

Product Environmental Profile

Middle Atlantic Products® Pre-Configured AV Enclosure Racks



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 informations 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	Enclosure of 0.68 m3 of usable space for storage of electrical equipment pre-configured with cable management accessories, thermal equipment, associated power and cooling items, etc. for a period of 20 years.
Reference Product	<div style="text-align: center;">  </div> <p>Part Number: BGR-4532-AV</p> <p>Includes:</p> <ul style="list-style-type: none"> (4) 1RU flanged blank panels (FWD-EB1), (2) 2RU flanged blank panels (FWD-EB2) (1) 4pk of horizontal lacer bars (FWD-LB-1A-4PK), (1) 4pk of 2" offset horizontal lacer bars (FWD-LB-2A-4PK) (1) vertical wire grid lace (FWD-LACE-WB3-XX-XX), (1) cable management lace (FWD-LACE-UMV-XX-XX) (1) 15pk of forward tie saddles (FWD-TSW-15), (2) Velcro straps for tie saddles (TW12) (2) 4pk of forward small device clamps (FWD-SIDECLMP-4), (1) Lever lock plate (LL-VP2110) (1) DC Fan Top (BGR-276FT-FC), (100) 10-32 threaded rackscrews (HP) (1) set of leveling feet (LF-HD)

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 the following products:

- BGR-4527-AV
- BGR-3832-AV
- BGR-3827-AV

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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	148.17 kg
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Plastics as % of weight		Metals as % of weight		Others as % of weight	
Product only: 124.64 kg					
ABS	0.2%	Steel	82.6%	Coating Paint	1.0%
PA	0.2%	Al	0.4%		
PBT	0.1%	Zamak	<0.1%	Various Components	0.1%
PE	<0.1%	Copper and Copper Alloys	<0.1%		
Various Plastics	<0.1%	others metals	<0.1%		
Packaging only: 23.53 kg					
PE	<0.1%			Wood	7.3%
				Cardboard	6.1%
				Paper	2.0%
Total plastics	0.5%	Total metals	83.0%	Total others	16.5%

Recycled material content: 13.5% by weight of Reference Product

- Product only : 16%
- Packaging only: 0%



■ MANUFACTURING

This Reference Product comes from a site that have received ISO 14001 certification.



■ DISTRIBUTION

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

For the installation of the product, a power driver tool is needed. Electricity consumption from the use of a power drill is taken into account by assuming a standard power drill operating at 0.6 kWh for a total of 5 minutes.



■ USE

Servicing and maintenance:
Replacement of four fans once during the product life is accounted for as product maintenance during the use phase.

Consumables:
No consumables are necessary to use this type of product.

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END OF LIFE

The product end-of-life factors are taken into account during the design phase. Dismantling and sorting of components or materials is made as easy as possible with a view to recycling or failing that, another form of reuse.



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 in North America.

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.
	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)	<ul style="list-style-type: none"> • Under normal conditions of use, this type of product is modeled to require replacement of fans once during its lifetime based on a similar product fan in PSR-0008 with a lifetime of 17 years. • No consumables are necessary to use this type of product. • Use scenario: Continuous operation for 20 years, including operation of four fans at a total wattage of 60.0W. • Energy model: Electricity(US) - 2018
	End of life (C1-C4)	The default end of life scenario modelled maximizes the environmental impact using the PCR hypothesis for "Local transport": 621 miles (1000 km) by heavy truck and landfilling.
Benefits & Loads (Module D)	Module D is calculated according to PCR-ed4-EN-2021 09 06 based on the materials recycled and the modelled end-of-life scenario. It expresses the net benefits and loads beyond the boundaries of the system, and are not to be included in the life cycle totals.	
Software and data-base used	EIME V6 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.

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ENVIRONMENTAL IMPACTS

Environmental Impact Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life	Benefits & Loads Module D
				A1-A3	A4	A5	B1-B7	C1-C4	
Climate change - total	GWP	6.78E+03	kg CO ₂ eq	7.38E+02	2.75E+01	2.08E+00	5.75E+03	2.60E+02	-4.13E+02
Climate change - fossil fuels	GWPf	6.76E+03	kg CO ₂ eq	7.31E+02	2.75E+01	2.08E+00	5.74E+03	2.60E+02	-4.13E+02
Climate change - biogenics	GWPb	1.29E+01	kg CO ₂ eq	6.80E+00	0.00E+00	0.00E+00*	6.07E+00	6.91E-03	-1.58E-01
Climate change - land use and land use transformation	GWPlu	1.63E-07	kg CO ₂ eq	4.70E-08	0.00E+00	0.00E+00	0.00E+00	1.16E-07	0.00E+00
Ozone depletion	ODP	3.37E-05	kg CFC-11 eq	7.46E-06	4.22E-08	3.66E-08	2.45E-05	1.66E-06	-8.31E-07
Acidification	AP	3.41E+01	mole of H+ eq	2.66E+00	1.74E-01	1.72E-02	3.04E+01	8.78E-01	-1.41E+00
Eutrophication, freshwater	Epf	9.82E-03	kg P eq	6.98E-04	1.03E-05	4.71E-06	8.85E-03	2.52E-04	-9.39E-05
Eutrophication, marine aquatic	Epm	4.37E+00	kg of N eq	5.01E-01	8.17E-02	8.03E-03	3.62E+00	1.57E-01	-2.34E-01
Eutrophication, terrestrial	Ept	5.05E+01	mole of N eq	5.40E+00	8.96E-01	8.38E-02	4.25E+01	1.71E+00	-2.56E+00
Photochemical ozone formation	POCP	1.47E+01	kg NMVOC eq	1.84E+00	2.26E-01	2.04E-02	1.20E+01	6.29E-01	-9.66E-01
Abiotic resource depletion - elements	ADPe	4.22E-06	kg Sb eq	1.13E-03	1.08E-06	7.15E-08	2.32E-04	0.00E+00*	-7.44E-05
Abiotic resource depletion - fossil fuels	ADPf	1.77E+05	MJ	3.42E+04	3.84E+02	2.20E+01	1.22E+05	2.03E+04	-3.14E+04
Water use	WU	6.12E+02	m ³ world eq	2.91E+02	1.04E-01	2.12E+00	2.06E+02	1.12E+02	-1.64E+02

*Represents less than 0.01% of the total life.

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 and Use stages.

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ENVIRONMENTAL IMPACTS

Inventory Flow Indicators		Total Life Cycle Impacts		Manufacturing	Distribution	Installation	Use	End of Life	Benefits & Loads
				A1-A3	A4	A5	B1-B7	C1-C4	Module D
Use of renewable primary energy, excluding renewable primary energy resources used as raw materials	ERP	1.53E+04	MJ	3.45E+01	5.12E-01	9.69E-02	1.53E+04	0.00E+00*	-3.96E+00
Use of renewable primary energy resources used as raw materials	ERM	5.45E+02	MJ	5.45E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total use of renewable primary energy resources	ER	1.59E+04	MJ	5.79E+02	5.12E-01	9.69E-02	1.53E+04	0.00E+00*	-3.96E+00
Use of non-renewable primary energy, excluding non-renewable primary energy resources used as raw materials	ENRP	1.77E+05	MJ	3.41E+04	3.84E+02	2.20E+01	1.22E+05	2.03E+04	-3.14E+04
Use of non-renewable primary energy resources used as raw materials	ENRM	1.20E+02	MJ	1.16E+02	0.00E+00	0.00E+00	4.29E+00	0.00E+00	-2.32E+00
Total use of non-renewable primary energy resources	ENR	1.77E+05	MJ	3.42E+04	3.84E+02	2.20E+01	1.22E+05	2.03E+04	-3.14E+04
Use of secondary materials	USM	2.58E+01	kg	2.58E+01	0.00E+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	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	0.00E+00
Net use of fresh water	NUFW	1.43E+01	m ³	6.78E+00	2.43E-03	4.94E-02	4.80E+00	2.61E+00	-3.81E+00
Hazardous waste disposed	HWD	2.29E+02	kg	1.71E+01	0.00E+00	5.81E-03	1.12E+02	9.97E+01	-4.56E+00
Non-hazardous waste disposed	NHWD	9.04E+02	kg	1.20E+02	9.66E-01	2.30E+01	8.49E+02	0.00E+00*	-9.83E+00
Radioactive waste disposed	RWD	2.60E-01	kg	8.57E-02	6.88E-04	4.34E-05	1.60E-01	1.35E-02	-7.89E-03
Components for re-use	CRU	0.00E+00	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	MRE	1.29E+02	kg	3.14E+01	0.00E+00	0.00E+00	0.00E+00	9.80E+01	0.00E+00
Materials for energy recovery	MER	4.29E-09	kg	4.29E-09	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	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	0.00E+00
Biogenic carbon content of the associated packaging	BCpkg	7.91E+00	kg C	7.91E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*Represents less than 0.01% of the total life.

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.

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ENVIRONMENTAL IMPACTS

For the products of the series covered by the BGR-4532-AV reference product, the environmental impacts can be determined for each life cycle by multiplying the reference product impacts by the factors listed below given by Legrand:

- Factor Ratio to Calculate Factors
- A Total mass of product with packaging / Total mass of reference product with packaging
 - B Mass of product without packaging / Mass of reference product without packaging
 - C Mass of product packaging / Mass of reference product packaging
 - 1 Use phase is the same for all products

PART NUMBER	MANUFACTURING	DISTRIBUTION	INSTALLATION	USE	END OF LIFE
SERIES:	A	A	C	1	B
BGR AV RACKS					

Registration number: LGRP-01866-V01.01-EN	Drafting rules: "PEP-PCR-ed4-EN-2021 09 06"
Verifier accreditation number: VH34	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 <input checked="" type="checkbox"/> External <input type="checkbox"/>	
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"