

## Intelligent OR light 'adjusts to ambient conditions'

With fluctuating light conditions in the operating theatre 'potentially a serious impediment to the surgeon', Trumpf Medical's iLED 7 – claimed to be 'the world's first OR surgical light with built-in intelligence' – features a 3D sensor system that 'continuously analyses its environment'.

The company said: "This information is evaluated and relayed to the lighting control system. The iLED 7 then automatically adjusts to the individual surgeon's needs."

With its automatic lighting and shadow management capability, the iLED 7 'detects obstacles within the illuminated field and autonomously re-adjusts the defined configurations'. In combination with the intelligent distance measurement system, this 'guarantees constant lighting intensities' at between 80 and 130 cm. Trumpf added: "The illuminated field



diameter remains consistent, even when the working environment spontaneously changes during the operation – for instance as a result of the operator's hand and arm movement. iLED 7 thus provides optimum lighting whatever the situation.

"The surgical light's manageable size, low weight, and aerodynamic shape, allow the iLED 7 to be simply positioned – even in laminar flow theatres. Other advantages include low energy consumption and ease of cleaning."

## 'Biologic' light for geriatric ward

'Human-centric' LED lighting from Trilux features in a new geriatric ward at the Krankenhaus Maria-Hilf in Brilon, Germany.

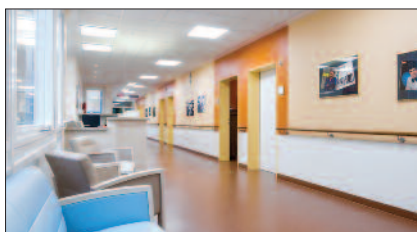
All the LED luminaires in the ward – primarily from the Liventy and Belviso ranges – are controlled via a central light management system. The light is designed to automatically replicate the sun's course during the day, adjusting the colour and intensity to the respective time, and thus supporting both patients' and staff's biorhythms.

Trilux said: "Not only do the luminaires

prevent the natural day/night rhythms getting 'out of sync', but they also address older people's specific needs, for example via a higher illuminance. A 75-year-old, for example, needs light 20 times stronger than someone in their early 20s."

Considerable attention was also paid to 'target group-oriented planning', to avoid reflections, light reflexes, or pronounced light/dark contrasts, thus minimising fall risk. In the corridors, an illuminance of 600 lux is achieved at eye level, and 300 lux at floor level, while illuminance in patient rooms ranges from 600-1,500 lux.

"The right light levels have an immediate positive impact on patient wellbeing," said head nurse for Geriatric Medicine, Birgit Hennemann. "More light reduces uncertainty, provides better balance, and leads to a relaxed state of mind. The patients get better faster, and are calmer."



## Accurate illumination, long-life LEDs

Astralite plus is a recently introduced minor surgical and examination light from Brandon Medical which the company says provides 'higher intensity bright light', has a light head positionable 'all the way around the couch', and offers an LED life of 50,000 hours, 'equating to over 20 years' normal use'.

Brandon said: "Higher intensity bright light at 1 m provides 100,000 lux or 60,000 lux; providing ample light for even the most demanding procedure. With a larger illuminated area of 195 mm diameter, Astralite plus makes it easy to illuminate large areas of tissue, and to target the light on the wound.

"The beams of light have a focus depth of 970 mm 'to penetrate into deep cavities', with all the visible colours naturally and accurately reproduced. The high Ra>94 describes the exceptionally high quality of white light, with the high R9>92 measurement ensuring accurate illumination of red tissue."

Astralite plus uses <30 Watt to produce 100,000 lux, or <18 Watt to produce 60,000 lux. The LEDs are mercury-free, and do not contain CFCs, POPs, VOCs, halogens, 'or other harmful chemicals'. They emit only cold light without infrared, 'ideal for comfort and safety'.



## Major savings expected for Spire

Energy performance 'solutions provider', Future Energy Solutions (FES), has completed, on time and on budget, a major two-phase LED lighting installation for Spire Healthcare, which has seen new LED luminaires installed at 38 of the private healthcare provider's sites.

Thanks to new LED lighting in its external car parks, FES says Spire Healthcare will save 'just under £800,000 over a 10-year period' – comprising

£564,000 in energy savings, 'over £188,000' in maintenance costs, and £43,000 in Carbon Reduction Commitment-related tax savings. The project should also cut its overall energy use by 428,000 kWh, with carbon dioxide, mono-nitrogen oxide, and sulphur dioxide emissions, 'all drastically lowered'.

FES said: "The new LED luminaires have achieved energy savings of over 73 per cent from a simple point-for-point



replacement, while providing 25 per cent better light output. They also have an enhanced rated life up to 20 times better than some of the previous luminaires."

## Automatic testing with remote view

P4 has worked with the Royal Brompton & Harefield NHS Foundation Trust since 2008 'to reduce risk and whole-life cost, ensure emergency lighting complies with BS 5266, and enable delivery of improved care outcomes'.

The UK's largest cardiothoracic centre, the Trust operates the Royal Brompton Hospital in London (pictured), and Harefield Hospital in Middlesex. P4 said: "John Calvert, the Trust's fire officer, recognised the importance of guaranteed testing of all the emergency lighting throughout the Trust's buildings. The cost of manually testing would have been prohibitive.

"The Trust needed a modular solution that allowed gradual expansion. The system selected allows the Trust to set



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convenient, automatic, and individual emergency light testing times, minimising patient disturbance. Upgrading the emergency lighting is a long-term project. The Trust welcomed a partner that could provide a remote monitoring solution and would help it achieve whole-life cost and time-saving benefits in each phase."

The equipment selected includes:

- A remotely monitored P4 FASTEL Link M-Web+ system monitoring over 600 emergency lights across the Harefield Hospital estate.
- A P4 wireless system, operating self-testing luminaires, comprising P4's own LED Quatrum range, together with some converted other manufacturers' mains luminaires, in the Chelsea Wing at the Royal Brompton Hospital.

## Designed for 'years of carefree operation'

Dräger Medical says its Polaris 100/200 surgical light heads offer 'everything users need for reliable operating room illumination', being 'equally suited to minor procedure and dedicated endoscopy room applications'.

The lights will provide up to 160,000 lux 'of quality illumination'. Dräger said: "The cardanic and suspension systems for the Polaris 100/200 light heads were designed for maximum mobility, and give users a choice of a single light head or, where more illumination is required, enable them to combine two light heads of their choice. The light heads are designed for years of carefree operation and minimal maintenance, offering exceptional reliability and price/performance ratio."

The 'classic round design' includes integrated handles for 'non-sterile personnel', and touch panel controls for easy handling/operation. Theatre personnel can position the Polaris 100/200 easily with the central sterile handle. Each of the four clearly marked control buttons performs a single function, and an optional, wall-mounted control panel is also available. The smooth, seamless casing makes cleaning quick and simple, while lightweight construction ensures 'effortless' positioning.

In addition to the ceiling-mounted system, the Polaris 100/200 range is also available as a mobile unit.



## Leicester pilot proves LED switch's benefits

As part of its carbon reduction programme – and in a separate project to that reported on on page 58 – Spire Healthcare has recently evaluated the benefits of LED lighting in a pilot project at its Leicester Hospital, which demonstrated energy savings of around 69%.

"Our carbon reduction target is a 10% reduction on a 2010 baseline by 2015," explained national estates director, Nigel Sharp. "To help achieve this, we undertook energy audits to evaluate areas where further investment would yield significant energy savings. We considered a number of low energy technologies, and upgrading the lighting to LED showed the biggest predicted ROI."



"To firm up the business case, Philips Lighting helped us organise a pilot at Spire Leicester Hospital, focusing on where the lighting was used for the longest periods, and installing metering equipment to measure the energy savings."

In corridors, the reception area, and main offices, existing fluorescent lighting has been replaced by LED luminaires point for-point. The project took full advantage of Philips' 'ability to provide a total solution', and encompassed a site survey, lighting design, installation services, measurement of energy consumption, and validation of savings.

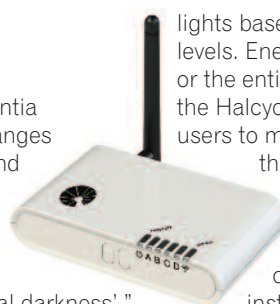
## In tune with circadian rhythms

Now available from Hampshire-based designer and manufacturer of 'smart LED lighting solutions', PhotonStar LED Group, is HalcyonPRO, 'an intelligent, wireless, automated energy-saving and circadian lighting solution'.

The company explained: "Research has shown that circadian lighting can have many benefits in healthcare environments. These include faster recovery times, plus the ability to improve sleep, health, and

wellbeing, and reduce dementia symptoms. HalcyonPRO changes to not only vary the colour and intensity of visible light, but also to control the amount of blue light throughout the day – from a stimulating 'biological' light, to 'biological darkness'."

The system also offers 'automated energy saving' via occupancy and daylight sensors. These automatically control the



lights based on occupancy, and daylight levels. Energy usage of individual fittings or the entire system can be monitored via the HalcyonPRO lighting server to allow users to make changes 'to positively affect their energy use and maximise savings'.

PhotonStar LED Group added: "As a wireless lighting control system, the cost of installation is very low, and fitting results in minimal disruption. HalcyonPRO can be used in all buildings, as it has been designed for retrofit."