Environmental Product Declaration

In accordance with ISO 14025:2006 and EN 50693:2020 for:

Split-type Room Air Conditioner

from

Bosch Thermotechnik GmbH

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES-0025696:001
Publication date:	2025-09-08
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

Statement: EPD of multiple products, based on a representative product. The list of products can be found in the product information section

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
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Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
PCR: 2024:06 “Electronic and electric equipment, and electronic components (non-construction)”. Version 1.0.1, 2024-12-09
PCR review was conducted by: Sophie Kieselbach. The review panel may be contacted via info@environdec.com.
Life Cycle Assessment (LCA)
LCA accountability: Lucas, Ma, Luqiang.Ma@tuvsud.com TÜV SÜD Certification and Testing (China) Co., Ltd. Guangzhou Branch 5F, Communication Building, 163 Pingyun Rd, Huangpu Ave. West, Guangzhou 510656 P.R. China
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: <*Sunil Kumar, SIPL Pvt Ltd*> Approved by: The International EPD® System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by accredited certification body Third-party verification: The certification body is accredited by
OR

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:

☐ EPD verification by EPD Process Certification*

Internal auditor: *<name, organisation>*

Third-party verification: *<name, organisation>* is an approved certification body accountable for third-party verification

Third-party verifier is accredited by: *<name of accreditation body & accreditation number, where applicable>*

*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI.

Procedure for follow-up of data during EPD validity involves third-party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see ISO 14025.

Company information

Owner of the EPD:
Bosch Thermotechnik GmbH
HC-CW/PAE Junkersstr. 20-24 73249 Wernau GERMANY

Contact:
Giuseppe Marino
+49(7153)306-1415, Giuseppe.Marino@de.bosch.com

Description of the organisation:
Bosch is a German multinational company founded in 1886 in Stuttgart; it deals with the development of products in the electronics sector such as power tools, automotive components, heating products, semiconductors and household appliances. For more than 100 years, Bosch has been committed to offering solutions for heating, cooling, and domestic hot water production that combine high quality and efficiency, using renewable energy sources to ensure maximum energy savings and environmental friendliness.

Product-related or management system-related certifications:
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

location of production site:
Shunde District, Foshan City, Guangdong Province, China

Product information

Product name: Split-type Room Air Conditioner

Product identification:
Air conditioner machines, comprising a motor-driven fan and elements for changing the temperature and humidity, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or "split-system"

Series	Model	SEER	SCOP*	Indoor unit	Yield (Pcs)	Outdoor unit	Yield (Pcs)	Comment
Climate 3000i	CL3000iU W 20E	7.4	5.2	CL3000iU W 20E	22844	CL3000i 26 E	15870	
	CL3000iU W 26 E	7.4	5.2	CL3000iU W 26 E	55889	CL3000i 26 E		
	CL3000iU W 35 E	7	5.5	CL3000iU W 35 E	49781	CL3000i 35 E	37820	
	CL3000iU W 53 E	7	5.1	CL3000iU W 53 E	12285	CL3000i 53 E	10507	
	CL3000iU W 70 E	6.4	5.1	CL3000iU W 70 E	3521	CL3000i 70 E	3581	
Climate 3200i	CL3200iU W 26 E	7.4	5.2	CL3200iU W 26 E	1940	CL3000i 26 E	Connected with Climate 3000i outdoor unit.	The only difference from Climate 3000i is the panel of the indoor unit.
	CL3200iU W 35 E	7	5.5	CL3200iU W 35 E	1985	CL3000i 35 E		
	CL3200iU W 53 E	7	5.1	CL3200iU W 53 E	385	CL3000i 53 E		
	CL3200iU W 70 E	6.4	5.1	CL3200iU W 70 E	0	CL3000i 70 E		

Series	Model	SEER	SCOP*	Indoor unit	Yield (Pcs)	Outdoor unit	Yield (Pcs)	Comment
Climate 7000i	CL7000iU W 20 E	9.4	5.3	CL7000iU W 20 E	1250	CL7000i 20 E	970	
	CL7000iU W 26 E	10.1	5.3	CL7000iU W 26 E	3824	CL7000i 26 E	3018	
	CL7000iU W 35 E	9.7	5.3	CL7000iU W 35 E	5833	CL7000i 35 E	5210	
	CL7000iU W 41 E	8.7	5.6	CL7000iU W 41 E	2721	CL7000i 41 E	2738	
	CL7000iU W 53 E	8.5	5.1	CL7000iU W 53 E	1664	CL7000i 53 E	1533	
Climate 5000 M	CL5000M 53/2 E + CL3000iU W 26 E*2	6.1	5.1	CL3000iU W 26 E	Connected with Climate 3000i outdoor unit	CL5000M 53/2 E	12048	Climate 5000 M series could be matched with any series' indoor units theoretically.
	CL5000M 79/3 E + CL3000iU W 26 E*3	6.1	5.1	CL3000iU W 26 E		CL5000M 79/3 E	6729	

Note: CL5000M 53/2 E + CL3000iU W 26 E*2, one outdoor unit is connected to two indoor units.
CL5000M 79/3 E + CL3000iU W 26 E*3, one outdoor unit is connected to three indoor units.

Geographical scope:
China, Europe.

UN CPC code:
43912

Product description:

Value for Money

With diverse features, some of them even difficult to find in models of higher price level in market today this unit is the best value product for money. Those full set of features offers a lot of possibilities to optimize the climate at your home. On top with exceptional and exclusive Bosch design ODU and IDU setting stands higher. USB Gateway is offered optionally for distant command on comfort via WİFİ connectivity.

Heating and cooling with inverter technology

Via power modulating inverter technology compressor and reversible AC system, it makes possible both efficient heating and cooling (SEER A++ for average climate region) providing a comfortable climate at your home all year round. Thanks to wide operation temperature range makes it possible cooling up to +50°C in summer and heating at temperatures down to -15 °C at winter days.

Corrosion resistance

Special coating on heat exchangers provides corrosion resistance and makes it possible reliable use at areas close to seaside.

Best air quality for your customers health, no odors, no allergies

With cold catalyst, high density filters and i-clean function, bacteria, mold, viruses and other polluting particles in the air are vanished, leaving the air fresh and clean. Cool or warm clean air make you feel more comfortable.

For more information, please visit website: https://www.bosch-homecomfort.com/global/en/

LCA information

Data quality

EN 15941 was applied in terms of data collection and quality requirements. In the module of A1, the data is from bill of materials which are provided by the manufacturer. The data concerning the modules A2 (Transportation) and A3 (Product manufacturing) were provided by manufacturer and concerns one year. These data were the quantities of all input and output materials extracted from the company's system. The purchased electricity in the manufacturing process is from the State Grid. Based on PCR, it belongs to 3) Electricity consumption mix on the market. Its GWP-GHG impact is 0.65 kgCO2 eq/kWh. The electricity from photovoltaic system (self-build) GWP-GHG impact is 0.08 kgCO2 eq/kWh. Generic data from database Ecoinvent 3.9.1. and the quality of the generic data used for the EPD in terms of its time, geography and technology representativeness are evaluated using EN 15804:2012+A2:2019, Annex E, E1. The generic data are found to be range from fair to very good for its quality.
The share of GWP-GHG result for A1-A3 details are shown in below.

Process	Source type	Source	Reference year	Data Category	Share of GWP-GHG results for A1-A3
Manufacturing-Grid electricity use	Database	Ecoinvent 3.9.1	2022	Specific Data	0.52%
Manufacturing-Photovoltaic electricity use	Database	Ecoinvent 3.9.1	2022	Specific Data	0.02%
Manufacturing-Heat	Database	Ecoinvent 3.9.1	2022	Specific Data	0.04%
Transport-Raw material	Database	Ecoinvent 3.9.1	2022	Specific Data	1.15%
Transport-solid waste	Database	Ecoinvent 3.9.1	2022	Specific Data	0.004%
Manufacturing-inductor-raw material	Database	Ecoinvent 3.9.1	2022	Specific Data: Secondary data, are combined with collected data on the composition of components used in manufacturing	9.10%
Other raw material component acquisition-outdoor unit	Database	Ecoinvent 3.9.1, Industry data 2.0	2022-2023		27.44%
Other raw material component acquisition-indoor unit	Database	Ecoinvent 3.9.1, Industry data 2.0	2022-2023		12.54%
Other process (waste treatment, etc.)	Database	Ecoinvent 3.9.1	2022	Generic data	0.12%
Total share of specific data, of GWP-GHG results for A1-A3					50.81%

The share of primary data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that supports the use of more primary data, to increase the representativeness of and comparability between EPDs. Note that the indicator does not capture all relevant aspects of data quality and is not comparable across product categories.

Functional unit

1 kWh of thermal energy exchanged with the building in cooling and heating mode by heating/cooling equipment using small-scale HVAC (split-type) as defined in CPC 43912 and HS 8415 according to the appropriate usage scenario of 350 hours of cooling and 1400 hours of heating per year defined in the EN 14511 and EN14825 standards over a service life of 20 years.

Reference service life:

the RSL of air conditioner is 20 years

Time representativeness:
Specific data for manufacturing was gathered for one year, 2024-02-01~2025-01-31.

Database(s) and LCA software used:
Ecoinvent 3.9.1, SimaPro 9.6.0.1

System diagram:

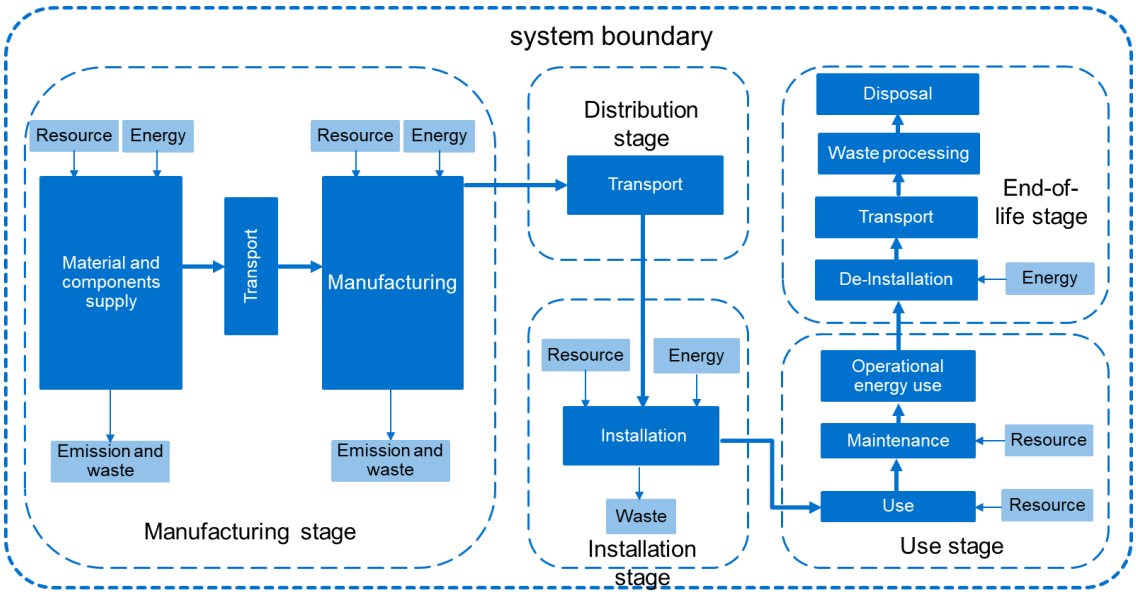

Figure 1: System Diagram

Figure 2: Included and excluded lifecycle

Stage	Manufacturing			Distribution	Installation	Use							End·of·life			
	Material·and·components·supply	Transport	Manufacturing	Transport	Installation	Use	Maintenance	Repair	Reuse	Refurbishment	Operational·energy·use	Operational·water·use	De-installation	Transport	Waste·processing	Disposal
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Modules·declared	X	X	X	X	X	X	X	ND	ND	ND	X	ND	X	X	X	X
Geography	CN	CN	CN	GLO	RER	RER	RER	/	/	/	RER	/	RER	RER	RER	RER
Specific·data·Used	50.81%			——	——	——	——	—	——	——	——	——	——	——	——	——
Variation·sites	——	——	——	——	——	——	——	—	——	——	——	——	——	——	——	——

System boundaries (X=included, ND=module not declared)

Description of system boundaries:
Cradle-to-grave

Description of the stage

Manufacturing stage

Acquisition of raw materials: This module considers the extraction and production of all raw materials, auxiliary products, packaging and energy which occur upstream to the manufacturing stage.

Transport: This module considers the raw materials transportation to the manufacturing site, which includes land transports.

Manufacturing: The manufacturing process of product includes five parts, injection moulding process, electronic process, two-device process, piping process and final assembly process. This module also includes the emissions, waste generated during manufacturing.

Distribution stage

Product transport: This process includes product transportation from the production gate to the retailer/distribution platform and from the retailer/distribution platform to the installation site. The products in this case are mainly sold in Europe during the time boundary. The main sales countries vary for different product series

Installation stage

Installation: The product installation includes indoor unit installation and outdoor unit installation. The energy consumed during the installation is electricity, which is used to drillholes, vacuum pump and the test run after the installation. The material consumed generally includes a copper pipe and a certain number of screws. This process also includes the wastes generated during installation.

Use stage

Usage: During the reference service life of 20 years, the usage process involves electricity consumption and leakage of refrigerant R32

Maintenance: During the reference service life of 20 years, the product maintenance includes refrigerant R32 charging.

End-of-Life stage

De-installation: the air conditioner can be completed with an electric drill, the electricity consumption is set the same value of installation.

Transport: This process considers the product waste transportation to the waste disposal site.

End-of-Life treatment: The waste air conditioning will be classified according to the composition of its components for recycling, incineration with energy and final disposal.

Excluded lifecycle stages:
The impacts associated with Repair, Replacement, Refurbishment and Operational water use module, are negligible, because according to the research conducted by the factory, the maintenance rate of air conditioner products is relatively low, and there will be no use of water during the use stage. Therefore, these life cycle modules are not declared (ND) and are not included in this LCA. According to PCR 2024:06, it is permissible not to calculate such benefits when they are not declared, in this case, the benefits of product waste in end-of-life stage (module D) are not declared, So the rules in Section G.2 of Annex G of EN 50693 are followed.

Cut-off criteria

all inputs and outputs for which data is available are included in the LCA. Data gaps are filled with conservative assumptions and generic data. Based on the practice, 0% of total energy usage and less than 1% of total mass input in this LCA is cut-off, and none of module is cut-off. In addition, the consumption and emissions of roads and plants' infrastructure, equipment of each process, personnel and living facilities in the plants were excluded.

Allocation

In this assessment, raw material and packaging material consumption did not involve allocations. Since there is no separate measurement of resource and energy consumption, emissions and wastes for each specific product models There are many product models of split-type room air conditioner produced by the manufacturer, which all consist of indoor units and outdoor units. Moreover, the assembly procedures for both the indoor and outdoor units of air-conditioning products are largely similar, in this study the total resource, energy consumption and emission output of the plant is allocated to each product according to total weight of the products produced in the plant.

the electricity mix

The purchased electricity in manufacturing process is from the State Grid. The data for generation of electricity applied is Electricity, Low voltage {CSG}| market for electricity, low voltage | Cut-off, U in the Ecoinvent 3.9.1 (cut-off) database. Its GWP-GHG impact is 0.65 kgCO_2eq/kWh. The reference year of electricity dataset is 2020~2022.

For the electricity consumed during the use stage, emission factor is Electricity, low voltage {RER}| market group for electricity, low voltage | Cut-off, U, (from ecoinvent 3.9.1; emission factor is 0.36 kg CO_2eq/kWh).

Content declaration

Product

The refrigerant used for all types is R32, Taking CL3000iU W 35 E for representative product as it´s the one sold most. The gross mass of product is 46.26kg. Description of the materials for representative product is shown in following diagrams.

Model	Product components	Mass (kg)	%	Post-consumer recycled material, weight-%	Biogenic material, weight-% of product	Biogenic material, kg C/product
CL3000iU W 35 E	Ferrous metal	20.20	43.65%	0	0	0
	Plastic and Rubbe	7.66	16.55%	0	0	0
	Cable	4.34	9.37%	0	0	0
	Copper metal	3.36	7.27%	0	0	0
	Aluminum metal	3.01	6.51%	0	0	0
	Electronic component	2.43	5.25%	0	0	0

Model	Product components	Mass (kg)	%	Post-consumer recycled material, weight-%	Biogenic material, weight-% of product	Biogenic material, kg C/product
	Refrigerant	0.66	1.42%	0	0	0
	Other material	0.62	1.33%	0	0	0

Packaging

Model	Product components	Mass (kg)	%	Biogenic material, kg C/product
CL3000iU W 35 E	Corrugated board (Packaging)	3.35	7.25%	1.51
	PE(Packaging)	0.04	0.09%	0
	PP(Packaging)	0.04	0.08%	0
	PS(Packaging)	0.57	1.23%	0

Note: 1kg biogenic carbon is equivalent to 44/12 kg of CO_2.

Consumer packaging: Not applicable

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product: Not applicable

In this case, since the biogenic carbon contained and recycled material is unknown and significantly less than 5 % of the total mass, this part of the content declaration is declared as 0% as a conservative estimation.

No substances are required to be reported as hazardous according to the *Restriction of Hazardous Substances*，*RoHS*, associated with the production of this product.

The products involved this time have obtained the European energy efficiency label and comply with ErP requirements. In their green procurement policies, manufacturers require suppliers to provide SVHC test reports to ensure material compliance. Adopting the approach of supply chain management + third-party testing to control SVHC risks.

Results of the environmental performance indicators

Impact category indicators

Taking CL3000iU W 35 E for representative product as it´s the one sold most.
The environmental performance results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3)."

Results per functional unit												
Indicator	Unit	Manufacturing stage	Distribution	Installation	Use			End of life				Total
		A1-A3	A4	A5	B1	B2	B6	C1	C2	C3	C4	
GWP-total	kg CO_2 eq.	6.7746E-03	1.1184E-04	1.4773E-04	4.8592E-04	3.2330E-06	6.2938E-02	5.7823E-08	1.2297E-04	2.6383E-04	1.2147E-04	7.0970E-02
GWP-fossil	kg CO_2 eq.	6.7275E-03	1.1177E-04	9.1658E-05	4.8592E-04	3.2225E-06	6.0669E-02	5.5738E-08	1.2293E-04	2.6164E-04	1.1803E-04	6.8592E-02
GWP-biogenic	kg CO_2 eq.	-1.0984E-05	2.5395E-08	5.8337E-05	0.0000E+00	4.6371E-09	3.3987E-04	3.1225E-10	1.3479E-08	8.1874E-07	1.1063E-08	3.8810E-04
GWP-luluc	kg CO_2 eq.	1.0153E-05	7.7430E-08	1.3196E-07	0.0000E+00	3.8006E-09	1.5141E-04	1.3910E-10	1.5549E-08	3.2531E-07	5.3306E-09	1.6212E-04
ODP	kg CFC 11 eq.	1.4328E-10	1.7166E-12	9.8245E-13	0.0000E+00	2.7760E-14	1.1573E-09	1.0633E-15	1.9266E-12	2.7318E-12	1.1501E-12	1.3092E-09
AP	mol H^+ eq.	9.2056E-05	2.4330E-06	5.5907E-06	0.0000E+00	2.0153E-08	3.4814E-04	3.1985E-10	6.7223E-07	8.5659E-06	4.4632E-08	4.5752E-04
EP-freshwater	kg P eq.	7.1541E-06	5.4195E-09	2.7521E-07	0.0000E+00	1.0534E-09	5.7471E-05	5.2800E-11	2.2937E-09	4.2871E-07	5.4967E-09	6.5343E-05
EP-marine	kg N eq.	1.2398E-05	6.2592E-07	2.4604E-07	0.0000E+00	2.3700E-09	5.6271E-05	5.1697E-11	2.9221E-07	4.4971E-07	1.7840E-08	7.0303E-05
EP-terrestrial	mol N eq.	1.0817E-04	6.9034E-06	3.2729E-06	0.0000E+00	2.4836E-08	5.0935E-04	4.6795E-10	3.1601E-06	5.6435E-06	1.6057E-07	6.3669E-04
POCP	kg NMVOC eq.	4.0810E-05	1.9092E-06	1.0432E-06	0.0000E+00	8.2286E-09	1.6356E-04	1.5026E-10	1.2374E-06	1.7611E-06	4.7143E-08	2.1037E-04
ADP-minerals & metals*	kg Sb eq.	1.5257E-06	1.8761E-10	7.7613E-08	0.0000E+00	5.9980E-11	7.3570E-07	6.7591E-13	7.8940E-11	1.0756E-07	2.5791E-11	2.4469E-06
ADP-fossil*	MJ	8.6637E-02	1.4366E-03	9.6187E-04	0.0000E+00	2.6982E-05	1.3807E+00	1.2685E-06	1.5944E-03	2.7205E-03	9.9677E-05	1.4742E+00
WDP*	m^3 world eq. deprived	1.9656E-03	4.3106E-06	8.7656E-05	0.0000E+00	1.8346E-06	1.5553E-02	1.4289E-08	3.0064E-06	1.5908E-04	3.8284E-06	1.7778E-02
Acronyms		GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Additional mandatory and voluntary impact category indicators

Results per functional unit												
Indicator	Unit	Manufacturing stage	Distribution	Installation	Use			End of life				Total
		A1-A3	A4	A5	B1	B2	B6	C1	C2	C3	C4	
GWP-GHG	kg CO_2 eq.	6.7376E-03	1.1185E-04	9.1790E-05	4.8592E-04	3.2263E-06	6.0821E-02	5.5877E-08	1.2295E-04	2.6197E-04	1.1804E-04	6.8754E-02

Disclaimer: According to the PCR, a supplementary indicator for climate impact: GWP-GHG indicator, which is equal to GWP-total except that the characterisation factor for biogenic CO_2 is set to zero

Resource use indicators

Results per functional unit												
Indicator	Unit	Manufacturing stage	Distribution	Installation	Use			End of life				Total
		A1-A3	A4	A5	B1	B2	B6	C1	C2	C3	C4	
PERE	MJ	1.0550E-02	1.3056E-05	2.0803E-04	0.0000E+00	3.1849E-06	3.0953E-01	2.8437E-07	6.3217E-06	5.3506E-04	3.9269E-06	3.2085E-01
PERM	MJ	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
PERT	MJ	1.0550E-02	1.3056E-05	2.0803E-04	0.0000E+00	3.1849E-06	3.0953E-01	2.8437E-07	6.3217E-06	5.3506E-04	3.9269E-06	3.2085E-01
PENRE	MJ	8.6633E-02	1.4366E-03	9.6181E-04	0.0000E+00	2.6980E-05	1.3801E+00	1.2679E-06	1.5944E-03	2.7200E-03	9.9674E-05	1.4735E+00
PENRM	MJ	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
PENRT	MJ	8.6633E-02	1.4366E-03	9.6181E-04	0.0000E+00	2.6980E-05	1.3801E+00	1.2679E-06	1.5944E-03	2.7200E-03	9.9674E-05	1.4735E+00
FW	m^3	6.0897E-05	1.4660E-07	2.1449E-06	0.0000E+00	4.7783E-08	1.1174E-03	1.0266E-09	1.0831E-07	4.4584E-06	1.1328E-07	1.1853E-03
Acronyms		PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; FW = Use of net fresh water										

Waste indicators

Results per functional unit												
Indicator	Unit	Manufacturing stage	Distribution	Installation	Use			End of life				Total
		A1-A3	A4	A5	B1	B2	B6	C1	C2	C3	C4	
Hazardous waste disposed	kg	7.9233E-07	7.8788E-09	4.1377E-09	0.0000E+00	1.0580E-10	2.4243E-06	2.2273E-12	1.0782E-08	2.3283E-07	6.7855E-10	3.4731E-06
Non-hazardous waste disposed	kg	1.5578E-03	2.6657E-05	2.9200E-05	0.0000E+00	2.3930E-07	5.5498E-03	5.0988E-09	8.0646E-06	5.7047E-05	4.9246E-06	7.2337E-03
Radioactive waste disposed	kg	2.2619E-07	2.0371E-10	2.1735E-09	0.0000E+00	6.2510E-11	9.9606E-06	9.1510E-12	1.1664E-10	8.8343E-09	7.7460E-11	1.0198E-05

The methods used for the calculation of environmental performance indicators are:

- “EN 15804 + A2 (adapted) V1.01 / EF 3.1 normalization and weighting set” for core impact category indicators,
- “Cumulative Energy Demand (LHV) V1.01 / Cumulative energy demand” for Primary energy resources –Renewable and Primary energy resources – Non-renewable,
- “Selected LCI results, additional V1.06” for Net use of fresh water,
- “EDIP 2003 V1.07 / Default” for Waste indicators.

Additional environmental information

Differences between products The results shown on the previous pages is the representative product; the values vary between products as shown below.

Indicator	Unit	CL3000iU W 20E	CL3000iU W 26 E	CL3000iU W 53 E	CL3000iU W 70 E	CL3200iU W 26 E	CL3200iU W 35 E	CL3200iU W 53 E	CL3200iU W 70 E
GWP-total	kg CO_2 eq.	5%	5%	4%	4%	5%	0%	4%	4%
GWP-fossil	kg CO_2 eq.	5%	5%	4%	4%	5%	0%	4%	4%
GWP-biogenic	kg CO_2 eq.	5%	5%	4%	5%	5%	0%	4%	5%
GWP-luluc	kg CO_2 eq.	5%	5%	5%	6%	5%	0%	5%	6%
ODP	kg CFC 11 eq.	9%	9%	5%	6%	9%	0%	5%	6%
AP	mol H^+ eq.	5%	5%	0%	0%	5%	0%	0%	0%
EP-freshwater	kg P eq.	5%	5%	3%	3%	5%	0%	3%	3%
EP-marine	kg N eq.	6%	6%	-2%	2%	6%	0%	-2%	2%
EP-terrestrial	mol N eq.	6%	6%	1%	1%	6%	0%	1%	1%
POCP	kg NMVOC eq.	6%	6%	0%	0%	6%	0%	0%	0%
ADP-minerals & metals	kg Sb eq.	8%	8%	-18%	-25%	8%	0%	-18%	-25%
ADP-fossil	MJ	5%	5%	5%	6%	5%	0%	5%	6%
WDP	m^3 world eq. deprived	5%	5%	3%	3%	5%	0%	3%	3%
GWP-GHG	kg CO_2 eq.	5%	5%	4%	4%	5%	0%	4%	4%

Indicator	Unit	CL7000iU W 20 E	CL7000iU W 26 E	CL7000iU W 35 E	CL7000iU W 41 E	CL7000iU W 53 E	CL5000M 53/2 E + CL3000iU W 26 E*2	CL5000M 79/3 E + CL3000iU W 26 E*3
GWP-total	kg CO_2 eq.	8%	3%	1%	-3%	2%	8%	9%
GWP-fossil	kg CO_2 eq.	8%	3%	1%	-3%	2%	8%	9%
GWP-biogenic	kg CO_2 eq.	9%	5%	2%	5%	-1%	7%	8%
GWP-luluc	kg CO_2 eq.	4%	1%	0%	-4%	3%	9%	9%
ODP	kg CFC 11 eq.	15%	6%	6%	1%	5%	13%	16%
AP	mol H^+ eq.	22%	9%	6%	1%	1%	5%	8%

Indicator	Unit	CL7000iU W 20 E	CL7000iU W 26 E	CL7000iU W 35 E	CL7000iU W 41 E	CL7000iU W 53 E	CL5000M 53/2 E + CL3000iU W 26 E*2	CL5000M 79/3 E + CL3000iU W 26 E*3
EP-freshwater	kg P eq.	8%	2%	0%	-4%	1%	7%	7%
EP-marine	kg N eq.	17%	7%	5%	-4%	-1%	6%	8%
EP-terrestrial	mol N eq.	15%	6%	4%	-1%	1%	6%	8%
POCP	kg NMVOC eq.	15%	4%	4%	-1%	0%	5%	8%
ADP-minerals & metals	kg Sb eq.	42%	10%	6%	-1%	-15%	-13%	-8%
ADP-fossil	MJ	4%	1%	0%	-4%	3%	9%	9%
WDP	m^3 world eq. deprived	8%	2%	0%	-5%	2%	7%	7%
GWP-GHG	kg CO_2 eq.	8%	3%	1%	-3%	2%	8%	9%

In an EPD of multiple products, the difference (in %) between the declared GWP-GHG result, and the product with GWP-GHG results furthest away from the declared results, for modules A1-A3.

Indicator	Unit	CL3000iU W 20E	CL3000iU W 26 E	CL3000iU W 53 E	CL3000iU W 70 E	CL3200iU W 26 E	CL3200iU W 35 E	CL3200iU W 53 E	CL3200iU W 70 E
GWP-total	kg CO_2 eq.	11%	11%	-23%	-27%	11%	0%	-23%	-27%

Indicator	Unit	CL7000iU W 20 E	CL7000iU W 26 E	CL7000iU W 35 E	CL7000iU W 41 E	CL7000iU W 53 E	CL5000M 53/2 E + CL3000iU W 26 E*2	CL5000M 79/3 E + CL3000iU W 26 E*3
GWP-total	kg CO_2 eq.	72%	26%	30%	18%	-11%	-12%	3%

Additional social and economic information

None

Information related to Sector EPD

This EPD is not sectorial

Differences versus previous versions

This EPD is a new submission.

Version history

Original Version of the EPD, 2025-09-29

Revision 1, 2025-10-16
Differences versus the previously published version:
Due to the data shifting caused by a typesetting error, the data for models CL3000iU W 20E to CL3200iU W 70E in the table of Additional Environmental Information section is different from the previously published version.

References

1) ISO 14040:2006 Environmental management — Life cycle assessment —Principles and Framework.
2) ISO 14044:2006 Environmental management — Life cycle assessment — Principles and guidelines.
3) ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
4) EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0.
5) EPD International (2024) General Programme Instructions for the International EPD® System. Version 5.0.
6) Zampori, L. and Pant, R., Suggestions for updating the Product Environmental Footprint (PEF) method, EUR 29682 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76- 00654-1, doi:10.2760/424613, JRC115959.
7) Product Environmental Footprint Category Rules Guidance, Version 6.3, May 2018.
8) Waste Electrical and Electronic Equipment Directive 2012/19/EU.
9) EN 15804:2012+A2:2019, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
10) BS EN 50693:2019, Product category rules for life cycle assessments of electronic and electrical products and systems.
11) BS EN 14511:2018, Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors.
12) BS EN 14825:2016, Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling — Testing and rating at part load conditions and calculation of seasonal performance.
13) BS EN 378-2, Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation.
14) PCR 2024:06 Electronic and electric equipment, and electronic components (non-construction).

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