

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019/AC:202 for:

Cladding: aluminum honeycomb backing and solar facing

from

Mitrex



Programme:

Programme operator:

EPD registration number:

Publication date:

Revision date:

Valid until:

The International EPD® System, www.environdec.com

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2025-06-04

2025-07-08

2030-06-03



INTERNATIONAL EPD SYSTEM



NORTH AMERICA



INTERNATIONAL EPD SYSTEM



Programme information

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm Sweden www.environdec.com info@environdec.com
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Product category rules (PCR): *'Construction Products' Product Category Rules (ISO 14025) 2019:14 Version 1.3.4 - Updated 2024-04-30 and Valid Until 2025-06-20 UN CPC 42999 EN 15804:2012+A2:2019/AC:2021, Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. c-PCR-016 Photovoltaic modules and parts thereof (c-PCR to PCR2019:14) (adopted from EPD Norway 2022-04-27).*

PCR review was conducted by: *Claudia Pena, IVL Swedish Environmental Research Institute*

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

☐ EPD process certification ☒ EPD verification

Third party verifier: *Stephen Forson, ViridisPride Ltd, s.forson@viridispride.com*

In case of recognised individual verifiers:

Approved by: The International EPD® System

LCA Practitioner: *Katie Soulliere, LCA Design Corporation, k.soulliere@lcadesign.ca*

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. An EPD should provide current information and may be updated if conditions change. The stated validity is, therefore, subject to the continued registration and publication at www.environdec.com.

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. EPDs of construction products may not be comparable if they do not comply with EN 15804. The EPD is in conformity with EN 15804:2012+A2:2019/AC:2021 and ISO 14025.

Company information

Owner of the EPD:

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Description of the organization:

Mitrex & Cladify, world leaders in sustainable building materials, bring over 20 years of manufacturing expertise of architectural panels and stand as the largest building-integrated solar technology (BIPV) manufacturer globally. Their mission is to drive the widespread adoption of sustainable materials, firmly believing that sustainable manufacturing, procurement, and import practices are not only economically viable but also critical for a better future. They are committed to creating a world where sustainability is seamlessly integrated into every aspect of design and construction.

With roots in crafting luxurious stone facades, their expertise evolved into advanced lightweight cladding systems through the Cladify brand, culminating in groundbreaking innovations in Mitrex's solar technology launched in 2020. The Cladify system offers architectural panels with multi-facing options ranging from stone, metal, brick, porcelain and solar, underpinned by a durable aluminum honeycomb core. Mitrex products transform building exteriors into energy-generating facades utilizing the high-performing Cladify system with a solar facing, effectively turning structures into self-sustaining power stations.

The Mitrex & Cladify vision is to revolutionize the construction industry by embedding sustainability into every structure, empowering buildings to produce renewable energy while maintaining aesthetic excellence. Mitrex & Cladify represent the cutting edge of sustainable building, offering architects and developers materials that blend energy efficiency, durability, and design excellence.

Name and location of production site:

Mitrex Manufacturing Facility 41 Racine Road, Etobicoke, Ontario, Canada, M9W 2Z4

Product information

Product name: Cladding: aluminum honeycomb backing and solar facing

Product description:

The Mitrex Solar Facade is an advanced building-integrated photovoltaic (BIPV) system, seamlessly combining energy generation with architectural panels. Each panel consists of high-efficiency, monocrystalline solar cells embedded between a customizable glass facing layer and a durable aluminum honeycomb backing. Whether it's granite, porcelain, brick, wood, or custom graphics, an innovative surface treatment achieves the look of any surface material, seamlessly integrating with any architectural style. Balancing cutting-edge innovation with energy efficiency, our designs conceal solar technology in plain sight while maximizing energy output with edge-to-edge panels and hidden wiring.

Mitrex Solar Facade panels stand out for their durability and versatility, designed to withstand environmental extremes while offering unique customization. The facade system, available in large-format, lightweight modules, replaces conventional cladding while generating renewable energy. Additional advantages include noise reduction, a low-carbon life cycle, and options that support up to 41 LEED certification points, demonstrating Mitrex's commitment to sustainable building solutions. The Mitrex module includes an industry-leading 25-year warranty covering both performance and product integrity, ensuring long-term value and reliability.



Image: The SunRise Residential Retrofit, Alberta, Canada, 2025

UN CPC code: UN CPC 42999

Geographical scope: North America

Technical Data and General Information

DIMENSIONS	STANDARD SIZE: 80in x 39in (2032mm x 990mm)
	MAXIMUM SIZE: 125in x 80in (3175mm x 2032mm)
WEIGHT	2.81lb/ft ² , 2.84lb/ft ² , or 2.97lb/ft ² (13.74kg/m ² , 13.89kg/m ² , or 14.5kg/m ²)
FACING THICKNESS	0.13in, 0.16in, 0.24in, or 0.31in (3.2mm, 4mm, 6mm, or 8mm)
BACKING THICKNESS	3/4in, 1in, or 2in (19mm, 25.4mm, or 50.8mm)
POWER RANGE	7-18W/ft ² (75-196W/m ²)
SOUND TRANSMISSION	STC 34, STC 35, STC 55

TESTING & CERTIFICATIONS:

- UL 61730-1/-2, CSA 61730-1/-2, IEC 61730-1/-2
- UL 61215-1/-2, CSA 61215-1/-2, IEC 61215-1/-2
- EN 13501-1 (A2-s1, d0)
- ANSI Z97.1
- NFPA 285
- CAN/ULC-S134, CAN/ULC-S135
- ASTM B117-16, ASTM C271/C271M-16, ASTM C297/C297M-16, ASTM C364/C364M-16, ASTM C365, ASTM C393/C393M-16, ASTM C480/C480M-16, ASTM C273/C273M-18, ASTM C481-99 (Reapproved 2016), ASTM C666/C666M-15, ASTM C880/C880M-15, ASTM C897-08 (20160), ASTM D1761, ASTM D7766/D7766M-16
- ISO 10545-8
- ASTM E84, ASTM E136, ASTM E119
- ASTM E283, ASTM E330, ASTM E331
- ASTM E1886, ASTM E1996
- ASTM G154
- ASTM D6578
- ASTM C373
- ASTM C729



Image: Taza Park Sales & Marketing Centre, Alberta, Canada, 2025

LCA information

A1 Raw material supply – Extraction, transport, refinement, and manufacturing of raw materials

A2 Transportation – Truck and ocean freighter transport from suppliers to manufacturing facility

A3 Manufacturing – Manufacturing, packaging, and waste treatment at Mitrex facility. Manufacturing process consists of solar cell processing, aluminum procurement, lamination, junction box installation, and testing.

A4 Transport – Truck transport from manufacturing facility to construction site, based on average customers, assume 558 km.

A5 Construction installation – Cladding installation and packaging waste disposal. Assume electric power tools used for installation. Assume pallets are reused, cardboard is recycled, and PE shrink wrap is landfilled.

B1-B7 Use – No repair, replacement, refurbishment, operational energy use, or operational water use. Solar cladding requires cleaning (B2) once per year using water.

B6 Energy Production – According to IES c-PCR-016, the energy production is included in B6. Information on the calculation procedures can be found on the next page.

C1 Deconstruction, Demolition – Deconstruction of the cladding for removal and disposal.

C2 Transport – Truck transport from construction site to waste processing facility.

C3 Waste Processing – No waste processing is required.

C4 Disposal – Waste cladding is landfilled.

D) Benefits and Loads Beyond the System Boundary – No benefits beyond the system boundaries. Machinery and commuting of employees are excluded from the analysis.

Allocation Procedures:

Production rates vary depending on the dimension, shape, and type of the cladding panel being produced. The electrical energy values were provided per month and allocated to a panel based on the number of panels produced per month. No usable co-product allocation required.

Cut-off Procedures:

The LCI data includes >95% of total inflows per module and utilizes proxy data from databases to achieve 100% completeness. For the product stage A1-A3, 100% of total inflows are included in the LCI data.

Functional unit: 1 m²
(14.80 kg/m²)

Reference Service Life: 60 Years

Time representativeness:

Primary data provided by Mitrex from 2023-01-01 to 2023-12-31 for suppliers and manufacturing inflows at Mitrex manufacturing facility.

A3 Electricity Used in Manufacturing Process:

Canada Emission Factors and Reference Values 2023 – Electricity Ontario: 0.03 kg CO₂e/kWh

Ontario Power Supply

Nuclear	50.8%
Hydro	24.5%
Natural Gas	12.5%
Wind	8.7%
Solar	2.3%
Bioenergy	0.4%
Other	0.8%

C2 and C4 End-of-life scenario:

Distance to waste processing facility: 100 km

Recovery system specified by type: 0 kg for recycling

Disposal specified by type: 14.80 kg for final deposition in landfill

Database(s) and LCA software used:

GaBi LCA Software Version 10.0, Sphera Database Version 2024, US LCI Database 2024

B6 Energy Production

The following information for the calculation procedures for the energy production provided by the NPCR. The energy produced by a PV module depends on the installed power peak, degradation factor, geographic location and direction/placement of the installation. Produced electricity over the lifetime of the module shall therefore not be declared in the LCA and EPD.

Data provided by Mitrex indicated in green below.

Energy production in the first year of operation:

$$E1 = S_{rad} * A * y * PR * (1 - deg)$$

E1 = Energy produced in the first year of operation, kWh/year

Srad = Site specific annual average solar radiation on module (shadings not included), kWh/kWp/year.
The annual radiation must take into consideration the specific inclination (slope, tilt) and orientation

A = Area of module, from functional unit (FU), m² (*area of solar module 0.9028 m²*)

y = Module yield: electrical power, kWp for standard test conditions (STC) of the module divided by the area of the module (*see next page for values based on panel choice*)

STC: The ratio is given for standard test conditions: irradiance 1000 W/m², cell temperature 25 °C, wind speed 1 m/s, AM1.5.

PR = Performance ratio, coefficient for losses. Site specific performance ratio can be modelled with PV simulation software tools, such as PVSyst or similar

- Inverter losses
- Temperature losses
- DC cables losses
- AC cables losses
- Shadings
- Losses at weak radiation
- Losses due to dust, snow
- Other Losses

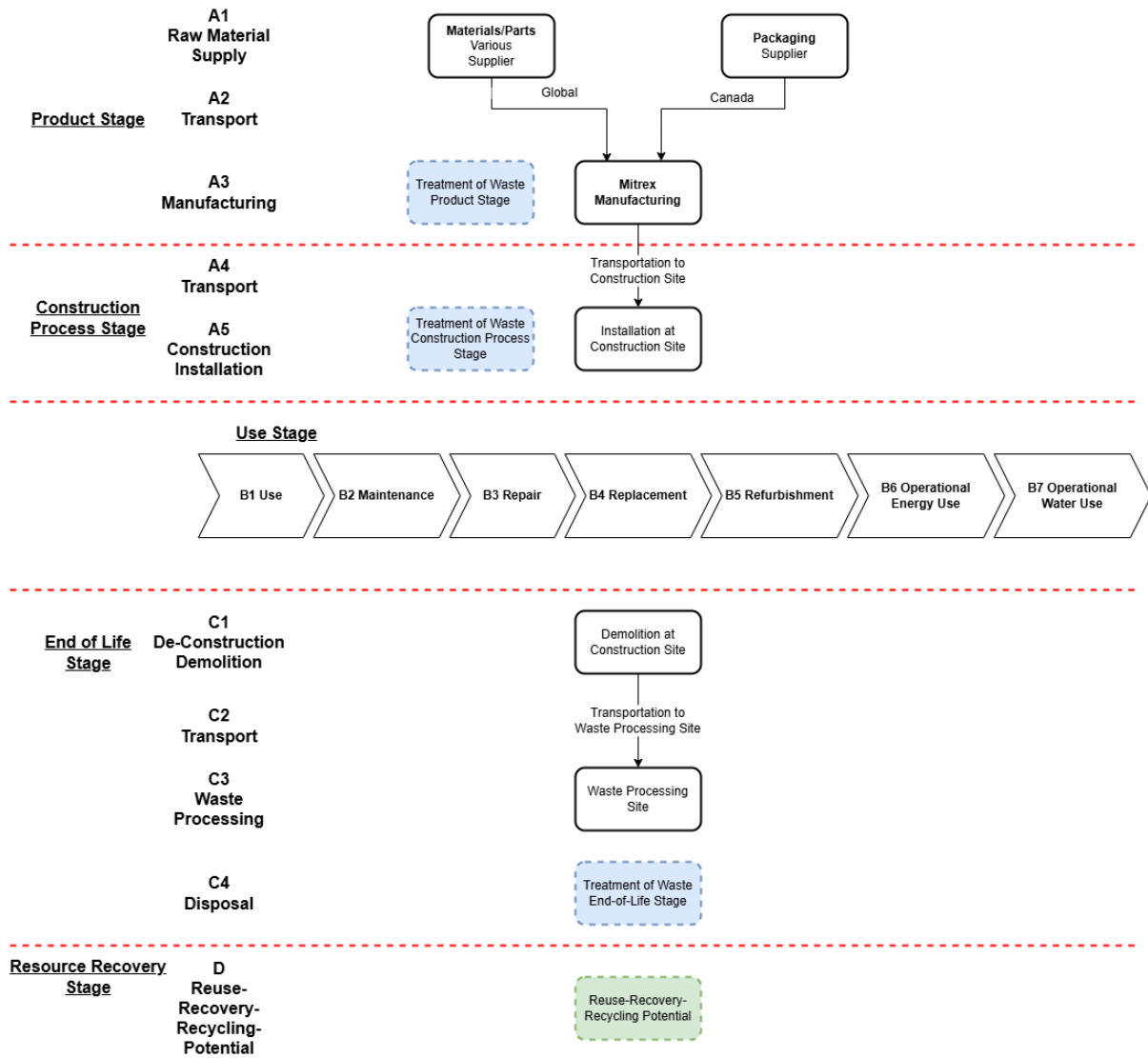
deg = yearly degradation rate (Use default degradation rate 0.007 (0.7 %) per year)

Model Name	Module Power (W/SF)	Max. Power Current - I _{max} (A)	Max. Power Voltage - V _{max} (V)	Short Circuit Current - I _{sc} (A)	Open Circuit Current - V _{oc} (V)	Module Efficiency (%)	y, Module Yield kWp/area
Ancona	15	7.46	42.90	8.89	49.00	16%	1.79E-01
Andromeda	7	3.73	40.20	3.89	47.30	7%	8.35E-02
Angola	12	6.51	41.50	6.74	48.00	13%	1.43E-01
Apache	9	4.50	41.10	4.83	47.70	9%	1.07E-01
Apple Blossom	8	4.16	40.90	4.44	47.50	8%	9.42E-02
Aranea	15	7.95	40.90	8.34	48.60	16%	1.79E-01
Arcturus	12	6.26	42.30	7.36	48.40	13%	1.43E-01
Ardea	9	4.78	39.80	5.16	47.70	9%	1.07E-01
Ash Beige	11	5.20	40.40	5.45	47.90	11%	1.25E-01
Astra	11	6.92	42.60	8.20	48.70	12%	1.31E-01
Aurora	11	5.52	41.70	5.91	48.20	11%	1.31E-01
Beige	5	2.61	40.30	2.74	46.90	5%	5.84E-02
Blackout	16	8.62	40.60	9.07	48.90	17%	1.93E-01
Blue	11	6.08	40.30	6.32	48.20	12%	1.31E-01
Blue Jay	14	7.59	40.20	7.90	48.50	15%	1.68E-01
Boulder	13	6.90	40.60	7.23	48.50	14%	1.54E-01
Brown	9	4.62	41.10	4.96	47.70	9%	1.05E-01
Bruna	9	4.59	40.30	4.80	47.80	9%	1.07E-01
Burgundy Red	12	6.55	40.50	6.84	48.40	13%	1.43E-01
Calcaria	10	5.25	40.00	5.71	47.90	10%	1.19E-01
Caldera	14	7.36	40.10	7.75	48.40	15%	1.67E-01
Carbo	13	6.85	41.60	7.12	48.10	14%	1.55E-01
Cassia	14	7.32	41.00	7.74	48.60	15%	1.67E-01
Castan	11	5.77	42.50	6.72	48.40	12%	1.31E-01
Castanea	12	6.17	40.50	6.52	48.30	12%	1.43E-01
Cerberus	16	8.49	40.60	9.06	48.90	17%	1.91E-01
Chantilly	13	6.81	40.40	7.11	48.20	14%	1.55E-01
Charbon	15	7.95	40.90	8.41	48.70	16%	1.79E-01
Charcoal Grey	10	5.43	40.50	5.71	48.00	11%	1.22E-01
Cinis	14	7.25	40.60	7.63	48.40	15%	1.67E-01
Cinnabar	10	5.32	40.50	5.58	48.00	11%	1.19E-01
Cobaltic	13	6.14	40.70	6.49	48.30	14%	1.55E-01
Cocoa Bean	9	4.62	41.10	4.96	47.70	9%	1.05E-01
Columba	8	4.30	39.60	4.62	47.50	8%	9.54E-02
Concorde Grey	14	7.59	40.20	7.90	48.50	15%	1.67E-01
Cool Blue	12	6.31	40.40	6.58	48.30	13%	1.43E-01

Model Name	Module Power (W/SF)	Max. Power Current - I _{max} (A)	Max. Power Voltage - V _{max} (V)	Short Circuit Current - I _{sc} (A)	Open Circuit Current - V _{oc} (V)	Module Efficiency (%)	y, Module Yield kWp/area
Core Black	18	9.31	41.90	9.97	48.20	19%	2.15E-01
Corvus	14	7.36	40.10	7.75	48.40	15%	1.67E-01
Cygnat	15	7.46	42.90	8.89	49.00	16%	1.79E-01
Dark Beige	12	6.55	40.50	6.84	48.40	13%	1.43E-01
Dark Blue	14	7.36	40.10	7.64	48.40	15%	1.67E-01
Dark Grey	15	8.04	40.40	8.42	48.70	16%	1.79E-01
Dark Mustard	9	4.96	40.30	5.19	47.80	10%	1.07E-01
Deep Ocean	15	8.17	40.40	8.55	48.70	16%	1.81E-01
Dove Grey	14	7.48	40.10	7.77	48.40	15%	1.67E-01
Dull Orange	5	3.21	40.50	3.39	47.10	6%	6.44E-02
Dull Yellow	6	3.21	40.50	3.39	47.10	6%	7.15E-02
Ebony Grey	13	7.00	40.70	7.36	48.60	14%	1.57E-01
Elara	15	7.46	42.90	8.89	49.00	16%	1.79E-01
Electric	15	7.95	40.90	8.34	48.60	16%	1.79E-01
Emperor	14	6.99	42.90	7.76	48.70	15%	1.67E-01
Eocene	12	6.14	40.70	6.49	48.30	12%	1.43E-01
Erda	13	6.56	42.70	7.24	48.50	14%	1.55E-01
Espresso Martini	10	5.43	40.50	5.71	48.00	11%	1.22E-01
Falco	12	6.14	40.70	6.49	48.30	12%	1.43E-01
Fennec	9	4.81	41.60	5.29	47.80	10%	1.07E-01
Ferra	14	7.53	40.50	7.95	48.60	15%	1.67E-01
Fiery Orange	8	4.16	40.90	4.44	47.50	8%	9.54E-02
Filigrana	13	6.81	40.40	7.11	48.20	14%	1.55E-01
Flat Blue	11	6.08	40.30	6.32	48.20	12%	1.31E-01
Fumo	14	6.89	42.80	7.63	48.60	15%	1.67E-01
Galaxias	12	6.10	42.60	7.13	48.50	13%	1.43E-01
Gold	11	5.67	40.60	5.97	48.10	11%	1.26E-01
Gravel Grey	11	5.97	40.20	6.19	48.10	12%	1.32E-01
Green	10	5.32	40.50	5.58	48.00	11%	1.19E-01
Green Boulder	11	5.77	40.70	6.10	48.20	12%	1.31E-01
Gun Smoke	13	7.00	40.70	7.36	48.60	14%	1.57E-01
Harena	9	4.78	39.80	5.16	47.70	9%	1.07E-01
Hekate	11	5.86	41.80	6.30	48.30	12%	1.31E-01
Icy White	5	3.21	40.50	3.39	47.10	6%	6.44E-02
Ionian	14	6.99	42.90	7.76	48.70	15%	1.67E-01
Irish Coffee	12	6.44	40.40	6.71	48.30	13%	1.43E-01
Iron Filings	14	7.48	40.10	7.77	48.40	15%	1.66E-01
Ironside Grey	13	6.67	40.50	6.97	48.40	13%	1.49E-01

Model Name	Module Power (W/SF)	Max. Power Current - I _{max} (A)	Max. Power Voltage - V _{max} (V)	Short Circuit Current - I _{sc} (A)	Open Circuit Current - V _{oc} (V)	Module Efficiency (%)	y, Module Yield kWp/area
Khaki	8	4.03	40.90	4.31	47.50	8%	9.54E-02
Light Blue	12	6.67	40.50	6.97	48.40	13%	1.43E-01
Limunada	8	4.16	40.90	4.44	47.50	8%	9.54E-02
Lunula	12	6.10	42.60	7.13	48.50	13%	1.43E-01
Lupine	14	6.92	42.60	8.20	48.70	15%	1.67E-01
Magnetic	14	6.89	42.80	7.63	48.60	15%	1.67E-01
Mandorla	10	5.19	40.50	5.45	48.00	10%	1.19E-01
Maris	14	7.53	40.50	7.95	48.60	15%	1.67E-01
Melograno	11	5.72	40.20	6.25	48.10	11%	1.31E-01
Mercurio	10	5.25	40.00	5.71	47.90	10%	1.19E-01
Middle Grey	14	7.71	40.20	8.03	48.50	15%	1.67E-01
Monsoon	13	6.77	40.60	7.10	48.50	14%	1.51E-01
Montanea	14	7.36	40.10	7.75	48.40	15%	1.67E-01
Moonstone	10	5.38	40.90	5.71	48.00	11%	1.19E-01
Mora	9	5.07	40.40	5.32	47.90	10%	1.07E-01
Morpho	12	6.44	40.40	6.71	48.30	13%	1.43E-01
Mustard	6	3.45	40.60	3.66	47.20	7%	7.15E-02
Natural Grey	13	7.00	40.70	7.36	48.60	14%	1.57E-01
Navy Blue	11	6.08	40.30	6.32	48.20	12%	1.32E-01
Nebula	10	5.41	41.60	5.78	48.10	11%	1.19E-01
Nero	12	6.51	41.50	6.74	48.00	13%	1.43E-01
Nobel Grey	10	5.20	40.40	5.45	47.90	10%	1.16E-01
Nocciola	12	6.17	40.50	6.52	48.30	12%	1.43E-01
Ocean	15	7.94	40.30	8.29	48.60	16%	1.76E-01
Oracolo	9	4.55	41.80	4.98	47.90	9%	1.07E-01
Orbit	15	7.95	40.90	8.34	48.60	16%	1.79E-01
Orion	13	7.00	40.00	7.35	48.30	14%	1.55E-01
Oscuro	15	7.86	40.70	8.34	48.80	16%	1.79E-01
Pale Rose	7	3.45	40.60	3.66	47.20	7%	7.75E-02
Peridot	5	3.21	40.50	3.39	47.10	6%	6.44E-02
Phoenix	8	4.21	40.40	4.41	47.50	8%	9.54E-02
Pine Cone	13	6.77	40.60	7.10	48.50	14%	1.51E-01
Polaris	9	4.16	40.90	4.44	47.50	9%	1.01E-01
Purple	13	6.90	40.60	7.23	48.50	14%	1.54E-01
Purpura	8	4.21	40.40	4.41	47.50	8%	9.54E-02
Quicksilver	13	6.46	42.60	7.11	48.40	14%	1.55E-01
Racine	15	8.05	41.00	8.47	48.70	16%	1.79E-01
Red	9	4.62	41.10	4.96	47.70	9%	1.05E-01

Model Name	Module Power (W/SF)	Max. Power Current - I _{max} (A)	Max. Power Voltage - V _{max} (V)	Short Circuit Current - I _{sc} (A)	Open Circuit Current - V _{oc} (V)	Module Efficiency (%)	y, Module Yield kWp/area
Red Orange	9	4.62	41.10	4.96	47.70	9%	1.07E-01
Rocksalt	11	5.74	41.80	6.17	48.30	12%	1.31E-01
Rosea	7	3.73	40.20	3.89	47.30	7%	8.35E-02
Rosy Finch	9	4.96	40.30	5.19	47.80	10%	1.07E-01
Rubrica	12	6.51	40.70	6.93	48.30	13%	1.43E-01
Sagittarius	12	6.10	42.60	7.13	48.50	13%	1.43E-01
Saturnian	12	6.15	42.30	7.22	48.40	13%	1.43E-01
Scurro	14	6.89	42.80	7.63	48.60	15%	1.67E-01
Sea	14	7.48	40.10	7.77	48.40	15%	1.66E-01
Selene	13	6.81	42.60	8.06	48.70	14%	1.55E-01
Silver Grey	10	5.43	40.50	5.71	48.00	11%	1.22E-01
Smokey Grey	10	5.43	40.50	5.71	48.00	11%	1.22E-01
Snowfall	12	6.12	42.50	6.72	48.30	13%	1.43E-01
Sorrel	11	5.71	40.30	6.00	48.10	11%	1.31E-01
Storm Dust	8	4.26	41.00	4.57	47.60	9%	9.66E-02
Storm Grey	13	6.90	40.60	7.23	48.50	14%	1.54E-01
Striata	15	8.04	40.40	8.54	48.70	16%	1.79E-01
Terra	14	7.39	40.60	7.76	48.40	15%	1.67E-01
Tramonto	14	7.37	40.70	7.70	48.40	15%	1.67E-01
Turquoise	7	3.68	40.70	3.92	47.30	7%	8.23E-02
Ursina	13	6.58	42.50	7.78	48.60	14%	1.55E-01
Vega	14	6.92	42.60	8.20	48.70	15%	1.67E-01
Venula	13	6.56	42.70	7.24	48.50	14%	1.55E-01
Wet Sand	12	6.44	40.40	6.71	48.30	13%	1.43E-01



Description of system boundaries:

The EPD is type c) from the PCR document, which outlines the system boundaries for the cradle-to-grave LCA to include the product stage (A1-A3), construction stage (A4-A5), use stage (B1-B7), end-of-life stage (C1-C4), and benefits and loads beyond the system boundary stage (D).

EPD Type c) Functional Unit: Cradle-to-grave + module D																	
	Product stage			Construction process stage		Use stage							End-of-life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste Processing	Disposal	Reuse-Recovery-Recycling potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	GLO	GLO	CA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Specific data used	8%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	0%			-		-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0%			-		-	-	-	-	-	-	-	-	-	-	-	-

NA = North America

More information:

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Additional information

Explanatory material on safe installation, use, and disposal of the solar cladding can be found online

<https://www.mitrex.com/resources/certifications-downloads>

Content declaration

Product

Materials / chemical substances	kg/m ²	%	Post-consumer recycled material, weight-%	Biogenic material, weight-% and kg C/kg
Glass	7.96	54	0	0
Aluminum	4.48	30	0	0
EVA	0.95	6	0	0
Ethylene phthalate	0.45	3	0	0
Solar Cell	0.36	2	0	0
Copper	0.27	2	0	0
Adhesive	0.34	2	0	0

Packaging

Materials / chemical substances	kg/m ²	%	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wood	1.22	87	8	0.47
Cardboard	0.17	12	1	0.47
PE	0.014	1	0.09	0

Packaging

Distribution packaging: Wood pallet, cardboard and PE shrink wrap

Recycled material

Provenience of recycled materials (pre-consumer or post-consumer) in the product:

According to PPEC, cardboard packaging contains 81% post-consumer recycled materials

Biogenic carbon content



Biogenic carbon content, packaging 0.65 kg C/m²

Environmental performance

The environmental performance results include the indicators and disclaimers of EN 15804:2012+A2:2019/AC:2021. The PCR requires that several parameters be reported in the EPD, including resource use, waste categories and output flows. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks, and discouraging the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

Indicator name and abbreviation		Unit	Module													
Core environmental impact indicators		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Climate Change - total	kg CO ₂ eq.	3.49E+01	1.69E+00	2.88E+00	0	2.87E-02	0	0	0	-	0	2.90E-01	3.02E-01	0	7.03E-01	0
Climate Change - fossil	kg CO ₂ eq.	3.75E+01	1.69E+00	2.90E-01	0	2.73E-02	0	0	0	-	0	2.90E-01	3.02E-01	0	6.92E-01	0
Climate Change - biogenic	kg CO ₂ eq.	-2.60E+00	0	2.59E+00	0	1.36E-03	0	0	0	-	0	5.42E-04	0	0	1.14E-02	0
Climate Change - LULUC	kg CO ₂ eq.	6.06E-03	0	2.53E-05	0	1.42E-05	0	0	0	-	0	2.52E-05	0	0	8.46E-05	0
GWP-GHG	kg CO ₂ eq.	3.75E+01	1.69E+00	2.90E-01	0	2.73E-02	0	0	0	-	0	2.90E-01	3.02E-01	0	6.92E-01	0
Ozone depletion	kg CFC-11 eq.	1.95E-10	4.27E-11	1.17E-12	0	3.20E-13	0	0	0	-	0	1.16E-12	7.66E-12	0	8.06E-12	0
Acidification	Mole of H+ eq.	2.01E-01	1.14E-02	1.13E-03	0	5.83E-05	0	0	0	-	0	1.12E-03	2.04E-03	0	3.67E-03	0
Eutrophication, freshwater	kg P eq.	2.95E-05	4.69E-07	1.02E-06	0	1.43E-06	0	0	0	-	0	4.95E-07	8.41E-08	0	2.16E-06	0
Eutrophication, marine	kg N eq.	4.15E-02	4.45E-03	1.92E-04	0	2.21E-05	0	0	0	-	0	1.92E-04	7.96E-04	0	9.65E-04	0
Eutrophication, terrestrial	mol N eq.	4.64E-01	4.86E-02	2.10E-03	0	1.98E-04	0	0	0	-	0	2.09E-03	8.71E-03	0	1.06E-02	0
Photochemical ozone formation	kg NMVOC eq.	1.09E-01	1.31E-02	5.64E-04	0	4.40E-05	0	0	0	-	0	5.57E-04	2.34E-03	0	2.91E-03	0
Abiotic depletion potential, minerals & metals ²	kg Sb eq.	2.68E-04	0	8.67E-08	0	7.05E-09	0	0	0	-	0	8.66E-08	0	0	1.22E-07	0
Abiotic depletion potential, fossil resources ²	MJ	5.08E+02	2.11E+01	5.98E+00	0	4.51E-01	0	0	0	-	0	5.97E+00	3.79E+00	0	1.04E+01	0
Water use ²	m ³ world eq. deprived	5.25E+00	0	1.08E-01	0	-8.96E-02	0	0	0	-	0	1.08E-01	0	0	-4.20E-01	0
Additional environmental impact indicators		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate Matter emissions	Disease incidence	2.21E-06	3.64E-08	8.18E-09	0	6.13E-10	0	0	0	-	0	7.71E-09	6.52E-09	0	4.92E-07	0
Ionizing radiation, human health ¹	kBq U235 eq.	1.10E+00	3.71E-19	8.26E-02	0	5.15E-03	0	0	0	-	0	8.26E-02	6.67E-20	0	9.40E-03	0
Eco-toxicity (freshwater) ²	CTUe	5.05E+02	8.91E+01	2.46E+00	0	6.33E-01	0	0	0	-	0	2.37E+00	1.60E+01	0	6.77E+00	0



 MITREX		<div>  </div> <div>INTERNATIONAL EPD SYSTEM</div>														
Human toxicity, cancer effects ²	CTUh	2.73E-08	4.44E-10	1.43E-10	0	1.16E-11	0	0	0	-	0	1.42E-10	7.96E-11	0	1.03E-09	0
Human toxicity, non-cancer effects ²	CTUh	7.99E-07	4.17E-08	2.42E-09	0	9.18E-10	0	0	0	-	0	2.36E-09	7.46E-09	0	5.17E-08	0
Land use related impacts/ Soil quality ²	dimensionless	6.32E+01	0	1.38E+00	0	1.25E-01	0	0	0	-	0	1.38E+00	0	0	5.13E-01	0
Indicators describing resource use		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Use of renewable primary energy as energy carrier	MJ	1.10E+02	0	5.62E+00	0	1.78E-01	0	0	0	-	0	5.62E+00	0	0	5.72E-01	0
Use of renewable primary energy resources used as raw materials	MJ	9.13E+00	0	-9.10E+00	0	2.00E-12	0	0	0	-	0	4.10E-11	0	0	1.26E-11	0
Total use of renewable primary energy	MJ	1.19E+02	0	-3.48E+00	0	1.78E-01	0	0	0	-	0	5.62E+00	0	0	5.72E-01	0
Use of non-renewable primary energy as energy carrier	MJ	5.10E+02	2.11E+01	6.08E+00	0	4.51E-01	0	0	0	-	0	6.07E+00	3.79E+00	0	1.06E+01	0
Use of non-renewable primary energy resources used as raw materials	MJ	3.46E+01	0	1.35E-04	0	3.46E-05	0	0	0	-	0	1.35E-04	0	0	4.06E-11	0
Total use of non-renewable primary energy resource	MJ	5.44E+02	2.11E+01	6.08E+00	0	4.51E-01	0	0	0	-	0	6.07E+00	3.79E+00	0	1.06E+01	0
Secondary material	kg	1.35E-01	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Non-renewable secondary fuels	MJ	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Net use of fresh water	m ³	3.36E-01	0	1.42E-02	0	-2.00E-03	0	0	0	-	0	1.42E-02	0	0	-9.75E-03	0
Environmental information describing waste categories		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	7.74E-06	0	2.13E-09	0	4.40E-11	0	0	0	-	0	2.10E-10	0	0	2.04E-06	0
Non-hazardous waste disposed	kg	5.38E+00	0	1.60E-02	0	1.91E-03	0	0	0	-	0	2.16E-03	0	0	1.48E+01	0
Radioactive waste disposed	kg	1.08E-02	0	1.03E-03	0	3.46E-05	0	0	0	-	0	1.03E-03	0	0	1.17E-04	0



Environmental information describing output flows		A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for reuse	kg	0	0	1.22E+00	0	0	0	0	0	-	0	0	0	0	0	0
Material for recycling	kg	0	0	1.70E-01	0	0	0	0	0	-	0	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	-	0	0	0	0	0	0
Disclaimer 1 – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.																
Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.																
GWP-GHG = Global Warming Potential total excluding biogenic carbon. GWP-GHG indicator is similar to GWP-Total except that the characterisation factor (CF) for biogenic CO2 is set to zero.																

Note: EN 15804 reference package based on EF 3.1

Option B was used for primary energy use indicators as per Annex 3 of PCR2019:14 Version 1.3.4.



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