

Lumon Annual Review 2024





Contents

Executive summary.	4
Business and strategy.	13
Sustainability at Lumon.	19
Environment.	25
Our offering.	29
Carbon emissions.	35
Social responsibility.	49
Governance.	59



Executive summary

From the CEO

In 2024, Lumon Group made important steps forward in strengthening our business and preparing for future growth. We concluded our previous strategy period and laid the foundation for our 2025–2030 strategy.



Our revenue for the year totaled €149 million, with an operating profit of €3.2 million. While it was not a year of growth, the result reflects the strength of our core business and disciplined operations in a challenging environment. The war in Ukraine, broader economic uncertainty, and a slowdown in residential construction, especially in our key markets, created significant headwinds. Still, our solid performance highlights the resilience of our business and positions us well for the years ahead.

We invested in developing our operations and organization. This included expanding our service offering through the acquisition of Balkonser, rolling out the 5S model across all production units, and advancing our safety culture. Altogether, we completed 480 large-scale projects, glazed over 34,000 balconies and terraces, and delivered 125,000 Visor Blinds during the year.

We also made progress in sustainability. All our Lumon factories now operate with CO₂-free electricity, and we made strong progress toward our target of reducing Scope 1 and 2 emissions by 100% by the end of 2025. Our customer and employee satisfaction remained strong, with an NPS of 70.4 and an eNPS of 53. Our profile factory in Finland even reached a full year without a single accident.

One of the highlights of the year was Lumon's entry into the high-rise sector with the announcement of our first skyscraper-level project in Vancouver, Canada. At the same time, we were proud to be part of the Roots building in Hamburg, Germany, the tallest wooden building in the country, which was completed in 2024. These examples show that our glazing solutions are valued in aspirational, forward-looking projects where quality, sustainability, and modern design are essential.

2024 was also a pivotal year as we prepared the foundation for our new strategy period spanning 2025–2030. The strategy work engaged employees across the organization, bringing valuable insights from different markets, functions, and roles. This collaborative approach ensured that the new strategy truly reflects both our strengths and our ambitions. The strategy can be defined as: Brand excellence through superior offering and customer experience, driven by engaged people with a global perspective. It provides a clear and ambitious path forward, emphasizing commitment, quality, and customer value in everything we do.

Looking ahead, we have a clear strategy, a strong foundation, and a motivated team. I want to thank all Lumon employees for your dedication, our partners for your collaboration, and our customers for your continued trust.

Together, we continue to create more room for life.

Jussi Kinnunen
CEO, Lumon Group

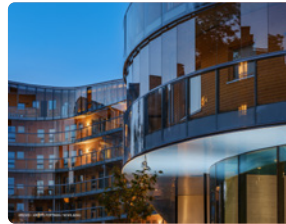


Highlights 2024

Lumon's global customer survey confirms that over 40% of respondents are using their glazed space on a daily basis.



Announcing Lumon's entrance to the high-rise sector by being part of the skyscraper-level I up-and-coming Solhouse project by Bosa Properties in Canada.



Meander is one of the 480 projects completed globally in 2024 by Lumon, showcasing how close collaboration, architectural adaptability, and early-phase involvement led to a successful outcome. The site's distinctive design now stands as a part of modern Finnish architecture.

Roots, the tallest wooden building in Germany, completed with 2.004 linear meters Lumon Glazing and Lumon Railing



The first internal audit of 2024 launched 5S-project was conducted successfully at Lumon Antequera factory in Spain

Internal event to celebrate long Lumon careers in Kouvola, Finland



Lumon glazing solutions, 90 balconies and 582 glazing panels, part of the tallest building of Athletes Village, Paris



Balkonser, a company providing maintenance service for glazing in Finland, becomes part of Lumon Group

Lumon Kouvola, Finland profile line factory achieves accident-free year

The first renovation project with Lumon eRailing – integrated railing system with solar panels, finished in Lahti, Finland.



Key figures 2024



Lumon organization

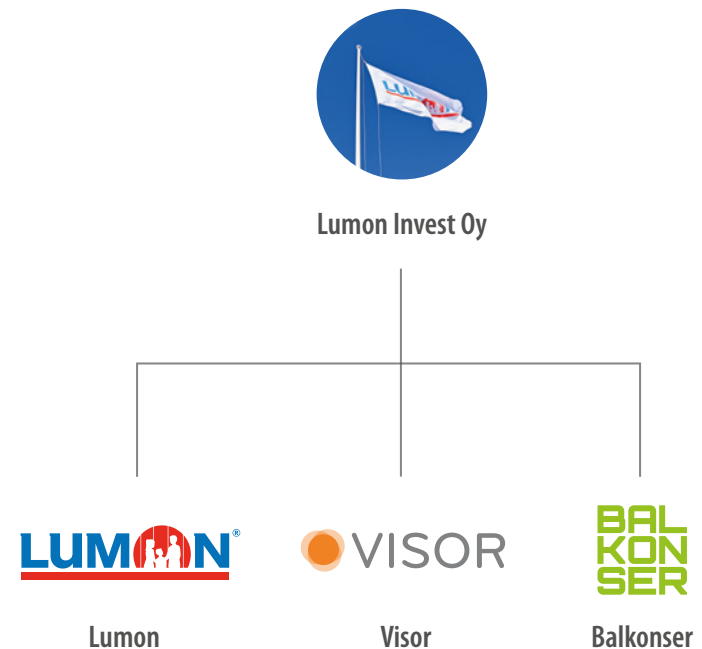
Lumon Group is the global leader in frameless balcony glazing solutions, serving both European and North American markets. With a workforce of over 1,000 employees worldwide, Lumon Group is committed to delivering high-quality, sustainable solutions for residential and commercial applications.

The Group comprises three key entities

- **Lumon** – The core of the business, specializing in balcony facade and terrace glazing systems.
- **Visor** – A dedicated manufacturer and supplier of blinds for both balcony glazing and windows, with its production facility located in Kempele, Finland.
- **Balkonser** – Acquired in 2024, Balkonser services all brands of balcony glazing in Finland and acts as the authorized maintenance provider for Lumon products, ensuring long-term product care and customer support.

Together, these companies form a unified ecosystem, enhancing Lumon's ability to provide comprehensive, high-quality, and sustainable solutions across its global markets.

Lumon Group 2024



Snapshot on sustainability across the organization

Lumon Group's organizations operate independently, each with their own brand and strategy. While Lumon, Visor, and Balkonser define their sustainability frameworks separately, they are united by a shared long-term commitment to responsible development.

Lumon

Lumon has adapted the globally recognized ESG (Environment, Social Responsibility, Governance) framework for sustainability reporting.

Lumon is dedicated to environmental sustainability, focusing on reducing carbon emissions and enhancing energy efficiency across its operations. In 2024, all electricity used in its factories was sourced from CO2-free energy, and the company continues to develop sustainable products like energy-efficient glazing solutions. By aligning with UN sustainability goals, utilizing recycled materials, and adopting green technologies like solar energy, Lumon is actively working to reduce emissions and improve waste management throughout its value chain.

Read more about environmental sustainability on pages 25–32.

Social responsibility is prioritized through a strong commitment to employee well-being, safety and ethical practices aligned with UN sustainability goals. In 2024, we focused on enhancing employee engagement, safety culture, and diversity, with significant improvements in safety targets and employee satisfaction.

Read more about social responsibility on pages 49–56.

Lumon's governance is built on ethical business practices, with compliance to internal and external regulations, including ISO9001, ISO14001, and ISO45001 standards. The company focuses on fair leadership, responsible sourcing, and transparent operations, aligning with UN sustainability goals. Regular audits, risk management, and adherence to the Employee Code of Conduct and Partner Code of Conduct ensure ongoing commitment to integrity, transparency, and accountability across all operations.

Read more about governance on pages 59–63.



Visor

Visor is committed to sustainability by focusing on reducing its carbon footprint and using recycled materials in its products. In 2024, the company decided to transition to 100% recycled fabric and aluminum for its window blinds, a change that will be implemented in 2025 and resulted in a 58% reduction in their carbon footprint.

In 2024, Visor made a strategic decision to pursue carbon-neutral production for Scope 1 and Scope 2 emissions, with the goal of achieving this milestone by the end of 2025. Additionally, Visor aims to establish a fully carbon-neutral supply chain by 2030.

Visor operations are ISO 9001 -certified, and the company places strong emphasis on employee satisfaction and development through a positive and open work culture.



Balkonser

Balkonser adopted the Ekokompassi (Eco Compass) environmental management system in early 2024 to develop and integrate sustainability into its daily operations. The system helps identify, measure, and reduce environmental impacts with the support of Ekokompassi experts.

Based on the Ekokompassi framework, Balkonser has established clear criteria and implemented concrete actions to meet its sustainability goals. Key initiatives include compliance with environmental legislation, appointing a dedicated sustainability team, assessing environmental impacts, and promoting sustainability through training, waste and chemical management, and setting measurable environmental objectives. Progress is monitored and reported annually, with a strong emphasis on continuous improvement and transparent communication.

Key actions in 2024:

- Joined Ekokompassi in February 2024
- Completed environmental impact assessment and created an environmental program
- Conducted staff trainings (first in May, second in October 2024)
- Underwent a certification audit in November–December 2024, which confirmed that the environmental management system met the required standards. Following the successful audit, Balkonser was officially granted Ekokompassi certification.





Business and strategy

2024 marked the conclusion of Lumon Group's 2021–2024 strategy period, driven by the strategic choices: competitive advantage through customer-centered business, profitably growing sustainable business, One Lumon culture, and Must-Win battle projects to support our strategy.

As part of the goal to profitably grow a sustainable business, developing an efficient international supply chain played a central role. A key milestone in this effort was the establishment of Lumon's new factory in Spain, which expanded our production capacity and improved delivery capabilities across Southern Europe.

Another major achievement during the strategy period was the development of structured business processes and a process-driven organization, which are critical enablers of sustainable growth and improved customer and employee experience.

As we move into a new strategic period, Lumon's focus shifts to three updated cornerstones:

- **Engaged people with a global perspective,**
- **Superior offering and customer experience,** and
- **Leading processes.**

The recent launch of the new Glass Terrace product in Finland is a strong example of our continued commitment to innovation and customer value. With a solid foundation built on strengthened supply chains and structured processes, Lumon is well-positioned to pursue global growth as an industry leader with the right capabilities in place.



Lumon serves a diverse customer base:

- Homeowners looking to expand their living space and create more room for life.
- Architects, developers, and housing companies in both renovation and new construction projects.

A growing part of our international success is our reseller network with more than 100 partners worldwide benefiting from a proven, scalable business model.

Looking to the future

Lumon's new strategy, launched in January 2025 brings together the following three cornerstones: "Engaged people with global perspective", "Superior offering and customer experience" and "Leading processes." The future direction supports a global growth strategy as an industry leader with the right competences.



Customer insight:

My experience with the Lumon team was highly professional. They did an outstanding job – quickly and efficiently – while addressing even the smallest issues immediately. I can honestly say I'd give them a 10/10. I would work with them again anytime! "

One Lumon Picture defines the strategic approach to guide our everyday work

The presented One Lumon picture reflects Lumon's strategy for the 2021–2024 period.
A new strategy was launched in January 2025 to guide the company's next phase of global growth.

Mission

Better Homes
Better Life
Better World

Vision

The best and the most
desired



Values

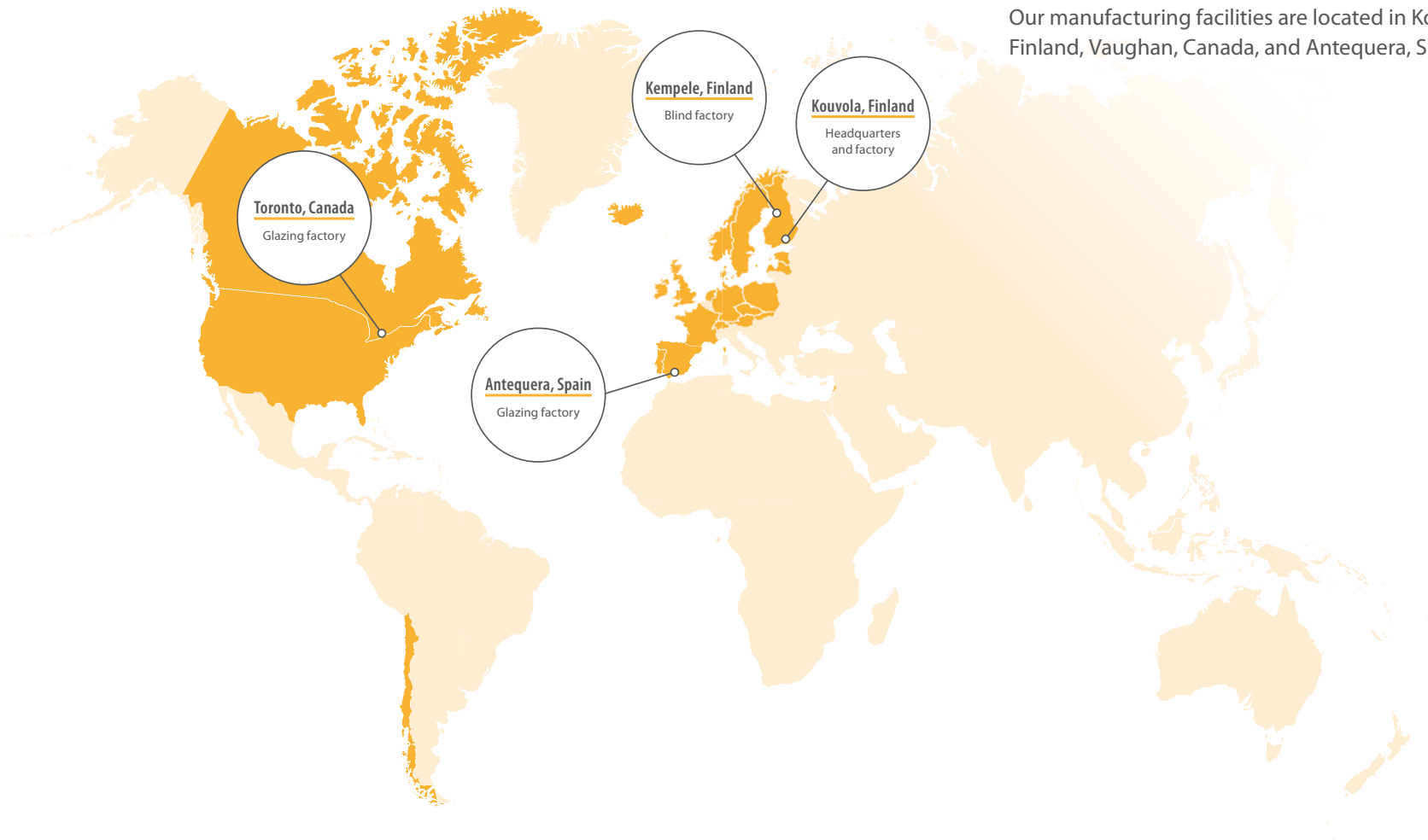
We are always near
We keep our promises
We build the future together

“Together we can reach our destination”

Multi-national company - Lumon is a Finland-headquartered group serving customers in more than 20 countries

Lumon operates in 20 countries across the globe, with subsidiaries in Finland, Spain, Sweden, Norway, Denmark, Germany, France, Switzerland, Poland, Canada and the USA. Lumon closed its business and all operations in Russia in 2022 and has had no activities in the country since.

In some countries, Lumon products are available through resellers. Our manufacturing facilities are located in Kouvola and Kempele in Finland, Vaughan, Canada, and Antequera, Spain.







Sustainability at Lumon

Lumon's sustainability vision continues to guide our efforts toward environmentally, socially, and ethically responsible operations: *Our goal is to be the leading provider of sustainable living solutions in the balcony and terrace glazing industry.*

Lumon's sustainability framework is based on the cornerstones of ESG – Environment, Social Responsibility, and Governance.



Note from Lumon Group Sustainability Program

Over the past years, we have made significant strides in reducing our environmental footprint across all our factories. The goal for Scope 1 and 2 emissions from production is to reach net zero by the end of 2025. This means that we aim to reduce the carbon dioxide emissions from our production by 100 percent from the 2022 level by the end of 2025. This is primarily made by our transition to carbon-neutral electricity and the switch to electric forklifts from gas-powered trucks. These improvements involve all our balcony and terrace production units, including Kouvola/Finland, Antequera/Spain and Toronto/Canada. For example, our newest factory in Antequera was equipped with solar panels from the outset, and we have just received the official certification for their functionality in the beginning of 2025.

Social responsibility remains at the heart of our operations. Despite challenging times, employee engagement has remained strong with the employee NPS at the rate of 53. Our long-term safety target is zero accidents, and we are proud that our Profile factory has just completed a full year of 2024 without a single workplace accident.

In governance, we have further developed systems to ensure sustainability across our entire value chain—upstream and downstream. A new international data system helps us monitor and validate suppliers and customers. We have also enhanced our supplier auditing processes and implemented that way a strengthened enforcement of Partner Code of Conduct.

We continue to innovate with low-carbon solutions. Our new eRailing product significantly lower carbon emissions and has now been implemented in a reference project in Lahti, Finland. We have also taken action to close material loops: surplus aluminum has long been recycled. Lowering of life-time carbon emissions are reduced by the compensation of the carbon emissions of the production and installation time by solar electricity generation of the use

time on the level of 35% of the annual demand of electricity in the apartment behind the balcony. With our main raw material, glass, we not only ensure the waste is directed into other responsible processes, but also now have opened a new return channel of waste glass from production is to our glass supplier in Germany for further processing back to useable flat glass.

Engaging with stakeholders is key. We hosted an international customer webinar on sustainable residential construction with glazed balcony facades and conducted two Lumon Group wide internal training sessions to strengthen our expertise in the year 2024. We are actively developing training programs, particularly for civil engineers with a focus on BIM and sustainable design, as well as our sales force to promote sustainable construction with glazed balconies.

We believe that sustainable living begins with smart construction choices. Glazed balconies provide year-round living space with a minimal footprint—less than 1% of total housing emissions at the construction phase—and we continuously develop our solutions in close dialogue with our customers. A recent B2B survey confirmed that sustainability is a central theme, and we are committed to listening and responding accordingly.

Balconies with frameless glazing are a very environmentally friendly way of enhancing living space, compared to air-conditioned indoor spaces, which require heating and cooling systems. Heating and cooling consume energy continuously throughout the whole lifetime of the building for those reasons, but glazed balconies are virtually free of environmental load during the whole life cycle of them. Additionally, it is far cheaper to build balcony space than air-conditioned indoor space. On glazed balconies, you can have a fresh outdoor experience, still protected against the weather effects.



Double materiality analysis

In 2024, Lumon Group has conducted a double materiality analysis to assess the key economic, environmental, and social impacts within its value chain, as well as their influence on business operations and stakeholder decision-making. This analysis serves as a foundation for strategic planning and sustainability reporting, ensuring that Lumon aligns with industry best practices and stakeholder expectations.

The material analysis was conducted by collecting data through interviews and pairwise comparison questionnaires through financial and sustainability audit company BDO. The following groups were surveyed:

- Suppliers
- Customers
- Personnel
- Project team
- Leadership team and board
- Other stakeholders

Through the survey, respondents identified and prioritized impacts, risks and opportunities of sustainability development.

The main themes of the material analysis have been defined as follows:

Climate change (ESRS E1)

- Impact of business on climate change and mitigation plans
- Greenhouse gas emissions reduction
- Transition strategies for a low-carbon economy

Own workforce (ESRS S1)

- Fair treatment, job security, diversity, and inclusion
- Policies to prevent discrimination
- Employee turnover rates

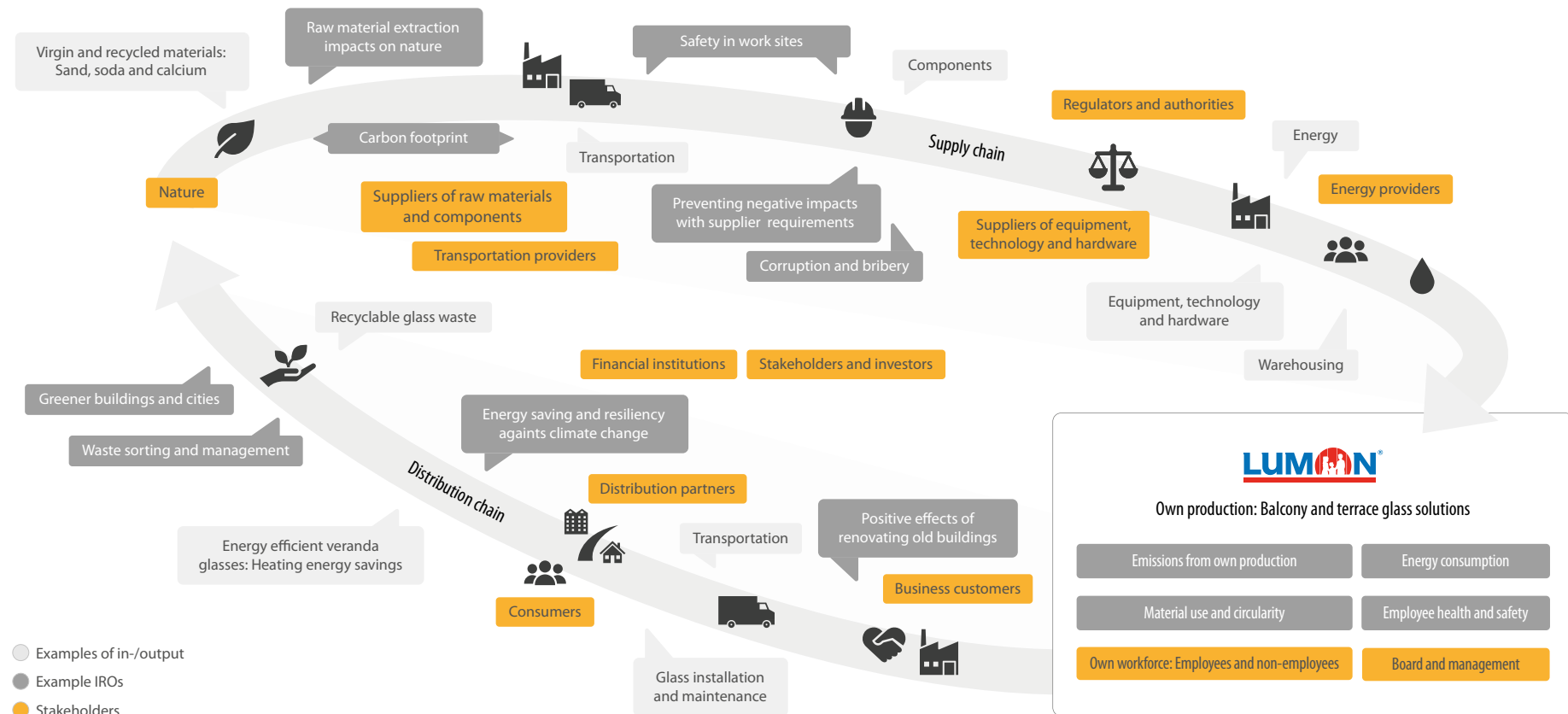
Business conduct (ESRS G1)

- Ethical business practices, political participation, and whistleblowing
- Transparency in management and governance
- Payment practices and fair dealings

Value chain

Lumon's value chain was evaluated on the basis of the double materiality assessment.

The Double Materiality Assessment involves also the value chain, not only Lumon's own operations.





Environment

We are dedicated to continuously improving both our products and operations to reduce our environmental impact. By offering high-quality glazing solutions, we contribute to the creation of more sustainable buildings, helping our customers achieve energy-efficient and eco-friendly spaces. Our focus points for reducing our environmental footprint lie in sustainable product development and reducing the carbon footprint of our own operations.

In the theme of Environment, we focus to align ourselves with UN's sustainability cornerstones:

- **Sustainable cities and communities:** promoting sustainable construction industry activities
- **Affordable and green energy:** Access to reliable, sustainable and modern energy sources
- **Industry, innovation, and infrastructure:** Resilient infrastructure, innovation and sustainable industrialization



Our climate commitment

“Lumon Group Factories to reduce their CO2 emissions of Scope 1 and 2 by 100 % by the end of 2025 compared to year 2022.

During 2024, we made significant progress towards Lumon’s climate commitment.

For example, all electricity used at our factories in Kouvola, Antequera and Vaughan as well as all district heating used at Kouvola factory were produced by and purchased from CO2 free sources. Verification was made using the Guarantee of Origin mechanism







Our offering

Our products provide a complete system that brings comfort, style, and functionality to outdoor spaces. They create the best and most desired glazed balconies and terraces, outdoor spaces that people enjoy using every day.

- Lumon Glazing
- Lumon Railing
- Lumon Roof
- Visor Blinds



LUMON® Glazing

Lumon's retractable and sliding glazing solutions are the foundation of Lumon's product strategy. The smart and stylish glazing solutions provide versatile possibilities for homeowners and professionals.



LUMON® Railing

Lumon's railing solution integrates seamlessly with retractable glazing. The Lumon eRailing is also a part of railing solutions, providing the possibility of not only passive energy generation, but of active opportunity for increased sustainable energy.

Lifecycle maintenance services

Guaranteed lifecycle care for Lumon glazing systems is offered, with maintenance services available for up to 25 years and beyond. In Finland, expert maintenance is provided by Balkonser, Lumon's authorized maintenance partner, ensuring that Lumon products are kept in optimal condition throughout their entire lifespan.

Additional products

In addition to the core products, a range of complementary solutions is provided by Lumon to enhance the functionality and aesthetics of outdoor spaces. These solutions include various accessories, customization options, and certified maintenance services, ensuring the continued performance and longevity of Lumon products.



LUMON® Roof

Lumon's roof solutions bring together glazing solutions, creating a unified entity. Paired with Visor Blinds, the roof solutions provide protection from the rain and the sun.



VISOR® Blinds

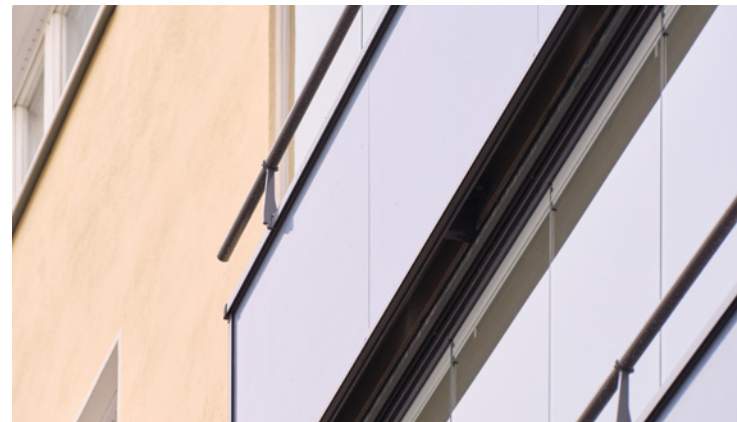
Visor Blinds can seamlessly be integrated with any of Lumon's product solutions. The blinds can also be applied to windows.

Lumon eRailing – A safe, stylish and sustainable solution

Lumon's eRailing solution provides yet added possibilities for energy generation. The solar panel-integrated railing solution not only passively supports the storage of heating energy but actively and significantly contributes to the possibilities of energy generation. 2024 also marked the year Lumon completed its first eRailing renovation project in Lahti, Finland.

The city of Lahti had a positive attitude towards utilizing renewable energy through the eRailing solution. Since our building facade faces south, eRailing was a natural choice. Everyone in our housing company has responded positively to the solution, and we have received only positive feedback. We are eagerly awaiting the first production data."

Lasse Aaltonen, Chairman of Housing Company Board

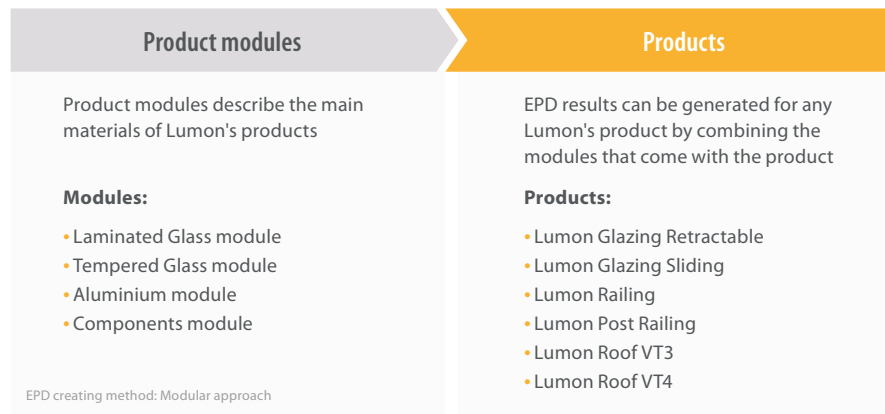


Lumon products are EPD -certified

In 2024, Lumon Group continued to lead the way in sustainable practices within the glazing industry, committing to a significant reduction in CO2 emissions and a transparent environmental footprint.

In 2023, Lumon Group led the industry by obtaining its first-ever Environmental Product Declaration (EPD) for its balcony, facade, and terrace products. Based on an extensive life cycle analysis of the products, the EPD verifies the low carbon footprint of Lumon glazing products. This achievement was leveraged in 2024 to further demonstrate the company's commitment to sustainability.

Lumon is currently working with consulting company Granlund to further determine the Environmental Product Declaration for Antequera factory in Spain made products and all essential CO2 emissions of distribution operations of Lumon outside Finland.



EPD information

Construction products EPDS may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

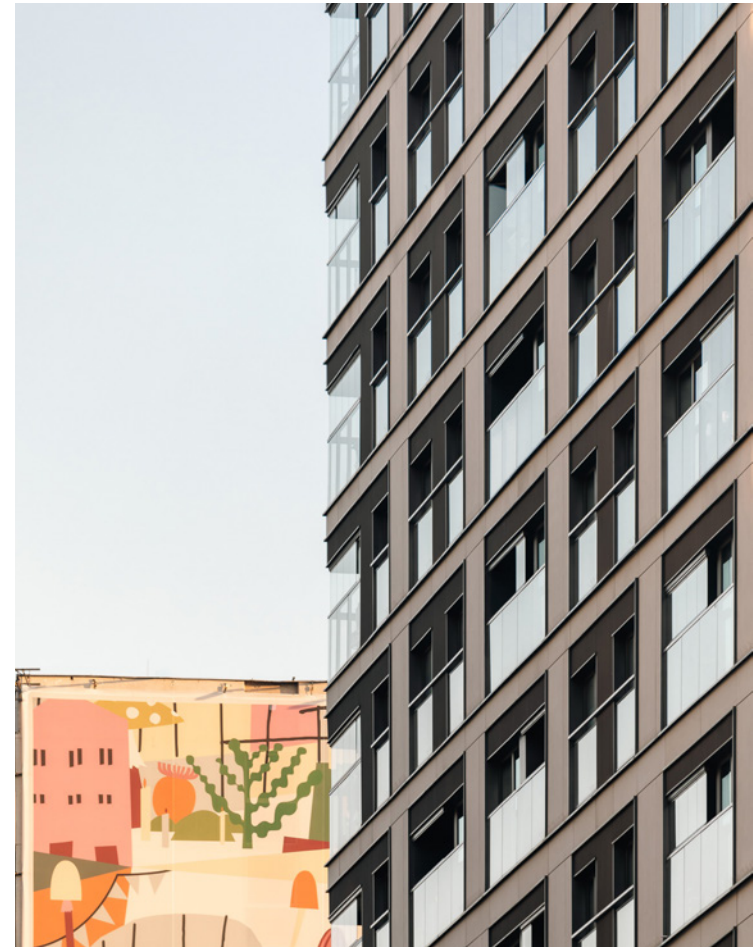
EPD program operator	Building Information Foundation, RTS, Malminkatu 16 A, 00100 Helsinki, Finland
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. RTS PCR 2020.
EPD author	Natalia Pennanen, Anni Viitala, Granlund Oy, Malminkaari 21, 00701 Helsinki, Finland
EPD verification	Independent verification of this EPD and data, according to ISO 14025: External verification
Verification date	7.9.2023
EPD verifier	Heini Koutonen, Nordic Offset Oy Keilaniementie 1, 02150 Espoo, Finland
RTS EPD number	RTS_257_23
Publishing date	3.10.2023
EPD valid until	3.10.2028

Quality assurance

During 2024, the overall quality level at Lumon Group improved. Main improvements in quality resulted from:

- Extended quality reporting and root cause analysis
- 5S initiative in all production facilities
- Integration of quality into process development

In 2025, quality ambitions take an even more central role, being integrated into central business processes. **A 2024 customer survey found that the most important contributing factor for choosing Lumon is quality.** As we move into 2025, quality remains top priority to meet customer expectations and strengthen our commitment to excellence.







Carbon emissions

Based on the double materiality assessment, the key sustainability topics of Lumon are climate change mitigation and adaptation, greenhouse gas emissions (GHG) and their reduction target and roadmap. Lumon already has its commitment to reduce GHG emissions in scopes 1-2 as stated before in this review.

Carbon emission reporting is thus crucial for Lumon, as it reflects our commitment to sustainability and environmental responsibility. By meticulously tracking and reporting our emissions, we demonstrate transparency and accountability to our stakeholders. This practice is integral to our overarching goal of reducing our environmental footprint and contributing positively to climate change mitigation.



Calculation process

We have calculated our carbon footprint according to the GHG Protocol standard. Our calculation includes scope 1 and scope 2 emissions as well as all material scope 3 emissions. Through the carbon footprint calculation, we have identified our biggest emission sources and the most significant emission reduction opportunities. We will improve the data collection process and the accuracy of the data going forward.

Consulting firm Granlund was involved in the data collection and calculation process, as well as analyzing the results. Together with them, we have verified that we reach the initial quality level in data accuracy and usage of the correct emission factors.

Scope 1 emissions source	Emissions tCO ₂ e
Own energy production	291
Owned and leased vehicles	1648
TOTAL Scope 1 emissions	1939

Results

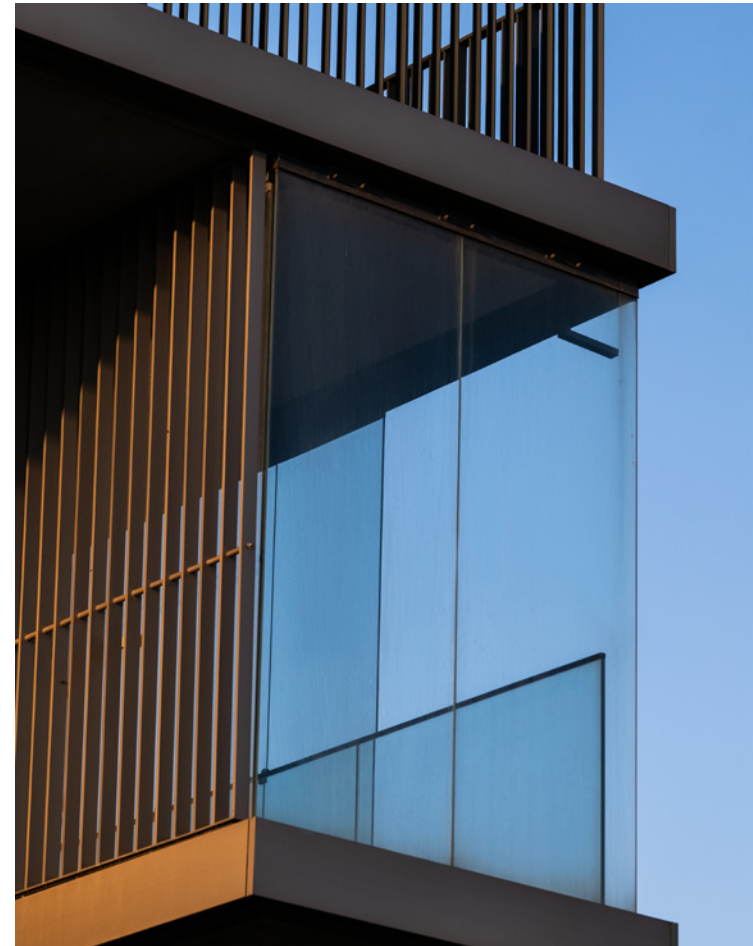
We are disclosing here the GHG emissions on all three scopes in 2024. For scope three, we have calculated only the material categories, based on the materiality analysis conducted by Granlund in 2024.

For scope 2 we have calculated both the market-based and location-based emissions. The results of our carbon footprint calculation for scopes 1 and 2 for the year 2024 are shown in the table below. By purchasing renewable energy certificates to all production units and all offices in Finland, we could reduce the market-based scope 2 emissions to 313 tCO₂e.

Scope 2 emissions source	Emissions tCO ₂ e
Purchased electricity (market-based)	35
Purchased heat (market-based)	278
Purchased electricity (location-based)	557
Purchased heat (location-based)	278
TOTAL Scope 2 emissions (market-based)	313
TOTAL Scope 2 emissions (location-based)	835

The scope 3 emissions calculation boundary is based on a materiality analysis conducted in 2024. This materiality analysis was used to define which scope 3 emission categories are relevant for us in terms of their absolute size and our possibility to influence them. According to the materiality analysis, the following Scope 3 categories are considered relevant to Lumon: Category 1 (Purchased goods and services), Category 2 (Capital Goods), Category 4 (Upstream transportation and distribution), Category 9 (Downstream transportation and distribution) and Category 12 (End-of-life treatment of sold products). For the material part of scope 3, the total emissions from year 2024 were 47 441 tCO₂e. The breakdown into different scope 3 categories can be seen in the table below.

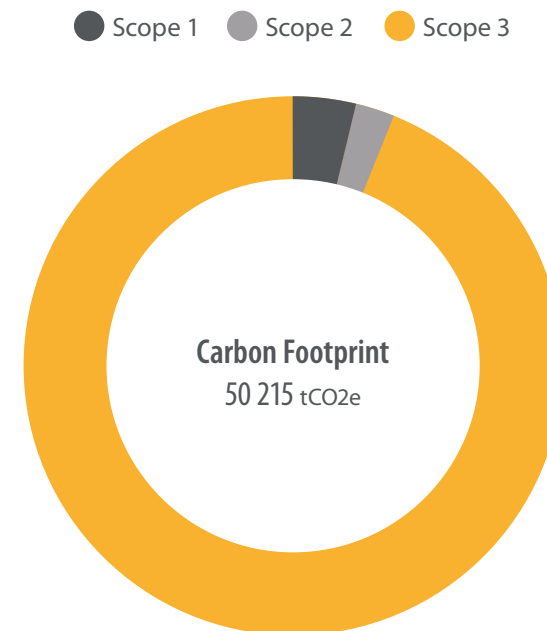
Scope 3 emissions source	Emissions tCO ₂ e
Ca 1: Purchased goods and services	41702
Ca 2: Capital goods	100
Ca 4: Upstream transportation and distribution	1201
Ca 9: Downstream transportation and distribution	886
Ca 12: End-of-life treatment of sold products	937
TOTAL	47441



In Lumon's operations, the emissions arising from raw materials play a critical role in our total carbon footprint. To calculate the emissions from raw materials, we use the information on actual material flows and utilize supplier-based emission data, when available. Lumon's most significant material flows are already covered by Environmental Product Declarations. Enhancing the coverage of supplier-based emission data within our supply chain remains the foremost priority as we advance the accuracy and precision of our raw material emission calculations and refine the potential for emission reduction.

Apart from the materials used in the production and packaging of the products, Category 1 contains also emissions from non-material services and support functions. The emissions from these functions are calculated using the spend-based method. The spend-based method gives a generic picture of the scale of the emissions but also contains some uncertainties. We aim to start working together with our service providers to gradually specify the calculation methodology and to assess the reduction potential of these emissions.

Lastly, we are in the process of creating a comprehensive strategy aimed at reducing scope 3 emissions, with a particular focus on raw materials.





Aluminum is 100% recyclable

Aluminum is 100% recyclable, making it a key material in Lumon's commitment to sustainability. It can be recycled indefinitely without losing quality, and over half of the aluminum produced in the EU already comes from recycled sources. Recycling aluminum saves 95% of the energy and emissions compared to primary production. We are constantly exploring ways to utilize recycled products in our production processes, with post-consumer aluminum being a key area of focus.

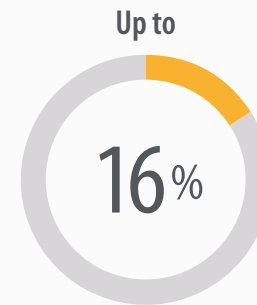
Lumon sources its glass from European manufacturers and continues to monitor market trends to increase the use of low-carbon glass. Glass is a resource-efficient material made from natural raw materials like sand, as well as post-consumer recycled glass. While recycled glass is man-made, it plays a crucial role in improving the sustainability of glass production. The glass industry is investing in lower-carbon production, improved recyclability, and greater energy efficiency, making glass a key material for sustainability and renewable energy technologies.



Sustainable product development

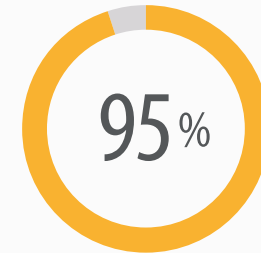
Lumon's products offer significant benefits for homeowners, providing added living space and the ability to enjoy private outdoor areas regardless of weather conditions.

Lumon's glazing systems can help achieve heating energy savings of up to 16% through the passive energy generation of the buffer space they create. This is especially effective in buildings constructed before 2010, where insulation may not be as efficient as in newer constructions. In addition, the carbon footprint from the production of Lumon's products is offset as quickly as 3.4 years.



Heating energy savings

Source: Hilliaho Kimmo. (2017). Energy Saving Potential and Interior Temperatures of Glazed Spaces: Evaluation through Measurements and Simulations (p. 251-258). Tampere University of Technology. Publication 1480.



Recyclable materials

Source: Environmental Product Declaration: Lumon Balcony, facade and terrace products: Modular product group EPD.



Noise reduction

Source: Kananen, Anttoni. (2015). Designing balcony glazing's sound insulation based on laboratory measurements. Master's Thesis in Finnish.



Extended maintenance cycle

Source: Mattila, Jussi. (2007). Effect of Balcony Glazing on the Durability of Concrete Structures in Nordic Climate. In Portugal SB07. Sustainable Construction. Materials and Practices. Challenge of the Industry for the New Millennium, International Conference on Sustainable Construction, Lisbon, Portugal 12-13-14 September 2007 (pp. 241-248).



Key findings from B2B customer survey – The future of sustainable buildings

At the end of 2024 and beginning of 2025, we conducted a B2B customer survey to discover the main insights of the future of sustainable buildings from our professional customer base. The final takeaways included:



Balconies remain a highly valued architectural feature, with glazing offering significant aesthetic, functional, and financial benefits



The demand for multi-climatic balcony designs is rising, emphasizing year-round usability



Sustainability and energy-efficient solutions (such as solar energy integration) are gaining traction



Noise reduction, maintenance savings, and improved comfort continue to be the top benefits of balcony glazing

Sustainability continues to play a key role in Lumon's design and procurement decisions, currently rated at **7.6/10** in importance. There is also a steady interest in **solar energy integration for balcony facades**, scoring **7.1/10**, suggesting real potential for future **eco-friendly balcony innovations**.

As one customer put it:

Balcony glazing increases the value of the apartment, enhances its rental potential, and positively impacts the building's facade. Energy savings for the housing company are also a benefit for the shareholders. "

Looking ahead, there is clear enthusiasm for smart, sustainable solutions. The **ideal balcony facade** is seen as both functional and aesthetically striking:

The ideal balcony facade is long-lasting, stylish, and has a unified appearance but adds a distinctive edge to the otherwise grey mass. "

These insights and ideas reflect growing demand for **durable, energy-efficient, and intelligent balcony solutions** – ones that don't just fit today's needs but help shape the future of sustainable living.



Sustainable supply chain

In 2024, Lumon strengthened its commitment to sustainability by setting clear environmental and social targets for its supply chain. Key suppliers are now required to establish ESG (Environmental, Social, and Governance) and CO₂ (carbon dioxide) reduction plans, integrating sustainability into our procurement strategy. We prioritize suppliers who measure and actively reduce their GHG (Greenhouse Gas) emissions, aligning with our goal of achieving zero CO₂ emissions in our own production (Scope 1 & 2) by the end of 2025.

To further reduce our environmental impact, we continue to increase the use of low-carbon and recycled materials in our main raw materials, in line with market demand and availability. Additionally, we will continue to source electricity for our factories in Kouvola, Antequera, and Vaughan exclusively from CO₂-free sources, verified by the Guarantee of Origin mechanism. In 2025, district heating at our Kouvola factory will also transition to CO₂-free sources.



Efficiency, safety and quality at the core

Productivity and quality remain at the core of our operations. In 2024, we successfully implemented the PDCA process and 5S methodology across all production units, resulting in improved efficiency and a stronger safety culture, as seen in the reduced accident frequency rate.

We have also taken steps to enhance circularity by investing in infrastructure to enable the recycling of glass waste from our production back to glass processors. Further improvements in packaging materials and waste reduction strategies are being developed to minimize material usage and environmental impact.

To ensure a responsible supply chain, Lumon sources its main raw materials from suppliers in the ETA area, adhering to strict ESG regulations. We maintain a multi-source strategy for material procurement, with defined processes for supplier acceptance, evaluation, and risk management. In 2024, a DMA analysis highlighted the importance of supply chain data transparency, which will guide our 2025 initiatives for improved supplier data management and process development.

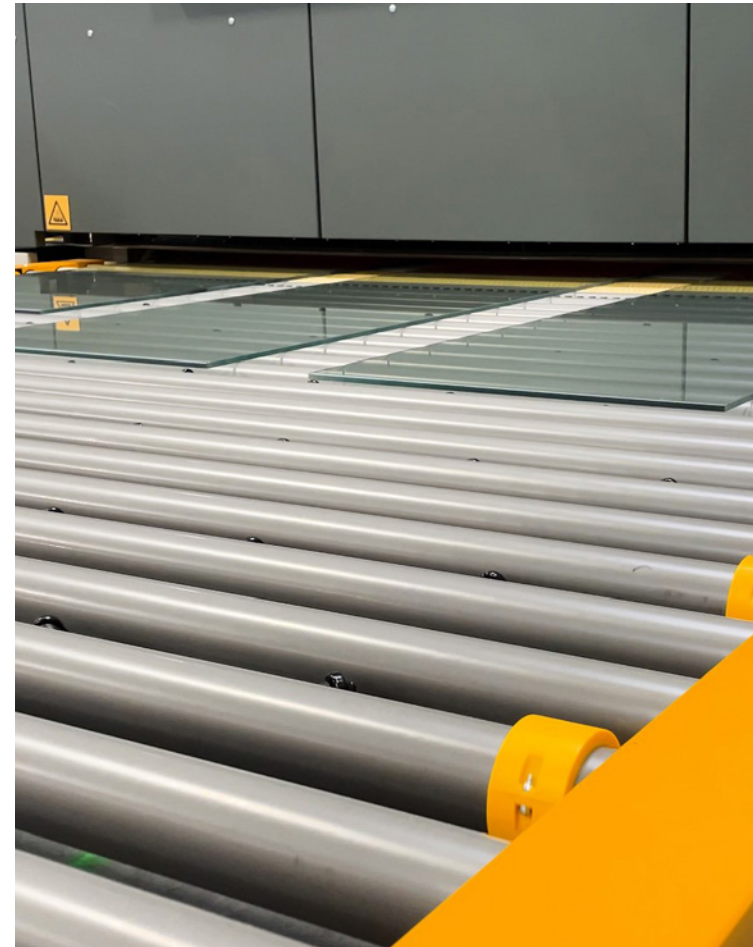
The Lumon production function initiated a program to add Sustainability audits to the normal regular business development meetings and audits of Tier 1 suppliers, to re-enforce the meaning of the Lumon Group Partner Code-of-Conduct and the sustainability goals and practices of Lumon.



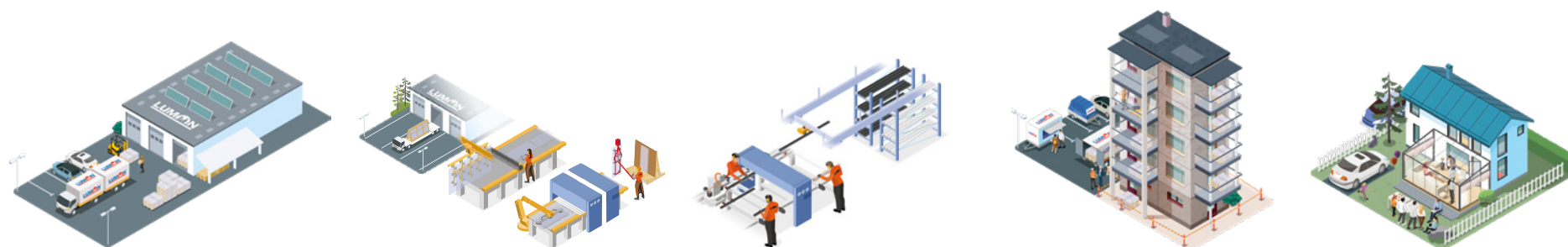
Waste management

In 2024, Lumon successfully concluded a major project focused on advancing the sustainability of our packaging practices. This initiative aimed at reducing the overall amount of packaging materials while optimizing the use of recyclable, renewable, and environmentally friendly alternatives. Key outcomes of the study and subsequent actions include:

- Transition to Post-Consumer Recycled (PCR) covering film
- Minimization of the use of stretch films and other plastic materials
- Reduced material use in wooden packaging without compromising product safety
- Planning in place to replace current forklifts with electric models



Product life cycle - From materials and components to value-added products and services



1. Materials and supplies

- **Glass:** supplied from Europe and North-America, with Lumon's high quality and sustainability requirements.
- **Fabrics:** supplied from Europe, with increased share of recycled PET plastic.
- **Aluminum profiles:** tier 1 suppliers in Finland, Spain and Canada, carefully selected based on the Lumon Group's high technical and quality standards.
- **Metal components**
- **Plastic components**
- **Other components and equipment**
- **Packing materials**

Key tier 1 suppliers are audited annually.

2. Manufacturing

- **Processing:** Glass processing – especially tempering – is an energy-intensive process, where GHG emission-free electricity is used. Also, the processing of fabrics and aluminum profiles is powered by GHG emission-free power.
- **Assembly:** Putting all together is critical step in the process of manufacturing safe, long-lasting products and easy-to-use products of Lumon Group.
- **Packing:** To protect the high quality of our products, they are packed mostly with wood, cardboard and plastics.

3. Delivery & Installation

Deliveries from factories to installation sites, directly or through terminals, are taken care by trusted partners.

Lumon's installation is carried out by trained professionals, ensuring precise, safe, and seamless integration of our glazing solutions.

Lumon's balcony products extend the lifetime of balcony facade by 10 years, which drops off one renovation cycle over the lifetime of the balcony facade. This means significant cost savings over the life-time of the building.

The CO₂ emissions from Lumon's balcony products during the construction phase are minimal compared to those generated by indoor air conditioning over the building's lifetime. This supports building larger balconies instead of oversized indoor spaces offering more sustainable living with lower long term energy use.

4. Life-cycle services & aftersales

- **Maintenance services:** Maintenance services: Balkonser is specialized in maintaining balcony glazing solutions in Finland, and Lumon offers these services also in many other countries.
- **Additional products**
- **Extended guarantee**



Social responsibility

At Lumon, we prioritize the well-being and safety of our employees, taking corporate social responsibility seriously in every aspect of our operations. We are committed to ensuring that our products are not only safe but also ethically produced, and we actively monitor our supply chain to uphold these values. Quality and safety come together to guide our socially responsible operations.

In the theme of Social Responsibility, we focus to align ourselves with UN's sustainability cornerstones:

- **Gender equality:** Providing equal opportunities, fair pay, and creating a safe and inclusive environment where all employees have the chance to succeed
- **Good health and well-being:** Promoting the physical and mental health of our employees through safety programs, health initiatives and a psychologically safe work environment
- **Decent work and economic growth:** Ensuring fair labour practices, creating meaningful employment opportunities and supporting sustainable economic growth and local employment through ethical business operations
- **Reduced inequality:** Addressing social inequalities by providing equal access to opportunities, reducing wage disparities, and promoting diversity and inclusion in the workplace
- **Responsible consumption and production:** Developing sustainable production practices by using eco-friendly materials, reducing waste, and ensuring that our operations minimize environmental impact

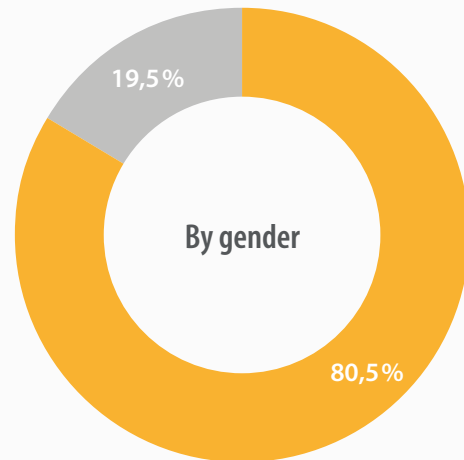


Lumon people 2024

Headcount

1059

● Women ● Men



Celebrating Lumon Careers



2 people to achieve

30 yrs

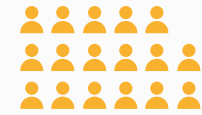
at Lumon



10 people to achieve

20 yrs

at Lumon



17 people to achieve

10 yrs

at Lumon

ENPS

53

global average from three different surveys

Sick leaves

3,3 %

Accident frequency rate

17.1*

Safety walks

1606

Safety observations

1615

* This value represents the accident frequency at Lumon. Balkonser's rate is to be included in the 2025 overall result.

Engaging and valuing our people

Lumon Group's eNPS developed positively in 2024, increasing by 8 points from the previous year. The eNPS result is the average of three surveys conducted over the course of the year. In 2024, a global leadership development training programme was launched to further enhance the abilities of team leaders to succeed in engaging their teams in daily work. In addition, we launched the Lumon digital learning platform in 2024, enabling our people to build their own role-based learning journeys.

Initiatives engaging our people in 2024

- ✓ Launch global leadership development program
- ✓ Launch of Lumon learning platform with more than 40 new and updated courses
- ✓ Extended employee survey



Spotlight:

On 17.5. we celebrated Lumon employees who have spent 10, 20, or 30 years at Lumon.

Safety at our core

Safety is a vital part of ensuring the well-being of our people. At Lumon Group, our **accident frequency rate dropped by nearly 30%** in 2024 – from 24.5 to 17.1. This significant improvement reflects our ongoing commitment to building a strong **safety culture**, where safety is consistently prioritized in everything we do.

Every employee plays a role in maintaining a safe workplace, regularly participating in **safety walks** and making **safety observations**. Our leadership team leads by example, each member completing at least **one safety walk per quarter**.

We're also seeing the results: **accidents causing absence decreased by 60%** last year. In total, **1,615 safety observations** and **1,606 safety walks** were completed – a clear sign of our collective dedication.

Training for safety

To strengthen this culture further, Lumon Group introduced **mandatory safety training modules** in 2024, required on an annual or bi-annual basis. Our **onboarding process** also places strong emphasis on safety and quality, with these topics covered extensively during the **first week** of every new employee's journey.

These efforts reflect a **shared commitment** across the organization to make safety a natural part of our daily actions and decisions.



Employee spotlight:

I value the open and safe working environment at Lumon. My colleagues and superiors are treated equally regardless of the tenure of employment, and the communication culture is open. //

Claudi Aguiló, Architect, DataAE, Barcelona, Spain

Spotlight: Profile line at Kouvola factory achieves accident-free year for the first time in history

The profile line at Lumon's factory in Kouvola has achieved an accident-free year. The profile line, with its heavy lifting and handling of bulky materials is prone to accidents. "This is a great accomplishment. One core element of this achievement has been the consistent improvement in cleanliness and orderliness, ensuring smooth flow of materials in the factory," notes Production Manager Matti Puhakka.

The importance of safety has been especially highlighted in past years. The entire team's involvement has been crucial in building the safety culture at Lumon. "With the profile line, we have determined the expectations that we have of each other, of ourselves, and of our managers in relation to safety. For example, we each take responsibility for completing our work thoroughly with quality in mind. We can also expect our manager to actively participate in safety work in the facilities, while from our colleagues we can expect availability and willingness to help. It has been important that we each understand our role in making the profile line as safe and efficient as possible," Matti adds.

Safety actions

- Improvement of cleanliness and orderliness of facilities with the support of the 5S model (sort – set in order – shine – standardize – sustain)
- Increasing safety observations and participation of employees in the building of safety culture
- Thorough walk-through of near-miss situations and accidents
- Improving training and awareness on safety topics

"Thank you to the team for this great achievement. Let's continue to ensure that we complete our work safely, and that we help our colleagues to do the same," Matti concludes.



Spotlight: Lumon Group's first internal audit of ongoing 5S project was conducted successfully at the Spanish factory in Antequera

The first internal audit of Lumon Group's extensive 5S -factory project was conducted at the Antequera production plant in Spain in November of 2024. The audit was extensive and was held by Lumon Group's Production Leadership Team.

During the day, the three areas of production were evaluated – production, maintenance, and logistics. The office areas of the facilities were also included in the audit.

The objective of the 5S project is to improve efficiency, quality, and safety, with the pillars of 5S standing for:

- **Sort:** Eliminate unnecessary items from the workspace
- **Set in order:** Arrange items so that they are easy to use, find and put away
- **Shine:** Keep the items and work area neat and clean
- **Standardize:** Create a consistent approach to tasks and procedures
- **Sustain:** Make a habit of maintaining the correct procedures

The aimed target level for the first audit was 3/5. This level was achieved. "The first audit marks an important milestone in the implementation of the 5S methodology, demonstrating how this project is already starting to have a positive impact on our working environment," notes Lumon Spain's Production HR Specialist Antonio Jose Maestre Carmona.

"The whole team is encouraged for growth next year in order to reach our 5S targets, and the everyone believes that achieving these results will strongly support our KPI's," continues Factory Manager of Spain, Benjamin Perez Gonzalez.



Visions for Lumon people – a statement from Lumon’s new CHRO

At Lumon, our success is driven by the dedication, expertise, and daily contributions of our people. As we look ahead, we remain committed to placing our employees at the center of our operations.



Moving forward, our people strategy is tightly connected to our business goals, guided by the strategic cornerstone of engaged people. It's about creating the conditions where everyone understands their role, feels empowered, and is equipped to succeed.

In 2024, we deepened our understanding of the employee experience through an extended employee survey. The survey covered key themes such as our values, psychological safety, well-being, vision, future trends, and strategy. Every employee had the opportunity to contribute directly to shaping Lumon's strategic direction for 2025–2030, reinforcing shared ownership and alignment across the organization.

Listening alone is not enough—we are committed to turning feedback into action. Tools like eNPS help us gather valuable insights, and our focus now is to embed those insights into daily operations and decision-making to drive continuous improvement.

Employee engagement also means supporting personal and professional growth. In 2024, we launched the Lumon digital learning platform, offering more than 40 new and updated courses. The platform enables employees to

build tailored, role-based learning paths that support development across functions and markets.

We also recognize that a great employee experience translates directly to a great customer experience. When people are supported through onboarding, career development, internal transitions, or returning from leave, they are better positioned to deliver value to our customers. That's why we're now defining what employee experience means for Lumon—translating it into clear, practical actions.

Leadership plays a key role in bringing this strategy to life. Team leaders are expected to provide clarity, support, and direction—not by making every decision themselves, but by enabling collaboration and drawing on the insights of those closest to the work. The launch of our global leadership development program in 2024 marked a significant step in building this capability across our teams.

A strong safety culture is also essential to engagement. In 2024, we achieved a nearly 30% reduction in accident frequency, thanks to consistent efforts like safety walks, observations, and improved training. These outcomes reflect the shared responsibility and daily commitment of our people to maintaining a safe working environment.

Our people strategy is progressing in clear phases: first by building a strong foundation, then by supporting global growth, and finally by securing long-term competitiveness. Through every stage, our direction stays the same—our people remain at the core of Lumon's future.

Sustainability across the value chain

In addition to Lumon's Partner Code of Conduct, which was established in 2023, Lumon Group has launched a "Know-Your-Partner" -concept, which seeks to further concretize the behaviour and practices we expect from those who do business with us. All our major suppliers received the Partner Code of Conduct and are expected to comply with it.







Governance

Lumon's good governance is guided by compliance with internal and external rules and regulations of ethical business. The foundation of our governance is based on Employee and Partner Code of Conduct and internal principles, policies and guidelines. Audits on compliance are conducted in alignment with the ISO9001 quality management standards, ISO14001 environmental management standards and ISO45001 occupational health and safety management standards. The audits are completed in Finland.

In the theme of Governance, we focus to align ourselves with UN's sustainability cornerstones:

- **Decent work and economic growth:** Ensuring fair and transparent leadership, protecting labor rights, and fostering a workplace that promotes sustainable economic practices
- **Responsible consumption and production:** Conducting regular audits and aligning with international standards to minimize environmental impact and operational risks
- **Partnerships for the goals:** Collaborating with ethical partners, ensuring responsible sourcing, and maintaining high sustainability standards across the value chain



Compliance

At Lumon, compliance is a key element of our sustainability efforts, ensuring that our operations align with ethical business practices, industry standards, and regulatory requirements. Our governance framework is built on integrity, transparency, and accountability, reflecting our commitment to responsible business conduct.

Regulatory compliance and governance

Lumon adheres to all applicable national and international laws, industry regulations, and sustainability frameworks. Our compliance practices are guided by:

- **Employee and Partner Code of Conduct** – Defining ethical business conduct and responsible decision-making
- **Quality and Safety Standards** – Compliance with ISO9001, ISO14001 and ISO45001
- **Anti-corruption and business ethics** – Maintaining zero tolerance for bribery and unethical business practices
- **Data protection & privacy** – Using GDPR and other applicable data security regulations to safeguard business and personal data
- **Risk management & audit processes** – Conducting regular internal and external audits to assess compliance, operational risks, and continuous development opportunities



Certifications

Lumon products are thoroughly tested, and the company's main factory is certified under ISO9001, ISO14001, and ISO45001 standards. Lumon's products are among the most tested in the glazing industry worldwide. In addition to receiving the CE mark, numerous tests, including hurricane, earthquake, and wind load tests, have been conducted on Lumon's products.

The products manufactured in Finland are produced according to processes based on the certified ISO9001 Quality Management System, ISO14001 Environmental Management System, and ISO45001 Occupational Health and Safety Management System. As Lumon's Research & Development operations are located at the main factory, these quality standards are applied globally.

In August 2023, Lumon underwent an audit by ThirdRock, a consulting company specializing in sustainability research and sustainability audits of organizations. The sustainability efforts of Lumon Group were evaluated based on their four-level system.

More information about our certifications can be found on our website.

www.lumon.com





Significant improvements on supply chain

In 2024, Lumon Group made several key investments to improve operational efficiency, sustainability, and employee satisfaction:

✓ Implementation of 5S system across all factories

The 5S methodology was rolled out across all Lumon factories to enhance safety, quality, productivity, and employee satisfaction. This systematic approach helps optimize workplace organization and reduces waste, creating a more efficient and safer working environment.

✓ Extensive workstation development

Significant investments were made in the development and improvement of workstations across the production facilities. These upgrades focus on enhancing ergonomic design and operational efficiency, ensuring that employees can work in a comfortable and productive environment.

✓ Safety enhancements at Kouvola profile factory

To further improve workplace safety, the Kouvola profile factory was equipped with canopies to provide additional protection for employees working outdoors. This investment helps reduce the risks associated with outdoor working conditions, enhancing overall safety.

✓ CO2 emissions reduction in Scope 1 and Scope 2

Lumon continues to make significant progress in reducing CO2 emissions in Scope 1 and Scope 2, in line with our sustainability goals. These efforts include ongoing investments in energy-efficient processes and the use of renewable energy sources to support our commitment to achieving zero CO₂ emissions in our own production by the end of 2025.

Leadership Team



Jussi Kinnunen
CEO, Board of Directors



Kimmo Hilliaho
Finland



Mikko Hilliaho
Scandinavia



Kristoph Karbach
North America



Javier Martinez
Spain & Emerging Markets



Antti Vänskä
Central Europe



Hanna van Enk
CFO



Risto Kivioja
Technology & ICT



Jouni Hilliaho
Production & Supply Chain



Jenni Lehtonen
CHRO *Effective March 2025*

Board of Directors



Tapani Kinnunen
Chairman



Camilla Grönholm



Mikko Hilliaho



Kimmo Hilliaho



Jussi Kinnunen



Antti Tiitola

More room for life — since 1978

Lumon is a Finnish, family-owned, international group focused on the design, sales, production and installation of frameless balcony facade and terrace glazing solutions. Lumon is a significant player in the European and North American balcony and terrace market.

Our product range includes balcony glazing, glass terraces, various balcony facade solutions, Lumon Glazing maintenance services and Visor blinds. Lumon's production facilities are located in Finland, Spain and Canada. In 2024, the Lumon Group had a turnover of EUR 149 million and employed more than 1000 people.

DESIGN
FROM
FINLAND

LUMON