

Product Environmental Profile

Mighty Mo® Racking Systems



COMPANY OVERVIEW

• Sustainability built in to support our associates, customers, and the environment

At Legrand North and Central America, we're committed to leading by example within our own operations, to developing high quality solutions for our customers' High Performance Buildings, and to transforming how people live and work – more safely, more comfortably, more efficiently.

• Better Performance

A core principle of designing for sustainability drives us to innovate products and systems that enable buildings to reach exceptional levels of performance, bringing about industry-leading ideas, inventions and initiatives.

• Better Operations

A commitment to a leadership role in operational excellence through environmental management, optimizing the way we manage energy, water and waste.

• Better Lives

A dedication to enhancing employee and community welfare through programs that help people enjoy healthier, more productive and more rewarding lives.

For more information on Legrand's PEPs and other sustainability initiatives, visit legrand.us/sustainability.



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 Legrand 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

Reduce the environmental impact of products over their whole life cycle.

Provide our customers with all relevant information (composition, consumption, end of life, etc.).



REFERENCE PRODUCT

Function	Supports cable routing for loads up to 2000 pounds in a data communications systems for a typical lifetime of 20 years. Has 45 rack units and the dimensions 84" H x 30" D.
Reference Product	<div style="text-align: center;"> </div> <p>Part Numbers: OR-MM20730-B and OR-MM20VMD706-B and OR-BFPA-1RU</p> <p>Mighty Mo 20 Channel Rack, 7' H x 30" D and (2) Mighty Mo Vertical Manager with Door, 7' H x 6.5" W and (10) Blank Filler Panel</p>

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.

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PRODUCTS CONCERNED

The environmental data is representative of the following products:

Mighty Mo Racks

- OR-MMVVHDD-X
- OR-MM20HDDADJZZ-X
- OR-MM20HDDFXDZZ-X
- OR-MM10HSVR
- VV = Mighty Mo version
- H = height
- DD = depth
- ZZ= equipment mtg style
- X = rack color

Mighty Mo Vertical Managers

- OR-MMVVMDHDD-X (door)
- OR-MMVVMSHDD-X (cover)
- OR-MMVVMLHDD-X (latches)
- VV = Mighty Mo version
- H = height
- DD = depth
- X = rack color

Blank Panels

- OR-BFPA-XRU
- X = rack units



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/EC and does not contain, as far as we know, any substance on the candidate list for authorization of the REACH regulation (EC) no. 1907/2006 with a concentration above 0.1% w/w.

Total weight of Reference Product (with unit packaging)	175 lb (79.5 kg)
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Plastics as % of weight		Metals as % of weight		Others as % of weight	
Product					
PC	22.1%	Aluminium	44.9%	Paper	<0.1%
PVC	0.7%	Steel	15.9%		
PC-ABS	0.3%	Copper alloys	<0.1%		
PA66 + 30% glass filling	0.2%				
PA	0.1%				
PC + 10% glass filling	0.1%				
Packaging					
PE (low-density)	0.1%			Paper and Cardboard	15.6%
Total plastics	23.6%	Total metals	60.8%	Total others	15.6%

Estimated recycled material content: 28% of weight.

The proportions of Aluminum, Steel, and PC vary for the rack system with vertical managers with latches due to less material used compared to vertical managers with a door. Percentages for these materials are shown in the table below. The percent composition for materials not shown are comparable to the values above for the Reference Product.

Part Number	% Aluminum	% Steel	% PC
OR-MM20730-B			
OR-MM20VML706-B	52	31	0
OR-BFPA-1RU			



MANUFACTURING

The Reference Product comes from a site that has initiated environmental 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.

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INSTALLATION

Only standard tools are needed for installation of the product. No electricity is required for installing the Reference Product.



USE

Servicing and maintenance:

Under normal conditions of use, this type of product requires no servicing or maintenance.

Consumable:

No consumables are necessary to use this type of product.



END OF LIFE

• **Hazardous waste* contained in the product:** no hazardous waste
 (*) Hazardous waste as defined by European Commission decision 2000/532/EC.

• **Recycling rate:**

Calculated using the method described in the IEC/TR 62635 technical report, the recyclability rate of the Reference Product without packaging is estimated as 99%. This value is based on data collected from a technological channel using industrial procedures. It does not pre-validate the effective use of this channel for end-of-life electrical and electronic products.

Separated into:	(% mass of Reference Product without packaging)
- plastic materials:	26%
- metal materials:	73%
- other materials:	<1%

Recycling rate of packaging (all types of materials): 100%



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.

The following modelling elements were taken into account:

Manufacturing	Packaging taken into account. As required by the PEP ecopassport program, all transport for the manufacturing of the Reference Product, including materials and components, has been taken into account. The waste generated during manufacturing phase has been taken into account.
Distribution	Transport between the last distribution center and an average delivery to the sales area. The default scenario modelled maximizes the environmental impact.
Installation	The end of life of the packaging (27 lb or 12.4 kg) is taken into account at this phase. Transport of packaging to end of life treatment.
Use	<ul style="list-style-type: none"> • Under normal conditions of use, this type of product requires no servicing or maintenance. • No consumables are necessary to use this type of product. • Use scenario: no energy consumption during the 20 year working life. This modelling duration does not constitute a minimum durability requirement. • Energy model: Electricity(US) - 2009
End of life	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.
Software used	EIME V5 and its database "CODDE-2015-04" and the indicators defined in the PCR ed 3 in alignment with the EN15804 standard

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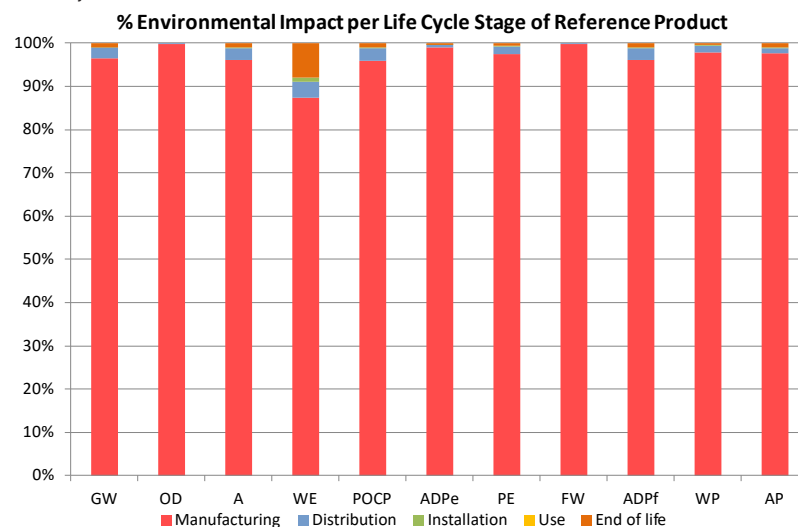
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ENVIRONMENTAL IMPACTS (continued)

	Total for Life cycle		Raw material and manufacturing		Distribution		Installation		Use		End of life	
	Value	Unit	Value	%	Value	%	Value	%	Value	%	Value	%
Global warming (GW)	5.64E+02	kg CO ₂ eq.	5.44E+02	96%	1.38E+01	2%	7.73E-01	< 1%	0.00E+00	0%	5.35E+00	< 1%
Ozone depletion (OD)	6.57E-05	kg CFC-11 eq.	6.56E-05	100%	2.81E-08	< 1%	5.39E-09	< 1%	0.00E+00	0%	7.72E-08	< 1%
Acidification of soil and water (A)	2.23E+00	kg SO ₂ eq.	2.15E+00	96%	6.22E-02	3%	3.78E-03	< 1%	0.00E+00	0%	2.17E-02	< 1%
Water eutrophication (WE)	4.00E-01	kg PO ₄ ³⁻ eq.	3.50E-01	87%	1.43E-02	4%	4.08E-03	1%	0.00E+00	0%	3.18E-02	8%
Photochemical ozone creation (POCP)	1.52E-01	kg C ₂ H ₄ eq.	1.46E-01	96%	4.42E-03	3%	2.67E-04	< 1%	0.00E+00	0%	1.65E-03	1%
Depletion of abiotic resources - elements (ADPe)	7.87E-05	kg Sb eq.	7.78E-05	99%	5.54E-07	< 1%	3.37E-08	< 1%	0.00E+00	0%	2.75E-07	< 1%
Total use of primary energy (PE)	1.09E+04	MJ	1.06E+04	97%	1.96E+02	2%	1.11E+01	< 1%	0.00E+00	0%	7.64E+01	< 1%
Net use of fresh water (FW)	2.97E+00	m ³	2.97E+00	100%	1.24E-03	< 1%	2.45E-04	< 1%	0.00E+00	0%	2.77E-03	< 1%
Depletion of abiotic resources - fossil fuels (ADP _f)	6.94E+03	MJ	6.67E+03	96%	1.95E+02	3%	1.08E+01	< 1%	0.00E+00	0%	7.29E+01	1%
Water pollution (WP)	1.46E+05	m ³	1.43E+05	98%	2.28E+03	2%	1.19E+02	< 1%	0.00E+00	0%	6.98E+02	< 1%
Air pollution (AP)	4.86E+04	m ³	4.75E+04	98%	5.68E+02	1%	9.76E+01	< 1%	0.00E+00	0%	4.42E+02	< 1%

The values of the 27 impacts defined in the PCR-ed3-EN-2015 04 02 are available in the digital database of pep-ecopassport.org website. The environmental impacts of the Reference Product are representative of the products covered by the PEP, which therefore constitute a homogeneous environmental family.



The environmental impact of the Reference Product occurs predominantly during the manufacturing phase.

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ENVIRONMENTAL IMPACTS (continued)

For products other than the Reference Product, the environmental impacts can be estimated by weighting the environmental impacts of the Reference Product by the values shown in the table below.

For racks with a vertical manager that has a door, the impacts for Manufacturing, Distribution, and End of Life are proportional to the mass with respect to the values shown for the Reference Product. Impacts for Installation are the same.

For racks with a vertical manager that has a cover, the impacts for Manufacturing, Distribution, and End of Life are proportional to the mass with respect to the values shown for OR-MM20730-B, OR-MM20VMS706-B, and OR-BFPA-1RU. Impacts for Installation are the same.

For racks with a vertical manager that has latches, the impacts for Manufacturing, Distribution, and End of Life are proportional to the mass with respect to the values shown for OR-MM20730-B, OR-MM20VML706-B, and OR-BFPA-1RU. Impacts for Installation are the same.

Part Number	Manufacturing	Distribution	Installation	End of Life
OR-MM20730-B OR-MM20VMS706-B OR-BFPA-1RU	ADPe / WP: 0.9 WE: 0.5 all else: 0.8	0.8	0.6	0.9
OR-MM20730-B OR-MM20VML706-B OR-BFPA-1RU	WE: 0.3 WP: 0.1 all else: 0.6	0.6	0.5	0.6

Registration number: LGRP-00054-V01.02-EN	Drafting rules: "PCR-ed3-EN-2015 04"
Verifier's accreditation number: VH02	Information and reference documents: www.pep-ecopassport.org
Date of issue: 02-2016	Validity period: 5 years
Independent verification of the declaration and data, in compliance with ISO 14025:2010 Internal <input checked="" type="checkbox"/> External <input type="checkbox"/>	
The PCR Review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN).	
The elements of the present PEP cannot be compared with elements from another program.	
Document in compliance with ISO 14025:2010: "Environmental labels and declarations - Type III environmental declarations"	
In compliance with ISO 14040:2006: "Environmental management - LCA - Principles and framework"	
In compliance with ISO 14044:2006: "Environmental management - LCA - Requirements and guidelines"	
In alignment with EN 15804:2012+A1:2013: "Sustainability of construction works - EPD's - Core rules for the product category of construction products"	