
JUGANU
BRIGHTER

Vera

JLED Street Light

JLED ***Street & Road*** Light enables ***Smart City***

Vera family of Street & Road lights by Juganu are efficient, lightweight and reliable. High SYSTEM efficacy of 130-140 LPW allows significant electricity savings of 75-90%, compared to HPS and 30% and compared to other LEDs. Negligible reduction of light with time of under 3% per year allows stable lighting for many years. Optimized optics direct the light where it is needed, providing uniform illumination, while meeting the international standards for Street & Road lighting. JLED fixtures withstand severe weather conditions, such as tropical rains and proximity to the sea.

Vera family supports Juganu sophisticated wireless communication with cloud management and control software and GPS, which allows autonomous operation, and accurate power management module.

Vera family supports the ANSI C136.41 (7 pin NEMA) for remote management.

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BENEFITS

- Increase quality of life and public security
- Increase safety for drivers, riders and pedestrians
- 75-90% savings in electricity costs
- 95% saving in maintenance costs
- Infrastructure for Smart City

APPLICATIONS

- Designed to meet Street & Road luminance and illuminance requirements

FEATURES

- Several types of optics for various road conditions
  - Lateral distribution: Type II, III, IV, VS
  - Longitudinal distribution: Very Short, Short and Medium
- CCT (typical)
  - 3000K ÷ 6500K

RATINGS

- Environmental: IP66
- Temperature range: –25° to 40°C ambient
- Compliant with the material restriction requirements of RoHS
- Impact shock: IK08
- 10KV surge protection
  - Compliance to UL1449 Type 4 Component Assembly
  - Compliance to IEC 61643-11 Class II / EN61643-11 Type 2
  - Compliance to CE Class I & II Installation
  - Protects Line to Neutral, Line to Ground and Neutral to Ground in accordance with IEEE/ANSI C62.41.2 Guidelines
  - Compliance to IEC 61000-4-5, Class 5, 20kV @ 1.2/50µs, 10kA @ 8/20µs using 2ohm Source Impedance
  - Pulse Rating @ 8/20µs (No. of Strikes @ I):
    - 1 @ 10,000A
    - 1 @ 10,000A
    - 2 @ 6,500A
    - 10 @ 3,000A
    - 1000 @ 1,500A
- AC input of up to 277V

MOUNTING

- Integral die cast mounting pipe stop feature
- Suitable for 1.77 ÷ 2.56 in. (45mm to 65mm) mounting pipe
- Inclination: integrated with ±15°

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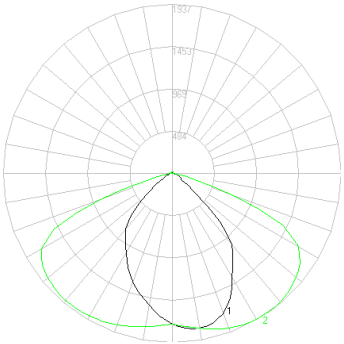
SPECIFICATIONS

- **Power consumption** | 0 to 200W (Continually dimmable)
- **Dimming** | factory set / 0 to 10V / wireless control
- **System efficacy** | 130-140 LPW (including PS & Optics)
- **Correlated Color Temperature (CCT)** | 3,000-6,500K
- **Color Rendering Index (CRI)** | > 70
- **Photometry** | IESNA types II, III, IV and VS Medium, Short and Very Short
- **Maintenance of Lumen output** | Light reduction < 3% / Year
- **Operating temperature Range** | -25 to +50 °C
    - **Main voltage** | 180 – 277 VAC
- **Frequency range** | 47 to 63 Hz
- **Surge protection** | 10KVA Protection
- **Lumen maintenance LM80, TM21**
    - **L90** 50,000 hours
- **Power factor** | > 0.92, max current THD 15% at 220V
- **MTBF** | > 900,000 hours Telcordia SR-332 (Bellcore)
- **Material** | Aluminum, Glass, PC
- **Maintenance** | No internal cleaning required

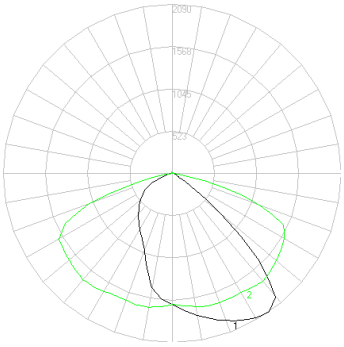
Optional photometry curves

D01



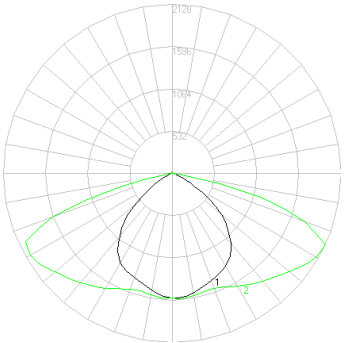
Type II
Very Short

D02



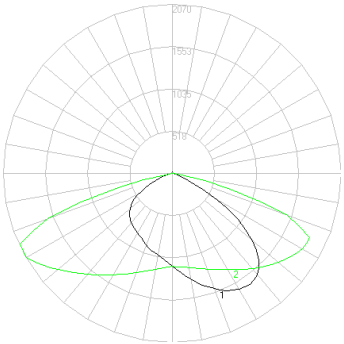
Type II
Very Short

D03



Type II
Short

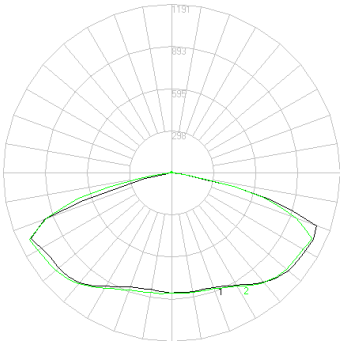
D04



Type II
Short

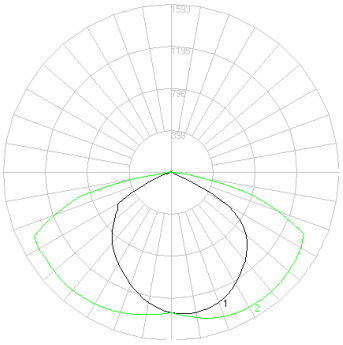
Vera

D05



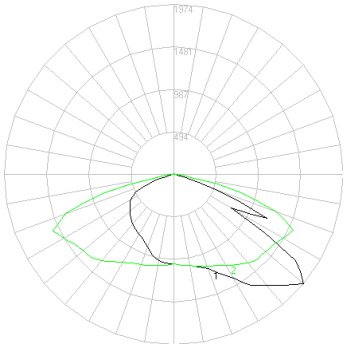
Type VS
Medium

D06



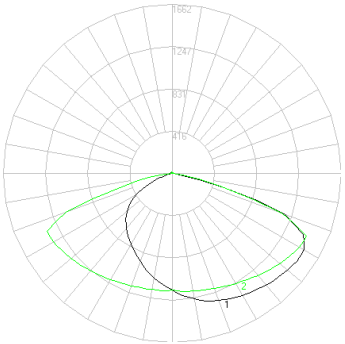
Type lll
Short

D07



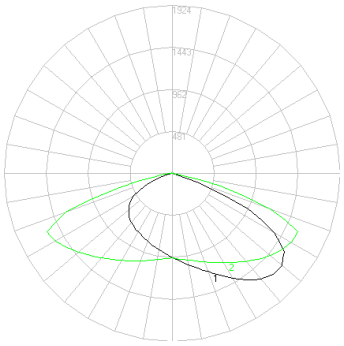
Type lll
Very Short

D08



Type IV
Short

D09



Type III
Short

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Options of power & lumens

Power [W]	Typ. efficacy [LPW]	Maximum lumens [LM]
100	140	14,000
150	140	21,000
200	130	26,000

Ordering information

Product ID	Power	Family	CCT	Wireless COM	ANSI C136.41 7 pin (NEMA)	Distribution curve
JLED-SL	xxxW	Vera	xx	NA	Nx	Dxx

CCT (other values possible)	**30** – 3000K	
	40 – 4000K	Standard
	50 – 5000K	
	65 – 6500K	
Wx	**W0–Wireless controller not included**	Standard
	WL – JWLC (LBW wireless controller in NEMA) included	
	WM – JWSC1 (MBW wireless controller in NEMA) included	
Nx	**N0** – NEMA not included, wireless not included	Standard
	NS – NEMA - shorting cap	
	NP – NEMA with photocell	
	NW – NEMA with wireless wireless COM	
	NC – NEMA with photocell and wireless COM	
Distribution curves	**D01 – TYPE 2, VERY SHORT** **D02 – TYPE 2, VERY SHORT** **D03 – TYPE 2, SHORT** **D04 - TYPE 2, SHORT** **D05 - TYPE 5S, MEDIUM** **D06 - TYPE 3, SHORT** **D07 - TYPE 3, VERY SHORT** **D08 - TYPE 4, SHORT** **D09 - TYPE 3, SHORT**	D04 standard

Ordering example:

JLED-SL-065W-VERA-40-W0-N0-D01

Description:

JLED street light of Vera family with 65W, 4000K, no wireless, no NEMA, and with distribution curve D01

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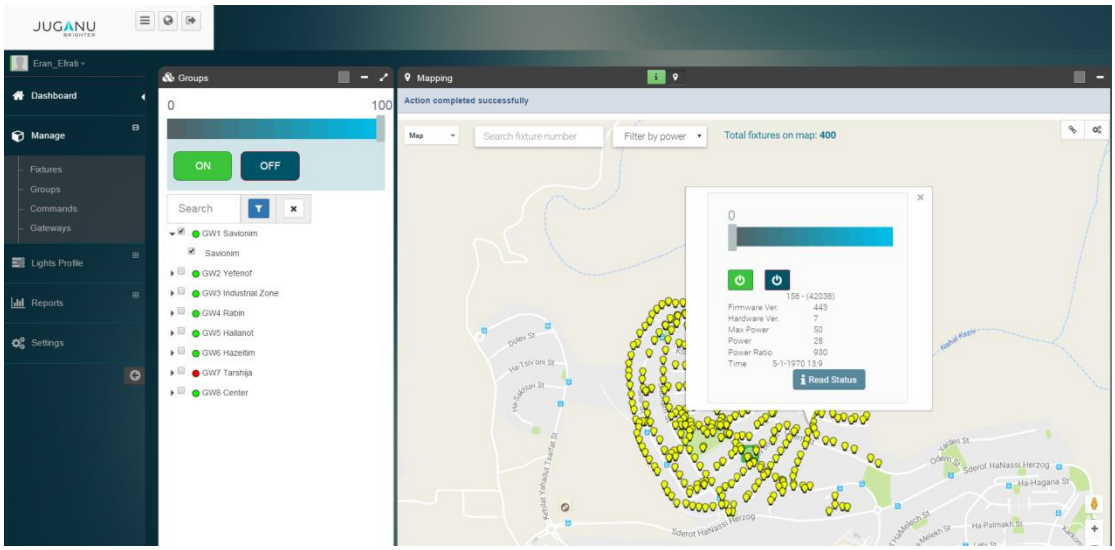
CLOUD BASED MANAGEMENT SOFTWARE

Each luminary is connected to the Juganu cloud-based management system. After log-in identification process, Graphical User Interface loads very fast (on mobile device or PC) and allows for comfortable and easy management of lighting at single fixture and street/neighborhood/city levels. Each lamp or an entirecity can be programmed to follow certain lighting schedules, to provide different light levels at different times. The reported power consumption is very accurate. Each lamp, which was damaged or destroyed, shows up as a RED dot on the map, allowing for cost-effective planning of maintenance.

- Cloud WEB-Based Graphical User Interface
- Accessible through PC Tablet & or Smartphone
- Clean and Easy interface
- The system requires Authorized credentials to Log in
- Control Luminary individually or in groups (street, neighborhood, city)
- Multi-level user access
- Shows the current status of Luminaries
- Shows Luminaries on Google maps
- Each Luminary is controlled at the component level
- Maintenance made easy



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Remote Management Systems can be conceptually described as a set of three interacting component layers:

1. Lighting controllers (potentially includes different additional services)
2. Network (COM nodes, gateways, routing and addressing logic…)
3. Management System (UI, management tools and more)

While the layers contain different types of physical devices, information is shared across all the layers. The system is established by the arrangement of controllers, which fundamentally consume and produce data, attached communication nodes and arrangement of one or more gateways. The gateways are backhauling information to and from the nodes.

Outdoor lighting system controllers typically both consume data in the form of instructions control the luminary and produce data in the form of measurements of consumption instantaneous power and energy consumption over time.

Multiple controllers typically route data through gateways, which at minimum, act as communication bridges to outside networks, but may also provide other system functions. The controllers, connected to nodes, may be accessed and managed remotely by a Management System, which typically facilitates user interaction through Graphical User Interface (GUI) and consolidates and stores retrieved data. Management Systems communicates with controllers through nodes and one or more wired/wireless backhaul connections, such as gateways.

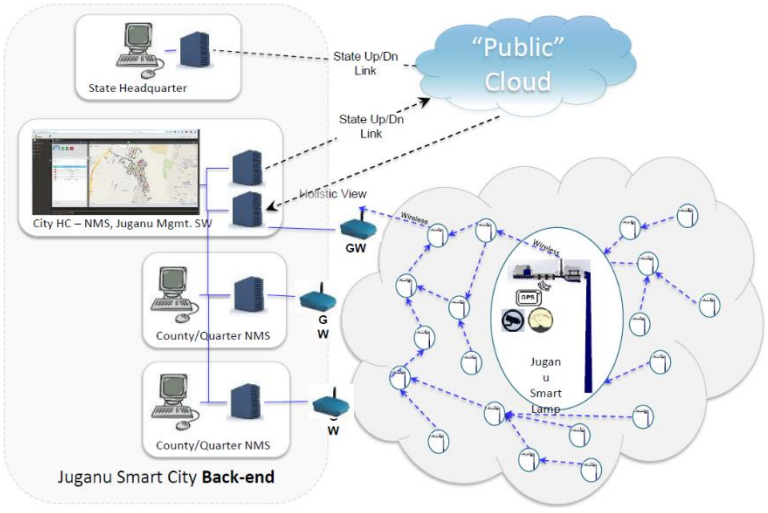

Figure 1 - Networked Outdoor Lighting Control Systems

System provides a means to:

- Set the frequency with which luminaires information is collected.
- Set luminaire into controlled and monitored groups.
- Manually control the state of a single light fixture or group of fixtures.
- Create schedules control, where the state of a single lamp or a group of fixtures is modified according to a predefined schedule.
- Create scheduled control programs based on the following criteria recurring:
  - Daily;
  - Weekly;
  - Weekend;
  - Special events.
  - Integrate with other systems of the Contracting Command Center, through API (Application Program interface) Web Service type.
  - Compare all collected parameters and informed by the fixtures and generate error messages in real time (based on availability of data reported) for any condition that violates the threshold specification of a particular indicator.
  - Error messages generate automatic defect tickets fromthe management system of the Contracting Called Operating through API (Application Program Interface) Web Service type.
  - Generate custom monitoring reports.
  - Export report data in PDF and CSV standards.
  - Generate notifications, whereby remote monitoring reports specified (predefined or custom) will be sent to the assigned users and / or groups of users via text message (SMS) and / or email.

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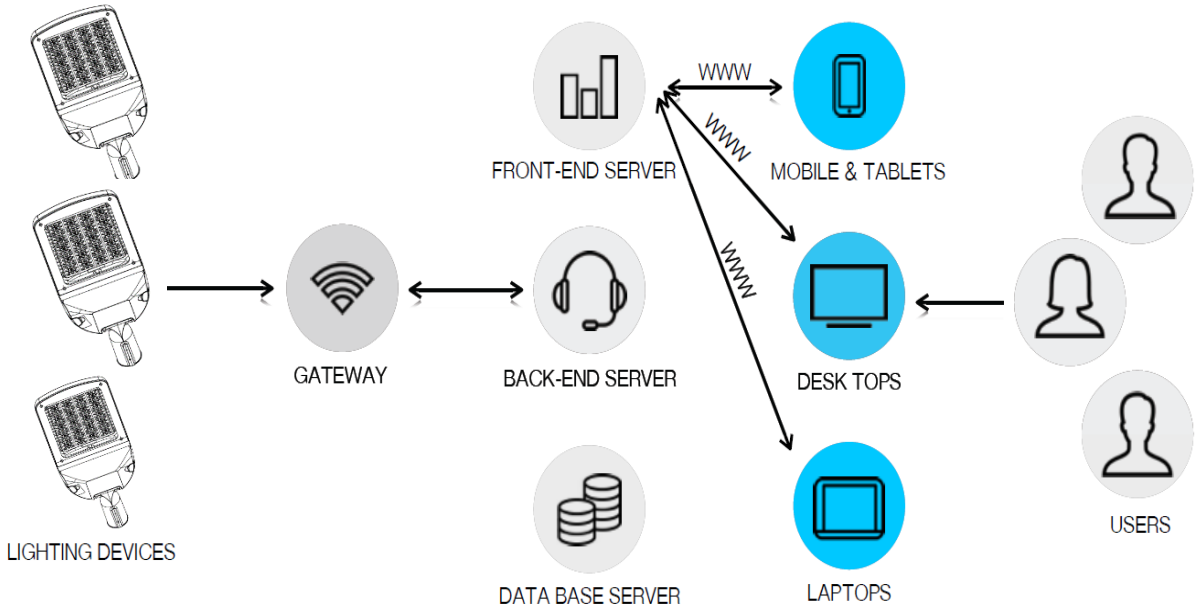
JWLC (Juganu wireless lighting control module)

Integrated Wireless Communication Lighting (wireless ready) by Juganu utilizes a proprietary, patent-pending, wireless communication technology which provides full-proof, stable and secure management and control of individual fixtures and lighting arrangements, both locally and cloud-based Graphical User Interface (GUI)

- Management & Control allows both simple and sophisticated, collective or individual control of each lighting fixture
- Each luminary is presented on a customized map and allows tracking of malfunctions and maintenance activities
- The power consumption of each fixture is measured and reportedAbnormal behavior is analyzed and maintenance can be predicted, planned and reported
- Any number of light fixtures are defined as group and group of groups. Each group is collectively controlled, including automatic dimming programs

BLOCK DIAGRAM



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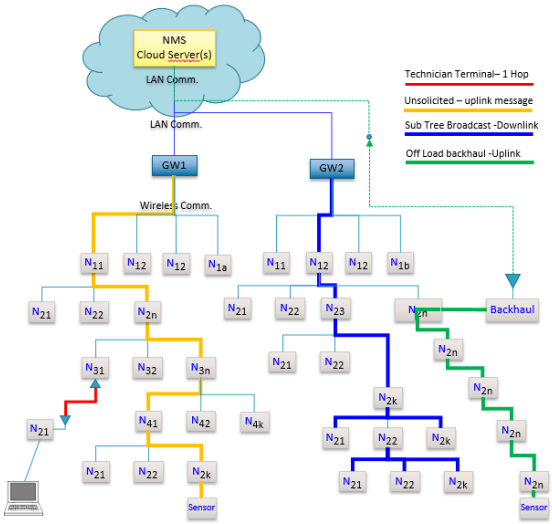
JWSC1

“JWSC1” networks use a proprietary tree/Mesh topology routing algorithm. Juganu provides a secured, robust, stable and relialbe protocol, for controlling tens of thousands of Juganu nodes. With this network having higher data bandwidth, the Juganu node can support multiple sensors and accessories, to enhance functionality and customer operation integration.



RF communication specifications: (Brazil 915 to 928MHz,Europe 868 MHz)

Parameter	Value	Remarks
Frequency range	902÷928 MHz	868MHz for Europe
RF Channel spacing	0.8 MHz	
RF output power	+14 dBm	typical
Reception sensitivity	-92 dBm	typical
Adjacent channel rejection	27 dB	offset = 300 kHz; interferer tone not modulated
Modulation	FSK	
Frequency channels	13	

- Grouping, Multicast & Sub Tree Broadcast
  - Patent pending predefined attribute based Multicast connectivity
  - Patent pending dynamic optimization of broadcast message to reduce traffic load
  - Support gathering a collection of lamps (IOT) into logical group for selective Control & Monitoring
- On Demand off Loading
  - Patent pending support an ad-Hoc Uplink back haul connection to off load traffic data
  - Provide a data shortcut from any tree location to the NMS

- Unsolicited uplink connectivity
  - Support truly native uplink message, initiated by the Network Node
  - Enable IOT and Smart city notifications
  - Efficient uplink routing outcome of the source routing tree nature
- Field maintenance
  - Special Ad-Hoc Technician Terminal connectivity
  - Enable field engineer to communicate with a specific, in proximity desired Node, for maintenance purpose
- Robust Security
  - Proprietary protocol & algorithms, open and standard for integration at application level

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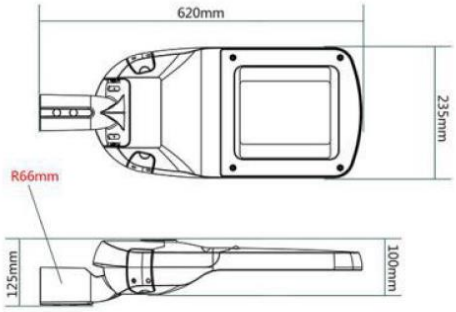
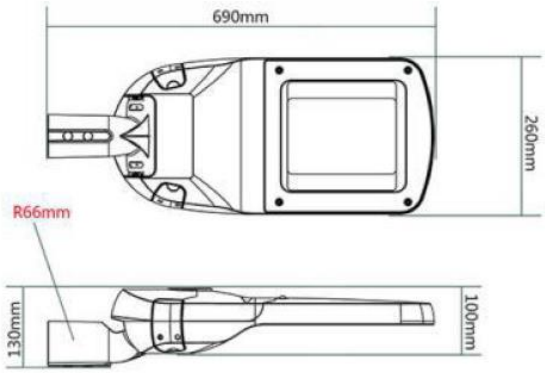
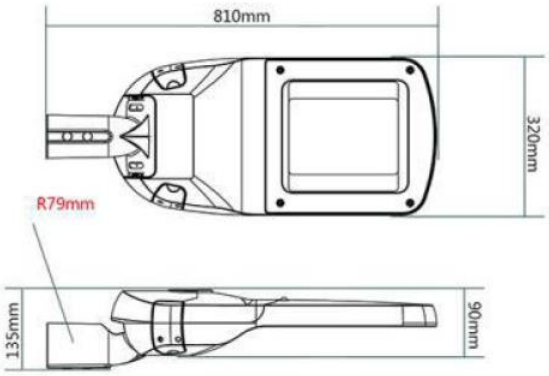
Mechanical Dimensions



100W



150W



200W