

## New light in the clinic





# "In daily clinic work, patients and personnel have to rely on everyone and everything.

### And that starts with light."

Dieter Schwöbel, Market Manager – New Light in the health sector.



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### **New Light**

#### Light not only illuminates. That's why we create more than just light.

TRILUX was established in 1912 based on a passion for light. Since that time it has been our aim to create artificial light that, as far as possible, approximates the quality of natural light. We call this New Light. With pioneering technology, intelligent design solutions and outstanding quality, we have been getting closer to this target for over one hundred years and we now shape both the present and the future of light.

Whether an inviting light ambience in entrance areas, a feel-good atmosphere in corridors and waiting areas or atmospheric light in the OT that aids concentration, suitably individual lighting concepts are of utmost importance in the health sector. These help personnel in their daily work, patients with recovery and also the clinic in sustainably improving efficiency. Discover for yourself TRILUX lighting solutions for clinics and hospitals.



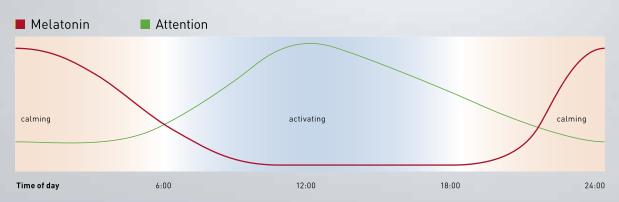
### New Light for the biological rhythm

#### The inner time clock of patients is light.

Light influences our health and well-being more than we know. In clinics, many areas exist with insufficient daylight or even no daylight at all. This is why, especially for patients who have to spend a lot of time in hospitals, their "inner clock" may lose its sense of balance and this in turn may cause a sense of restlessness.

TRILUX has been tackling this problem with circadian lighting that dynamically adapts light intensity and light colour according to daylight. This enables us to actively support the biological rhythm of patients and also helps to re-establish their natural day-night rhythm. After all, peaceful sleep at night and active time during the day is needed to rapidly regain health. How does this work? Our circadian system is primarily controlled by the blue and red components in light. Melatonin and cortisol hormones are generated by our bodies in accordance with these factors and these have an essential influence on our waking-sleeping rhythm. Thus light can not only improve the quality of sleep, but also comfort and therefore well-being as well. An ideal environment for patients and clinic personnel.

Find out on pages 12 and 13 just how much modern light management systems can help to improve the quality of light.



Requisite artificial light is mixed from warm white (3,000 K) and daylight white (6,500 K) light sources according to the time of day.



### New Light for a pleasant atmosphere

#### Concentrate in a relaxed way and relax in a concentrated way: with coloured light.

Staying in a hospital is hardly ever a reason to be happy. In fact it's just the opposite: patients are often unsure and worried about their health. Bright, colourful, dynamic light and a homely design for rooms can contribute significantly in making such environments less clinical and more personal. Sterile hospital white has thus become a thing of the past, as it is only in this way that stress for patients can be minimised.

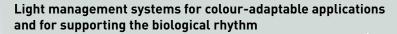
However, this serves not only the well-being of patients but also the low-effort, error-free visual work load of doctors and care personnel. The need for good visual conditions is, for example, a dominant factor in operating theatres, as operations are highly challenging in terms of mental and physical effort. To achieve an individual, relaxing light atmosphere, colour accentuation can lead to significantly higher levels of concentration when OT teams carry out their tasks, just as the right light atmosphere in intensive care can also lead to better recovery and thus also to satisfied patients and satisfied doctors.

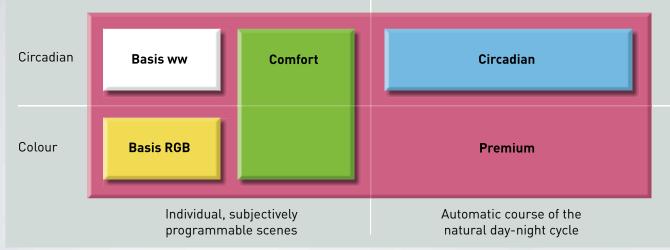
The following page offers detailed information about controlling light colour using light management systems.

### New Light meets new light management systems

#### The result: benefits for the atmosphere, the biological rhythm and of course for efficiency as well.

The demands on lighting systems and controls are complex and challenging, in particular in the health sector, and it is not only energy efficiency that is especially relevant, but also atmospheric and colour-dynamic lighting. TRILUX offers you a wide range of systems and therefore also many options for implementing individual or circadian-supporting, colour-dynamic concepts.





**Basis ww** (white/white) control is the simplest option for selecting the colour temperature. It enables simple and intuitive operation of lighting and selection of the colour temperature via touch-sensitive buttons, which can also be set via a central colour ring in addition to brightness. Two individual light scenes can also be saved.



Colour temperature can be individually set.

**Basis RGB** control is a light management system especially designed for simple colour control and unites elegant design with simple, intuitive operation via touch-sensitive buttons. It features a central colour ring for user-friendly setting of colour, colour saturation and brightness. A pre-defined sequence can also be called up in addition to the saving of two individual colour mixes as light scenes.



Colour scenes can be individually set.

The **Comfort** light management system enables simple, colour-dynamic light accents and also makes available a limited number of light scenes and sequences. Individual colour design is thus possible: discreet or strong colours, warm or calming colour temperatures or cool, invigorating colours. Various remote control devices are available for operation in addition to access via conventional push buttons. Installation of the control device is usually external but luminaire integration is also possible on request.

Colour scenes and colour temperatures can be individually set, sequences according to time of day are possible and supplementary areas can controlled individually.

The Circadian system consists of a controller integrated in the luminaires that automatically adapts colour temperature to the natural day-night rhythm of people and supplies light which is ideally adapted to the human biological rhythm. In emergencies during the evening or night, an emergency scenario can be called up completely intuitively via standard push buttons. In such cases the complete lighting is immediately put into operation. Ideal visual conditions for safe treatment are therefore ensured at all times. The circadian system also has simple start-up: unpack, connect and it's ready to use.

Lighting is adapted according to time of day in order to support the day-night rhythm.

The **Premium** light management system for light scenes and dynamics enables the time-based implementation of lighting scenes as part of dynamic light sequences. Ranging from accentuating colour changes intended to catch the attention of viewers, to discreet colour temperature changes that follow the example of natural daylight. Start-up and operation as well as programming of light scenes and sequences is via the touch panel. Connection via standard buttons is also possible for calling up light scenes or for switching and dimming the DALI groups.

Colour scenes and colour temperatures can be set individually and individually designed sequences give the room colour and dynamics.

Further information at www.trilux.com/lms-health









### **New Light for greater efficiency**

#### Saving costs with three letters: LED.

As service companies, hospitals are today forced to act with cost efficiency. The number of beds is falling and the duration of patients' stays as well, while demand increases. Despite an intensification of medical and care treatment, costs must be kept under close control.

This is why long-life, energy-efficient lighting is especially important, as costs for lighting during 24-hour clinic operation are significant.

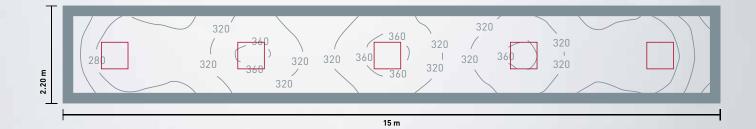
To lay the foundation for sustainable success, planning must integrate energy efficiency from the very beginning, ideally with LED solutions from TRILUX. These are not only especially energyefficient but feature very low maintenance as well significantly contributing to cutting running operating costs. They also help to eliminate disruption for both personnel and patients. It's obvious: thinking economically is good for everyone.



Calculate your potential savings with the TRILUX Efficiency Calculator: www.trilux.com/efficiency-calculator

### **Efficiency via LED**

Refurbishing corridor lighting not only positively affects the well-being of patients, but also actively reduces your energy costs. The following example demonstrates the potential savings achieved when upgrading corridors with the TRILUX Liventy LED as compared to obsolete corridor luminaires (4 x 18 watts). With TRILUX Liventy LED you can cut energy consumption by approximately 52 % each year. This saving is equivalent to 884 kWh. With an electricity price of  $\notin$  0.20 you could save  $\notin$  229.66 per year.



#### Comparison of system wattage

Corridor	Obsolete installation	New installation	
			-52%
Luminaire	Otris N 625 RWV 418	Liventy Flat 625 OT LED 3900 nw	
Power consumption per luminaire	84 W	40 W	
Number of luminaires	5 pcs.	5 pcs.	
Total power consumption	420 W	200 W	
Kilowatt hours p. a.	1,687 kWh	803 kWh	
Potential savings		52 %	
Saved kilowatt hours p. a.		884 kWh	420 200
Costs savings p.a.		€ 229.66	kWh kWh
CO <sub>2</sub> savings p.a.		0.53 tons	



Discover your savings potential now. The TRILUX Efficiency Calculator: www.trilux.com/efficiency-calculator

### Efficiency via light management

#### **Presence detection**

A high-sensitivity sensor identifies people in the room and switches light on. After a longer period of absence, for example 15 minutes, the light is automatically switched off again. This means there is only artificial light according to requirements.

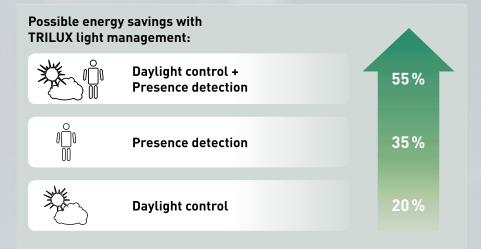
#### **Daylight regulation**

A light sensor measures brightness in the room and, according to the daylight component, only as much artificial light is emitted as is required for a predefined lighting level.

#### **Night-time reduction**

Homogeneous general lighting of corridors at night has several advantages. It offers patients orientation and also safety for personnel during night work. Step switching is used for all luminaires for uniform dimming. A positive effect of this night-time reduction is a simultaneous reduction of energy costs.





### Efficiency via refurbishment and financing

TRILUX offers a full-service called TRISET for optimising the quality of light and reducing energy consumption in clinics. This also simultaneously reduces the output of  $CO_2$  and the maintenance effort required. The service ranges from individual lighting solutions and the financing of refurbishment concepts, to complete replacement of lighting installations. We are also on-site with personnel and partners at any time for maintenance and repair purposes.

And the best aspect: financing a new installation is usually cheaper than the running costs of the old lighting system, so that in ideal cases, refurbishment is amortised during implementation.



### **New Light for more fascination**

#### No patients are the same and no clinic is like yours.

Patients' requirements need to be met if they are to feel well cared for in a clinic. This not only includes outstanding medical care and a high level of comfort in terms of equipment, but also a design-oriented light and colour concept that makes the building appealing for your customers.

Whether it's a case of suitable refurbishment solutions for existing ceiling systems or a creative, individual solution for special requirements, our lighting solutions lead to a relaxed atmosphere and give hospitals an unmistakable identity. A pleasing side-effect is also higher efficiency.

Thus when patients select a suitable clinic, lighting solutions from TRILUX give you a decisive advantage over your competition.



### New Light for welcoming

#### Entrance and relaxation areas reduce anxiety and help with orientation.

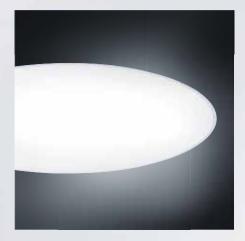
First impressions count and this is especially true for entrance and receptions areas in clinics. Harmonious lighting is therefore particularly important, giving its surroundings an inviting character and a pleasant, relaxing ambience.

However, the design of the clinic entrance area serves not only as its business card but also helps with orientation: each person visiting is welcomed in a stimulating environment. People needing orientation are helped by setting clear accents and pleasant general lighting quickly achieves a sense of trust and reduces the anxiety of visitors and patients.

Relaxation areas and meeting points for patients and relatives, such as a cafeteria for example, should not only offer good visual conditions but also give a homely atmosphere to the surround-ings. This in turn gives the clinic a personal character.



### Lighting solutions for entrance and relaxation areas



#### Plenar

The Plenar light ceiling module has a high representative appeal. Various daylight atmospheres can be simulated: colourdynamic light or white light with differing colour temperature.

www.trilux.com/plenar



#### Neximo

Whether for general or workplace lighting, TRILUX Neximo features an individual design, a new form of light emission and high efficiency thanks to daylight control and presence detection.

www.trilux.com/neximo-h



www.trilux.com/polaron



Polaron



The ring-shaped TRILUX series with classic,

cated architectural styles. An ideal surface-

mounting. It can also be suspended via wires and is suitable for ceiling cut-outs or system ceilings using recessing accessories.

geometric design complements sophisti-

mounted luminaire for wall and ceiling



#### Inperla Ligra

With an extremely compact construction combined with high performance LED technology and a wide range of design attachments, the round Inperla Ligra LED downlight is a lighting solution for nearly all forms of interior design. The downlight makes the most of its strengths even in applications with more stringent requirements.

www.trilux.com/inperla-ligra





#### Athenik Ligra

With an extremely compact construction combined with high performance LED technology and a wide range of design attachments, the square Athenik Ligra LED downlight is an ideal solution for nearly all forms of room architecture. The downlight makes the most of its strengths even in applications with more stringent requirements.

www.trilux.com/athenik-ligra







### Lighting solutions for entrance areas



#### Lutera

The Lutera ground-recessed spotlight sets architecture in scene with striking light accents and can be flexibly used thanks to two construction sizes and various light sources. All possible applications with accenting from the ground can be achieved. The sophisticated water-resistant construction ensures permanently reliable operation.



#### Skeo

The Skeo luminaire family offers representative facade lighting with a high level of efficiency in outdoor areas. Differing variants mean that a wide diversity of optical demands are met. High-grade, long-life materials and a high protection rating enable long-term use even in adverse weather conditions.



#### Varisto

The Varisto ceiling luminaire catches the eye with a clarity of form and function. Highly purist due to the slender luminaire cylinder and solid cover glass, Varisto is predestined for efficient accent lighting not only in canopied outdoor areas but also for example in adjacent foyer areas. With the recessed variant, the visible construction height can be steplessly set and expanded taking the level of design flexibility into the third dimension.

www.trilux.com/lutera





www.trilux.com/skeo



www.trilux.com/varisto







### **New Light for calming**

#### Worrying situations need calming light for corridors and waiting areas.

The corridors and waiting areas of hospitals are often seen as being cold and impersonal. This need not be the case. The right lighting concepts help to create a relaxed, bright and friendly atmosphere.

In areas such as these where people are worried, anxious or even are in pain, a pleasant ambience with soft, circadian light is the ideal solution, creating an environment that distracts and calms and where people can quickly feel more at ease.

Orientation and safety though are of prime importance, because only the homogeneous, glarefree illumination of paths and traffic routes ensures that older people find their way as intended, especially during the night. To save energy, the light levels of corridors can be simply reduced at later hours, for example with the Deca or 74… series. You therefore score points not only with patients but also with your financial director.



### Lighting solutions for corridors and waiting areas



#### Coriflex

With its clear language of design and uniform illuminance across the complete luminaire length, Coriflex seamlessly blends into any room concept. Its appearance, independent of the luminaire module used, is always identical. As well as almost unlimited design flexibility, the luminaire also reduces the installation time by 50 %.



#### Belviso

Recessed or semi-recessed luminaire for an innovative and unique appearance of light. The luminaire family has a high recognition value with the exclusive light frame as a defining element.



#### Polaron

The ring-shaped TRILUX series with classic, geometric design complements sophisticated architectural styles. An ideal surface-mounted luminaire for wall and ceiling mounting. It can also be suspended via wires. Also suitable for ceiling cut-outs or system ceilings with the use of recessing accessories.

#### www.trilux.com/coriflex





#### www.trilux.com/belviso



www.trilux.com/polaron







#### 333--- series

Surface-mounted luminaires for ceiling and wall mounting – with opal or translucent plexiglass diffusers and symmetric or asymmetric specular reflectors. Ideal for the lighting of vertical surfaces.

www.trilux.com/products-indoor





#### Solvan

Ultra-slender surface-mounted continuous line luminaire with filigree square design for vivid lighting in corridors and foyers. Suitable for vertical and horizontal wall recessing.

www.trilux.com/solvand





### Lighting solutions for corridors and waiting areas



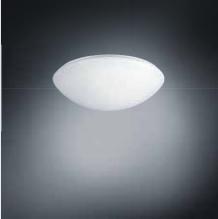
#### ScenaticPoint 900

Emphasises details and at the same time ensures a high level of general lighting comfort throughout the room. Various designs and interchangeable reflector technology for a wide design flexibility.

#### www.trilux.com/scenatic-point







#### 74 ··· series

Surface-mounted luminaire with classic design and future-fit LED technology. Ideal for wall and ceiling surface-mounting Decorative attachments allow different appearances both in form and colour.

#### www.trilux.com/740led







#### Deca

Wall and ceiling surface-mounted luminaire with opal PMMA diffuser, with finely structured surface. Effective matt decorative finish with diverse optional decorative accessories for individual design variations.

#### www.trilux.com/deca







### New Light for well-being

#### Recovery comes from a feeling of well-being and that comes from the right light.

For many patients, a clinic is temporarily their new home and it should be equipped as such. Bright rooms designed with colour and with the right lighting systems can achieve a homely atmosphere in normal care areas where patients feel relaxed and can forget their everyday stress.

At the same time though the right lighting concept effectively aids personnel with their work: functional lighting ensures maximum safety during the day for medical examinations and treatment directly at hospital beds and night-time lighting provides ideal orientation without disturbing sleeping patients. It also makes sure that in emergency cases the personnel can move about in the room at night to monitor patients. In this way, patients feel as if they were at home, but have the benefits of professional care.



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### Lighting solutions for normal care



#### Polaron

The ring-shaped TRILUX series with classic, geometric design complements sophisticated architectural styles. An ideal surface-mounted luminaire for wall and ceiling mounting. It can also be suspended via wires. Also suitable for ceiling cut-outs or system ceilings with the use of recessing accessories.

#### www.trilux.com/polaron







#### Belviso

Recessed or semi-recessed luminaire for an innovative and unique appearance of light. The luminaire family has a high recognition value with the exclusive light frame as a defining design element. A special version adapts colour temperature to the day-night cycle of people.

#### www.trilux.com/belviso



www.trilux.com/paredaled

specific lighting tasks.

Recessed wall luminaire with two construction sizes and different recessing

versions. A wide spectrum of applications for

flexible design arrangements according to



Pareda



#### **Acuro Active**

LED wall-mounted mirror luminaire which adapts to the natural day-night cycle of people. An integral controller mixes LED light with differing colour temperatures. Ideal for the harmonious, glare-free lighting of sanitary rooms.

www.trilux.com/acuroactiveled







### New Light for care around the clock

### Intensive observation requires intensive lighting.

An intensive care unit must not only be equipped with highly developed medical equipment but also with first-class lighting systems. These must primarily enable the provision of care and observation of very ill patients and patients who have recently been operated on and all this around the clock.

In such cases, a pleasant atmosphere requires not only indirect general lighting but also direct distribution light for simple observations as well as light for examination and treatment. Because patients are under constant observation at night as well, the ambient lighting must not disrupt their sleep.

Because a light atmosphere is also felt subconsciously, circadian lighting especially in the waking up area, is highly important, helping to adapt artificial light to the natural course of daylight. This leads to a feeling of normality, achieves a sense of trust in medical care and also has positive effects on recovery.



### Lighting solutions for intensive care



### Fidesca SD

www.trilux.com/fidesca

As with Fidesca Premium, Fidesca Standard is ideal for rooms which demand maximum levels of cleanliness and hygiene. Equipped with a cover panel of laminated safety glass and with an IP65 protection rating, the luminaire is suitable as a simple solution for laboratories and intensive care rooms.



#### Belviso

Recessed or semi-recessed luminaire for an innovative and unique appearance of light. The luminaire family has a high recognition value with the exclusive light frame as a defining element. A special version adapts colour temperature to the day-night cycle of people.

#### www.trilux.com/belviso



www.trilux.com/liventyled

to the day-night cycle of people.



Liventy



Recessed luminaire with a modern, timeless

design and featuring the latest LED techno-

logy, for the uniform illumination of all work

surfaces. Especially economic: Liventy only

a special version adapts colour temperature

emits light when needed. Especially pleasant:



#### Plenar

A light ceiling module with a prestigious approach. Various daylight atmospheres can be simulated: colour-dynamic light or white light with differing colour temperatures.

www.trilux.com/plenar







## New Light for concentrating

### We cannot operate for doctors, but we can make it easier for them.

Operations are not child's play. They often take several hours and demand a high level of mental and physical effort from doctors and personnel. This makes it even more important to have ideal lighting comfort for safe, concentrated work.

In addition to white light, coloured ambient lighting for operating theatres can also contribute to an individual, relaxing light atmosphere. It can also help the OT team to visually differentiate between specific phases such as basal narcosis, surgery, wound closure or waking up. All lighting systems are almost completely free of maintenance to avoid failure times and for problem-free operations and concentrated staying power.



### Lighting solutions for the OT



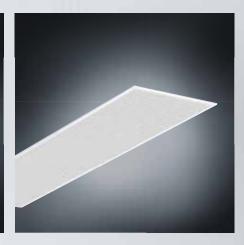
### Fidesca PM

This luminaire has everything for maximum variability in the operating theatre. Thanks to controlling and focusing functions the adjustable reflector optic achieves maximum illumination flexibility. Maximum safety is also guaranteed with a cover panel of laminated safety glass and IP65 protection. Whether as a surface-mounted or recessed luminaire, Fidesca Premium fulfils all requirements.



#### Fidesca SD

As with Fidesca Premium, Fidesca Standard is ideal for rooms that demand maximum levels of cleanliness and hygiene. Equipped with a cover panel of laminated safety glass and with an IP65 protection rating, the luminaire is suitable as a simple solution for laboratories and intensive care rooms.



### Fidesca BS

Fidesca Basic is ideal for workplaces with hygienic demands where humidity is also present, or for cleanroom areas such as OT anterooms or awakening rooms in hospitals. It's benefits at a glance: high resistance to ageing, high UV resistance, protection against dust and moisture ingress. Or put simply, a high level of satisfaction.

### www.trilux.com/fidesca





### www.trilux.com/fidesca



www.trilux.com/fidesca







### Fidesca RGB-W

Diverse applications via the combination of coloured (RGB) and neutral white light (W). Coloured light can be used to comply to personal perceptions of patients, while white light serves as safe workstation lighting for personnel.

www.trilux.com/fidesca





## **New Light for working**

### Ideal work conditions begin with ideal light.

Doctors and care personnel are subject to pressure around the clock and for this reason, it is all the more important to make their workplaces as pleasant and comfortable as possible with modern lighting solutions.

Lighting in such applications must be suitable for all tasks occurring in offices, for example when working with computers, which need uniform, high-contrast, glare-free light for fatigue-free work. But doctors' rooms also have specific requirements: if examinations take place, then light-ing must ensure ideal lighting conditions.

In fact the right light supports not only concentrated work, but also all of the well-earned breaks.



### Lighting solutions for work rooms



#### Liventy

Recessed luminaire with a modern, timeless design and featuring the latest LED technology, for the uniform illumination of all work surfaces. Especially economic: Liventy only emits light when needed. Especially pleasant: a special version adapts colour temperature to the day-night cycle of people.



Belviso free-standing luminaire Free-standing luminaire for glare-free,

harmonious light. For the innovative, workzone-oriented lighting of workstations in offices and public areas.



### Neximo free-standing luminaire

The representative Neximo free-standing luminaire unites a sensational form with maximum light quality and distribution to achieve pleasant working atmospheres. Thanks to LCL technology it creates pleasant low-contrast light and with it's daylight and presence sensor, only emits light when necessary.

www.trilux.com/liventyled





www.trilux.com/belviso



www.trilux.com/neximo





#### Aurista

Recessed luminaire with a specially designed light-guiding element which, in combination with LED, creates an innovative light appearance and beam characteristic.

www.trilux.com/aurista





#### Aurinio L50 Mobile

The cool light of the OT light protects the tissue of patients from dehydration and also ensures ideal working conditions for surgeons. An especially compact, flat and streamlined construction with a futuristic appearance.

www.trilux.com/aurinio-l50











# **New Light for arriving**

### Good parking areas supply not only light, but also orientation and safety.

Those visiting friends or relatives in hospitals are usually restless and anxious and want to find a parking place as quickly as possible. Friendly, good illumination of car parks enables visitors to relax a little, offering rapid orientation and also maximum safety, for both vehicles and pedestrians. The footpath often leads to the entrance via the traffic route. TRILUX lighting systems help to minimise inherent dangers and illuminate the way to the building. After all, a friendly reception doesn't begin with the foyer.



## Lighting solutions for car parks



### Altigo

Outdoor luminaire for either ground, wall or ceiling applications. Ideal for accenting buildings. A wide application spectrum when complemented by our bollard luminaires.

www.trilux.com/altigoled



### Nextrema with HF sensor

Robust weather-proof luminaire with LED technology, for use in extreme operating environments. Vibration-resistant components with light that can be used immediately, available without start-up time at low ambient temperatures of up to -25 °C.

www.trilux.com/nextrema



www.trilux.com/viatana

Viatana for the illumination of roads and parking areas utilising unique reflector

intelligent switching concepts and state-of-

the-art LED technology. Replaceable LED

modules enable upgrading to future LED

technology. Very high efficiency using





#### Publisca

Whether historical or avant-garde, exclusive or purist - thanks to it's discreet and elegant form and variability with regard to light colour, mounting height and light distribution characteristics, Publisca is ideal for the illumination of parking areas.

www.trilux.com/publisca





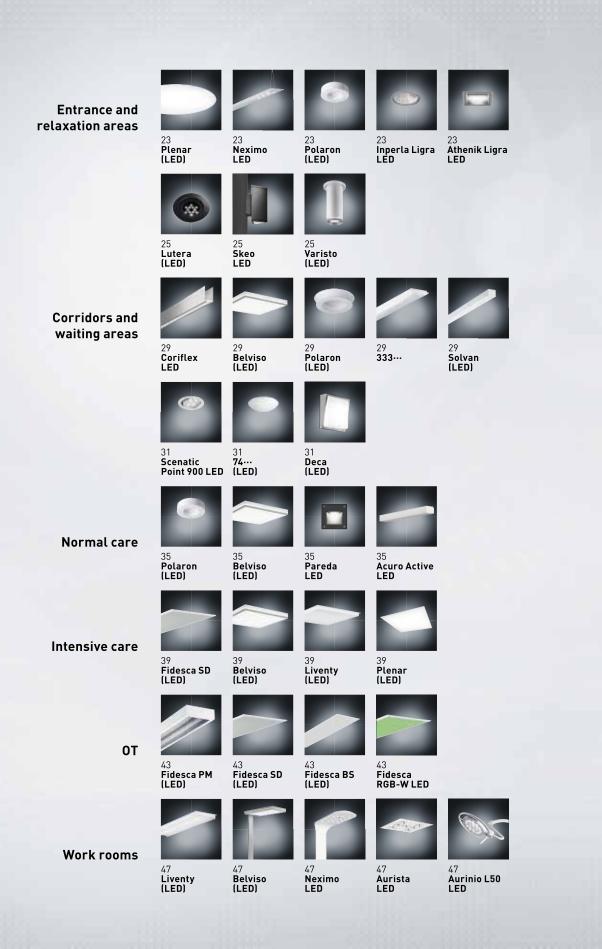


generations.

Viatana



## **TRILUX lighting solutions according to application areas**





Ăltigo LED





51 Nextrema LED 51 51 Viatana Publisca LED LED





Our **"New Light for Care"** catalogue specifies lighting solutions adapted especially to the needs of older people in all areas of care.



www.trilux.com/health

# Innovative solutions for the medical sector: TRILUX Medical





BS 410



**TRILUX medical products** 



Find out more about medical supply units for normal, intensive and OT applications as well as OT lights from **TRILUX Medical GmbH & Co. KG.** 



www.trilux-medical.com



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> All technical data including dimensional and weight specifications have been checked carefully. Errors excepted. We reserve the right to modify in the interest of progress. Luminaires are partly shown with accessories to be ordered separately. Images of installations may show custom manufactured luminaires.

> This publication was printed on PEFC-certified paper in an environmentally friendly way.

