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CELEBRATING 30 YEARS OF "LIGHTING YOUR WAY"

2021 marks a special milestone for Eurolux (Pty) Ltd as the company celebrates its 30-year anniversary. Founded in 1991 in Cape Town by the Mirlas family, what started out as a small family business importing lighting and incandescent bulbs, has now grown into a company with a substantial Sub-Saharan Africa footprint, supplying over 8 000 products to 2 300 distributors across the African continent.

Eurolux was purchased from the Mirlas family in March 2002, by current directors Peter Willig, Steve Palframan and Shaun Bouchier. The company's first major decision was to establish a Johannesburg operation based in Linbro Business Park, Sandton, which officially commenced trading on the 1st of July 2002. The timing of this move proved to be immensely successful and April 2004 saw Eurolux JHB moving, literally just up the road, into its own purpose-built 8 500 m² building.

Just two years later, in June 2006, the Cape Town Head Office moved into its own designed new 8 000 m² building in Milnerton, thus creating the perfect platform to take the Eurolux brand to another level of growth and subsequent market acceptance as a major player in the lighting industry. Going from strength to strength, Eurolux experienced notable growth after 2011 when ARB Holdings Limited purchased 60% of the company. With the financial backing of this JSE listed group, the company was able to expand into new markets, launching its electrical division, project department and 'Euro Nouveau' concept, which represents some of Europe's most prestigious lighting design companies.

Further growth opportunity arose with Eurolux purchasing Radiant Lighting in January 2019, collectively forming the Eurolux Group. The start of 2020 saw both businesses move under one roof in Cape Town, at the Eurolux Head Office building in Milnerton, with the Johannesburg branches later combining at the existing Radiant Lighting premises in Wynberg.

2020 also heralded the opening of a new concept lighting showroom in Umhlanga, providing a modern and upmarket facility for its KZN clientele, housing lighting fixtures from all three of the Eurolux Group brands.

Acting as an importer and distributor, Eurolux has always had its finger on the pulse of global industry trends and movements. By maintaining strong business relationships with its business partners, the company has been able to both understand and meet the needs and preferences of its clients, thus ensuring a product offering of world-class quality and variety.

Eurolux's upward trajectory over the years has also allowed the company to invest in the wellbeing and empowerment of the community, with a special focus on healthcare and education. The company man-

tra "Lighting your Way" has proved to be a driving principle in all of its social initiatives, from the lighting of schools and healthcare facilities, to making sandwiches for the children of crèches located near its Cape Town headquarters.

The last thirty years have given Eurolux plenty of reason to celebrate this anniversary milestone and the company looks forward to continuing its pursuit of excellence; from building sound client and supplier relationships, to offering premium quality lighting products sourced from around the globe.

Enquiries: www.eurolux.co.za

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- Patent pending full range adjustment control
- Designed and manufactured in South Africa under ISO conditions

CERTIFICATION

EMC CISPR 15 (2018-05 ED.9.00), IEC 61547 (2009).
Safety IEC 60669-1:2017, IEC 60669-2-1:2015.

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Zest WEG customers can now buy online – anytime

Zest WEG has become one of only a few industrial companies to pioneer an e-commerce facility linked to its new website, allowing its customers to make purchases online. Incorporated into the online purchasing facility on the new website are functionalities which include features such as technical tools and other capabilities including access to stock availability levels and more.

"The e-commerce facility is part of Zest WEG's continuous drive to serve customers better, making it easier and quicker for them to deal with us," says Johan van Niekerk, Zest WEG national sales executive. "This is just another way to make our products more readily available to customers."

Around South Africa, customers can now conveniently place orders on this new Zest WEG e-commerce site, which in its first phase of roll-out includes standard products like low voltage electric motors, variable speed drives, soft starters and switchgear.

Van Niekerk highlights that the design and programming for this kind of site – which includes a wide range of technical products – has been quite demanding. The company began the thought process long before the COVID-19 lockdowns were implemented, and prioritised the roll-out since then.

"The digital world around us, and especially electronic or internet trading, is developing very rapidly," he says. "It was therefore important for us to develop our e-commerce capability as part of our philosophy of ongoing improvement and customer service."

He emphasises that customers requiring assistance will still have access to the staff that currently provide them with service support.

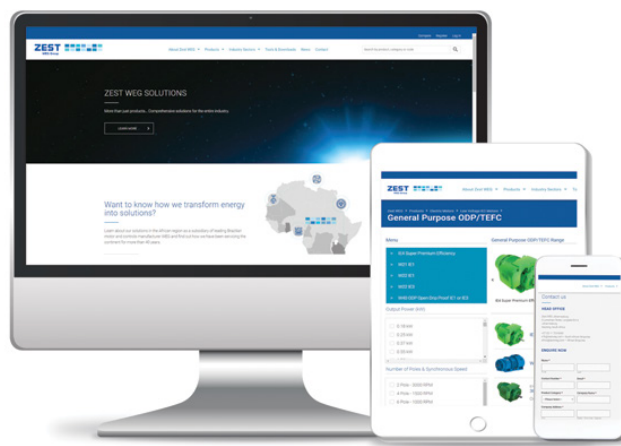
"The e-commerce site is an important value addition to our new corporate website, which has been redesigned partly to facilitate easy integration with the e-commerce

element," he says. "The website is now easier to navigate and offers an even greater depth of technical information and brochures, as well as more tools that customers will find useful."

Zest WEG's fleet of delivery vehicles will deliver goods ordered online, within the existing areas of coverage ensuring the same high levels of logistical reliability and the normal returns policy will still apply to these products. Van Niekerk advises that emergencies should be dealt with through direct personal contact to ensure that the customer's requirement is well understood – to achieve the best and quickest service.

"We are confident that customers will find the added flexibility of Zest WEG e-commerce valuable, giving them access to an ordering system at all hours of the day or night," he says.

Enquiries: www.zestweg.com



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The new Smart-Ex® O2 is the next generation of rugged, intrinsically safe smartphones for hazardous areas and harsh industrial environments from the Pepperl+Fuchs brand ecom. Developed completely in-house, the smartphone has a large 5-inch display, an ergonomic design, advanced features and optimised accessories, making digital applications mobile beyond company boundaries. Global frequency bands and certifications, along with a high-performance operating system, allow users a wide range of applications worldwide.

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The mobile worker concept allows consistent networking and collaboration between mobile personnel, the control room, and backend systems. Users in the field can capture on-site data and location details and share it with others in real-time.

These synergies open up completely new, innovative applications and efficient total solutions that give users a competitive edge essential for Industry 4.0.

Enquiries: www.pepperl-fuchs.com

Mini-substations for motor plant boasts dry-type transformer

Dry-type transformer specialist Trafo Power Solutions will supply two custom-engineered mini-substations to a significant motor plant expansion near Pretoria. The two units will be located outdoors, serving to power the lighting system and security requirements of the facility, as well as other loads. While most mini-substations are equipped with conventional oil-cooled transformers, these units have dry-type transformers – delivering a number of benefits to the customer.

David Claassen, managing director of Trafo Power Solutions, says these include security and environmental factors.

"Used by both the private and public sector, mini-substations must often be located in unprotected areas, making them vulnerable to vandalism and theft," Claassen says. "The oil-cooled transformers are often targeted for the copper in their windings, as well as the oil for the cooling system."

The dry-type transformer's windings, by contrast, are cast in resin so the copper or aluminium cannot be readily accessed. There is also no oil to harvest, further reducing the incentive for criminals to destroy the structure.

"In terms of environmental considerations, the dry-type transformer does not require any additional protective structure like walls or bunds to contain leaking oil or fire," he says. "These units also require very little maintenance, easing the managerial and technical burden on the owner."

While these two transformers are manufactured in TMC Transformers' world-class facility in Italy, the design and manufacture of the balance of the mini-substation is carried out in South Africa. This gives Trafo Power Solutions a high level of control over the quality of the final product, says Claassen.

"This also allows us to fully test the equipment locally before it is delivered, installed and commissioned on site," he says. "We embrace the opportunity to manufacture locally as much as we can, to support local industries and enhance job creation."

Enquiries: www.trafo.co.za





Free ebooks for the electrical contractor

An electrician's education never truly ends. As electrical systems grow more sophisticated and complex, so too must an electrician's knowledge of his or her chosen craft. Full-time electricians may find it difficult to find a moment to study the latest tricks and techniques, especially if they've been out of school for a while and don't know which texts are currently regarded as the industry standards. Direct the electricians on your team to the resources below and you will make an important investment in their professional development, an investment that will pay off as their value to your company increases.



Fundamentals of Electrical Engineering I

From its beginnings in the late nineteenth century, electrical engineering has blossomed from focusing on electrical circuits for power, telegraphy and telephony to focusing on a much broader range of disciplines. However, the underlying themes are relevant today: power creation and transmission and information have been the underlying themes of electrical engineering for a century and a half. This course concentrates on the latter theme: the representation, manipulation, transmission, and reception of information by electrical means. This course describes what information is, how engineers quantify information, and how electrical signals represent information.

Engineers, who don't care about information content, categorise information into two different forms: analogue and digital. Analogue information is continuous valued; examples are audio and video. Digital information is discrete valued; examples are text (such as what you are reading now) and DNA sequences ...

Download link: www.getfreebooks.com/fundamentals-of-electrical-engineering-i/



The Complete Guide to Under Cabinet Lighting

Under cabinet lights are the most popular, attractive, and handy kind of task lighting for the kitchen. Lighting designers agree that the path to any beautiful, functional kitchen starts with excellent task lights. Kitchen task lights have one simple purpose – to help you out. When you really need to get down to business, to cook a gourmet dinner or finally scrub down those countertops, task lights allow you to see.

In this book, you will learn how to get that perfect lighting in your own kitchen. You will discover what kind of under cabinet lights will work best for your space, the ins and outs of every light source and fixture style, and even what kind of lights will work best with your personality. Then, move on to step-by-step instructions on how to layout, install, and operate your under cabinet lights.

Download link: www.getfreebooks.com/the-complete-guide-to-under-cabinet-lighting/



Advances In Robotics, Automation and Control

The book presents an excellent overview of the recent developments in the different areas of robotics, automation and control. Through its 24 chapters, this book presents topics related to control and robot design; it also introduces new mathematical tools and techniques devoted to improve the system modelling and control. An important point is the use of rational agents and heuristic techniques to cope with the computational complexity required for controlling complex systems. Through this book, we also find navigation and vision algorithms, automatic handwritten comprehension and speech recognition systems that will be included in the next generation of productive systems to be developed.

Download link: www.getfreebooks.com/advances-in-robotics-automation-and-control/



Lessons In Electric Circuits

This free electrical engineering textbook provides a series of volumes covering electricity and electronics. The information provided is great for students, makers, and professionals who are looking to refresh or expand their knowledge in this field.

Download link: www.getfreebooks.com/lessons-in-electric-circuits-2/



What is the biggest mistake you can make with photovoltaic installations?

Big mistakes impact efficiency, and there is a very big one in cable management for PV installations that you should avoid at all cost. HelmermannTyton explain more in this video.



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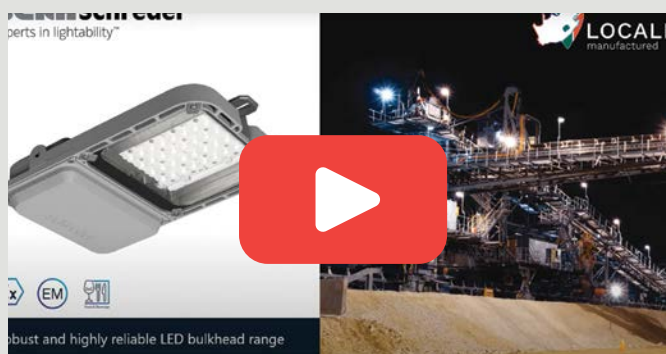


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Residential Electrical Quick Guide

The PDF guide is a 38-page e-book with home electrical wiring diagrams, symbols, codes, and many instructional photos. It covers areas like simple electrical circuits such as home lighting systems, as well as difficult wiring systems such as breaker boxes and 240 V circuits. This is a 14 MB download with graphics and text.

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Voltage and frequency around the world

Most readers will know that the South African domestic voltage is 220 V, 50 Hz. Just to remind you, 50 Hz (also referred to by grandfathers, like me, as "50 cycles") is the number of times the voltage and current reverse, per second. In fact, the South African domestic voltage is 220-240 V when the power supply is under load so, for example, if there is a house which has a 30 amp power supply, then when everything is off, the voltage in the distribution board will be higher than 220 V and can be as high as 240 V.

The voltage difference from no load to full load is the voltage drop in the electrical supply system, being the volt drop at the supply transformer terminals and the supply cables, no load to rated load. Most supply transformers are three phase – they have four terminals, L1, L2, L3 and neutral. The voltage from neutral to any of the phases is 220/240 V and this is normally supplied to houses as neutral/live. The voltage

between phases is 400 V which falls to 380 V under load conditions. An exception is Cape Town where the voltage between phases is about 420 V.

The reason that South Africa has these voltages and a 50 Hz frequency is because we inherited them from the British and Europeans who have similar voltages. The Americans have different voltages and frequencies. They have 120 V/60 Hz as a domestic supply voltage as do most South American countries. Japan is 100 V 50 Hz/60 Hz – in some parts it is 50 Hz and some 60 Hz.

Now all of this information is only just vaguely interesting and probably of no use at all, other than perhaps for somebody from South Africa who wants to use their hairdryer in the USA. What is more interesting is the effect that all these different frequencies and voltages have on our society. Having a 60 Hz system means that motors will operate variably at nominal speeds of 3600 rpm, 1800 rpm or

900 rpm depending on the number of poles. On a 50 Hz system the rotational speeds are 750 rpm, 1500 rpm and 3000 rpm (in point of actual fact, in all cases slightly less than nominal speed due to the slip of the motor rotor).

This means that fans and pumps will not have the same output for 50 Hz as they do for 60 Hz. It also means that standby generators must run at different speeds depending on the different frequencies. The matter of the fans and pumps is easily dealt with – the manufacturers just design the motor so it can operate at any frequency (taking care that the cooling fan is doing its job at the lower speed) and deliver the required shaft power. The pumps and fans are themselves designed such that the delivery curves are different for each speed and the user can choose. With regards to generators, they are designed to run at 60 Hz speeds and can run at 50 Hz without any problems. However, one should

not ignore the matter since some appliances will run at either frequency but others, for example microwave ovens, will not. There is no real reason to alter the existing frequency in a country or an area. In any event, doing this is bound to cause problems and has very little benefit.

It is quite probable that the need for 50 Hz and 60 Hz power will fall away in the coming years. With efficient dc to ac converters, it is possible that domestic power supplies will all be dc, operating at 50 V. Similarly, industrial power systems will have motors which are driven at variable frequency which will make systems more efficient. Right now, many air-conditioning systems run on variable frequency systems for reasons of efficiency. As I write this, I wonder if this will happen in my lifetime. Certainly, the only way to control the theft of electricity is to change to a dc system with a dc/ac converter box which can be remotely controlled. We'll see.

International study verifies energy savings potential of Standards and Labelling Programmes – and SA is on track

The International Energy Agency (IEA) and 4E Technology Collaboration Programme (4E TCP) have released a report on the effectiveness of Energy Efficiency Standards and Labelling (EES&L) programmes. Labelling electrical equipment such as, among others, residential appliances, electric motors, streetlighting, etc. according to their energy performance helps consumers to make informed purchasing decisions, saving them billions of dollars on electricity and avoiding more than 300 million tonnes of CO₂ emissions each year. The South African National Energy Development Institute (SANEDI) reports that this international study has strengthened local EES&L programmes, through knowledge gained towards implementation, which are seeing success in South Africa in line with international findings.

The IEA report draws on nearly 400 documents and shows that the longest running EES&L programmes have saved approximately 15% of their country's total electricity consumption. Around two-thirds of these savings are seen in the residential sector, while savings in the services and industrial sectors each account for one-sixth.

"This is exciting news for South Africa, as the study echoes the experience that we have had with our local EES&L programmes," says Barry Bredenkamp, General Manager: Energy Efficiency & Corporate Communications, SANEDI. A recent DMRE-SANEDI-UCT research report on electricity consumption in the South African residential sector shows that electrified households consume roughly 17% of the country's total grid electrical energy.

SA on track for improving residential energy intensity

The country's existing National Energy Efficiency Strategy (first published in 2005) included a target to improve residential energy intensity by 10% in 2015 compared to a year 2000 baseline. The mechanisms predicted for achieving this target included S&L of household appliances. Regulations requiring minimum energy performance standards and consumer labels for large residential appliances (including laundry, refrigerators, AC, and geysers) were introduced in 2015.

Bredenkamp says "research undertaken in 2019 concluded that our local S&L programme will reduce electricity consumption by 7,1 TWh by 2030, reducing residential utility bills in total by US\$1.4 billion – \$54 per household. The IEA report reinforces how effective these programmes are. These reductions bring benefits to consumers as well as lower emissions and lower energy demand."

The report's findings are drawn from evaluation studies covering 100 countries, including those with the longest running and strongest appliance policies, such as China, the EU, Japan, and US. It confirms that well-designed policies encourage product innovation and lead to economies of scale, which reduces the cost of appliances even without accounting for the efficiency gains or reducing the size or service of the appliance.

"Notably, South Africa is mentioned in this report. This is encouraging, given that we are the world's 14th largest global emitter of greenhouse gases, because we rely on coal for energy generation," says Ashanti Mogosetsi, Project Manager, EES&L Programme for SANEDI.

"The report confirms that improvements to the energy efficiency of appliances and equipment are some of the lowest-cost options available today for reducing energy consumption and associated emissions. They show a typical society benefit to cost ratios of four to one," says Bredenkamp. "These programmes provide net financial benefits to individuals and the community. Other benefits, include employment, product innovation, water savings, improvements in air quality and the reduction of public expenditure on health, add to the case for stronger and more widely implemented standards and labels.

"The evidence shows that EES&L programmes can deliver annual electricity demand savings equal to the annual production of renewable energy. Regular updates of EES&L policies are required to keep them in line with technological improvements, and to drive innovation in energy efficiency. This demands due diligence, such as industry consultation, and SANEDI is eager to participate in this process. To this end, South Africa has started the process for S&L to be introduced to streetlights, electric motors and televisions; cost benefit analyses are at an advanced stage to prove this can work in the country" says Bredenkamp.

Enquiries: www.sanedi.org.za

Hitachi Energy goes live

Speaking from its global headquarters in Zurich, Switzerland, Claudio Facchin, CEO of Hitachi Energy, commented, "At Hitachi Energy, we are championing the urgency of a clean energy transition, through innovation and collaboration. There are many pathways towards a carbon-neutral future – to tackle this global challenge, we nurture diverse global teams bringing authentic passion and enduring ownership." He continued, "By 2050, global electrification will near double in demand and electricity will be the backbone of the entire energy system. At Hitachi Energy we have pioneered many of the technologies needed for advancing a sustainable energy future for all – and we are committed to continue pushing the boundaries of innovation. Delivering on the promise of a carbon-neutral future will take passion, trust and innovation – and the benefits will be for our generations and those to come. With our new name – Hitachi Energy – we are broadening our commitment to creating real impact for our customers and partners, our people and society."

The carbon-neutral energy system will be highly interconnected and HVDC, a technology we have pioneered over 60 years ago is one of the key enablers for bulk renewable energy resources integration and reliable interconnection across countries, regions and continents. As the market leader in HVDC, Hitachi Energy is contributing to many of these interconnections, such as the recently announced award of Saudi Arabia – Egypt HVDC interconnector (October 5, 2021) – the first ever large-scale interconnector in the Middle East and North Africa and the start of operation of North Sea Link (October 1, 2021) – at 720 kilometers, NSL is the world's longest subsea interconnector linking Norway and the UK, enabling the exchange of renewable energy between the countries.

To complement interconnections and meet the growing need for energy system flexibility, Hitachi Energy is also supporting customers with grid edge solutions such as microgrids and energy storage. A recent example can be seen in Cordova, Alaska, where the community has been able to reduce its reliance on fossil fuels, whilst gaining energy independence.

As part of Hitachi Energy's 'go live' celebrations, Claudio Facchin will today host an interesting dialogue with Steven Chu, 12th US Secretary of Energy, scientist and Nobel Prize co-winner for Physics (1997), and Lully Miura, Japanese scholar of international politics and a member of the Growth Strategy Committee of Cabinet Office of Japan. The session titled, 'Energy technologies and innovations that contribute to a carbon-neutral future', will be streamed from the Hitachi Social Innovation Forum 2021 JAPAN. The focus will be on how to realize the ambitious net-zero targets that many countries have committed to and how Hitachi and Hitachi Energy are contributing to establishing a society that is more sustainable, flexible, and secure.

One of the related topics is the importance of digitalization which is critical for overcoming the complexity and capacity challenges brought about by the larger volumes of variable renewable energy being integrated into the world's energy system. For example, by combining advanced digital solutions and services, Lumada Asset Performance Management provides health and performance insights to prevent critical asset failures while optimizing asset lifecycle costs. It enables customers to leverage online and offline data to drive more intelligent, risk-based approaches to asset management.

Hitachi Energy is fostering collaboration with customers and partners to find global solutions to solve the global challenge of an inclusive and equitable carbon-neutral future. Earlier this year, the business launched EconIQ™ – its eco-efficient portfolio which delivers a superior environmental performance compared to conventional solutions. Its EconIQ high-voltage offering is proven to significantly reduce the carbon footprint throughout the total life-cycle. The business also recently launched a portfolio of transformer products for offshore floating applications, designed to overcome the challenging offshore environment and efficiently harvest and integrate wind into the global energy system, directly supporting the transition to a sustainable energy future.

Enquiries: www.hitachienergy.com



Hitachi Energy CEO Claudio Facchin.



How to be a good electrical contractor – 9 things every sparky should know

Electrical contractors get paid well, work in cool places on cool things, and can take their skills to pretty much any country in the world. But what separates the bright sparks from the dim bulbs? How do you become a good electrician?

1. Getting started as a good electrician

Becoming a successful electrician takes time and requires a broad range of skills. The rewards are worth it though, with good electricians earning attractive salaries around the world.

A solid foundation starts with your training. Paying attention during your studies will help launch your career as an electrician. Training takes around four years and is primarily completed through an apprenticeship and/or course. In most cases, you'll earn while you learn and once you've completed your apprenticeship (and been registered and/or licensed) you're good to go!

2. Concentrate on customer service

While maths and physics knowledge will help to become a certified electrician, starting a successful electrical business will require strong customer communications skills. Being a good electrician starts with customer service.

Good communication helps to keep you and your customers on the same page. Even if something goes wrong during the project, a customer will appreciate being kept in the loop. Treat your customers the same way you'd like to be treated, and they'll do the same in return. Electricians get a lot of business through word of mouth referrals,

and repeat business from happy customers.

3. Build strong relationships

Communication doesn't end with customers. Your staff, subcontractors and suppliers require the same treatment. Time is money and poor communication wastes time. Learn to communicate well and build strong positive relationships with everyone you interact with.

4. Never stop learning

Don't think completing an apprenticeship means you should stop learning. There are many other electrical skills to learn and courses to take. If you're looking to run your own electrical business, you should think about things like safety and business development courses as well.

On top of that, there are often changes with local electrical standards or technological advancements that you'll need to keep up with. If you want to stay on top of your game you'll need to stay on top of the learning as well as key trends such as renewable energy and home automation.

5. Keep cash flowing

Get paid well is one thing, but it's the overheads that make the difference. Your hourly charge-out rate might look great on paper but you'll need to pay close attention to your overheads to make sure you're earning a comfortable amount.

Simple things like making sure you recover all your materials costs, creating minimum call out charges and recovering industry-standard margins on materials will make a massive difference

to your bottom line.

On top of this, making sure to invoice customers on a regular and consistent basis will drastically improve your cash flow. A job management system will help you track overheads, recover costs and get paid faster.

6. Keep your digital details up to date

If you run a trade business, you must pay attention to your online presence. These days, local products or services are just a quick Google search away. Make sure you show up in search results by creating a website for your electrical business.

Social media profiles will also help to boost your reach. Think about whether these platforms would suit your business.

Small business directories can also help to promote your business, especially if you don't have your own website. See which options suit your business best by looking at lists of small business directories for your local area.

If you've already made a start on all this, make sure all your digital channels are up to date. That way, when prospective clients find you, they can get in touch straight away. If you aren't committed to a particular platform, then it's best to avoid it completely. Old or outdated information may harm your reputation if anyone stumbles across it.

7. Know your health and safety

Like most trades, electricians are at a high risk of injury. You're exposed to health and safety risks daily – it's just part of the job. The good news is that the risk can be minimised with the right

knowledge. But if you're not clued up, you could find yourself in a very serious situation.

Protect yourself, your colleagues and your customers by making sure you're up to date on your health and safety obligations and policies in the workplace.

8. Become a master problem solver

A fundamental part of an electrician's job is preparing or diagnosing electrical problems. Usually, the cause of the problem may not be readily apparent.

Learning how to quickly and efficiently troubleshoot then problem solve is half the battle. The other half is knowing which diagnostic tool to use at the right time. Knowing how to solve common electrical problems will help you finish jobs quicker, giving you the opportunity to take on more work and leaving you with a trail of happy clients.

9. Your career in electrics

Not everyone is cut out to be an electrician. It requires drive, effort, and a positive outlook when things seem negative. The rules for success are mostly the same across all fields – you'll need to be personable and friendly, clued up on health and safety, and be open to learning new ways of doing things. Above all, you need solid business processes to help free your time and keep track of your income so you can focus on what's most important – building your reputation and growing your business.

Source: www.tradifyhq.com

ABB leads the way in developing new technology to drive our e-mobility future

Transportation is a major contributor to CO₂ emissions globally, accounting for about 24% of total emissions come from this important sector. Of this figure, more than 75% is from road transportation in the form of cars, trucks and motorbikes. Surprisingly, the aviation sector only accounts for 11% of emissions here, while passenger cars account for 60% of road transportation emissions globally. Electric mobility (e-mobility), paired with renewable energy generation, stands to play a major role in significantly lowering global CO₂ emissions in the transportation sector. This will not only help us achieve our global targets, but have a positive impact on the environment and our quality of life due to reduced pollution and noise.

After a decade of rapid growth, the global electric vehicle (EV) stock hit the ten million mark in 2020, reports the International Energy Agency (IEA), which represents an astonishing 43% increase over 2019. China has the largest fleet with 4.5 million electric cars, with Europe recording the largest annual increase last year of 3.2 million. Globally, governments spent US\$14 billion on direct purchase incentives and tax deductions for electric cars in 2020, a year-on-year increase of 25%.

Not to be outdone with accelerating developments in the EV market worldwide, the Department of Trade, Industry and Competition published a Green Paper entitled 'The South African Road to Production of Electric Vehicles' on 18 May 2021. It aims to establish a clear policy foundation to coordinate a long-term strategy to position South Africa at the forefront of advanced vehicle and vehicle component manufacturing, complemented by a consumption leg. It will likely boost our competitiveness in the global race to transition from the internal combustion engine era into e-mobility solutions and technologies.

This follows the Minister of Trade, Industry and Competition challenging major South African automotive manufacturers in 2019 to assist to develop a roadmap for local EV production. The various workstreams of the automotive industry's Master Plan were launched shortly thereafter, including a focus on technology changes and deeper localisation. The draft Green Paper aims to develop a framework upon which a comprehensive and long-term automotive industry transformation plan on new energy vehicles (NEV) can emerge, with a specific focus on the creation of a high-yielding business environment. This includes an appropriate fiscal and regulatory framework that will make South Africa a leading, highly competitive location for EV production, not only in Africa but globally.

Another focus is the development and investment in new energy vehicle (NEV) component technology and expansion of the fledgling electric supply chain; reinvestment and support towards reskilling and upskilling of the workforce to ensure the right skills are available for the design, engineering and manufacturing of EVs and related components and systems; the transition of South Africa towards cleaner fuel technologies available globally; and adoption of new and sustainable manufacturing processes to significantly reduce greenhouse gas emis-

sions and improve our environmental wealth.

In a research note on the current EV market in South Africa, Old Mutual notes that the current charging network is still very small, and that it is going to take a long time before there is a widespread distribution of charging points. However, the larger issue is that a charging network is only as good as its power supply. More specifically, a large network of frequently used charge points needs a reliable industrial-strength power supply. Old Mutual notes: "Much would need to be done to ensure that the national grid has the capacity to cope with the petrol-to-electric switch, and energy producers and government need to anticipate and prepare for higher energy demands."

Therefore, it is readily apparent the e-mobility market segment requires integrated charger and electrical infrastructure architectures that can be rapidly deployed. Here ABB leads the way to a zero-emission mobility future. With its mission and purpose to power e-mobility going forward, ABB engineers the electrification solutions for the transport of tomorrow, today. It ranges from smart transportation solutions from EV chargers for the home and electrified fleet depots and opportunity charging for electric bus and trucks to high-power chargers for the highway stations of the future.

ABB's modular building block approach with integrated communication allows for scalable, repeatable designs for fast implementation in the rapidly developing EV market globally. One particular scalable solution to build depot charging infrastructure, for example, is our eFleet depot solution. Here the combination of modular blocks provides the solution architecture that meets the demand of modern eBus depots. On the other hand, the roadside relocatable EcoFlex with integrated high-power chargers is ideal for highway and public commercial parking. It allows for up to two 350 kW chargers in a relocatable enclosure: A 20-foot enclosure with up to four 175 kWHP cabinets, ac/dc, two 350 kW charge posts and an optional 50 kW dc fast charger.

The EV Site System (EVSS) provides integrated control and management between the chargers, electrical infrastructure and customer systems for seamless operation. The OPC UA protocol provides open communication and common interfaces. ABB chargers have integrated systems for connection to customers' operating systems. EVSS allows for connection to other architectures (battery energy storage system or a MV feeder plus transformer) for easy transition to future needs.

A decade ago, the concept of autonomous driving and full EV fleets was very much a vision. It is fast becoming a reality, with ABB leading the way in developing new technologies and integrated solutions to drive our EV future. ABB entered the EV charging market in 2010 when it launched its pioneering DC charger. Now more than 14 000 ABB dc fast chargers are sold across more than 80 countries, from Peru to Rwanda. ABB is a global market leader in e-mobility charging solutions, with a strong market share in Europe, Asia Pacific and the US.

In 2013, ABB was the first company to develop networks of 50 kW



Yuri Ramsamy, Product Marketing Specialist, ABB South Africa.

chargers, spanning complete nations. This was paired with a unique cloud-based service for remote monitoring and servicing of chargers, which was a real game changer for connectivity, and now forms part of the ABB Ability™ ecosystem. More recently in 2018, ABB was first-to-market with its liquid-cooled full 350 kW capable charging technology, which delivers higher power and charging speeds. Early 2020 saw the acquisition of Chinese EV charging provider Chargedot, giving ABB a stronger entry into the largest e-mobility market in the world and broadening its portfolio of dc and ac fast charging.

ABB offers a total EV charging solution from compact, high-quality AC wallboxes and reliable DC fast-charging stations with robust connectivity to innovative on-demand electric bus-charging systems, with infrastructure solutions that meet the needs of the next generation of smarter mobility. In addition, ABB also offers Connected Services through its ABB Ability™ platform to allow charging station owners to monitor and configure charge points remotely, adapt business and pricing models over time, keep charging infrastructure up-to-date with the latest software, service the equipment efficiently and with minimal operational effort, increase charger uptime and the reliability of the charging network, and minimise investment in IT infrastructure and back-end software.

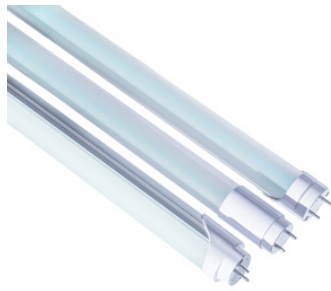
The faster we transition to EVs, the bigger the change will be, and the more stakeholders and OEMs we expect to enter this burgeoning market. We will also see the merging of two worlds, where the automotive world becomes part of the electrical world. In the past, these were two distinct industries, but in the next ten years we will see them coming together to offer a better user experience.

By Yuri Ramsamy, Product Marketing Specialist, ABB South Africa

Enquiries: www.abb.com



New offering of Green Finance options for energy efficient solutions



Infinite Blue Energy (IBE) is a specialist South African-based lighting, energy efficiency and solar PV solutions company that has been in the industry for more than a decade. IBE's continued vision is to provide professional, quality and sustainable energy-efficient lighting and solar PV solutions and products that are engineered to meet its clients' unique requirements. The company's solutions have application in various sectors, including residential, retail, commercial, industrial, hospitality, healthcare, roadway and education.

IBE has a proven track record in the supply and instal-

lation of multi-functional lighting and solar PV solutions for small, medium and large lighting projects. Notably, IBE was a primary product supplier to the Growthpoint Property Limited energy efficiency lighting project, where its Save It Easy™ electronic ballast adaptor kits were installed in 157 Growthpoint buildings.

All of IBE's products and solutions are fully compliant with SABS, NRCS and/or SANS standards and requirements and its established reputation is testament to its commitment to service excellence, innovation and cost competitiveness.

Green funding options to help save electricity and money

By providing turnkey LED lighting solutions which incorporate design, engineering, sourcing, measurement, monitoring and after-sales management, substantial electrical energy cost and maintenance savings can be achieved. These savings range from 50% to 80%, savings which will help your business or home to achieve its sustainability goals, while impacting your bottom line positively.

IBE's latest offering, Pay As You Glow™, gives its clients access to various Green Finance options for all of its energy efficiency solutions, allowing clients to convert lighting expenditure into a quantifiable investment, without the need for upfront capital expenditure.

In a nutshell, a physical audit of the premises is undertaken and a detailed report is gener-

ated. This report is used as the basis for a tailored electricity saving solution and allows clients to make informed decisions relative to the Green Finance options, if required. Once finance has been approved, professional installation is implemented by IBE.

Solar PV and battery back-up solutions

Furthermore, IBE has formed a strategic partnership with Jager, one of South Africa's foremost engineering, procurement and construction companies. Jager's decades of knowledge and expertise in the energy industry allow IBE to provide a full spectrum of solar solutions, which include grid-tied, off-grid and hybrid solutions.

More specifically, the company's battery back-up solutions offer homes and businesses electricity back-up in the event of load shedding and/or unforeseen power outages. These can also be paired with solar panels to convert your emergency power system into a source of green energy.

The company makes it easy to switch or transition to solar energy without the need for upfront investment. Advice on the most suitable funding options and/or solar service agreements is provided as part of the process.

IBE is helping South Africa to embrace cost-effective and energy efficient solutions, as we join the global movement towards cleaner, more sustainable energy.

Enquiries: hello@infiniteblue.co.za

The affordable, proven and tested PowerVault 16500 mAh power bank

PowerVault is a Lithium power bank, that uses clever engineering to offer a 12 V vehicle a jumpstart when the battery is flat. No assistance is required to perform a jumpstart; it is handheld and simple to operate, with fool proof safety features. The PowerVault is compact, and the entire kit comes in a handy zip up case that will fit into your cubbyhole.

New-age compact jump starters have been on the market for several years with PowerVault becoming a trusted brand for quality and reliability over the last six years. Boasting an impressive 16500 mAh battery, the device is powerful enough to start just about every car on the South African roads. The PowerVault is also used by several industry sectors including mining, roadside assist companies, motor dealerships, motor repair, and consumers for the convenience of having a portable mobile laptop and USB device charger. Outdoor enthusiasts trust the brand when exploring off the beaten track.

The build quality is outstanding, and it comes with a host of accessories. Included are:

- 16500 mAh Power bank
- Smart car jump starter cable
- 220 V wall charger
- 12 V cigarette lighter for charging the unit to charge the power bank in the car.
- 12/15 V accessory cable.
- 12/16 V adaptors
- 3-way USB cable.

The PowerVault, however, is much more than just a jump starter. Thanks to several USB and auxiliary ports it doubles as a power bank to charge devices – and unique to the PowerVault – it has a 19 V output designed to charge laptop computers.

Electrolux South Africa to power 80% of production with new solar energy system



Electrolux South Africa has embarked on its journey to exit the national electricity grid and move to renewable solar energy, cutting the organisation's carbon footprint at its local Kwikot water heater (geyser) manufacturing plant by an impressive 40%.

Ughard de Clercq, lean engineer at Electrolux South Africa said the organisation was expected to complete the development of a major 1 MW solar energy system at its Benoni factory by November 2021. The company has invested R16 million in the solar system which it started building in July 2021.

"We plan to be climate neutral by 2030 in all our manufacturing operations. So far, we have implemented a 112 kWp solar system for our offices in 2020 and have saved over 96 tons of CO₂ just this year. We expect that the 1 MW solar system will reduce our manufacturing CO₂ footprint by 40%," said de Clercq.

Once completed, the solar system will comprise 1278 solar panels that will power the factory during the day, supplying as much as 80 to 90% of the plant's energy requirements. The organisation also intended to explore the possibility of purchasing renewable energy from Eskom, to meet its nighttime electricity requirements when the parastatal is ready to offer privately produced green energy as an option, said de Clercq. "We did not develop more than one megawatt due to the roof space and current regulations limiting the amount of electricity generated via a solar system, but the government is looking to increase it," he added.

Since limits have been increased to 100 MW or more, Electrolux would also investigate extending its solar system so that it could sell power back to the electricity grid.

"If the local law and infrastructure allow it, we would want to sell the excess green electricity back into the grid. We would like to be able to make a contribution to other organisations by supplying them with green energy," he said.

Electrolux would likely also explore installing smaller solar energy systems at its geyser distribution centres around South Africa.

"We plan in the next two to three years to start reducing the consumption of our fossil fuels by switching from diesel to electric forklifts that can be charged by our solar system," said de Clercq.

"We are also investigating how to reduce our water consumption in the future by harvesting the rainwater to reduce our environmental impact even further."

This latest investment in solar energy at its local factory was part of the organisation's global strategy to achieve its 'better living' 2030 goal of zero carbon emissions, partially by using renewable energy in production. The investment also follows similar solar systems installed at the company's plants in China, Thailand, and Australia.

"We strive not only to manufacture sustainable products such as our appliances but to manufacture them in a sustainable way. It is important to look after the environment and do our part for future generations to come," commented Murray Crow, Electrolux South Africa's Managing Director.

Enquiries: www.electrolux.co.za

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South Africa's increasingly unreliable power supply means that diesel is more in demand than ever, so have your fuel injection system professionally repaired at a **Bosch Diesel Service workshop**. Our certified fuel injection experts are trained to world-class standards and will make sure the cleaning, servicing, refurbishing and calibration of your diesel injection components are done to the same standards.

All work is done in-house to the **highest standards using quality parts**. To keep your generator running at optimal capacity, book a diesel injection component repair today.

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No time for operations to stop in data centres

Continuity of operations during power outages is critical in all sectors of business and has become even more important in digitally-driven environments, like data centres.

No organisation can afford to experience disruptions of services, especially businesses that depend on critical access to cloud environments. There has been a significant increase in the utilisation of cloud computing during the global Covid-19 pandemic, resulting in greater demand for storage space and infrastructure - all of which is handled by data centres.

According to Legrand - global specialists in electrical and digital building infrastructures - a reliable uninterruptible power supply (UPS) system is essential in data centres, to ensure that electrical power to equipment is never affected or interrupted and that data centres are fully operational during power outages.

UPS systems also prevent power surges and provide a consistent, filtered power supply and avoid power lapses, thus protecting critical equipment. UPS devices also prevent data losses and maintain battery life of the system.

Legrand's advanced UPS systems ensure continuity of service of essential electrical equipment in data centres, by providing reliable performance in terms of power and back up time, particularly during electrical network disturbances - like power outages and loadshedding - that are increasingly common in South Africa.

Individuals and businesses rely on the continuous operation of centralised, networked computers at data centres, to process, store and share large quantities of data at all times.

Work that requires intense hours of concentration is valuable for businesses and can result in direct financial losses if a PC or server suddenly fails under a power loss, for example, design software and work programmes that communicate via a server.

Legrand specialists advise that servers need to be powered down, as a sudden, cold switch off may result in loss of data. If the power to a server is interrupted during its operation, the UPS will automatically run a systems-check on rebooting, prolonging startup and extending the systems to be offline.

Legrand's UPS products are divided into two categories - single-phase and three-phase units - with solutions that ensure optimum performance in terms of power and backup time.

Important systems for use in data centres are Legrand's conventional UPS Keor LP units, which are single-phase on-line double conversion VFI-SS-111 devices, from 1 to 3 kVA and Dakar DK Plus units, which are single-phase on-line double conversion VFI devices, from 1 to 10 kVA.

The Legrand design team has incorporated advanced technologies into these new systems, to optimise energy-efficiency and an intelligent battery charging system extends the system's service life. In addition to significantly reducing UPS consumption and operating costs, these features also reduce the environmental impact of battery disposal.

An important benefit of Legrand's modular UPS systems is the power supply is customised to exact requirements and can be modified at any time. Standard modules can be added to existing configurations to increase power or backup time.

A range of communications accessories has been designed for managing and configuring the UPS, as well as for remote control of the system. These devices include network interfaces for real time control of the UPS and for managing numerous events that include no power, over-loads and by-pass problems. These network interfaces, with a 32-bit processor, do not require any external software. Other accessories include sensors for monitoring ambient temperature and humidity, smoke detectors and fire safety controls, as well as air conditioning fault and intrusion detectors.

Communication and supervision software for accessing the operating parameters of the UPS and for carrying out full diagnostics and the configuration of specific functions, is also available. Legrand's online site configurator www.ups.legrand.com assists with the selection of the correct UPS, by providing easy power selection and calculation of the necessary back-up time required.

The Legrand team offers a technical advisory service to ensure that the volt-ampere (VA) rating of

the selected UPS device is compatible with the total load of the equipment and accessories that need to be protected at the data centre.

In addition to UPS systems for data centres, the company also offers carefully designed solutions for offices, shopping centres (especially cash registers), hospitals, medical centres and hotels. Other applications are in factories and warehouses, as well as airports, rail and ship transport.

Legrand's also offers UPS systems suitable for home offices, which are gaining popularity during the current Covid-19 pandemic.

Enquiries: legrandsouth-africa@legrand.co.za



Motors | Automation | Transmission & Distribution | Energy Solutions | Electrical Construction



MORE THAN JUST GENERATOR SETS.....
CUSTOMISED CONFIGURATIONS
 to provide a tailor-made solution for your energy challenge



ZEST WEG Generator Sets prides itself in solutions driven innovation through our engineering acumen. In addition to our stock availability which allows us to rapidly respond to our customers' energy requirements, we have the ability to provide comprehensive after sales support to our customers across Africa.

Through our manufacturing facility located in Cape Town, we offer access to locally manufactured, fit-for-purpose generator sets; standard off-the-shelf diesel generator sets and custom built, application specific units; in either stationary or mobile configurations from 10 kVA up to 3350 kVA. Larger power generation requirements can be provided, through the synchronisation of multiple sets.

Zest WEG is proud to celebrate 40 years of innovation in Africa.



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MANUFACTURERS

ACTOM Protection and Control
Aurora Lighting
BEKA Schréder
Bosch Diesel Service
Caco Trading
Clearline Protection Systems
Crabtree South Africa
Eurolux
HellermannTyton
LEDvance
Legrand SA
Magnitech
Matelec
Megger
NewElecJDL
Nordland Lighting
Opplé Lighting SA
Phoenix Contact
Power Process Systems
Shuttle Lighting Control Systems
Silicon Engineering
Sollatek Electronics
Spazio Lighting
Superlume
Three-D Agencies

DISTRIBUTORS

ACDC Dynamics
Altron Arrow
ARB Electrical Wholesalers
Arrow Altech Distribution
Atlas Group
Aurora Lighting
Bellco
Bosch Diesel Service
Citilec
Clearline Protection Systems
Comtest Distribution
Cummins SA
Denver Technical Products
Electrahertz
Electromechanica
Eurolux
ExSolar Solar Solutions
Fusecomp
Genlux Lighting
HellermannTyton
Magnet Electrical Supplies
Magnitech
Major Tech
Mantech Electronics
Matelec
MCE Electric
Power Process Systems
Radiant Lighting
Regal Distributors
Silicon Engineering
Sinetech
Superlume
Swan Electric
Three-D Agencies
Vert Energy
Voltex
Vossloh-Schwabe
Waco Industries
Zest WEG
Comtest
Sinetech
Switchman Products
ACDC Dynamics
Elmari Erasmus/Dirk Klynsmith

CONTACTS

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Mattheus van Emmenis
ARB Electrical Wholesalers
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Arrow Altech Distribution
Sales
Atlas Group
Annie Storar or Imran Gaffoor
Aurora Lighting
Olivia Tait
BEKA Schréder
Grant Combrink
Bellco
Shiraj Wentzel
Bosch Diesel Service
Sales
Caco Trading
Christopher Hinckley
Citilec
Jeff Forman
Clearline Protection Systems
Tanya/Rakesh
Comtest Distribution
Sales
Crabtree South Africa
Brendan
Cummins SA
Sales
Denver Technical Products
Mervyn Stocks
Electrahertz
Frank Proude (Pta) Peet Lourens (Jhb)
Electromechanica
Debbie Venter
Eurolux
Andrew Wex
ExSolar Solar Solutions
Sales
Fusecomp
Charmaine
Genlux Lighting
Glen Hill
HellermannTyton
Ingrid Nicolaus
LEDvance
James Clifford
Legrand SA
Johan Bosch
Magnitech
Amar Singh
Major Tech
Werner Grobbelaar
Mantech Electronics
Manny Moutinho
Matelec
Lindsay Bam
MCE Electric
Sales
Megger
Sales
NewElec
Luc Dutrieux
Nordland Lighting
Johann Lamprecht
Opplé Lighting SA
Willem Venter
Phoenix Contact
Carl Coetzer
Power Process Systems
Michael du Toit
Radiant Lighting
Alfred Weldon
Shuttle Lighting Control Systems
Tracey Steyn
Silicon Engineering
Chris Hanson
Sinetech
Chris Rodgers
Sollatek Electronics
Nick Allen
Spazio Lighting
Sales
Stone-Stamcor
Kevin Gray

CONTACTS

Superlume
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Swan Electric
Franza van den Heever
Switchman Products
Josh Berman
Three-D Agencies
Mark Jenkins
Vert Energy
Grant Robertson
Voltex
Hugh Ward
Voltex Lighting
Wendy Higgins
Vossloh-Schwabe
Barry Harrison
Waco Industries
Vanessa Venter
Zest WEG
Generator Sets Sales

GENSETS AND ACCESSORIES

ACDC Dynamics
Wide variety of domestic, commercial and industrial generators and accessories
ARB Electrical Wholesalers
Full range of gensets and accessories
Atlas Group
Gensets and accessories available according to customer specifications
Bellco
Gensets and accessories available according to customer specifications
Bosch Diesel Service
Gensets and accessories
Caco Trading
Full range of gensets and accessories
Citilec
Gensets and accessories
Cummins SA
Full range of gensets and accessories
Electrahertz
Full range of gensets and accessories
Electromechanica
Full range of gensets and accessories
Fusecomp
Fuses and fuse accessories/solar equipment
HellermannTyton
Accessories for the installation and maintenance of gensets; Large selection of cable ties including UV and high temperature, as well as spiral binding, Ratchet P Clamps, lugs and pre-insulated terminals, heat shrink
MCE Electric
MCE petrol generator sets
Silicon Engineering
External battery chargers
Sinetech
Inverters – single-phase, three-phase, grid tie, off grid and hybrid
Swan Electric
Gensets and accessories
Switchman Products
Changeover panels, controllers and enclosures
Vert Energy
Full range of gensets and accessories
Voltex
Gensets and accessories available according to customer specifications
Zest WEG
Full range of diesel generators and accessories, 10k VA-3350k VA. Standard or custom built- prime or standby, single sets or synchronised power plants

EMERGENCY LIGHTING

ACDC Dynamics
Extensive range of emergency lighting in various brands and options including Gewiss; emergency lighting for buildings, mining and automotive applications
ARB Electrical Wholesalers
Full range of emergency lighting
Atlas Group
Distributors of Voltex Lighting emergency exit and other signs; emergency control gear for fluorescent lights
Aurora Lighting
Extensive range of emergency lighting
BEKA Schréder
Full range of emergency lighting
Bellco
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Citilec
Full range of emergency lighting

EMERGENCY LIGHTING

Clearline Protection Systems
Range of emergency lighting
Denver Technical Products
High power mains fail safety lighting; trailer mounted floodlighting, up to 4 x 1 000 W; high pressure sodium lamps powered by onboard diesel generator; handheld explosion-proof intrinsically safe torches
Electrahertz
Full range of emergency lighting
Eurolux
LED emergency light; rechargeable portable emergency lights
Genlux Lighting
Full range of emergency lighting
Legrand SA
Full range of self-contained emergency lighting
Magnitech
Emergency lighting; battery backup and battery cycling units; bulkheads
Major Tech
Full range of emergency lighting
MCE Electric
O-Lite rechargeable portable LED floodlights
Nordland Lighting
Full range of emergency lighting
Radiant Lighting
Floodlight LED aluminium 12 W battery back-up; rechargeable camping emergency lanterns LED battery 1.6 and 2.4; motion sensor LED plus flashlight emergency lights 40/35 and 35/18 lumen; exit light 230 V LED with backup; LED lamps A60 5 W E27 and B22 4 000 K with backup
Sinetech
Solar street lighting with five year warranty
Spazio Lighting
Full range of emergency lighting
Superlume
A variety of emergency lighting
Voltex
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Voltex Lighting
Distributors of emergency exit and other signs; emergency control gear for fluorescent lights
Vossloh-Schwabe
Full range of emergency lighting
Waco Industries
Rechargeable desk lamps; Rechargeable 24 LED Spot Lite

BATTERIES FOR EMERGENCY APPLICATIONS

ACDC Dynamics
Full range of batteries and backup solutions such as UPS systems, invertors, etc
Altron Arrow
Full range of batteries for emergency applications
ARB Electrical Wholesalers
Full range of batteries for emergency applications
Arrow Altech Distribution
Lithium iron phosphate battery management solution
Atlas Group
Distributors of Solid State Power invertors in various sizes
Aurora Lighting
Extensive range of battery backups for LED light fittings
Bellco
Distributors of invertors in various sizes
Caco Trading
Full range of batteries for emergency applications
Citilec
Full range of batteries for emergency applications
Electrahertz
Full range of batteries for emergency applications
Electromechanica
Full range of batteries for emergency applications
Fusecomp
Lead acid batteries 12 V 100 Ah
Mantech Electronics
Full range of sealed lead acid (SLA) batteries in regular, deep cycle and gel types
Radiant Lighting
LED panel emergency backup: metal case, 3 m cable, 6 A plug; spare emergency backup for LED; backup 12 V 50 W remote/maintained; remote backup for fluorescent 6 – 65 W magnetic 1H00 five cell
Regal Distributors
Batteries for emergency applications
Silicon Engineering
BAE: Belin stationary, solar, UPS lead acid batteries; Everexceed: stationary, valve regulated and re-combination nickel cadmium cells
Sinetech
AGM gel/lead acid hybrid solar batteries; nano carbon batteries; lithium Ion batteries





BATTERIES FOR EMERGENCY APPLICATIONS

- Stone-Stamcor**
Yuasa sealed lead acid batteries
- Swan Electric**
Full range of batteries for emergency applications
- Voltex**
Distributors of inverters in various sizes
- Waco Industries**
Battery backup for light fittings

PUMPS FOR EMERGENCY APPLICATIONS

- ACDC Dynamics**
Variety of pumps for most applications including solar pumping systems
- Bosch Diesel Service**
Diesel injection system
- Matelec**
Float switches

UPS

- ACDC Dynamics**
Comprehensive range of UPSs
- ARB Electrical Wholesalers**
Full range of UPSs
- Atlas Group**
Distributors of Solid State Power UPSs in various kVA ratings
- Bellco**
Distributors of UPSs in various kVA ratings
- Citilec**
Full range of UPSs
- Electrahertz**
Full range of UPSs
- Eurolux**
UPS inverters
- Legrand SA**
Full range of conventional and modular single-phase and three-phase UPSs
- Mantech Electronics**
Vast stocks of inverters and UPSs
- Phoenix Contact**
Industrial UPSs
- Regal Distributors**
Stockists of UPSs
- Silicon Engineering**
BAE - Berlin industrial stationary lead acid batteries
- Sinotech**
UPS for all applications: 650 VA to 800 kVA
- Sollatek Electronics**
Full range of UPSs
- Swan Electric**
Full range of UPSs
- Voltex**
Distributors of UPSs in various kVA ratings

LIGHTING FOR HAZARDOUS AREAS

- ACDC Dynamics**
Distributor of Halo Lighting Solutions including LED strip lighting systems; wide range of flameproof and explosion-proof lighting
- ARB Electrical Wholesalers**
Full range of lighting for hazardous areas
- Atlas Group**
Distributors of luminaires for hazardous areas
- BEKA Schröder**
Full range of luminaires for hazardous areas
- Bellco**
Distributors of luminaires for hazardous areas
- Citilec**
Full range of lighting for hazardous areas
- Clearline Protection Systems**
Range of lighting for hazardous areas
- Denver Technical Products**
Wolf safety lamps and Smith Light LED lighting for industrial work areas
- Electrahertz**
Full range of lighting for hazardous areas
- Eurolux**
Vapour-proof fluorescent fittings; CFL enclosed 'bullet'
- Genlux Lighting**
Full range of lighting for hazardous areas
- Legrand SA**
Full range of weatherproof bulkhead lights
- MCE Electric**
O-Lite LED floodlights from 10 W to 200 W
- Nordland Lighting**
Full range of lighting for hazardous areas

LIGHTING FOR HAZARDOUS AREAS

- Radiant Lighting**
Full range of lighting for hazardous areas
- Sinotech**
Solar street lighting with five year warranty
- Spazio Lighting**
Full range of lighting for hazardous areas
- Superlume**
Zone rated lighting fixtures
- Voltex**
Distributors of luminaires for hazardous areas
- Voltex Lighting**
Distributors of luminaires for hazardous areas

OTHER

- ACDC Dynamics**
Large lighting offering including decorative, LED and general lighting applications
- ACTOM Protection and Control**
General protection relays
- ARB Electrical Wholesalers**
Electrical cables and wiring accessories; electrical contractors' materials
- Arrow Altech Distribution**
Protection modules; SPDs
- Atlas Group**
Full range of cables and wires as well as a range of overhead line equipment, mini subs and transformers
- Bellco**
All electrical industrial and commercial products as well as the associated accessories; Elespec power quality PFC and monitoring; MV and LV panels
- Citilec**
LED energy efficient lighting
- Comtest Distribution**
Battery testers to ensure your batteries are fully operational
- Crabtree South Africa**
Electrical wiring accessories such as switches and sockets (domestic, commercial and industrial)
- Denver Technical Products**
Hannay reels for cable management
- Eurolux**
Inverters
- ExSolar Solar Solutions**
Backup solar UPS solutions, solar DIY kits, solar camping kits, solar batteries, solar panels and solar
- Fusecomp**
Electrical components
- HellermannTyton**
Stock various tools and test instruments including multimeters, clamp meters and insulation testers
- LEDvance**
OSRAM LED lamps, luminaires
- Mantech Electronics**
Large range of solar panels, solar regulators, power supplies, instruments, meters, cabling and accessories
- Matelec**
Cable glands
- Megger**
Protection: cable fault, transformer, circuit breaker, battery and low voltage
- NewElec**
Three-phase motor protection and control relays for low voltage motors
- Nordland Lighting**
Full range of LED luminaires
- Opplite Lighting SA**
Full range of LED luminaires
- Power Process Systems**
Electrical enclosures and change-over systems with control
- Shuttle Lighting Control Systems**
Dimmers for LED, Halogen and Incandescent lights
- Silicon Engineering**
Silicon battery chargers for battery tripping systems
- Sinotech**
PV solar panels: monocrystalline, polycrystalline, CIGS thin film; power inverters; backup power systems; battery chargers; solar cable; solar mounting structures; solar connectors; battery management systems; solar charge controllers/charge regulators
- Sollatek**
Voltage protection (switches and stabilisers/regulators) 2 Amp to 2 MVA
- Superlume**
Recently launched Smart Home Wifi switches
- Three-D Agencies**
Cable accessories



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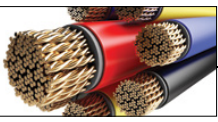


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A major technological shift in flameproof glanding

For nearly 50 years, CCG's Ex certified cable glands have been recognised globally by electrical engineers for the Built in Safety™ features of the Captive Component Gland® design.

Having major safety advantages over other makes of glands which have loose components, Ex certified CCG glands have critical seals, single orientation armour clamping cones and cone rings (for SWA and braid cables) held captive within the gland meaning that these components do not need to be individually assembled when the gland is installed and therefore cannot get lost or wrongly fitted. This equates to an extremely easy installation process.

Building on this already solid international reputation for innovation, in 2013 CCG revolutionized the international cable gland market with the introduction of the award-winning QUICKSTOP-Ex® Injection Resin flameproof barrier gland.

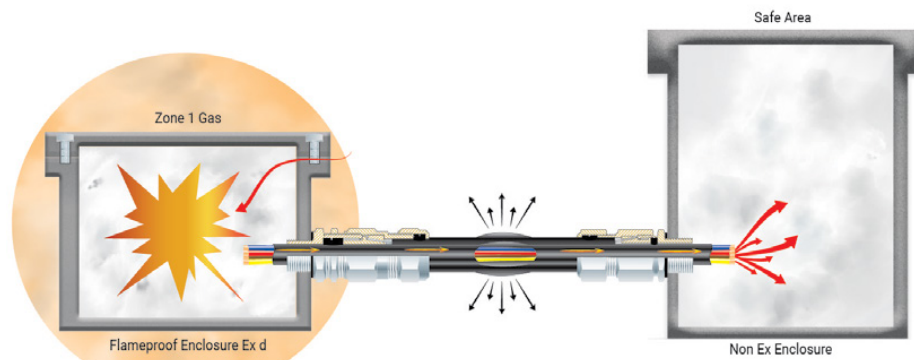
Recognising that explosive gasses or liquids can migrate down the interstices of cables in hazardous areas thus bypassing traditional cable gland inner seals, the IEC 60079-14 installation standards require that barrier glands be fitted on Ex d (flame proof), Ex nR (restricted breathing) and Exp (pressurized) equipment, and on cables which run from hazardous areas to non-hazardous areas.

A barrier gland is designed to fill all the interstices and gaps and seal around the individual cable conductors within the cable inner bedding, thus giving a 100% barrier seal against explosive gasses and liquid migration down the cable. Traditional inner rubber compression/tapered seals can never achieve this level of sealing.

The IEC/SANS 60079-1 standard requires that Ex d glands with rubber type compression / tapered displacement seals withstand a pressure of 30-bar, this test is to simulate an internal explosive pressure generated within a flameproof enclosure. However, these tests are performed on solid steel mandrels and do not take into consideration the real-life properties of cables experienced in the field which are that they have bedding susceptible to creep or cold flow, are never completely filled, solid or gas tight. This means that although traditional glands with compression/tapered seals will easily pass the 30-bar pressure test on a steel mandrel they will perform very differently when installed on the multitude of different types of cables found installed in modern hazardous areas plants. Unfilled or multicore cables become mini pipes whereby explosive pressures generated in flame proof enclosures force



Unfiled cables.



Explosive gasses bypassing traditional flameproof seals.

hot gasses down cables bypassing the traditional gland seals and flame paths. This not only causes damage to the cable but also creates the potential for an external explosion. With onsite temperature fluctuations, explosive gasses or liquids can also migrate down cables from a zoned area into non-zoned areas such as a control rooms or non-certified equipment. (The infamous SeaGas explosion incident in Australia is a good example of this type of gas migration).

Although traditional two-part putty mixed barrier glands have been on the market for many years, these barrier glands took a long time to install as the putty had to be hand mixed and installed and took a few hours to set. They also had a wide margin of error as it relied on the skill and subjective opinion of the installer to install the gland correctly. With the increased awareness of the updated IEC/SANS 60079-14 requirements and the increased mandatory requirement for barrier glands over the traditional "rubber taper/compression seal" type glands, CCG designed a faster easier and safer means of installing barrier glands. The QUICKSTOP-Ex® Injection Resin Barrier Gland uses a two-part quick setting resin which is instantly and accurately mixed and injected into the gland seal pot by means of a double injection tube and a vortex mixing nozzle. Being a liquid, the resin flows around the cable conductors filling all the voids and then

bonds in just minutes with a 100 % gas blocking seal quickly achieved.

After a request from one of CCG's major international oil and gas customers for an inspectable version of the QUICKSTOP-Ex® gland, the 2nd generation VORTEX Inspectable Injection Resin Barrier Gland® range was launched at the Offshore Europe Expo in 2019. The resin colour was changed to a bright yellow and a clear resin chamber was introduced so that the installer could easily inspect the resin fill.

Despite the COVID-19 economic downturn, CCG has seen tremendous uptake in the VORTEX® range of glands having supplied two major expansions in the Shell and SANTOS coal seam gas fields in Australia, the Sriracha Thai Oil refinery project and the Saudi Aramco Zuluf, Abu Safah, Berri and Safaniya Oil Field development projects.

As international safety standards and specifications change and engineers become more aware of EEHA safety related issues, Ex d I/II certified VORTEX Injection Resin Barrier Gland® technology is not just a simple game changer, it is the major technological shift in cable gland design and safety, making flame proof glands with old style compression/tapered seal technology all but redundant.

Enquiries: +27 (0)11 394 2020 or info@ccgcablegland.co.za

"Trust me, I'm an engineer!"

This saying was a very popular T-shirt message when I was in training. Of course, there are many disciplines within the engineering faculty, but the following events highlight that for any electrical work there should be an engineer from that discipline or all will go wrong.

In one such incidence I had been requested to a site where there was new construction on the go and was informed that a particular brand and model of MCB was performing badly, and 'failing'.

As one rushes off to site it will always cross one's mind that something could always be a problem in the application of an item, even after a host of QA driven tests in any factory. Manufacturers will always try to do everything economically possible to test in order to prevent any field failure issues, but from time to time, some are bound to slip through.

Before leaving home base the field complaint/QA data is duly inspected to ensure that things are stable. Notwithstanding all avenues being checked, one still arrives on site with some apprehension, after all this may be the first of a run of quality issues. One is just never fully sure.

So, the time for the visit came and during the booking in at reception it was obvious that there was another individual there for the same issues.

In this case, the other chap was from an electrical cable company.

We were collected and taken to the scene of all the trouble by one of the construction/installation engineers who quickly launched into why our products were found to be a massive issue during the commissioning phase.

The actual site housed a new zinc hot dip bath which, as you can imagine, is a huge molten zinc bath to drop metal piping into, in order to electro-galvanise the pipes. Power to the molten bath is required to be on 24/7 and the surrounding area was beyond comfortable ambient temperature.

Within seconds of seeing the cables used on the breaker to the molten bath, the main problem was identified. The cable selected was the cheapest soft strand type aimed at home welders! In other words, soft flexible copper with a very low duty cycle, so quite underrated and silicone covered but not suitable for the 400 V mains voltage.

Similarly, because the cables were running at such extremes, any connection with the MCB was being reduced to a very poor connection within hours, not to mention the underrating size, high ambient temperature and the poor connections done in the first instance ...

Fortunately, it is very rare that cases of such

poor judgement are seen within the electrical industry, but this surely highlights why we have to choose the engineer from the correct discipline in order not to mess things up. If we had not been summoned at the earliest failures, there could have been rather nasty consequences.

This surely also highlights why we have wiring codes and safety legislation that we all need to be fully aware of. So, two very relieved engineers returned back to their offices and, yes, you can trust me as your qualified electrical engineer! In this case the SANS 10142 and Occupational Health and Safety Act would apply.

By Kevin Flack

Flack has recently retired from industry and believes he still has valuable in-depth knowledge of the South African electrical landscape due to wide experiences gained in his 45+ years working career. He is keen to explore the training arena so that this can be passed on to the youth so as to benefit their practical ability in the electrical field. In these trying COVID-19 times, Flack can provide online training to keep your staff up to date on all aspects of circuit breaker deployment. Email kevin.flack@outlook.com

All the cable accessories you could need

HellermannTyton offers over 50 years of uncompromising quality in cable management solutions. The company not only offers cable management solutions but also a wide range of cable accessories catering for various industries.

Selected cable accessories

Cable ties

HellermannTyton's vast range of high performing cable ties and fixings, provides solutions which can meet practically any challenge. The company's core strength lies in the fact that it has done the hard work in the local market, ensuring that its range of cable ties suit the African market and its unique demands. Locally the company produce 50 to 60 million cable ties per month.

Available in a wide range of materials, the T Series MIL Spec Ties cable ties all feature internal serrations allowing for a positive hold onto cable, hose and pipe bundles. The design of the head guarantees a high tensile strength whilst allowing a very low insertion force. This, combined with the bent tail design of many of the ties, ensures a simple and quick installation. Whilst easily installed by hand - manual and pneumatic (for high volume applications) tensioning tools are available to ensure a consistent and safe installation.

The Stainless Steel Cable Ties MBT-FC-Series cable ties are rustproof and resist acids and high temperatures. The MBT (Metal Ball-Ties) offers a non-releasable locking mechanism that offers infinite adjustment along the length of the tie. These ties are available in 316 grade stainless steel.

The Metal Content MCT-Series Tie is a cable tie specifically designed for use in the food and pharmaceutical processing industries. A unique manufacturing process, involving the inclusion of a metallic pigment, enables even small 'cut-off' sections of the cable tie to be detected by standard metal detecting equipment.

The question constantly arises as to whether a black cable tie is suitable for use outside. This is dependent on the application of the tie, but in general the following statements can be made: A black cable tie made of polyamide 6.6 standard (PA66) is only coloured black with a low proportion of carbon black. This is not sufficient to protect the material from damage caused by UV-radiation in the long term. Products made from UV-stabilised polyamide PA66W are produced in accordance with ASTM standard D6779, offering outstanding weather resistance and performance against our harsh South African climate.

Cable lugs

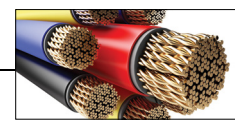
The company offers mechanical and crimp electrical lugs and connectors for underground electrical cables for Heavy Duty, Medium Duty and light weight applications. The only full range of SABS

The evolution of Pratley's Flameproof Cast Iron Junction Box

Pratley has been manufacturing flameproof junction boxes since the 1960s. Over the years, it has refined the design of these enclosures, making Pratley's cast iron flameproof junction boxes well-known in the mining and petrochemical industries.

With the recent IECEx approval of these junction boxes, Pratley has proven its commitment to world-class product development and innovation. One of these innovations is to offer Pratley's unique increased-safety (Ex e) Kwikblok® terminals as a termination option inside the flameproof junction box, essentially doubling the level of protection.

"By combining our flameproof junction box with



approved cable lugs are available from HellermannTyton.

Pre-insulated terminals

HellermannTyton supplies a wide range of Pre-Insulated Crimping Terminals, including pre-insulated terminal kits. Due to the varying conditions these terminals are used in, they are available in standard and twin grip versions for high vibration areas.

Heat shrink

HellermannTyton provides a comprehensive range of heat shrink tubing to suit any kind of application or conditions, from a cost-effective commercial grade to the highest mil spec shrink. Offering a 2-1, 3-1, 4-1 and 6-1 shrink ratio makes choosing the right shrink for your application very easy. HellermannTyton has been manufacturing heat shrink in its UK manufacturing plant for many years and also offers a comprehensive range of heat shrink break out boots and end caps.

Convolute tubing

The tubing is manufactured locally from medium impact, flexible, UV stable PVC material affording a durable product meeting the requirements of the relevant sections of SABS IEC 60614-1:1994 – pliable conduits for electrical installations. The tubing is supplied in white as standard. The flexibility and UV-stability of the material allows for a wide range of conduiting applications.

Earth rods

The copper bonded earth rod from HellermannTyton is an earth spike used to create a proper earth for buildings, electrical installations and electrical fencing. Copper earth rods are recommended to prevent electrical surges and to ensure proper bonding of the building. The rod is driven into the ground and connected via a 16 mm² cable to the main earth bar in the DB board and your copper water pipes. On electric fencing you will install an earth rod every 22 m or so, depending on the size of the property. The company's copper earth rods are manufactured from a high-quality carbon steel that is copper plated to 250 microns and complies to the stringent SANS 1063-2020 standards.

Ratchet P-Clamps

HellermannTyton thrives on taking established design conventions and improving on them. When the company received a request for a more versatile way to mount and clamp cables and hoses on construction machinery, it rose to the challenge. The result is the Ratchet P-Clamp. It is the most user-friendly, versatile and robust P-Clamp for fastening and fixing cables, wires, pipes and hoses on the market. Especially for maintenance work, the Ratchet P-Clamp is the ideal solution: cables and wires can be replaced with ease, and without having to unscrew the product. All you need is a screwdriver to open the closure again. This means that the Ratchet P-clamp can be reused hundreds of times.

our Kwikblok® terminals, we can prevent arcing or sparking across the connections themselves," explains Pratley Electrical Research & Development Manager Sven Breedt. In addition, electrical current limitations prevent those terminals from exceeding their service temperatures, together with limiting creepage and clearance or tracking distance. This means that the terminals are spaced such that there can be no arcs or sparks across the connections, adding a second dimension to the safety.

Flameproof junction boxes are specifically designed to house equipment that arcs or sparks, meaning that any termination type can be fitted into these enclosures. However, with the inclusion of increased-safety terminals inside a flameproof enclosure, the terminations rating is pushed up to Zone 0.

Wire connectors

HellermannTyton recently launched its new HelaCon Plus Mini. It is 40% smaller than the original HelaCon Plus and offers great space savings for use in modular applications, for instance, lightning installations. It is suitable for cables from 0.5 mm to 2.5 mm solid and rigid stranded cables. Depending on your application needs, the range is available from a 2-way, to an 8-way terminal.

Din rail

Mounting circuit breakers and industrial control equipment inside equipment racks is made easy with the HellermannTyton range of Din Rail.

Manufactured in Europe, HellermannTyton offers a high-quality solution for your application. Available in mild steel to 316 stainless steel.

Wall boxes

Designed to safely secure electrical light switches and plugs within walls, the Wall Box Range is designed and manufactured in South Africa to comply with local conditions and specifications. These wall boxes have an unbreakable design with easy to remove knockouts which will not destroy the box. The range complies to the IEC60335-1 and IEC 60695-2 glow wire test requirements.

Enquiries: www.hellermanntyton.co.za



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 Suppliers you can trust

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Outdoor lighting solution for fruit terminal

BEKA Schröder has supplied the outdoor lighting for APL's fruit terminal at the Port of Coega in the Eastern Cape. This newly constructed site combines fruit packing, cold storage and container depot activities in a single development.

Various luminaires, designed and manufactured in South Africa, were supplied to provide the outdoor lighting solution. These products were chosen for their long lifespan, high-quality materials and trust in the BEKA Schröder brand.

Internal roads

LEDLUME-MIDI mounted on glass-fibre reinforced polyester (GRP) poles have been installed along the internal roads.

The LEDLUME range offers optimised photometric performance with a minimum total cost of ownership. It provides customers with the ideal tool to generate energy savings, improve lighting levels and reduce maintenance costs. The great variety of high-performance optics optimises the photometric distribution for each specific application to achieve minimum energy consumption.

The BEKAPOLE is a GRP Pole range and is used not only for its resistance to corrosion, but is preferred by architects, developers and local authorities for its aesthetic appearance, strength, ease of installation and inherent safety for road users.

Walkways and parking areas

The LEDPOST bollard luminaire illuminates the walkways between the main office building and the stores. With its elegant design, the LEDPOST is dedicated to lighting open areas. The distinct design shields pedestrians and drivers from glare and prevents light spill

from being emitted above the horizontal. Thanks to innovative technology, the LEDPOST combines the highest precision and efficiency in a very compact bollard.

The decorative ELLEGA luminaire/pole arrangement has been installed in the VIP parking area and adds that extra touch of elegance. The ELLEGA is available in a single or double configuration at various heights. This winning combination of performance, design and flexibility enables the ELLEGA range to illuminate streets, residential areas, parks, bicycle and pedestrian paths with a better quality of light, to generate energy savings and to reduce the ecological footprint with a perfectly aesthetic integration into the environment.

The ZELA LED post top, mounted on GRP poles, has been installed in the general parking area. This modern luminaire is characterised by its distinct flat and conical diffuser, made possible by incorporating LED technology. This compactness is coupled with a careful design that harmoniously integrates both functionality and finish. The ZELA emits a pleasant, low glare light, making it perfect for architectural spaces.

Container area

The container area is illuminated with the LEDNOVA-MINI luminaire. The LEDNOVA offers optimal photometric performance and high reliability to reduce energy consumption and maintenance in all types of lighting application. The LEDNOVA range is suitable for use in various environments, which include outdoor mining areas, food and beverage plants, manufacturing process plants and any application that requires robust and well-built luminaires. Indeed, the LEDNOVA range has been



developed to reduce disability glare and thus improves the quality of light.

Loading bays and building exterior

The LEDFLOOD-MIDI has been installed at the loading bays and along the exterior of the building to provide general area and security lighting.

The LEDFLOOD luminaire range has been designed for area lighting applications, ranging from car parks to large areas, while offering energy savings, low maintenance requirements and precise light control. The flexibility of the LensoFlex® photometric engine

allows for multiple light distributions to ensure that the specific requirements of each application are met. The marine grade, high-pressure die-cast aluminium housing makes the LEDFLOOD suitable for installation in harsh environments.

BEKA Schröder locally develops and manufactures energy-efficient LED lighting products, designed and suitable for local conditions. The company is proud to be associated with Eng-X and BJ Electrical in providing a successful outdoor lighting solution for this project.

Enquiries: +27 (0)11 238 0000

Illuminating the streets of Cookhouse



The community living in the most vulnerable parts of Cookhouse in the Eastern Cape will benefit from improved safety and reduced criminal activity at night, thanks to the installation of 30 solar-charged, battery-powered streetlights.

The streetlights are part of an electrification plan – powered by solar energy – which is funded by the socio-economic development (SED) funds from Exxaro and Cennerg's 134 MW Amakhala Emoyeni Wind Farm, near Cookhouse.

Roland Tatnall, Exxaro's MD for energy, explained that the electrification of this area through solar energy highlights the company's sustainable energy values and how the mining company is addressing environmental challenges.

"Through the erection of solar powered

lights, we are not only able to light up a community which was once surrounded by darkness, but we are able to do so in the most environmentally conscious way as solar power holds some of the greatest potential of all South Africa's renewable energy sources," Tatnall says.

The local ward councillor, Mpumelelo Steve Kwatsha, as well as local residents have welcomed the installation of these streetlights, which created 14 job opportunities, help to reduce crime and have made the streets safer at night.

Muhammad Khan, the owner of ZP Energy, the company which undertook the project, said the streetlights were installed on Ndyamarha, Sinyanza and Joe Slovo streets in Cookhouse.

Enquiries: www.exxaro.com

What is circular lighting, and how to make a closed loop system

Circularity focuses on maximising the reusability and longevity of materials and resources; and this includes lighting. Unlike a linear economic system, where products ultimately end their lifespan as waste due to initial design features, circularity puts the future in mind through the design of recyclable, reusable and serviceable goods, creating a closed regenerative loop system.

"We must look at the way we are using – or abusing – products, and that's what we are doing with lighting," says Harry Verhaar, Head of Global Public and Government Affairs at Signify.

"In order to move to a more sustainable society we must naturally tackle carbon emissions, but we need to also look at the way we are making products in what is very much a consumer based society," says Harry Verhaar, Head of Global Public and Government Affairs at Signify, adding that "we must look at the way we are using – or abusing – products, and that's what we are doing with lighting."

Reuse/recycle

There are around 30 billion light points installed around the world, many of which are disposed of at the end of their lifespan. But this is not the case for those at Signify's Bielsko Biala plant in Poland which became a zero-waste-to-landfill site last year after a successful campaign to set up a new waste collection system.

Now, plastic, paper, glass and municipal waste is separated before collection ready to be reused or recycled. Previously landfilled waste is also now in the process of being collected for use once more.

Serviceability

Additionally, circular lighting is about having the ability to continue benefiting from the best available technology through the maintenance and upgrading of products. This allows for a level of customer care, performance guarantees, and overall business models that are largely service-based.

The High Tech Campus Eindhoven, a technology park in the Netherlands, which is home to over 140 businesses, worked with Signify to redesign its lighting system to be more reflective of its sustainable business operations.

"A circular lighting service was introduced throughout the campus' parking garages, to switch all of the existing

lighting to LED, and handing the maintenance responsibility over to Signify through a light as a service contract, meaning that Signify retains ownership over the physical lights, and that High Tech Campus Eindhoven pays for the lighting. Together, this led to a 70% saving on energy consumption and allowed the campus management team to focus on their core business.

"As a Campus, we consider it natural that visitors should encounter the best and very latest technology," said Harrie Arends, operations manager at High Tech Campus Eindhoven.

"This technology ensures significant energy savings and produces lower carbon emissions. In addition, we will not have to do anything with our lighting system for the next ten years; Signify will handle all of that," he adds.

Design and production

For ease of serviceability, products need a modular construction, and this means that circularity begins at the design and production stage. "3D printing has been around for a while, but these luminaires are the first real retail lighting application we've seen that improves the sustainability of our stores and are extremely complementary to our sustainability strategy," says Oliver Knowles, Research and Development Manager at British retailer M&S.

M&S recently announced it will be rolling out thousands of 3D Signify printed luminaires across its stores, which is expected to drastically reduce the carbon footprint of the lighting system and will be almost entirely reused or recycled at the end of the luminaires' lifespan.

This technique generally has half the carbon footprint of a traditional luminaire and the polycarbonates used are 10 times more recyclable.

"3D printing has been around for a while, but these luminaires are the first real retail lighting application we've seen that improves the sustainability of our stores and are extremely complementary to our sustainability strategy," said Oliver Knowles, Research and Development Manager at M&S, adding that "the potential for these fittings is enormous, both from an energy and cost-efficiency perspective."

Ultimately circular lighting advances the move towards a more energy efficient society.

Enquiries: www.signify.com



A dual-direction luminaire for effective commercial displays

The ACE-C-BH is a linear luminaire designed for seamless illumination of both the aisles and bulkhead signage in a retail environment. It is fully compatible with our standard ACE-C Linear Range. With its dual-directional design, the ACE-C-BH can replace all open channel fluorescents and bulkhead flood lights in a retail, warehouse and commercial application.

For ease of installation, the ACE-C-BH is supplied with pluggable power connectors on each end of the luminaire, together with mounting clips for surface and suspended installations. Accessories are available to simplify installations.

The ACE-C-BH is available in standard lengths of 1140 mm, 1420 mm and 1700 mm, various LED colour temperatures and power/m – 30, 40, 50 W/m to cater for different types of applications. Connected to a single AC power feed, the ACE-C-BH linear can continuously run for up to 50 m. Non dimmable option and a built-in emergency gear can be incorporated on request.

- The ACE-C (Continuous) is supplied with pluggable connectors on each end and two mounting clips per length.
- 3P (3 Pole connector) for single circuits and 4P (4 Pole connector) for two circuits per line available on request.
- All lights need to have the same number of poles per line, they cannot be a mix of 3P and 4P connectors.
- When mixing different lengths of ACE-C in the same line, please choose the same Power/m for all lengths.
- Beam angles: 60°, 90°, Oval (O), Aisle Symmetric (AS), Aisle Asymmetric (AAS).

Enquiries: www.ledwise.co.za

IR LEDs can detect gaseous signatures

The University of Melbourne, Lawrence Berkeley National Laboratory, University of California Berkeley, and Australian Research Council Centre of Excellence for Transformative Meta-Optical Systems (TMOS) have collaborated on the development of a device that could identify various gases, potentially including lethal ones. The work appeared in the journal, Nature.

Infrared (IR) spectrometers are common laboratory equipment that can identify different materials by analysing their infrared signatures, which is invisible to the human eye. Just like an AM radio can be tuned to different frequencies of radio wave, IR spectrometers can be tuned to different wavelengths, giving a broad-spectrum analysis of a gas sample. However, these machines are bulky and expensive and not usually practical to take out of the laboratory and into the field.

“Our new technology bonds a thin layer of black phosphorus crystals to a flexible, plastic-like substrate, allowing it to be bent in ways that cause the black phosphorus to emit light of different wavelengths essentially creating a tunable infrared LED that allows for the detection of multiple materials,” University of Melbourne Professor Kenneth Crozier said. “This technology could fit inside smartphones and become part of everyday use.”

Importantly, the device could make the work of firefighters, miners and military safer, allowing them to identify potentially lethal gases from safe distances as the ultra-thin, ultra-light devices can be placed on small drones. Flying such a drone over a building fire could tell firefighters what dangers they face and equipment they will need.

Source: www.lightingnow.com

Legrand announces publication of research study demonstrating technology which effectively and safely kills SARS-CoV-2

Legrand recently announced the publication of research showing its Kenall Indigo Clean light disinfection technology effectively and safely inactivates SARS-CoV-2 and influenza A viruses in a range of real-world clinical settings. The study was published in partnership with the Icahn School of Medicine at Mount Sinai.

The paper, “The virucidal effects of 405 nm visible light on SARS-CoV-2 and influenza A virus,” was published in Scientific Reports on September 30, 2021. It reflects how researchers evaluated the

inactivation rate of the SARS-CoV-2 virus using 405 nm visible light under a range of clinical conditions. Kenall then applied these findings to a real-world usage model and determined that Indigo-Clean would achieve a SARS-CoV-2 inactivation rate of 94% based on 12 hours of occupied room use and 12 hours of unoccupied room use. The study was funded by Kenall.

The potential of specific wavelengths within the electromagnetic spectrum is an area of growing clinical interest. Ultraviolet (UV) technologies

have demonstrated the ability to reduce virological spread, but potential toxicities have limited its use in occupied spaces. Longer wavelengths with less irradiation energy such as visible light (405 nanometers) have largely been evaluated in bactericidal and fungicidal applications. This research offers new evidence that lower-risk 405 nm visible light can inactivate the SARS-CoV-2 and influenza A viruses.

Read the paper at: www.nature.com/articles/s41598-021-97797-0

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Lighting your way



Proper light at the proper time

Every morning, I receive the daily release of a science journal. This morning I was absolutely fascinated to read that climate change is making the Earth dimmer. Yes, earth is reflecting less light, here it is natural light being discussed and not artificial light which is also the subject of another topic – Light Pollution. I do not want to delve into this subject now, but I encourage readers to do their own research to find documents relating to this subject.

Now, on with the final episode in this fascinating world of light and lighting design.

On 3rd October 2019, The International Commission on Illumination (CIE) issued a Position Statement on the Non-Visual Effects of Light which recommended the proper light at the proper time. It embraced CIE S 026:2018: CIE System for Metrology of Optical Radiation for ipRGC-influenced Responses to Light.

You may be wondering what ipRGCs (intrinsically photosensitive retinal ganglion cells) are. Well, they are a set of receptors situated in the retina in our eyes together with the rod and cone photo-receptors which are solely for vision. The ipRGCs respond to light and are responsible for the control of our Circadian Rhythms, in other words our internal body clocks. The production and release of different hormones and the functioning of our organs as well as the production and release of melatonin by the pineal gland at night, are all down to the ipRGCs.

It is for this reason that we refer to Human Centric Lighting which is exactly what the CIE have explained in their Position Paper. When we wake in the morning, we need more light and stimulation to become alert and tackle our daily tasks. As we become attuned to the day, the intensity and colour of the light can be returned to lower intensity and less short wavelength radiation of light. Finally, as we prepare to end the working day and

return home, the intensity is further reduced and a warmer colour light is introduced so that when we arrive home, we are ready to rest, relax, have dinner and retire for the night to get a good eight hours of sleep before the start of the next day. We effectively recharge our internal 'batteries'.

How do we know if our eyes are getting the correct stimulus? What is the desired level of Circadian Stimulus? According to the CIE, leading neurologists, scientists and ophthalmologists, the correct Circadian Stimulus (CS) is 0.3 during the day while at work and 0.1 when at home relaxing.

The important measurement in order to be able to calculate the CS, is Circadian Light (CLA). Circadian Light is the measurement of light that enters the human eye when seated at a workstation/desk. So ... how do we calculate that? This is where a high level of proficiency is required in the use of Relux Desktop. You have to know and understand how the various calculations are executed within Relux Desktop. You also need to understand how to navigate through the Calculation Manager. The degree of accuracy and the different measurements that you want to produce will depend on this. It is also important to understand that the automatic raster setting in the Relux Desktop calculator will produce results which can be used as accurate light measurement points when verifying the results post installation, according to the lighting design using a photometer. You will not need to compile your own measurement grid.

Next, it is important to preferably use the Maintenance factor for each luminaire rather than the classical method where you would simply select 0.9 for LED in accordance with SANS 10114-1:2020.

When using the Maintenance Factor for each luminaire, you are able to select the environment, the correct surface and material reflectances, the maintenance interval i.e., cleaning and others, whether the luminaire

is direct or indirect or direct/indirect, and finally, you can set to calculate manually or automatically. We prefer not to use the Tick Box for manual but rather to enter the L factor which for LED is usually 80, the lifetime of the LED being used i.e., the number of hours and lastly, the estimated operating time of the LEDs for the application. Relux Desktop will calculate the Maintenance Factor for the specific LED Luminaire.

Now it is time to set Expert Mode in the Calculation Manager. Enter the EVE from the tables in IES TM-24-13 in the field luminous flux factor. Now select Reason and type in "EVE factor applied according to IES TM-24-13". This will now report in the lighting design report when you have completed your lighting design.

For CLA measurement and CS calculation, it is now time to insert observer TI making sure that once inserted, adjust the angle of inclination, viewing direction, observer age and the distance set to 1.2 m which is the average human face height when seated at a desk. Make sure that the cut-off angle is set to zero. Here we are using the measuring object that we would normally use in street lighting designs for Threshold Increment to calculate the vertical measurement of the observers at their desks.

Once again, modern lighting design for LED lighting and taking the well-being of the occupants into account to be compliant with all standards, regulations, CIE directives and WELL Building standards for occupant well-being credits.

For more detail on the subjects covered in this series, about Relux Desktop advanced use and about lighting courses with internationally recognised qualifications, readers are welcome to contact me directly.

Until next month, stay safe!

Enquiries: www.bhaschooloflighting.co.za

Full LED lighting – more comfort, more savings



Entreprise Spiess is a company specialising in the field of public and private construction work. The premises of Entreprise Spiess include several industrial halls, parts of warehouse, a hall for the care and maintenance of vehicles and construction equipment, and offices. The objective was to improve the lighting situation and at the same time reduce energy consumption. The traditional lighting was no longer efficient enough and the lack of light causing shadows was hindering technicians in their maintenance work. In the offices, the target was to increase the light levels and above all to have an automated system without manual switching and with motion detection. "We were well advised by Ledvance for our lighting renovation project. The installation was easy and fast, and we are already seeing the results in terms of energy consumption. Our employees appreciate the automatization of lighting in the offices. It is very comfortable for them and it also saves the energy. We are still in the process of expanding our premises and are counting on Ledvance to enlighten us once again," says Franck Schmitt, Recycling Operations Manager at Entreprise Spiess.

In the halls, up to a height of 10 m, the traditional lighting with high pressure discharge lamps or fluorescent tubes was replaced by LED solutions. Thus 18 High Bay luminaires now equip the halls and maintenance workshops. 12 waterproof Damp Proof luminaires were installed in the spare parts storage workshop and 18 waterproof Damp Proof Special luminaires were mounted in the mechanical pit. 28 Floodlight Performance ASYM luminaires were installed in the parking lot and on the facades of the industrial halls. All these lighting renovations have improved comfort, but the

most importantly, safety on the workplace where several thousand trucks and machinery vehicles move around every year. The lighting in the office was also optimized with LED solutions. The reception area, corridors and toilets were illuminated by 10 Downlight Comfort and 19 Spot Fireproof FIX luminaires. Furthermore, 55 Panel luminaires were installed in the offices and meeting rooms and four Surface Compact IK10 luminaires safely guide employees through the stairwell. Sensors installed in the offices enable the automation of lighting.

The selected luminaires stand out for their high level of lighting comfort, potential energy savings and low maintenance and operating costs. Thanks to the detection sensors in the offices, the lighting automatically adjusts to presence – providing light only when needed – and adapts to natural light by regulating the artificial light so that there is always sufficient light intensity. The company thus saves energy and, as a bonus, does not need a manual lighting switch, which is a significant advantage, especially in times of increased hygiene requirements. In addition, the LED solutions have considerably improved the quality of light and the comfort of the employees. Maintenance costs have also been reduced, which provides a significant saving.

The complete conversion of the lighting at site to LED solutions from Ledvance has significantly improved the quality of the lighting as well as the comfort and safety of the employees. Maintenance costs have also been reduced. In the offices, the lighting only needs to be switched on when required and adapts to the natural course of daylight.

Enquiries: www.ledvance.com

LED strip lights – add a touch of extravagance



If you have conquered LED bulbs, floodlights, or even downlights and now aspire to take your client's homes to the next level; LED strip lights could be the next step for you as an electrical contractor

You would have often noticed mood lighting used in showrooms, display stands, or stage setups. These emotion-altering effects, through LED strip lights, can enhance a home's experience.

LED strip lights are a highly flexible and customizable way to add lighting or colour to a home. Their size, durability, and flexibility allow them to be used in almost any space, inside and outside a home. Recently, they have not only been the latest trend in residential applications but commercial too.

Here are a few benefits to persuade you in the right direction:

- **Cut-to-size:** LED strip lights are pre-soldered at every cutting point. This allows the strip light to be customised in length or to connect the strip in difficult places.
- **Quick and easy installation:** LED strips come with genuine 3M adhesive backing tape for quick and safe installations.
- **Indoor or outdoor use:** LED strip lights are available in IP20 for indoor use as well as IP65 for outdoor use. IP65 rated LED strips are fully encased with a silicone sleeve that protects the strip's components from dust and moisture. This allows them to be used almost anywhere. PioLED's 12 V IP67 strip light can be used outdoors and is safe for use around swimming pools.

- **Variety of moods (Colours):** If contemporary is more your style, the use of warm, neutral, or cool whites will assist. But if you are feeling more whimsical, RGB options are also available to match your client's every mood. LED strips are also dimmable when coupled with a wireless dimmer.

Where to use LED strip lights?

From the kitchen to the outdoor area, LED strip lighting has no boundaries. The only limitation is your imagination. Here are a few recommendations to get you started:

- **Brighten dark corners:** The versatility of strip lights allows them to fit perfectly into any corner or under furniture. Revealing space that people would not be able to see and enhance the size of a room. Add PioLED's Dotless profile for a seamless linear effect.
- **LED strips behind TV screens:** Enhance your viewing pleasure with LED strip lights. These strip lights eliminate excess glare, therefore, causing less strain on your eyes.
- **Emphasise the outdoor stairs:** Not only will this add to the safety aspect, but the luminous glow will create appeal and style to the great outdoors.

Explore your options but most importantly, if you or your clients are not happy with the current placement, it can easily be removed without a trace.

Enquiries: www.pioledlighting.co.za



Lighting for the retail space

Experts from Radiant Lighting offer electrical contractors and lighting designers tips for lighting retail spaces. If faced with a retail lighting project, incorporate the below tips to ensure a successful outcome which will benefit both the customer and client.

Layer ambient and accent lighting

When illuminating a retail space there should be ambient lighting and accent lighting. Ambient lighting will provide the store with general illumination so that customers and staff can move about comfortably and safely. Accent lighting will showcase and highlight specific merchandise and displays. The ambient lighting in a store should always be low enough so that it's an obvious contrast to the accent lighting. This allows the merchandise to really stand out.

Stay true to brand values

The fixtures and lighting layout of a store should match the brand's values. Budget-friendly stores do better with ambient lighting, while the emphasis in high-end stores is on accent lighting to create an upmarket look.

Pay attention to colour temperature

The colour temperature of a store's lighting affects its demographic. Younger shoppers prefer spending money in stores with a cooler colour temperature (4000 K to 6000 K) as this lighting creates a contemporary, spacious feel.

For the older demographic, people in this age group prefer shopping in stores with a warmer colour temperature (2700 K to 3000 K) as this conveys familiarity and comfort. Jewellery stores in particular benefit from having both cool and warm lighting. Gold looks best under 3000 K lighting while silver and diamonds really shine under 4000 K.

Use hot spot lighting

Direct the brightest light where you want the most attention. This simple "hot spot" lighting technique highlights new merchandise, special offers, and any stock that needs to be sold quickly, capturing the attention of customers in-store as well as passers-by.

Work your window

Good retail lighting captures the attention of passersby and lures potential customers into the store. An eye-catching window display is an easy way of achieving this. Use bold, high-contrast lighting in different colours. Lighting that creates movement and variations of brightness is even better.

Online lighting store offers new Super Sale section

LightStore is very excited to announce the launch of its new initiative – Super Sale. The online store will now feature a new Super Sale category which will regularly be updated with special offers and products on promotion. The company has been working hard negotiating with its suppliers for the best possible deals and their long term buy in so that customers can benefit and save now and in the future. LightStore will feature a variety of products across its full range so that its customers have as a big a selection as possible to save from.

LightStore firmly believes this Super Sale initiative will be of great value to its customers in these challenging times. As South Africa's premier online lighting store, it is totally committed to consistently searching for the best deals for customers as well as sourcing new and interesting products. Its growth and the number of repeat customers it enjoys confirms that the company takes its business and its customers seriously.

Enquiries: www.lightstore.co.za

Change up the changing rooms

Awful lighting in a changing room is not going to convince customers to buy anything. Cheap downlights are not flattering to anyone and should be replaced with warm, vertical linear lights on either side of the mirror.

Use integrated lighting

According to research, customers are twice as likely to pick up an item from a shelf with integrated lighting than a shelf without. For this reason alone, LED tape lighting is worth investing in.

Enquiries: www.radiant.co.za



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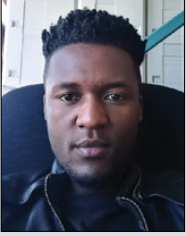




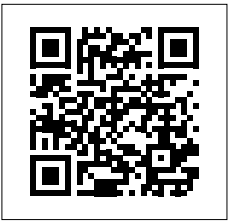
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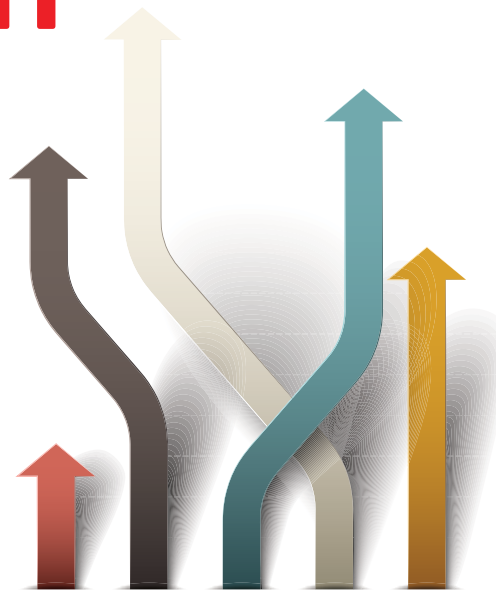
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The wife was pregnant and they were racing to the hospital for the birth of the baby. The husband jumped out of the car to get help and a wheelchair. When he returned, his wife had given birth to the baby, but died in childbirth.

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