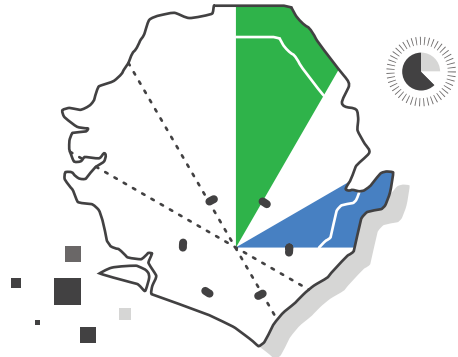

iLamp | Africa

Wednesday, 23/10/2024

Dear Morie Lomba Manye,
High Commissioner
Sierra Leone High Commission
41 Eagle Street, Holborn
London WC1R 4AT



Your Excellency,

It is with deep pride that myself and my team Edward Fitzpatrick and Joseph Goba had the opportunity to meet and discuss with you our plans for iLamp Africa and the prospect of a pilot in Sierra Leone to advance light, communication, power and growth in our home country.

Firstly, allow me to thank you and your team for a vibrant and positive discussion, the professionalism of your team is outstanding, and I look forward to working with you and the rest of the team as we advance the discussions.

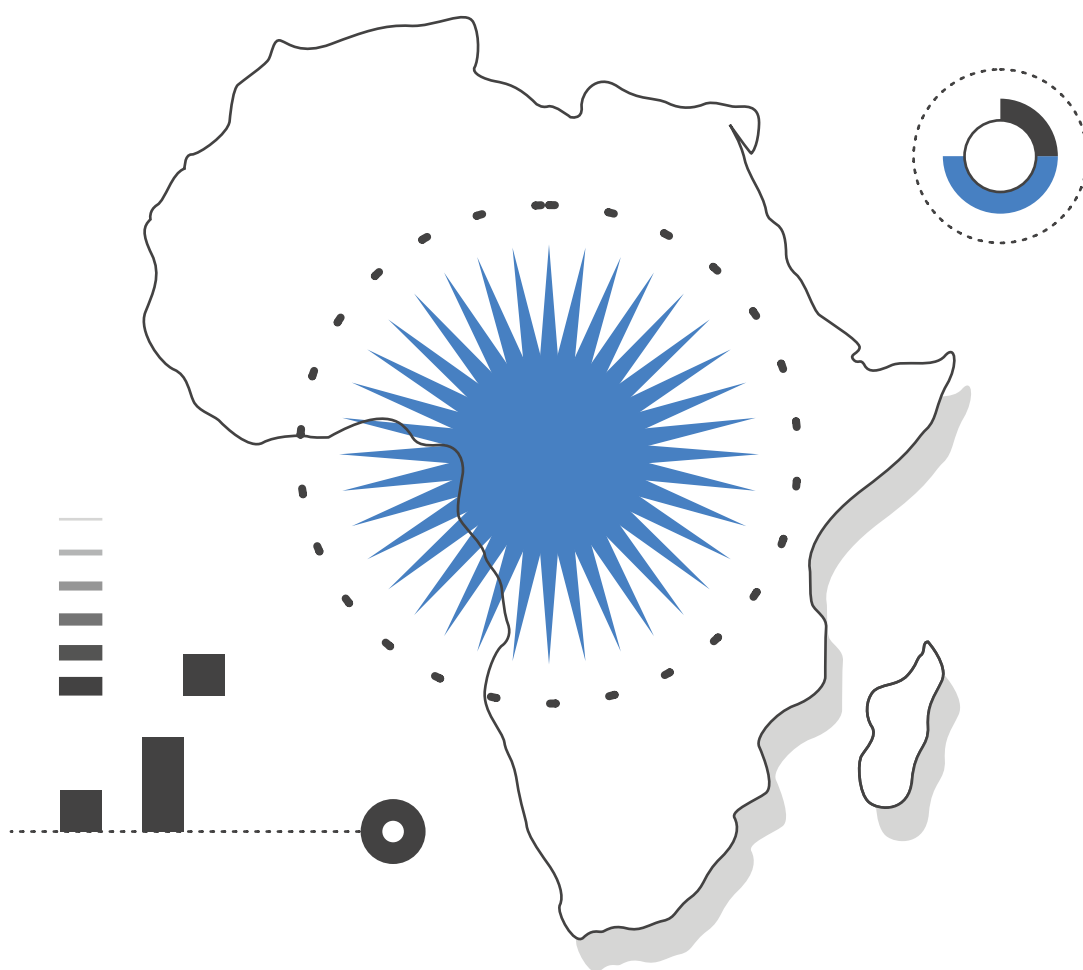
As requested I am including with this mail some additional copies of the presentation which has some further information regarding the technical specification at the back of the document.

We stand ready to follow up with whatever meetings, phone calls or correspondence you direct us to do so.

With deep appreciation, yours faithfully,

Best regards,
Zainu Goba
CEO, iLamp Africa

Sierra Leone, Meet iLamp Africa



Prepared for:
Office of the High Commissioner



Sierra Leone, Meet iLamp

iLamp is a smart streetlight proven to reduce crime and save lives, self powered and self sufficient, iLamp is easy to install, robust and reliable. iLamp is always on, immune to power cuts and grid outages, providing a sustainable energy solution. When everything else goes down, iLamp stays up.

But it's more than just a light, it's a power source, a community asset, and a step towards energy independence. Resistant to sand, snow, dirt, water, and floods, its innovative cylindrical solar panel cleans itself, ensuring continuous power generation in any environment.

As a modular system iLamp is a platform for innovation, enabling developers to create plug and play modules that use iLamp's sensors and communications for advanced functionalities.

Each module pays for its space and resources used, creating a marketplace of capabilities. Software developers can submit apps to the iLamp App Store, leveraging its onboard senses to deliver services ranging from environmental monitoring to public safety.

Each iLamp is a mass rolled out miniature microgrid, generating reliable, resilient, sustainable energy exactly where it's needed.

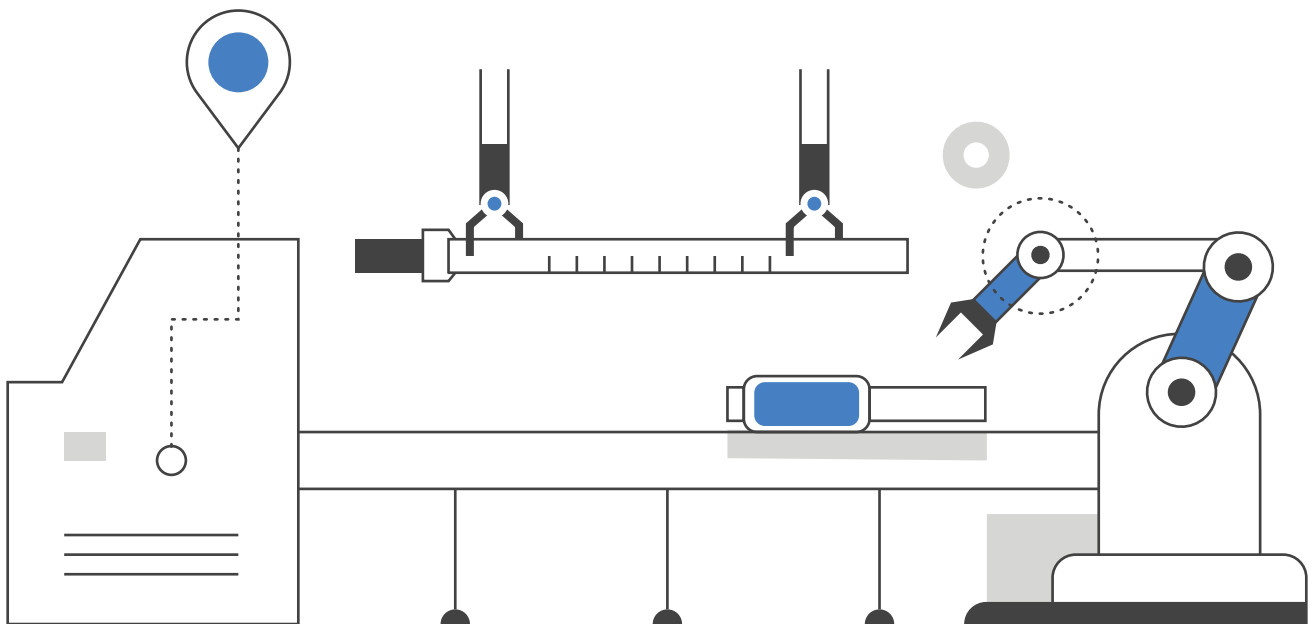
Modules are billed for the power and onboard services such as data transmission and sensor access, creating an ecosystem where energy and functionality come together seamlessly. With this proven microgrid in a smart streetlight solution, iLamp Africa is uniquely positioned to address the broader energy challenges faced by countries like Sierra Leone, where reliable electricity access is still a luxury for many.

With the potential to reduce crime, improve safety, and create economic opportunities, iLamp fosters a positive feedback loop of community benefits. Its partnerships with diverse local stakeholders such as property developers, public works contractors, community leaders, and local consultants, ensure that each iLamp is a perfect fit for the community it serves, enhancing the vibrancy and sustainability of cities around the globe.



iLamp is constructed in local Micro Factories, iLamp Africa provides the blueprint to develop these microfactories, creating local jobs and fostering economic growth at a local level.

Designed to produce high mix, low volume lamps, allow for the customisation of streetlights that fit the specific requirements of each community. This flexibility ensures that iLamps are not just functional but also align with the unique character and needs of Sierra Leone.



Significant energy potential and significant challenges are present in Sierra Leone energy potential exists in biomass, hydro, and solar sources, but these resources remain largely underutilized.

The country's energy consumption is dominated by **fuel-wood biomass, making up 80%**, while **imported petroleum products account for 13%**.

27.5% of the total population has access to electricity, with rural areas being especially underserved. The power sector is small and unreliable, with less than 150 MW of capacity and one of the **highest electricity tariffs in the sub-region**.

The government has initiated reforms to attract private sector investment, established regulatory bodies, and created projects to expand rural energy access.

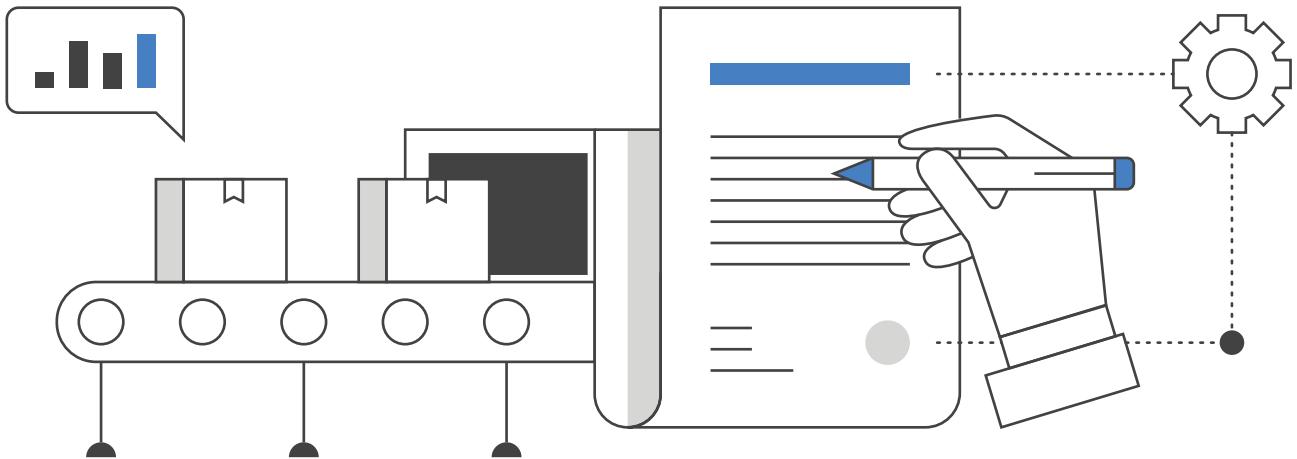
Solar opportunities exceed 240 MW.

Electricity Access: 27.5% nationwide, only 4.9% in rural areas.

Current Capacity: Less than 150 MW, heavily subsidized, with high tariffs.

Renewable Potential: Over 1000 MW in hydropower and 240 MW in solar energy.

Key Challenges: Seasonal variation, aging infrastructure, high costs, and inadequate investment.



Sierra Leone, Join iLamp

The energy challenges faced by Sierra Leone require more than just traditional solutions. They demand an approach that is flexible, resilient, and locally adapted. iLamp, has laid the groundwork for building customised microgrids that go beyond lighting to deliver reliable, resilient energy solutions tailored to the specific needs of each region.

iLamp itself is a smart streetlight system, but its core technology, design principles, and deployment strategies are directly applicable to creating scalable microgrids.

iLamp's expertise in developing and implementing modular, autonomous power systems has provided invaluable insights into managing diverse environmental conditions, meeting varying energy demands, and integrating multiple functionalities into a single platform. This unique experience translates seamlessly into designing regional microgrids that can deliver energy security, economic growth, and community resilience.

iLamp Microgrids:

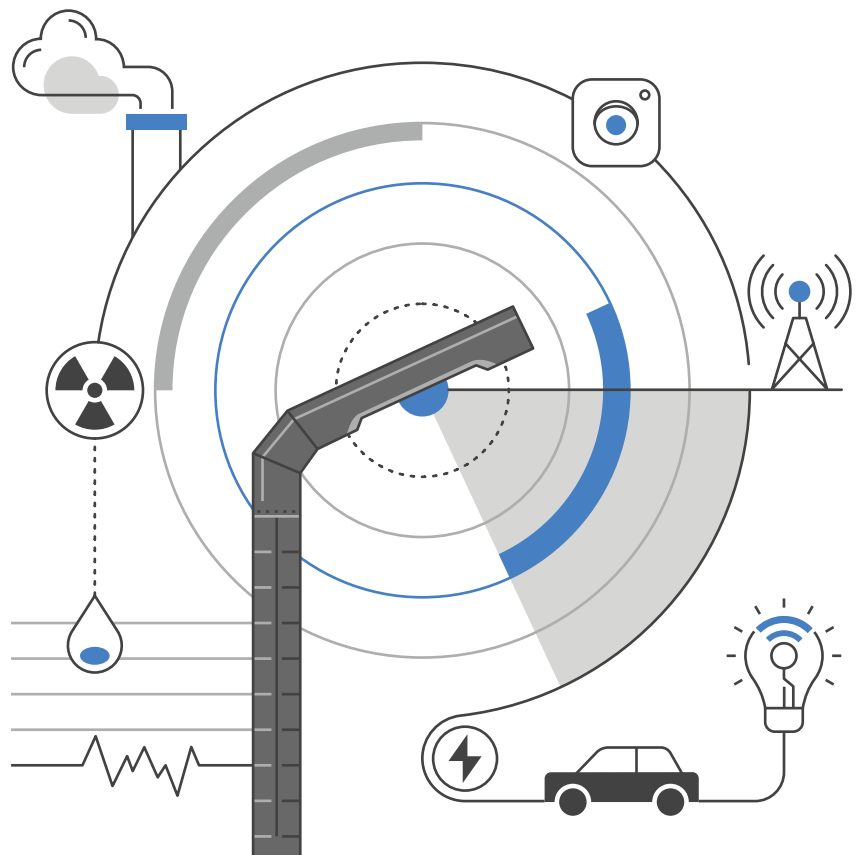
Tailored Energy Solutions: Each microgrid is customized

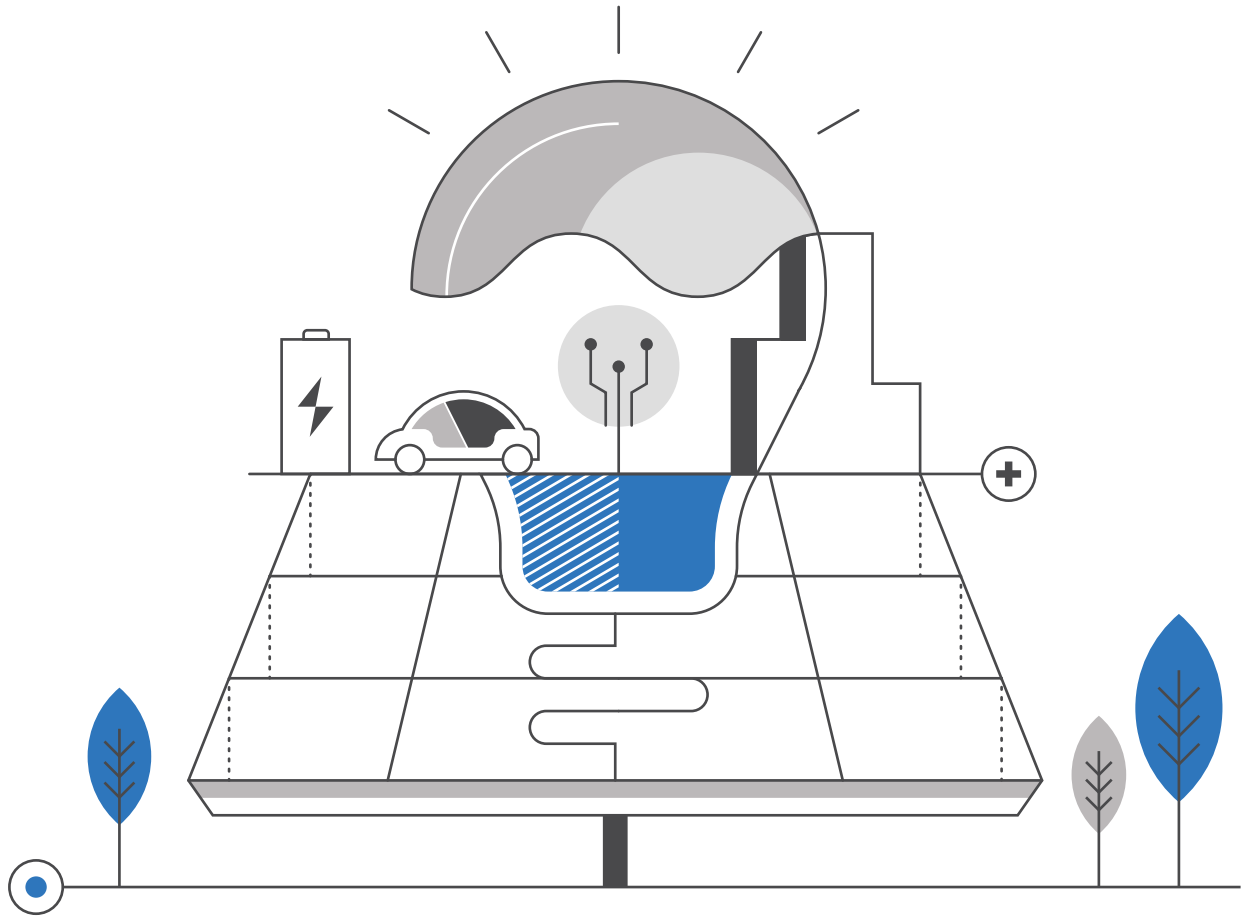
based on local energy profiles and needs, balancing generation and storage for maximum efficiency and reliability.

Scalability and Adaptability: Starting small and scaling up as the community's needs grow, each microgrid can be expanded to support residential, commercial, public infrastructure.

Reduced Dependence on Fossil Fuels: By integrating renewable sources and leveraging energy harvesting techniques, microgrids reduce reliance on costly imported fuels.

Sustainability and Community Ownership: Localised manufacturing and job creation ensure that the community has a direct stake in the project's success, fostering long-term sustainability and local economic empowerment.





iLamp Africa Micro Grids

In Sierra Leone, traditional energy infrastructure is limited - the deployment of tailored microgrids presents an immediate and long term solution to energy access challenges. These microgrids can:

Expand Energy Access: Electrify remote and underserved areas quickly, providing power where it's needed most.

Support Critical Services: Ensure reliable power for hospitals, schools, and emergency services, enhancing public health and safety.

Enhance Economic Growth: Power small businesses and agricultural operations, fostering local entrepreneurship and economic resilience.

iLamp Africa, backed by iLamp's strong track record, offers assurance that these solutions are field tested, adaptable, and ready to be scaled. By leveraging this experience, Sierra Leone can embark on a journey towards a more reliable, sustainable, and inclusive energy future.



RELIABILITY: Each microgrid is engineered to provide continuous, stable power.



RESILIENCY: Built to handle fluctuating demand and withstand local environmental challenges.



SUSTAINABILITY: Reduces carbon emissions while supporting long-term energy security.



COST-EFFICIENCY: Minimises reliance on expensive fuels, lowers overall energy costs for communities.



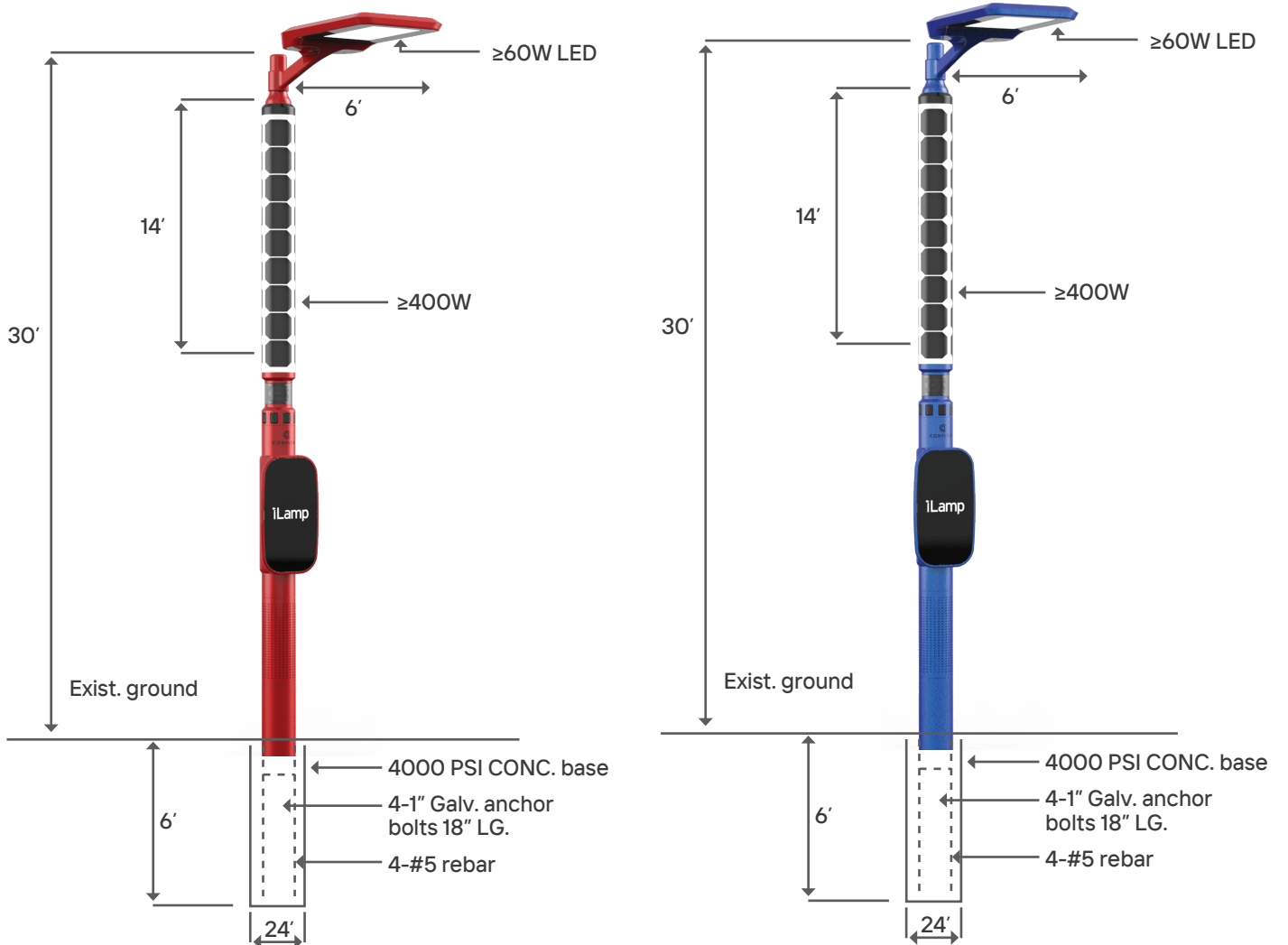
RAPID DEPLOYMENT: Modular design allows for rapid deployment and straightforward operation.

iLamp's expertise in building modular, autonomous power systems has set the stage for creating customized microgrids that provide reliable, resilient energy where it is needed most. By leveraging renewable sources, reducing reliance on imported fuels, and empowering local communities through job creation and manufacturing, iLamp offers a scalable, sustainable approach to addressing energy access issues.

This solution is not just about powering lights but about enabling economic growth, supporting critical services, and creating a pathway to a more resilient and prosperous future for Sierra Leone.

Standard Drawings

Height, colour, modules and light arm and heads are all interchangeable.



Broad Specifications	Standard Pole (Single Solar Module)
Hardware	Patented Adjustable Aluminium Array
Solar Panels	≥400W, wrap around, glass covering
Battery Pack	12V, 75AH Lithium Ion / Conflow Device 12V
Lighting & Charge Controller	Exclusively Supplied by CPG
LED Light	≥60W LED, ≥160 lumens per watts
Dimensions (length)	Variable (depending on site conditions)
EPA	5.26ft ²
Weight (lbs.)	200


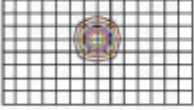
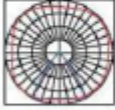


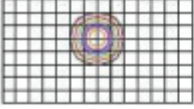
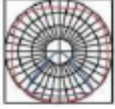



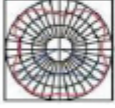


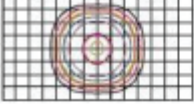
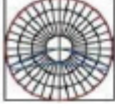


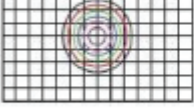
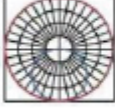

Lighthouse	
Dimensions	10.66" OD x 164.5" L
Material mounted to	Wooden, Aluminium, Steel or Concrete
Internal Mounting Options	Adjustable universal arm mount for poles up to 5" OD
Material	Anti-corrosive mounting hardware and array
Shape	Circular backing panels

LED Lights	LED Lights 50-50W Lantern or Street Light LED
Lumens	162 LM/W
Input Voltage	24V
CRI Minimum	70 (80 or 90 available special order)
CTT	4000K, 5000K (3000K and 5700K available special order)
Lighting Type	Solid state LED. T4M & T3L stocked. Other types available special order. IES Files available upon request
Life	>100,000 hours
Safety Certification	IP65, UL 1598, UL8750, CE, CB, ANSI C136.31-2001, RoHS Compliant, Meets Buy American requirements with ARRA

Solar Arrays CIGS	400W
Cell Efficiency	15.9%
Rated Peak Power (P _{mpp})	400 watts
Power Output Tolerance	+5/-0
Open Circuit Voltage (V _{oc})	62.6
Max Power Voltage (V _{mpp})	50.2
Short Circuit Current (I _{sc})	4.56
Panel Length (mm)	3457
Max Power Current (I _{mpp})	3.99
Safety Certification	UL 1703, IEC 61646, IEC 61730, cUL 1703, IEC 62716, IEC 61701 (Salt Spray)
Manufacturer Warranty	90% at 10 years, 83.5% at 20 years, 80% at 25 years

Batteries	Lithium Ion / ConFlow device Battery Pack
Nominal Capacity	75AH
Nominal Voltage	24V
Operating Voltage	20.0V up to 29.2V
Max Discharge Current	20A
Impedance	< 100m
Dimensions	L = 31.5cm, W = 23.0cm, H = 14.0cm
Weight	<16kg
Temperature Range	-30°C to +60°C
Expected Life	12-15 years based on shallow discharge of 4,500 Life Cycle
Autonomy	8 Days

MPPT / BatteryWare	Controller
Max Open PV Voltage Max Current	75.0V DC 15 amps
Battery Voltage Battery Current	29.4V DC 3.0 mps
Light Voltage Light Current	LED Specific
Dimming	0-5V DC
Efficiency	98% peak efficiency
CTemperature Range	-30°C to +60°C
Communications	Bluetooth Connection / Wifi where available
Safety	EN/IEC 62109-1, UL 1741, CSA C22.2

	ISO Plot	Polar Curve	Cu Graph
			
	T5 S Average beam angle 60°		
			
	T5 M Average beam angle 90°		
			
	T5 L Average beam angle 120°		
			
	T5 X Average beam angle 150°		
			
	T5 D Diffuser		