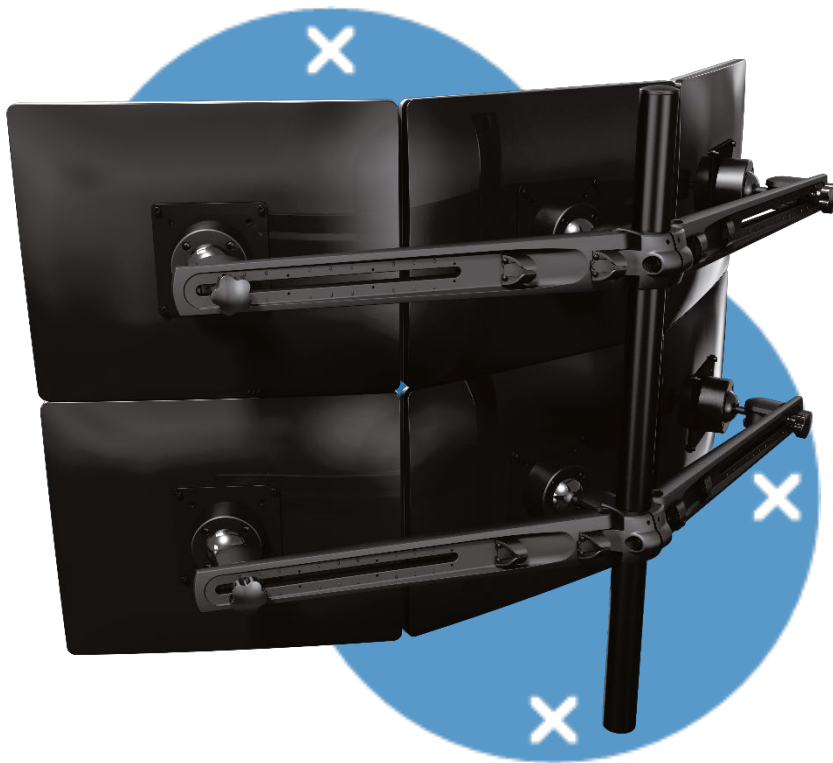


Environmental Product Declaration

in accordance with ISO 14025 and EN 15804



53.633

Viewmaster multi-monitor system - desk 633

| | |
|-----------------|------------|
| EPD Issue date | 2019-02-08 |
| EPD Expires on | 2024-02-07 |
| Market coverage | Europe |

dataflex

feeling at work

General

This environmental product declaration (EPD) is based on the results of the Life Cycle Assessment (LCA) that was commissioned by Dataflex and performed by Ecochain. The LCA and EPD comply with the requirements of ISO 14040 [1], ISO 14044 [2] and ISO 14025 [3] and follow the rules set out in "INSIDE/INSIDE Horizontale PCR" [6] and "INSIDE/INSIDE PCR Accessoires" [7]. Both product category rules (PCR's) are based on EN15804:2012+A1:2013 [4].

EPD of interior design products may not be comparable if they do not comply with "INSIDE/INSIDE Horizontale PCR" [6].

EPD Program

inside inside

INSIDE/INSIDE
Dutch Green Building Council
Zuid Hollandlaan 7
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The Netherlands
www.insideinside.com

EPD Program operator

INSIDE/INSIDE

EPD Owner/ Manufacturer

dataflex

Dataflex International B.V.
Van Nassauweg 2-6
2921 LX Krimpen aan den IJssel
The Netherlands
www.dataflex-int.com

EPD in accordance with

- INSIDE/INSIDE Horizontale PCR; version 1.2, 2018-12-10
- INSIDE/INSIDE PCR Accessoires; version 1.1, 2018-12-12

EPD type

Cradle to grave; no stages were omitted.

LCA Report prepared by

Ecochain

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Background data

Ecoinvent database version 3.4

Year of study

2017

EPD prepared by

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Demonstration of verification

| | |
|--|--|
| CEN standard EN 15804 serves as the core PCR | |
| Independent verification of the declaration and data, according to EN ISO 14025:2010 | |
| <input type="checkbox"/> internal | <input checked="" type="checkbox"/> external |
| Third party verifier: René Kraaijenbrink, LBP Sight | |

Company

At Dataflex we want to help you get the most out of yourself. This is why we want the place where you work to be a place where you feel at home. We call it 'feeling at work'.

Our product collections achieve the optimal balance between functionality, design and price. But while we help create ergonomic computer workplaces to suit every budget, we never compromise on quality.

What makes us tick

As well as sustainable relationships, we also want to do our bit for a sustainable planet. We try hard to be transparent at all times, and always to operate with integrity and respect for society and our environment. And we like to work with partners who feel the same way.

The Dataflex core values

We're honest and transparent, following not just the letter but the spirit of legislation and regulations.

We look to minimize the environmental impact of our products throughout their lifespan.

We try to do what's best by all our stakeholders, are open to criticism and seek out partners who share our core values. Why? Because we want to do things even better tomorrow than we do them today.

Better for those stakeholders, better for the planet and better for society.

Want to know more? Visit our website:

www.dataflex-int.com

Scope

Reference unit

The declared functional unit encompasses the production, installation, use and waste processing of one Viewmaster multi-monitor system - desk 633 (art. no. 53.633) as sold by Dataflex

Product description

This model mounts a total of 6 monitors. Like on all other winged multi-monitor systems, each monitor can be adjusted individually. Cable management in the wings tidies up all cables, resulting in an impressive, curved monitoring workstation.

Specifications

- Stepless height adjustment
- For 6 monitors
- Cable clips and loop ties included
- Die-cast aluminium parts
- VESA MIS-D 75 x 75/100 x 100 mm compatible
- Monitor: tilt +55°/-55°, swivel +90°/-90°, rotate 360°
- Weight capacity max. 12 kg per monitor
- Desk mount not included
- Monitor size limit: width 440 - height 428 mm
- Due to excellent stability also suitable for touchscreens
- The reference service life (RSL) is 5 years ^a

List of materials Viewmaster multi-monitor system - desk 633

| Materials | | Quantity | Unit |
|---------------------|---------------------------------------|------------------------|----------------|
| Main body | EG cold roll steel | 3,519 | kg |
| | Aluminium A380 | 3,895 | kg |
| | Powder coating, steel | 0,302 | m ² |
| | Paint, aluminium | 0,014 | kg |
| | Acrylonitrile butadiene styrene (ABS) | 0,284 | kg |
| | Polypropylene (PP) | 0,034 | kg |
| | Bakelite | 0,786 | kg |
| | Phenol formaldehyde resin (PF) | 0,128 | kg |
| | Nylon | 0,491 | kg |
| | Packaging materials | Plastic packaging (PE) | 0,055 |
| Cardboard box | | 0,900 | kg |
| Dataflex cardboard | | 0,500 | kg |
| Auxiliary materials | Manuals & product sheets | 0,019 | kg |
| | Dataflex instructions | 0,020 | kg |
| | Others | 0,007 | kg |

Table 1: Composition 53.633

No material content of this product has substances of very high concern (SVHC's) that are listed on the "Candidate List of Substances of very high concern for authorization" exceeding the limits for registration with the European Chemicals Agency (ECHA).

Data representation

Data concerning the manufacturing of the 53.633 and the used background processes for environmental impacts are recent (<2 years). All processing data has been modelled using Ecoinvent [8] (cut-off system model) references, released in 2017. Calculations were performed with Ecochain version 2.10 [5].

^a Based on fixed RSL of "INSIDE/INSIDE PCR Accessoires" [7]

Process description

The process tree consists of all processes that cause environmental impacts, such as material extraction and the transportation of these resources to the production facility. The processes and life cycle modules that are included in this study are defined by system boundaries. In the LCA the following stages are covered:

- Raw material supply (A1), transport to production facility (A2) and manufacturing (A3)
- Transport to the customer (A4) and the installation process (A5)
- Use phase (B)
- De-installation (C1), transport to waste processing site (C2), waste processing (C3) and disposal (C4)
- Reuse, recovery or recycling potential (D)

During the use of Dataflex products no consumption, emissions or environmental impacts take place. Phase B is therefore not included in the process tree.

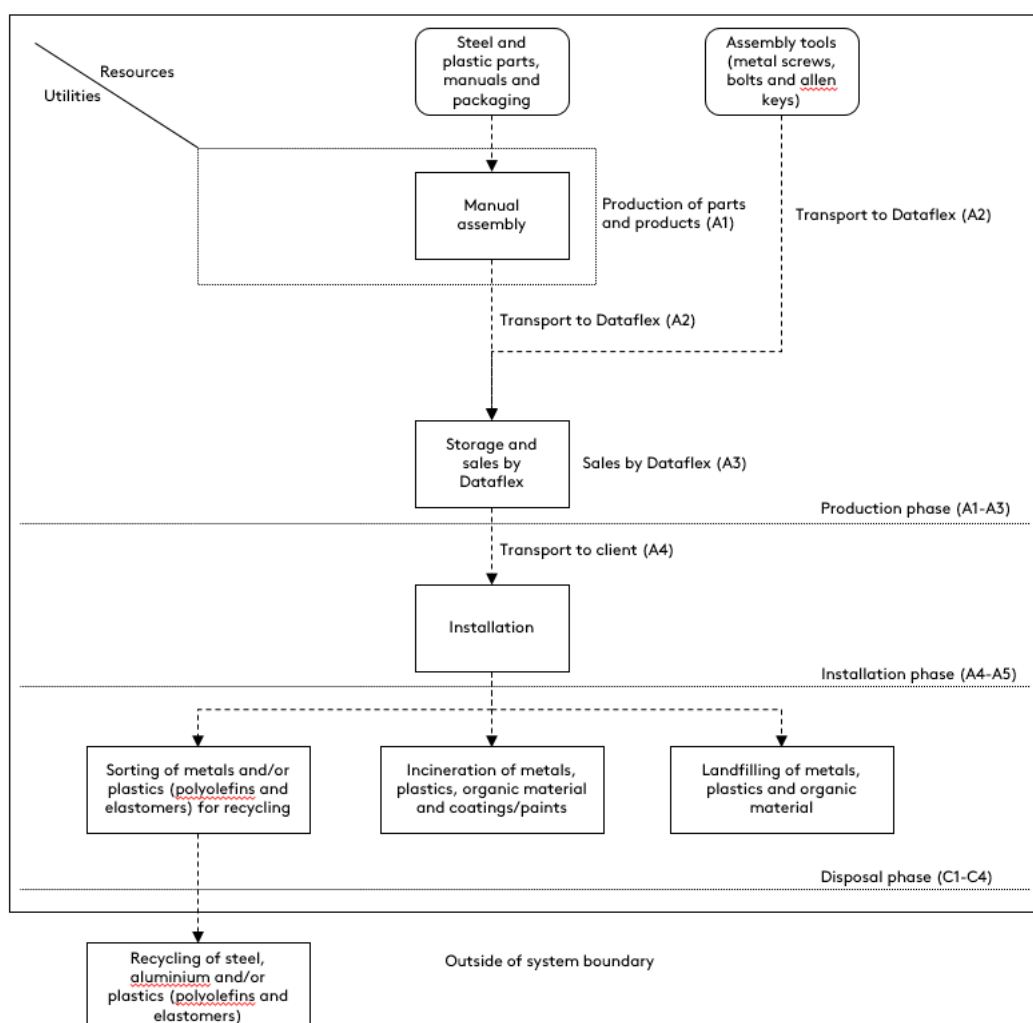


Figure 1: Process tree of 53.633

All parts of the 53.633 are made by subsuppliers who did not supply data. As such, average plastic and metal working references from Ecoinvent 3.4 [8] are used for this supplier. The product is finished at Dataflex. During assembly no resources or materials are consumed, as this is done by hand. The original packaging added by Dataflex' supplier is shredded, however, and used as filling material for repackaging. The exact consumption of this shredding process is unknown, but due to the low amounts and simplicity of the process, this likely amounts to less than 1% of the product's impact. This process is therefore omitted. After use, the products are discarded by customers without the involvement of Dataflex. As such, standard waste scenario's as described in "INSIDE/INSIDE Horizontale PCR" (appendix A) [6] are used.

System boundary and cut off criteria

In figure 1 the most important processes in the different life cycle stages are visualized as a process tree. Inputs and outputs that leave the system boundary are placed outside the system boundary. For reasons of clarity, not every emission that takes place at each process is visualized. However, all emissions and resource extractions that take place in the life cycle were included in the LCA calculations. In this LCA, the waste processes are declared in the relevant module. In the case of the use of secondary materials or energy recovered from secondary fuels, the system boundary between the system under study and the previous system (providing the secondary materials) is set where outputs of the previous system, e.g. materials, products, building elements or energy, reach the end-of waste state. For all materials, the cut-off is set after any pre-treatment processes such as sorting, as the recovered materials must be applicable for a specific purpose.

In this analysis all environmental inputs - such as resources, energy and waste - were qualified, quantified and translated to environmental impacts through the use of LCA background data from Ecoinvent [8].

Module A

All relevant resources, materials and services in production phase A1 are based on the composition of the products and Ecoinvent [5] references. Therefore no co-product allocation of energy usage was needed. The impact of modules A1 to A3 has been aggregated. Transport from Dataflex to its clients (A4) is set to 1 km, in accordance with "INSIDE/INSIDE Horizontale PCR" (paragraph 5.6) [6]. The impact of A4 is therefore not representative for the actual impact of the transport. Module A4 in this report should be scaled to the actual transport distance of the products from Dataflex to the respective client. All truck transport takes place with >32 t EURO4 trucks, as is described in "INSIDE/INSIDE Horizontale PCR" (paragraph 6.3.6.2) [6]. This reference from Ecoinvent [8] assumes an average load factor of 50%, in other words: fully loaded transport towards the customer with empty returns. The impact of production and waste processing of tools and fittings required to install the products is seen as the impact of the installation phase (A5).

Module B

The product consumes no resources or materials and the applied materials do not cause emissions in use.

Modules C and D

As no demolition takes place, there is no impact for C1. For transport to the waste processing site, distance to sorting/landfilling locations is set to 50 km and to incineration plants to 100 km in accordance with "INSIDE/INSIDE Horizontale PCR" [6]. The waste scenario for all materials has been based on appendix A of "INSIDE/INSIDE Horizontale PCR" [6], and is given in table 2.

| Material group | Landfill (%) | Incineration (%) | Recycling (%) | Product re-use (%) |
|--|--------------|------------------|---------------|--------------------|
| Plastics (rest materials) | 20 | 80 | 0 | 0 |
| Polyolefins (i.a. pe,pp) | 10 | 85 | 5 | 0 |
| Metals, other / metals (rest materials) | 5 | 5 | 90 | 0 |
| Finishing (attached to wood, plastic, metal) | 0 | 100 | 0 | 0 |
| Organic (via rest materials) | 15 | 85 | 0 | 0 |
| Elastomers (i.a. epdm) | 10 | 85 | 5 | 0 |

Table 2: waste scenario's C3-D

For metals the end-of-waste is reached when the material is sorted, as the sorted metal can replace primary material inputs of metal production. In the case of metals, the (technically equivalent) avoided materials have been determined based on Ecoinvent [8] references used for the primary material that is used in module A1. Sorted steel replaces pig iron as raw material input for steel production

For polyolefins the end-of-waste is reached when the material have been pre-sorted and sorted, as the sorted plastics can be used as raw material input for secondary polyolefin granulate production. The sorted polyolefins therefore indirectly replace plastic (polyolefin) powder as input for granulate production. The impact of the granulation process in Ecoinvent [8] of recycled polyethylene is assumed to be similar to the granulation of virgin polyethylene in Ecoinvent [8].

For elastomers the end-of-waste is also reached when the material have been pre-sorted and sorted, as the sorted elastomers can be used as raw material input for secondary elastomer production (paragraph 2.4). According to the Ecoinvent [8] reference of the elastomer synthetic rubber, the sorted polyolefins indirectly replace raw HDPE (40%) and black carbon (60%) as input for elastomer (synthetic rubber) production. As the processing of sorted elastomers is unknown, it is assumed the same losses occur for elastomers as for polyolefins (4,48%).

All materials that are incinerated are associated with energy recovery, as it is assumed the products are incinerated in the Netherlands or similar countries. The energy yield of Dutch incineration facilities is taken from the SBK Bepalingsmethode [9].

Environmental indicators

Tables 3 to 6 show the parameters that describe the environmental impacts, resource use, waste categories and other output flows of one unit of the 53.633.

| Parameter | Unit | A1-A3 | A4 | A5 | B1-B7 | C1 | C2 | C3 | C4 | D | Total |
|--|--|----------|----------|----------|-------|----|----------|----------|----------|-----------|----------|
| Depletion of abiotic resources – elements (ADP - elements) | kg Sb equiv. | 4,58E-01 | 6,55E-06 | 1,16E-03 | 0 | 0 | 1,03E-03 | 5,13E-03 | 1,28E-04 | -1,50E-01 | 3,16E-01 |
| Depletion of abiotic resources - fossil fuels (ADP - fossil fuels) | MJ, net calorific value | 7,89E+02 | 1,43E-02 | 1,95E+00 | 0 | 0 | 2,26E+00 | 9,87E+00 | 2,57E-01 | -2,41E+02 | 5,63E+02 |
| Acidification for soil and water (AP) | kg SO ₂ equiv. | 3,65E-01 | 3,41E-06 | 9,17E-04 | 0 | 0 | 5,37E-04 | 5,09E-03 | 8,38E-05 | -1,10E-01 | 2,62E-01 |
| Ozone depletion (ODP) | kg CFC 11 equiv. | 3,04E-06 | 1,65E-10 | 1,02E-08 | 0 | 0 | 2,60E-08 | 8,71E-08 | 2,26E-09 | -8,81E-07 | 2,29E-06 |
| Global warming (GWP) | kg CO ₂ equiv. | 6,77E+01 | 8,66E-04 | 1,76E-01 | 0 | 0 | 1,37E-01 | 4,14E+00 | 4,05E-02 | -2,37E+01 | 4,85E+01 |
| Eutrophication (EP) | kg (PO ₄) ³⁻ equiv. | 4,27E-02 | 5,99E-07 | 1,48E-04 | 0 | 0 | 9,44E-05 | 1,04E-03 | 3,05E-05 | -9,26E-03 | 3,48E-02 |
| Photochemical ozone creation (POCP) | kg ethene equiv. | 2,44E-02 | 1,42E-07 | 7,18E-05 | 0 | 0 | 2,24E-05 | 2,40E-04 | 9,99E-06 | -9,58E-03 | 1,51E-02 |

Table 3: Environmental impacts

| Parameter | Unit | A1-A3 | A4 | A5 | B1-B7 | C1 | C2 | C3 | C4 | D | Total |
|--|-------------------------|----------|----------|----------|-------|----|----------|----------|----------|-----------|----------|
| Use of renewable primary energy excluding renewable primary energy resources used as raw materials | MJ, net calorific value | 6,80E+01 | 1,99E-04 | 1,71E-01 | 0 | 0 | 3,14E-02 | 1,05E+00 | 1,15E-02 | -3,09E+01 | 3,84E+01 |
| Use of renewable primary energy resources used as raw materials | MJ, net calorific value | 2,28E+01 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 2,28E+01 |
| Total use of renewable primary energy resources | MJ, net calorific value | 8,02E+01 | 1,99E-04 | 1,71E-01 | 0 | 0 | 3,14E-02 | 1,05E+00 | 1,15E-02 | -3,09E+01 | 5,05E+01 |
| Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials | MJ, net calorific value | 7,88E+02 | 1,46E-02 | 2,12E+00 | 0 | 0 | 2,30E+00 | 1,12E+01 | 2,70E-01 | -2,43E+02 | 5,61E+02 |
| Use of non-renewable primary energy resources used as raw materials | MJ, net calorific value | 5,63E+01 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,63E+01 |
| Total use of non-renewable primary energy resources | MJ, net calorific value | 8,45E+02 | 1,46E-02 | 2,12E+00 | 0 | 0 | 2,30E+00 | 1,12E+01 | 2,70E-01 | -2,43E+02 | 6,17E+02 |
| Use of secondary material | kg | 5,80E+00 | 0,00E+00 | 2,00E-02 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 5,82E+00 |
| Use of renewable secondary fuels | MJ, net calorific value | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Use of non-renewable secondary fuels | MJ, net calorific value | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Net use of fresh water | m ³ | 3,05E-01 | 7,44E-07 | 9,98E-04 | 0 | 0 | 1,17E-04 | 8,83E-03 | 5,00E-05 | -5,15E-02 | 2,63E-01 |

Table 4: Resource use

| Parameter | Unit | A1-A3 | A4 | A5 | B1-B7 | C1 | C2 | C3 | C4 | D | Total |
|------------------------------|------|----------|----------|----------|-------|----|----------|----------|----------|-----------|----------|
| Hazardous waste disposed | kg | 1,39E-02 | 1,01E-07 | 1,22E-05 | 0 | 0 | 1,60E-05 | 2,32E-02 | 1,55E-06 | -1,16E-03 | 3,60E-02 |
| Non-hazardous waste disposed | kg | 1,10E+01 | 1,18E-03 | 4,46E-02 | 0 | 0 | 1,86E-01 | 1,03E+00 | 8,68E-01 | -2,20E+00 | 1,10E+01 |
| Radioactive waste disposed | kg | 1,46E-03 | 9,36E-08 | 5,31E-06 | 0 | 0 | 1,48E-05 | 4,75E-05 | 1,32E-06 | -2,01E-04 | 1,33E-03 |

Table 5: Waste categories

| Parameter | Unit | A1-A3 | A4 | A5 | B1-B7 | C1 | C2 | C3 | C4 | D | Total |
|-------------------------------|-----------------------|----------|----------|----------|-------|----|----------|----------|----------|----------|----------|
| Components for re-use | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Materials for recycling | kg | 0,00E+00 | 0,00E+00 | 3,28E-02 | 0 | 0 | 0,00E+00 | 6,68E+00 | 0,00E+00 | 0,00E+00 | 6,71E+00 |
| Materials for energy recovery | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| Exported energy | MJ per energy carrier | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0 | 0 | 0,00E+00 | 6,46E+01 | 0,00E+00 | 0,00E+00 | 6,46E+01 |

Table 6: Other output flows

References

- [1] 'ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.
- [2] 'ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.
- [3] 'ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO14025:2006.
- [4] 'NEN-EN 15804: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products', NEN-EN 15804:2012+A1:2013.
- [5] Ecochain, 2017, web: <http://app.Ecochain.com>.
- [6] INSIDE/INSIDE Horizontale PCR; version 1.2, 2018-12-10
- [7] INSIDE/INSIDE PCR Accessoires; version 1.1, 2018-12-12
- [8] Ecoinvent database version 3.4
- [9] 'SBK Bepalingsmethode Milieuprestatie Gebouwen en GWW werken', Stichting Bouwkwiteit, versie januari 2019.