\_6%200\\_Displays\\_Program\\_Requirements.pdf](http://energystar.gov/products/specs/sites/products/files/Final_Version_6%200_Displays_Program_Requirements.pdf), January 2013 version

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contractor or present evidence that the product is certified under „TCO Certified Displays“, as amended at the time of application (Annex 3).*

## **3.4 Recyclable Design**

### **3.4.1 Structure and Connection Technology**

The following shall apply to computer monitors:

- The devices to be Blue Angel eco-labelled shall be so designed as to allow easy disassembly for recycling purposes in order to make sure that housing parts, chassis, monitor panel<sup>13</sup> and electrical/electronic components (including printed circuit boards) can be separated as fractions from materials of other functional units and, if possible, recycled by material type. They shall be so designed as to allow manual disassembly by a specialist company by the use of universal tools<sup>14</sup> and it shall be possible for a single person to disassemble the device.
- Electrical/electronic components must be easy to remove from the housing.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements and present instructions showing/explaining the professional disassembly of the computer monitor (Annex 4). These instructions shall have a special focus on the professional separation of housing parts, chassis, monitor panel and printed circuit boards. The instructions shall be presented free of charge either in writing, by photo documentation, drawing or in video format. Moreover, the applicant shall undertake in Annex 1 to the Contract to provide the hired recycling company – if necessary - with free of charge information on efficient disassembling as well as on the substances and components that need to be treated selectively.*

### **3.4.2 Material Selection and Labelling**

The requirements of „TCO Certified Displays 6.0“ (A.6.6.1 Material Coding of Plastics, A.6.6.2 Variety of Plastics and A.6.6.3 Moulded-in metal parts and metallization of plastic housing) or comparable requirements set forth in the latest version of „TCO Certified Displays“, as amended at the time of application, shall be met.

Also, under these requirements, plastic parts greater than 25 grams in mass must be marked with codes according to ISO 11469 and ISO 1043-1, -2, -3, -4. Exempt from this requirement are carrier materials of the printed circuit boards and transparent plastic parts the function of which presupposes transparency (e.g. visible sheets in displays).

Product parts greater than 100 grams in weight must not consist of more than 2 different polymers.

There shall be no internal or external metallization of the housings of flat-panel monitors.

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<sup>13</sup> A monitor panel consists of liquid crystal sandwiched between two plastic plates, various filters and diffuser sheets as well as a transparent protective plate. These components are assembled in a multi-layer system (so-called sandwich structure). A monitor module is composed of a display panel, a backlight unit and electronic components.

<sup>14</sup> The term “universal tools” stands for general commercial tools

## **Compliance Verification**

*The applicant shall declare compliance with requirements in Annex 1 to the Contract and present evidence, if available, that the product is certified according to „TCO Certified Displays“, as amended at the time of application (Annex 3).*

### **3.5 Material Requirements**

#### **3.5.1 Requirements for the Plastics used for Mechanical Plastic Parts**

The plastics must not contain as constituent parts any substances that are classified as

- a) carcinogenic of categories 1A or 1B according to Table 3.1 of Annex VI to Regulation (EC) 1272/2008<sup>15</sup>
- b) mutagenic of categories 1A or 1B according to Table 3.1 of Annex VI to Regulation (EC) 1272/2008
- c) toxic to reproduction of categories 1A or 1B according to Table 3.1 of Annex VI to Regulation (EC) 1272/2008
- d) being of very high concern for other reasons according to the criteria of Annex XIII to the REACH Regulation, provided that they have been included in the List (so-called Candidate List<sup>16</sup>) prepared in accordance with REACH, Article 59, para. 1.

Halogenated polymers shall not be permitted. Nor may halogenated organic compounds be added as flame retardants.

The following shall be exempt from this rule:

- process-related, technically unavoidable impurities;
- fluoroorganic additives (as, for example, anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed 0.5 weight percent;
- plastic parts less than 25 grams in mass.

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<sup>15</sup> Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, Annex VI Harmonised classification and labelling for certain hazardous substances, Part 3: Harmonised classification and labelling – Tables, Table 2.3 List of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC, short: GHS Regulation [http://www.reach-info.de/ghs\\_verordnung.htm](http://www.reach-info.de/ghs_verordnung.htm), as amended.

The GHS Regulation (Global Harmonization System), that has come into force on January 20, 2009, replaces the old Directives 67/548/EEC and 1999/45/EC. According to the said regulation, substances are classified, labelled and packed until December 1, 2010 according to Directive 67/548/EEC (Dangerous Substances Directive) while mixtures are classified, labelled and packed until June 1, 2015 according to Directive 1999/45/EC (Dangerous Preparations Directive). Notwithstanding this, substances and preparations may be classified, labelled and packed according to the provisions of the GHS Regulation already before December 1, 2010 or June 1, 2015, respectively. In such case, the provisions of Dangerous Substances Directive or Dangerous Preparations Directive do not apply.

<sup>16</sup> Link to the Candidate List in Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH): <http://echa.europa.eu/web/guest/candidate-list-table>

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 and present a written declaration from the plastic manufacturers or ensure the submission of such declaration to RAL gGmbH. Such declaration in Annex P-M shall confirm that the banned substances have not been added to the plastics and give the chemical designation of the flame retardants used, including CAS No. and classifications. When first applying for the Blue Angel eco-label the declaration submitted must not be older than 6 months. If one applicant files additional applications for the eco-labelling of products containing the same plastics the declarations submitted may be presented unchanged during the term of the Basic Criteria. Notwithstanding this, RAL shall be entitled to ask for an updated version of the declarations if the Umweltbundesamt (Federal Environmental Agency) finds that product-relevant substances have been added to the Candidate List.*

*The applicant shall specify the housing plastics used for parts greater than 25 grams in mass and present a list of the housing plastics used pursuant to Annex P-L 25.*

### **3.5.2 Requirements for the Plastics used in Printed Circuit Boards**

No PBBs (polybrominated biphenyls), PBDEs (polybrominated diphenyl ethers) or chlorinated paraffins may be added to the carrier material of printed circuit boards.

### **Compliance Verification**

*The applicant shall declare compliance with the requirements in Annex 1 to the Contract.*

### **3.6 Ergonomics**

The ergonomic properties of monitors for personal computers shall be tested for their ergonomic properties in accordance with DIN EN ISO 9241-307 and at least meet the requirements of pixel error class 2.

As an alternative to this requirement the applicant may provide evidence that the product is certified according to „TCO Certified Displays“, as amended at the time of application (current version: „TCO Certified Displays 6.0“).

### **Compliance Verification**

*The applicant shall verify compliance with the ergonomics requirements under DIN EN ISO 9241-307 by presentation of a test protocol prepared by an independent DIN EN ISO/IEC 17025 accredited testing laboratory (Annex 5). Alternatively, the applicant shall provide evidence (Annex 3) that the product is certified according to „TCO Certified Displays“, as amended at the time of application.*

### **3.7 Consumer Information**

The documentation included with the devices shall include both the technical specifications and the environment and health-related user information. It shall be supplied as a CD-ROM or in printed form together with the device or made available on the Internet from the time of distribution for a minimum of 5 years after production ceases.

The documentation shall include at least the following basic user information:

- a) Power consumption in different operating modes according to para. 3.2. Also included shall be instructions on how to set the devices to the energy-saving modes.
- b) Information that a reduction in energy consumption goes along with a reduction in operating costs and that the energy consumption can be cut down to zero if the device is disconnected from the mains socket outlet completely.
- c) Information that the device draws power even when in the Off mode.
- d) Information that screen savers prevent the device from automatically entering into power-saving modes and, therefore, should not be enabled.
- e) Information that lowering the monitor brightness helps reduce energy consumption.
- f) Repairability according to para. 3.3.
- g) Instructions for environmentally sound product disposal at the end of service life in accordance with the German Elektroggesetz (Electrical and Electronic Equipment Act).

### **Compliance Verification**

*The applicant shall declare compliance with the requirement in Annex 1 to the Contract and present the product documentation in Annex 6.*

## **4 Applicants and Parties Involved**

Manufacturers or distributors of final products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel Environmental Label,
- the federal state being home to the applicant's production site,
- Umweltbundesamt (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications for the Blue Angel in order to be able to further develop the Basic Award Criteria.

## **5 Use of the Environmental Label**

The use of the Environmental Label by the applicant is governed by a contract on the use of the Environmental Label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the Environmental Label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until December 31, 2018. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2018 or March 31 of the respective year of extension.

After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant (manufacturer) shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organisations.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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