

SOLAR ENERGY IN SOUTH AFRICA: STANDARDS, OPPORTUNITIES AND OPPORTUNITIES

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By Ilana Koegelenberg

Trevor van der Vyver, founder and owner of MaxLite, has been at the forefront of South Africa's solar energy sector since before most people even considered it viable. In a recent exclusive interview, he shared insights on the challenges facing the local industry today and where future opportunities may lie.

Pioneering solar in South Africa

Van der Vyver's journey with solar energy began in 1974 when he started engaging with the Council for Scientific and Industrial Research (CSIR) on solar water heating – decades before it became mainstream. He later founded MaxLite in 1989, initially focusing on DC lighting solutions, with Eskom as his first major customer.

His company has since evolved alongside the industry, installing solar systems in over 20,000 rural houses across South Africa, from the Western Province to the Northern Cape.

In 2000, his innovations earned him an ETA award from Eskom, leading to the development of a product line called etamax. This recognition highlights his long-standing commitment to the advancement of solar technology in the region.

Rural electrification solutions

The unequal and expensive distribution of electricity to communities and the non-existent delivery to rural areas has led MaxLite to develop its own range of locally manufactured and installed Solar Home Systems.

MaxLite's Solar Home Systems have been designed as both fee-for-service (MaxMeter) and standalone (MaxReg) systems. The development of the MaxMeter has been a journey focused on sustainability and reliable basic electricity for homes where units are installed.

Fee-for-service systems require that the municipality or service provider purchase the units, with the idea of recovering costs from the homeowner through airtime purchased at sales offices. This approach encourages a sense of product ownership while allowing cost recovery.

The MaxReg standalone system doesn't require prepaid vouchers or customer visits to sales offices; once installed,

it works from day one, though money collection ultimately falls to the municipality/community.

Standards and regulatory challenges

Solar power is not an easy-to-understand subject. One of the most pressing challenges in today's market is the lack of appropriate standards for newer hybrid and established technologies. Van der Vyver currently chairs a working group with the South African Bureau of Standards (SABS) addressing this exact issue.

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From intern to leader: Vera Maditsi's journey in energy skills development

By: Ilana Koegelenberg

In the bustling world of energy skills development, Rasekele Gladys Veracious Maditsi, known professionally as Vera Maditsi, has carved out an impressive career path that exemplifies dedication and perseverance. At 37, the skills development manager at the Institute of Energy Professionals Africa (IEPA) has transformed from trainee to trainer, now leading programmes she once participated in herself.

A journey of growth

Originally from Lebokwakgomo in Limpopo province, Maditsi's career in the energy sector began in 2017 when she secured an internship through the Limpopo Department of Economic Development, Environment and Tourism (LEDET). This opportunity allowed her to pursue a Certified Energy Manager (CEM) certificate – an internationally recognised qualification.

She was placed under mentorship at the University of Venda. Her determination quickly became evident as she emerged as

one of only two students to successfully pass the certification.

Building on this achievement, Maditsi continued her professional development by attending an Energy Performance Certificate course in 2019. Her cohort made history as the first group of students to complete this particular training in Limpopo.

Seizing opportunities

Maditsi's career took a significant turn in 2020 when she was asked to temporarily fill in for IEPA's certification co-ordinator who was on maternity leave. What began as a temporary position soon became permanent when she was offered the role of project coordinator.

Her competence and dedication did not go unnoticed. Within a year, Maditsi was promoted to her current position as Skills Development Manager, where she now oversees the very programmes she once participated in as a trainee.

Making an impact

When asked about her proudest career achievements, Maditsi highlights her ability to successfully manage projects

independently and her contributions to IEPA's growth.

However, it's the human impact of her work that truly resonates with her. "Seeing young people who have no income and come from disadvantaged backgrounds getting permanent jobs and supporting their families" is what makes her role fulfilling, she explains.

Maditsi takes particular pride in witnessing the transformation of unemployed youth who initially show little interest in the energy sector but then develop a passion for it through IEPA's programmes. "Most importantly, seeing them stay in the energy industry" gives her immense satisfaction.

Looking to the future

For young people and women aspiring to enter the energy industry, Maditsi offers straightforward advice: "Believe in yourselves and never allow other people to define who you are." She encourages newcomers to "hold on to the energy industry as it is the future."

When asked about her role model, Maditsi doesn't hesitate to name her executive director at IEPA – Yolanda de Lange. "She never stops until something is done perfectly and believes in making a change in people's



lives," Maditsi explains, admiring her leader's empowering management style.

Looking ahead, Maditsi's professional ambitions remain focused on people development. Her primary goal is "to ensure that employees possess the right skills to perform effectively and contribute to the overall success of the company."

From intern to skills development manager in just a few years, Vera Maditsi's career trajectory demonstrates how passion, persistence and embracing opportunities can lead to meaningful professional growth in South Africa's vital energy sector.

Enquiries: www.iepa.org.za

SOLAR ENERGY IN SOUTH AFRICA: STANDARDS, CHALLENGES AND OPPORTUNITIES

CONTINUED FROM PAGE 1

Despite reports from universities, the national regulation VC 9006 has virtually killed the solar water heater with electrical backup market, in his opinion. The latest SWH, which is compliant with SANS standards, is a non-electrified 100 L system. This is sold to low-cost buildings, which generally have multiple occupants. "Imagine 100 L for a family of four on an overcast day. With no electrical backup and a limited quantity of water. It's not enough," Van der Vyver explains.

"We have a product, etamax, a Dual energy generation unit, that takes grid and solar at different required times," he explains. "The problem is that it doesn't fit into the current standards. There is no standard for such a thing because it's a hybrid."

The product connects to photovoltaic panels and heats water in geysers, drawing from solar during the day by default, with an option to use grid power as backup. Traditional standards classify this as small, embedded generation (SEG), which was designed specifically for solar PV inverters in homes, not these hybrid solutions.

This regulatory gap creates uncertainty for electrical contractors who need clear guidelines to ensure compliance. It also opens the door for non-compliant products to enter the market, ultimately affecting the industry's reputation.

Van der Vyver's dual role as supplier and standards committee chair puts him in a unique position to help find solutions to bridge this gap.

Quality concerns and import competition

The influx of low-quality imports has been particularly damaging to the solar industry. According to van der Vyver, many imported products are designed for different plumbing and electrical standards than those used in South Africa.

This mismatch creates installation problems that give solar energy a bad

reputation when systems fail. The problem is compounded by limited enforcement of existing standards. Van der Vyver recounts how in the past, SABS/NRCS was rigorous about enforcing the proper use of their approval marks, but enforcement has since weakened significantly.

Public sector challenges

Van der Vyver doesn't shy away from addressing the corruption that has plagued the solar industry, particularly in government projects. He recalls a solar water heating project that had R4.3 billion allocated but was ultimately pulled due to widespread corruption.

"It could have changed this entire country if it actually went through the way it was supposed to," he says.

He describes how social programmes designed to bring solar water heating to underprivileged communities opened doors for bribery and corruption. Municipalities could request allocations for thousands of systems, but proper installation and oversight were lacking, resulting in infamous cases like the ineffective township installations.

Market evolution and future directions

The South African solar energy market has changed dramatically since van der Vyver entered the industry. "Today, like in the solar water heating industry, there are so many people doing the job, and that's what's killing the industry. You have hundreds of inverters on the market. You have hundreds of installers. But not everyone is focused on quality."

This saturation has led to fierce competition and shrinking margins. However, van der Vyver sees opportunity in changing the value proposition. Even as load shedding becomes less frequent, the economic case for solar remains strong



when framed in terms of energy savings rather than backup power. "Solar has changed," he notes. "We no longer sell solar as a backup. We sell savings."

This is particularly interesting for municipalities trying to reduce their energy consumption. He points specifically to geyser-focused solar solutions that can save homeowners R900–R1,000 per month on energy costs. "If you have 1,000 solar systems installed, you're saving a few thousand megawatts. The municipalities could use that saving for industry, factories, and further grid roll-out."

New business models

One particularly promising development is the emergence of "as-a-service" business models. Rather than simply selling equipment, these models offer ongoing service with flexible payment options.

"My goal would be to find somebody whereby the homeowner, or the business, can get whatever product they desire, not tied to just one supplier, that is fee-for-service or pay-as-you-go enabled," says van der Vyver.

He recalls implementing a "fee-for-service" model a decade ago with *Électricité de France* (EDF), one of the world's largest utilities. While that particular initiative faced



challenges from other local interests, the concept remains viable.

These models could open new revenue streams for electrical contractors while making solar more accessible to a broader market, particularly when backed by appropriate financing structures.

Looking ahead

Despite the challenges, van der Vyver remains engaged with the industry's future. His company continues to evolve, exploring opportunities not just in South Africa but across the African continent, though he notes each country presents its own unique challenges.

Enquiries: www.maxlitesa.com



Turning challenges into opportunities



Ilana Koegelenberg

that little app tells me my power woes have been "suspended", but I'm certain there are many others who don't share in that joy.

After speaking to several local industry professionals about this topic, I'm starting to realise it doesn't have to be one or the other – we can both be happy. Me having electricity and the solar industry making money aren't necessarily mutually exclusive.

What we need is perhaps as simple as a mindset shift. Moving from simply seeing solar as a back-up to viewing it as a way to save energy and money. Yes, it's great to have solar for a backup-up when you get that 55-minute loadshedding warning, but what about the rest of the time? What if solar could be saving users money every day?

This was one of the key topics that came up when I met with industry doyen Trevor van der Vyver from Maxlite to discuss the state of the industry and potential challenges and opportunities. Trevor has been working with solar since 1974 – since before I was even born – and truly has a wealth of knowledge on the subject. Check out his view on solar and other local issues on our cover page (page 1).

Trevor wasn't the only one who brought up this topic. ACDC Dynamics

also spoke about the long-term energy-saving benefits of solar (below, on page 3). According to ACDC, by integrating solar energy, timers, and smart automation, homeowners and businesses can significantly cut down on their electricity bills. There clearly is an opportunity here.

If there's one thing I know about South Africans, it's that we're very good at making a plan and turning challenges into opportunities. Perhaps the end of loadshedding doesn't have to be bleak news for those in the solar sector. What other opportunities are we missing by staring ourselves blind at the challenges instead?

Speaking of turning challenges into opportunities, our profile this month is an interview with Vera Maditsi from the Institute of Energy Professionals Africa (IEPA). Vera's journey from trainee to trainer is truly inspiring. (Read more on page 2.)

What else is happening? In this edition, we look at Motor Control Centres, Cables, Lighting and more. Congratulations to Ptytrade 228 for turning 21 (Page 5), to Fuchs Lubricants for doubling their sales volume (page 6), and RS Group for being included in the CPD A List (page 2). Did you know ElectroMechanica has expanded its range to include electric motors too? (Page 6)

On page 14, Radiant discusses LED

retrofitting and why it's necessary, while on the next page (page 15), Henk Rotman from IESSA looks at boosting energy efficiency with lighting controls. Also on page 15, read more about BEKA Schröder supplying solar lighting to waste water treatment works in the Eastern Cape.

It's inspiring to see so many local companies and individuals doing such great things. What is your proudest achievement? Perhaps you finished a nice project or got a new certification? Maybe you landed a new job...

If you want to share your story (or that of someone you admire), feel free to reach out to me any day. I love learning more about what's happening on the ground.

For now, I hope you enjoy this edition.

Ilana Koegelenberg

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With loadshedding becoming more infrequent (and annoyingly inconsistent), many working in the solar sector are becoming increasingly frustrated by the seemingly dwindling opportunity to promote their solar solutions. Sure, as an end user, I'm super happy when

Smart energy management: saving electricity with ACDC Dynamics

With Eskom's rising electricity tariffs, South Africans are feeling the pressure to reduce energy costs. While many have turned to solar as a solution for load shedding, its potential for long-term savings is often overlooked. By integrating solar energy, timers, and smart automation, homeowners and businesses can significantly cut down on their electricity bills. ACDC Dynamics offers a range of products designed to help users optimise their energy consumption efficiently.

Many households and businesses invest in solar solutions as a backup power source, but its true benefit lies in its ability to reduce overall energy costs. ACDC Dynamics provides high-quality solar panels, inverters, and energy storage solutions that allow users to generate and store their own electricity. By using solar energy during peak tariff hours and switching to grid power during off-peak times, consumers can drastically lower their electricity expenses in commercial settings.

ACDC Dynamics' range of solar inverters seamlessly integrates into existing electrical systems, ensuring that users maximise the energy harvested from the sun. By combining these with an energy storage system, excess solar energy is harvested during the day and can be used to supply the loads during the night.

Another simple yet effective way to cut down on electricity consumption is by using timers to control high-energy appliances. Many people unknowingly waste power by leaving geysers, pool

pumps, and outdoor lights running longer than necessary. ACDC Dynamics offers a range of programmable timers that allow users to schedule when these appliances should turn on and off, ensuring they operate only when needed. They can also monitor electricity usage, which, in conjunction with using the PV to power high-usage appliances during the day, will lead to savings.

For instance, a geyser timer can be set to run only during off-peak hours, significantly reducing electricity costs. Similarly, timers for pool pumps can ensure they operate for just a few hours a day instead of running continuously. Businesses can also benefit from timer switches for signage and office lighting, reducing unnecessary power usage after hours (e.g. in the early hours of the morning when few people are active).

Smart technology is revolutionising energy efficiency. ACDC Dynamics' range of smart plugs, motion sensors, and automated control systems allow users to manage their power consumption remotely. Smart plugs enable users to switch off appliances from their smartphones, preventing standby power wastage.

Motion sensors and daylight-harvesting controls are another game-changer in energy conservation. ACDC Dynamics' motion-activated lighting solutions ensure that lights are only on when needed. This is particularly beneficial in office buildings, warehouses, and outdoor security lighting.

For industrial and commercial

applications, smart energy meters and power factor correction units from ACDC Dynamics help monitor and regulate electricity usage. These systems provide real-time insights into power consumption and power quality, helping businesses identify inefficiencies and make informed decisions to reduce costs. This can lead to reductions in Max Demand and Reactive Power charges.

Lighting accounts for a significant portion of energy usage in homes and businesses. Switching to LED lighting can lead to substantial savings. ACDC Dynamics offers a wide range of energy-efficient LED bulbs, floodlights, and industrial lighting solutions that consume up to 80% less electricity compared to traditional lighting.

As electricity costs continue to rise, proactive energy management is essential. By investing in solar solutions, timers, smart automation, and LED technology from ACDC Dynamics, consumers can take control of their energy consumption while enjoying long-term savings.

"Whether you are a homeowner looking to reduce your monthly bill or a business aiming to cut operational costs, the right combination of technology and strategic planning can make a significant difference," said ACDC Dynamics. "Visit ACDC Dynamics today to explore a wide range of energy-efficient solutions tailored to your needs."

Enquiries: +27 (0)10 202 3300



Local industry bodies launch Electricity Expo Africa

The Electrical Contractors' Association SA and South African Equity Workers Association (SAEWA) have joined forces to launch what is said to be the first-ever industry-led and produced electricity event on the continent – Electricity Expo Africa – taking place this September.

Electricity Expo Africa was officially launched at the ECA(SA) Presidential Excellence Awards last year.

ECA(SA) and SAEWA have a 50-year collaboration, which began with establishing the National Bargaining Council for the Electricity Industry, which remains one of South Africa's most influential bargaining bodies. Joining forces again, they launched the upcoming Electricity Expo Africa, which is set to have its first run at the NASREC Expo Centre in Johannesburg from 9 to 11 September 2025.

"The players in this trade have organised this expo as a meeting point between contractors, installers, manufacturers, innovators and policymakers, where business transactions will be conducted," noted Mark Mfikoe, national director of ECA(SA).

Groundbreaking in its structure, the Electricity Expo Africa is set to unite industry leaders, innovators and other key stakeholders. It will be an immense contribution to unlocking the potential of

Africa's energy sector.

Robert McAlpine, general secretary and CEO of SAEWA, observed: "The idea behind the expo is a desire to unify all stakeholders – under one big, commercial umbrella – with the aim of growing the electricity sector's potential for job creation and a sustainable future."

The bigger picture includes harnessing Africa's mighty wind and solar resources, smart grid technologies and other energy efficiency applications to ensure all communities enjoy the fruit of our vast continent.

Powering Africa's future

"Electricity is the pulse of Africa's future – an engine of innovation, development, and prosperity across the continent," said Frans Swanepoel, president of the ECA(SA). "The Electricity Expo Africa is not just an exhibition; it's a call to action – a chance to explore, discover, and collaborate on game-changing technologies that will transform Africa's energy landscape and ensure safe, sustainable access to electricity for all. Yes, Africa will work with the universe to contribute bright energy to the world."

Full endorsement

In their opening addresses at the ECA(SA)'s Presidential Excellence Awards 2024, all

three keynote speakers acknowledged and endorsed Electricity Expo Africa. Marina Dumakude, president of SAFCEC, Matthew Mflathelwa, general manager of Strategy and Planning at Eskom and City of Joburg MMC, Eunice Mgcina, all put their significant weight behind the expo, agreeing that its time has come.

As MMC Mgcina noted: "Tonight, we gather to celebrate more than the launch of an expo; we celebrate the promise of transformation and innovation in addressing one of Africa's most pressing challenges: energy sustainability.

"The Electricity Expo Africa will serve as a crucial platform for collaboration, innovation and opportunity – uniting over 5,000 attendees, including suppliers, manufacturers, contractors, and regulators.

"This event is not just an opportunity to showcase technological advancements; it is a commitment to shaping a resilient and sustainable energy future for our continent."

With both the commercial and the public sector endorsing the venture, the organising principle itself sees Africa's future take centre stage. Establishing routes to new markets across the continent is both a challenge and a promise, which can only be unlocked through cooperation and unification.

Enquiries: <https://ecasa.co.za/>



Mark Mfikoe, National Director of ECA(SA).



ECA(SA) President, Frans Swanepoel.



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Solar energy: a key investment to mitigate rising electricity costs

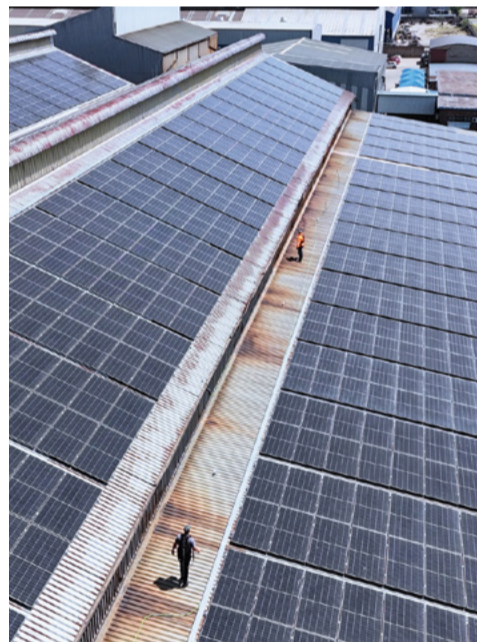
Electricity tariffs in South Africa have been rising consistently, prompting businesses to rethink their energy strategies. Candi Solar South Africa investigates the role solar can play in managing a business's costs.

The National Energy Regulator of South Africa (NERSA) has approved a 12.7% electricity tariff increase for the 2025/26 financial year, effective April 1, 2025. While this increase is lower than Eskom's initial request of 36%, it still significantly exceeds the current inflation rate of approximately 3%, adding further financial strain on businesses.

For manufacturers, retailers and other energy-intensive sectors within the commercial and industrial sector, electricity is not just an expense – it is critical for maintaining competitiveness. Every tariff increase raises operating costs, constrains margins and makes long-term planning even more challenging.

Richard Flamand, country lead of Candi Solar South Africa, notes, "Previously, load shedding was the primary driver for investment in solar PV and battery storage, as businesses sought alternatives to keep operations running. Today, the conversation has shifted. Investing in solar and battery storage is about taking control of energy costs, locking in long-term savings and building financial resilience in an unpredictable market."

With electricity prices on an upward trajectory, businesses are looking for ways to hedge against financial risk. "Solar energy is now a strategic investment, with South Africa's installed capacity projected to grow by over 11% annually from 6.05 gigawatts in 2024 to 10.27 gigawatts by 2029. This rapid growth highlights the increasing role of solar energy in mitigating electricity expenses and providing a stable energy



source for businesses," explains Flamand.

At the same time, advancements in battery storage technology are making solar solutions more efficient and valuable. The South African battery storage market is expected to grow from 270 MWh in 2020 to 9,700 MWh by 2030. As technology improves, battery storage is becoming more affordable and scalable, allowing businesses to store excess solar energy for peak demand periods and further stabilise their electricity costs.

Looking ahead, tariff increases will remain a pressing issue, reinforcing the need for proactive energy planning. Businesses that diversify their energy sources now and invest in cost-saving renewable solutions will be better positioned to navigate the evolving energy landscape and protect themselves from ongoing price volatility.

Enquiries: www.candi.solar

New Tesla home battery now in South Africa

The Powerwall 3, Tesla's newest home battery, is now available locally through Rubicon. It boasts even more energy savings potential than previous models.

In South Africa, a single Powerwall 3 unit can power most homes, reducing electricity costs by storing excess solar energy produced during the day for use at night when energy prices are higher. Using self-consumption mode, South African customers can reduce their reliance on the grid by up to 67%*, according to Rubicon.

Additional savings are possible with Time-Based Control, which allows homeowners on time-of-use rate plans to charge their Powerwall during low-price periods and use stored energy when prices are high. "On average, homeowners can save up to R29,351 annually by combining Powerwall 3 with solar energy," says Rubicon.

Powerwall 3 also offers reliable backup protection. In the event of a power outage, it automatically takes over as your home's energy source. "With Powerwall 3, you get more power, greater efficiency, and enhanced backup protection."

Boasting over twice the power of Powerwall 2, Powerwall 3 offers flexibility to power homes of all sizes. In South Africa, the inverter delivers up to 11.04 kW of power, allowing homeowners to save more by powering a wider range of appliances.

The integrated solar inverter makes Powerwall 3 more energy-efficient, reduces the complexity of installations by eliminating the need for extra wall boxes and negates the need for a third-party inverter.

Designed with an advanced thermal management system based on insights



from Tesla's Model 3, Powerwall 3 operates efficiently in a wide range of temperatures (-20 °C to 50 °C) and is built for both indoor and outdoor installations. It can withstand high humidity and even operate in up to 60 cm of floodwater, providing reliable power in challenging conditions.

Seamlessly integrated into the Tesla ecosystem, Powerwall 3 can be controlled through the Tesla App, making it adaptable to various home energy needs.

*Savings estimates are based on an average South African customer with 6 kW of solar and a Powerwall 3, using typical regional consumption and PV production values (approximately 9,965 kWh and 7,575 kWh, respectively). Actual savings vary depending on location, household energy use, and utility rates, which may change over time.

Enquiries: <https://powerwall.rubicon.tech/>



Ptytrade 228 Electrical Wholesaler and Panel Builder is Celebrating its 21st Birthday

Established in 2004, Ptytrade 228 is an independent, family-run business that has grown into one of South Africa's leading technical and electrical supply companies. While it also distributes and stocks all major electrical brands throughout South Africa and Sub-Saharan Africa, the panel-building expertise is a key offering that has propelled the organisation forward in leaps and bounds.

In the highly technical field of electrical panel building, experience matters. At Ptytrade 228, based in Boksburg, through its panel building division 4iR Electrical Systems, two industry veterans with years of expertise bring unparalleled knowledge to every project they undertake.

José Carreira, Engineering Manager, and Thomas Theodoulou, Business Development Manager, first worked together nearly 30 years ago at Klöckner-Moeller (now Eaton), where they honed their craft. José managed the panel building workshop while Thomas worked in engineering. After years of working separately, they've reunited at Ptytrade 228, where they're applying their extensive knowledge to deliver exceptional quality.

"Between us, we've got something like 60 years of experience," explains José, who joined Ptytrade 228 six years ago to develop the panel building division. Thomas joined a year ago, reuniting the "dream team".

Quality matters:

When it comes to sourcing electrical products and engineered solutions, there can be no room for compromise. You need a partner who can support you with tried-and-tested products, global capabilities, local expertise, and delivery.

"What sets us apart is our commitment to quality, timely delivery, ability and willingness to handle projects of any size. We pride ourselves in our quality and turnaround times and always try to make it as short as possible without compromising on quality," explains José.

The company refuses to compromise on quality, using only reputable products that are SABS-certified. "We don't use anything simply because of the cheaper price. We only use products that are reputable," José emphasises. All motor control centres (MCCs) and distribution boards are manufactured in accordance with IEC 61439-2 standards.

This dedication to quality extends to their operational standards. PtyGroup of companies is on the verge of receiving ISO 9001 certification, with their final audit expected to be completed this month. "We are a small company, but the product that we put out is just as good as any of the big players in the market," states José proudly.

Thanks to its smaller size and adaptability, Ptytrade 228 offers something the larger companies often can't – a personal touch. "Anybody can come and see us at any time. We have an open-door policy," says José.

"All projects are handled on an individual basis, from quotation stage on the placement of the order to engineering, manufacturing, delivery of the final product to the client, and final handover," explains Thomas.

Future growth plans

Looking to the future, Ptytrade 228 is focused on growth in several key sectors. "We focus on the water industry quite a bit currently," José notes, while also mentioning future



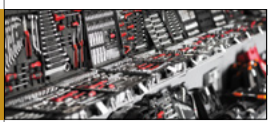
José Carreira, Engineering Manager, and Thomas Theodoulou, Business Development Manager.

opportunities in renewables and mining operations further north in Africa, particularly in the DRC, Mozambique, and Zambia. Thomas also indicated that future growth will be focused on the Food & Beverage industry, photovoltaic plants, as well as Mining, Minerals, & Metals.

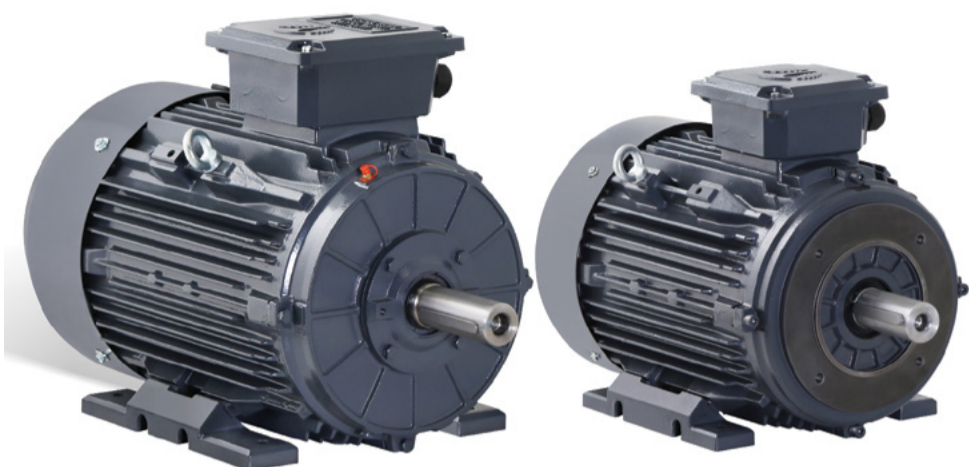
With its wealth of experience, commitment to quality, and customer-focused approach, Ptytrade 228 stands ready to handle the distribution of electrical consumable products as well as electrical panel building projects of any scale, delivering solutions that are built to last.

Enquiries: <https://www.ptygroup.co.za/>





TechTop motors: driving efficiency and sustainability in Southern Africa



ElectroMechanica (EM) recently expanded its product range by introducing electric motors, marking a natural step in its journey of delivering comprehensive industrial solutions. With a legacy of innovation in motor control, EM has partnered with TechTop, a global leader in electric motor manufacturing, to provide South African industries with high-performance motors that prioritise efficiency, durability, and sustainability.

Why electric motors?

This move follows extensive research into global manufacturers and the needs of local industries. TechTop emerged as the ideal partner, sharing EM's commitment to energy-efficient, robust, and versatile solutions. These motors address rising energy costs and increasing regulatory demands, offering a reliable option for industries across South Africa.

Why TechTop motors?

TechTop's motors are designed to thrive in demanding environments. With IE3 efficiency ratings, they exceed South Africa's energy regulations and deliver measurable cost savings. Built to withstand harsh conditions,

these motors are essential for applications such as agricultural machinery, wastewater systems, pumps, fans, and compressors. Their versatility, combined with advanced technology, ensures reliability and peak performance across diverse industrial sectors.

Commitment to sustainability

EM exclusively stocks IE3 motors to support the phasing out of inefficient IE1 motors, aligning with South Africa's sustainability goals. This transition helps industries reduce energy consumption, cut costs, and achieve long-term environmental benefits, contributing to a greener future. The introduction of TechTop motors has been met with enthusiasm by industries seeking reliable and energy-efficient solutions. With its innovative product range and personalised support, EM remains committed to empowering industries through sustainable technologies.

EM invites its customers to "explore reliable, energy-efficient solutions built to handle your toughest challenges".

Enquiries: www.em.co.za

Fuchs doubles sales thanks to growth strategy

Fuchs Lubricants South Africa's

aggressive growth strategy in Sub-Saharan Africa over the last decade has resulted in a CAGR of 6% in volume sold since 2015. "The result of this is that sales volume has nearly doubled in this time," said Paul Deppe, managing director of Fuchs Lubricants SA and regional vice president of Sub-Saharan Africa.

Deppe was speaking at the official opening of the expanded Fuchs Lubricants facility in Isando. "This growth would not have been possible had the Fuchs Group not the confidence and desire to support its subsidiary in South Africa." More than R650 million has been invested in creating capacity at the South African subsidiary over the past eight years. "It is a huge confidence boost in the country and the Fuchs business in South Africa," said Deppe.

Joining the event from Fuchs SE was Dr Ralph Rheinboldt, chairman of the South African subsidiary and member of the Fuchs SE Executive Board responsible for EMEA, Dr. Sebastian Heiner member of the Fuchs SE Executive Board and CTO, and Matthias Spethmann, vice president of EMEA OEM sales.

"Fuchs has marked a significant milestone with the completion of its expanded plant in Isando," said Deppe. The project commenced in 2020 with the purchase of an adjacent site to accommodate the company's growth. This expansion follows the initial investment in a new grease plant commissioned in 2018.

The newly built facility, which now spans 6 ha, doubling its previous size, represents a R500 million investment in "creating capacity" and technological advancement. The project includes a new office complex, warehouse, laboratory, tank farm, oil lubricants blending plant, and state-of-the-art filling machines. Completed in December 2024, the expansion has increased production capacity by over 40%.

The development has been a key factor



in Fuchs's growth, which now employs nearly 450 people, up from 250 in 2015. No staff redundancies took place during this period, with the company continuing to invest in employee training and upskilling.

Among the highlights of the new facilities is the modern office complex, which serves as the head office for South Africa and the regional office for Sub-Saharan Africa. It is designed to house 110 people in a sustainable, energy-efficient environment, certified net-zero carbon by the Green Building Council of South Africa.

The new 7 000 m² warehouse, four-and-a-half times larger than the previous one, incorporates sustainability elements such as rainwater harvesting and a solar photovoltaic system, which will increase the total renewable energy supply to 30%.

Additionally, the laboratory has also been renovated and upgraded to support Fuchs's commitment to quality control and product development.

Enquiries: www.fuchs.com/za

Powering industry in 2025: smart motor control, protection and advanced cable solutions

As industries embrace automation, digitalisation, and energy efficiency, the role of motor control centres (MCCs), motor protection, and cables and cable accessories has never been more critical. These components are the foundation of modern electrical infrastructure, ensuring seamless operations, asset longevity, and intelligent

power management.

"At Voltex, we stay ahead of the curve by delivering cutting-edge electrical solutions that empower businesses to operate smarter, safer, and more efficiently," the company said. "Our comprehensive range of MCCs, motor protection systems, advanced cables, and cable accessories is designed to integrate seamlessly into today's rapidly

evolving industrial landscape."

The future of motor control and protection

MCCs are no longer just about centralising motor operations. Smart MCCs now incorporate Internet of Things (IoT)-enabled monitoring, predictive maintenance, and real-time data analytics, giving businesses deeper insights into performance while minimising downtime. These advancements ensure:

- Optimised energy efficiency through real-time monitoring;
- Remote diagnostics and predictive maintenance; and
- Seamless scalability to adapt to expanding operational needs.

Intelligent motor protection

Traditional motor protection focused on preventing short circuits and overloads. In 2025, businesses need intelligent protection solutions that go beyond the basics. Advanced protection systems now feature:

- AI-driven fault detection to predict failures before they occur;
- Dynamic load balancing to prevent energy wastage; and
- Cloud-based monitoring for enhanced operational control.

Smarter, more resilient cabling solutions

Advanced cables and accessories are the backbone of modern power systems.

As electrical networks evolve, so must the cables that power them. Today's industrial setups demand fire-resistant, highly durable, and energy-efficient cables to meet stringent safety and performance requirements. Key advancements include:

- Low-smoke, zero-halogen (LSZH) cables for enhanced fire safety;
- Self-healing insulation that extends cable lifespan; and
- Lightweight, high-capacity conductors to optimise power distribution.

Future-ready cable accessories

Beyond cables, smart accessories are enhancing connectivity and durability. Innovations include:

- Smart cable glands with built-in temperature sensors;
- Modular cable trays for fast, flexible installations; and
- Self-repairing insulation wraps that adapt to environmental stress.

Enquiries: www.voltex.co.za



At Voltex, we stay ahead of the curve by delivering cutting-edge electrical solutions that empower businesses to operate smarter, safer, and more efficiently. Our comprehensive range of MCCs, motor protection systems, advanced cables, and cable accessories is designed to integrate seamlessly into today's rapidly evolving industrial landscape.

- Voltex



Empowering Africa: custom electrical solutions

JB Switchgear Solutions (JBSS) is committed to excellence by providing low-voltage electrical panels and solutions designed to meet the highest standards of quality, reliability, and safety. As a proud Level 1 B-BBEE company, it contributes to South Africa's economic growth while delivering innovative and tailored electrical systems.

Trusted partner for low-voltage electrical systems

With years of experience in the electrical industry, the company specialises in custom-designed, low-voltage electrical panels that support the efficiency, safety, and long-term reliability of your operations. Its comprehensive range of products and services ensures that every aspect of a project's electrical infrastructure is in good hands, from design through to installation.

JB Switchgear Solutions proudly serves a wide range of industries across the African Continent, including:

- Mining & Minerals;
- Manufacturing;
- Energy & Utilities;
- Food & Beverage; and
- Water & Waste Water.

Why choose JB Switchgear Solutions?

Tailored solutions: No two projects are the same. JBSS works closely with customers to design and deliver a switchgear system that is tailor-made for individual operational

needs, whether it be a bespoke design for a new installation or an upgrade to existing infrastructure.

One-stop shop: The company offers comprehensive solutions, including high-quality sheet metal fabrication ranging from mild steel, 3CR12 or stainless steel and reliable uninterruptible power supply (UPS).

Superior quality and durability: JBSS partners with leading original equipment manufacturers (OEMs) and utilises only the highest quality materials. Each system undergoes rigorous testing to ensure its performance and longevity.

Safety and compliance: Its low-voltage electrical panels are built to the highest standards, ensuring compliance with the latest IEC/SANS regulations. JBSS products also carry SABS certification.

Proven track record: With years of experience, JBSS has successfully delivered projects and motor control solutions across multiple industries.

Key offerings

JBSS' key offerings include:

Motor control centres (MCCs): fixed, demountable, and withdrawable patterns, in various formats and sizes.

Custom-designed panels: tailored solutions for specific requirements, including modular designs. This includes RIO panels, junction boxes, network panels etc.

Patented gully boxes (up to 1,000 V): developed for underground and surface



operations, which can be an incomer, feeder, starter, lighting DB, etc.

Patented slide-type isolators: revolutionising electrical isolation and safety. These come in various sizes, where canopies can be added for field applications.

UPSs and inverters: customised in various power, voltages, and backup time. Offering either modular or monolithic with different battery options (lithium/gel lead acid).

Containerised substation: a fully equipped, compact electrical substation housed within a shipping container. Easy transport and installation, providing reliable power distribution in remote or temporary locations.

ECP Sheet Metal

ECP Sheet Metal is a subsidiary of JB

Switchgear Solutions. ECP focuses on delivering high-quality, custom-made metal enclosures for industries that require both exceptional durability and precision, making it a critical part of our portfolio of products and services, offering:

- Custom sheet metal fabrication;
- Laser cutting and punching;
- Powder coating and finishing; and
- Prototyping and production.

Get in touch today

When it comes to electrical systems, JB Switchgear Solutions provides reliable and safe solutions to help your business succeed.

Enquiries: www.jbswitchgear.co.za



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Saving energy and money: what's driving the IE3 motor revolution?

The International Efficiency 3 (IE3) motor standard will soon become South Africa's legal minimum standard, mandating that local suppliers offer more efficient electric motors. What is driving this change, and how does it affect the many industries that rely on these modern electric workhorses?

The multi-century revolution

The world is powered by electric motors. First invented in 1835, electric motors are ubiquitous nearly two centuries later, playing roles in running vehicles, elevators, escalators, air conditioners, conveyor belts, and pumps, to name a few.

Mechanised motors put momentum behind modernisation. Ancient societies invented water wheels and windmills to turn the elements into torque for production. The invention and commercialisation of steam engines served as one of the early industrial revolution's biggest catalysts. Combustion engines

ushered in an era of giant machinery and shortened distances.

However, electric motors are at the forefront of powering the modern world, generating over \$150 billion annually in sales, according to Allied Market Research. Yet, industries that rely on these motors are grappling with rising energy costs and constrained network market spending. Electric motor-driven systems (EMDS) have a considerable impact on both, not the least because they consume more than 40% of global electricity supplies.

"Most industries are focused on how to reduce their energy bills and increase energy efficiency," said Rodrigo Cetenaeski, sales & marketing director at WEG Africa. "They are also looking to save costs through more equipment efficiency, particularly around maintenance. These factors have made electric motors a priority area and put momentum behind MEPS [Minimum Energy Performance Standards] regulations."

A regulated seachange

MEPS encourage the use of energy-efficient technologies, including electric motors. Managed by the International Electrotechnical Commission (IEC), it published new MEPS standards in 2007. The U.S. updated its MEPS laws in 2011, European countries followed by 2017, and China deployed similar regulations soon after.

Currently, over 57 countries support the new MEPS standard, with more to follow. South Africa gazetted its new MEPS regulations in late 2023, with enforcement slowly coming online.

Implications of MEPS

What are the implications of these new laws? There are numerous benefits that support industries' saving and efficiency priorities. But before exploring those, what are the new requirements?

The new regulations impact low-voltage electric motors in the 0.75 kW to 375 kW range, predominantly two-pole, four-pole, six-pole, and eight-pole motors. Roughly 200,000 electric motor units are sold in South Africa each year, according to the National Economic Development and Labour Council, with almost 70% of them between the 0.75 kW and 11 kW size range.

Yet very few have stated energy ratings, suggesting that the majority are very inefficient IE1 motors that require frequent maintenance. Under the new regulations, most new motors must adhere to the IE3 standard. These regulations don't affect current installations, but it might be more economical to replace broken motors with new models rather than repair or rewire them.

"Companies that rely on electric motors won't have to rip and replace what they have. The new regulations focus on new motors sold in the country. However, when you look at the advantages of IE3 motors, there is good reason to consider upgrades," said Cetenaeski.



Rodrigo Cetenaeski, sales & marketing director at WEG Africa.

even by the second year. The same logic resonates when older motors require repair or rewiring, said Cetenaeski: "Rewiring a motor can cost more than half of purchasing an IE3 motor. If you look at the subsequent savings, it makes more economic sense to phase out older motors rather than repair them."

IE3 motors represent a significant advancement in electric motor technology. By upgrading, companies reduce energy costs, improve sustainability, enhance performance, and comply with regulations.

South Africa's new MEPS regulations and the increased adoption of IE3 motors will unlock considerably more energy at a time when companies and consumers are looking to lower costs, gain value, and boost resilience.

Enquiries: <https://www.weg.net/>



Empowering Minerva Secondary School with mathematics dictionaries

ABB South Africa and EduFeArn hosted a special event to officially hand over R600,000 worth of mathematics dictionaries to Minerva Secondary School in Alexandra on 18 March. This event highlighted the importance of investing in education and empowering the next generation of learners.

In 2024, ABB and EduFeArn launched a mathematics intervention at Minerva Secondary School in Alexandra. This initiative was designed to enhance the mathematical and scientific understanding of high school learners, equipping them with the skills necessary for academic success and future careers in science, technology, engineering, and mathematics (STEM) fields.

The provision of the dictionaries, alongside specialised educator training, is aimed at making a tangible difference in the classroom. By equipping both students and teachers with essential tools, ABB and EduFeArn are ensuring that educational gaps are bridged, and that learners in underserved communities are given the knowledge and skills they need to shape their futures. Ongoing monitoring of each

learner's progress is a key aspect of the initiative, ensuring that the support provided remains relevant and effective.

ABB South Africa corporate social responsibility manager Cynthia Khoali expressed pride in the partnership with the EduFeArn Foundation: "It is a long-term commitment to support South African learners, particularly in mathematics, a subject that serves as a gateway to numerous opportunities in today's world." She stressed that this initiative is not merely about providing resources but about creating an environment where learners can thrive academically and build the confidence they need to excel in their studies.

Kholisile Khumalo, business development manager at EduFeArn, highlighted the challenges South African learners face due to language barriers in mathematics and physical science: "Many students must write exams in English, despite it not being their first language, and often struggle to interpret complex terms correctly."

EduFeArn's CAPS-aligned mathematics and physical sciences picture dictionaries

have been specifically designed to address this issue. (CAPS stands for Curriculum and Assessment Policy Statement, the official curriculum framework used in South African schools. It provides detailed guidelines on what students should learn in each subject and grade level.)

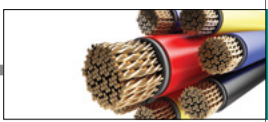
The dictionaries are educational resources designed to help students understand key concepts in these critical subjects through visual aids. They include definitions, explanations, and illustrations to make complex topics more accessible, especially for learners who benefit from visual learning. "These resources are intended to improve comprehension, retention, and overall academic performance," added Khumalo.

This initiative forms part of ABB's broader Corporate Social Responsibility strategy, which is dedicated to

making a meaningful, lasting impact in the communities where the company operates. Through its partnership with EduFeArn, ABB is reinforcing its commitment to education and community development, empowering learners with the tools they need to succeed in their studies and future careers.

Enquiries: www.abb.com





Experience premium label printing with the BradyPrinter i7500

Fed up with old-school high-volume label printing? The new BradyPrinter i7500 reimagines 76 mm core high-precision label printing. No calibration, no formatting, no ribbon fumbling, no trial and error, and no waste – the new i7500 redefines the 76 mm core premium printing experience in electronics, electrical, manufacturing and laboratory industries.

The identification specialist Brady Corporation's new BradyPrinter i7500 for 76 mm core label rolls automatically adjusts all of its settings when new consumables are loaded. Ready to print in just 40 seconds, the printer also removes all calibration waste by printing the first label right.

Set up, don't touch

The approach in most industries to high volume, high-precision thermal heat transfer 76 mm core (3-inch core) label printing to date has almost always been "set it up and don't touch". Crucial for traceability and compliance, yet excruciating to set up and calibrate, the 76 mm core label printing experience has been a notorious pain point for many manufacturing, electronics, electrical and laboratory industries.

Ready in 40 seconds

In a new proprietary printer model, global identification specialist Brady Corporation removed all label printing hassle to redefine the 76 mm core label experience. "The new BradyPrinter i7500 does not require users to adjust sensors, heat settings, define label dimensions or waste labels in calibration," says Ömer Adisen, product manager benchtop printers & software at Brady Corporation. "We call it LabelSense. The technology reduces the frustrating trial and error of manual printer calibration to print readiness in just 40 seconds. That includes loading Brady consumables, designed so they can only be loaded the right way."

Efficient, flexible printing

The new BradyPrinter i7500 with LabelSense technology makes high-precision 76 mm core label printing a lot more intuitive and efficient. There is no need to maintain multiple printers just to avoid the classic consumable and calibration hassle. "All optimal settings are already preloaded, and the printer automatically recognises every Brady consumable," explains Adisen. The i7500 offers considerable print flexibility by enabling users to switch from printed

circuit board labels to rating plates, raised profile labels and cable sleeves, or between relevant specialised laboratory labels, in just 40 seconds. "Even when loading the tiniest 3.18mm QR-coded labels, the i7500 prints the first label right, reducing waste and supporting sustainable label printing practices."

Open core

There is no need to devalue current label stock. Because, in addition to auto-calibration, the BradyPrinter i7500 can print 76mm core labels from any manufacturer in manual mode with great speed and precision.

Software compatible

When combined with Brady Workstation label design, the software instantly recognises the dimensions of loaded Brady consumables for fast and intuitive label creation. In addition to label design protection, Brady Workstation also includes an easy scan-to-print app and a data automation app to print labels at the right time with the right ERP-system data. The BradyPrinter i7500 supports print languages like ZPL and can print labels via other label



design software.

Premium printing redefined

"The new BradyPrinter i7500 defines a new premium high-precision printing experience for 76mm core labels," Adisen says. "Fully automated calibration enables printing on different consumables within 40 seconds. Supported by a clear user interface on a large on-board screen, the i7500 prints a wide range of labels without any hassle. We can provide a hands-on demo at your premises to show your teams just how intuitive label printing can be."

Enquiries: africa@bradycorp.com

GoodApp to formalise the local informal service sector

The recently launched GoodApp is a pioneering online platform designed to bridge the gap between consumers and a diverse network of home service providers in the South African informal sector, including electricians. By prioritising professionalism, trust, and reliability, the platform aims to bring informal economy service providers into the formal economy.

South Africa continues to grapple with a crippling unemployment crisis resulting in the highest income inequality in the world, evidenced by a 2023 Gini coefficient of 0.63. Unlike comparable emerging economies like Brazil, South Africa's high barriers to entry into the informal sector and the difficulties informal businesses face in transitioning to formal business create a significant economic bottleneck. While the formal economy struggles to absorb the nation's workforce, the informal sector, estimated at 7.5 million participants, represents untapped potential.

According to a working paper from the Centre for International Development at Harvard University, South Africa's informal economy has the potential to provide an entry point into the labour market for many unemployed South Africans.

Despite its potential, the informal sector, predominantly located in townships, faces persistent challenges: an inability to access finance, entrepreneurial skills gaps, market access barriers, and inadequate infrastructure.

The Institute of Business Advisors Southern Africa (IBASA) says that the two types of businesses that can benefit most from formalising are those that are operating as informal, non-registered businesses and those that are registered businesses, but which lack well-structured processes. Once a business has been formalised, it is able to build up a track record, secure funding and scale operations.

The Harvard paper advocates for deregulating the management and oversight of the informal sector in the longer term with immediate policy interventions, including lowering, removing or changing the conditions of licensing and registration costs of – and stipulations to – Informal trading as a starting point to realising the potential of the informal sector. According to the paper, this would unleash the informal sector's power to generate meaningful income opportunities.

Enter GoodApp

What sets GoodApp apart is a rigorous verification process that ensures every service provider undergoes comprehensive background checks, security clearances, and

certification verification. Continuous performance monitoring ensures consistent professionalism and reliability. In addition, customers can access detailed reviews and ratings prior to booking a service provider.

GoodApp offers enormous potential for township service providers in terms of servicing consumers living in suburbia as well as in townships. There is a growing awareness that township communities are not peripheral players in the economy but are instead essential engines of South African consumer power with an estimated spending capacity of R900 billion, according to the latest Township Customer Experience Report. In this report, nearly half of the survey respondents said they were directing more than a quarter of their income towards purchases within their township, highlighting an increasing shift towards hyper-local economic activity.

The latest report's most significant findings include the need for transparency and reliable verification. Consumers want to support brands that resonate with and understand them, and they also want responsive, empathetic, and attentive customer service – all traits that help build trust and brand loyalty in a community-driven market.

GoodApp addresses this demand by providing a platform for verified, trustworthy and professional service providers, accessible at the customer's convenience. By formalising and legitimising informal service providers, GoodApp empowers them to thrive while providing consumers with confidence and peace of mind, ultimately contributing to a more inclusive and equitable South African economy.

Enquiries: <https://goodapp.co.za/>

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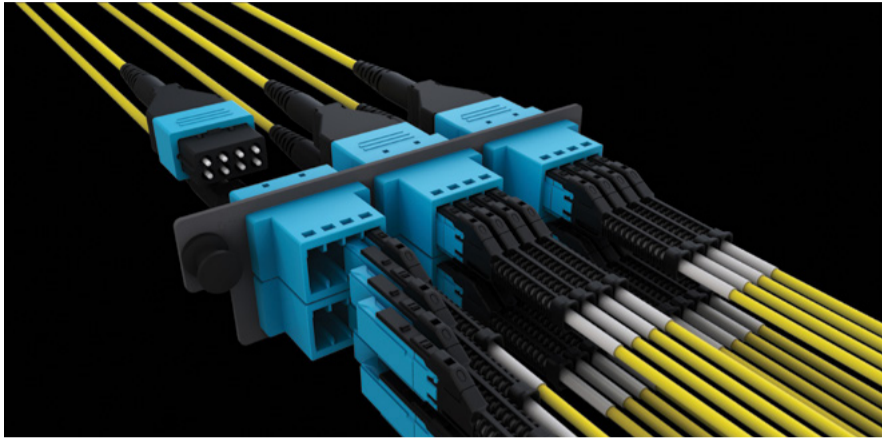
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Redefining plug-and-play mobility for fibre cabling



As data volumes rapidly increase globally, specialists need to urgently examine IT and network infrastructure, with a particular focus on vital equipment like servers, racks, and fibre cabling.

Legrand data centre specialists anticipate that the world will soon produce over 180 zettabytes of data, a significant increase from 79 zettabytes in 2021. This means that critical infrastructure operators need a new generation of tools to simplify and streamline their operations; this involves investing in the latest flexible data storage, computing, and networking systems.

The Legrand team believes that advanced fibre cabling solutions, which have been developed to simplify deployment, lower costs, improve

performance, and enable greater densities, will efficiently meet future capacity demands.

Conventional cassette-based forms of cable management at data centres pose varying challenges, including polarity, optical loss, rapid deployment, and high costs. Legrand maintains that the phasing out of cassette-based cabling solutions is the key to improved optical performance, increased scalability, and reduced costs.

The company's Infinium acclAIM fibre cabling connectivity solution is the first system of its kind that replaces pre-terminated cassette-based cabling solutions with direct connections, eliminating costly components and reducing time-consuming processes.

Legrand's Infinium acclAIM cabling solution removes the antiquated,

inefficient, and untidy way of connecting or mating cables within a data centre and other critical environments by providing a fibre cabling connection that is simpler, smaller, more intuitive, better performing, and easier to use.

This advanced system is now being used by some of the world's most innovative and progressive data centre organisations. By introducing direct fibre cable connections, companies are reducing the total cost of ownership (TCO) of mission-critical spaces, while improving efficiencies and performance.

Important benefits of this system include the lowest optical loss and a significantly simplified installation and configuration process. The product design requires end-users to order only three parts, which means unlimited scalability for critical infrastructure operators.

The simple yet robust design encompasses Infinium acclAIM connectors that mate directly to an array of 2-fiber duplex MDC patch cords through a conversion adapter panel. This system passively adapts the acclAIM octal fibre connector to four MDC 2-fiber duplex connectors.

Legrand's solution has been designed to minimise loss, eliminate the need for splicing and maximise optical headroom to overcome barriers to performance. The simplicity of design, combined with application-defined on-site polarity adjustment, fewer components and near-lossless performance, enables this system to provide a multi-generational lifecycle with a single installation of a sustainable

building asset for decades.

Other important features include a simplified interface with an Ultra-High Density Plus design – offering 33% more capacity than High-Density units – with up to 192 fibres per rack unit. This flexible system has been designed for simplified connectivity – there are no gender considerations, just direct connections. Polarity is application-defined and can be adapted to nearly any link configuration – pre-planned, on-site, or on the fly – whereas cassettes must be pre-planned or pre-ordered to be able to change polarity.

With each connector's increased density and smaller footprint, there is more room for technicians to work on each panel. Users also benefit from fast installation times, limitless scalability, and enhanced design aesthetics. Testing is now completed with a single link after mating, versus having to test both sides of a conventional cassette, which is time-consuming.

Legrand believes that by addressing challenges associated with the smallest components of data and other critical infrastructure, companies will significantly improve efficiency, productivity, performance, scalability, and profitability. Infinium acclAIM redefines connectivity at data centres by replacing pre-terminated cassette-based solutions with direct connections reducing components, processes and costs.

Enquiries: www.legrand.co.za

CCG specified for the Australian Ceres Ammonia Urea project

CCG has secured a major specification win for Australia's groundbreaking Ceres Ammonia Urea project. This development, set to become the world's largest fertiliser plant of its kind, has selected CCG's proven Corrosion Guard and Posi Grip range of hazardous certified cable glands to meet the facility's demanding environmental and safety requirements.

Located on the Burrup Peninsula, approximately 20 km north of Karratha on the Western Australia coast, the Ceres Ammonia Urea project will produce fertiliser from urea by transforming natural gas supplied by the neighbouring Woodside LNG production facility into ammonia and then into urea. Producing over 2 million metric tons per year, this will make the plant the largest of its kind in the world. It will also be on the avant-garde in terms of energy efficiency and emission reduction, with a design to minimise the carbon footprint to net carbon zero by 2050.

The project includes a urea fertiliser plant, a water treatment plant, a power plant (100 MW), and urea storage, loading, and unloading facilities. A closed conveyor will transport the urea 7 km directly to the Pilbara Ports Authority for shipping to local and offshore markets, with up to 100 shiploads expected per year.

Stringent design specifications

The design specification for the project called for continuous heavy-duty service in a harsh and hazardous environment, 24 hours per day and seven days per week, for a minimum facility life of 25 years

Equipment had to demonstrate reliable and proven performance for ambient temperatures of 50 °C, high exposure to UV, ingress resistance to cyclonic conditions, operation in 100% humidity, explosion hazardous certification, and resistance to high levels of corrosion.

After a lengthy vetting process during which CCG could demonstrate compliance with all the project's strict performance requirements, the project EPC specified CCG's proven Corrosion Guard and Posi Grip range of hazardous certified cable glands for installation throughout the plant.

CCG was able to demonstrate proven performance because the company's Corrosion Guard and Posi Grip range had been in continuous operation on a similar neighbouring Yara fertiliser plant for 21 years without any failures and on the Woodside LNG plant for 24 years. In addition to the required explosive hazardous areas certification, CCG could produce independent test reports and certification for corrosion resistance, UV protection, and resistance against deluge conditions experienced during cyclonic conditions with compliance to Shell oil specification DTS-01.

World-leading solutions

CCG is the recognised world leader in corrosion-resistant cable glands. In 1989, in cooperation with Sastech-Sasol, it first designed and patented the Posi Grip compression gland and Corrosion Guard armoured cable gland.

Since then, the range has been specified globally for use in highly corrosive process plants such as metallurgical and mining process plants, petrochemical plants, and water treatment plants. A unique design feature of the range is the tapered Posi Grip seal, which results in 100% cable retention. This negates the need for extra cable clamping or built-in captive components. This delivers true built-in safety, as critical components cannot be left out during installation. It also uses the revolutionary Vortex injection resin barrier gland system on unfilled cables.

Enquiries: info@ccgcablegland.co.za

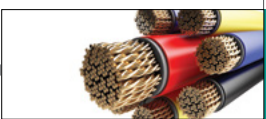
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Introducing igus's online drive cable finder

igus has released the latest version of its readycable finder, an online tool that makes it easier to select suitable drive cables.

Users can find the right cable with the appropriate quality at the most favourable price with just one entry. The integrated chainflex service life calculator also reliably predicts how long the cable will last.

Customers looking for a cable for their motors are spoilt for choice at igus. The motion plastics specialist offers a range of over 6,000 drive cables suitable for 38 manufacturer standards. The brand-new readycable finder helps customers select the right cable. With its modern, user-friendly design, the online tool only requires the part number of the motor manufacturer's cable and converts it directly into the appropriate readycable product.

Customers can choose from up to seven different cable qualities, which are

designed for special requirements in the energy chain. These include different jacket materials and particular specifications, which can vary depending on the operating conditions. The price, the cost savings when changing the chainflex cable quality and the delivery time of the cable are also displayed in real-time, which allows customers to place an order quickly in the online shop.

The service life of the cable can be calculated using the integrated chainflex service life calculator. The online tool helps customers determine the service life of their selected cable using real test data from the company's own 4,000 m² test laboratory and AI-based calculations. After entering parameters such as travel, speed, acceleration and maximum bend radius, the tool immediately provides an exact calculation of the cable's durability.

Enquiries: <https://www.igus.co.za>



Optimising electrical systems with Three-D Agencies' cable accessories solutions

Maintaining a well-functioning electrical system is essential in any workplace, whether it's an office, industrial facility, or energy-related project. Without the right components and maintenance, electrical systems can become inefficient, prone to malfunctions, or even experience total failures, which can lead to costly repairs and downtime. This is where Three-D Agencies steps in. The company offers a wide range of high-quality cable accessories designed to keep electrical systems running smoothly, securely, and efficiently.

Understanding cable accessories

Cable accessories encompass a diverse range of components essential for connecting, securing, insulating, and protecting electrical cables. These accessories play a crucial role in maintaining cable integrity, ensuring reliable electrical transmission, and minimising risks from exposure, wear, and external factors like moisture, heat, and mechanical stress. By choosing the right cable accessories, businesses can enhance operational safety, prevent electrical failures, and reduce downtime, leading to improved efficiency and system longevity.

Three-D Agencies offers a comprehensive range of high-quality cable accessories designed to enhance performance, safety, and durability. From heat shrink tubing and cable protection to connectors and terminations, the company's solutions ensure reliable electrical connections in even the most demanding environments.

Here's how Three-D's cable accessory solutions can help optimise electrical systems:

- 1. Cable lugs and terminals:** Cable lugs and terminals are vital for ensuring secure and reliable electrical connections. If these components aren't correctly installed, the electrical system can suffer from loose connections, which may lead to inefficiency or even dangerous malfunctions. Three-D Agencies provides a variety of cable lugs suitable for different voltage levels and applications. Whether crimped, soldered, or mechanical lugs, Three-D Agencies' products guarantee safe, secure, and long-lasting connections. With the right cable lugs, one can ensure that the electrical system operates smoothly and without interruptions.
- 2. Wire cable markers:** Proper cable identification is important, especially in large electrical systems with numerous connections. Clear identification of cables can make troubleshooting easier and more efficient, saving valuable time and reducing the risk of errors. Three-D Agencies offers durable wire cable markers that help label and organise cables effectively. This simple yet essential tool improves overall system management and ensures quicker fixes when issues arise. Using its wire markers reduces downtime,

streamlines maintenance, and minimises costly mistakes in future upgrades or repairs.

- 3. Cable management solutions:** Effective cable management isn't just about keeping cables neat and organised, it's also about ensuring safety and reducing the risk of damage. Three-D Agencies offers a complete range of cable management products, such as cable trays, conduits, and cable ties. These solutions help prevent cables from tangling, fraying, or becoming damaged while also improving the overall appearance of a workspace. Whether setting up an office or optimising an industrial facility, Three-D Agencies' cable management products ensure that cables stay organised, protected, and easily accessible.
- 4. Heat shrink tubing:** Heat shrink tubing is a vital protective solution for insulating and safeguarding cables against environmental hazards. It provides excellent resistance to moisture, chemicals, and abrasion, making it ideal for demanding industries such as automotive, electrical, and telecommunications. Three-D Agencies supplies high-quality, reliable heat shrink tubing designed to enhance cable durability and performance in harsh conditions.
- 5. Test instruments:** Routine testing of electrical systems is vital for detecting potential issues such as voltage fluctuations, cable wear, or irregularities before they result in bigger problems. Three-D Agencies provides an extensive selection of test instruments designed to help with monitoring the health of an electrical system. By regularly testing a system, problems can be caught early, avoiding expensive repairs and minimising downtime. With Three-D Agencies' high-quality test instruments, one can ensure that an electrical system continues to perform at its best, preventing costly failures down the line.
- 6. Cable protection products:** Cables are exposed to various risks, including physical damage, moisture, and harsh chemicals. Protecting them is essential for ensuring long-term reliability. Three-D Agencies offers a range of cable protection products, including heat shrink tubing and cable glands, which protect cables from environmental damage. These protective solutions enhance the lifespan of cables and help ensure they continue to perform reliably, even in harsh conditions. Using the right protection products can save money by reducing the need for frequent replacements and repairs.

Conclusion

A well-maintained and efficient electrical system is crucial for keeping a workplace safe, productive, and efficient. "With Three-D Agencies' wide range of products – from



cable lugs and wire markers to cable management and protection solutions, you can ensure your electrical setup is optimised for performance, safety, and longevity," Three-D Agencies said. "Our high-quality products help prevent issues, improve system efficiency, and safeguard your equipment."

Three-D Agencies stands out as a trusted supplier of premium cable accessories due to their commitment to quality, innovation, and customer satisfaction. The company sources products from leading global manufacturers, ensuring compliance with international safety and performance standards.

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What is LED retrofitting and why is it necessary?

Simply put, LED retrofitting means upgrading your existing light fittings from halogen, CFL, and other older bulb types to new LED alternatives. In today's energy-conscious environment, LED retrofitting has become an increasingly popular option for commercial and industrial businesses worldwide.

While the energy-saving benefits of LEDs are obvious, there are several other

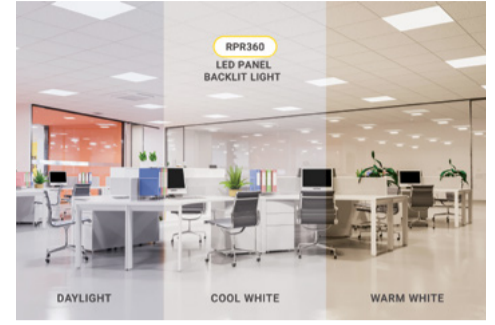
benefits that business owners and building managers should consider when making the decision to retrofit their facilities to LED lighting. These include dramatically improved lighting quality and significantly reduced maintenance costs.

When to (and when not to) retrofit

LED retrofitting has many advantages, considering LEDs save energy and

maintenance costs while providing better light quality. However, with the latter in mind, LEDs don't have the same light distribution as conventional fluorescents, halogens, or High-Intensity Discharge (HID) lamps, so issues can arise from just converting an unsuitable fitting to LED tubes or lamps.

To explain: open channels, vapour proofs, prismatic and decorative fittings



that do not have any reflectors are ideal for retrofit options and are easily converted to the LED option.



Fittings with reflectors that have been specifically designed for Fluorescent, HID, CFL, or Halogen lamps do not perform well when retrofitted with LED lamps.



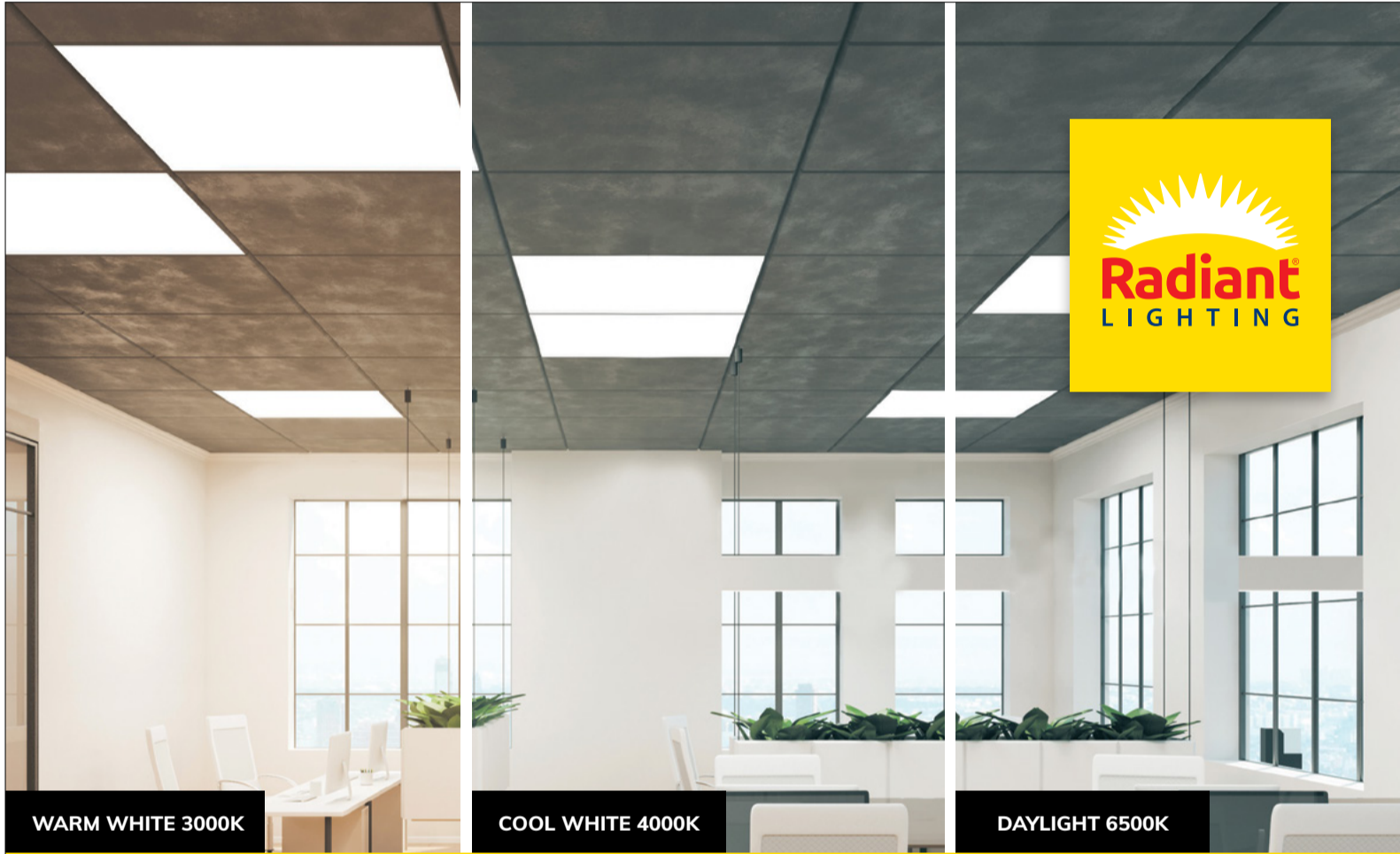
Due to the new lamp legislation, however, halogen and CFLs fall short of the minimum performance requirement of 90 lumens per watt and will no longer be on sale after 23 May 2025.

The above-mentioned fittings should be completely replaced with new LED fittings that are designed to fit the ceiling grid. The most common sizes are 600 x 600 mm, 1,200 x 600 mm, and 1,200 x 300 mm.

If retrofitting is not an option, look for a complete solution that will provide quality light, energy savings, and a long service life.

3 Colour-Changing (3CCT) panels, for example, allow you to choose between cool white, daylight, or warm white colour temperatures through an in-line switch. They are ideal for multiple applications, from hospital waiting areas, where a friendly, warm white might be suitable, to an office or factory environment, where daylight or cool white applications will boost concentration levels and productivity.

Enquiries: www.radiant.co.za



COLOUR CHANGING TECHNOLOGY BACKLIT LED PANEL LIGHTS

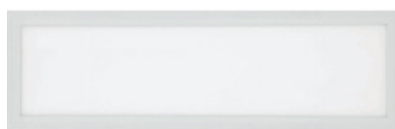
The three-colour changing technology on our new LED panel lights means you can select from Warm White, Cool White or Daylight settings through a CCT in-line switch. These ceiling lights are flicker-free and available in 3 sizes. All are covered by a 3 year warranty. Radiant Lighting offers an extensive product range to meet your architectural and building project requirements. Visit www.radiant.co.za and let us take your project to the next level.



RPR360

3CCT LED BACKLIT PANEL

Colour Temp: 3000K, 4000K & 6500K
Lumens: 4000lm
Wattage: 40W
Size: 600mm(w) x 600mm(h)



RPR361

3CCT LED BACKLIT PANEL

Colour Temp: 3000K, 4000K & 6500K
Lumens: 4000lm
Wattage: 40W
Size: 300mm(w) x 1200mm(h)



RPR362

3CCT LED BACKLIT PANEL

Colour Temp: 3000K, 4000K & 6500K
Lumens: 6000lm
Wattage: 60W
Size: 600mm(w) x 1200mm(h)



Inline Switch

JHB 011 386 0000

CPT 021 521 2500



Eurolux's project-ready downlighters: flexible, efficient, and built to perform

Lighting plays a crucial role in any project, and when it comes to downlighters, flexibility and efficiency are key. Eurolux's range of project-ready downlighters is designed to meet the needs of a variety of spaces, from large-scale commercial projects to smaller, more intimate settings. With adjustable colour temperatures, multiple size options, and both dimmable and non-dimmable choices, these downlighters provide a versatile and reliable lighting solution.

Tailored for any project

Available in five different sizes – 114 mm, 120 mm, 175 mm, 196 mm, and 230 mm – this fit-for-purpose Eurolux range ensures there's a perfect solution for your project, whether it's a high-traffic retail environment, a modern office space, or a cosy hospitality setting. The variety of sizes and outputs, ranging from 900 to 3,000 lumens, allow you to select the perfect combination for your space for consistent lighting while maintaining performance and aesthetics.

CCT-enabled for ultimate adaptability

When designing spaces, colour temperature is key to both functionality and mood. This range allows you to set the tone for relaxation, concentration or mood through integrated CCT technology. Each downlighter comes with an inline switch that allows users to select from 3,000 K (warm white), 4,000 K (cool white), or 5,000 K (daylight), offering full control over the ambience and functionality of a space. Whether you need a warm, inviting atmosphere or a crisp, daylight-like brightness, these downlighters adapt effortlessly.

Eurolux: performance you can rely on

- **Product codes PR250-PR254:** This range delivers 100 lumens per Watt, and a bright and efficient 900 lumens. These downlighters ensure excellent illumination while keeping energy consumption low.
- **Die-cast aluminium construction:** Durable and designed for longevity, the high-quality aluminium body ensures effective heat dissipation and a sleek, professional finish.
- **Dimmable and non-dimmable options:** Catering to different lighting control preferences, whether for mood-

setting applications or straightforward, consistent lighting.

- **Five-year warranty:** Built to last, these downlighters come with the assurance of long-term reliability and peace of mind.
- **IP20 rating:** Ideal for indoor applications where performance and style matter.

Designed for versatility

From corporate offices and retail

environments to hotels and residential projects, these downlighters provide a seamless lighting solution that meets various design and performance requirements. Their easy-to-install nature and adaptable colour temperature settings make them a go-to choice for contractors, designers, and facility managers looking for a cost-effective and high-performing option.

Your lighting solution starts at Eurolux

"When it comes to lighting solutions that balance flexibility, efficiency, and longevity, our project-ready downlighters stand out," says Eurolux. "No matter the scale or complexity of your project, this range is engineered to deliver optimal performance with minimal hassle."

Enquiries: www.eurolux.co.za



Project-Ready Downlighters

Versatile, Efficient, Built to Perform



Brilliant spaces begin with the right lighting! With adjustable CCT settings (3000K, 4000K, 5000K), multiple size options, and dimmable & non-dimmable choices, Eurolux's project downlighters offer solutions for multiple business and home applications.

These downlighters are flexible and energy-efficient, delivering high-quality illumination. Plus, with a 5-year warranty, you can rely on long-term performance. Whether for large-scale projects or intimate settings, Eurolux has the lighting solution for you.

Find your perfect fit today at www.eurolux.co.za.

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Lighting your way





Aurora Lighting Africa unveils a game-changer for retail illumination

The retail lighting sector is undergoing a transformative shift, and Aurora Lighting Africa is at the forefront with its latest innovation, the Lumi-Line Ultra Slim Polycarbonate Linear. Designed with efficiency, flexibility, and longevity in mind, this cutting-edge luminaire is set to redefine supermarket and retail space lighting. Delivering an impressive 170 lumens per watt (lm/W), this ultra-slim luminaire ensures retailers can maximise illumination while significantly reducing energy costs.

Easy to install and with a wide 120-degree

beam angle, this luminaire provides comprehensive illumination coverage, ensuring that every aisle, display, and promotional section in a supermarket or retail store is well-lit, enhancing the overall shopping experience.

Retail environments demand adaptable lighting solutions, and the Lumi-Line Ultra Slim delivers exactly that. Available in both 3 000K and 4 000K colour temperature options, this fixture allows businesses to tailor their lighting ambience to match their branding and customer experience goals.

The 3 000K option provides a warm, inviting glow that is perfect for creating a cosy shopping atmosphere, while the 4 000K setting offers a crisp, neutral light that enhances visibility and product presentation.

One of the most significant advantages of this new product is its modular design. Supplied with mounting clips, the Lumi-Line Ultra Slim also offers a range of accessories, including T-pieces, 90-degree bends, and cross pieces, enabling multiple configuration possibilities. This adaptability allows retailers to create customised lighting designs, ensuring that every corner of their space is optimally illuminated without dark spots or uneven coverage.

Durability is another key aspect that sets this luminaire apart. With an impressive lifespan of 50,000 hours, retailers can rest assured that they are investing in a long-term lighting solution that minimises maintenance costs and downtime. Furthermore, Aurora Lighting Africa backs this product with a robust five-year warranty, demonstrating their confidence in its performance and reliability.

For supermarkets and other retail spaces, lighting is more than just illumination, it plays a crucial role in guiding customers, enhancing product visibility, and creating an engaging shopping experience. The Lumi-Line Ultra Slim Polycarbonate Linear

embodies all these qualities, making it an ideal choice for retailers looking to modernise their spaces with energy-efficient and visually appealing lighting.

As sustainability and operational efficiency continue to drive business decisions, investing in high-performance lighting solutions like the Lumi-Line Ultra Slim is a strategic move. Aurora Lighting Africa has once again demonstrated its commitment to providing innovative, high-quality lighting solutions that meet the evolving needs of the retail sector. With its superior efficiency, flexible design, and long-lasting durability, the Lumi-Line Ultra Slim Polycarbonate Linear is set to become a staple in supermarket and retail installations across Africa and beyond.

"At Aurora Lighting Africa, we believe that innovative lighting solutions are key to transforming retail spaces. The Lumi-Line Ultra Slim Polycarbonate Linear not only enhances energy efficiency but also creates inviting atmospheres that elevate the shopping experience. Our commitment to quality and sustainability drives us to provide retailers with the tools they need to thrive in a competitive market," said Scylagh Clunnie, managing director, Aurora Lighting Africa.

Enquiries: info@aurora-africa.com



The true cost of Africa's counterfeit electrical goods trade

Financial pressures in South Africa and across Africa have led to a surge in demand for cheaper products, creating a lucrative market for counterfeiters. This has even extended to electrical goods, which have infiltrated between 40% to 80% of markets on the continent, posing a potentially lethal risk to millions of consumers.

At best, these products simply might not operate, but in the worst case, they may result in unprotected installations, with burns or electrical shocks being inflicted on users as a result. In severe circumstances, fires or fatalities occur.

"Unfortunately, wherever there is demand, counterfeiters will find opportunities to profit," points out Dr Andrew Dickson, engineering executive at CBI-electric: low voltage. "A case in point is solar power systems, which have been surging in popularity, especially in South Africa. This has led to a flood of uncertified components and substandard solar panels, raising concerns from the electricity minister and local solar companies."

"Despite the risks, the tempting price tag of counterfeit electrical products keeps them in high demand," he notes. "Consumers are unfortunately unaware of the implications of these purchases. This short-term focus on price, coupled with the absence of immediate consequences, can lead to a preference for cheaper counterfeit goods."

Illustrating the long-term cost implications for consumers, Dr Dickson compares an R50 counterfeit circuit breaker to a genuine one costing R100. "The short-term savings might seem appealing, but the potential repercussions are severe. A malfunction could lead to damage to property or personal injury, so the total cost of losses from a counterfeit product far exceeds the initial savings gained from their purchase."

Materials matter

Dickson highlights that a key difference between real and counterfeit electrical goods lies in the materials used. "With manufacturers of these items cutting corners, this translates to the use of substandard materials. For example, instead of using tested and compliant plastic materials that are non-flammable or self-extinguishing to produce products and components, they use cheap, untested, and non-compliant alternatives. This is a huge health and safety hazard as they are highly flammable, do not self-extinguish and may also produce toxic smoke, making the electrical installation unsafe and consequently putting the consumer at risk."

"Additionally, authentic products undergo rigorous testing to meet stringent safety, environmental, and performance standards and regulations required both domestically and internationally, which is why they tend to be more expensive. Counterfeit products, however, bypass these essential checks, as compliance is costly and time-consuming," adds Dickson.

Pros of complaint products

Beyond safety, he shares that investing in compliant electrical goods offers a wealth of benefits that far outweigh a cheaper version, as these products typically last longer since they are made with better materials and construction. "Compliant products offer an extended lifespan, saving consumers money on replacements. In addition to comprehensive safety assessments, these products undergo accelerated life tests, including exposure to harsh environmental conditions such as ageing and salt spray. They also perform better and are more efficient."

Dickson observes that despite efforts by African governments to implement safety,



Legitimate manufacturers, certification bodies, and distributors have a shared responsibility to inform consumers about the risks associated with counterfeit electrical goods, so they understand that the lower cost is not worth the risk.

- Dr Andrew Dickson



quality, and environmental regulations for electrical goods, the primary challenge lies in the blatant disregard by counterfeiters. "This, however, is being driven by the demand for cheaper, non-compliant products, and is a trend evident not only among individuals but also businesses and even government institutions."

"Legitimate manufacturers, certification bodies, and distributors have a shared responsibility to inform consumers about the risks associated with counterfeit electrical goods, so they understand that the lower cost is not worth the risk," he stresses. "Additionally, by providing guidance on

identifying genuine items and the importance of using reputable suppliers and electrical contractors, we can empower consumers to make informed choices."

If you come across counterfeit electrical products, Dickson advises that you report them to the Consumer Goods Council of South Africa and/or to your nearest police station.

"The difference between life and death can hinge on a plug. While the initial price of authentic products might be higher, it pays off in the long run," he concludes.

Enquiries: <https://cbi-lowvoltage.co.za/>



BEKA Schröder supplies solar lighting to waste water treatment works

BEKA Schröder has supplied the solar highmast lighting solution for the Mdantsane Waste Water Treatment Works in the Eastern Cape province.

The Mdantsane Waste Water Treatment Works required a reliable and efficient lighting solution. To reduce electricity costs, ensure continuous illumination despite power supply interruptions, and eliminate the risk of cable theft, a solar-powered lighting system was selected.

BEKA Schröder's Solarflood solar floodlights, mounted on 20 m highmasts, provided the ideal solution. This installation marks a significant milestone as the first waste water treatment facility in the Eastern Cape province to be illuminated by solar lighting.

Off-grid solar highmast lighting solution

The South African designed and manufactured Solarflood is a solar highmast lighting solution designed for outdoor open areas and rural applications, offering a high-performance, durable option for off-grid solar lighting needs. It delivers reliable illumination with an

IP66 rating, ensuring it can withstand high ambient temperatures. With an excellent lumen/watt ratio, it excels in energy efficiency.

The Solarflood's advanced optics allow for mounting up to 20 m, providing high-quality lighting where it's most needed. The system is optimised with monocrystalline solar modules for efficient energy conversion, paired with Maximum Power Point Tracking (MPPT) charging and lithium storage technology, ensuring long-lasting autonomy and reliable performance in challenging environments.

Keeping it local

BEKA Schröder develops and manufactures sustainable lighting products in South Africa, designed and suitable for local conditions.

"We are very proud to be associated with Bosch Projects East London, Designer Lighting and Buffalo City Metropolitan Municipality in providing a successful solar lighting solution for this project," the company said.

Enquiries: el@beka-schreder.co.za



This installation marks a significant milestone as the first waste water treatment facility in the Eastern Cape province to be illuminated by solar lighting.

- BEKA Schröder

Boosting energy efficiency with lighting controls

By Henk Rotman of IESSA

The use of lighting controls is a powerful extra when it comes to energy-efficient lighting. This article explains the main lighting control strategies and the additional energy savings that can be realised by implementing them.

To realise an energy-efficient lighting installation, one needs to combine an energy-efficient light source with an energy-efficient control gear into an energy-efficient luminaire with the right light distribution for the application and then use that in an efficient lighting design. This should result in the lowest possible Lighting Power Density (LPD), expressed in watts per square metre per 100 lux ($W/m^2/100 \text{ lux}$). One way

to further improve these savings is with lighting controls.

We can define lighting controls as any device or system controlling or communicating with lighting devices or installations.

Three of the main lighting control strategies are:

- **Motion sensing or presence detection:** This entails the ability to sense when a space is vacant and then switching off (or dimming down) the lighting and switching the lighting back on (or going to full output) when a person or object enters that space.
- **Daylight linking or daylight harvesting:** This strategy means measuring incoming daylight and, based on that, dimming

down artificial light.

- **Task tuning:** This is the process of adjusting lights to create lighting levels appropriate for location- or task-specific lighting needs.

So, what savings can be realised by implementing these control strategies? The correct answer is 'it depends'. Let's give an example: In an office, motion sensors are installed in all cell offices. One office is occupied by a person who mainly uses the computer; the person doesn't like socialising with colleagues and stays behind the desk during lunch breaks to enjoy homemade sandwiches and herbal tea. Possible savings due to motion-sensing: maybe 10%.

The office next door is occupied by a person who attends many meetings – either in the office or with outside partners. The person loves socialising and can often be found at the coffee machine talking to colleagues. Lunch is had at the office canteen. Here possible savings due to motion-sensing are much higher and could reach 50%, even 60%.

Companies offering standalone motion sensors and control systems, including motion-sensing, often quote 30% as an energy saving for the technology. A 2011 study by the Lawrence Berkeley National Laboratory based on a review of 240 energy-saving estimates mentions an average saving of 24% for motion-sensing.

Like motion sensing, the potential savings for daylight linking show a wide variety. Factors influencing the savings are:

- Construction of the building;
- Size of the windows;
- Presence of blinds and how they are being used; and
- Geographical location (e.g. North facing/ climate).

The average savings found by the same study done by the Lawrence Berkeley National Laboratory is 28%.

An older study (from 2002) by the

National Research Council Canada found the following savings:

- Open plan office: 40%
- Cell office: 50% to 70%

The growing realisation of the benefits of incoming daylight into buildings (both due to health and well-being as well as efficiency aspects) combined with advancements in glass/window technologies able to let daylight come in while blocking heat allows the use of larger windows in buildings. This has the potential to increase the savings using daylight linking going forward.

Possible savings using task tuning can be found in LEUKOS Volume 8, Number 3 from January 2012: we see a savings of 31%. The same study found a saving of 24% for motion-sensing and 28% for daylight linking (the same results as the Lawrence Berkeley National Laboratory).

Lighting control systems offered today often include the possibility of monitoring energy use in both the total installation and the individual spaces. This creates an additional opportunity for savings using insights based on generated data.

Adding lighting controls to a lighting installation is a powerful 'Add-on'. Adding two of the main lighting control strategies (motion-sensing and daylight linking) has the potential to halve the energy used for lighting in buildings.

Controls can also be used in outdoor lighting, and given the higher number of burning hours, substantial savings can be realised. 'Stepdim' is a technology used in outdoor lighting where the light is dimmed during the quiet hours of the night. Stepdim can be achieved by using a timer (which nowadays can be programmed into dedicated LED drivers) or by means of an outdoor motion sensor. Stepdim can be used in many applications, like the roads in a complex, parking lots of malls, or outdoor luminaires around an office building.

Enquiries: www.iessa.org.za



Lighting control systems offered today often include the possibility of monitoring energy use in both the total installation and the individual spaces. This creates an additional opportunity for savings using insights based on generated data.

- Henk Rotman





Lightning protection: South African standards 2025

By: Richard Evert* of the Earthing and Lightning Protection Association (ELPA)

The SABS and SANS framework

The South African Bureau of Standards (SABS) serves as the custodian of South African National Standards (SANS) under the mandate of the Standards Act 8 of 2008. SANS are developed and maintained through a consensus-based approach, employing transparent and balanced processes that involve diverse stakeholders.

This collaborative methodology ensures SANS reflects industry best practices, aligns with international standards, and remains practically implementable across relevant sectors. As a member of the International Electrotechnical Commission (IEC), SABS maintains access to all IEC international standards and collaborates with the experts who develop them.

Evolution of lightning protection standards

Two key standards govern lightning protection methodology in South Africa. (See Table 1).

SANS 10313: South Africa's first official lightning protection standard was published in 1952 as SABS 03 ("The protection of structures against lightning"), followed by SABS 03A ("for dwelling houses") in 1975. The standard was renamed to SABS 0313 in 1999 and subsequently to SANS 10313 ("Protection against lightning – Physical damage to structures and life hazard") in 2005, aligning with corresponding international IEC standards. The current version is Edition 3.3, published in 2018.

SANS 62305: This comprehensive four-part standard suite for "Protection against Lightning" is maintained by the IEC and provides best-practice lightning protection measures to mitigate lightning threats. Originally adopted in 1990 and unified as

SANS 62305 in 2007, the current version is Edition 2.0, published in 2011.

Standards Development 2025: Edition 3.0 of IEC 62305 was published in 2024 and will be adopted as SANS in 2025. The Earthing and Lightning Protection Association (ELPA) will coordinate workshops with partner organizations to communicate the significant changes in Edition 3.0 and their impact on current practices. Additionally, SABS has proposed standards development work to align SANS 10313 (Edition 4.0), scheduled to commence in 2025.

Comprehensive lightning protection framework

Lightning presents dual threats: (1) direct strikes to structures and (2) induced voltages generated by lightning current passing through conductive paths (See Figure 1).

Without adequate protection, direct strikes can cause catastrophic damage to buildings and pose severe risks to occupants.

A Lightning Protection System (LPS) specifically refers to the components designed to safely conduct high-current direct lightning strikes to ground, rather than being a generic term for all lightning protection measures.

SANS 62305-3 and SANS 10313: A complete LPS consists of (1) an "external LPS" to control the transfer of lightning current and (2) an "internal LPS" to manage induced voltages and consequent currents from the external LPS. The methodologies for implementing these systems are detailed in SANS 62305-3 and SANS 10313 (See Figure 1).

SANS 62305-4: Addresses indirect lightning strikes that introduce surges via conductive elements such as power and communication lines. Lightning Surge Protection Measures (LSPM) control these induced voltages according to methodologies outlined in SANS 62305-4. (See Figure 1).

These standards separate the surge protection measures (over-voltage control) design work for LPS and LSPM. They need to be addressed separately and then integrated when both LPS and LSPM are required.

SANS 62305-1: Establishes fundamental principles, parameters, and strategies for lightning protection – the foundation for asset owners' and designers' responsibilities (See Figure 2).

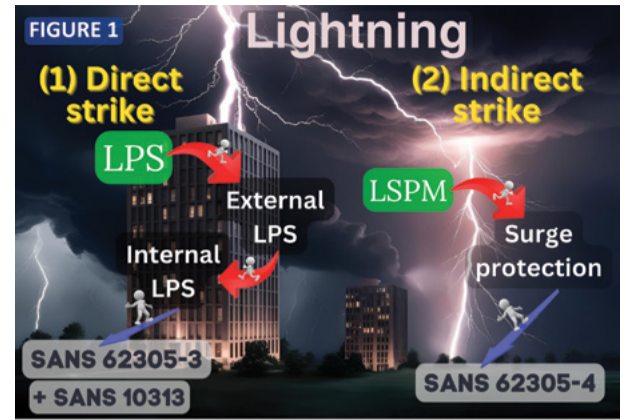
SANS 62305-2: Risk Management – Any decision to forgo lightning protection should only be made after conducting a data-driven lightning risk assessment and validating potential impacts. This approach allows actual losses to be compared against projected losses if an incident occurs, enabling informed reconsideration of protection decisions. Risk assessments not based on empirical data may result in unexpected financial burdens (See Figure 2).

Regulatory considerations

Whether direct-strike lightning protection should be legislated similarly to safe electrical installations remains an open question beyond this article's scope. ELPA is addressing several critical areas:

- Service provider competencies;
- Recognised qualifications;
- Governance frameworks;
- Standardised methodology for consistent and reliable lightning risk assessments; and
- Stakeholder awareness and education.

Until technically auditable measures considered in the risk analysis (see Figure 2) have established thresholds for mandatory adoption, the "authority having jurisdiction" will remain with asset owners and property risk managers.



Standard	Description
62305-1	General principles
62305-2	Risk Management
62305-3 + 10313	Physical damage to structures and life hazard
62305-4	Electrical and electronic systems within structures

*About the Author

Richard Evert serves as chairperson of the SABS subcommittee TC67 SC06 responsible for maintaining the SANS lightning protection standards.

Enquiries: <https://elpasa.org.za/>

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- Energy measurement and supply
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Design:
Ano Shumba

Publisher:
Wilhelm du Plessis

Published monthly by:
Crown Publications (Pty) Ltd
P O Box 140
Bedfordview, 2008
Tel: (011) 622-4770
Fax: (011) 615-6108

e-mail: sparks@crowns.co.za
Website: www.crowns.co.za

Printed by: Tandy Print

The views expressed in this publication are not necessarily those of the editor or the publisher.

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