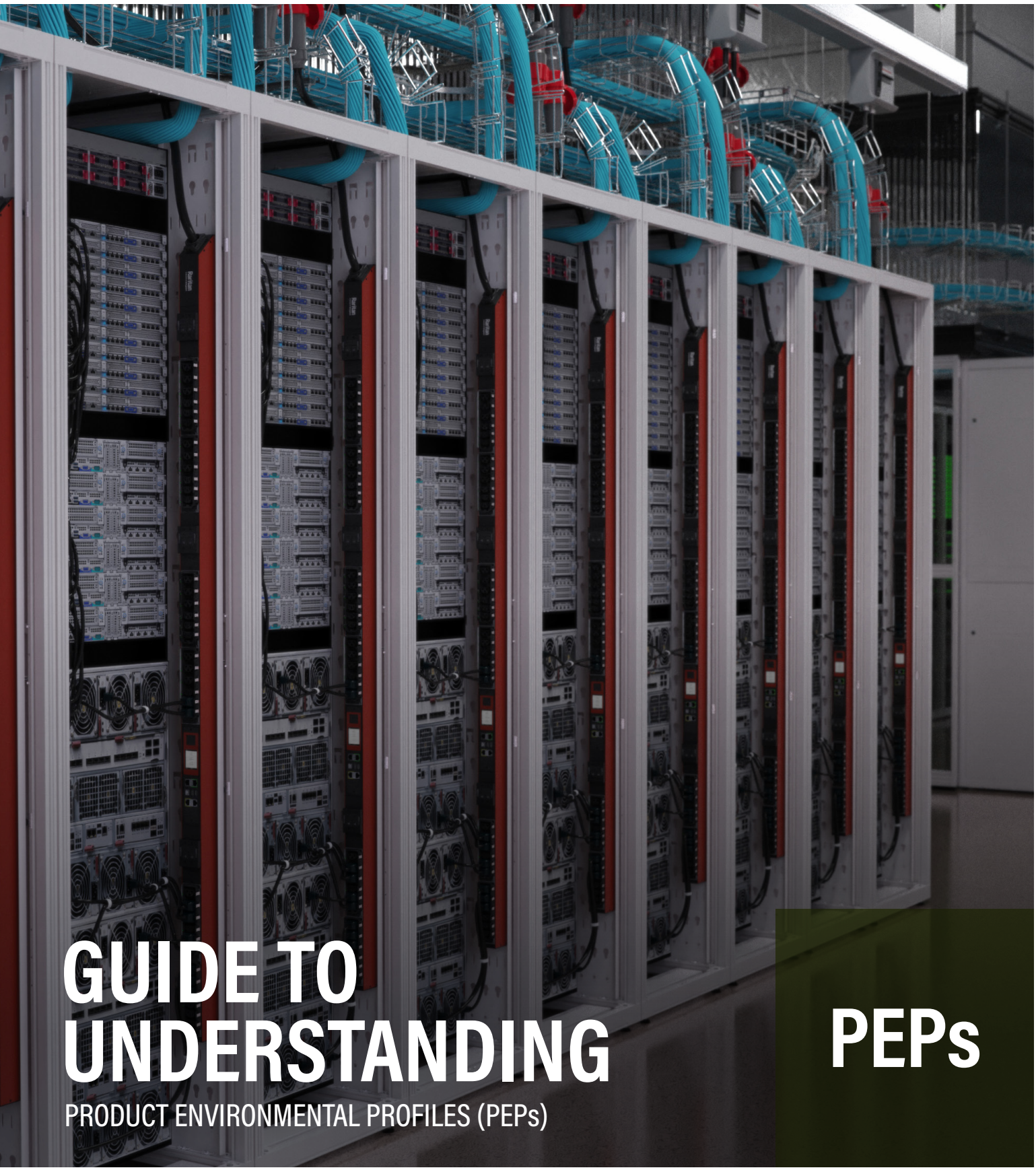


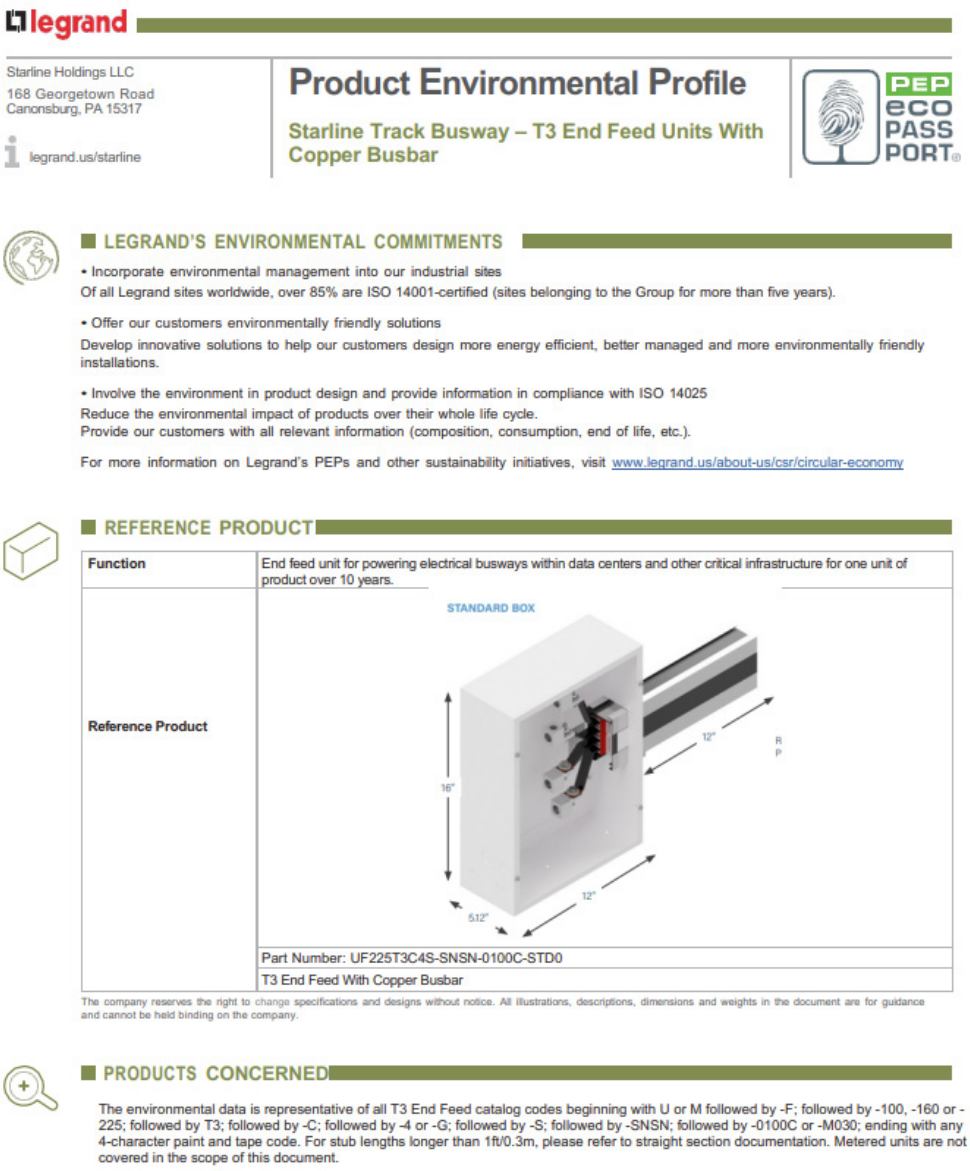
GUIDE TO UNDERSTANDING PEPs

PRODUCT ENVIRONMENTAL PROFILES (PEPs)

Starline®
A brand of legrand®

This document is designed to provide you with an in-depth understanding of the various components of a Product Environmental Profile (PEP) including:

- Understanding the Scope of a PEP
- Finding Your Catalog Code in the Products Concerned Section
- Understanding the Life Cycle Analysis
- Understanding Environmental Impacts
- Understanding Environmental Impact Indicators
- Typical Impact Hotspots of Electrical Equipment
- Extrapolation Rules for Products Outlined by the PEP
- Understanding the Verification Chart



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Product Environmental Profile

Starline Track Busway – T3 End Feed Units With Copper Busbar

PEP eco PASS PORT®

LEGRAND'S ENVIRONMENTAL COMMITMENTS

• Incorporate environmental management into our industrial sites
Of all Legrand sites worldwide, over 85% are ISO 14001-certified (sites belonging to the Group for more than five years).

• Offer our customers environmentally friendly solutions
Develop innovative solutions to help our customers design more energy efficient, better managed and more environmentally friendly installations.

• Involve the environment in product design and provide information in compliance with ISO 14025
Reduce the environmental impact of products over their whole life cycle.
Provide our customers with all relevant information (composition, consumption, end of life, etc.).

For more information on Legrand's PEPs and other sustainability initiatives, visit www.legrand.us/about-us/csr/circular-economy

REFERENCE PRODUCT

Function	End feed unit for powering electrical busways within data centers and other critical infrastructure for one unit of product over 10 years.
Reference Product	STANDARD BOX
	Part Number: UF225T3C4S-SNSN-0100C-STD0
	T3 End Feed With Copper Busbar

The company reserves the right to change specifications and designs without notice. All illustrations, descriptions, dimensions and weights in the document are for guidance and cannot be held binding on the company.

PRODUCTS CONCERNED

The environmental data is representative of all T3 End Feed catalog codes beginning with U or M followed by -F; followed by -100, -160 or -225; followed by T3; followed by -C; followed by -4 or -G; followed by -S; followed by -SNSN; followed by -0100C or -M030; ending with any 4-character paint and tape code. For stub lengths longer than 1ft/0.3m, please refer to straight section documentation. Metered units are not covered in the scope of this document.

UNDERSTANDING THE SCOPE OF A PEP

1. The reference product section of the PEP outlines what the reference product is which is what the environmental impacts and materials listed describe.

2. In the products concerned section other products are listed out that are also covered by this PEP. +/- 10% of the materials of these products are similar to the reference product.

The following material and environmental information listed on the PEP is based on the reference product only. To find specific impacts based on a different product (covered within the scope of the PEP), extrapolation rules are provided in the last section of the document.

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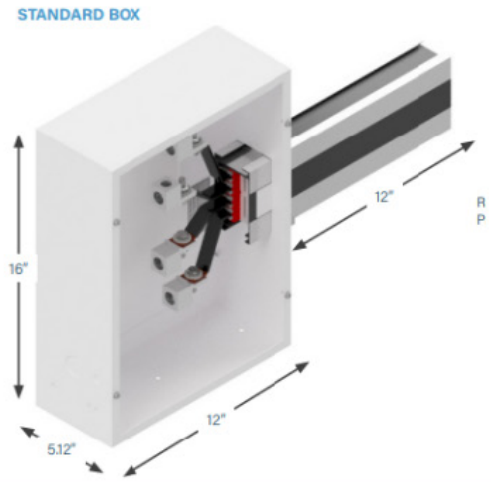
Reference Product	STANDARD BOX 
	Part Number: UF225T3C4S-SNSN-0100C-STD0
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FINDING YOUR CATALOG CODE IN THE PRODUCTS CONCERNED SECTION

"The codes listed in the Products Concerned section match the format of the catalog codes listed in the Starline Product Selection Guide. For example, to see the potential codes for the "T3 End Feeds" PEP, refer to the section "END FEEDS UNITS: PRODUCT NUMBERS"

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T3 AND S3 SERIES BUSWAY

TABLE OF CONTENTS

UNDERSTANDING THE LIFE CYCLE ANALYSIS

The constituent materials section lists out the percentage by mass of the materials of the reference product including product packaging and seperates them into categories of plastics, metals, and others.

The bottom section provides a description of the scope and assumptions used in each phase of the life cycle percentage by mass. Manufacturing, Distribution, Installation, Use, End of Life

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Product Environmental Profile

Starline Track Busway – T3 End Feed Units With Copper Busbar

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CONSTITUENT MATERIALS

This Reference Product contains no substances prohibited by the regulations applicable at the time of its introduction to the market. It respects the restrictions on use of hazardous substances as defined in the RoHS directive 2011/65/EU amended by delegated directive (EU) 2015/863, and its amendment 2017/2102/EU.

Total weight of Reference Product	10.79 kg

Plastics as % of weight		Metals as % of weight		Others as % of weight	
Product only: 9.05 kg					
Polyvinyl Chloride (PVC)	2.64%	Steel	55.60%		
Polyphenylene Ether (PPE)	2.52%	Copper	13.90%		
Polypropylene (PP)	0.04%	Aluminum	9.17%		
Packaging only: 1.74 kg					
Low Density Polyethylene (LDPE)	2.25%			Cardboard	13.3%
High Density Polyethylene (HDPE)	0.56%				
Total plastics	**8.01%**	**Total metals**	**78.67%**	**Total others**	**13.3%**

100% of the HDPE used and 80% of the Cardboard used comes from recycled content.

MANUFACTURING

This stage includes an aggregation of raw material extraction and supplier processing, delivery of the materials of the manufacturing site, and impacts from manufacturing. This Reference Product comes from a site that has received ISO-14001 certification.

DISTRIBUTION

Products are distributed from logistics centers located to optimize transport efficiency using EPA SmartWay® certified carriers to reduce greenhouse gases emissions. Information on the distance of distribution is not available so the PCR hypothesis for "Intracontinental transport", 2175 miles (3500 km) by heavy truck, was used. This represents transportation of the Reference Product from our warehouse to the local point of distribution in the North American market.

INSTALLATION

During installation, no product waste is assumed, and no electricity is used. Packaging disposal has been modeled per US EPA's Advancing Sustainable Materials Management 2018 Facts and Figures Report. The transportation distance is assumed to be 32 km as described by the US EPA WARM Tool.

UNDERSTANDING ENVIRONMENTAL IMPACTS

The environmental impacts section outlines the modeling elements that were taken into account at each life cycle stage and module.

EIME V6.1.1, along with its CODDE-2023-02 database, was utilized to perform the life cycle analysis of the reference product. This software is developed by LCIE Bureau Veritas, a renowned testing laboratory specializing in certification. CODDE operates as a department within LCIE. EIME software is designed to quantify the environmental impact of a product throughout its entire life cycle. The CODDE database contains a comprehensive inventory of materials and their specific environmental impacts. The CODDE® database comprises environmental data curated and selected by LCIE Bureau Veritas to meet the diverse needs of their clientele.[6]

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END OF LIFE

The recycling rate of each waste material is adopted from the US EPA's Advancing Sustainable Materials Management 2018 Facts and Figures Report including metals and plastics. The remaining portion of the waste is not recycled and is conservatively assumed landfilled.

The transportation distance is assumed to be 32 km as described by the US EPA WARM Tool.

ENVIRONMENTAL IMPACTS

The evaluation of environmental impacts examines the stages of the Reference Product life cycle: manufacturing, distribution, installation, use and end of life. It is representative of products marketed and used globally.

For each stage, the following modelling elements were taken into account at each life cycle stage (and module):

System Boundary	**Manufacturing (A1-A3)**	Materials and components of the product, all transport for the manufacturing, the packaging and the waste generated by the manufacturing. Facility energy data was used.
	Distribution (A4)	Transport between the last distribution center and an average delivery point in the sales area.
	Installation (A5)	The end of life of the packaging.
	Use (B1-B7)	Electricity use not accounted for in this PEP. Reference Lifetime (RLT) is not indicative of product warranty or expected lifetime of the product.
	End of life (C1-C4)	The transportation distance for waste disposal is assumed to be 32 km as described by the EPA WARM tool.
Benefits & Loads (Module D)		Module D was not assessed in this study.
Software and database used		EIME V6.1.1 and its CODDE-2023-02 database

For each stage, the energy mix modelled is based on default information integrated in the data modules used from the aforementioned database unless otherwise indicated.

UNDERSTANDING ENVIRONMENTAL IMPACTS

The environmental impacts section showcases the results of the conducted Life Cycle Assessment of the reference product.

ENVIRONMENTAL IMPACT INDICATORS:

The selection of indicators by the PEP Ecopassport program is based on the level of international recognition and takes into consideration the specific nature of the production of electrical, electronic and HVAC-R equipment and the requirements of other industry sectors, such as the European construction industry.

The indicators selected by the program are classified into two categories:

- a common base of mandatory indicators,
- optional indicators that companies are free to choose and declare[7]

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ENVIRONMENTAL IMPACTS

Environmental Impact Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life
				A1-A3	A4	A5	B1-B7	C1-C4
Climate change - total	GWP	9.13E+01	kg CO_2 eq	7.27E+01	2.91E+00	2.01E+00	0.00E+00	1.37E+01
Climate change - fossil fuels	GWPf	8.93E+01	kg CO_2 eq	7.09E+01	2.91E+00	1.94E+00	0.00E+00	1.36E+01
Climate change - biogenics	GWPb	2.04E+00	kg CO_2 eq	1.83E+00	0.00E+00	7.19E-02	0.00E+00	1.28E-01
Climate change - land use and land use transformation	GWPlu	7.61E-06	kg CO_2 eq	9.66E-07	0.00E+00	-3.59E-08	0.00E+00	6.68E-06
Ozone depletion	ODP	7.04E-06	kg CFC-11 eq	4.29E-06	2.58E-06	2.87E-08	0.00E+00	1.42E-07
Acidification	AP	5.88E-01	mole of H+ eq	5.06E-01	1.31E-02	4.39E-03	0.00E+00	6.46E-02
Eutrophication, freshwater	Epf	8.94E-03	kg P eq	2.29E-03	3.42E-07	2.92E-05	0.00E+00	6.61E-03
Eutrophication, marine aquatic	Epm	6.04E-02	kg of N eq	4.32E-02	6.07E-03	2.24E-03	0.00E+00	8.91E-03
Eutrophication, terrestrial	Ept	6.26E-01	mole of N eq	4.43E-01	6.58E-02	1.29E-02	0.00E+00	1.04E-01
Photochemical ozone formation	POCP	2.17E-01	kg NMVOC eq	1.58E-01	2.13E-02	3.05E-03	0.00E+00	3.44E-02
Abiotic resource depletion – elements	ADPe	2.25E-03	kg Sb eq	2.04E-03	2.51E-10	4.81E-08	0.00E+00	2.05E-04
Abiotic resource depletion – fossil fuels	ADPf	2.40E+03	MJ	1.60E+03	3.64E+01	1.49E+01	0.00E+00	8.43E+02
Water use	WU	3.91E+01	m^3 world eq	3.08E+01	1.48E-01	2.14E-01	0.00E+00	7.97E+00

The values of the indicators defined in the PCR-ed4-EN-2021 09 06 are available in the digital database of pep-ecopassport.org website.

The environmental impact of the Reference Product is most significant during the Manufacturing stage.

UNDERSTANDING ENVIRONMENTAL IMPACT INDICATORS

Climate Change: This disrupts the Earth's natural carbon cycle, making the natural greenhouse effect out of balance leading to increased frequency in natural disasters and rising global temperatures. It measures greenhouse gasses that trap heat in Earth's atmosphere.

- Carbon dioxide, methane, nitrous oxide, HFCs, PFCs, Sulphur hexafluoride and nitrogen trifluoride
- Uses respective Global Warming Potentials over a 100-year time frame to calculate the kg of CO2 that would trap the equivalent amount of heat as all the combined GHG emissions would (ex: methane traps 25x the heat that CO2 does)

Ozone Depletion: This depletion results in a lack of protection for humans, plants, and animal life from UV light. A main cause of depletion are Ozone Depleting Substances (ODS) which could be refrigerants, flame retardants, and aerosols. To calculate this we measure ODS that contribute to stratospheric ozone depletion.

- Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs), Halons, etc
- Uses respective Ozone Depletion Potentials to calculate the kg of CFC-11 that would have the same impact as all the ODS combined

UNITS OF MEASUREMENT FOR ENVIRONMENTAL IMPACT INDICATORS INDICATORS

Indicator	Unit
Climate Change-total	kg CO2 eq
Climate Change-fossil fuels	kg CO2 eq
Climate Change-biogenics	kg CO2 eq
Climate Change- land use and land use transformation	kg CO2 eq
Ozone depletion	kg CFC-11 eq
Acidification	mole of H+ eq
Eutrophication, freshwater	kg P eq
Eutrophication, marine aquatic	kg of N eq
Eutrophication, terrestrial	mole of N eq
Photochemical ozone creation	kg NMVOC eq
Abitoic resource depletion-elements	kg Sb eq
Abiotic resource depletion- fossil fuels	MJ
Water use	m3 world eq

UNDERSTANDING ENVIRONMENTAL IMPACT INDICATORS

Abiotic Resource Depletion: Overextraction of elements and fossil fuels leading to the depletion of these nonrenewable resources.[1]

- For elements a materials abiotic depletion potential is typically calculated which is a ratio of nonrenewable energy to renewable energy during the life cycle of a product (kg Sb eq)
- For fossil fuels it is measured in terms of energy used specifically Megajoules (MJ)

Eutrophication: The main effect of this is that when substances contribute an overabundance of nutrients to a body of water especially Phosphorus and Nitrogen there will be an overabundance of algae. As the algae die and decompose an abundance of oxygen is extracted from the water leading to inefficient oxygen for the remaining plants and animals in that body of water.[9]

- Some main causes are fertilizers, sewage treatment plants, and combustion processes[2]
- For measurement of freshwater eutrophication, the impact potential of a material is converted to the equivalent of kg of Phosphorus (kg P eq)
- For measurement of terrestrial eutrophication, the impact potential of a material is converted to the equivalent of moles of Nitrogen (mole of N eq)
- For measurement of marine aquatic the impact potential of a material is converted to the equivalent of kg of Nitrogen (kg of N eq)

UNDERSTANDING ENVIRONMENTAL IMPACT INDICATORS

Water Use: "Water actually used by end users (e.g. households, services, agriculture, industry) within a territory for a specific purpose such as domestic use, irrigation or industrial processing."[4] This is calculated by measuring the total amount of water used in the manufacturing process and throughout all 5 life cycle stages in cubic meters of water (m3 world eq)

Acidification: This causes a drop in pH below levels that are optimal for plant and animal living in a body of water.

- It occurs when a body of water absorbs CO2 which will then react with the water to create carbonic acid
- The carbonic acid breaks down as a hydrogen ion (H+) and bicarbonate
- The hydrogen ions are what are measured (mole of H+ eq) as they are what decrease the pH of the water[8]

Photochemical Ozone Formation: This formation is an indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) when in contact with the rays of the sun (photochemical oxidation).[7]

- A main cause of this is photochemical oxidation of Volatile Organic Compounds (VOC) and carbon monoxide in the presence of nitrogen oxides and sunlight.[5]
- This is measured in kg of emissions of gases that are non-Methane VOCs (kg NMVOC eq)

TYPICAL IMPACT HOTSPOTS OF ELECTRICAL EQUIPMENT

Climate Change Impact

- Electronic products typically have high manfacturing and use phase impacts
- In 2022 138,514 metric tons of CO2eq were emitted from manufacturing electrical equipment and 1,712,977 metric tons of CO2eq were emitted from electrical equipment use[3]
- This GHG emission contributes to the environmental impact indictar of climate change as this CO2 plays a role in the heat that is being trapped

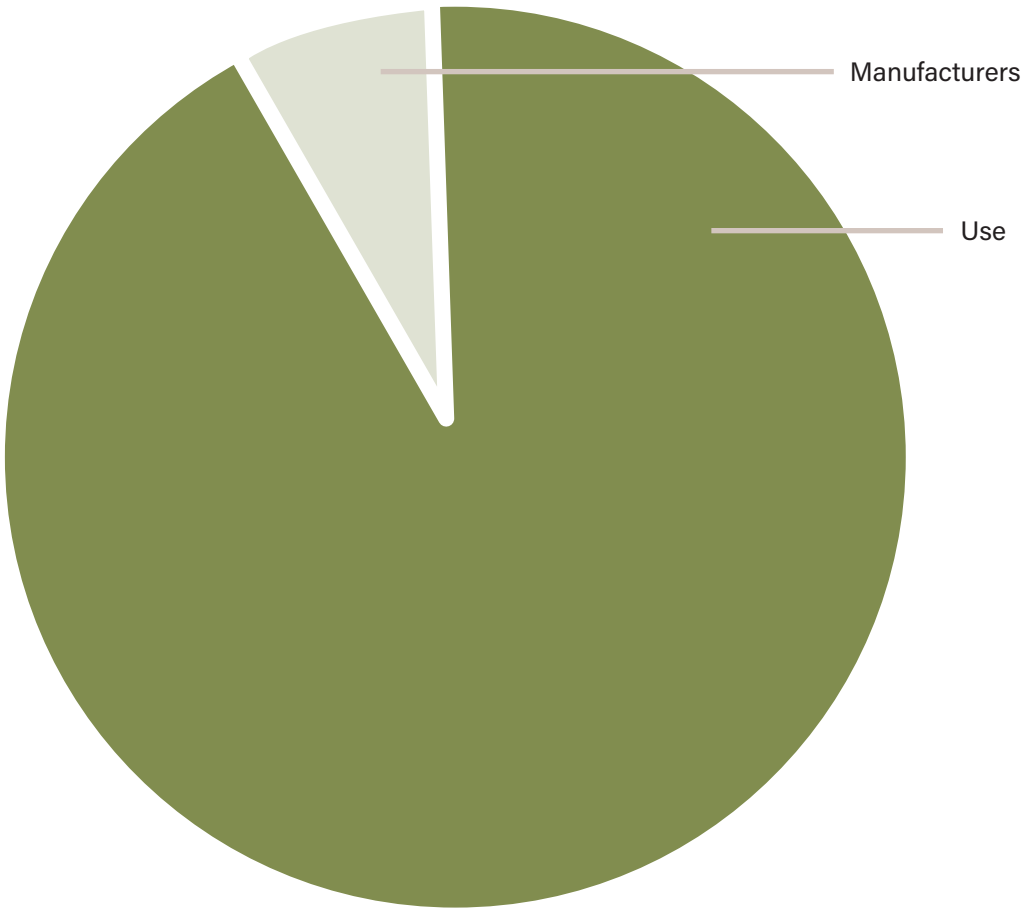
Ozone Depletion Impact

- Substances used throughout the manufacturing of electronic products have ozone depleting potential
- Some ODS typically found in the manufacturing process are aerosols and refrigerants

Particulate Matter/ Respiratory Organics Impact

- The industrial processes used to create the electrical equipment can lead to particulate matter which can be detrimental to human health in many ways including an increased risk of asthma

CO2 emissions from Electrical Equipment 2022



UNDERSTANDING ENVIRONMENTAL IMPACTS

In addition to the impact indicators, the environmental impacts section includes measurements for Inventory Flow Indicators.

Inventory Flow Indicator:

- Total use of primary energy during the life cycle, expressed in MJ
- There are indicators describing
  - Use of primary energy resources
  - Use of secondary materials and energy resources (e.g. waste combustion)
  - Categories of waste
  - Output flows[7]

ENVIRONMENTAL IMPACTS

Inventory Flow Indicators		Total Life Cycle Impacts		Manufactu-ring	Distribution	Installation	Use	End of Life
				A1-A3	A4	A5	B1-B7	C1-C4
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	ERP	3.96E+01	MJ	3.48E+01	2.38E-04	1.98E+00	0.00E+00	2.87E+00
Use of renewable primary energy resources used as raw materials	ERM	5.15E+00	MJ	5.15E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	ER	4.48E+01	MJ	3.99E+01	2.38E-04	1.98E+00	0.00E+00	2.87E+00
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	ENRP	2.37E+03	MJ	1.48E+03	3.64E+01	1.49E+01	0.00E+00	8.43E+02
Use of non-renewable primary energy resources used as raw materials	ENRM	2.69E+01	MJ	2.69E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of non-renewable primary energy resources	ENR	2.40E+03	MJ	1.50E+03	3.64E+01	1.49E+01	0.00E+00	8.43E+02
Use of secondary materials	USM	1.23E+00	kg	1.23E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	URSF	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	UNRSF	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	NUFW	9.11E-01	m^3	7.17E-01	3.45E-03	4.98E-03	0.00E+00	1.86E-01
Hazardous waste disposed	HWD	1.86E+02	kg	1.86E+02	2.42E-03	3.79E-02	0.00E+00	-3.85E-01
Non-hazardous waste disposed	NHWD	6.04E+01	kg	5.71E+01	2.98E-03	9.48E-01	0.00E+00	2.37E+00
Radioactive waste disposed	RWD	2.32E-02	kg	2.22E-02	5.81E-04	9.19E-05	0.00E+00	2.96E-04
Components for re-use	CRU	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	MRE	1.66E+01	kg	1.15E+01	0.00E+00	4.12E-02	0.00E+00	5.11E+00
Materials for energy recovery	MER	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	EE	0.00E+00	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the product	BCpdt	0.00E+00	kg C	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Biogenic carbon content of the associated packaging	BCpkg	6.16E-01	kg C	6.16E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00

In accordance with the PCR, the "Benefits & Loads" are beyond the system boundary and are thus not included in the results of "Total Life Cycle Impacts".

The values of the indicators defined in the PCR-ed4-EN-2021 09 06 are available in the digital database of pep-ecopassport.org website.

UNDERSTANDING ENVIRONMENTAL IMPACTS

The environmental impacts section provides a chart that allows the impact value to be calculated for any product that is not the reference product but is included in the scope of the PEP. The customer can do this by finding their product code in the left most column, then can find the appropriate impact value by multiplying the coefficient for the phase and impact indicator they are looking for.

ENVIRONMENTAL IMPACTS

For products other than the Reference Product, the environmental impacts can be calculated using the coefficients below:

Product	Phase	GWP-Total	GWP-Fossil	GWP-Bio-genic	GWP-Land Use	ODP	AP	EP-Freshwater	EP-Marine	EP-Terre-strial	POCP	ADPe	ADPf	WU
MF160T3C4S-SNSN-M030C-STD0	1.Manufacturing	1.0	1.0	1.0	0.9	1.2	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	1.0	1.0	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	0.9	1.0	1.0
MF225T3C4S-SNSN-M030C-STD0	1.Manufacturing	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
UF100T3CGS-SNSN-0100C-STD0	1.Manufacturing	1.0	1.0	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	0.8	1.0	0.9
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	1.0	1.0	0.8	0.8	0.9	0.9	0.8	0.9	0.9	1.0	0.8	1.0	0.9
UF100T3C4S-SNSN-0100C-STD0	1.Manufacturing	1.0	1.0	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.7	1.0	0.9
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	0.9	0.9	0.7	0.7	0.8	0.9	0.7	0.9	0.9	0.9	0.7	1.0	0.9
MF160T3CGS-SNSN-M030C-STD0	1.Manufacturing	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

EXTRAPOLATION RULES

To find the EP-Freshwater during the EOL phase MF160T3C4S-SNSN-M030C-STD0, multiply the value in the table above for the reference product (6.61E-03) by the coefficient (0.9)

(6.61E-03) x (0.9) = 5.949E-03 this is the EP-Freshwater impact value for MF160T3C4S-SNSN-M030C-STD0

Environmental Impact Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life
				A1-A3	A4	A5	B1-B7	C1-C4
Climate change - total	GWP	9.13E+01	kg CO_2 eq	7.27E+01	2.91E+00	2.01E+00	0.00E+00	1.37E+01
Climate change - fossil fuels	GWPf	8.93E+01	kg CO_2 eq	7.09E+01	2.91E+00	1.94E+00	0.00E+00	1.36E+01
Climate change - biogenics	GWPb	2.04E+00	kg CO_2 eq	1.33E+00	0.00E+00	7.19E-02	0.00E+00	1.28E-01
Climate change - land use and land use transformation	GWPlu	7.61E-06	kg CO_2 eq	9.86E-07	0.00E+00	-3.59E-08	0.00E+00	6.68E-06
Ozone depletion	ODP	7.04E-06	kg CFC-11 eq	4.29E-06	2.58E-06	2.87E-08	0.00E+00	1.42E-07
Acidification	AP	5.88E-01	mole of H+ eq	5.06E-01	1.31E-02	4.39E-03	0.00E+00	6.46E-02
Eutrophication, freshwater	Epf	8.94E-03	kg P eq	2.29E-03	3.42E-07	2.92E-05	0.00E+00	6.61E-03
Eutrophication, marine aquatic	Epm	6.04E-02	kg of N eq	4.32E-02	6.07E-03	2.24E-03	0.00E+00	8.91E-03
Eutrophication, terrestrial	Ept	6.26E-01	mole of N eq	4.43E-01	6.58E-02	1.29E-02	0.00E+00	1.01E-01
Photochemical ozone formation	POCP	2.17E-01	kg NMVOC eq	1.58E-01	2.13E-02	3.05E-03	0.00E+00	3.44E-02
Abiotic resource depletion – elements	ADPe	2.25E-03	kg Sb eq	2.04E-03	2.51E-10	4.81E-08	0.00E+00	2.05E-04
Abiotic resource depletion – fossil fuels	ADPf	2.40E+03	MJ	1.50E+03	3.64E+01	1.49E+01	0.00E+00	8.43E+02
Water use	WU	3.91E+01	m^3 world eq	3.08E+01	1.48E-01	2.14E-01	0.00E+00	7.97E+00

6.61E-03

0.9

Product	Phase	GWP-Total	GWP-Fossil	GWP-Bio-genic	GWP-Land Use	ODP	AP	EP-Freshwater
MF160T3C4S-SNSN-M030C-STD0	1.Manufacturing	1.0	1.0	1.0	0.9	1.2	1.0	1.0
	2.Distribution	1.0	1.0	-	-	1.0	1.0	1.0
	3.Installation	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	5.End of life	1.0	1.0	0.9	0.9	0.9	1.0	0.9

UNDERSTANDING THE VERIFICATION CHART

This chart shows confirmation of verification and compliance with ISO standards, as well as publication details.

Registration number: LGRP-01879-V01.01-EN	Drafting rules: "PEP-PCR-ed4-EN-2021 09 06"
Verifier accreditation number: VH43	Information and reference documents: www.pep-ecopassport.org
Date of Issue : 12-2023	Validity Period : 5 years
Independent verification of the declaration and data in compliance with ISO 14025:2006 Internal ☒ External ☐	
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)	
PEP compliant with XP C08-100-1:2016 or EN 50693:2019 The content of this PEP cannot be compared with content from any other program.	
PEP compliant with ISO 14025:2006: "Environmental labels and declarations - Type III environmental declarations"	

LCA compliant with ISO 14040:2006: "Environmental management – LCA – Principles and framework" LCA compliant with ISO 14044:2006: "Environmental management – LCA – Requirements and guidelines" Environmental data in alignment with EN 15804:2012 + A2:2019: "Sustainability of construction works - EPD's - Core rules for the product category of construction products"

Starline's Product Environmental Profiles are Type III Environmental Product Declarations -- Why is this important?

- Only Type III Environmental Declarations can count for LEED credits
- For more information on LEED and how PEPs can earn you credits please see the LEED and PEP brochure

CITATIONS

1. https://www.designingbuildings.co.uk/wiki/Abiotic_depletion_potential
2. https://eplca.jrc.ec.europa.eu/uploads/EF_categories_description.pdf
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8. https://www.plymouth.ac.uk/research/ocean-acidification
9. https://www.usgs.gov/centers/wetland-and-aquatic-research-center/science/science-topics/eutrophication

HELPFUL LINKS

Link to PEP Used

Link to Product Selection Guide

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