



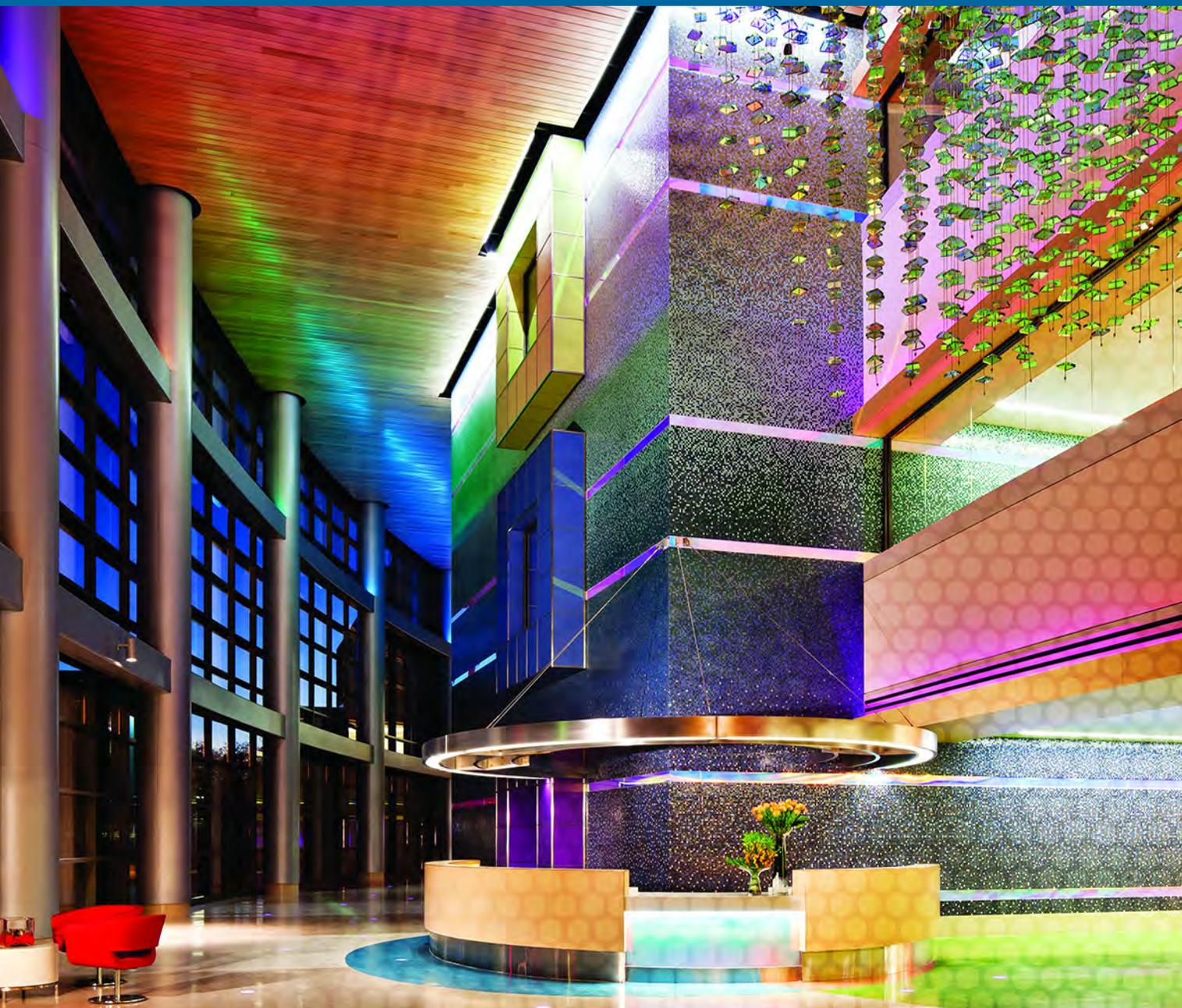
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ABOUT LUMILEDS

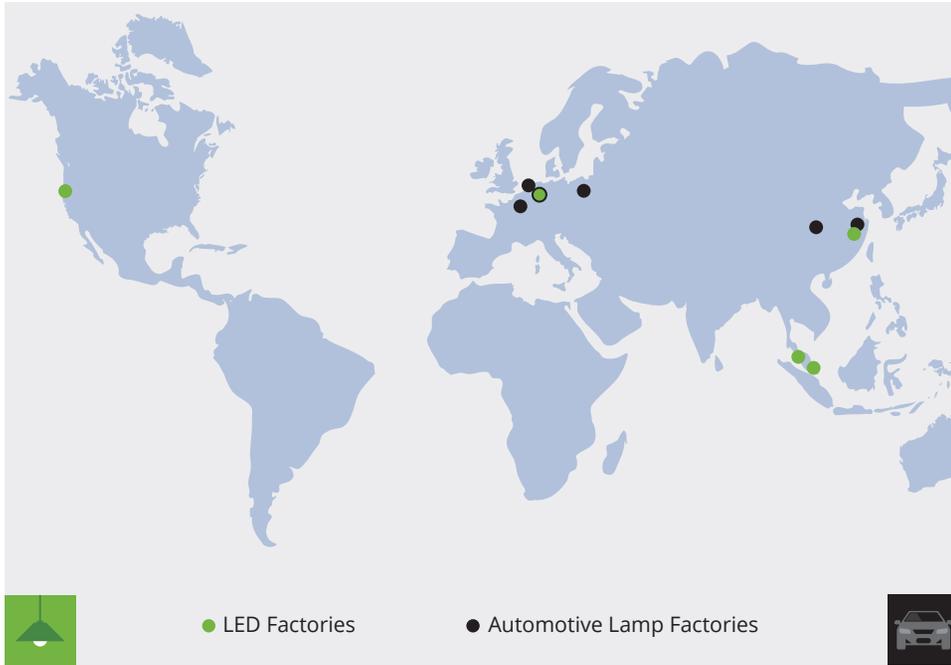


Technology advancements in lighting, especially LED, are creating tremendous opportunities in the field of light. Lighting solutions today not only need to work and to last, they need to give customers a competitive edge. Companies developing automotive, mobile, IoT, and illumination lighting applications require a partner who can collaborate with them to push the boundaries of light. With more than 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge.

As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation into everything it does. What's more, quality and reliability are guiding principles for Lumileds. We demonstrate this by maintaining control over materials, processes, and technologies and by helping customers engineer the best quality of light for their application to achieve the highest levels of performance. The best innovation happens when great minds work together. Lumileds acts with integrity as a trusted partner to its customers, honoring commitments, offering deep expertise, and going the extra mile—making the world better, safer, more beautiful—with light.

Lumileds has research and development (R&D) and manufacturing facilities in Asia, Europe and the United States and 30 commercial offices in the Americas, Asia, and Europe.

- **Five LED factories** in San Jose, United States of America (USA); Singapore; Penang, Malaysia; Jiaxing, China; and Aachen, Germany.
- **Five Automotive Lamps factories** in Aachen, Germany; Chartres, France; Songzi, China; Middelburg, the Netherlands; and Pabianice, Poland.



Lumileds organizes its business into **two business units** organized to serve key customer segments: The Automotive Business Unit and The LED Solutions Business Unit:

AUTOMOTIVE BUSINESS UNIT	LED SOLUTIONS BUSINESS UNIT	
AUTOMOTIVE PRODUCTS	ILLUMINATION PRODUCTS	SPECIALTY PRODUCTS
 Cutting-edge lighting solutions to motor vehicle manufacturers and suppliers.	 Products focused on architectural, entertainment, retail, horticultural, and sports lighting solutions.	 Products designed to provide cutting-edge solutions for Camera Flash, Display, Infrared (IR) and ultraviolet (UV) applications.

Lumileds at a Glance

± 7,000 Worldwide Employees

100+ Years of experience in lighting technology

10 Manufacturing Facilities

30 Countries of Operations

Corporate Headquarters Schiphol, the Netherlands

Operational Headquarters San Jose, USA

CEO Jonathan Rich

[Read more about Lumileds on our website.](#)



CEO MESSAGE

Dear Stakeholders:

Lumileds 2019 Sustainability Report arrives as the world continues to grapple with the challenges of a global pandemic that has underscored the need for us all to be attentive and respectful of our environments and to ensure we continue to act as responsible global citizens.

In this report, we acknowledge the magnitude of the climate crisis and how Lumileds continues to contribute to a low-carbon economy in our operations and the use of our products. As we light the world, we also protect it. 2019 was a transformative year for our business. Despite economic challenges in the industry, our scientists and engineers continued to increase product performance while achieving significant reductions in energy use and water consumption and we lowered our carbon emissions and waste. We are now going to raise the bar as we enter the next five years.

Due to these changes, 2019 will be the last year we report on our progress toward our 2015 environmental commitments. This is because the 2015 baseline to which we measure our progress no longer represents Lumileds today.

In light of these changes, we remain steadfast in our commitment to being an ethical and sustainable company. In 2020, we will reevaluate our sustainability strategy and disclosure priorities in the context of these recent changes to our business and the evolving economic landscape. As we look ahead, our priority issues will serve as the foundation for our next set of commitments, which we plan to roll out in 2021.

With the publishing of Lumileds 2019 Sustainability Report, I would like to commend our employees' efforts and dedication. Today, the threats to our environment are substantial. Our commitment to protect the environment, our people's safety, the resilience of our customers, and the well-being of our communities remains unwavering. On behalf of the Lumileds employees, I would like to thank our customers, suppliers, and other stakeholders for their support of our sustainability journey. Together, we are making our world safer, better, and more beautiful with light.

Regards,

Jon Rich

“Our commitment to protect the environment, our people's safety, the resilience of our customers, and the well-being of our communities remains unwavering.”

Dr. Jon Rich
CEO Lumileds





COVID-19



The COVID-19 pandemic has put fundamentals in perspective and demonstrated that ESG (Environmental, Social, and Governance) events can have significant implications for companies and the broader economy and society.

At Lumileds, we responded immediately to the COVID-19 pandemic and, throughout, have taken every possible action to ensure we can support our employees, customers, and communities to minimize the stress on both individuals and our business.

Health and Safety as our First Priority

With our commitment to health and safety, we have taken immediate ownership to ensure the well-being of our people across our sites. We deployed a strict global policy based on the principle that safeguarding employee health is our primary concern. The global protocol has been implemented by each site and complemented with additional measures in relation to specific local regulations or local health authority guidance. The global health advisory protocol originally issued in January has been updated a number of times to reflect the latest pandemic developments. We will continue to update our protocols as the pandemic evolves. In line with our global policy, a number of critical safety precautions have been implemented to prevent the spread of COVID 19. These measures are geared toward ensuring that those essential employees who must work in our plants and laboratories can continue to do so in a safe and healthy way.

Ensuring Business Continuity

Thousands of customers around the world depend on our products and business continuity is a critical concern. Ensuring a safe and healthy work environment has allowed our manufacturing sites to continue to operate – while at the same time maintaining world class, single digit parts per million quality levels throughout all the starts and stops of our factories. In parallel, supported by clear governance and effective information technology, we have been able to sustain our businesses with many of our employees working from remote locations. A significant number of our customers have experienced the same disruptions that affect Lumileds. Our manufacturing, operations and support teams have worked closely with customers to ensure that we do everything we can to minimize the impacts on their business.

Community Engagement

Lumileds employees have stepped up to respond – even in the face of uncertainty and adversity – to the most urgent needs within our communities:

- In Penang (Malaysia), Lumileds made a donation of masks, gloves and equipment to support front line workers in medical care, the police and essential food industry. Laptops were provided to support students’ online learning process during the Movement Control Order period.
- In Songzi (China), Lumileds made a donation to support the Songzi city local anti-epidemic events via the Red Cross.
- In San Jose (USA), Lumileds made a donation of masks and equipment to support local medical efforts.
- In Eindhoven (the Netherlands), Lumileds made a donation of masks, lab coats, glasses and gloves to local nursing staffs.

- Lumileds Middelburg site in the Netherlands donated masks, protection glasses and overalls to a local home healthcare provider. The site also used their 3D-printer for assembly of re-enforcement plastic parts for face shields to protect healthcare employees in hospitals.
- In Aachen (Germany), Lumileds made a donation of masks to local medical service.

Governance

COVID-19 has been a stress test for our governance mechanisms and a demonstration of their resilience in managing extreme events. In addition to our business-as-usual governance, we have implemented a number of crisis-response global and local task forces to enable us to respond rapidly. Our Leadership Team and task forces throughout the organization have been planning, working, and responding on a daily basis since January 2020. These teams have worked tirelessly to protect our employees’ safety while managing our business operations.

COVID-19 – Health & Safety Preventive Measures



IDENTIFYING OUR SUSTAINABILITY PRIORITIES



Lumileds has identified eight priority issues, which are the focus of our sustainability efforts.



Business Ethics



Efficiency and Manufacturing



Hazardous Substances



Climate Change and Carbon Footprint



Employee Health and Safety



Product Energy Efficiency



Product Responsibility



Talent Management

Lumileds prioritizes the environmental, social, and governance issues that have the greatest impact on our business and the highest importance to our stakeholders. Our 2018 materiality analysis identified eight priority issues, which remain the focus of our sustainability strategy:

- Business Ethics
- Climate Change and Carbon Footprint
- Efficiency and Manufacturing
- Employee Health and Safety
- Hazardous Substances
- Product Energy Efficiency
- Product Responsibility
- Talent Management

In 2020, we will review our sustainability strategy and disclosure priorities to reflect recent developments in our business and the evolving economic landscape. Our priority issues will serve as the foundation for our next set of commitments, which we plan to roll out in 2021. To view our [materiality matrix](#), see page 9 of our [2018 Sustainability Report](#).



Sustainability at Lumileds

At Lumileds, we seek sustainable solutions to help us push the boundaries of light. We are committed to a culture of engaged employees, striving for the highest standards of quality and responsibility in creating products that make life safer, better, and more beautiful.

We approach sustainability throughout every stage of our products' lifecycle:

Product Innovation – We contribute to the transition to a low-carbon economy through our energy-efficient product innovations. Our worldwide team maintains a singular focus on delivering products that consistently meet or exceed sustainability requirements by integrating environmentally efficient practices throughout R&D.

Responsible Operations – Our workplace and manufacturing practices prioritize the well-being of our employees and resource conservation. We value our employees and communities, and adhere to comprehensive Environmental, Health and Safety (EHS) management guidelines that help ensure safe, secure, and healthy working conditions globally.

Acting with Integrity – We act with integrity to uphold the practices expected by our customers, investors, regulators, and partners, and we also seek out suppliers that do the same. We have integrated these requirements into our business processes, our policies, and Code of Ethics to make these commitments actionable.



Our Contribution to the Sustainable Development Goals

We recognize that business has a key role to play in contributing to the achievement of the United Nations Sustainable Development Goals (SDGs). Lumileds has identified the following SDGs as those where we can make the most significant contribution:



Ensure healthy lives and promote well-being for all.

Lumileds supports SDG 3 through the development of high-quality lighting solutions that improve road safety as well as individual health and well-being by combining visual, biological, and emotional benefits of light.



Ensure access to affordable, reliable, sustainable and modern energy for all.

Lumileds supports SDG 7 through the development of affordable and energy-efficient LED lighting solutions that reduce energy demand.



Ensure sustainable consumption and production patterns.

Lumileds supports SDG 12 by continually increasing the energy and material efficiency of lighting products on a global scale while also reducing the impact of lighting production.



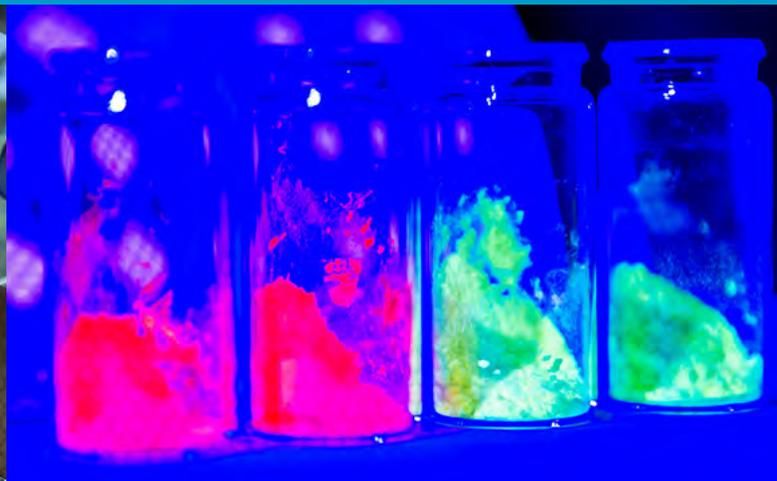
Take urgent action to combat climate change and its impacts.

Lumileds supports SDG 13 through the development of low-carbon LED lighting solutions and an ongoing commitment to reduce greenhouse gas (GHG) emissions in our operations.

Throughout this report, we have indicated the SDG linkages to our relevant topic areas.



OUR PRODUCT IMPACT



Impact 1: Addressing Climate Change

Impact 2: Improving Vehicle Safety

Impact 3: Light for Health and Well-being.



Take urgent action to combat climate change and its impacts.

3.93 million metric tons of CO₂ averted in 2019 on our customers' end through our LED products.



Ensure healthy lives and promote well-being for all.

One in three cars worldwide is equipped with Lumileds lighting.



Ensure healthy lives and promote well-being for all.

Lumileds has the most comprehensive illumination LED portfolio in the industry, with different package types each available in a wide range of spectra, enabling luminaire makers and lighting designers to design LED systems that deliver high-quality illumination while optimally supporting the circadian system.

Impact 1: Addressing Climate Change



Take urgent action to combat climate change and its impacts.

3.93 million metric tons of CO₂ averted in 2019 on our customers' end through our LED products.

Reducing Carbon Footprint Through Energy Efficient Lighting¹

Lumileds is facilitating a global transition to a low-carbon economy through energy efficient LED lighting solutions. An external 2017 market analysis by IHS Markit estimated that Lumileds LEDs reduced the total CO₂ emissions of lighting globally by an estimated 39 million metric tons, which is equivalent to a 0.11% reduction of the world's entire CO₂e footprint and roughly equivalent to shutting down 11 coal-fired power plants in the United States.

Compared to traditional incandescent lights, Lumileds LED products have reduced the amount of energy needed to produce light by a factor of 10. This tremendous efficiency gain reduces the carbon footprint of our products during their use-phase and saves customers money. We also reduce the impacts associated with the production phase by avoiding or minimizing the use of hazardous substances and by setting standards for supplier environmental performance.

Producing More Light with Less

For more than **100 years**, Lumileds has been pushing the boundaries of light through a series of firsts in the LED technology industry. We invented new classes of semiconductors, packages, and phosphor materials that have dramatically reduced the amount of electricity required to produce a lumen of light. This started with Lumileds work in the commercialization of LEDs at Hewlett-Packard in the 1960s and continued with industry-shaping LED applications and efficacy breakthroughs ever since.



¹ CO₂ reductions that can be attributed to the illumination market are calculated based on two reference products: LUXEON 3030 2D for the mid-power segment and LUXEON TX for the high-power segment. The energy efficiency improvements of the two reference products are extrapolated to the entire sales volume of 2019 for both the mid-power and high-power segments. CO₂ reductions are annualized based on an average hours of use of 2,000 hours per year and calculated compared to conventional lighting products. In comparison to conventional lighting a conservative saving of 49 percent is used. This analysis does not account for the impact of historical installs (LED sales prior to 2019) on CO₂ reductions in 2019.

Key Impact Indicators: Efficiency Improvements

- Called the workhorse LED, **LUXEON 3014 LED** provides 10% higher efficacy than previous generations.
- With an extra punch of brilliant light, **LUXEON CX Plus CoB** features a 14% flux improvement compared to previous generations.
- Two groundbreaking LEDs—**LUXEON CoB Core Range PW LED** and **LUXEON 3030 HE Plus**—enable the highest efficacy in the industry.
- Providing longer lasting streetlights, **LUXEON 5050 Square** features the industry's highest flux and efficacy and the **LUXEON 2835E 9V LED** achieves a 5% boost in efficacy.



Looking Ahead

Lumileds will continue to invest in innovation to bring more energy efficient products and solutions to market. In collaboration with our customers, we will continue to explore new applications of our technology to drive adoption of lighting innovations with the goal of reducing carbon emissions.

Impact 2: Improving Vehicle Safety



Ensure healthy lives and promote well-being for all.

One in three cars worldwide is equipped with Lumileds lighting.

Safeguarding Healthy Lives

Safety starts with seeing and being seen, and that's where top-quality lighting counts. Lumileds products—used in many applications, including one out of three cars globally—save lives by improving the quality and safety capabilities of vehicle lighting.

Lumileds is at the forefront of developing innovative lighting solutions for enhanced performance and improved safety. In addition to vehicle lighting, our products also enhance the illumination of city streets and active work areas, making them safer by increasing visibility and reducing hazards.

Delivering Quality Products

Product quality is a strategic business priority, core value, and a necessary ingredient for success at Lumileds. To keep people safe, we must ensure the quality and consistency of our products. This commitment—to deliver superior product quality extends to suppliers as well, who we choose based on shared standards for quality management and a willingness to collaborate on product innovation.

We demonstrate our commitment to quality by maintaining control over materials, processes, and technologies and by helping customers engineer the best quality of light for their application to achieve the highest levels of performance.

Enabling Technologies for Enhanced Vehicle Safety

Smart cars are ushering in a new era of travel that is cleaner, safer, and more efficient and affordable. One of our ambitions for these next-generation cars is to invest in technologies, such as matrix LED and micro-LED, that improve the driving experience while also increasing the safety of drivers. Digital headlighting will play a major role by enabling high resolution headlamp systems with enhanced new beam functionalities, as well as added lighting functionality for driver assistance and automated driving systems.

Lumileds sees also as part of its mission to bring those benefits not only to the innovative premium end of the market, but also to the full mainstream market. By furthering technological improvements and smart standardized, modular solution thinking, total system costs—or even total cost of ownership—can be reduced further to enable full global market adoption and maximized benefits to the market.

Key Impact Indicators: Vehicle Safety

- Developed by Lumileds, the latest **Philips Ultinon Essential LED** offers up to 50% more vision compared to the minimum legal standard for halogen bulb.
- **Philips RacingVision headlight bulb**, developed by Lumileds, has been named Auto Express Headlight Bulb of the year—awarded 4 years in a row—for providing more than 150% brighter light, translating into what can be a critical-safety advantage on the road.



Looking Ahead

At Lumileds, we are not only making vehicles safer today, we are also working on the future of vehicle safety in the era of autonomous cars. Before crossing the street, pedestrians intuitively make eye contact with drivers to confirm they have been seen. Autonomous vehicles will have to take over this important safety task without an active driver behind the wheel.

We are working with automakers to define and develop new solutions that communicate to pedestrians using lighting signals. In the same way turn signals, hazard lights, and brake lights communicate information today, autonomous vehicles will say “I see you” using Lumileds lighting technologies.

Impact 3: Light for Health and Well-being



Ensure healthy lives and promote well-being for all.

Lumileds has the most comprehensive illumination LED portfolio in the industry, with different package types each available in a wide range of spectra, enabling luminaire makers and lighting designers to design LED systems that deliver high-quality illumination while optimally supporting the circadian system.

Supporting Health and Well-being through Lighting

Human centric lighting supports human health, well-being, and performance by combining visual, biological, and emotional benefits of light. While the concept of human centric lighting—defined as designing lighting to reproduce key beneficial attributes of natural light—is not new, access to affordable, simple methods to implement it is a new development.

LUXEON Fusion

Our LUXEON Fusion platform technology takes human centric lighting to the next level by making white light selection available for mainstream adoption. When interior designers are lighting hospitals, restaurants, offices, or retail venues, they often wish to be able to adjust color temperatures and light levels throughout the day to complement a changing ambient environment to improve health and happiness.

Key Impact Indicators: Light for Health and Well-being

- **LUXEON Fusion** technology enables the next step in human centric lighting, providing the option to adjust light levels throughout the day to complement a changing ambient environment.
- Our **LED systems** are designed to not only replicate natural light, but also to engineer light that provides healthful, manageable, full-spectrum illumination.
- Ultimately, the goal of our **LUXEON LEDs** is to improve health and happiness by better tuning the light we control in order to complement the light that comes through windows.



Looking Ahead

Lumileds is working with lighting designers and experts in sensors and controls to develop the next generation of light engines that provide dynamic control over not only intensity and spectrum but also the direction of lighting. This technology will enable lighting installations to perform better on critical human-centric lighting metrics such as light uniformity and contrast, glare, and retinal melanopic illuminance. In addition, we are also working on future releases of our LUXEON Fusion platform.



OUR ESG DISCLOSURES



We recognize the urgency with which society must act to mitigate the threat of climate change. By developing lighting solutions that reduce energy use and greenhouse gas (GHG) emissions during their use-phase, we continue to promote the transition to a low-carbon economy. We also look for ways to reduce impacts beyond our four walls by working with our suppliers and encouraging them to reduce their environmental impact. Because we know that our manufacturing operations are the primary contributor to our own environmental footprint, we pursue comprehensive programs to improve the efficiency of manufacturing, lower energy and water use, reduce waste, and reduce negative impacts from chemical processes. And we do so in a way that meets or exceeds all environmental laws and regulations.



Take urgent action to combat climate change and its impacts.

Lumileds supports SDG 13 through the development of low-carbon LED lighting solutions and an ongoing commitment to reduce GHG emissions in our operations



Environment

Reviewing Our Environmental Targets for 2020 and Beyond

As part of making the world better, safer, and more beautiful with light, we are committed to building a more sustainable future—both through our products and the way in which we operate. In 2015, Lumileds launched a five-year sustainability target program overseen by a sustainability board comprised of executive team members from all corporate functions. The environmental objectives are based on deducing the environmental footprint of the company's operations.

In view of cyclical developments in the lighting segments we serve, the COVID-19 pandemic, and structural changes in our product mix, we will evaluate our environmental targets for 2020 and beyond to ensure they continue to provide a meaningful direction to our continual improvement efforts. As such, 2019 will be the last year we report on our progress toward our 2015 commitments.

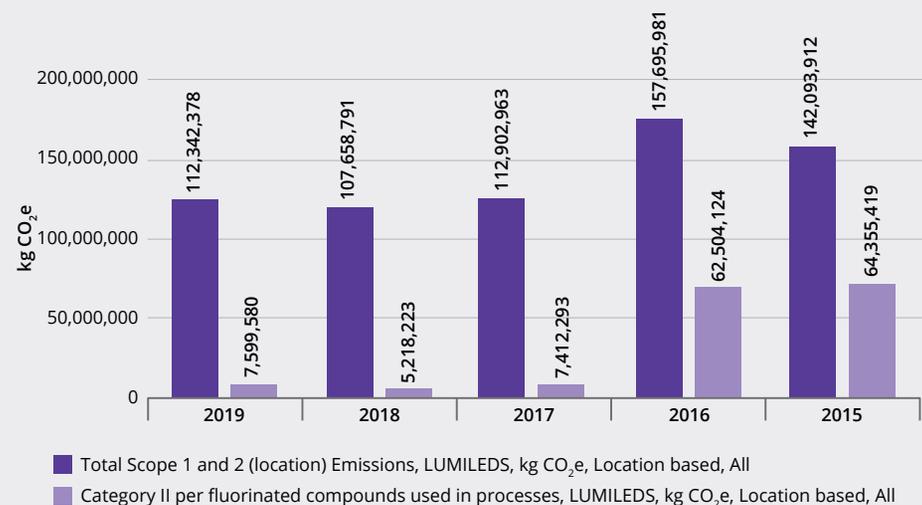
Lumileds Environmental Targets

OUR COMMITMENT	2019 RESULT	YEAR-OVER-YEAR CHANGES
Operational Carbon Footprint		
Reduce the carbon footprint of our operations per unit produced by 20% (CO ₂ e per unit produced), compared to 2015 baseline	<p>Lumileds has significantly reduced its carbon footprint compared to the 2015 baseline—and we have reduced our normalized emissions by 25% compared to 2015.</p> <p>In 2016, we implemented 3 new emission reduction units in Singapore, which reduced the impact of PFCs by more than 90%. This initiative was the main contributor to reducing our emissions.</p>	Our operational footprint increased in 2019 by 4% compared to 2018, mainly driven by a temporary lower efficiency of our emissions abatement systems.
Operational Energy Consumption		
Reduce energy consumption in our operations per unit produced by 20% (MWh per unit produced), compared to 2015 baseline	<p>All sites are contributing to this target. Combined, these projects are expected to produce annual savings of more than 12.1 gigawatt hours (roughly equivalent to 4.7% of Lumileds total energy consumption).</p> <p>We have currently reduced our normalized energy consumption by 13% compared to 2015.</p>	Energy consumption decreased in 2019 by 9% compared to 2018, mainly driven by lower production volumes and energy saving projects.
Operational Water Intake		
Reduce water intake in our operations per industrial output by 20%, compared to 2015 baseline	<p>All sites are contributing to this target. Combined, these projects are expected to produce annual savings of more than 42,500 m³ (roughly equivalent to 3% of Lumileds total water consumption).</p> <p>We have currently reduced our normalized water consumption by 21% compared to 2015.</p>	Water consumption decreased in 2019 by 18% compared to 2018, mainly driven by lower production volumes and water saving initiatives.
Recycled Waste		
Recycle 85% of our total waste	<p>Recycling is the dominant disposal method for waste at Lumileds manufacturing sites. The recycling rate is tracked and defined as total waste delivered for recycling as a percentage of the total waste. The recycling rate for 2019 was 67% - and 79% if incineration with energy recovery is also taken into account.</p>	In 2019 total waste decreased by 14%, mainly driven by lower production volumes and waste reduction initiatives.

Reducing the Climate Impact of Our Operations

The majority of our GHG emissions are released through the energy used at manufacturing sites and the release of perfluorinated compounds (PFCs) in our manufacturing.

Lumileds GHG Emissions and Perfluorinated Compounds, 2015–2019



We have implemented several energy reduction initiatives, which will result in significant GHG emission reductions. See “Improving Operational Efficiency” for more detail on these initiatives.

PFCs serve two important roles in the semiconductor manufacturing process—chamber cleaning and plasma etching. Although we limit PFC use, its high potency as a GHG compared to CO₂ makes this compound a significant emissions contributor. Notably, our emissions from PFCs have drastically reduced in the past years (see “Lumileds GHG Emissions and Perfluorinated Compounds” table). This reduction is due to the implementation of emission reduction units in our Singapore facility. These emission reduction units reduced the GHG impact of our PFCs in Singapore by more than 90 percent.

Greenhouse Gas Emissions at Manufacturing Sites

GREENHOUSE GAS EMISSIONS	2019	2018	2017	2016	2015
Total scope 1 emissions (CO ₂ e metric tons)	16,552	15,651	18,984	73,637	73,828
Total scope 2 emissions (CO ₂ e metric tons)	95,790	92,008	93,919	84,059	68,266
Total emissions	112,342	107,659	112,903	157,696	142,094

Improving Operational Efficiency

We continue to reduce our operational impact by pursuing comprehensive programs to improve the efficiency of manufacturing, lowering energy and water use, reducing waste, and reducing negative impacts from chemical processes.

Improving Energy Efficiency

Energy use is our most significant operational impact area. The energy that we use releases carbon emissions and has the potential to pollute local air. To mitigate this impact, we are focused on reducing energy use through internal efficiency programs, and we have set company-wide targets for energy-use reduction.

Energy Use at Manufacturing Sites (MWh)

ENERGY SOURCES	2019	2018	2017	2016	2015
Electricity	203,162	222,428	227,930	223,726	217,103
Natural Gas	42,358	48,736	54,797	52,110	44,221
Other	9,284	10,152	10,216	14,371	12,712
Total	254,804	281,316	292,943	290,207	274,036

Energy Efficiency Programs

Driven by our corporate target to reduce normalized energy consumption, all our manufacturing sites implemented projects to reduce energy consumption in 2019. In total, these projects are expected to produce more than 12.1 gigawatt hours of annual savings, equivalent to approximately five percent of Lumileds total energy consumption. Examples of projects achieving energy savings are provided below.

- **Heating, Ventilation, Air Conditioning (HVAC)**

In Aachen, Germany, the central heating system supplying hot water to heat the building has been replaced by smaller more efficient heating systems with the latest technology, resulting in reduced electricity consumption of 1,250 MWh per year.

In Penang, Malaysia, chillers were optimized so that one chiller could be switched off during weekends, reducing electricity consumption by 493 MWh per year.

- **Compressed Air Projects**

In Pabianice, Poland, our facility implemented a constant monitoring system for compressed air usage and installed electro-valves with shut-off consumption, reducing electricity required for compressed air production by 500 MWh per year.

In Penang, Malaysia, the compressor configuration was optimized for the compressed dry air system, leading to reduced electricity consumption for compressed air by 925 MWh per year.

- **Demand Optimization Projects**

Several sites implemented projects to modify energy demand according to the production schedule, leading to reduced electricity consumption by equipment shut down and load shifting by more than 8,000 MWh per year.

Conserving Water

We place a high priority on continually reducing our water consumption. Our larger manufacturing sites have wastewater reclamation systems that treat and recycle wastewater from production to then be used again in production, cooling towers, and scrubbers. Our company-wide water reduction target to reduce normalized water consumption is driving the more water-intensive sites to find new ways to reduce water use. For example, once installed, a project in Singapore will reduce the deionized (DI) water recirculation amount in the DI system, which results in a decrease in fresh incoming water consumption by roughly 24,000 m³ per year.

Ensuring Environmental Compliance

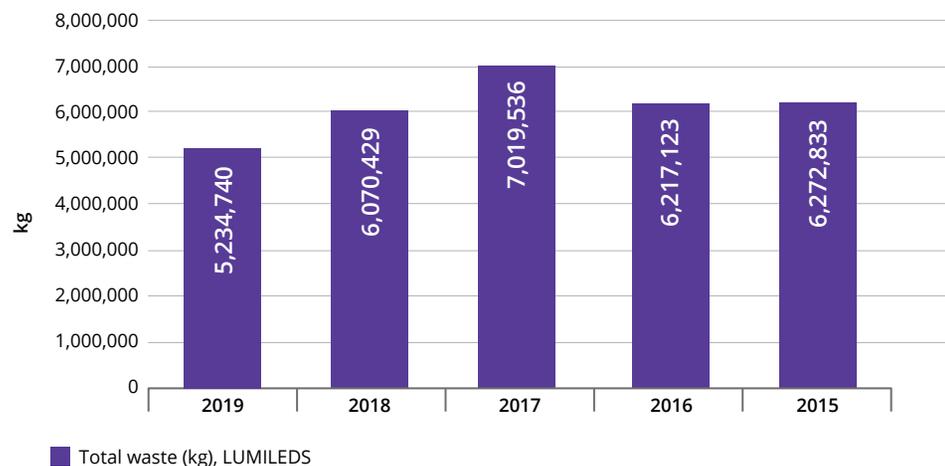
To reduce our environmental impact, be compliant with EHS requirements, and continually enhance EHS performance, all Lumileds manufacturing sites are certified to the ISO 14001:2015: Environmental Management Systems standard. In addition, our site in Aachen, Germany is certified to the ISO 50001:2011: Energy Management Systems standard.

Reducing Waste

Lumileds has a company-wide target to increase the recycling rate of the total waste generated and reduce the amount of waste delivered to landfill. Our manufacturing sites generate hazardous and nonhazardous waste streams, in addition to office and general waste. Most of the waste is related to the manufacturing of our products. Recycling is the dominant disposal method for waste at our manufacturing sites. Our recycling rate in 2019 was 67% - and 79% if incineration with energy recovery is also taken into account.

We implement projects focused on optimizing the segregation of waste streams and training employees to minimize the mixture of recyclable and non-recyclable waste. Manufacturing sites are also looking for opportunities to divert waste from going to landfill. As depicted by the following chart, our total waste at Lumileds decreased by more than 800,000 kg in 2019.

Lumileds Total Waste (kg), 2015–2019

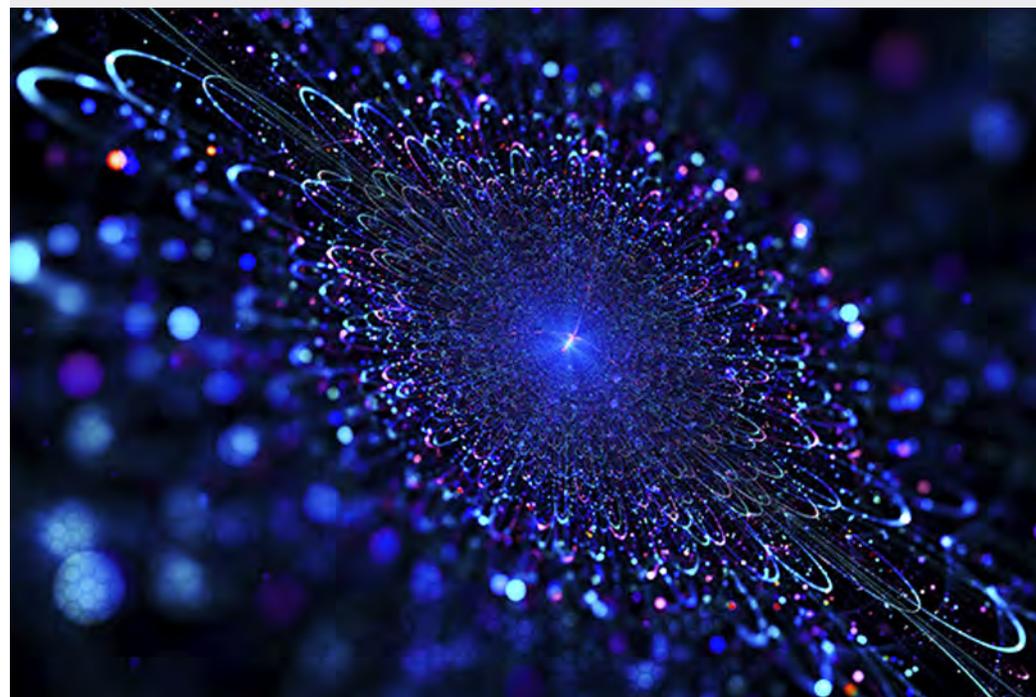


Reducing Hazardous Substances

Wherever possible, we work to minimize or eliminate hazardous substances from our products. Our policies and operations frequently go beyond existing industry-related hazardous substances regulations and standards. To make our commitment to reducing hazardous substances transparent to stakeholders, we publish and regularly update the Lumileds List of Regulated Substances. We require all suppliers to comply with it as a condition of doing business with Lumileds. The list is derived from stakeholder consultations, scientific evidence of hazards, and awareness of existing and possible future legislative requirements.

Lumileds Environmental Policies and Documents

- [Environmental, Health and Safety Policy](#)
- [ISO 14001:2015 Certification](#)
- [REACH Position Statement](#)
- [Regulated Substances List \(RSL\)](#)
- [Supplier Sustainability Declaration \(SSD\)](#)



Looking Ahead

We are steadfast in our commitment to further efficiency improvements on energy, water, and waste. Several new improvement projects are identified for energy, water, and waste, and these projects will be implemented throughout 2020.



Employees

We strive to make the world a better, safer, and more beautiful place for everyone. This starts internally with our employees. Our first priority is to provide safe and healthy workplaces for our employees, contractors, customers, and visitors, as well as strive for an accident-free workplace. We also acknowledge that in order for us to continue to sustain our top performance, we need to recruit and retain the best talent. We believe that a values-based culture, supportive management and a focus on diversity are key ingredients for us in shaping a work environment that will attract, engage, and retain talented employees.





Investing in Talent

Learning@Lumileds

We have introduced Competence Management as part of our development planning activities.

Competence management is the process to assess, develop and monitor job-specific skills sets. In this process, each employee self-assesses and is assessed by their manager on a set of values-based competencies. The outcome forms the basis for development planning – adding specificity and rigor to this important process.

To actively support the execution of employees' development plans, we offer hundreds of relevant courses through our learning management platform. On average each month, approximately 500 courses are completed. For key subjects (e.g., related to our values, products, compliance), we offer targeted curricula.

Focusing on the Employee Experience

We engage and communicate with our employees in several ways, including video and web-based media, print, and face-to-face events. Company updates are regularly shared through our intranet—THE HUB—which promotes awareness of business results, customer wins, and large internal initiatives. It promotes engagement, recognition, and role modeling by featuring employee stories at all levels, and it also serves as an educational tool about the Lumileds business. We feature sites so that employees can understand the diversity of our locations and people.

Our recognition program awards and celebrates outstanding employee achievement and contribution. Recognition is most often offered for project completion, outstanding results, living Lumileds values, and company seniority. We have different award levels, each with a different monetary reward. We also have an annual quality improvement competition where employees from across Lumileds share quality improvement ideas, and a jury of senior-level business leaders selects the winners.

Strengthening Diversity

Lumileds is guided by a set of ethical standards, which underscores our commitment to build a strong and diverse slate of candidates. We believe talented and diverse employees provide fresh perspectives and strategic thinking, better equipping us to understand global markets.

More than a Job: Lumileds Employee Value Proposition

Lumileds operates in markets where there is fierce competition for talent. Employees want to be proud of where they work, and they want the company's culture to reflect their values. To that end, we designed Lumileds Employee Value Proposition (EVP), highlighting the areas where we excel as an employer.

Our EVP describes what makes it attractive to work for Lumileds, and it forms the basis for what and how we communicate with current and prospective employees. We leveraged People Survey data and interviewed employees around the globe to make certain that our EVP both reflects what is important to our employees and is perceived to be true.

The key attributes of our new EVP are:

- A meaningful and rewarding place to work where you can grow
- Innovative products
- Managers that make a positive difference to employee performance and growth
- A work atmosphere/culture that radiates integrity and diversity and feels empowering
- Competitive pay and benefits

We continue to use these attributes in our employer branding and in other Human Resources initiatives.



Looking Ahead

The recent events in the US related to racism have prompted us to recommunicate our belief in equality and call for empathy and compassion for one another. We continue to look at how Lumileds can do more to remove bias, promote inclusion, and make sure that our employees truly have an equal opportunity to pursue their careers.



Promoting Health and Safety

We aim to foster an injury prevention culture where employees, managers, and leadership have the courage to act on “potential” injuries before they occur. To support these ambitions, we conduct risk assessments, host safety trainings, oversee safety improvement programs, and make ongoing adjustments to processes and operations. Our efforts are supported by the OHSAS 18001-certified Lumileds Occupational Health and Safety Management System. This externally certified system is implemented at all manufacturing facilities. The management system ensures a structured approach on key safety topics such as hazard/risk assessment, operational controls, training, communication, governance, and management review. These topics are assessed through internal and external safety audits.

Goals	Progress in 2019
Reduce lost workday injury cases to 0.15*	In 2019, our lost workday injury case rate was 0.16.

*Percentages are based on cases per 100 full-time equivalent employees (FTE).

Our Total Recordable Case rate decreased from 0.26 in 2018 to 0.23 in 2019 (measured as total number of recordable cases per 100 FTE at manufacturing sites).

Promoting a Healthy Workforce

To support the health and well-being of employees, our sites around the world manage a range of initiatives, including:

- Health talks by experts on topics such as women’s health, better sleep, ergonomics, and stress management
- Periodic dedicated days or weeks to promote a healthy lifestyle
- Campaigns offering employees access to various health screenings

Reducing Safety Risks Through Continual Improvement

In 2019, a total of 15,629 injury prevention actions were performed, including:

- 9,555 behavior observations with feedback provided
- 4,583 at risk conditions observed and addressed
- 1,391 near misses reported and action taken

Changing Behaviors for a Safer Workplace

Most occupational injuries have their origins in at-risk and unsafe behaviors. To address this, we work to reinforce a company-wide culture where everyone is responsible to proactively identify, address, and reduce unsafe actions. To support this, Lumileds created Behavior Based Safety (BBS) programs that foster positive safety behaviors. BBS observations create a culture where employees openly look out for themselves and each other and discuss how to do their jobs more safely.

Safety Training

To ensure all employees have the right skills and knowledge to do their job safely, as well as minimize the risk of injuries to themselves and colleagues, we provide trainings at all of our sites. Our training programs range from general safety trainings for employees to job-specific safety trainings and specialized trainings.

Examples of specialized trainings carried out in 2019 include:

- First aid trainings
- Fire protection trainings
- Behavior Based Safety (BBS) Trainings on how to conduct BBS assessments
- Log-out Tag-out (LOTO) trainings on electrical safety
- Machine safety trainings
- Chemical safety trainings

Advancing Safety in 2019

Each site has a safety plan in place with initiatives aimed at specific risks and opportunities identified locally. Examples of initiatives undertaken in 2019 include:

- Safety culture surveys to capture employee feedback and identify areas of improvement to enhance our safety culture.
- Machine safety levels were upgraded by several sites, implementing measures focused on ergonomics, noise, and guarding.
- Slip, Trip, and Fall Prevention Programs, focusing on the safe use of handphones while walking.

Looking Ahead

In 2020, we will be looking to identify further continual improvement opportunities in the area of health and safety. For example, we will be completing the conversion to ISO 45001 (the occupational health and safety management system standard replacing OHSAS 18001).



Communities

The activism and passion of Lumileds employees on the ground is what transforms our community strategy into real-world results. We are committed to building a culture that enables employees to apply their time and talents to the issues they care most deeply about, and to offering programs that maximize volunteer efforts.

Supporting Community Initiatives

Collaboration with our stakeholders is one of our core values. Local community engagement activities are reported centrally and are shared on our global intranet, THE HUB, to foster awareness and recognition for these initiatives.

In total, more than 1,300 employee volunteer hours were dedicated to company-sponsored community and other charitable activities during 2019. Most of these activities were partnerships with local non-governmental organizations. Examples of community engagements undertaken in 2019 include:

- Yearly school supply drive for back to school season, partnering with Farmington Public Schools to donate a wide variety of school supplies (Farmington Hills, USA).
- Donations for schools, hospices, orphanages, and gifts for children (Pabianice, Poland).
- San Jose employees volunteered with Family Giving Tree, sorting through donated gifts for low-income San Francisco Bay Area families (San Jose, USA).
- Packing and distribution of Chinese New Year Gift in Community Outreach Program (Singapore).



Hear Me Talent Program

Lumileds Malaysia (Penang) has launched a project called the Hear Me Talent Program, which focuses on hiring for disabled people (deaf category). The objective of the program is to create inclusiveness, provide a diversified environment, and to be a resource to others. The program provides employment opportunities to individuals with disabilities (deaf category) by giving them an equal chance to experience a career in manufacturing.

Together, with various private and government agencies, such as Penang Deaf Association (PDA), Penang Labor Office, Penang Social Welfare Department, Flextronics Malaysia, and Jobstreet.com, we have made the journey of impossible to possible. In addition to the HMT program, Lumileds Penang improved site infrastructure to enhance the visibility of emergency alarm and lighting, as well as additional evacuation trainings conducted specially for these employees.

Lumileds Malaysia has been recognized by the Penang State government for the “Highest Number of Special Talent Hiring in Penang Island.”



Looking Ahead

In 2020, in reaction to the impact of the COVID-19 pandemic in the communities where we operate, we have been actively setting up [various initiatives](#).



Governance

Lumileds' Leadership Team is guided by our corporate values of innovation, quality, execution, care for customers, collaboration, and integrity, as well as our Global Code of Ethics. These standards also drive the expectations that we set internally for employees and externally for our business partners.

Our company values are at the core of Lumileds' culture. They serve as our compass and describe how we want to shape the culture of our company. These values guide how we work with our colleagues, customers, business partners, and communities.

Our values are not only descriptions of operational procedures or statements, they are reflections of our common principles. Together with our Global Code of Ethics, our values serve as a guide to do the right thing and to take actions in the best interest of our company, customers, our employees, and the world.



Managing Our Business Responsibly

Sustainability Governance

Our ability to deliver on our sustainability commitments many years into the future requires that we establish a strong governance framework. With that in mind, Lumileds has formed a Sustainability Board that provides executive-level governance for the Sustainability Program at Lumileds. The Sustainability Board sets the vision for sustainability at Lumileds, is responsible for our sustainability and EHS policies, and identifies areas for improvement. The Sustainability Board consists of Executive Team members representing Operations, R&D, Quality, Human Resources, and Legal functions.

Lumileds has a Sustainability Manager at the corporate level who oversees management of the ESG issues disclosed in this report. The Sustainability Manager reports into the Quality Function and provides periodic updates (at a minimum of three times per year) to the Sustainability Board.

Each manufacturing site has an EHS Management Function and EHS Manager(s). The site EHS Manager(s) report into the Operations Function. The Sustainability Manager and the site EHS Managers communicate regularly to align on progress toward our corporate sustainability targets.

Global Code of Ethics

Lumileds Global Code of Ethics serves as an ethics guide for employees and stakeholders and supports commitment to working in alignment with the highest ethical standards and our global values. The Code has been translated into multiple languages and is integrated into mandatory new hire trainings.

Lumileds believes it is important to cultivate an open, transparent culture among our employees, allowing everyone to express, in good faith, any concern. We have a dedicated 24/7 Speak Up line and an online platform where everyone can express concerns, report complaints, and ask questions.

Everyone should be able to raise concerns without fear of retaliation, knowing that their concern will be treated confidentially, seriously, fairly, and promptly. Most of the time, this can be done by speaking with a direct manager, the local Human Resources representative or the Legal and Compliance department. If an employee prefers to remain anonymous, they can contact the Lumileds Speak Up line.

Calls to the Speak Up line are toll free and available 24 hours a day in all local languages. Telephone numbers for the Speak Up line are available on posters throughout Lumileds sites, on the Lumileds intranet, and on lumiledsintegrity.com. The Speak Up line serves as a whistleblowing line and is managed by an independent company. All reports are reviewed by our Global Compliance Director and employees can be assured of objective treatment. The Speak Up line is operated in compliance with data privacy requirements and reports can be made anonymously (unless local law prescribes otherwise).

Ethics and Employee Training

Every Lumileds employee is educated on working in an ethical, honest, and compliant manner and he or she has received the message that Lumileds will not compromise when it comes to ethical principles. To ensure this ethical standard is communicated accurately, Lumileds has trained all employees on fair competition, gifts and entertainment standards, anti-bribery policies, avoiding conflicts of interest, complying with global trade restrictions and export controls, protecting data/IP/other property, as well as Lumileds' view on taking care of people and the planet. In 2019, all new employees were trained in the Code of Ethics, and all existing employees are required to take an annual refresher course. Certain qualified employees are required to take subject matter-specific trainings as well.

Protecting Data Privacy

At Lumileds we are committed to treating the personal data of our business partners, customers, and employees with respect. We are keen to collecting personal data in alignment with our business purposes and the relevant lawful basis, and to protecting it appropriately. We consider it important to demonstrate our commitment to data protection and have, as part of our Data Protection Compliance Program, filed Binding Corporate Rules with the Dutch Data Protection authorities.

Goals	Progress in 2019
85% supplier compliance with the Supplier Sustainability Code of Conduct by 2020	The compliance rate (number of suppliers with a valid audit without non-conformities/total suppliers in the program) is 86%.



Responsible Supply Chain

Our core value of integrity extends externally to our supply chain where we set strict standards for our suppliers. As a condition of doing business with Lumileds, we require suppliers to share our commitment to responsible business practices.

We enforce this commitment through the Supplier Sustainability Declaration policy that sets standard labor, environmental, ethics, and health and

safety requirements for suppliers. Our Supplier Sustainability Declaration is based on the Responsible Business Alliance (RBA) (formerly the Electronic Industry Citizenship Coalition) Version 6.0 (2018). In accordance with the California Supply Chain Transparency Act (SB 657), the Supply Chain Transparency statement provides information on our efforts to address the issues of slavery and human trafficking in the supply chain.

Examples of supply chain actions in 2019:

- Training and capacity building**
 In 2019, 26 training sessions were held for suppliers on the Supplier Sustainability Code of Conduct. We divided on-site training into two parts: one part is for sustainability management awareness to suppliers' top management and another part is for capacity building to EHS / sustainability team.
- Audit**
 In 2019, 64 audits (initial, surveillance, and resolving audits) were executed at supplier sites. Most audits were executed by third-party audit companies.
- Audit follow up**
 After an audit, a corrective action plan is agreed to with the supplier. Lumileds works with suppliers on the improvement areas identified in the audit and follows up to provide coaching to suppliers until the non-conformities are corrected and verified. This also includes opportunities for improvement that are not identified as a non-conformity and which can be identified through overall trends observed in the audit program.
- Supplier improvement**
 Specific focus areas are defined based on the audit findings, which are integrated in the training sessions.

Lumileds Ethics and Supply Chain Policies and Documents

- [Supplier Sustainability Declaration](#)
- [Conflict Minerals Position Statement](#)
- [Conflict Minerals Declaration \(CMRT\)](#)
- [Transparency in Supply Chains Statement](#)

Holding Suppliers Accountable: Monitoring and Audits

To support supply chain responsibility efforts, Lumileds carries out selective monitoring by means of supplier self-assessment questionnaires and third-party audits to ensure suppliers fulfill their commitment. The selection of a supplier in the self-assessment or audit program depends on the risk profile of the supplier. A supplier's risk profile includes the country risk as assessed by external sources.

If a supplier is selected to be in the scope of the audit and accepts, the supplier will be enrolled in a three-year audit cycle. The audits cover all the requirements of the RBA Code of Conduct. The audit identifies any code violations for which a corrective action plan to remedy the violations is agreed upon with the supplier. Lumileds works with the suppliers on the improvement areas that are identified in the audit and follows up with coaching to suppliers until the non-conformities are corrected. This also includes opportunities for improvement that are not identified as a non-conformity, and which can be identified through overall trends observed in the audit program.

Key non-conformities identified and corrected as part of the supplier sustainability program in 2019 were:

- Fire exit & escape route (signs, quantity, emergency lights)
- Environment certificates
- Chemicals storage and eye washing facility
- Weekly working hours and 1 day rest per 7 days
- Machine safety
- Personal protective equipment
- Emissions (waste water, gas, etc.)
- Building structure & fire safety
- Benefits (social insurance/leaves)
- Occupational health check

Conflict Minerals

Conflict minerals are natural resources that ethical companies seek to avoid purchasing because they have been extracted in conflict zones and are used to finance and perpetuate armed conflicts. The most prominent contemporary example has been in the Democratic Republic of the Congo (DRC), where various actors have profited from mining while contributing to violence and exploitation during wars in the region.

The four most commonly mined conflict minerals are tin, tungsten, tantalum, and gold. Each of these metals are used in the manufacturing of LEDs. As outlined in our [Conflict Minerals Position Statement](#), Lumileds is committed to not purchasing raw materials, subassemblies, or supplies that contain conflict minerals that directly or indirectly finance or benefit armed groups. Lumileds also asks our suppliers to establish their own Conflict Minerals Policies and to only use validated smelters. Further, Lumileds supports organizations, including the Responsible Minerals Initiative, that seek to prevent minerals that directly or indirectly finance the DRC conflict from entering the electronics supply chain.

Conflict Free Smelters and Refiners

The [Responsible Minerals Initiative](#) helps companies make informed choices about responsibly sourcing minerals in their supply chains. The organization conducts independent third-party audits of smelter and refiner management systems and sourcing practices to form a comprehensive list of conformant companies. Lumileds uses this list to assess our suppliers and we will not work with any that use non-conforming smelters and refiners.



Looking Ahead

Activities related to data protection maintain an area of focus on our compliance roadmap given the continuous developments within the field.

We are closely monitoring the impact of COVID-19 on our responsible supply chain programs and mitigating risks accordingly.



Stakeholder Engagement

As we continue to innovate and challenge ourselves to create value for our business, we recognize stakeholders are key to our ongoing success. To ensure our priorities continue to align with current stakeholder expectation, we engage the stakeholders most material to our business success and most impacted by our activities. We continuously interact with them through a wide range of initiatives and on topics specific to the interests of each group. A sampling of stakeholder interactions undertaken in 2019 are provided below. Some of these interactions are discussed in further detail throughout this report.

STAKEHOLDER	INTERACTION	DESCRIPTION/EXAMPLE
Communities	<ul style="list-style-type: none"> Local community outreach projects 	Our manufacturing sites engage in community outreach activities to build relationships with a broad range of local partners. As an example, see our Penang case study , Hear Me Talent Program .
Customers	<ul style="list-style-type: none"> Customer meeting Joint research and development 	Care for our customers is one of our core values. Everything we do is with our customers in mind—meeting their existing requirements and lighting needs, plus anticipating their future demands. To that end, we listen closely for insights that serve as the catalyst for breakthrough solutions and services.
Employees	<ul style="list-style-type: none"> People Survey Employee newsletters Intranet platform "THE HUB" 	We have a range of initiatives to engage with our team members on an ongoing basis. See section Focusing on the Employee Experience for more information.
Investors	<ul style="list-style-type: none"> Board meetings Participation in portfolio network events 	We have intensive dialogue with our investors through Board of Directors Meetings. On the topics of Environmental, Social and Governance (ESG) performance we regularly interact with Apollo through numerous touchpoints, including the ESG Reporting Program, ESG Webinars, and ESG Digests.
Regulatory bodies	<ul style="list-style-type: none"> Engagement through Industry Associations 	We are active in several industry organizations where we partner with peers and engage policymakers on a range of environmental and social topics specific to our industry. As an example, Lumileds has been engaging with other industry partners through LightingEurope with the European Commission and their consultants to help shape the next energy performance rules for lighting products.
Suppliers	<ul style="list-style-type: none"> Supplier Sustainability Declaration Supplier trainings and audits 	We understand suppliers are critical to our success. Everything we achieve is a collaborative effort. That's why we seek suppliers who share our exacting quality and sustainability standards, then work closely with them to enhance product innovations and speed-up time-to-market. See section Responsible Supply Chain for more information.

Awards

Green Supply Chain Award

Lumileds was named a [Green Supply Chain Award](#) winner in 2019 by the Supply & Demand Chain Executive magazine. The award honors companies that make sustainability a core part of their operations and supply chain strategy. "We are extremely proud to be recognized by Supply & Demand Chain Executive magazine for our accomplishments in sustainability. This award is a testament to the contribution that Lumileds and its customers make towards creating a green economy, a mission that is central to our company purpose of making the world better, safer, and more beautiful with light," said Jan van Rompay, Director of Sustainability at Lumileds.

Ecovadis CSR Rating

- Lumileds has been awarded a silver recognition level by CSR Rating Agency EcoVadis. This result places Lumileds among the top 30 percent performers evaluated by EcoVadis.

Lumileds Local Recognition

- Apprentices at Lumileds Aachen won the competition "Energy Scouting" of the Aachen Chamber of Commerce against 10 other teams from other companies.
- Lumileds Poland S.A won second and third place in the 2nd Polish Red Cross First Aid Championships for Factory Teams.
- Lumileds Poland received Award III level in the category: Technical & Technology Solutions in the 47th Edition of countrywide "Contest of Work Conditions Improvement", organized by Ministry of Family, Labor and Social Policy.
- Lumileds Poland won a recognition award for taking part in the safety campaign "Fashion for Safety," organized by the Central Institute of Labor Protection.
- Lumileds Penang was selected by DOSH Penang to participate in OSH Star Rating program in 2019. Lumileds has successfully received a 4-star rating.



PERFORMANCE



Throughout this report, we detail the performance related to the priority issues identified. In this section, we provide an overview of our environmental and social performance in 2019.

Environmental Performance

GREENHOUSE GAS EMISSIONS	2019	2018	2017	2016
Total absolute emissions (metric tons of CO₂e)¹	116,695	114,791	122,000	166,743
Scope 1	16,552	15,651	18,984	73,637
Scope 2 location-based (manufacturing)	95,790	92,008	93,919	84,059
Scope 2 location-based (offices) ²	1,665	1,666	1,768	1,768
Scope 3 (air travel only)	2,688	5,466	7,329	7,279
Total normalized emissions				
GHG intensity (g CO ₂ e per unit produced) ³	55	47	48	70

1 Emission factors have been updated for 2016, 2017 and 2018 based on the most recent version of the GHG Protocol / IEA v13 (06/2020) and eGrid 2018.

2 2016 Scope 2 location-based emissions are estimated. We started tracking office emissions in 2017.

3 GHG intensity measures Scope 1 and Scope 2 location-based emissions attributable to manufacturing, per unit produced; the methodology to calculate the number of units produced has been revised based on changes in the production mix.

ENERGY	2019	2018	2017	2016
Total energy consumption (MWhs)	258,450	285,095	296,862	294,177
Natural gas	42,358	48,736	54,797	52,110
Fossil carburants (diesel and LPG) for stationary use	603	732	724	776
Energy from electricity consumed in manufacturing	203,162	222,428	227,930	223,726
Energy from electricity consumed in offices	3,043	3,047	3,194	3,194
Energy from heat, steam, and cooling	9,284	10,152	10,216	14,371
Direct purchase of renewable electricity	-	-	-	-
Indirect purchase of renewable electricity (renewable energy certificates)	-	26,153	27,256	36,262
Total normalized energy consumption				
Energy intensity (kWh per unit produced) ¹	0.12	0.12	0.13	0.13

1 Energy intensity measures total energy consumed in manufacturing sites per unit produced; the methodology to calculate the number of units produced has been revised based on changes in the production mix.

WASTE	2019	2018	2017	2016
Total hazardous waste (metric tons)	1,032	984	1,468	1,324
Sent to landfill	8	59	112	137
Recycled or composted	393	393	413	438
Recovered (energy from waste) ¹	464	264	309	0
Incinerated	167	269	634	749
Total non-hazardous waste (metric tons)	4,203	5,087	5,552	4,893
Sent to landfill	454	267	483	528
Recycled or composted	3,093	3,869	4,134	3,835
Recovered (energy from waste) ¹	200	135	41	0
Incinerated	456	816	894	531
Recycling Rate	66.6%	70.2%	64.8%	68.7%

1 Waste recovery was included under incineration in 2016. Since 2017, waste recovery and incineration are tracked separately.

WATER	2019	2018	2017	2016
Total water withdrawn (Nm³)	1,419,810	1,699,647	1,739,749	1,651,361

ENVIRONMENTAL COMPLIANCE	2019	2018	2017	2016
Number of significant environmental fines	0	0	0	0
Amount of significant environmental fines	0	0	0	0

Safety Performance

SAFETY	2019	2018	2017	2016
Fatalities as a result of work-related injury (number)	0	0	0	0
Fatalities as a result of work-related injury (per 100 FTE)	0	0	0	0
High-consequence work-related injuries ¹ (number)	0	0	1	0
High-consequence work-related injuries ¹ (per 100 FTE)	0	0	0	0
Total incident rate ² (injury cases per 100 FTE)	0.23	0.26	0.42	0.44
Lost-time incident rate ² (lost workday cases per 100 FTE)	0.16	0.12	0.18	0.32

1 Excludes fatalities. Work-related injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within 6 months.

2 Total incident rate and lost-time incident rate covers full-time equivalents at manufacturing locations, which is greater than 95% of all Lumileds full-time equivalents.



Gender Diversity

GENDER	TOTALS		FEMALE		MALE	
	2019	2018	2019	2018	2019	2018
Employment Contract						
Permanent employees	7,465	8,823	3,823	4,592	3,642	4,231
Interns	13	34	3	15	10	19
TOTAL	7,478	8,857	3,826	4,607	3,652	4,250
Employment Type¹						
Full-time	7,402	8,728	3,783	4,538	3,619	4,190
Part-time	76	129	43	69	33	60
TOTAL	7,478	8,857	3,826	4,607	3,652	4,250
Employees by Region¹						
Americas	544	671	183	217	361	454
APAC	4,880	5,821	3,051	3,664	1,829	2,157
EMEA	2,054	2,365	592	726	1,462	1,639
TOTAL	7,478	8,857	3,826	4,607	3,652	4,250
Employee Category¹						
Admin Support	430	522	272	336	158	186
Director	209	247	31	37	178	210
Executive	34	31	5	3	29	28
Manager	452	540	145	169	307	371
Production & Assembly	3,348	4,014	2,301	2,839	1,047	1,175
Professional	1,845	2,138	663	729	1,182	1,409
Supervisor	182	214	64	72	118	142
Tech Support	978	1,151	345	422	633	729
TOTAL	7,478	8,857	3,826	4,607	3,652	4,250

¹ Interns are included in calculations.

PERCENTAGE OF FEMALE EMPLOYEES	2019	2018	2017	2016
Americas	34%	32%	34%	32%
APAC	63%	63%	64%	65%
EMEA	29%	31%	29%	29%



Gender Diversity

NEW EMPLOYEE HIRES ¹	2019	2018	2017
Total	497	1,078	1,312
New Employee Hires by Region			
Americas	42	108	72
APAC	369	746	1,024
EMEA	86	224	216
New Employee Hires by Gender			
Female	261	567	745
Male	236	511	567
Not Declared	0	0	0
New Employee Hires by Age Group			
Under 30 years old	162	454	693
30–50 years old	286	554	573
Over 50 years old	49	70	41
Not Declared	0	0	5

¹ Excludes contingent workers and interns.

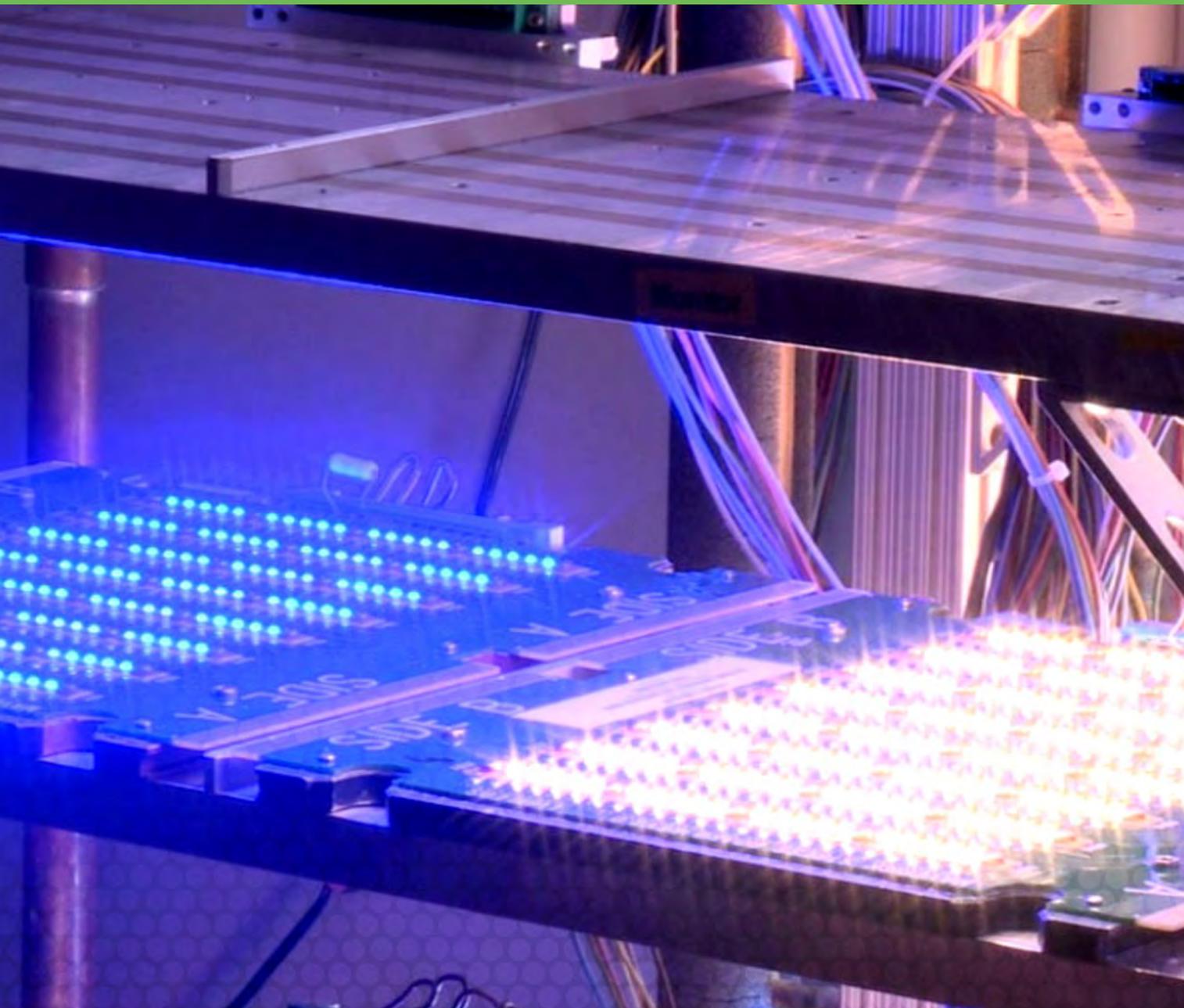
EMPLOYEE TURNOVER AND RATE	EMPLOYEE TURNOVER ¹		TURNOVER RATE ²	
	2019	2018	2019	2018
Voluntary	1,324	1,288	16.1%	14.6%
Involuntary	403	115	4.9%	1.3%
Retirement	49	69	0.6%	0.8%
End of Fixed Term/Intern Contracts	252	202	3.1%	2.3%
Total	2,028	1,675	24.6%	19.0%
Turnover by Region				
Americas	166	124	27.7%	18.5%
APAC	1,559	1,249	29.0%	21.5%
EMEA	303	301	13.4%	12.9%
Turnover by Gender				
Female	1,195	1,051	29.7%	22.9%
Male	833	623	19.8%	14.7%

¹ Excludes contingent workers and interns.

² Turnover rate is calculated by total number of terminations divided by total headcount. Employees who did not declare their age group are not included in the turnover rate.



GRI INDEX



The GRI Sustainability Reporting Standards (GRI Standards) are the most widely adopted global standards for sustainability reporting. This report applies the 2016 version of the GRI Standards. "2016" refers to the Standards issue date, not the date of information presented in this report.



GRI 102: General Disclosures 2016*

DISCLOSURE	DESCRIPTION	CROSS-REFERENCE OR ANSWER
Organizational Profile		
102-1	Name of the organization	Lumileds
102-2	Activities, brands, products, and services	Who We Are
102-3	Location of headquarters	Our operational headquarters is in San Jose, USA. Our Corporate headquarters is in Schiphol, the Netherlands.
102-4	Location of operations	Our Global Footprint
102-5	Ownership and legal form	Lumileds operates as a private company and is majority owned by Apollo Global Management.
102-6	Markets served	Lumileds products are sold worldwide. We have commercial offices in more than 30 countries and service other countries through a network of distributors. Customers in the specialty and illumination market are exclusively business-to-business. In the Automotive market we have customers in both the business-to-business (OEM, OES) and business-to-consumer (Aftermarket) segments.
102-7	Scale of the organization.	Company Overview
102-8	Information on employees and other workers	Performance, pages 27-29
102-9	Supply chain	Responsible Supply Chain
102-10	Significant changes to the organization and its supply chain	In 2019, our manufacturing site in Shanghai Malu was closed. Production lines were transferred to our other two manufacturing sites in China: Jiaxing and Songzi. The 2019 Report still includes the data (environmental, social) for Shanghai Malu.
102-11	Precautionary Principle or approach	Within Lumileds management system processes, we evaluate risks and opportunities related to quality, environment, and health and safety. These risks and opportunities are reviewed annually, and discussed in the Management Review at the Corporate Level. This includes any impact of our activities upon human health or the environment.
102-12	External initiatives	Identifying Our Sustainability Priorities, page 8 We endorse the Responsible Business Alliance (RBA) Code of Conduct. The RBA Code of Conduct is a standard part of Lumileds terms and conditions of purchase. The code of conduct requires suppliers to share our commitment to promote acceptable working conditions, environmentally, responsible management, and ethical behavior.
102-13	Membership of associations	We are active in industry associations in Europe (LightingEurope) where we partner with others in the industry to engage with policymakers on a range of environmental and social topics specific to our industry. We are active in several standardization bodies where we help to define specifications to enhance safety related to automotive lighting solutions.
Strategy		
102-14	Statement from senior decision-maker	CEO Message, page 5
Ethics and Integrity		
102-16	Values, principles, standards, and norms of behavior	Identifying Our Sustainability Priorities, page 8
102-17	Mechanisms for advice and concerns about ethics	Governance, page 22

DISCLOSURE	DESCRIPTION	CROSS-REFERENCE OR ANSWER
Governance		
102-18	Governance structure	Leadership Team
102-20	Executive-level responsibility for economic, environmental, and social topics	Governance, page 22
Stakeholder Engagement		
102-40	List of stakeholder groups	Stakeholder Engagement, page 25
102-41	Collective bargaining agreements	61% of Lumileds work force is covered by collective bargaining agreements.
102-42	Identifying and selecting stakeholders	Stakeholder Engagement, page 25
102-43	Approach to stakeholder engagement	Stakeholder Engagement, page 25
102-44	Key topics and concerns raised	Identifying Our Sustainability Priorities, page 8
Reporting Practice		
102-45	Entities included in the consolidated financial statements	Not applicable as Lumileds does not publish consolidated financial statements.
102-46	Defining report content and topic Boundaries	Identifying Our Sustainability Priorities, page 8 The report includes all Lumileds operations. The Environment, Health and Safety (EHS) performance indicators represent our manufacturing facilities, and do not include our commercial offices, unless otherwise indicated at the relevant sections.
102-47	List of material topics	Identifying Our Sustainability Priorities, page 8
102-48	Restatements of information	2016, 2017 and 2018 Greenhouse Gas Emissions data, specifically Total absolute emissions, Scope 1, and Scope 2 location-based (manufacturing), has been updated to reflect the latest emission factors available for these periods from the most recent version of the GHG Protocol / IEA v13 (06/2020) and eGrid 2018. 2016, 2017 and 2018 GHG intensity figures and Total energy consumed in manufacturing sites have been updated to reflect a change in calculation methodology. The methodology was revised based on changes to Lumileds' production mix.
102-49	Changes in reporting	None
102-50	Reporting period	January 1, 2019 through December 31, 2019
102-51	Date of most recent report	June 1, 2019
102-52	Reporting cycle	Annual
102-53	Contact point for questions regarding the report	Contact the Director of Sustainability at info@lumileds.com
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.
102-55	GRI content index	GRI Index, pages 30-32
102-56	External assurance	The 2019 Sustainability Report and GRI disclosures were not subject to external assurance.

* This report applies the 2016 version of the GRI Standards. "2016" refers to the Standards issue date, not the date of information presented in this report.



GRI 103: Topics and Topic Boundaries 2016*

GRI TOPIC	CROSS-REFERENCE OR ANSWER	RELEVANT EXTERNAL ENTITY
GRI 205: Anti-corruption 2016	Governance, page 22	Communities, Customers, Policymakers, Investors, Suppliers
GRI 302: Energy 2016	Environment, page 16	Communities, Customers, Policymakers, Investors, Suppliers
GRI 305: Emissions 2016	Environment, page 16	Communities, Customers, Policymakers, Investors, Suppliers
GRI 306: Effluents and Waste 2016	Environment, page 17	Communities, Customers, Policymakers, Investors, Suppliers
GRI 307: Environmental Compliance 2016	Environment, page 17	Communities, Customers, Policymakers, Investors, Suppliers
GRI 401: Employment 2016**	Employees, pages 18-19	
GRI 403: Occupational Health and Safety 2018**	Employees, page 20	
GRI 416: Customer Health and Safety 2016	Our Product Impact, pages 12-13	Communities, Customers, Policymakers, Investors, Suppliers
GRI 419: Socioeconomic Compliance 2016	Governance, page 22	Communities, Customers, Policymakers, Investors, Suppliers

GRI 200–400: Topic-Specific Disclosures 2016*

DISCLOSURE	DESCRIPTION	CROSS-REFERENCE OR ANSWER
GRI 205: Anti-corruption 2016		
205-2	Communication and training about anti-corruption policies and procedures	Governance, page 23
GRI 302: Energy 2016		
302-1	Energy consumption within the organization	Performance, page 27
302-3	Energy intensity	Performance, page 27
302-5	Reductions in energy requirements of products and services	Our Product Impact, page 11

GRI 200–400: Topic-Specific Disclosures 2016* (cont'd)

DISCLOSURE	DESCRIPTION	CROSS-REFERENCE OR ANSWER
GRI 305: Emissions 2016		
305-1	Direct (Scope 1) GHG emissions	Performance, page 27
305-2	Energy indirect (Scope 2) GHG emissions	Performance, page 27
305-3	Other indirect (Scope 3) GHG emissions	Performance, page 27
305-4	GHG emissions intensity	Performance, page 27
305-5	Reduction of GHG emissions	Environment, page 15
GRI 306: Effluents and Waste 2016		
306-2	Waste by type and disposal method	Performance, page 27
GRI 307: Environmental Compliance 2016		
307-1	Non-compliance with environmental laws and regulations	Performance, page 27
GRI 401: Employment: 2016		
401-1	New employee hires and employee turnover	Performance, page 27
GRI 403: Occupational Health and Safety 2018		
403-1	Occupational health and safety management system	Employees, page 20
403-2	Hazard identification, risk assessment, and incident investigation	Employees, page 20
403-3	Occupational health services	Employees, page 20
403-4	Worker participation, consultation, and communication on occupational health and safety	Employees, page 20
403-5	Worker training on occupational health and safety	Employees, page 20
403-6	Promotion of worker health	Employees, page 20
403-9	Work-related injuries	Performance, page 27
GRI 416: Customer Health and Safety 2016		
416-1	Assessment of the health and safety impacts of product and service categories	Our Product Impact, page 10
GRI 419: Socioeconomic Compliance 2016		
419-1	Non-compliance with laws and regulations in the social and economic area	Lumileds incurred no significant fines associated with non-compliance of social or economic laws in 2019.

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** Employees as a stakeholder group are not considered an external entity.

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