Product Environmental Profile (PEP)

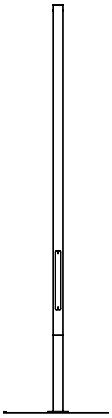
Moshi column **S160 4m**

This document is based on the following norms : NF ISO 14020 setting out the general principles for environmental declarations, NF ISO 14025 which relates to type III environmental declarations.

Aubrilam's **environmental commitments**

- **To take account** of the environment when designing products
- **To make Product Environmental Profiles for all our products available to our clients**
- **To help our clients choose** columns which will guarantee them the optimum ecological impact for their projects

Product description



The MOSHI 160 - 4m lighting column is an exterior lighting support whose flexion resistance capacity is equivalent to 1230 daN.m.

This column consists of a regular shaft with square cross section in glued laminated wood with a galvanised steel base. The glued laminated shaft is made using glued laminated wood which conforms to CE requirements or equivalents. The wood has not been subject to chemical treatment. **All our wood is from FSC or PEFC label managed forests.**

Total mass of product : 39,3 kg

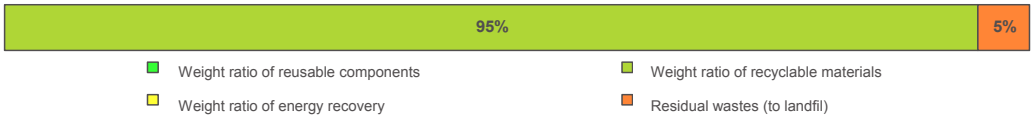
The design of this product conforms to the requirements of the European frame of reference for composite wood/metal lighting columns. (CUAP 01.06/07 « Wood and metal composite lighting columns ») and to the rules set out in norms NF-EN 40, NF-EN1990, NF-EN 1991-1-4, NF-EN 1993-1-1 and NF-EN 1995 1-1.

End-of-life

The end-of-life stage is not considered in the environmental analysis.

End-of-life scenario:
After dismantling the column, the metal parts follow the standard recycling path and the wooden shaft is recycled via a shredding center for producing insulation or fibre boards/MDF (losses evaluated at 5% during shredding)

End-of-life indicators:



83, rue Fontgiève - 63057 Clermont-Ferrand Cedex 1 - FRANCE - T. +33 (0)4 73 31 86 86 - www.aubrilam.com
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Moshi column **S160 4m**

Environmental Impacts

Calculation of the environmental impact of the Moshi column includes all stages in the product life-cycle from the extraction of the primary raw materials (wood, metal) to the product's leaving the factory where it was manufactured and assembled (from cradle to gate).

Environmental indicators	Moshi 160-4m	Units
Global warming*	**80,1**	kg ~CO2
Hazardous waste production	**1,26**	kg
Non renewable energy depletion	**331,1**	kW.h
Raw material depletion	**1,49E-15**	/year
Air toxicity	**1,66E+07**	m^3
Water toxicity	**11,9**	m^3
Water depletion	**0,334**	m^3
Photochemical ozone creation	**28,0**	g ~C_2H_4
Air acidification	**12,1**	g ~H^+
Water eutrophication	**2,14**	g ~PO_4^{3-}
Ozone depletion	**0,0149**	g ~CFC_{11}

*CO2 stored in the wood is not taken into account in the calculation of the carbon footprint. Only emissions originating from fossil fuels contribute to this score.

These Results were obtained with the EIME software version 4.0 and the database version 10.8, distribute by CODDE-part of Bureau Veritas.

Eco-comparison gauge

The Eco-comparison gauge allows **a comparison of the PEP of an Aubrilam column and that of a metal column.**
For a public lighting project involving the installation of a number of columns, **it is possible to visualise the 'ecological potential' of the whole project.**
To calculate the ecological potential of a project, click onto www.aubrilam.com

In conformity with ISO norms 14020 relating to the general principles for environmental declarations, ISO 14025 relating to type III environmental declarations and IEC PAS 62545 relating to environmental information for electrical and electronic products, this document establishes a comparison of the environmental profiles for an Aubrilam mast and a metal mast of equivalent strength.
*the metal mast is by definition the conventional mast representing the use of steel and aluminium in the European public lighting market.

Moshi column **S160 4m**

Glossary

AA (Air Acidification)
This indicator presents the air acidification by gases released to atmosphere. It is expressed in grams of H+, as if all gases were H+, using equivalent in their acidification potential.

Life Cycle Analysis (LCA)
Compilation and evaluation of inputs and outputs, as well as potential environmental impacts of a product, or of a system, during its lifecycle from 'the cradle to the grave'. This process is described by the ISO14040 norm and complimentary norms.

OD (Ozone Depletion)
This indicator calculates the contribution to depletion of stratospheric ozone layer by releasing specific gases. It is expressed in grams of CFC-11, as if all gases were CFC-11, using equivalent in their depletion potential.

WD (Water Depletion)
It is expressed in m^3, shows the total amount of water consumed during the lifecycle of a product.

ED (Energy depletion)
Expressed in kilowatt hours (KW.h), this indicator shows the total consumption (or use) of energy, either derived from the combustion of fuels (fossil or otherwise) including nuclear energy from uranium or from other sources (hydroelectricity, tidal, solar, wind). The indicator also considers the latent energy in materials (which is produced during the combustion of the material, typically at the end of its life).

POC (Photochemical Ozone Creation)
This indicator calculates the potential creation of tropospheric ozone («smog») by the release of specific gases which become oxidants at low atmospheric altitude when acted upon by solar radiation. It is expressed in grams of ethylene (C_2H_4), as if all substances were C_2H_4, using their equivalent potential.

Sustainable development
'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs' Brundtland report, 1987.

EIME
Software for modelling the environmental impact of a product based on lifecycle analysis methodology.

Carbon footprint or CO2 footprint or global warming potential (GWP – Global Warming Potential) or contribution to the greenhouse effect.
this indicator calculates the contribution to the global warming of atmosphere by releasing specific gases. It is expressed in grams of CO2, as if all gases were CO2, using equivalent in their warming potential. Example of the comparability principle : 1 g of CO2 = 1g ˜CO2 ; 1 g of CH_4 (méthane) equals the effect of 64 g of CO2, etc.

Ecological footprint
The ecological footprint aims to translate into an easily comprehensible language the impacts of human activities on the ecosystems of the planet.

RMD (Raw Material Depletion)
This indicator calculates the depletion of natural resources, taking into account the size of the reserve for that resource remaining in the ground and the consumption rate of today's economy. Is expressed as a fraction of the reserves disappearing each year.

WE (Water Eutrophication)
This indicator calculates the water eutrophication (enrichment in nutritive elements) of lakes and marine waters by releasing specific substances in effluents. It is expressed in grams of PO_4^{3-}, as if all substances were PO_4^{3-}, using equivalent in their nitrification potential.

Recycling potential % mass of the product or of the packaging which can be reintroduced into the manufacturing cycle of a similar product or another product**.**

Evaluation of the energy potential of a product as a % of The mass of the product or of the packaging from which energy can be recovered. Energy evaluation consists of using calories stored in waste by burning them and recovering the energy thus produced in order, for example, to heat buildings or produce electricity. Put simply, this is the exploitation of the energy contained within waste products.

HWP (Hazardous Waste Production)
These are specific types of waste containing certain levels of toxicity and requiring special treatment. Their definition is codified by the European Community (annexe to resolution 2000/532/CE modified by resolutions 2001/118/CE and 2001/119/CE)

AT (Air Toxicity)
This indicator calculates the air toxicity in a human environment, taking into account the usually accepted concentrations tolerated for several gases and the quantity released. It gives a volume of «unhealthy air». It is expressed in m^3.

WT (Water Toxicity)
This indicator calculates the water toxicity taking into consideration the usually accepted concentrations tolerated for several substances and the quantity released. It is expressed as a volume of «unhealthy water». It is expressed in dm^3 or in m^3.