

EOS P500 FDR

This document summarizes the life cycle assessment data of the LCA study "Life cycle assessment of the manufacturing of the manufacturing of a P500 system", which was commissioned by EOS and conducted by Fraunhofer EMI in 2025.

Framework of the LCA

Goal

Investigation of the environmental impact of the manufacturing of one EOS P500 FDR system.

System boundary

Cradle-to-gate.

Declared unit

The manufacturing of one EOS P 500 FDR system, ready for delivery, including the manufacturing and disposal of the transport packaging.

Methodology

The LCA follows the principles of the ISO standards 14040/44 and was performed according to the VDMA 34178 guideline. EF 3.1 method were used for the characterization.

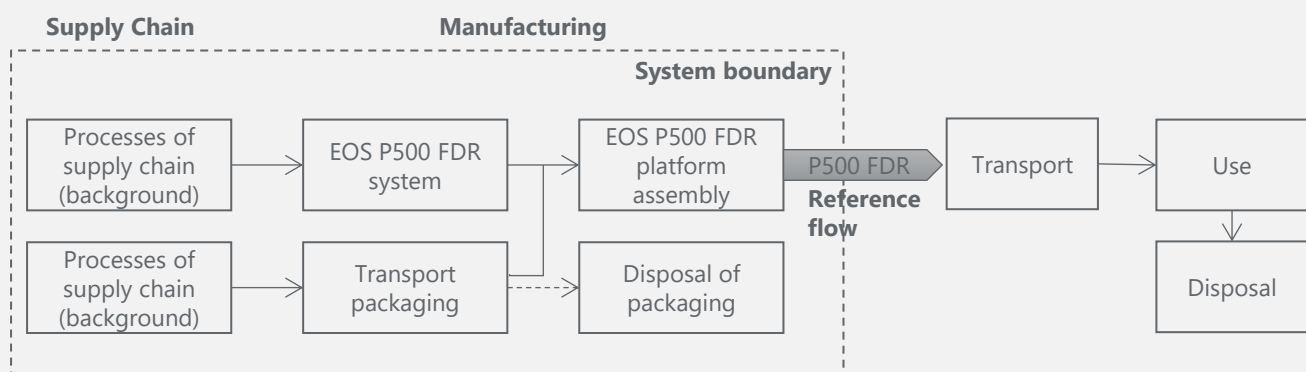
Data sources

The foreground data was provided by EOS (*data from 2025*). The background data was derived from component suppliers and taken from the ecoinvent 3.11 database.

Cut-off rules

Inputs and outputs contributing <1% of the total mass (based on the BOM) and <1% of the total cumulative energy demand of the reference flow may be excluded, provided that the total excluded flows do not exceed 5 % of the mass, energy, or environmental relevance for any impact category.

System boundaries



Product system of the EOS P500 FDR system

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Results of impact assessment

Category	Value	Unit
Climate Change – total	3.75 x 10 ⁴	kg CO ₂ eq.
Climate Change – biogenic	549	kg CO ₂ eq.
Climate Change – fossil	3.70 x 10 ⁴	kg CO ₂ eq.
Climate Change – land use and land use change	48	kg CO ₂ eq.
Acidification	267	mol H ⁺ eq.
Eutrophication, freshwater	27	kg P eq.
Eutrophication, marine	43	kg N eq.
Eutrophication, terrestrial	441	mol N eq.
Ozone depletion	0.008	kg CFC11 eq.
Photochemical oxidant formation	141	kg NMVOC eq.
Land use	2.03 x 10 ⁵	Pt
Water use	2.02 x 10 ⁴	m ³ world eq.
Resource use, fossils	4.44 x 10 ⁵	MJ
Resource use, minerals and metals	2.6	kg Sb eq.

Framework of the LCA

Life cycle software
openLCA 2.0.5

LCA practitioner
Fraunhofer EMI

Report
Report EMI_2025_101-I

Critical review
Critically reviewed by TÜV Süd,
27.08.2025