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REFERENCES

"With Nordeon we have found an experienced partner in the field of energy efficient lighting solutions. The collaboration was quick and effective, the result is convincing." Rainer Glogowski, Technical director ArcelorMittal Auto Processing Germany Eisenhüttenstadt GmbH

"THE NEW TYR HIGHBAYS PRODUCE BRIGHT AND HOMOGENEOUS LIGHT AT 100,000 HOURS LIFETIME AND SAUE MORE THAN 50% OF OPERATING COSTS."

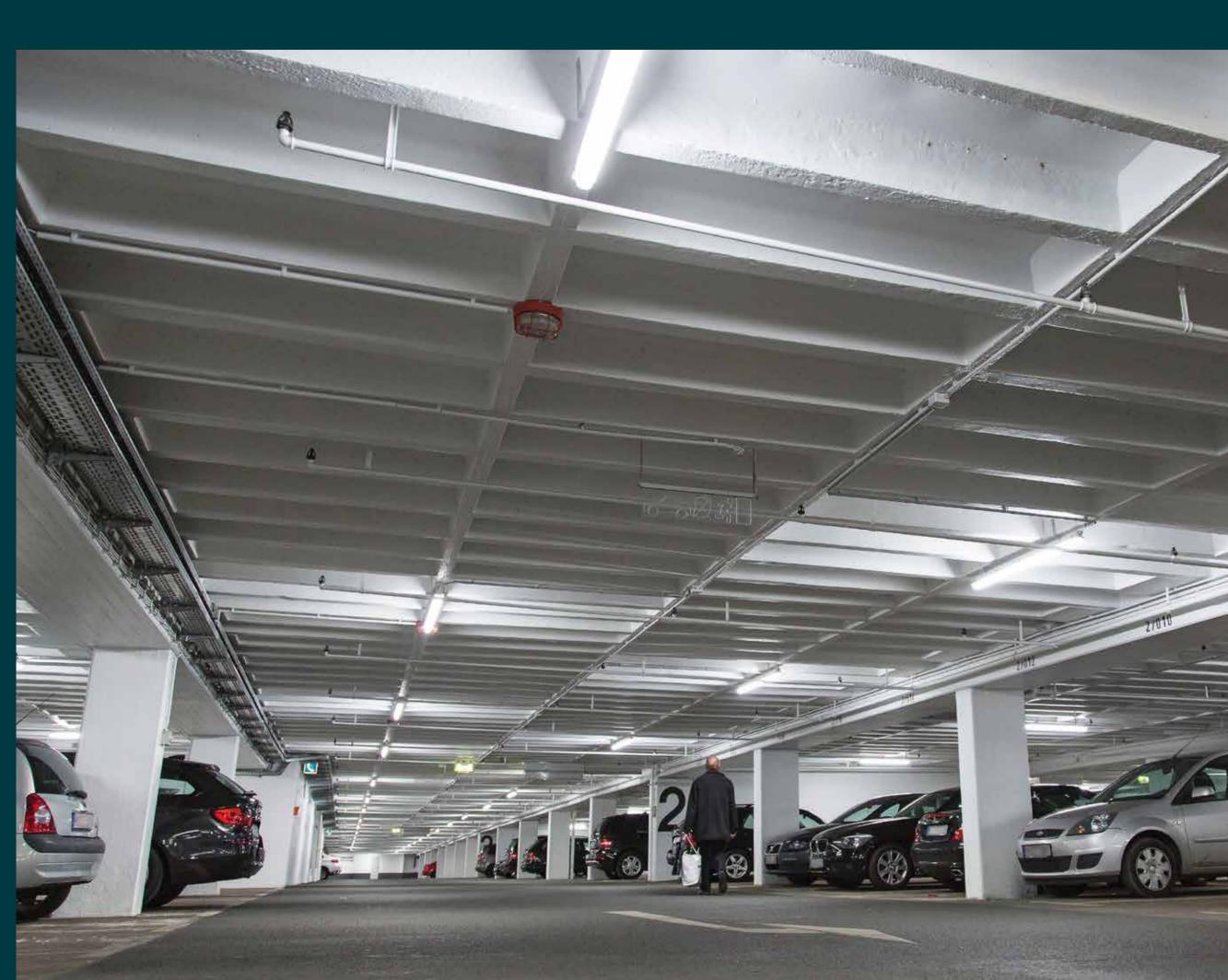
Jürgen Schmidt, spokesperson ArcelorMittal Eisenhüttenstadt



ordeon In

ndustry

References



"Bright light increases comfort and safety."

"THE VIKING WATERPROOF
LUMINAIRE PROVIDES
A UNIFORM LIGHT
DISTRIBUTION OVER THE
WHOLE PARKING AREA.
THE HOMOGENEOUSLY
DISTRIBUTED LIGHT MAKES
OUR GUESTS FEEL SAFER."

Construction manager, union-boden GmbH

Customer union-boden GmbH
Product Viking waterproof luminaire
Electrical installation Fritz Grove Elektro GmbH
Project Parking opera building in Hannover, Germany

Nordeon Industry References

"Lighting when and where it is needed."

"Routes such as factory roads or bypasses are lit at night, even if there is no necessity. Our goal is to provide light only when it is needed. The integration of sensors helps to optimize the light output without reducing the comfort or the safety. Integrated motion sensor can reduce the light intensity to a minimum value. If a sensor detects any traffic, the light intensity increases to a defined value. Simultaneously, the command to do the same is sent to predefined neighbor luminaires to create a homogenous lighting for the entire road."

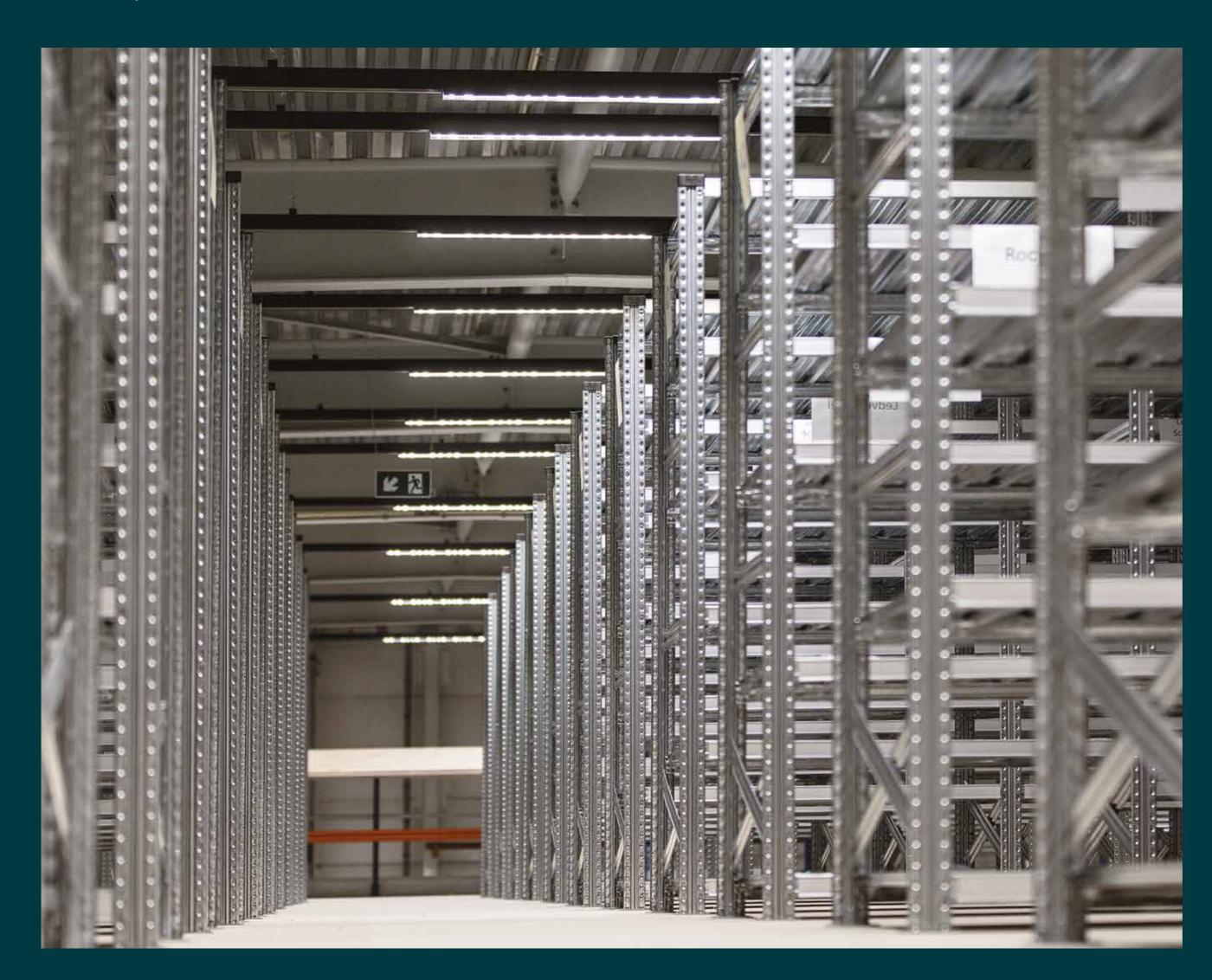
"INTEGRATED MOTION
SENSORS ENSURE
INTELLIGENT ENERGY SAVING,
WITHOUT SACRIFICING
SAFETY!"

Sascha Müller, Product manager V3630



Customer Nordeon GmbH
Product V3630 outdoor luminaire
Project Parking Nordeon at production site, Springe, Germany





"Excellent light output from ceiling to floor."

"DESPITE DIFFERENT
CEILING HEIGHTS, BALDUR'S
FLEXIBLE MOUNTING
OPTIONS ENSURE
CONSISTENT, HOMOGENEOUS
LIGHTING WITH A VERY
HIGH LIGHT OUTPUT."

Marc van Duuren, Operations manager eWarehousing

Nordeon

Industry

References

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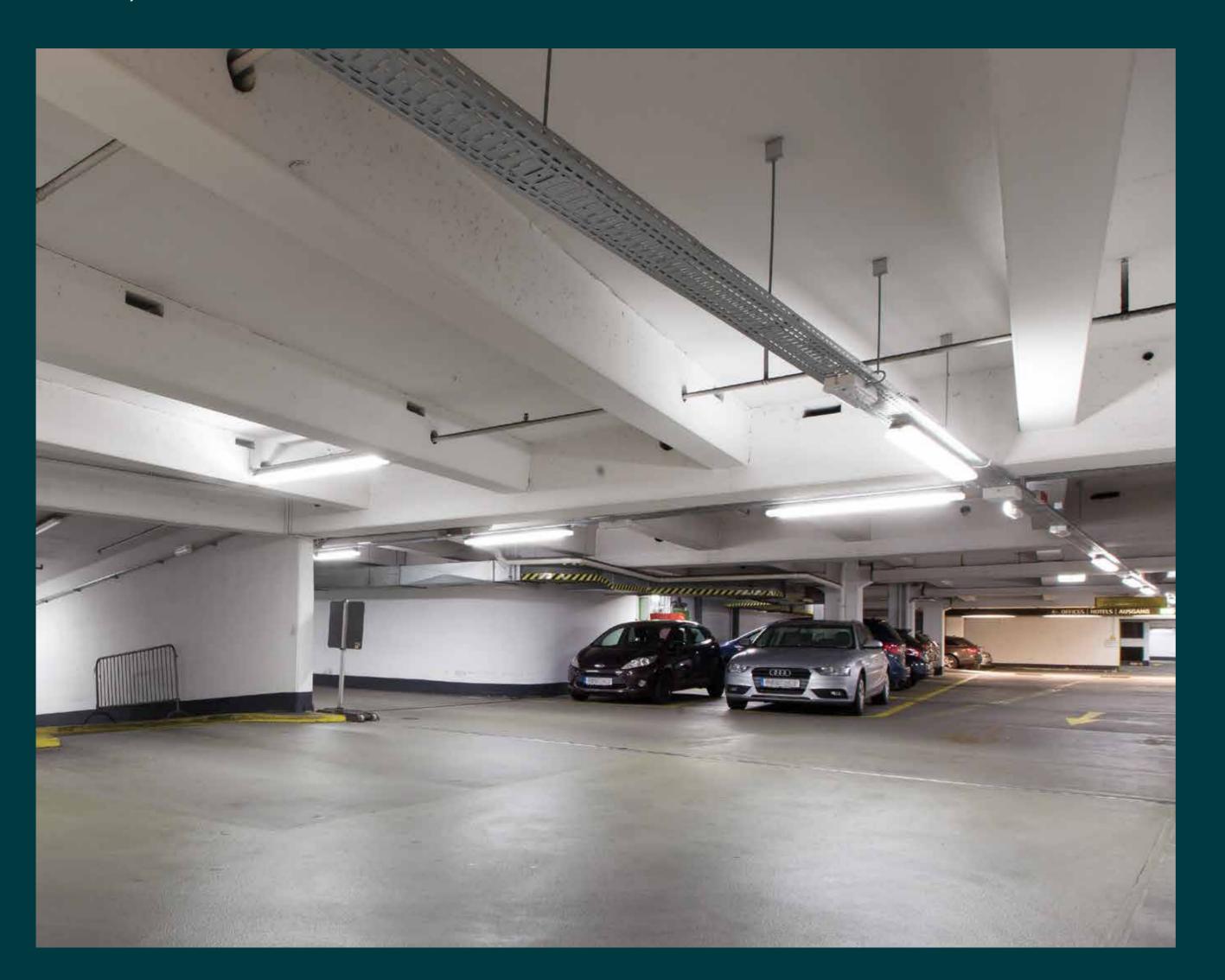
"Rapid installation"

"IN OUR DAILY BUSINESS AN EASY INSTALLATION IS A CRUCIAL FACTOR. WITH ITS CLICKFAST SYSTEM THE BALDUR LIGHT LINE SYSTEM CAN BE MOUNTED QUICKLY AND EASILY. THIS SAVES TIME AND COSTS. WE ARE ALSO GLAD TO HAVE FOUND A SYSTEM WITH SUCH A WIDE RANGE OF DIFFERENT LIGHT DISTRIBUTIONS. THIS ALLOWS US TO COMBINE EASILY DIFFERENT APPLICATIONS IN A UNIFORM DESIGN."

Hans-Georg Herbst, Herbst Elektroinstallation







"Low maintenance product with bright light"

"OUR CAR PARK IS NOW
EQUIPPED WITH
EXTRAORDINARY UNIFORM
LIGHT. OVER THE WHOLE
SURFACE WE HAVE AN
ABSOLUTELY HOMOGENEOUS
LIGHT AND OUR GUESTS
ARE VERY CONTENT.
THEY SAY IT IS BRIGHT
AND THIS MAKES THEM
FEEL SAFE."

Dr. Marko Huber, Technical asset manager APCOA Parking

Nordeon Industry References

"IN FACILITY MANAGEMENT
OUR EMPLOYEES ARE OFTEN
CHALLENGED TO REALIZE
UERY DELICATE WORK.
NO SHADES OR REFLECTIONS
ON OBJECTS OR TOOLS
SHOULD DISTURB THE
PROCESS. THE LED LIGHT LINE
SYSTEM BALDUR PROVIDES
A PRECISE AND GLARE-FREE
LIGHT DISTRIBUTION WITH
A HIGH LIGHT OUTPUT."

Alex Baardman, Facility manager CSi industries B.V.









"Due to the double asymmetric light distribution we have super uniform and bright lighting from the top to the bottom shelf."

"THE MOST BEAUTIFUL THING IS WHEN YOU ARE WORKING AND NOT THINKING ABOUT THE LIGHT, BECAUSE IT IS PERFECT THAT WAY."

Patricia Fehrmann, Managing director Rudolf Fehrmann GmbH & Co.KG

Nordeon Industry References

"THE CONFIGURATION OF
THE LIGHT LINE SYSTEM
IS VERY EASY TO ADAPT.
ITS STRONG LIGHT IS
ABSOLUTELY CONVINCING
AND IS EVERYWHERE
WHERE NEEDED. WITH THE
DIMMING FUNCTION WE CAN
USE 30%, 60% OR 100% OF
THE SYSTEM POWER, WE
ADDITIONALLY SAVE ENERGY
WITHOUT MUCH EFFORT."

Danny Piels, Construction and maintenance manager Open32 B.V.







"Energy saving with simplicity"

"AN INTEGRATED DAYLIGHT SENSOR IN THE BALDUR LIGHT LINE 9000 LM 840 DALI WIDE BEAM, IS PRE-PROGRAMMED TO MAINTAIN 500 LUX AT 1 METER HEIGHT. THE SYSTEM CONTROLS THE LEVEL OF LIGHT OUTPUT NEEDED. BASED ON THE LEVEL OF DAYLIGHT. IT SWITCHES LIGHTS ON AND OFF AND DIMS THE LIGHT IF NEEDED. THIS SOLUTION COMBINES **EXCELLENT LIGHTING EFFICIENCY WITH PERFECT** UNIFORMITY AND GOOD COMFORT FOR WORKERS."

Facility management coordinator, Schneider Electric

Nordeon Industry Tyr Swea

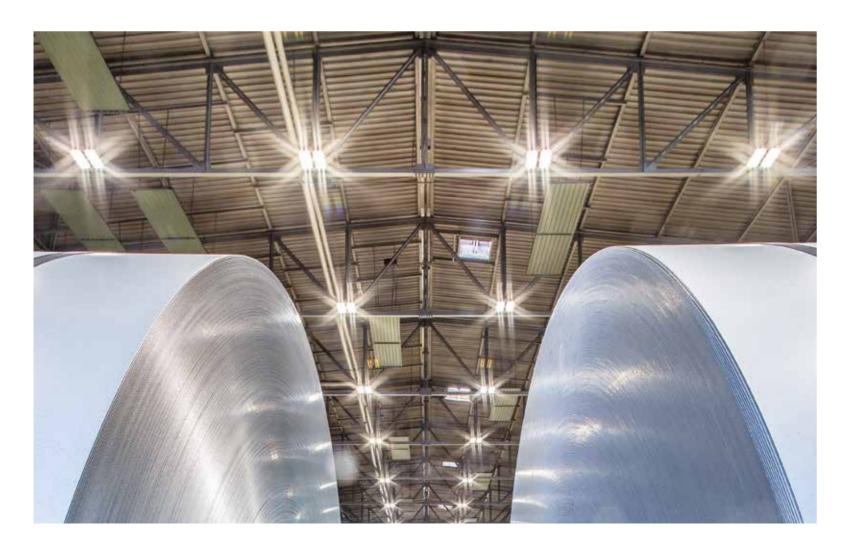
TOP QUALITY, ROBUST, HIGH PERFORMANCE, LONG LIFETIME HIGHBAY

TYR

- Tyr is named after the Nordic god representing heroic glory, this highbay will bring glory to the most demanding industrial environments
- ♣ Breakthrough in lifetime (100,000 hours, L80B10) in heavy duty environments water, dirt, vibrations, high ambient temperatures of up to 50 °C (60 °C on request) or mechanical impacts; IP66; IK03 (PMMA) or IK08 (PC)
- → High energy efficiency at a light flux of up to 28,000 lumen (32,000 on request) optimizes lighting performance, resulting in fewer luminaires required per application
- Control options include DALI, built-in motion sensors and daylight dependent light control
- Available in four light distributions, narrow beam (30°), medium beam (60°), wide beam (120°) and oval beam (22°, 100°)







HIGHBAY DESIGNED FOR INDUSTRY, FOOD PROCESSING & SPORTS HALLS

SWEA

- Swea, the Nordic name for brightness, is a highlight in any kind of industry, food processing or sports environment
- Lifetime of 50,000 hours (L70), HACCP certified for food processing environments; IP65; IK10 (PC, ESG), IK07 (PMMA), ball impact proof
- Extruded aluminum heatsink, designed without cooling fins preventing dust collection and facilitating easy cleaning for the highest hygiene standards
- High energy efficiency, available in 14,000 lumen (in H2 2016 up to 112,000 lumen), DALI supported
- Available in four light distributions, narrow beam (37°), medium beam (74°), wide beam (96°) and opal beam (94°)





HIGH PERFORMANCE, VALUE FOR MONEY INDUSTRIAL HIGHBAY

- ◆ Vidar, a new generation of the Nordic gods, represents our new generation of highbays
- ♣ Perfectly suitable for logistical centres, warehouses and industrial applications; IP65; IK06
- Easy to install, single mounting point, fast replacement guaranteed as the total fixture weighs less than 4 kg
- → High energy efficiency; available in 10,500 lumen and 14,000 lumen; the driver is integrated in the fixture
- Available in three light distributions, narrow beam (35°), medium beam (75°) and wide beam (120°)
- ◆ Made in France







COMPACT AND EFFICIENT LIGHT LINE SYSTEM





- ♣ Baldur, the god of light and beauty in Nordic mythology, an appropriate name for our stylishly designed light line
- Easy to adapt the configuration of the light line when a changing layout of the environment requires this
- → Full flexibility to place general lighting units, lighting controls, emergency lighting units and blind covers at any position (1-foot grid)
- → The combination of trunk lengths up to 5,058 mm and the Nordeon ClickFast system enables fast and easy
- ♣ Lifetime of 70,000 hours (L80B10), available in 1,124 mm with 3,200 lumen, 4,000 lumen and 6,000 lumen; in 1,686 mm with 4,800 lumen, 6,000 lumen and 9,000 lumen





Nordeon Industry Baldur G-Luxe



WIDE VARIETY OF OPTICS, PERFECTLY SUITABLE FOR DIVERSE INDUSTRIAL ENVIRONMENTS



NB Narrow beam for high halls and high rack areas (32°)



MB Medium beam for general light in open areas (74°)



WB Wide beam for low installation height (88°)



UWB Ultra wide beam for general lighting and wide aisles (111°)



DA Double asymmetrical for aisle lighting (2 x 24°)



A Asymmetrical wall washer (25°)



High aesthetic standard (96°)



O-DI Opal direct/indirect for areas with ceiling illumination (116°)





SIGNIFICANT ENERGY SAUINGS FOR T8 REPLACEMENT

G-LUXE

- The G-Luxe is made with a glass tube, which prevents bending of the product over time
- Versions with optional plastic coatings for usage in food industry are available
- The G-Luxe base fits into the existing fixtures for T8 (see mounting instructions)
- Light output of up to 3,500 lm, with an efficiency between 100 lm/W and 150 lm/W
- ♣ Beam angle of 190°





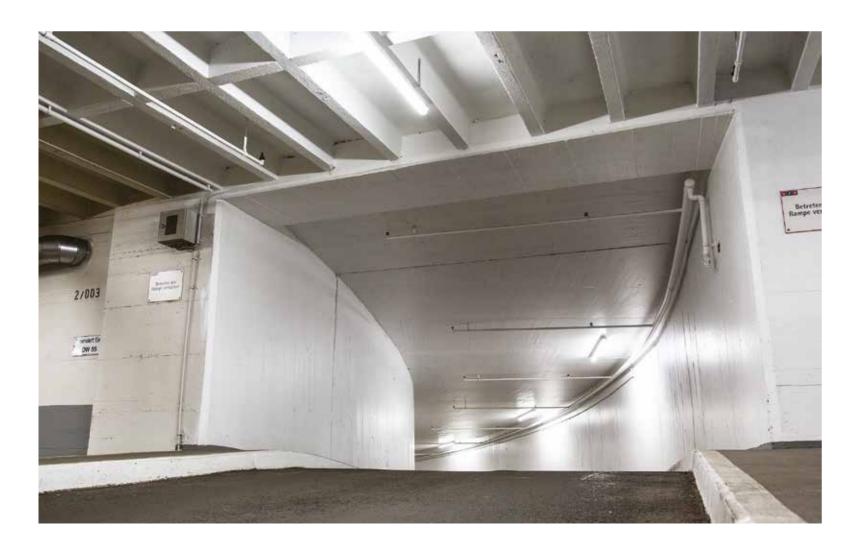
Nordeon Industry Viking V3630

HIGHLY VERSATILE, HIGH PERFORMANCE, WATER AND DUSTPROOF FIXTURE

- This product, like the strong and seaworthy Vikings of Scandinavia, is an extremely endurable luminaire, developed for use in harsh conditions
- ◆ The solution for industrial halls, parking garages and production areas; IP65
- Fifficiency of up to 130 lm/W; available in 2,000 lumen, 4,000 lumen and 5,600 lumen
- Easy and fast installation: stainless steel brackets, easy-to-use fasteners, mounting brackets for toolless light line installation on Niedax RL060
- Available with clear cover or opal cover (with 10% indirect light to the ceiling) and in four light distributions, narrow beam (32°), medium beam (70°), wide beam (122°) and opal beam (140°)
- ◆ Made in France







EFFICIENT AND ROBUST OUTDOOR LUMINAIRE

<u>U3630</u>

- Built to last in demanding outdoor conditions, lifetime over 100,000 hours (L80B10); IP66; IK08
- Intelligent lighting control solutions available for optimal energy savings constant lumen management (CLM), autarkic regulation (LRA)
- Over 120 lm/W; available in 12 different versions from 1,200 lumen to 14,500 lumen
- Available in three light distributions: O1, O3, O5











Nordeon Industry Intelligent lighting

LIGHTING CONTROL ENSURING LIGHT ONLY WHEN NEEDED

A lighting control system is there to provide the right amount of light where and when it is needed. Nordeon luminaires, combined with lighting controls, can reduce the annual energy consumption and associated costs by more than seventy percent.

ENERGY CONSUMPTION 50% Nordeon solution Nordeon solution Nordeon solution + presence control + daylight

EXAMPLE OF ENERGY SAVINGINDUSTRY HALL WITH LED LIGHT LINE SYSTEM BALDUR REPLACES CONVENTIONAL LIGHTING

30kW x 24 h x 250 days

180,000
kWh/year

Baldur combined with presence control saves up to 55% energy

81,000
kWh/year

Additional energy savings due to daylight harvesting adds another 19%

65,610 kWh/year

Example of a sensor network solution with Baldur in a warehouse

INTELLIGENT LIGHTING

EFFORTLESS LIGHTING

(dimming)

Daylight harvesting & presence control

Maximum energy savings and comfort it only creates the light that

is needed. Dependent on the level of daylight, the artificial light will

be dimmed down automatically. On top of that, presence sensors

will detect occupancy and switch off lights when nobody is there.

This system is based on DALI controls and can be individually

commissioned, simply by remote control.

Baldur with built-in daylight harvesting & presence control





Tyr with built-in daylight harvesting & presence control

NORDEON BOASTS A FULL RANGE OF INTELLIGENT LIGHTING CONTROL SOLUTIONS

Presence related switch (on/off)

The simplest way to save energy is by switching off lights when nobody is present, (no dimming of lights). This is particularly suitable for warehouses without daylight and dimming requirements. The presence related switch is available as an integrated solution for Baldur.



Sensor network solutions for increased comfort

For even more comfort, sensors can interact in networks. What does that mean? Imagine a large hall where lights would would only switch on in the area below a luminaire or light line where movement is detected. All other areas remain dark. This situation creates discomfort.

Connecting the sensors in networks avoids this lights would go to a level of 100% when movement is detected, but adjacent luminaires or light lines would operate at 20%, for example. This creates a more comfortable and safe environment to work in.

COMPANY INFORMATION

41 Project service The NordeonGroup Industry

YOUR LIGHTING AND ENERGY CONSULTANT, PROUIDING TAILOR-MADE LIGHTING SOLUTIONS

Intelligent lighting consultancy

It all begins with our team performing a lighting and energy quickscan to understand your lighting needs and your current energy consumption. This is the starting point of an energy savings proposal in which we will calculate your return on investment and, where applicable, we will advise you regarding possible subsidies or fiscal advantages.

Planning & Design

We then develop a tailor-made lighting concept based on our quickscan, which contains an improved lighting configuration of your premises, with the shortest possible payback time. Improved lighting leads to higher productivity, safety and more visual comfort. It goes without saying that all relevant standards and regulations are taken into account. In a second meeting we will discuss this concept and collect any additional input you may have in order to arrive at a final design.

Pilot Phase

In order to ensure your maximum satisfaction, we will execute a trial in your premises in order to experience the new situation. At the same time, we will optimise the return on investment by adapting the concept in vitu.

Manufacturing and Delivery

European production and development locations in Germany and France guarantee high quality and short, flexible delivery times for your tailored lighting solutions. This will allow you to start saving energy rapidly and reap the benefits of better lighting A safer, more productive and comfortable working

After sales

We are here to help you. Our service team is always available for any questions after completion of the project. Nordeon will provide you with the highest possible level of service.



NORDEON GROUP WORLD CLASS BRANDS AND TECHNOLOGY UNDER ONE ROOF

- ◆ Where over 1,000 people are ready to serve you across the globe, whether you are an architect, a lighting designer, a construction company, an installer or an end customer, our experienced staff will cater to all your individual needs
- ♣ This is where leading edge lighting and control technology meets state of the art premium design and quality, made in Western Europe and the USA





NORDEONGROUP

ARCHITECTURAL LIGHTING

MGRIVEN

- → One of the leading manufacturers in the architectural lighting market
- → A comprehensive catalogue of proven quality, high reliability and fully weatherproofed lighting fixtures and one of the most innovative and alternative solutions
- Years of research and development have allowed Griven to feature an extensive portfolio of light fittings that are a lighting designer's "dream

OUTDOOR LIGHTING

.hess

- High quality and decorative outdoor lighting and street and site furnishings
- Holistic concents for the design

Vulkan

- > Technically advanced outdoor lighting
- Highly efficient with short payback period

INDOOR LIGHTING

NORDEON

- Indoor lighting for retail, industry and office Professional LED luminaires with
- short payback time
- Customised LFD solutions also

Headquarters & Sales

Production & Sales



- 1. NordeonGroup headquarters, Eindhoven (NL) 2. Nordeon, Springe (GER)
- 2. Vulkan, Springe (GER)
- 3. Hess, Villingen-Schwenningen (GER)
- 4. Nordeon, Chalon sur Saône/Dijon (FR)
- 5. Hess America. Gaffnev (SC/US)
- 5. Nordeon USA, Gaffney (SC/US) 6. Hess Scandinavia, Stockholm (SE)
- 7. Hess Spain, Barcelona (ES)
- 8. Hess Belaium, Gent (BE)
- 9. Griven. Castel Goffredo (IT)

About the Group

The NordeonGroup consists of a group of medium sized lighting companies that operate close to their markets, but can also tap into a global support and technology infrastructure.

The lighting industry is undergoing a profound change. The demand for energy efficiency is continuously increasing and the development of efficient LED luminaires and technology is taking giant steps forward. The NordeonGroup, combining a large corporation's power of scale with the benefits of agile, independently operating businesses, is perfectly positioned to help drive this change.

Flexibility and quality, made in Europe and the USA

We strongly believe in developing and manufacturing products close to our customers. This enables us to provide the flexibility, quality and service that our customers require. We have proven that, by investing smartly in product and manufacturing technology, we are able to introduce best in class products to the market. All our products are "Made in Western Europe and the USA".

A proven track record

The NordeonGroup was founded in 2012 by its current owner Varova from the Netherlands with the launch of the Nordeon brand in Germany, France and the Netherlands. Nordeon operates out of Springe in Germany and Chalon-sur-Saône in France and specializes in the design and manufacturing of lighting systems for industry and retail, with products such as trunking systems, highbays and downlights. The NordeonGroup acquired Vulkan and Hess in 2014, bringing two formidable brands in urban and decorative outdoor lighting to the Group. The outdoor proposition was further complemented with the acquisition of Griven from Italy, a leading specialist in architectural outdoor lighting.

The NordeonGroup is committed to investing in research and development of state of the art lighting technology solutions to support its portfolio of leading global lighting brands, in order to cater to the lighting markets' ever developing needs. Our team of more than 1,000 people is committed to deliver leading lighting performance, top notch design and the highest quality standards.

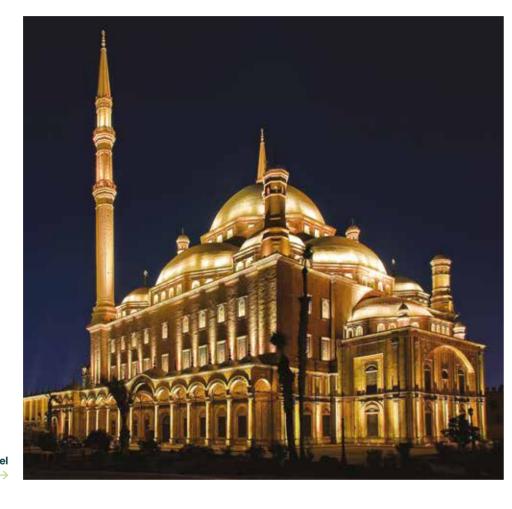
With manufacturing, engineering, testing, lighting design, customer services and sales and marketing operations spread across Europe and the USA, and its second-to-none portfolio of brands and products, the NordeonGroup is there to support its customers wherever they may be, whatever challenge they may be facing.

Industry Griven

GRIVEN: BUILDINGS BROUGHT TO LIFE

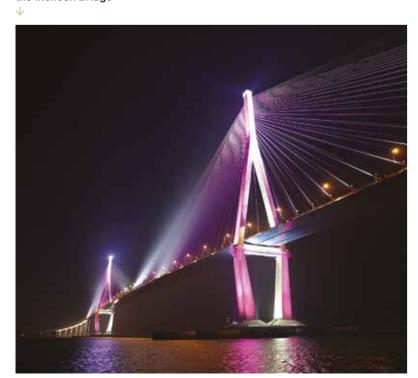
GRIVEN from Castel Goffredo in Italy, founded in 1990, has established itself as one of the world's leading manufacturers in the architectural lighting market. It features a comprehensive catalogue of proven quality, high reliability and fully weatherproofed lighting fixtures, which offer industry professionals the most innovative and alternative solutions.

A full range of acclaimed colour changers, sky trackers and a complete collection of products for the theatre market are available worldwide from a well-selected network of specialist outlets. In its quest to stay ahead of a constantly expanding market, GRIVEN took LED technology on board in 2001. This has given GRIVEN a headstart over its competitors, by being the first to offer a full LED product range for architectural applications. These professional LED lighting solutions incorporate the latest energy efficient solid state technology and offer high profile equipment for the widest range of applications.



Egypt, the Citadel

South Korea, the Incheon Bridge



A state of the art collection of surface mount, modular, linear, recessed, underwater and visual display projectors which can enhance, with spectacular effects and the boundless versatility of its dynamic and green lighting source, the most demanding lighting shows. Innovation and durability have always been core values at GRIVEN. Nowadays, sustainability and efficiency have become new engineering guidelines for products which are proudly made in Italy and the result of high building and design standards.

Griven . A Member of the NordeonGroup

HESS: ENHANCING URBAN SPACES

Hess is Germany's leading premium brand in decorative and architectural outdoor lighting for urban spaces. Hess' broad product diversity ensures the availability of the best lighting solution for every application. Whether it is illuminating outdoor public spaces or exterior lighting. Premium street and site furnishings complement its lighting portfolio. The perfect combination of luminaires and street and site furnishings allows Hess to enhance urban spaces. Hess was one of the first players in this market to move on to applying LED technology in its product design and development. As a result, it is right there at the forefront of lighting design and control. Hess is well known for its distinct designs, its use of high grade materials, its eye for detail and its unsurpassed quality standards. It is specified by architects and light designers around the globe.

Hess is headquartered in Villingen-Schwenningen in Germany's black forest area and has a strong manufacturing, support and commercial operation in Gaffney, South Carolina to support its US customers.

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Hess . A Member of the NordeonGroup www.hess.eu







United Kingdom, Beaufort

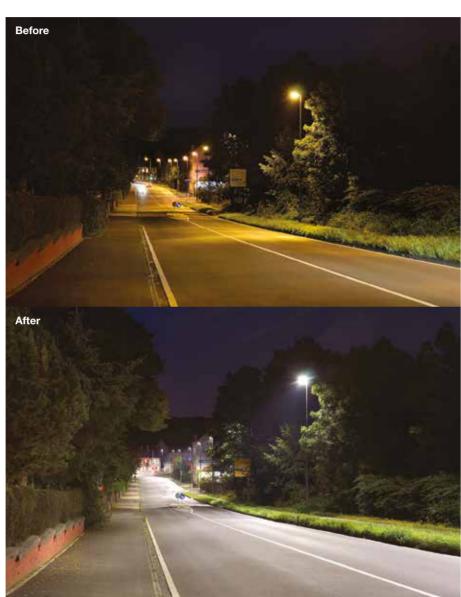
Nordeon Industry Vulkan Nordeon

UULKAN: LIGHTING UP URBAN SPACES

Vulkan was founded in 1898, making it one of the world's first lighting companies. It has been going strong ever since. Today it is one of the leading brands in Germany and Austria for urban lighting, on top of which it has developed a strong international footprint. Vulkan designs, develops and manufactures high performance fixtures for cities, municipalities and utility companies. Its designs are renowned for their elegance and versatility. Its product range covers all urban areas, such as streets, squares, traffic junctions, danger spots, pedestrian areas and public buildings, adhering to the highest standards.







Germany, Wuppertal

Vulkan's luminaires are known for their high level of technical functionality and maximum energy efficiency. This is achieved by deploying the latest LED and control technology. In addition, Vulkan's 115 years of experience provides an invaluable asset in understanding our customer's exact requirements. This is experienced in product design, the adaptation of technology and the high level of customer support. Our technically advanced products, "Made in Germany", competitively priced, combined with high levels of energy efficiency and long maintenance intervals, secure short payback times for customers.

Vulkan . A Member of the NordeonGroup www.vulkan.eu

NORDEON: HIGH PERFORMANCE LIGHTING FOR INDUSTRY AND RETAIL

Nordeon can boast about having one of Europe's largest, most advanced and dedicated LED fixture manufacturing sites in Springe in Germany and Chalon-sur-Saône in France. Its extensive laboratories, full ESD manufacturing environment, advanced quality control and testing equipment, highly experienced staff and LEAN manufacturing principles have

put Nordeon in the driver's seat for the development, design and manufacturing of high performance fixtures and lighting solutions for retail and industry.

Nordeon . A Member of the NordeonGroup

The Netherlands, Sissy-Boy

Sissy-Boy





The Netherlands, Petrol Industries

Nordeon	Industry	Notes	47

Nordeon Industry Notes

NORDEONGROUP

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