

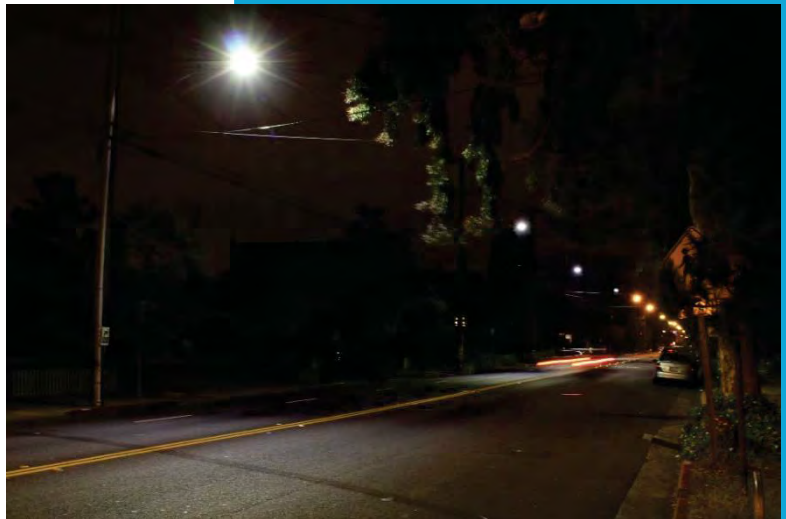


*Bringing passion to light.*

# PROPOSAL IN RESPONSE TO THE TOWN OF MIAMI LAKES' REQUEST FOR PROPOSALS (RFP No. 2016-34) FOR LED STREET LIGHT CONVERSION PROGRAM

**Submitted to:**  
**Office of the Town Clerk**  
Town of Miami Lakes Government Center  
6601 Main Street  
Miami Lakes, Florida 33014

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July 13, 2016

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# I. QUALIFICATIONS, EXPERIENCE AND PROJECT HISTORY

## A. Introductory Letter

*In an introductory letter not to exceed two (2) pages, clearly describe proposer's ability to successfully perform the scope of services enumerated herein to identify how the firm meets each minimum qualification requirement stated in Article 1 above and affirm proposer's understanding of key program components and applicable laws or regulations. This letter shall be signed by the individual authorized to bind the Contractor to the proposal and include firm name, contact names, mailing address, telephone number and email address.*

July 13, 2016

Office of the Town Clerk  
Town of Miami Lakes  
Government Center  
6601 Main Street  
Miami Lakes, Florida 33014

Dear Office of the Town Clerk,

Tanko Streetlighting, Inc. ("Tanko Lighting") appreciates the opportunity to submit for your review this proposal in response to the Town of Miami Lakes' Request for Proposals (RFP No. 2016-34) for LED Street Light Conversion Program. Please find Tanko Lighting's completed Required Forms in Appendix K and its completed required Proposer Profile Form in Appendix L<sup>1</sup>.

Tanko Lighting is a national firm focused solely on providing professional services for turn-key municipal energy efficiency street light conversion projects. The company has previously been or is currently involved with the energy efficiency conversion of more than 250,000 street lights throughout the nation.

Tanko Lighting understands the Town's desire to select a partner that can assist with converting the Town's approximate 915 High Pressure Sodium (HPS) cobra head street lights to Light Emitting Diode (LED) lights, as well as installing a monitor system and providing cost-effective financing.

Tanko Lighting meets the Town's Minimum Qualification Requirements (as stated in Article 1 of the RFP) via the following specifics:

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<sup>1</sup> Please note that the Town's RFP required that financial statements for the proposer be submitted with the Proposer Profile Form. Tanko Lighting has complied with this requirement and has provided its most recent Financial Statements in Appendix L. However, Tanko Lighting claims an exemption to disclosure as provided by Florida Statute Chapter 119.071 for the Financial Statements (marked as Confidential) in Appendix L, given that said Florida Statute states: "(c) Any financial statement that an agency requires a prospective bidder to submit in order to prequalify for bidding or for responding to a proposal for a road or any other public works project is exempt from x. 119.07(1) and s. 24(a), Art. I of the State Constitution". Given that Tanko Lighting is a privately owned company, these Financial Statements are confidential and would do unnecessary harm if they were made publicly available. As such, Tanko Lighting claims an exemption to the disclosure requirement for the provided Financial Statements in Appendix L.



1. Tanko Lighting has been involved with street lighting projects since 2003. Within the last seven years, Tanko Lighting has completed more than sixty projects focused specifically on municipal LED street light conversions. Each project varies in size and complexity, but the average project typically involves between 5,000 and 10,000 street lights and a variety of cobra head and decorative fixture types. Please find project examples in the completed Project Data Forms in Appendix A.
2. Tanko Lighting is recommending LED luminaires for this project that are on the pre-approved FPL list. Please find product technical information in Appendix B.
3. Tanko Lighting is partnering with G&R Electric Corp. ("G&R Electric") – a local, qualified, and licensed electrical contractor (G&R Electric currently serves as the Town of Miami Lakes' street light maintenance contractor) – for the installation services related to the project. Please find G&R Electric's State of Florida Electrical Contractor Licenses in Appendix C.
4. Tanko Lighting's proposal includes a five (5) year warranty on each LED luminaire, per the Town's requirements. Please find warranty information in Appendix B.
5. Tanko Lighting currently has the bond capacity to execute this project. Please see Appendix D for a letter from Tanko Lighting's bond surety company, confirming its ability to obtain the required Performance and Payment bonds for this project.

Tanko Lighting is distinguished from other competitors by its passionate and sole focus on street lighting, which enables it to be steeped in the necessary technical knowledge and market context of municipal street lighting projects. This also enables it to appropriately translate technical information, market context, and industry standards into appropriate, high quality and cost effective projects for its customers.

Tanko Lighting expertise and experience renders it significantly qualified to ensure that the Town of Miami Lakes' LED street light conversion results in accessible, efficient, accurate, cost effective and ultimately expedited project execution that will provide unparalleled value for the Town and will ensure the success of this project.

Please let us know should you have any questions. We look forward to your feedback.

Regards,



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jason@tankolighting.com

Enclosures



## B. Project History

*Proposer must have completed a minimum of three (3) projects of a similar size, scope and complexity in the last seven (7) years. Complete and include a separate Project Data Form for each qualifying project.*

Tanko Lighting is a privately held S Corporation based in San Francisco, CA (Federal Tax ID No: 26-2819585). Tanko Lighting holds electrical contractor licenses in the States of California and Arizona, is a Certified Contractor by the Commonwealth of Massachusetts' Division of Capital Management and Maintenance (DCAMM), a Qualified Vendor with the Connecticut Conference of Municipalities, and is a registered Energy Services Company (ESCO) with the United States Department of Energy.

Tanko Lighting is focused exclusively on municipal energy efficiency street lighting conversion projects. With decades of experience serving this market, Tanko Lighting is the municipal street light expert. Because of its technical experience and national context, Tanko Lighting is intimately familiar with industry standards and trends.

Since 2003, Tanko Lighting has been assisting municipalities with their street lighting needs. A national firm, Tanko Lighting is focused solely on providing professional services for turn-key municipal energy efficiency street light conversion projects. The company has previously been or currently involved with the energy efficiency conversion of more than 250,000 street lights throughout the nation. Recent projects include:

- Goffstown, NH (460 fixtures)
- North Stratford, NH (50 fixtures)
- New London, CT (3,500 fixtures)
- Berlin, CT (2,500 fixtures)
- Rocky Hill, CT (1,600 fixtures)
- Vernon, CT (1,700 fixtures)
- West Hartford, CT (6,000 fixtures)
- Jewett City, CT (300 fixtures)
- East Lyme, CT (1,500 fixtures)
- Wolcott, CT (980 fixtures)
- Andover, MA (1,500 fixtures)
- Leominster, MA (3,573 fixtures)
- Everett, MA (3,333 fixtures)
- Wayland, MA (700 fixtures)
- Watertown, MA (800 fixtures)
- Warren, MA (430 fixtures)
- Somerville, MA (5,000 fixtures)
- Malden, MA (3,500 fixtures)
- Lowell, MA (8,500 fixtures)
- Sudbury, MA (500 fixtures)
- Millis, MA (500 fixtures)
- Hopkinton, MA (500 fixtures)
- Westfield, MA (4,000 fixtures)
- Sharon, MA (1,600 fixtures)
- Winchester, MA (1,600 fixtures)
- Berkeley, CA (8,000 fixtures)
- Hayward, CA (7,700 fixtures)
- Napa, CA (4,500 fixtures)
- Sonoma, CA (1,200 fixtures)
- San Bruno, CA (2,000 fixtures)
- Pleasanton, CA (5,600 fixtures)
- Rancho Cordova, CA (6,500 fixtures)
- West Hollywood, CA (2,300 fixtures)
- Santa Ana, CA (11,500 fixtures)
- Vista, CA (2,200 fixtures)
- Silicon Valley Power, Santa Clara, CA (5,000 fixtures)
- Alameda Municipal Power, Alameda, CA (3,200 fixtures)
- Fairfield, CA (8,000 fixtures)
- Modesto, CA (9,500 fixtures)
- Lodi Electric Utility, Lodi, CA (7,200 fixtures)
- Morgan Hill, CA (2,500 fixtures)
- Oakland, CA (30,000 fixtures)
- Vacaville, CA (5,000 fixtures)
- Vallejo, CA (9,000 fixtures)
- Kauai Island Utility Cooperative, Island of Kauai, HI (3,500 fixtures)
- Glastonbury, CT (1,000 fixtures)
- Groton, CT (1,500 fixtures)
- Darien, CT (850 fixtures)
- Groton Utilities, CT (2,500 fixtures)
- Meriden, CT (4,300 fixtures)

Specific examples of Tanko Lighting's recent turn-key projects include:



- [New London, CT](#): Tanko Lighting is currently assisting the City of New London, CT with a turn-key LED streetlight conversion project. Tanko Lighting completed an audit, design, equipment selection and is currently in the final stages of the installation phase of the project.
- [West Hartford, CT](#): Tanko Lighting is currently assisting the City of West Hartford, CT with a turn-key LED streetlight conversion project. Tanko Lighting completed an audit, design, equipment selection and is currently in the final stages of the installation phase of the project.
- [Berkeley, CA](#): Tanko Lighting provided the City of Berkeley with turn-key support to implement its comprehensive streetlight conversion project. This complex project included a total of more than 8,000 fixtures, 6,800 of which were cobra head fixtures and approximately 1,200 were more than twenty-one different styles of decorative fixtures. Tanko Lighting provided project management support, engineering services (including a comprehensive neighborhood design/value engineering phase that updated the fixture design to be more consistent with current field conditions, which resulted in an increase of approximately twenty-five percent of energy savings from original project design estimates), cost-benefit analysis of various technologies, field light measurement analyses, GIS field auditing and commissioning, product procurement, pole tagging, environmental disposal/recycling, data reconciliation, installation management, rebate/rate change support, reporting for available State financing, and administrative services.
- [Modesto, CA](#): Tanko Lighting provided the City of Modesto with turn-key support to implement its comprehensive streetlight conversion project of approximately 9,800 cobra head fixtures. Tanko Lighting provided project management support, engineering services (including a comprehensive neighborhood design/value engineering phase that updated the fixture design to be more consistent with current field conditions, which resulted in an increase of approximately ten percent of energy savings from original project design estimates), implementation of an entirely new numbering/tagging system, cost-benefit analysis of various technologies, field light measurement analyses, GIS field auditing and commissioning, product procurement, environmental disposal/recycling, data reconciliation, installation management, rebate/rate change support, and administrative services.
- [Vallejo, CA](#): Tanko Lighting provided the City of Vallejo with turn-key support to implement its comprehensive streetlight conversion project of approximately 9,000 cobra head fixtures, utilizing City crews for installation. Tanko Lighting provided project management support, engineering services (including a comprehensive neighborhood design/value engineering phase that updated the fixture design to be more consistent with current field conditions, which resulted in an increase of approximately forty percent of energy savings from original project design estimates), pole tagging, cost-benefit analysis of various technologies, field light measurement analyses, GIS field auditing and commissioning, product procurement, environmental disposal/recycling, data reconciliation, installation management, rebate/rate change support, and administrative services. Tanko Lighting also provided logistics support to assist the City's own installation crews.
- [Kauai Island Utility Cooperative \(Kauai, HI\)](#): Tanko Lighting recently completed Phase 1 of a turn-key project with Kauai Island Utility Cooperative by providing a comprehensive GIS audit of the existing streetlight inventory, as well as data reconciliation, equipment recommendations, design/replacement plan, and cost/savings estimates. The results of these recommendations led to Phase 2 of the project – LED conversion, which Tanko Lighting is currently project managing
- [Silicon Valley Power \(Santa Clara, CA\)](#): Tanko Lighting recently completed a turn-key project with Silicon Valley Power by providing a comprehensive GIS audit of the existing streetlight inventory, as well as data reconciliation, equipment recommendations, design/replacement plan, cost/savings estimates, product procurement,



installation coordination, stakeholder outreach, commissioning, rebate/rate change coordination, and reporting.

- **Warren, MA:** Tanko Lighting is currently assisting the Town of Warren, MA with a turn-key LED streetlight conversion project – the first phase of which involved a GIS audit, data reconciliation, design, cost/savings estimates, and acquisition assistance – including valuation support and Town negotiations, and financial feasibility analysis.

Please find additional specifics of project examples in the completed Project Data Forms in Appendix A.

## C. Project Manager

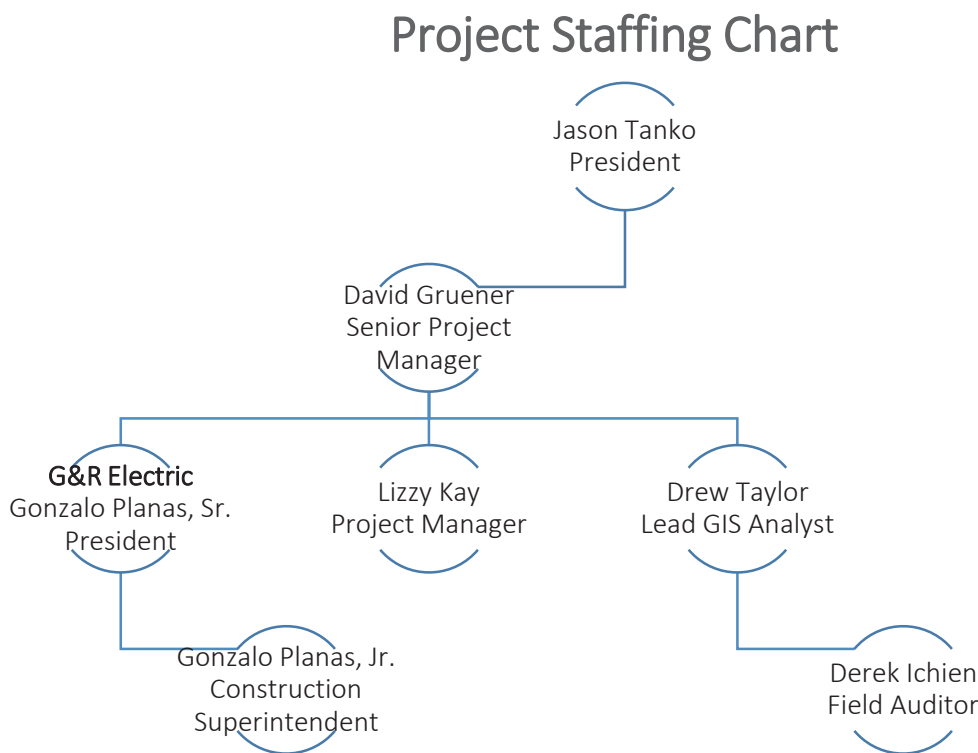
*Provide resume for the Project Manager assigned to this project including project history, applicable licenses, certifications and trainings. Insert the completed Project Manager Experience Questionnaire Form.*

David Gruener will be Tanko Lighting's Project Manager assigned to this project. Mr. Gruener has significant data management, energy efficiency, and information systems expertise. He manages company projects, as well as auditors, commissioners, and the data collection process from installers. Please find the completed Project Manager Experience Questionnaire Form in Appendix E. Please find Mr. Gruener's resume in Appendix F.

## D. Staffing Chart for This Project

*Provide a chart showing firm's staffing configuration with respect to this project. In addition, identify and provide resumes for all key project team members to include information about licenses, certifications & trainings required to perform the job specified herein.*

Please find Tanko Lighting's staffing chart for the Town of Miami Lakes' LED Street Light Conversion Program below. For resumes, please see Appendix F – Key Staff Resumes.





## II. PROGRAM APPROACH AND WORK PLAN

### A. Project Approach

*Proposer shall convert the proposed scope of services into a detailed programmatic approach addressing all work elements, including project supervision, a project schedule, accounting methods and information regarding subcontractors providing materials/services in order to complete the work. Project schedule should include details of assumptions regarding product lead time, necessary permitting and other potential factors that may impact the timeline.*

Tanko Lighting understands the Town's desire to select a partner that can assist with converting the Town's approximate 915 High Pressure Sodium (HPS) cobra head street lights to Light Emitting Diode (LED) lights, as well as installing a monitor system and providing cost-effective financing.

In response, Tanko Lighting will provide the following services to assist the Town with achieving its goals for this project. Please note that many of these services were not specifically required in the Town's Scope of Services section of the RFP. However, based on Tanko Lighting's extensive project experience, the following approach is the most responsible way to properly implement a streamlined LED street light conversion project. Note that Tanko Lighting's pricing for this project includes all of the tasks outlined in the following approach.

The following work will be completed in accordance with the contractor responsibilities set forth by the Town in Section II, subsection three of the RFP.

### Phase 1: Project Development

This task is paramount to the Town effectively understanding its current infrastructure and appropriately planning so that the LED conversion project maximizes savings. To that end, Tanko Lighting will offer strategic planning services and analysis to ensure that this task accurately establishes the needs and scope of the entire project and minimizes the need for costly change orders and delays. Task 1 will include the following activities:

#### Task 1: Comprehensive GIS Audit of Existing Street Lights

Tanko Lighting will conduct a Geographic Information System (GIS) audit for this project. In Tanko Lighting's experience, a proper GIS audit is essential to equipping the Town with a comprehensive and accurate understanding of its existing infrastructure. The GIS audit is pivotal, as the information it provides enables appropriate design and product procurement. The GIS audit also results in streamlined installation, as it identifies potential obstructions and other on-site challenges.

It should be noted that Tanko Lighting utilizes the most state-of-the-art technology, with spatial accuracy within +/- one meter (compared with many competitors whose devices have a margin of error of up to fifteen feet), and utilizes the industry standard software – ESRI's ArcGIS – to process data and provide shape files that are fully compatible with the Town's GIS records.

The preparation phase for the audit will involve the following activities that are critical to the accuracy of the data collection:

- Tanko Lighting working with Town staff to clearly define audit scope, including priority areas and/or Town borders or other areas containing non Town -owned fixtures

- Tanko Lighting developing and providing to Town staff for approval a list of the characteristics (the “Data Dictionary”) of the data that will be collected during the audit
- Town staff providing Tanko Lighting with all available Town and utility records for existing inventory
- Tanko Lighting reviewing these data records to determine which should be utilized for the data reconciliation phase
- Tanko Lighting initiating rate change processes with the utility
- Tanko Lighting developing audit maps, scheduling and dispatching auditors to the field

Once the preparation phase is complete, the audit will commence.

Tanko Lighting will collect data on the existing inventory and identify attributes on-site, including:

- The horizontal Global Positioning System (GPS) coordinates (latitude, longitude) of each fixture location
- Luminaire type
- Pole mounting configuration
- Luminaire wattage
- Pole height, mounting type, and mast arm length
- Pole type
- Street or highway name
- Nearest street address and intersecting street
- Physical attributes and/or issues – such as paint color, electrical hazards, graffiti, tree obstructions, etc.

Tanko Lighting’s auditors will collect and transmit data points daily. Tanko Lighting will compile data weekly to provide the Town with a Weekly Audit Report (please see Appendix G for a Sample Weekly Audit Report). The Weekly Audit Report will enable the Town to identify and address any immediate safety concerns, as well as other issues – such as observed infrastructure failure in need of replacement and tree trimming – that may need attention prior to project installation.

Unlike other potential providers, Tanko Lighting is an industry expert focused solely on street lighting. Tanko Lighting has built its own in-house data team with the right blend of both street lighting technical expertise and data analysis skills to collect and reconcile accurate project data. Further, Tanko Lighting’s field auditors have accurately collected data on tens of thousands of street light fixtures nationwide – ensuring that the Town’s audit will be conducted by highly qualified professionals with tremendous experience. This renders Tanko Lighting as the most qualified to perform the GIS audit, as its staff is extremely experienced in the nuances and characteristics of all street light installations.

#### Deliverables:

- Weekly Audit Reports: An overview map listing the locations completed during the data collection phase (showing both weekly and comprehensive progress), along with a description of any issues that the Town would need to devote immediate attention to – including electrical hazards, tree trimming needs, etc.

## Task 2: Data Reconciliation

Simultaneously with the GIS audit, Tanko Lighting will conduct a thorough and detailed investigation of the Town’s existing records, including utility billing records and maps. Tanko Lighting will reconcile these Town records with the data from the Town-wide GIS audit to confirm ownership, and billing record accuracy. In Tanko Lighting’s experience, cross-referencing these various data sources results in extremely precise and clean data.

#### Deliverables:



- Pre-Construction Existing Inventory GIS Records: Electronic GIS records (in an ArcGIS geodatabase format) for all existing inventory in the Town that has been reconciled with available utility and Town records. This information will be provided as part of the final GIS data submitted upon completion of the project.
- Reconciliation Report: A concise report detailing any discrepancies found between records during the data reconciliation process.

### Task 3: Replacement Plan

In Tanko Lighting's experience, a comprehensive LED street light conversion project is the ideal opportunity for a municipality to reassess its entire street lighting design and ensure that field conditions are optimized for all applications in the design. To achieve this, Tanko Lighting routinely conducts Town-wide design reviews for each of its turnkey street lighting projects.

Tanko Lighting will utilize industry standards – which typically involves organizing the existing street light infrastructure by road classification (e.g. arterial, collector, residential streets) and applying standard LED replacement wattage recommendations based on the location of each existing HPS fixture. Further, if the Town identifies any over- or under-lit areas that are of special concern, Tanko Lighting will apply additional analysis to these limited locations, in an attempt to provide an appropriate design.

The overall benefits to Tanko Lighting's design approach include:

- **Standardization** – The Town is ensured that there is a consistent design method resulting in wattage continuity on its streets. Standardization also leads to a reduction in the variety of fixtures that the Town must keep in its inventory
- **Safety** – Based on the most updated field conditions, the Town can be assured that the design matches the system's current needs and results in improved public safety from streets no longer being under or over lit
- **Efficiency** – The process takes a very thorough approach by examining all relevant field factors and thereby maximizes the available savings by utilizing the most efficient design, while meeting light output needs

#### Deliverables:

- Replacement Plan Map: Town-wide map with recommended LED replacement wattages for the Town to review and approve.

### Task 4: Development of Final Scope of Work

Tanko Lighting will closely coordinate with Town staff throughout the planning phase to solicit feedback, obtain information and resources, and discuss strategy. Once the data is compiled and the analyses are completed, Tanko Lighting will develop a final Scope of Work that will include all project details, including LED street light replacements, final cost estimates and energy savings analysis. Tanko Lighting will await approval prior to the commencement of project implementation.

#### Deliverables:

- Final Scope of Work: An outline of the final project details, which will be delivered and approved by the Town prior to the commencement of project implementation.

## Phase 2: Project Implementation

This task is the crux of the entire project, as it will be the point at which installation occurs and the first opportunity for the public to experience the project's benefits. Tanko Lighting will carefully orchestrate logistics and provide post-installation commissioning to ensure that this phase of the project is executed with the utmost professionalism. Task 2 will include the following milestones:

### Task 1: Materials Procurement

Tanko Lighting will purchase the Town's preferred fixtures and will stage the receipt of fixture shipments for installation in a manner that ensures the secured storage of materials at the designated storage location for the project.

#### Deliverables:

- Product Submittals: Upon approval of final project design, Tanko Lighting will provide the Town with final product submittal sheets for final approval. Once submittal sheets have been approved, Tanko Lighting will order the materials.

### Task 2: Community Outreach and Notification

Tanko Lighting believes that proper coordination of information and outreach to stakeholders is an essential part of ensuring a successful street light conversion project. To that end, Tanko Lighting will coordinate with the Town to help develop a community outreach and notification plan prior to the commencement of any project activities. The plan will ensure project awareness and minimize public disturbance. Specifically, Tanko Lighting will develop the message and provide the schedule to the Town's media staff. Further, Tanko Lighting will assist with the Town's efforts via a preconstruction informational session and community walk through during the evaluation of the sample fixture installations.

#### Deliverables:

- Project Messaging and Schedule: Specific language, draft press release, and timelines related to project activities to assist with notifying community members of the project.

### Task 3: Logistics Management

Tanko Lighting will ensure that all logistics are carefully coordinated for the project. Tanko Lighting will work with the Town's main point of contact to develop an installation plan that minimizes inconvenience to the Town and includes ordering schedules, traffic control plan, waste disposal procedures (that comply with all applicable State and Federal laws), and installation and commissioning schedules (including hours of installation) as required, to the Town.

Tanko Lighting will maintain proper communication and coordination with installers to ensure installation quality, work and public safety, compliance with project schedule and proper handling of waste. Tanko Lighting will facilitate a pre-construction Kick-Off meeting with Town staff and installers to review the traffic control plans, work safety, public safety and waste material handling procedures and requirements prior to the start of installation.

#### Deliverables:

- Logistics Management Details: Ordering, traffic control plans, required permits, disposal strategy, pre-construction meeting, ongoing meetings, installation and commissioning schedules.

## Task 4: Installation

Tanko Lighting routinely partners with subcontractors for installation for its turn-key municipal street lighting projects. Tanko Lighting contends that this is an ideal way to utilize local knowledge and leverage taxpayer dollars back to the local economy. As such, Tanko Lighting is very familiar with how to properly solicit, vet and manage qualified local subcontractors.

In preparation for this proposal, Tanko Lighting solicited local firms, reviewed a variety of factors, including price, qualifications, availability of crews, and responsiveness, and selected G&R Electric Corp. (“G&R Electric”) for the project’s installation scope of work. G&R Electric has been operating in Florida for nearly three decades, offering a wide range of electrical contracting services for both the private and public sectors. G&R Electric has served on a variety of outdoor LED conversion projects, including a parking lot conversion in Plantation, FL and a residential street lighting LED conversion in Miami Beach, FL. Additionally, G&R Electric currently serves as the Town of Miami Lakes’ street light maintenance contractor.

G&R Electric will provide safety, installation, traffic control, environmental disposal, and maintenance services for this project. G&R Electric’s efforts will be directed by a Construction Superintendent, who will be responsible for all logistics and field installation, including safety and traffic control, and all management of field staff.

G&R Electric will provide at least two installation crews and it is expected that each installation crew will install an average of thirty fixtures per day. Installers will ensure that an electrical inspection is conducted prior to installation of the new luminaire to confirm that the current electrical connection is adequate. Any inadequate locations will be so noted on the Weekly Installation Report.

Completion of the project commissioning (see Commissioning section below) will coincide at the end of the installation phase to quickly address any errors, punch list items, or troubleshooting needs.

Utilizing the data from the audit and design process, Tanko Lighting will develop installation maps (see Sample Installation Map in Appendix G) and provide to installers and relevant Town staff for accurate project tracking.

It should be noted that, upon request, Tanko Lighting can provide pole labeling for all fixtures or just a subset of fixtures missing labels. If a labeling strategy is of interest to the Town, Tanko Lighting will develop a scope of work based on the Town’s needs and an estimated additional cost for these services.

An additional feature of Tanko Lighting’s approach is that its GPS data collection activities are not limited to the auditing phase – but are integrated throughout project implementation – as a routine practice. Tanko Lighting is able to stay intimately involved with the daily installation phase via its data collection protocols that are required of all installers. Tanko Lighting will ensure that installers are equipped with handheld GPS devices and train them in collecting relevant data on both the HPS fixtures being removed, as well as the LED fixtures being installed. Installers will be required to collect data at every location and transmit it daily to Tanko Lighting. Tanko Lighting’s in-house data analysts will review the data, reconcile it against the audit data, as well as Town and utility records, which will result in a precise understanding of the project’s progression. Tanko Lighting is able to track each crew’s daily progress via time-stamped data on every fixture location. This not only enables Tanko Lighting to know every location where each crew has been, it also allows Tanko Lighting to track the routes that each crew has used and any inefficiencies in the process. Tanko Lighting reviews this information on a daily basis, which allows it to provide immediate instruction to crews on any course corrections necessary. Tanko Lighting’s proven experience with managing installation crews through data collection activities routinely integrated into the installation phase ensures the accuracy and accountability of project partners.

Tanko Lighting will use the installation data to provide Weekly Installation Reports to the Town (see Sample Weekly Installation Report in Appendix G).

Tanko Lighting will be responsible for warranty work related to materials for a period of five years from the Town's acceptance and warranty work related to installation for a period of one year from the Town's acceptance of the project (please note that additional warranty options are outlined in Section III below). The warranty will cover fixture or photocell failure and issues related to the installation, such as incorrect mounting or wiring of fixture. The warranty will not cover issues unrelated to the installation, such as fuse failure, knockdowns, wire shorting, disconnection of the pole or arm from power source, weather related damage, Acts of God, vandalism, or unrelated capital work impacting the pole or fixture.

Upon installation, the Town or its standard maintenance contractor will be responsible to serve as first-responder to any and all outages, shall identify locations where warranty-related work is necessary, and will notify Tanko Lighting of the warranty-related locations so that a remedy can be implemented. Tanko Lighting will dispatch and ensure that the location is properly remedied within three (3) days of the Town's notice.

#### Deliverables:

- Installation Maps: Maps with particular locations and fixture information used to dispatch installation crews and allow Town staff to track installation routes.
- Weekly Installation Report: A detailed listing of the locations completed during the installation phase, along with maps corresponding to locations.

### Task 5: Commissioning

Given Tanko Lighting's significant focus on thorough data collection during both the audit and installation phases, approximately ninety-five percent of the commissioning efforts take place during the time of installation. This is due to the fact that Tanko Lighting can quickly validate the installation data against the confirmed audit data (which is validated against municipal records during the Data Reconciliation phase) and accurately identify any locations where both data sets do not match. This ensures tremendous precision that establishes a finite subset of the installation locations that require additional review. Final data collection is obtained during the commissioning phase, which includes a field inspection to confirm installations. This process often includes capture of additional GPS locations and taking pictures at many locations to confirm installation status.

Upon completion of the installation, Tanko Lighting will ensure that the installers perform final inspection on all fixtures, correct any "punch list" items, test lights to ensure that they work, and identify locations where repair needs Town assistance. Tanko Lighting will provide the Town with a complete commissioning report outlining any errors and actions taken to correct errors.

#### Deliverables:

- Commissioning Report: Detailed analysis of final installation verification and testing, including an outline of any errors and actions taken to correct errors.

### Phase 3: Project Closeout and Deliverables

A project is never completed until the final documentation and administrative requirements are met. Tanko Lighting understands that proper follow through is essential to considering a project successfully executed. To that end, Tanko

Lighting will coordinate all final reporting and data requirements to ensure that the Town considers the project is compliant and complete. Phase 3 will include the following milestones:

### Task 1: Tariff Change Coordination

Although not required in the Town's RFP, Tanko Lighting contends that it has the experience and data necessary to provide tariff change submissions with the utility as a value-added task. As such, Tanko Lighting will coordinate with the utility on changing tariffs to the newly-installed LED fixture rates. Tanko Lighting will provide the administrative support to not only process the tariff changes, but also to amend billing records with the utility.

Tanko Lighting will closely coordinate with Town staff on the status of tariff changes on an ongoing basis, to troubleshoot any issues with the Town, and to keep Town staff informed of the status of the processes.

#### Deliverables:

- Tariff Change Documentation: A compilation of copies of paperwork submitted and processed with the utility regarding tariff changes.

### Task 2: Photometric Confirmation

Tanko Lighting will provide photometric confirmation post-installation that installed LED fixtures match design. This will be based on field data collected at one location per roadway classification type (residential, collector, and arterial).

#### Deliverables:

- Post-Installation Photometric Analysis: Documentation supporting that the installed replacement lights either meet or exceed previously existing lighting levels.

### Task 3: Final Reporting

Tanko Lighting will provide all necessary documentation to fulfill the requirements of the Town's compliance and reporting for this project. This includes:

- All applicable product warranties and service, maintenance and operations manuals
- "As-built" record documents of newly installed (as well as GIS records of existing conditions) LED street lights in the form of electronic GIS format records
- Environmental waste disposal documentation

#### Deliverables:

- Final Reporting Documentation: Final pre- and post-construction electronic GIS records for all newly-installed street lights in the Town, product warranties and manuals, and environmental waste disposal documentation.

## Project Schedule

Please find Tanko Lighting's Proposed Schedule below. Please note the following regarding the schedule:

- Tanko Lighting's extensive project experience enables it to accurately predict the duration of this project. However, there are a variety of factors outside of Tanko Lighting's control with regards to the timeline of the project. These factors include product availability, Town's ability to provide feedback on requests and design recommendations, permitting processes (which were not provided/explained in the Town's RFP), and weather-





related factors. Tanko Lighting is unable to predict such factors in the current schedule but will work with the Town to mitigate delays from any such factor, should they actualize during the project.

Proposed Schedule	
Task	Estimated Completion Date
GIS Audit	NTP + 3 weeks (includes time to gather existing Town records)
Data Reconciliation	3 weeks after Audit completion
Replacement Plan	Initial Design Submission = 1 week after Data Reconciliation completion; Final Design Submission = 2 weeks after Town feedback
Materials Procurement	<u>Submittals to City</u> = 1 week after Town approval of Design; <u>Ordering</u> = 1 week after Town submittal approval; <u>Shipment of Fixtures</u> = 6 – 8 weeks from order placement
Logistics Management	2 weeks prior to Installation
Community Outreach	2 – 4 weeks prior to Installation
Installation	<u>Commencement</u> = 1 week from material receipt; <u>Substantial Completion</u> = 3 weeks from commencement
Commissioning & Final Punch List	2 weeks following Substantial Completion
Final Reporting	3 weeks following Substantial Completion

## Accounting Methods

Tanko Lighting's turn-key services are integrated into a fixed per fixture price. This ensures that the project will not be overrun by change orders and simplifies the accounting processes. Tanko Lighting will invoice the Town on a monthly basis during the installation phase for the per unit turn-key service price for each fixture installed. Tanko Lighting will provide installation documentation to support the quantities it bills on a monthly basis. Tanko Lighting will offer Net 30 payment terms to the Town.

## B. Special Problems or Concerns

*Identify any special problems or concerns that may be associated with the work and preliminary ideas about how these items should be addressed, to include but not be limited to traffic control, resident grievances, verification of supply voltage and recycling services (luminaires, lamps, photo controls and miscellaneous materials).*

Given Tanko Lighting's extensive experience with street light projects nationally, it is intimately aware of the potential issues that may be relevant to this project. Such issues include:

- Traffic Control:** The Town's RFP was clear that traffic control should follow FDOT standards, and that is what Tanko Lighting is including in its Project Approach. However, in practice, even when traffic control standards are precisely followed, accidents and unforeseen dangers can be factors in a project. As such, Tanko Lighting will ensure that G&R Electric's field staff are properly trained and managed while performing installation services and that staff are aware of their surroundings at all times. One thing to note with street lighting projects is that,

because the actual time to replace the HPS fixture with an LED fixture is minimal (often just a few minutes), the installation is conducted as a swiftly rolling operation – much like a garbage service. As such, while it is important to have safe and proper traffic control for this project, it will likely pose minimal traffic interruptions due to the mobile nature of the work.

- **Resident Grievances:** In Tanko Lighting’s experience, the average citizen rarely notices the street lighting infrastructure unless it is not properly operating or is changed. As such, the Town should anticipate citizen feedback – both positive and negative – as a result of the project. Tanko Lighting employs its thorough audit and design processes in every project to ensure that the Town is aware of existing conditions and conducts an intentional design process. Completing this process serves as peace of mind to Tanko Lighting’s clients, as they are confident in their decisions and can more easily defend them in the event that there is any negative public feedback.

Tanko Lighting has assisted many clients in responding to negative feedback and resident grievances – ranging from issues with the color of the new fixtures to complaints about the new fixtures no longer providing light to residents’ front yards. Tanko Lighting typically recommends that the Town acknowledge the complaint and utilize a waiting period of at least thirty days to determine if there is any action necessary. During the waiting period, Tanko Lighting assists the Town in investigating the merits of the complaint. If another complaint about the same location has not been issued within the waiting period, this typically means that the resident(s) is adjusting to the new fixtures and leads to no long-term need for action. In the event that the issue escalates during the waiting period, Tanko Lighting assists clients with reviewing the data and reason for the design, determining if the client should affirm the design and respond to the complainant with justification for the design, and – in cases where the client believes the complaint might have merit – assisting the client with remedy options.

- **Verification of Supply Voltage:** Due to the fact that supply voltage is verified when the street light fixtures are non-operational, this can often lead to a higher voltage measurement than under actual load conditions (when the fixture is operating). This can result in the voltage dramatically decreasing when the fixture is operational, which would indicate potential system issues. The remedy for this is the controls that will be installed through this project, which will indicate any voltage issues when the system is operating.
- **Recycling Services:** A public relations nightmare can ensue anytime a Town undergoes a significant infrastructure upgrade that results in improper waste management. Tanko Lighting is cognizant of the impacts of waste related to this project and will work to ensure that G&R Electric properly disposes and recycles all material from this project. On every project, Tanko Lighting requires that subcontractors provide documentation from recycling and waste disposal vendors, confirming the material that was disposed of and when it was disposed. Tanko Lighting will impose such requirements on G&R Electric for this project and will provide documentation to the Town during the Final Reporting phase of the project.
- **Data Reconciliation:** Although not specifically addressed in the RFP, reconciling the audit data with existing Town records is critical to providing the utility with an accurate final existing inventory. In Tanko Lighting’s experience, most initial utility inventory records are highly inaccurate, which can lead to overstating or understating a Town’s bill. In countless projects, Tanko Lighting has demonstrated its ability to reconcile audit data, as well as provide substantiated evidence to utility companies when field conditions vary from initial utility-provided inventory records. As such, Tanko Lighting has included this task in its approach to the Scope of Work and pricing for this project (see Project Approach section below for more details).

- **Special Infrastructure Issues:** As with any major infrastructure improvement project, there are a variety of special issues that may arise throughout the course of this project. Particularly within the context of municipal street light conversion projects, these special issues are often unforeseen because the municipality has not comprehensively upgraded its system for several decades. In general, most of the special issues typically center on electrical issues, such as blown fuses, no power, missing wires, etc. – most of which are unforeseen until the installation phase. Further, there may be special issues related to unforeseen maintenance needs (such as knock downs, etc.) that may occur between the audit and subsequent future installation phase, as well as the existence of any undisclosed and/or undiscovered 480 Volt and series circuits. Tanko Lighting has encountered all of these special issues in previous projects and has the technical knowledge to appropriately identify the issues, develop the most effective remedy, and integrate these elements into the project planning.

## C. Advantages of Tanko Lighting

*Provide information regarding proposed product quality, value-added special services, knowledge, expertise, or other benefits or advantages that will be afforded the Town in selecting your firm for this project.*

Given its extensive project experience, Tanko Lighting is uniquely positioned to assist the Town of Miami Lakes with this project for the following reasons:

- **Municipal Street Light Conversion Experience:** Tanko Lighting's extensive knowledge of and experience with street lighting conversion projects is unsurpassed. The company has previously been or is currently involved with the energy efficiency conversion of more than 250,000 street lights nationwide.
- **Project Management Experience:** Tanko Lighting utilizes the extensive experience and organizational skills of its in-house project managers to develop project timelines, and manage ordering and installation schedules. This ability to focus managing all aspects of the project is in contrast to many of its competitors, which typically operate projects according to crew schedules as the priority and not necessarily prioritizing the Town's schedule.
- **Technical Knowledge:** Tanko Lighting has significant technical expertise centered on municipal street lighting infrastructure. Led by an electrical engineer and licensed electrical contractor, Jason Tanko (President), Tanko Lighting understands the field conditions and system constraints that are often involved with municipal street lighting projects. This enables the team to accurately design projects to prevent anticipated challenges, as well as quickly respond with streamlined solutions in the event of technical difficulties during a project.
- **National Context:** Tanko Lighting's broad experience with feasibility, and design and implementation of LED conversion projects provides tremendous national context that will benefit the Town by ensuring that the project is consistent with industry standards during each phase of the project.
- **Data Management:** Tanko Lighting contends that utilizing data collection and analysis throughout all stages of a project results in superior project management. Thus, Tanko Lighting has built its own in-house data team with the right blend of both street lighting technical expertise and data analysis skills to collect and reconcile accurate project data. While competitors often subcontract data collection and management, Tanko Lighting retains these activities in-house to better inform the design and project management processes. Field staff are provided devices that track the Global Position System (GPS) coordinates and other characteristics of the existing fixtures for the audit phase, as well as for the installation phase (installers track this information at the time of the LED installation), which, when compared with Town data, streamlines the accuracy of the ordering and installation processes. Additionally, Tanko Lighting utilizes the most state-of-the-art technology, with spatial accuracy within +/- one meter (compared with many competitors whose devices have a margin of error of up

to fifteen feet), and utilizes the industry standard software – ESRI’s ArcGIS – to process data and provide shape files that are fully compatible with clients’ GIS records. Further, Tanko Lighting’s field auditors have accurately collected data on hundreds of thousands of street light fixtures – ensuring that the Town’s audit will be conducted by highly qualified professionals with tremendous field experience. As a result, Tanko Lighting’s projects are well-designed, streamlined, accurate, efficient and cost effective. Additionally, Tanko Lighting’s focus on data results in significant transparency throughout all phases of the project.

- **Data Reconciliation:** Reconciling the audit data with existing Town records is critical to providing an accurate final existing inventory. In Tanko Lighting’s experience, most initial utility inventory records are highly inaccurate, which can lead to overstating or understating the quantity of existing assets. In countless projects, Tanko Lighting has demonstrated its ability to reconcile audit data, as well as provide substantiated evidence to utility companies when field conditions vary from initial utility-provided inventory records.
- **LED Conversion Design:** Any consultant can select street light fixtures from a catalog, but only an expert can walk the City through its specific nuances and existing field conditions that warrant a customized approach to design. As a street light expert, Tanko Lighting is equipped to provide a comprehensive approach to the design process. Because Tanko Lighting is involved with turn-key LED street light conversion projects nationwide, it has tremendous context from which to base its LED design recommendations. Tanko Lighting is product neutral and has worked with all the major LED street light manufacturers, including cobra head, as well as decorative products. Yet, Tanko Lighting does not merely rely on manufacturers for information related to design, but has the knowledge and analyzation skills to interpret how manufacturer data impacts a Town’s needs. Tanko Lighting utilizes industry standards – which typically involves organizing the existing street light infrastructure by road classification (e.g. arterial, collector, residential streets) and applying standard LED replacement wattage recommendations based on the location of each existing HPS fixture. Additionally, Tanko Lighting considers areas of concern that are currently over or under-lit and applies customized solutions to these locations so that a Town’s conversion project results in a comprehensive re-design that is updated to the existing field conditions and needs of the Town’s current system. This is in contrast with Tanko Lighting’s competitors, which often merely apply a cookie cutter approach to design that oversimplifies areas that are currently being over or under-lit.
- **Selective Subcontracting:** Tanko Lighting is highly aware of its core competencies. It thus retains the essential project activities (such as design, engineering, data collection/reconciliation, product procurement and project management) in-house in order to ensure that the project is run cost-effectively, efficiently and successfully. Tanko Lighting practices selective subcontracting, in that it sources out limited key project activities (such as installation and maintenance) to qualified street light experts local to the project in order to obtain competitive pricing and prevent the project from accruing unnecessary costs and change orders. Further, selective subcontracting allows Tanko Lighting the flexibility to obtain additional installation resources as needed, and also allows the Town to invest in the local economy and leverage local expertise by including local subcontractors in the project. For this project, Tanko Lighting has developed a strong and exclusive partnership with a highly qualified local subcontractor – G&R Electric (which currently serves as the Town of Miami Lakes’ street light maintenance contractor) – to perform the installation services. This firm has significant experience with street lighting in Florida and particularly in Miami Lakes. The fact that G&R Electric is the Town’s current maintenance contractor will ensure more efficient and streamlined responses and remedies to any maintenance need.
- **Accessibility:** As a mid-sized firm, Tanko Lighting provides its municipal clients with all of the necessary resources to successfully accomplish complex street lighting projects – without the challenges of a large, bureaucratic firm. This enables every client to receive personal attention, with a primary Tanko Lighting point of contact providing

superior customer service through responsiveness, accessibility, and the agility to create expedited decisions and solutions leading to effective results. Further, Tanko Lighting's size enables all clients to have direct access to the company's President, Jason Tanko, at any point during the project – which results in clients having an industry expert available at their fingertips.

- **Local Presence:** Although Tanko Lighting is headquartered in San Francisco, it strives to make every client feel as if Tanko Lighting is right down the street. Because of Tanko Lighting's extensive use of data collection and management as a critical path element to its project management approach, the majority of the tasks driven by data can be handled remotely from Tanko Lighting's headquarters in San Francisco, CA. However, there are a variety of in-field logistical tasks that are best handled in the specific project locale. As such, Tanko Lighting staff will be available for key project meetings and milestones.
- **Experience with Financing Coordination:** Tanko Lighting has worked on numerous contracts in which it has facilitated project financing for municipal street lighting projects, including both public and private financing. Tanko Lighting has assisted municipalities by providing an investment grade audit, determining project costs, life cycle costs, savings models, and payback schedules, as well as directly coordinating with the financing entity and the municipality, providing documentation, and reporting about project progress to the financing entity. When public financing is not readily available, Tanko Lighting facilitates private financing through third party entities (such as Graybar Financial Services, TCF Equipment Financing, and Banc of America Public Capital Corp), which typically offer low-interest, Tax Exempt Lease Purchase financing that includes all costs related to the project, which are repaid through the project's savings. Further, virtually all of Tanko Lighting's projects involve rebates from the local utility. Tanko Lighting can leverage its experience nationally to identify potential financing options, should the Town be interested.

### III. RESOURCES, AVAILABILITY AND WARRANTY

#### A. Staffing & Safety Chart

*Provide a chart showing firm's staffing configuration and safety protocols.*

#### Project Staffing & Safety Chart



Please note that G&R Electric's field installation crews are thoroughly trained in safety briefings and MOT procedures. Further, its Construction Superintendent is OSHA 30 and MOT-certified.

#### B. Quality Control

*Provide information about the firm's quality control standards and objectives, offering specific examples from past projects.*

Quality control is paramount to the successful implementation of any project and will be a critical path item for Tanko Lighting on this project. Tanko Lighting's extensive experience with successful municipal projects, its stellar reputation, and its approach to managing costs and revenue for this project ensures that the Town's project will be appropriately managed with the utmost responsibility.

The following demonstrate Tanko Lighting's quality control standards and have been utilized in every one of Tanko Lighting's projects to date:

- Tanko Lighting follows Generally Accepted Accounting Principles (GAAP) for all corporate accounting activities and this project will be no exception.



- Tanko Lighting’s extensive experience with implementing municipal street light projects provides it with the appropriate context from which to accurately determine costs and budgets associated with this project.
- Tanko Lighting will maintain regular communication with the Towns to provide ongoing updates, identify any challenges, and address any concerns.
- Tanko Lighting will rely upon industry standards when identifying recommendations and estimates related to design and costs – this will ensure that the information provided by Tanko Lighting is based on best practices.
- Tanko Lighting utilizes a proprietary time keeping system that tracks resource allocation and employee activities. This will ensure that invoices are accurate and that staff are utilizing their time in a most efficient manner.
- Tanko Lighting develops project deliverables based on an initial drafting process involving the Project Manager, with subsequent review and approval by the Senior Project Manager, and final review by a company Principal. This ensures consistency, accuracy and quality.
- Tanko Lighting provides the majority of services (with the exception of direct installation) in-house, which enables it to monitor and enforce quality standards.
- Tanko Lighting’s focus on data management ensures accurate project tracking, accountability and transparency. Especially during the installation phase, having the GPS coordinates of installers’ positions on a real-time basis allows Tanko Lighting to track progress, identify any methodology issues, and impose swift course correction when necessary.

## C. Product Information

*Provide information about the product/material proposed, equipment and resources to be utilized in performance of the program.*

Please find information regarding the products that Tanko Lighting is recommending for this project below. Additional information can be found in Appendix B – Product Technical Information.

Please note the following about the products that Tanko Lighting is proposing:

- Tanko Lighting is including adaptive controls as a bid adder, per the Town’s RFP requirements. However, in the event that the Town does not select to proceed with adaptive controls for this project, Tanko Lighting is also including a Ripley photocell (see information below and in Appendix B) with this proposal. Given that the Town did not provide any specifications for the photocell in its RFP, Tanko Lighting can also provide alternative photocell products at the Town’s request.
- Given that the Town’s existing inventory includes a small quantity of 480V locations, Tanko Lighting’s proposed fixtures will include a specialized driver for the 480V locations – the cost of which is included in the proposed pricing.
- Tanko Lighting is proposing an LED retrofit kit (Cree DPT Series) for both the Contempo and Colonial style decorative fixtures outlined in the Town’s RFP, which is included in Tanko Lighting’s price proposal. However, if the Town is interested in simplifying the two types into one, consistent standard, Tanko Lighting can provide an LED Colonial Post Top Fixture as an alternative, at a turn-key price of \$425 per fixture. Tanko Lighting can provide more information on the alternative LED Colonial Post Top Fixture upon request.

### GE Evolve Series – Cobra Head Fixtures

Tanko Lighting requested information from multiple manufacturers for this project. After reviewing various options, Tanko Lighting opted to proceed with the GE Evolve Series because it is the brand that best meets the Town’s technical requirements, provides the best value, and is Made in the USA. Additionally, GE has significant quantities of Evolve Series installations throughout the nation – particularly in municipal street light settings. Further,

### GE Evolve Series ERS Fixture





the Town's RFP photos indicate that its existing infrastructure primarily utilizes GE fixtures, which demonstrates that the Town is familiar with the brand and LED fixtures – leveraging that history with the brand is an advantage of continuing with GE products.

From local to major roadways, the GE Evolve™ LED Roadway Scalable Cobrahead fixtures are changing the way lanes are lit. Preserving the aesthetic look of traditional roadway Cobrahead fixtures, GE balances the technical needs of a sophisticated LED system with the functional demands of an outdoor fixture facing extreme weather hazards. GE's advanced LED optical design offers hundreds of photometric options to meet precise lighting requirements, while delivering reduced glare and improved light control. The refined thermal management system incorporates a sleek and robust heat sink directly into the fixture to ensure maximum heat transfer and long LED life.

The GE Evolve LED Roadway Scalable Cobrahead offers more than 23 years of reliable service life to significantly reduce maintenance frequency and expense, based on a 100,000-hour life and 12 hours of operation per day. This efficient fixture can yield up to a 50-percent reduction in system energy compared with standard HID systems, depending on roadway applications, and is adaptive control ready, which allows it to also be paired with programmable dimming options for even greater savings and control.

**GE Evolve Series ERL Fixture**



#### **Cree DPT Series LED Decorative Post Top Luminaire**

The DPT Series provides all the great benefits of performance, energy savings and reduced maintenance of a LED luminaire because it is designed to be a "luminaire within a luminaire." Designed to replace up to 70W Metal Halide or High Pressure Sodium and up to 175W Mercury Vapor lamps, the DPT luminaire utilizes a standalone UL 1598 compliant light engine and a universal mounting base that can be mounted in new or existing installations with both medium and mogul base sockets. The DPT Series preserves the historic look of the streetscape, maintains safety and eliminates compliance hurdles.

**Cree DPT Series LED  
Decorative Post Top**



#### **Ripley's Twist-Lock Electronic Photocontrol 6390TF**

Ripley's Tru-Filter® InfraRed-Filtering Photocontrols provide greater control, accuracy and overall energy savings. A single infrared-filtering phototransistor in each Tru-Filter® photocontrol, filters out all sources of infrared to mirror the spectral sensitivity of the human eye, and provide highly accurate control across the entire visual light spectrum.

**Ripley's Twist-Lock Electronic  
Photocontrol 6390TF**



### GE LightGrid Wireless Control System

LightGrid™ is a groundbreaking outdoor wireless control system for street and roadway lights. The unique technology inside this system allows for remote operation and monitoring of all fixtures through a Web-enabled central management system. Designed with municipalities and transportation departments in mind, LightGrid offers many features, including:

- Accurate, utility-grade energy metering per pole – only pay for what is used
- GPS chip embedded into node – always know the exact location of controllers and fixtures. Node automatically connects to network and acquires location in just minutes, reducing commissioning time.
- One-piece control – no special electronics necessary in the fixture. Node simply connects to external socket, so it can be added easily at any time.
- Operates with programmed schedules in case of network outage.

### Equipment

G&R Electric will provide all in-field equipment for the project, including two bucket trucks, a flatbed trailer, traffic control equipment, and logistics equipment.

## D. Proposed Luminaires

*Provide at response time two (2) samples of proposed luminaires: One (1) assembled and one (1) broken down by component. Packages containing such samples shall be labeled in accordance with Article 2 of this section. The Town reserves the right to request performance demonstrations and/or field tests of the proposed luminaires at no additional cost to the Town.*

Please find Tanko Lighting's sample luminaire fixtures (including a complete GE luminaire, a disassembled GE luminaire, and a disassembled Cree DPT product) submitted with the proposal package. Note that the complete DPT Series product will be submitted in a separate package, directly submitted by Crescent Electric (a distributor), on behalf of Tanko Lighting.

## E. Warranty Information

*Warranty information:*

*i. Identify extended warranty ~~and~~ surety bond coverage options for each luminaire model proposed ~~the luminaires~~ beyond the minimum requirement stipulated in Article 1.4 of this section. In the designated location on the updated Price Proposal Form herein, provide an annual cost for the extended warranty, the number of years available under the extended warranty, and detail any discounts should the Town elect to pay in advance for a multi-year warranty.*

Tanko Lighting will provide an extended warranty – up to ten (10) years – for the luminaires via a manufacturer's warranty at no additional cost to the Town. Further, Tanko Lighting will provide an extended warranty – up to ten (10) years – for the installation at the annual cost as outlined in the Price Proposal Form.

*ii. Per Article 1.4, identify the warranty ~~coverage for labor and installation~~ included in proposer's price. ~~Identify extended coverage options beyond the included coverage.~~*

Tanko Lighting's proposed price includes warranty coverage for labor and installation for (1) one year after the Town's project acceptance. Additionally, Tanko Lighting's proposed price includes warranty coverage for materials for (5) five years after the Town's acceptance (or, at the option of the Town, (10) ten years after the Town's acceptance for no additional cost).

## IV. CLIENT REFERENCES

*Proposers shall complete the Proposer's Reference Form herein to provide three (3) references of clients which have utilized proposer's services within the last three (3) years.*

Please find Tanko Lighting's completed Proposer Reference Forms in Appendix H.



## V. PRICE PROPOSAL

### A. Price

*Proposal amount must be provided in correlation with the Price Worksheet (Excel Spreadsheet Exhibit "A"). Proposer must include in proposal package the completed worksheet and enter the sums which correlate to the Price Proposal Form herein. Price submitted must be based upon and include any and all costs or expenses to be incurred by the Proposer in completing all aspects of the mobilization/start-up, construction, and Project close-out. The Price component, in addition to all direct and indirect costs and expenses, must include all other costs and expenses including but not limited to such costs as the Proposer's general, administrative and overhead costs; project management and supervisory costs; all fees, charges and taxes; labor, direct and indirect payroll costs, including labor burden; insurance and bond costs; cost of equipment, material, tools and transportation; and operating margin (profit).*

Please find Tanko Lighting's completed Price Worksheet in Appendix I. Please find below notes regarding the proposed pricing:

- The cost of the Monitoring and Control System in the Price Worksheet (attached as Appendix I) accounts for the unit cost of the control equipment and labor cost of installing controls (LightGrid) minus the unit cost of the photocell (Ripley). The cost of the photocell is placed into the Fixture Cost Per Unit column for the fixture, given that a fixture cannot function without controls or photocell. Further, the Maintenance Fee of \$7.50 (per fixture/per year) is not included in the cost for GE LightGrid Smart Controls in the Price Worksheet.
- The cost of Fixture Cost Per Unit in Exhibit A (attached as Appendix I) accounts for the unit cost of the fixture, photocell and (185) 480V drivers.
- The cost of (Installation Cost Per Unit) accounts for the cost of installing all fixtures and photocells.
- Pricing includes sales tax (based on seven percent).

### B. Schedule of Values Submittal

*Proposer must provide a proposed Schedule of Values for the Project. The Schedule of Values will be broken down only to trade categories. The proposed Schedule of Values should include major/critical subtask but should not include all of the subtasks. At a minimum the information must include the trade category, and the estimated cost of the Work. Where a discrepancy exists between the trade category's estimated cost of work and the percentage shown in the subcontract list the trade category estimated percentage of the total work will prevail.*

Please find Tanko Lighting's Schedule of Values Submittal in Appendix I.

## VI. PROGRAM FINANCING OPTIONS

*If a financing option is proposed, provide name of institution financing project, the term, the payment amount and the interest rate charged.*

Tanko Lighting has worked on numerous projects in which it facilitated project financing for municipal street lighting projects, including both public and private financing. Tanko Lighting has assisted municipalities by providing an investment grade audit, determining project costs, life cycle costs, savings models, and payback schedules, as well as directly coordinating with the financing entity and the municipality, providing documentation, and reporting about project progress to the financing entity.

The industry standard for financing municipal turn-key street light conversion projects is typically through either a public bond or private financing. While there are advantages to public bond financing, there are a number of factors that make it less appealing than private financing, such as:

- The need for voter approval
- Advertising and election costs
- Staff burden, particularly with reporting requirements
- Lengthy process
- Prepayment penalties
- Term may exceed rated equipment life
- Hidden fees
- More relevant for large and long-term projects

Given these challenges, Tanko Lighting recommends Municipal Lease Purchase Financing as the financing structure for the LED conversion phase of the project. Municipal Lease Purchase Financing is a hybrid tax-exempt structure. Similar to a loan, the Town maintains title to the asset during the financing term and obtains clear ownership of the asset at the end of the term. Similar to a lease, the financing is subject to annual review or termination. Yet, this structure is not considered “debt” because no multi-year obligation is created. Further, per GAAP accounting, it is treated as a Capital Lease.

As a result, Municipal Lease Purchase Financing is more frequently utilized by municipalities for street light conversion projects than public bond financing due to the following benefits:

- No need for voter approval
- Energy cost savings from the street light upgrade repay the financing
- No upfront costs
- Documentation is simpler and the process is streamlined
- Staff burden is minimized
- No hidden fees or reporting requirements
- Rated equipment life matches the lease term

For this project, Tanko Lighting solicited terms from various third party financing entities. Based on the feedback, Tanko Lighting selected TCF Equipment Finance’s offering as the most cost-effective financing option for the Town. TCF Equipment Finance (TCF) is a division of TCF National Bank. TCF is a national bank holding company based in Wayzata, MN. As of March 31, 2016, TCF had \$21.3 billion in total assets and 376 branches in Illinois, Minnesota, Michigan, Colorado, Wisconsin, Arizona, South Dakota and Indiana, providing retail and commercial banking services. Through its subsidiaries, TCF also conducts commercial leasing, equipment finance and auto finance business in all 50 states and commercial inventory finance business in all 50 states and Canada.

TCF's financing offer for the Town's project includes the following terms (please find more details in the offer letter in Appendix J):

LESSEE:	Town of Miami Lakes, Florida
LESSOR:	TCF Equipment Finance, its affiliates or assignees
EQUIPMENT:	High Efficiency Street Lighting
PROJECT COST:	\$508,577.00
TERM:	8 Years
INTEREST RATE:	2.65%
SEMI-ANNUAL PAYMENTS:	16 @ \$35,590.00
FIRST PAYMENT DUE:	January 2017
CLOSING FEES:	None charged by Lessor



## VIII. APPENDICES

- Appendix A – Project Data Forms
- Appendix B – Product Technical Information
- Appendix C – Subcontractor’s State of Florida Electrical Contractor License
- Appendix D – Bond Capacity Letter
- Appendix E – Completed Project Manager Experience Questionnaire Form
- Appendix F – Key Staff Resumes
- Appendix G – Sample Reports
- Appendix H – Proposer Reference Forms
- Appendix I – Price Worksheet
- Appendix J – Financing Offer
- Appendix K – Required Forms
- Appendix L – Proposer Profile Form



## Appendix A – Project Data Forms

**PROJECT DATA FORM**

(A separate data form is to be used for each qualifying project)

1. Project Name: City of Berkeley LED Streetlight Conversion
  2. Project Location: Berkeley, CA
  3. Project Title: City of Berkeley LED Streetlight Conversion
  4. Project Number, if applicable: 9645
  5. Type of Construction: LED Streetlight Retrofit  
(i.e.: New, Renovation, Addition, Repair, Sidewalk/Curb/Gutter, Roadway reconstruction, Roadway resurfacing, Drainage, etc. Use all that apply.)
  6. Size: (i.e.: Quantity of luminaires installed, etc.): 8,000 fixtures
  7. Scope of Work: Project management support, engineering services (including a comprehensive neighborhood design/value engineering phase that updated the fixture design to be more consistent with current field conditions, which resulted in an increase of approximately twenty-five percent of energy savings from original project design estimates), cost-benefit analysis of various technologies, field light measurement analyses, GIS field auditing and commissioning, product procurement, pole tagging, environmental disposal/recycling, data reconciliation, installation management, rebate/rate change support, reporting for available State financing, and administrative services.
  8. How many bid submissions did the owner receive for the project? 3-5
  9. Business name that constructed & managed this project: Tanko Streetlighting, Inc.
  10. How is this project similar to the Town's project? Same scope as what Tanko Lighting is proposing for this project, including LED conversions of both cobra head and decorative fixtures.
  11. Cost of the project at time of bid: \$ 2.92 million
  12. Cost of work at completion: \$ 3.2 million
  13. LEED Certification
    - a. Was this a LEED Certified Project: Yes \_\_\_\_\_ No X
    - b. Minimum LEED Certification required: \_\_\_\_\_
    - c. LEED Certification obtained: \_\_\_\_\_
  14. Describe the sources and/or causes of the above differences in costs with reference to the following categories as determined by written change order, the public entity or the Architect/Engineer of Record (whichever had final authority):
    - a. Errors or omissions: \_\_\_\_\_ % \$ \_\_\_\_\_
    - b. Unforeseen/Hidden conditions: 50 % \$ 140,000
    - c. Owner generated changes: 50 % \$ 140,000
    - d. Regulatory agency changes: \_\_\_\_\_ % \$ \_\_\_\_\_
    - e. Contractor recommended changes: \_\_\_\_\_ % \$ \_\_\_\_\_
    - f. Other: \_\_\_\_\_ % \$ \_\_\_\_\_
- Explain other: \_\_\_\_\_

15. How many RFIs did your company submit with respect to the plans and specifications for the project? 0

16. What was the primary reasons for the RFIs: \_\_\_\_\_

17. What year did the project start construction? 2014

18. What year did the project complete construction? 2015

19. Project Timeframe for completion (number of calendar days):

- a. 285 Contract timeframe at time of bid/proposal date for Substantial Completion
- b. 315 Contract timeframe at time of bid/proposal date for Final Completion (if different from Substantial Completion)
- c. 740 Formally adjusted contract timeframe based on change orders (if none state N/A)
- d. N/A Timeframe not covered under approved change orders (if none state N/A)
- e. 300 Actual time between issuance of Notice to Proceed and date of Substantial Completion
- f. 365 Actual time between date of Substantial Completion and Final Completion
- g. 315 Total number of days between original contract timeframe and Substantial Completion
- h. 740 Total number of days between original contract timeframe and Final Completion (if different from Substantial Completion)

20. If completion did not occur within the contract time established at bid/proposal date or within the formally adjusted contract time (as identified in item 17c above, explain the reason(s) for the delay:

The project Final Completion was delayed due to delays with the utility in processing rebate and rate change applications.

21. Total number of tasks on the punch list? ~75

22. If punch list items were not completed/performed explain the reason(s): \_\_\_\_\_

23. Were liquidated damages or actual damages for delay assessed on this project?

Yes \_\_\_\_\_ No X If yes, state the amount: \$ \_\_\_\_\_

24. Name of the Project Manager: David Gruener

25. Name of the Construction Superintendent: Rex Waggener, Beci Electric

26. Total amount of the work self-performed: 81 % \$ 2.6 million

- a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

Project management, audit, 81 % \$ 2.6 million  
materials procurement, etc.

_____	_____ %	\$ _____
_____	_____ %	\$ _____
_____	_____ %	\$ _____

27. Were subcontractors used on the project?   X   yes        no

a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

<u>Electricians</u>	<u>19</u> %	\$ <u>600,000</u>
_____	_____ %	\$ _____
_____	_____ %	\$ _____

28. Were any Claims\* or Dispute filed on the project        yes   X   no

\*A Claim means a demand or assertion by your firm seeking as matter of right, adjustment or interpretation of contract terms, compensation, extension of time or other relief with respect to the terms of the contract or other disputes between the owner and your firm.

29. If a Claim(s) was filed on the project, provide the following details for each Claim\*:

a. Dollar amount for Initial

Claim: \_\_\_\_\_

b. Source of Claim: (e.g. contractor, subcontractor, supplier, etc.)

\_\_\_\_\_

c. Method of resolution (e.g. negotiation, mediation, arbitration, litigation): \_\_\_\_\_

d. Final amount of Claim settlement:

\_\_\_\_\_

30. If a formal Dispute(s) was filed on the project, provide the following details for each Dispute. Identify the reason for the Dispute and the resolution (use additional pages if necessary):

N/A

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. Did your company fail/refuse to perform or complete any of work it was obligated to complete?

       yes   X   no

If yes, explain what work was not performed/ completed and reasons why:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

32. Was your company required to perform any work under a directive to proceed pending the resolution of an interpretation of the contract or dispute?

\_\_\_\_\_ yes                        X   no

33. Identify up to four (4) constructability issues encountered by your company on the project and briefly describe how your company resolve each issue:  
Decorative fixtures were difficult because of the high cost involved with purchasing new fixtures. Tanko Lighting solved this by providing the City with retrofit kit options for the decorative fixtures.

34. Did your company perform any value engineering or other cost savings measures, which improved the quality of the project or saved cost? If yes, provide details and any cost savings.

Yes. As a result of Tanko Lighting's innovative design - for both cobra head and decorative fixtures - the City saved an additional 25% in energy savings.

Project Owner's Name: City of Berkeley Department of Public Works

Is the Project Owner a public entity?   X   yes                      \_\_\_\_\_ no

Contact Name for Project Owner: Reeve Battle

Contact Name's Title: Assistant Public Works Engineer

Project Owner's Address: PO Box 700

Project Owner's City, State, and Zip Code: Berkeley, CA 94701

Contact Name's Telephone Number: (510) 981-6336

Contact Name's Email Address: RBattle@ci.berkeley.ca.us

Architect/Engineer of Record: N/A

Architect/Engineer of Record Contact Name: \_\_\_\_\_

Architect/Engineer of Record Contact Name's Telephone No.: \_\_\_\_\_

Architect/Engineer of Record Contact Name Email Address: \_\_\_\_\_

**PROJECT DATA FORM**

(A separate data form is to be used for each qualifying project)

1. Project Name: Town of Winchester LED Streetlight Conversion Project
2. Project Location: Winchester, MA
3. Project Title: Town of Winchester LED Streetlight Conversion Project
4. Project Number, if applicable: N/A
5. Type of Construction: LED Streetlight Retrofit  
(i.e.: New, Renovation, Addition, Repair, Sidewalk/Curb/Gutter, Roadway reconstruction, Roadway resurfacing, Drainage, etc. Use all that apply.)
6. Size: (i.e.: Quantity of luminaires installed, etc.): 1,600 fixtures
7. Scope of Work: As a subcontractor, Tanko Lighting provided the Town of Winchester with turn-key support to implement its comprehensive street light conversion project of more than 1,600 fixtures. Tanko Lighting provided project management support, GIS auditing and commissioning, data reconciliation, installation management, rebate/rate change support, and administrative services.
8. How many bid submissions did the owner receive for the project? 3-5
9. Business name that constructed & managed this project: Dagle Electrical Construction Corp.
10. How is this project similar to the Town's project? Same scope as what Tanko Lighting is proposing for this project, including LED conversions of both cobra head fixtures.
11. Cost of the project at time of bid: \$ 410,850.00
12. Cost of work at completion: \$ 410,850.00
13. LEED Certification
  - a. Was this a LEED Certified Project: Yes \_\_\_\_\_ No X
  - b. Minimum LEED Certification required: \_\_\_\_\_
  - c. LEED Certification obtained: \_\_\_\_\_
14. Describe the sources and/or causes of the above differences in costs with reference to the following categories as determined by written change order, the public entity or the Architect/Engineer of Record (whichever had final authority):
  - a. Errors or omissions: N/A % \$ \_\_\_\_\_
  - b. Unforeseen/Hidden conditions: N/A % \$ \_\_\_\_\_
  - c. Owner generated changes: N/A % \$ \_\_\_\_\_
  - d. Regulatory agency changes: N/A % \$ \_\_\_\_\_
  - e. Contractor recommended changes: N/A % \$ \_\_\_\_\_
  - f. Other: N/A % \$ \_\_\_\_\_

Explain other: \_\_\_\_\_

15. How many RFIs did your company submit with respect to the plans and specifications for the project? 0
16. What was the primary reasons for the RFIs: N/A
- 
17. What year did the project start construction? 2014
18. What year did the project complete construction? 2015
19. Project Timeframe for completion (number of calendar days):
- a. 270 Contract timeframe at time of bid/proposal date for Substantial Completion
  - b. N/A Contract timeframe at time of bid/proposal date for Final Completion (if different from Substantial Completion)
  - c. N/A Formally adjusted contract timeframe based on change orders (if none state N/A)
  - d. N/A Timeframe not covered under approved change orders (if none state N/A)
  - e. 270 Actual time between issuance of Notice to Proceed and date of Substantial Completion
  - f. \_\_\_\_\_ Actual time between date of Substantial Completion and Final Completion
  - g. 270 Total number of days between original contract timeframe and Substantial Completion
  - h. N/A Total number of days between original contract timeframe and Final Completion (if different from Substantial Completion)
20. If completion did not occur within the contract time established at bid/proposal date or within the formally adjusted contract time (as identified in item 17c above, explain the reason(s) for the delay:
- 
- 
- 
21. Total number of tasks on the punch list? 25
22. If punch list items were not completed/performed explain the reason(s):
- 
- 
23. Were liquidated damages or actual damages for delay assessed on this project?  
 Yes \_\_\_\_\_ No X If yes, state the amount: \$ \_\_\_\_\_
24. Name of the Project Manager: Julia Allman
25. Name of the Construction Superintendent: Matthew Scheier
26. Total amount of the work self-performed: 14 % \$ 58,620
- a. If yes, specify the trade, percentage, and value (add additional pages if necessary)
- Project management, audit, 14 % \$ 58,260  
 materials procurement, etc.



_____	_____ %	\$ _____
_____	_____ %	\$ _____
_____	_____ %	\$ _____

27. Were subcontractors used on the project? \_\_\_\_\_ yes   X   no - Tanko subbed to the

- a. If yes, specify the trade, percentage, and value (add additional pages if prime necessary)

_____	_____ %	\$ _____
_____	_____ %	\$ _____
_____	_____ %	\$ _____

28. Were any Claims\* or Dispute filed on the project \_\_\_\_\_ yes   X   no

\*A Claim means a demand or assertion by your firm seeking as matter of right, adjustment or interpretation of contract terms, compensation, extension of time or other relief with respect to the terms of the contract or other disputes between the owner and your firm.

29. If a Claim(s) was filed on the project, provide the following details for each Claim\*:

- a. Dollar amount for Initial

Claim: \_\_\_\_\_

- b. Source of Claim: (e.g. contractor, subcontractor, supplier, etc.)

\_\_\_\_\_

- c. Method of resolution (e.g. negotiation, mediation, arbitration, litigation): \_\_\_\_\_

- d. Final amount of Claim settlement:

\_\_\_\_\_

30. If a formal Dispute(s) was filed on the project, provide the following details for each Dispute. Identify the reason for the Dispute and the resolution (use additional pages if necessary):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. Did your company fail/refuse to perform or complete any of work it was obligated to complete?

\_\_\_\_\_ yes   X   no

If yes, explain what work was not performed/ completed and reasons why:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

32. Was your company required to perform any work under a directive to proceed pending the resolution of an interpretation of the contract or dispute?

\_\_\_\_\_ yes                        X   no

33. Identify up to four (4) constructability issues encountered by your company on the project and briefly describe how your company resolve each issue:

  N/A  

34. Did your company perform any value engineering or other cost savings measures, which improved the quality of the project or saved cost? If yes, provide details and any cost savings.

Yes. As a result of Tanko Lighting's innovative design, - the Town saved an additional 10% in energy savings.

Project Owner's Name:   Town of Winchester  

Is the Project Owner a public entity?      X   yes                      \_\_\_\_\_ no

Contact Name for Project Owner:   Susan McPhee  

Contact Name's Title:   Energy Conservation Corodinator  

Project Owner's Address:   71 Mt. Vernon Street  

Project Owner's City, State, and Zip Code:   Winchester, MA 01890  

Contact Name's Telephone Number:   781-507-5880  

Contact Name's Email Address:   sgmcphee@me.com  

Architect/Engineer of Record:   N/A  

Architect/Engineer of Record Contact Name: \_\_\_\_\_

Architect/Engineer of Record Contact Name's Telephone No.: \_\_\_\_\_

Architect/Engineer of Record Contact Name Email Address: \_\_\_\_\_

**PROJECT DATA FORM**

(A separate data form is to be used for each qualifying project)

1. Project Name: City of Santa Clara LED Streetlight Conversion Project
  2. Project Location: City of Santa Clara, CA
  3. Project Title: City of Santa Clara LED Streetlight Conversion Project
  4. Project Number, if applicable: \_\_\_\_\_
  5. Type of Construction: LED Streetlight Retrofit  
(i.e.: New, Renovation, Addition, Repair, Sidewalk/Curb/Gutter, Roadway reconstruction, Roadway resurfacing, Drainage, etc. Use all that apply.)
  6. Size: (i.e.: Quantity of luminaires installed, etc.): 5,000 fixtures
  7. Scope of Work: \_\_\_\_\_  
Tanko Lighting provided Silicon Valley Power (City of Santa Clara) with turn-key support to implement its comprehensive street light conversion project of approximately 5,000 fixtures. Tanko Lighting provided project management support, GIS auditing, design, commissioning, product procurement, installation, data reconciliation, and administrative services.
  8. How many bid submissions did the owner receive for the project? 3-5
  9. Business name that constructed & managed this project: Tanko Streetlighting, Inc.
  10. How is this project similar to the Town's project? \_\_\_\_\_  
Same scope as what Tanko Lighting is proposing for this project, including LED conversions of both cobra head fixtures.
  11. Cost of the project at time of bid: \$ \$1.7 million
  12. Cost of work at completion: \$ 1.521 million
  13. LEED Certification
    - a. Was this a LEED Certified Project: Yes \_\_\_\_\_ No X
    - b. Minimum LEED Certification required: \_\_\_\_\_
    - c. LEED Certification obtained: \_\_\_\_\_
  14. Describe the sources and/or causes of the above differences in costs with reference to the following categories as determined by written change order, the public entity or the Architect/Engineer of Record (whichever had final authority):
    - a. Errors or omissions: \_\_\_\_\_ % \$ \_\_\_\_\_
    - b. Unforeseen/Hidden conditions: 11 % \$ 179,000
    - c. Owner generated changes: \_\_\_\_\_ % \$ \_\_\_\_\_
    - d. Regulatory agency changes: \_\_\_\_\_ % \$ \_\_\_\_\_
    - e. Contractor recommended changes: \_\_\_\_\_ % \$ \_\_\_\_\_
    - f. Other: \_\_\_\_\_ % \$ \_\_\_\_\_
- Explain other: \_\_\_\_\_
- \_\_\_\_\_

15. How many RFIs did your company submit with respect to the plans and specifications for the project? 0

16. What was the primary reasons for the RFIs: N/A

17. What year did the project start construction? 2015

18. What year did the project complete construction? 2015

19. Project Timeframe for completion (number of calendar days):

- a. 335 Contract timeframe at time of bid/proposal date for Substantial Completion
- b. 365 Contract timeframe at time of bid/proposal date for Final Completion (if different from Substantial Completion)
- c. 550 Formally adjusted contract timeframe based on change orders (if none state N/A)
- d. N/A Timeframe not covered under approved change orders (if none state N/A)
- e. 335 Actual time between issuance of Notice to Proceed and date of Substantial Completion
- f. 216 Actual time between date of Substantial Completion and Final Completion
- g. 335 Total number of days between original contract timeframe and Substantial Completion
- h. 550 Total number of days between original contract timeframe and Final Completion (if different from Substantial Completion)

20. If completion did not occur within the contract time established at bid/proposal date or within the formally adjusted contract time (as identified in item 17c above, explain the reason(s) for the delay:

The City opted to change the design mid-project, and took longer than anticipated to perform final inspections after Substantial Completion.

21. Total number of tasks on the punch list? 250

22. If punch list items were not completed/performed explain the reason(s):

N/A

23. Were liquidated damages or actual damages for delay assessed on this project?

Yes \_\_\_\_\_ No X If yes, state the amount: \$ \_\_\_\_\_

24. Name of the Project Manager: David Gruener

25. Name of the Construction Superintendent: Wilson Lew

26. Total amount of the work self-performed: 79 % \$ 1.2 million

- a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

Project management, audit, 79 % \$ 1.2 million  
materials procurement, etc.

_____	_____ %	\$ _____
_____	_____ %	\$ _____
_____	_____ %	\$ _____

27. Were subcontractors used on the project?   X   yes        no

a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

<u>Electrical contractors</u>	<u>  11  </u> %	\$ <u>\$325,000</u>
_____	_____ %	\$ _____
_____	_____ %	\$ _____

28. Were any Claims\* or Dispute filed on the project        yes   X   no

\*A Claim means a demand or assertion by your firm seeking as matter of right, adjustment or interpretation of contract terms, compensation, extension of time or other relief with respect to the terms of the contract or other disputes between the owner and your firm.

29. If a Claim(s) was filed on the project, provide the following details for each Claim\*:

a. Dollar amount for Initial

Claim: \_\_\_\_\_

b. Source of Claim: (e.g. contractor, subcontractor, supplier, etc.)

\_\_\_\_\_

c. Method of resolution (e.g. negotiation, mediation, arbitration, litigation): \_\_\_\_\_

d. Final amount of Claim settlement:

\_\_\_\_\_

30. If a formal Dispute(s) was filed on the project, provide the following details for each Dispute. Identify the reason for the Dispute and the resolution (use additional pages if necessary):

  N/A  

\_\_\_\_\_

\_\_\_\_\_

31. Did your company fail/refuse to perform or complete any of work it was obligated to complete?

       yes   X   no

If yes, explain what work was not performed/ completed and reasons why:

  N/A  

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

32. Was your company required to perform any work under a directive to proceed pending the resolution of an interpretation of the contract or dispute?

\_\_\_\_\_ yes                        X   no

33. Identify up to four (4) constructability issues encountered by your company on the project and briefly describe how your company resolve each issue:

\_\_\_\_\_ The installation subcontractor neglected to fully fasten one of four bolts in some installation locations. This resulted in fixture tilting issues. Once the issue was identified, the installation subcontractor was dispatched to remedy the issue in a timely manner, resulting in zero long-term contract issues with the client.

34. Did your company perform any value engineering or other cost savings measures, which improved the quality of the project or saved cost? If yes, provide details and any cost savings.

\_\_\_\_\_ Yes. As a result of Tanko Lighting's innovative design, - the Town saved an additional 11% in energy savings.

Project Owner's Name: City of Santa Clara, CA

Is the Project Owner a public entity?   X   yes                      \_\_\_\_\_ no

Contact Name for Project Owner: Mary Medeiros McEnroe

Contact Name's Title: Public Benefit Program Manager

Project Owner's Address: 1500 Warburton Avenue

Project Owner's City, State, and Zip Code: Santa Clara, CA 95050

Contact Name's Telephone Number: 408.615.6646

Contact Name's Email Address: mmedeiros@santaclaraca.gov

Architect/Engineer of Record: N/A

Architect/Engineer of Record Contact Name: N/A

Architect/Engineer of Record Contact Name's Telephone No.: N/A

Architect/Engineer of Record Contact Name Email Address: N/A

## Appendix B – Product Technical Information



GE  
Lighting

# Evolve™ LED Roadway Lighting

LED Roadway Luminaire (ERL1-ERLH-ERS1-ERS2)



imagination at work

## Product Features

The Evolve™ LED Roadway Luminaire is optimized for customers requiring a LED solution for local, collector and major roadways. GE's unique reflective optics are designed to optimize application efficiency and minimize glare. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life. This reliable unit has a 100,000 hour design life, significantly reducing maintenance needs and expense over the life of the fixture. This efficient solution lowers energy consumption compared to traditional HID fixture for additional operating cost savings.

### Applications

- Designed to meet recommended luminance and illuminance requirements for local, collector and major roadway/street classifications.

### Housing

- The modern design incorporates Casting-integral heatsink for maximum heat transfer.
- Meets 3G vibration per ANSI C136.31-2010.
- Die Cast Enclosure.

### LED & Optical Assembly

- Evolve™ light engine consisting of reflective technology designed to optimize application efficiency and minimize glare.
- Utilizes high brightness LEDs, 70 CRI at 3000K and 4000K typical.
- LM-79 tests and reports in accordance with IESNA standards.

### Lumen Maintenance

- Lumen Maintenance per TM21.

### Ratings

- UL/cUL listed, suitable for wet locations per UL 1598.
- Std. Optical enclosure rated per ANSI C136.25-2009: ERL1 = IP65, ERS1-2 = IP66, ERLH = IP65.
- Upward Light Output Ratio (ULOR) = 0.
- Compliant with the material restriction requirements of RoHS.

Product ID	Lumen Output	Ambient Rating
ERL1	02-09	-40°C to 50°C
ERLH	10-11	-40°C to 50°C
ERLH	13-15	-40°C to 40°C
ERS1	10-15	-40°C to 50°C
ERS2	16-23	-40°C to 50°C
ERS2	25-28	-40°C to 40°C

Delayed start may be experienced <-35°C.

### Mounting

- Slipfitter with +/- 5 degree of adjustment for leveling.
- Integral die cast mounting pipe stop.
- Adjustable for 1.25 in. or 2 in. mounting pipe.

### Finish

- Corrosion resistant polyester powder paint, minimum 2.0 mil. thickness.
- Standard colors: Black, Gray and Dark Bronze.
- RAL & custom colors available.
- Optional coastal finish available.

### Electrical

- 120-277 VAC and 347-480 VAC.
- System power factor is >90% and THD <20%.\*
- Class "A" Sound rating.
- 0-10V dimming standard or DALI dimming available upon request for 120V-277V.
- Surge Protection per ANSI C136.2-2015:
  - Standard: 6kV/3kA "Basic: (120 Strikes)"
  - Optional Secondary: 10kV/5kA "Enhanced: (40 Strikes)"
- EMI: Title 47 CFR Part 15 Class A
- Photo electric sensors (PE) available.

\* System power factor and THD is tested and specified at 120V input and maximum load conditions. THD<26% for 347/480V supply with 03 power level.

### Warranty

- 5 Year Standard
- 10 Year Optional

### Suggested HID Replacement Lumen Levels

- ~4,000–5,000 lumens to replace 100W HPS Cobra-head
- ~7,000–8,800 lumens to replace 150W HPS Cobra-head
- ~8,500–11,500 lumens to replace 200W HPS Cobra-head
- ~11,500–14,000 lumens to replace 250W HPS Cobra-head
- ~21,000–28,000 lumens to replace 400W HPS Cobra-head

**Note:** Actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.

# Ordering Number Logic

## Evolve™ LED Streetlight (ERL1)



ERL1

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION	CCT	CONTROLS	COLOR	OPTIONS
<b>E</b> = Evolve <b>R</b> = Roadway <b>L</b> = Local <b>1</b> = Single Module	<b>0</b> = 120-277* <b>1</b> = 120 <b>2</b> = 208 <b>3</b> = 240 <b>4</b> = 277 <b>5</b> = 480 <b>D</b> = 347 <b>H</b> = 347-480*  * Not available with Fusing. Must choose a descreeet voltage with F option.	<b>03</b> <b>04</b> <b>05</b> <b>06</b> <b>07</b> <b>08</b> <b>09</b>  See Data Table for more information.	<b>A1</b> = Extra Narrow Asymmetric <b>B1</b> = Narrow Asymmetric (Medium) <b>C1</b> = Asymmetric (Short) <b>D1</b> = Asymmetric Forward <b>E1</b> = Asymmetric (Medium) <b>F1</b> = Asymmetric (Wide) <b>G1</b> = Asymmetric (Extra Wide)  See Data Table for more information	<b>30</b> = 3000K <b>40</b> = 4000K	<b>A</b> = ANSI C136.41 7-pin <b>D</b> = ANSI C136.41 7-pin receptacle with Shorting Cap  <b>E</b> = ANSI C136.41 7-pin Receptacle with non-Dimming PE Control.*  * PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete.  <b>NOTE:</b> Dimming controls wired for 0-10V standard unless DALI option "U" requested.	<b>GRAY</b> = Gray <b>BLCK</b> = Black <b>DKBZ</b> = Dark Bronze	<b>A</b> = 4 Bolt Slipfitter† <b>F</b> = Fusing <b>G</b> = Internal Bubble Level <b>I</b> = IP66 Optical <b>L</b> = Tool-Less Entry <b>R</b> = Optional Secondary Enhanced Surge Protection (10kV/5kA) <b>U</b> = Universal DALI Programmable +^ <b>X</b> = Single Package # <b>Y</b> = Coastal Finish * <b>XXX</b> = Special Options  † Contact manufacturer for Lead-Time. # Std Packaging = 20 units per container. * Recommended for installations within 1 mile from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ^ Not available in 347V, 480V or 347-480V for Lumen Level 07 and 08.

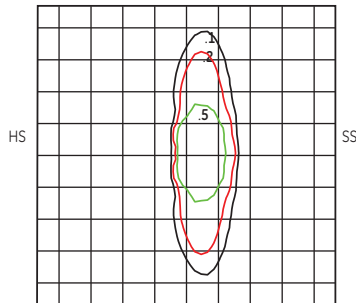
PRODUCT ID	LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS		TYPICAL SYSTEM WATTAGE		BUG RATING		IES FILE NUMBER 4000K		IES FILE NUMBER 3000K	
			4000K	3000K	120-277V	347-480V	4000K	3000K	120-277V	347-480V	120-277V	347-480V
ERL1	03	A1	2800	2700	25	28	B1-U0-G1	B1-U0-G1	ERL1_03A140_-120-277VIES	ERL1_03A140_-347-480VIES	ERL1_03A130_-120-277VIES	ERL1_03A130_-347-480VIES
ERL1		B1	2900	2800			B1-U0-G1	B1-U0-G1	ERL1_03B140_-120-277VIES	ERL1_03B140_-347-480VIES	ERL1_03B130_-120-277VIES	ERL1_03B130_-347-480VIES
ERL1		C1	3000	2900			B1-U0-G1	B1-U0-G1	ERL1_03C140_-120-277VIES	ERL1_03C140_-347-480VIES	ERL1_03C130_-120-277VIES	ERL1_03C130_-347-480VIES
ERL1		D1	2900	2800			B1-U0-G1	B1-U0-G1	ERL1_03D140_-120-277VIES	ERL1_03D140_-347-480VIES	ERL1_03D130_-120-277VIES	ERL1_03D130_-347-480VIES
ERL1		E1	3000	2900			B1-U0-G1	B1-U0-G1	ERL1_03E140_-120-277VIES	ERL1_03E140_-347-480VIES	ERL1_03E130_-120-277VIES	ERL1_03E130_-347-480VIES
ERL1		F1	3000	2900			B1-U0-G1	B1-U0-G1	ERL1_03F140_-120-277VIES	ERL1_03F140_-347-480VIES	ERL1_03F130_-120-277VIES	ERL1_03F130_-347-480VIES
ERL1	04	G1	3000	2900	32	35	B1-U0-G1	B1-U0-G1	ERL1_03G140_-120-277VIES	ERL1_03G140_-347-480VIES	ERL1_03G130_-120-277VIES	ERL1_03G130_-347-480VIES
ERL1		A1	3800	3700			B1-U0-G1	B1-U0-G1	ERL1_04A140_-120-277VIES	ERL1_04A140_-347-480VIES	ERL1_04A130_-120-277VIES	ERL1_04A130_-347-480VIES
ERL1		B1	3900	3800			B1-U0-G1	B1-U0-G1	ERL1_04B140_-120-277VIES	ERL1_04B140_-347-480VIES	ERL1_04B130_-120-277VIES	ERL1_04B130_-347-480VIES
ERL1		C1	4000	3900			B1-U0-G1	B1-U0-G1	ERL1_04C140_-120-277VIES	ERL1_04C140_-347-480VIES	ERL1_04C130_-120-277VIES	ERL1_04C130_-347-480VIES
ERL1		D1	3900	3800			B1-U0-G1	B1-U0-G1	ERL1_04D140_-120-277VIES	ERL1_04D140_-347-480VIES	ERL1_04D130_-120-277VIES	ERL1_04D130_-347-480VIES
ERL1		E1	4000	3900			B1-U0-G1	B1-U0-G1	ERL1_04E140_-120-277VIES	ERL1_04E140_-347-480VIES	ERL1_04E130_-120-277VIES	ERL1_04E130_-347-480VIES
ERL1	05	F1	4000	3900	41	45	B1-U0-G1	B1-U0-G1	ERL1_04F140_-120-277VIES	ERL1_04F140_-347-480VIES	ERL1_04F130_-120-277VIES	ERL1_04F130_-347-480VIES
ERL1		G1	4000	3900			B1-U0-G1	B1-U0-G1	ERL1_04G140_-120-277VIES	ERL1_04G140_-347-480VIES	ERL1_04G130_-120-277VIES	ERL1_04G130_-347-480VIES
ERL1		A1	4800	4600			B2-U0-G1	B2-U0-G1	ERL1_05A140_-120-277VIES	ERL1_05A140_-347-480VIES	ERL1_05A130_-120-277VIES	ERL1_05A130_-347-480VIES
ERL1		B1	4800	4600			B2-U0-G1	B2-U0-G1	ERL1_05B140_-120-277VIES	ERL1_05B140_-347-480VIES	ERL1_05B130_-120-277VIES	ERL1_05B130_-347-480VIES
ERL1		C1	5000	4800			B2-U0-G1	B2-U0-G1	ERL1_05C140_-120-277VIES	ERL1_05C140_-347-480VIES	ERL1_05C130_-120-277VIES	ERL1_05C130_-347-480VIES
ERL1		D1	4800	4600			B1-U0-G1	B1-U0-G1	ERL1_05D140_-120-277VIES	ERL1_05D140_-347-480VIES	ERL1_05D130_-120-277VIES	ERL1_05D130_-347-480VIES
ERL1	06	E1	5000	4800	53	58	B2-U0-G1	B2-U0-G1	ERL1_05E140_-120-277VIES	ERL1_05E140_-347-480VIES	ERL1_05E130_-120-277VIES	ERL1_05E130_-347-480VIES
ERL1		F1	5000	4800			B2-U0-G1	B2-U0-G1	ERL1_05F140_-120-277VIES	ERL1_05F140_-347-480VIES	ERL1_05F130_-120-277VIES	ERL1_05F130_-347-480VIES
ERL1		G1	5000	4800			B2-U0-G1	B2-U0-G1	ERL1_05G140_-120-277VIES	ERL1_05G140_-347-480VIES	ERL1_05G130_-120-277VIES	ERL1_05G130_-347-480VIES
ERL1		A1	5700	5500			B2-U0-G1	B2-U0-G1	ERL1_06A140_-120-277VIES	ERL1_06A140_-347-480VIES	ERL1_06A130_-120-277VIES	ERL1_06A130_-347-480VIES
ERL1		B1	5800	5600			B2-U0-G1	B2-U0-G1	ERL1_06B140_-120-277VIES	ERL1_06B140_-347-480VIES	ERL1_06B130_-120-277VIES	ERL1_06B130_-347-480VIES
ERL1		C1	6000	5800			B2-U0-G1	B2-U0-G1	ERL1_06C140_-120-277VIES	ERL1_06C140_-347-480VIES	ERL1_06C130_-120-277VIES	ERL1_06C130_-347-480VIES
ERL1	07	D1	5800	5600	67	72	B1-U0-G1	B1-U0-G1	ERL1_06D140_-120-277VIES	ERL1_06D140_-347-480VIES	ERL1_06D130_-120-277VIES	ERL1_06D130_-347-480VIES
ERL1		E1	6000	5800			B2-U0-G1	B2-U0-G1	ERL1_06E140_-120-277VIES	ERL1_06E140_-347-480VIES	ERL1_06E130_-120-277VIES	ERL1_06E130_-347-480VIES
ERL1		F1	6000	5800			B2-U0-G1	B2-U0-G1	ERL1_06F140_-120-277VIES	ERL1_06F140_-347-480VIES	ERL1_06F130_-120-277VIES	ERL1_06F130_-347-480VIES
ERL1		G1	6000	5800			B2-U0-G1	B2-U0-G1	ERL1_06G140_-120-277VIES	ERL1_06G140_-347-480VIES	ERL1_06G130_-120-277VIES	ERL1_06G130_-347-480VIES
ERL1		A1	6700	6500			B2-U0-G2	B2-U0-G2	ERL1_07A140_-120-277VIES	ERL1_07A140_-347-480VIES	ERL1_07A130_-120-277VIES	ERL1_07A130_-347-480VIES
ERL1		B1	6800	6600			B2-U0-G1	B2-U0-G1	ERL1_07B140_-120-277VIES	ERL1_07B140_-347-480VIES	ERL1_07B130_-120-277VIES	ERL1_07B130_-347-480VIES
ERL1	08	C1	7000	6800	88	93	B2-U0-G1	B2-U0-G1	ERL1_07C140_-120-277VIES	ERL1_07C140_-347-480VIES	ERL1_07C130_-120-277VIES	ERL1_07C130_-347-480VIES
ERL1		D1	6800	6600			B2-U0-G1	B2-U0-G1	ERL1_07D140_-120-277VIES	ERL1_07D140_-347-480VIES	ERL1_07D130_-120-277VIES	ERL1_07D130_-347-480VIES
ERL1		E1	7000	6800			B2-U0-G1	B2-U0-G1	ERL1_07E140_-120-277VIES	ERL1_07E140_-347-480VIES	ERL1_07E130_-120-277VIES	ERL1_07E130_-347-480VIES
ERL1		F1	7000	6800			B2-U0-G2	B2-U0-G2	ERL1_07F140_-120-277VIES	ERL1_07F140_-347-480VIES	ERL1_07F130_-120-277VIES	ERL1_07F130_-347-480VIES
ERL1		G1	7000	6800			B2-U0-G2	B2-U0-G2	ERL1_07G140_-120-277VIES	ERL1_07G140_-347-480VIES	ERL1_07G130_-120-277VIES	ERL1_07G130_-347-480VIES
ERL1		A1	8200	8000			B2-U0-G2	B2-U0-G2	ERL1_08A140_-120-277VIES	ERL1_08A140_-347-480VIES	ERL1_08A130_-120-277VIES	ERL1_08A130_-347-480VIES
ERL1	09	B1	8300	8100	90	95	B2-U0-G1	B2-U0-G1	ERL1_08B140_-120-277VIES	ERL1_08B140_-347-480VIES	ERL1_08B130_-120-277VIES	ERL1_08B130_-347-480VIES
ERL1		C1	8500	8200			B2-U0-G1	B2-U0-G1	ERL1_08C140_-120-277VIES	ERL1_08C140_-347-480VIES	ERL1_08C130_-120-277VIES	ERL1_08C130_-347-480VIES
ERL1		D1	8300	8100			B2-U0-G1	B2-U0-G1	ERL1_08D140_-120-277VIES	ERL1_08D140_-347-480VIES	ERL1_08D130_-120-277VIES	ERL1_08D130_-347-480VIES
ERL1		E1	8500	8200			B2-U0-G1	B2-U0-G1	ERL1_08E140_-120-277VIES	ERL1_08E140_-347-480VIES	ERL1_08E130_-120-277VIES	ERL1_08E130_-347-480VIES
ERL1		F1	8500	8200			B2-U0-G2	B2-U0-G2	ERL1_08F140_-120-277VIES	ERL1_08F140_-347-480VIES	ERL1_08F130_-120-277VIES	ERL1_08F130_-347-480VIES
ERL1		G1	8500	8200			B2-U0-G2	B2-U0-G2	ERL1_08G140_-120-277VIES	ERL1_08G140_-347-480VIES	ERL1_08G130_-120-277VIES	ERL1_08G130_-347-480VIES
ERL1	10	A1	8400	8100	90	95	B2-U0-G2	B2-U0-G2	ERL1_09A140_-120-277VIES	ERL1_09A140_-347-480VIES	ERL1_09A130_-120-277VIES	ERL1_09A130_-347-480VIES
ERL1		B1	8500	8200			B2-U0-G1	B2-U0-G1	ERL1_09B140_-120-277VIES	ERL1_09B140_-347-480VIES	ERL1_09B130_-120-277VIES	ERL1_09B130_-347-480VIES
ERL1		C1	8800	8400			B2-U0-G1	B2-U0-G1	ERL1_09C140_-120-277VIES	ERL1_09C140_-347-480VIES	ERL1_09C130_-120-277VIES	ERL1_09C130_-347-480VIES
ERL1		D1	8500	8200			B2-U0-G2	B2-U0-G2	ERL1_09D140_-120-277VIES	ERL1_09D140_-347-480VIES	ERL1_09D130_-120-277VIES	ERL1_09D130_-347-480VIES
ERL1		E1	8800	8400			B2-U0-G1	B2-U0-G1	ERL1_09E140_-120-277VIES	ERL1_09E140_-347-480VIES	ERL1_09E130_-120-277VIES	ERL1_09E130_-347-480VIES
ERL1		F1	8800	8400			B2-U0-G2	B2-U0-G2	ERL1_09F140_-120-277VIES	ERL1_09F140_-347-480VIES	ERL1_09F130_-120-277VIES	ERL1_09F130_-347-480VIES
ERL1		G1	8800	8400			B2-U0-G2	B2-U0-G2	ERL1_09G140_-120-277VIES	ERL1_09G140_-347-480VIES	ERL1_09G130_-120-277VIES	ERL1_09G130_-347-480VIES

# Photometrics

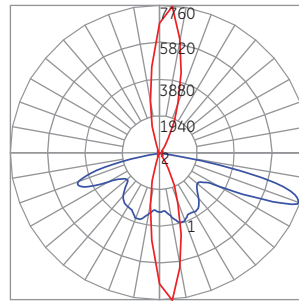
## Evolve™ LED Streetlight (ERL1)

### ERL1 Extra Narrow Asymmetric (08A1)

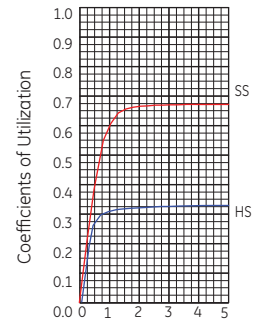
8,200 Lumens  
4000K  
ERL1\_08A140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



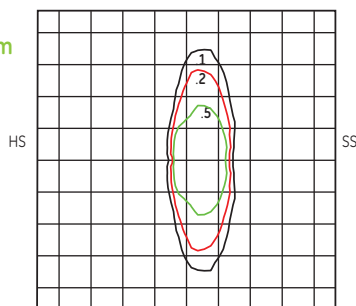
— Vertical plane through horizontal angle  
of maximum candlepower at 85°  
— Vertical plane through horizontal angle of 70°



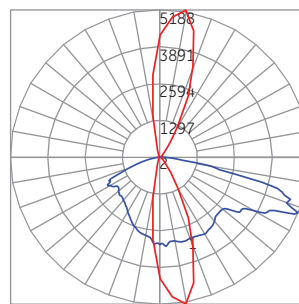
Street Width/Mounting Height

### ERL1 Narrow Asymmetric Medium (08B1)

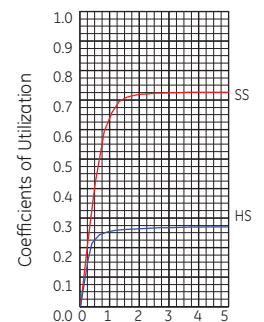
8,300 Lumens  
4000K  
ERL1\_08B140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



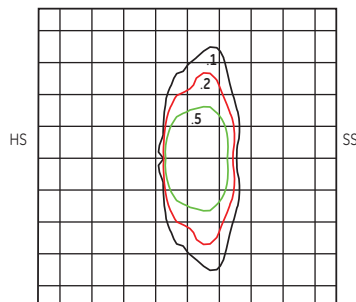
— Vertical plane through horizontal angle  
of maximum candlepower at 80°  
— Vertical plane through horizontal angle of 68°



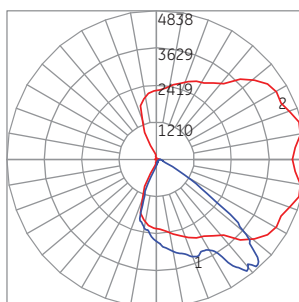
Street Width/Mounting Height

### ERL1 Asymmetric Short (08C1)

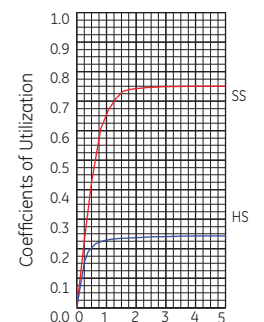
8,500 Lumens  
4000K  
ERL1\_08C140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



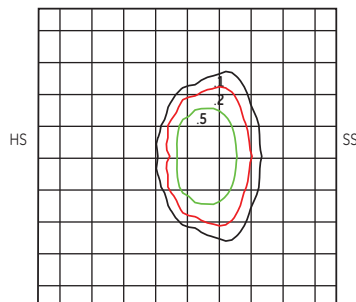
— Vertical plane through horizontal angle  
of maximum candlepower at 15°  
— Vertical plane through horizontal angle of 42°



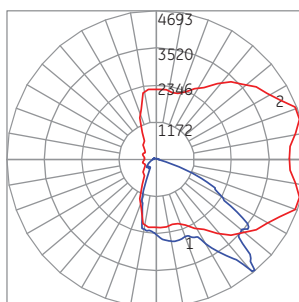
Street Width/Mounting Height

### ERL1 Asymmetric Forward (08D1)

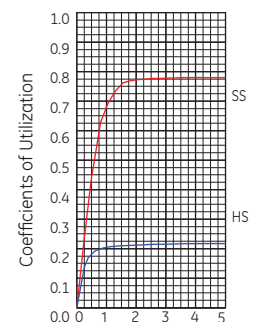
8,300 Lumens  
4000K  
ERL1\_08D140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



— Vertical plane through horizontal angle  
of maximum candlepower at 15°  
— Vertical plane through horizontal angle of 42°



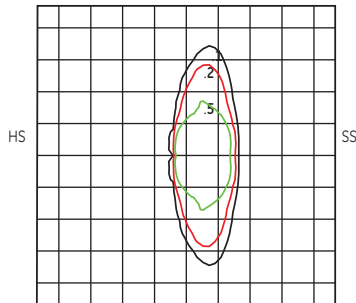
Street Width/Mounting Height

# Photometrics

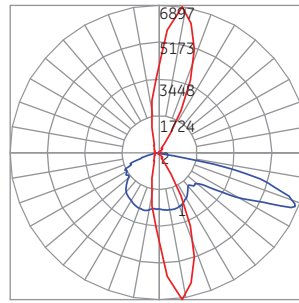
## Evolve™ LED Streetlight (ERL1)

### ERL1 Asymmetric Medium (08E1)

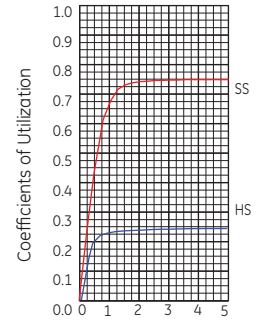
8,500 Lumens  
4000K  
ERL1\_08E140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



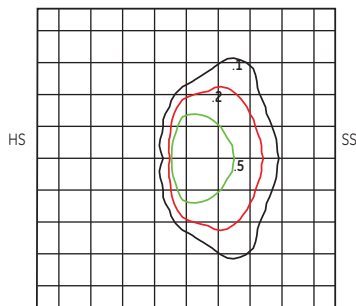
— Vertical plane through horizontal angle  
of maximum candlepower at 80°  
— Vertical plane through horizontal angle of 69°



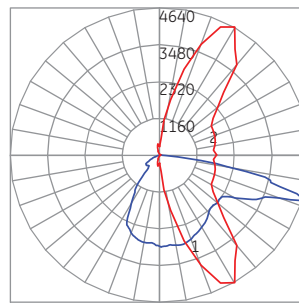
Street Width/Mounting Height

### ERL1 Asymmetric Wide (08F1)

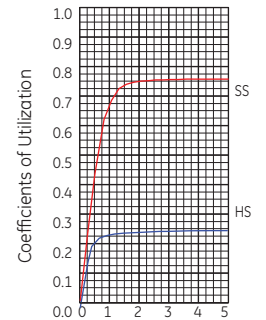
8,500 Lumens  
4000K  
ERL1\_08F140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



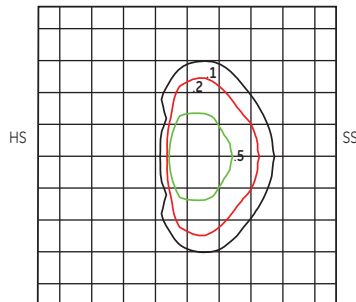
— Vertical plane through horizontal angle  
of maximum candlepower at 60°  
— Vertical plane through horizontal angle of 73°



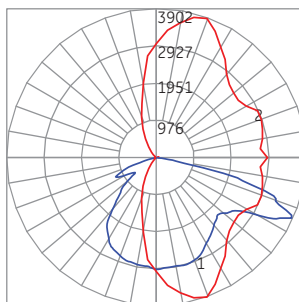
Street Width/Mounting Height

### ERL1 Asymmetric Extra Wide (08G1)

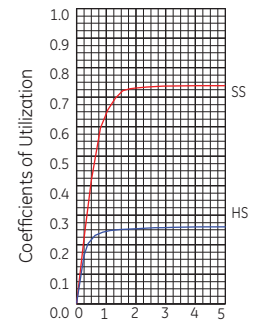
8,500 Lumens  
4000K  
ERL1\_08G140\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



— Vertical plane through horizontal angle  
of maximum candlepower at 70°  
— Vertical plane through horizontal angle of 66°



Street Width/Mounting Height

# Ordering Number Logic

## Evolve™ LED Streetlight (ERLH)



ERLH

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION	CCT	CONTROLS	COLOR	OPTIONS
<b>E</b> = Evolve <b>R</b> = Roadway <b>L</b> = Local <b>H</b> = High Output	<b>0</b> = 120-277* <b>1</b> = 120 <b>2</b> = 208 <b>3</b> = 240 <b>4</b> = 277 <b>5</b> = 480 <b>D</b> = 347 <b>H</b> = 347-480* * Not available with Fusing. Must choose a discreet voltage with F option.	<b>10</b> <b>11</b> <b>13</b> <b>14</b> <b>15</b> See Data Table for more information.	<b>A1</b> = Extra Narrow Asymmetric <b>B1</b> = Narrow Asymmetric (Medium) <b>C1</b> = Asymmetric (Short) <b>D1</b> = Asymmetric Forward <b>E1</b> = Asymmetric (Medium) <b>F1</b> = Asymmetric (Wide) <b>G1</b> = Asymmetric (Extra Wide) See Data Table for more information	<b>30</b> = 3000K <b>40</b> = 4000K	<b>A</b> = ANSI C136.41 7-pin <b>D</b> = ANSI C136.41 7-pin receptacle with Shorting Cap <b>E</b> = ANSI C136.41 7-pin Receptacle with non-Dimming PE Control.* * PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. <b>NOTE:</b> Dimming controls wired for 0-10V standard unless DALI option "U" requested.	<b>GRAY</b> = Gray <b>BLCK</b> = Black <b>DKBZ</b> = Dark Bronze	<b>A</b> = 4 Bolt Slipfitter † <b>F</b> = Fusing <b>G</b> = Internal Bubble Level <b>I</b> = IP66 Optical <b>L</b> = Tool-Less Entry <b>R</b> = Optional Secondary Enhanced Surge Protection (10kV/5kA) <b>U</b> = Universal DALI Programmable + ^ <b>X</b> = Single Package # <b>Y</b> = Coastal Finish * <b>XXX</b> = Special Options



PRODUCT ID	LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS		TYPICAL SYSTEM WATTAGE	BUG RATING		IES FILE NUMBER	
			4000K	3000K		4000K	3000K	4000K	3000K
ERLH	10	A1	9500	9100	90	B3-U0-G2	B3-U0-G2	ERLH_10A140_IES	ERLH_10A130_IES
ERLH		B1	9800	9500		B3-U0-G1	B2-U0-G1	ERLH_10B140_IES	ERLH_10B130_IES
ERLH		C1	10000	9600		B2-U0-G1	B2-U0-G1	ERLH_10C140_IES	ERLH_10C130_IES
ERLH		D1	9800	9500		B2-U0-G2	B2-U0-G2	ERLH_10D140_IES	ERLH_10D130_IES
ERLH		E1	10000	9600		B2-U0-G2	B2-U0-G2	ERLH_10E140_IES	ERLH_10E130_IES
ERLH		F1	10000	9600		B2-U0-G2	B2-U0-G2	ERLH_10F140_IES	ERLH_10F130_IES
ERLH		G1	10000	9600		B2-U0-G2	B2-U0-G2	ERLH_10G140_IES	ERLH_10G130_IES
ERLH	11	A1	10900	10500	108	B3-U0-G2	B3-U0-G2	ERLH_11A140_IES	ERLH_11A130_IES
ERLH		B1	11200	10800		B3-U0-G2	B3-U0-G1	ERLH_11B140_IES	ERLH_11B130_IES
ERLH		C1	11500	11100		B3-U0-G2	B3-U0-G2	ERLH_11C140_IES	ERLH_11C130_IES
ERLH		D1	11200	10800		B2-U0-G2	B2-U0-G2	ERLH_11D140_IES	ERLH_11D130_IES
ERLH		E1	11500	11100		B3-U0-G2	B3-U0-G2	ERLH_11E140_IES	ERLH_11E130_IES
ERLH		F1	11500	11100		B3-U0-G2	B3-U0-G2	ERLH_11F140_IES	ERLH_11F130_IES
ERLH		G1	11500	11100		B3-U0-G2	B3-U0-G2	ERLH_11G140_IES	ERLH_11G130_IES
ERLH	13	A1	12300	11900	125	B3-U0-G2	B3-U0-G2	ERLH_13A140_IES	ERLH_13A130_IES
ERLH		B1	12700	12200		B3-U0-G2	B3-U0-G2	ERLH_13B140_IES	ERLH_13B130_IES
ERLH		C1	13000	12500		B3-U0-G2	B3-U0-G2	ERLH_13C140_IES	ERLH_13C130_IES
ERLH		D1	12700	12200		B3-U0-G2	B2-U0-G2	ERLH_13D140_IES	ERLH_13D130_IES
ERLH		E1	13000	12500		B3-U0-G2	B3-U0-G2	ERLH_13E140_IES	ERLH_13E130_IES
ERLH		F1	13000	12500		B3-U0-G2	B3-U0-G2	ERLH_13F140_IES	ERLH_13F130_IES
ERLH		G1	13000	12500		B3-U0-G2	B3-U0-G2	ERLH_13G140_IES	ERLH_13G130_IES
ERLH	14	A1	13300	12800	139	B3-U0-G3	B3-U0-G3	ERLH_14A140_IES	ERLH_14A130_IES
ERLH		B1	13700	13200		B3-U0-G2	B3-U0-G2	ERLH_14B140_IES	ERLH_14B130_IES
ERLH		C1	14000	13500		B3-U0-G2	B3-U0-G2	ERLH_14C140_IES	ERLH_14C130_IES
ERLH		D1	13700	13200		B3-U0-G2	B3-U0-G2	ERLH_14D140_IES	ERLH_14D130_IES
ERLH		E1	14000	13500		B3-U0-G2	B3-U0-G2	ERLH_14E140_IES	ERLH_14E130_IES
ERLH		F1	14000	13500		B3-U0-G2	B3-U0-G2	ERLH_14F140_IES	ERLH_14F130_IES
ERLH		G1	14000	13500		B3-U0-G2	B3-U0-G2	ERLH_14G140_IES	ERLH_14G130_IES
ERLH	15	A1	14200	13700	161	B3-U0-G3	B3-U0-G3	ERLH_15A140_IES	ERLH_15A130_IES
ERLH		B1	14700	14200		B3-U0-G2	B3-U0-G2	ERLH_15B140_IES	ERLH_15B130_IES
ERLH		C1	15000	14500		B3-U0-G2	B3-U0-G2	ERLH_15C140_IES	ERLH_15C130_IES
ERLH		D1	14700	14200		B3-U0-G2	B3-U0-G2	ERLH_15D140_IES	ERLH_15D130_IES
ERLH		E1	15000	14500		B3-U0-G2	B3-U0-G2	ERLH_15E140_IES	ERLH_15E130_IES
ERLH		F1	15000	14500		B3-U0-G2	B3-U0-G2	ERLH_15F140_IES	ERLH_15F130_IES
ERLH		G1	15000	14500		B3-U0-G2	B3-U0-G2	ERLH_15G140_IES	ERLH_15G130_IES



# Ordering Number Logic

## Evolve™ LED Streetlight (ERS1)



ERS1

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION	DRIVE CURRENT	CCT	CONTROLS	COLOR	OPTIONS
<b>E</b> = Evolve <b>R</b> = Roadway <b>S</b> = Scalable <b>1</b> = Single Module	<b>0</b> = 120-277* <b>1</b> = 120 <b>2</b> = 208 <b>3</b> = 240 <b>4</b> = 277 <b>5</b> = 480 <b>D</b> = 347 <b>H</b> = 347-480* * Not available with Fusing. Must choose a discrete voltage with F option.	<b>10</b> <b>11</b> <b>13</b> <b>14</b> <b>15</b> See Data Table for more information.	<b>A1</b> = Extra Narrow Asymmetric <b>B1</b> = Narrow Asymmetric (Medium) <b>C1</b> = Asymmetric (Short) <b>D1</b> = Asymmetric Forward <b>E1</b> = Asymmetric (Medium) <b>F1</b> = Asymmetric (Wide) <b>G1</b> = Asymmetric (Extra Wide) See Data Table for more information	<b>X</b> = Not Applicable	<b>30</b> = 3000K <b>40</b> = 4000K	<b>A</b> = ANSI C136.41 7-pin <b>D</b> = ANSI C136.41 7-pin receptacle with Shorting Cap <b>E</b> = ANSI C136.41 7-pin Receptacle with non-Dimming PE Control.* * PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. <b>NOTE:</b> Dimming controls wired for 0-10V standard unless DALI option "U" requested.	<b>GRAY</b> = Gray <b>BLCK</b> = Black <b>DKBZ</b> = Dark Bronze	<b>F</b> = Fusing <b>G</b> = Internal Bubble Level <b>I</b> = IP66 Optical <b>L</b> = Tool-Less Entry <b>R</b> = Optional Secondary Enhanced Surge Protection (10kV/5kA) <b>T</b> = 20kV/10kA Surge Protection per IEEE/ANSI C62.41.2-2002 † <b>U</b> = Universal DALI Programmable+^ <b>Y</b> = Coastal Finish* <b>XXX</b> = Special Options * Recommended for installations within 1 mile from the coast. Contact Factory for Lead-Time. ^ Compatible with LightGrid 2.0 nodes. ^Not available at 347V, 480V or 347-480V.

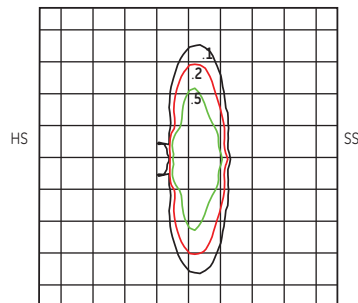
PRODUCT ID	LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS		TYPICAL SYSTEM WATTAGE	BUG RATING		IES FILE NUMBER	
			4000K	3000K		4000K	3000K	4000K	3000K
ERS1	10	A1	9500	9200	90	B3-U0-G2	B3-U0-G2	ERS1_10A1X40_IES	ERS1_10A1X30_IES
ERS1		B1	9800	9500		B3-U0-G1	B2-U0-G1	ERS1_10B1X40_IES	ERS1_10B1X30_IES
ERS1		C1	10000	9600		B2-U0-G1	B2-U0-G1	ERS1_10C1X40_IES	ERS1_10C1X30_IES
ERS1		D1	9800	9500		B2-U0-G2	B2-U0-G2	ERS1_10D1X40_IES	ERS1_10D1X30_IES
ERS1		E1	10000	9600		B2-U0-G2	B2-U0-G2	ERS1_10E1X40_IES	ERS1_10E1X30_IES
ERS1		F1	10000	9600		B2-U0-G2	B2-U0-G2	ERS1_10F1X40_IES	ERS1_10F1X30_IES
ERS1		G1	10000	9600		B2-U0-G2	B2-U0-G2	ERS1_10G1X40_IES	ERS1_10G1X30_IES
ERS1	11	A1	10900	10500	108	B3-U0-G2	B3-U0-G2	ERS1_11A1X40_IES	ERS1_11A1X30_IES
ERS1		B1	11200	10800		B3-U0-G2	B3-U0-G1	ERS1_11B1X40_IES	ERS1_11B1X30_IES
ERS1		C1	11500	11100		B3-U0-G2	B3-U0-G2	ERS1_11C1X40_IES	ERS1_11C1X30_IES
ERS1		D1	11200	10800		B2-U0-G2	B2-U0-G2	ERS1_11D1X40_IES	ERS1_11D1X30_IES
ERS1		E1	11500	11100		B3-U0-G2	B3-U0-G2	ERS1_11E1X40_IES	ERS1_11E1X30_IES
ERS1		F1	11500	11100		B3-U0-G2	B3-U0-G2	ERS1_11F1X40_IES	ERS1_11F1X30_IES
ERS1		G1	11500	11100		B3-U0-G2	B3-U0-G2	ERS1_11G1X40_IES	ERS1_11G1X30_IES
ERS1	13	A1	12300	11900	125	B3-U0-G2	B3-U0-G2	ERS1_13A1X40_IES	ERS1_13A1X30_IES
ERS1		B1	12700	12200		B3-U0-G2	B3-U0-G2	ERS1_13B1X40_IES	ERS1_13B1X30_IES
ERS1		C1	13000	12500		B3-U0-G2	B3-U0-G2	ERS1_13C1X40_IES	ERS1_13C1X30_IES
ERS1		D1	12700	12200		B3-U0-G2	B2-U0-G2	ERS1_13D1X40_IES	ERS1_13D1X30_IES
ERS1		E1	13000	12500		B3-U0-G2	B3-U0-G2	ERS1_13E1X40_IES	ERS1_13E1X30_IES
ERS1		F1	13000	12500		B3-U0-G2	B3-U0-G2	ERS1_13F1X40_IES	ERS1_13F1X30_IES
ERS1		G1	13000	12500		B3-U0-G2	B3-U0-G2	ERS1_13G1X40_IES	ERS1_13G1X30_IES
ERS1	14	A1	13300	12800	139	B3-U0-G3	B3-U0-G3	ERS1_14A1X40_IES	ERS1_14A1X30_IES
ERS1		B1	13700	13200		B3-U0-G2	B3-U0-G2	ERS1_14B1X40_IES	ERS1_14B1X30_IES
ERS1		C1	14000	13500		B3-U0-G2	B3-U0-G2	ERS1_14C1X40_IES	ERS1_14C1X30_IES
ERS1		D1	13700	13200		B3-U0-G2	B3-U0-G2	ERS1_14D1X40_IES	ERS1_14D1X30_IES
ERS1		E1	14000	13500		B3-U0-G2	B3-U0-G2	ERS1_14E1X40_IES	ERS1_14E1X30_IES
ERS1		F1	14000	13500		B3-U0-G2	B3-U0-G2	ERS1_14F1X40_IES	ERS1_14F1X30_IES
ERS1		G1	14000	13500		B3-U0-G2	B3-U0-G2	ERS1_14G1X40_IES	ERS1_14G1X30_IES
ERS1	15	A1	14200	13700	161	B3-U0-G3	B3-U0-G3	ERS1_15A1X40_IES	ERS1_15A1X30_IES
ERS1		B1	14700	14200		B3-U0-G2	B3-U0-G2	ERS1_15B1X40_IES	ERS1_15B1X30_IES
ERS1		C1	15000	14500		B3-U0-G2	B3-U0-G2	ERS1_15C1X40_IES	ERS1_15C1X30_IES
ERS1		D1	14700	14200		B3-U0-G2	B3-U0-G2	ERS1_15D1X40_IES	ERS1_15D1X30_IES
ERS1		E1	15000	14500		B3-U0-G2	B3-U0-G2	ERS1_15E1X40_IES	ERS1_15E1X30_IES
ERS1		F1	15000	14500		B3-U0-G2	B3-U0-G2	ERS1_15F1X40_IES	ERS1_15F1X30_IES
ERS1		G1	15000	14500		B3-U0-G2	B3-U0-G2	ERS1_15G1X40_IES	ERS1_15G1X30_IES

# Photometrics

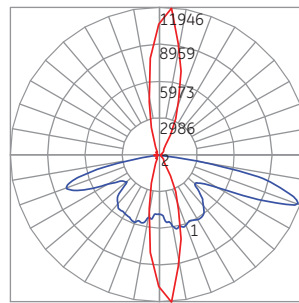
## Evolve™ LED Streetlight (ERLH and ERS1)

### ERLH and ERS1 Extra Narrow Asymmetric (15A1)

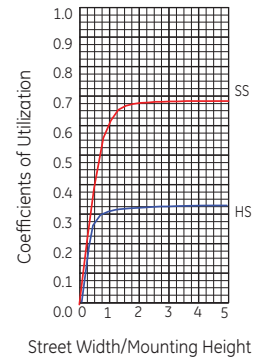
14,200 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

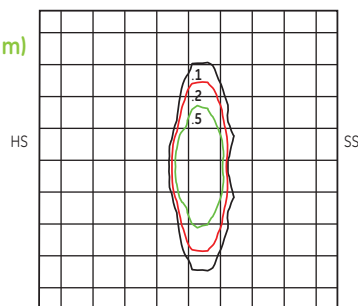


— Vertical plane through horizontal angle  
of maximum candlepower at 85°  
— Vertical plane through horizontal angle of 71°

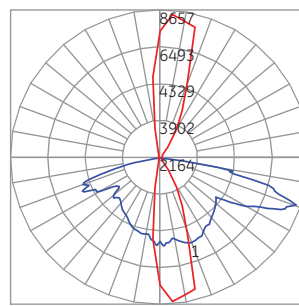


### ERLH and ERS1 Narrow Asymmetric (Medium) (15B1)

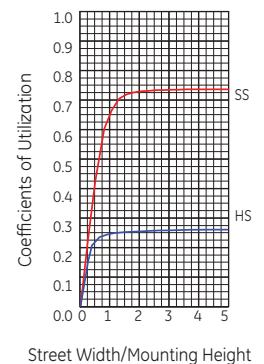
14,700 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

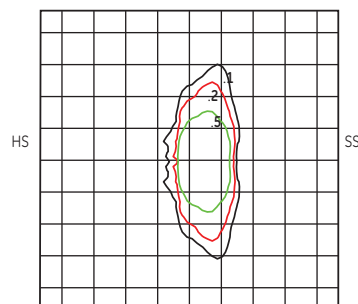


— Vertical plane through horizontal angle  
of maximum candlepower at 85°  
— Vertical plane through horizontal angle of 71°

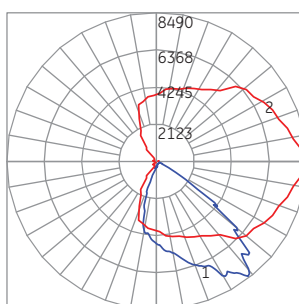


### ERLH and ERS1 Asymmetric Short (15C1)

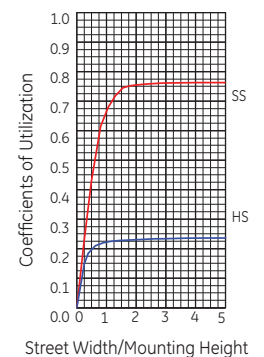
15,000 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

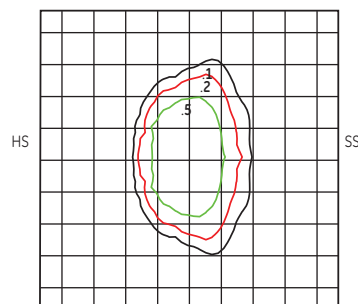


— Vertical plane through horizontal angle  
of maximum candlepower at 0°  
— Vertical plane through horizontal angle of 38°

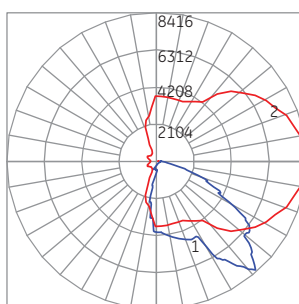


### ERLH and ERS1 Asymmetric Forward (15D1)

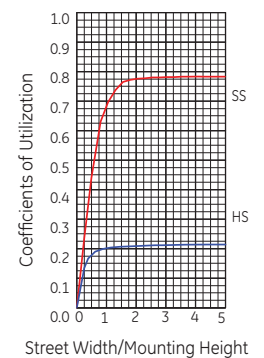
14,700 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



— Vertical plane through horizontal angle  
of maximum candlepower at 5°  
— Vertical plane through horizontal angle of 41°



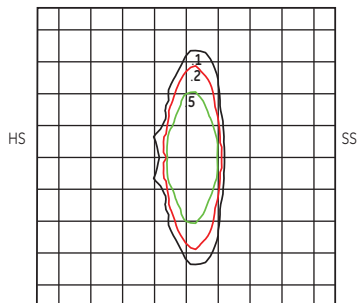


# Photometrics

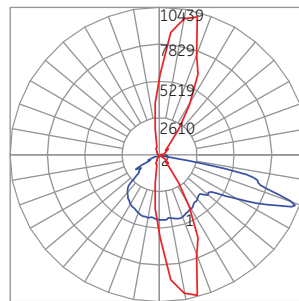
## Evolve™ LED Streetlight (ERLH and ERS1)

### ERLH and ERS1 Asymmetric Medium (15E1)

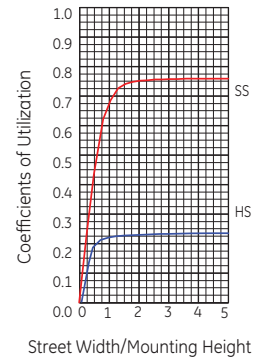
15,000 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

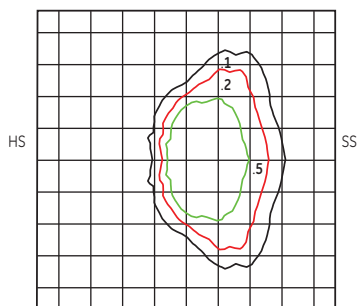


— Vertical plane through horizontal angle  
of maximum candlepower at 75°  
— Vertical plane through horizontal angle of 70°

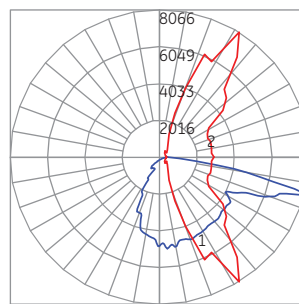


### ERLH and ERS1 Asymmetric Wide (15F1)

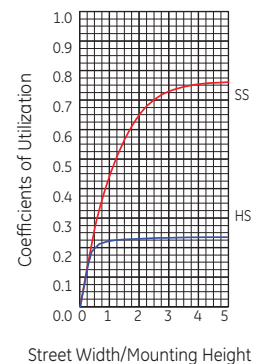
15,000 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

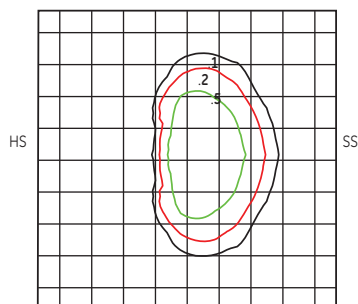


— Vertical plane through horizontal angle  
of maximum candlepower at 60°  
— Vertical plane through horizontal angle of 75°

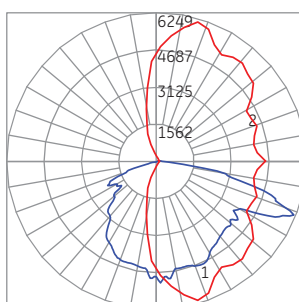


### ERLH and ERS1 Asymmetric Extra Wide (15G1)

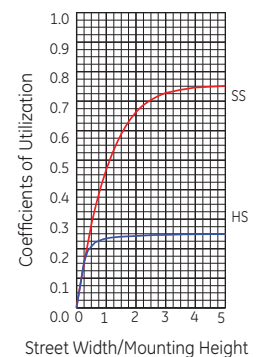
15,000 Lumens  
4000K



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



— Vertical plane through horizontal angle  
of maximum candlepower at 75°  
— Vertical plane through horizontal angle of 68°



# Ordering Number Logic

## Evolve™ LED Streetlight (ERS2)



ERS2

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION	DRIVE CURRENT	CCT	CONTROLS	COLOR	OPTIONS
<b>E</b> = Evolve <b>R</b> = Roadway <b>S</b> = Scalable <b>2</b> = Double Module	<b>0</b> = 120-277* <b>1</b> = 120 <b>2</b> = 208 <b>3</b> = 240 <b>4</b> = 277 <b>5</b> = 480 <b>D</b> = 347 <b>H</b> = 347-480* * Not available with Fusing. Must choose a descreeet voltage with F option.	<b>16</b> <b>18</b> <b>19</b> <b>21</b> <b>23</b> <b>25</b> <b>27</b> <b>28</b> See Data Table for more information.	<b>A1</b> = Extra Narrow Asymmetric <b>B1</b> = Narrow Asymmetric (Medium) <b>C1</b> = Asymmetric (Short) <b>D1</b> = Asymmetric Forward <b>E1</b> = Asymmetric (Medium) <b>F1</b> = Asymmetric (Wide) <b>G1</b> = Asymmetric (Extra Wide) See Data Table for more information	<b>X</b> = Not Applicable	<b>30</b> = 3000K <b>40</b> = 4000K	<b>A</b> = ANSI C136.41 7-pin <b>D</b> = ANSI C136.41 7-pin receptacle with Shorting Cap <b>E</b> = ANSI C136.41 7-pin Receptacle with non-Dimming PE Control.* * PE Control Only available for 120-277V or 480V Discrete. Not available for 347-480V or 347V Discrete. <b>NOTE:</b> Dimming controls wired for 0-10V standard unless DALI option "U" requested.	<b>GRAY</b> = Gray <b>BLCK</b> = Black <b>DKBZ</b> = Dark Bronze	<b>A</b> = 4 Bolt Slipfitter † <b>F</b> = Fusing <b>G</b> = Internal Bubble Level <b>I</b> = IP66 Optical <b>L</b> = Tool-Less Entry <b>R</b> = Optional Secondary Enhanced Surge Protection (10kV/5kA) <b>T</b> = 20kV/10kA Surge Protection per IEEE/ANSI C62.41.2-2002 † <b>U</b> = Universal DALI Programmable + ^ <b>Y</b> = Coastal Finish* <b>XXX</b> = Special Options † Contact manufacturer for Lead-Time. * Recommended for installations within 1 mile from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ^ Not available at 347V, 480V or 347-480V.

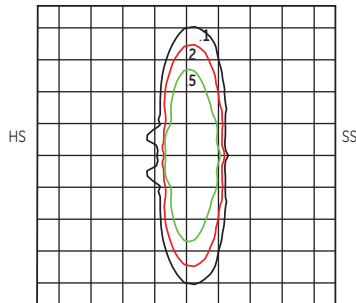
PRODUCT ID	LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS		TYPICAL SYSTEM WATTAGE	BUG RATING		IES FILE NUMBER	
			4000K	3000K		4000K	3000K	4000K	3000K
ERS2	16	A1	15200	14700	132	B3-U0-G3	B3-U0-G3	ERS2_16A1X40	ERS2_16A1X30
ERS2		B1	15700	15100		B3-U0-G2	B3-U0-G2	ERS2_16B1X40	ERS2_16B1X30
ERS2		C1	16000	15400		B3-U0-G2	B3-U0-G2	ERS2_16C1X40	ERS2_16C1X30
ERS2		D1	15700	15100		B3-U0-G2	B3-U0-G2	ERS2_16D1X40	ERS2_16D1X30
ERS2		E1	16000	15400		B3-U0-G2	B3-U0-G2	ERS2_16E1X40	ERS2_16E1X30
ERS2		F1	16000	15400		B3-U0-G2	B3-U0-G2	ERS2_16F1X40	ERS2_16F1X30
ERS2		G1	16000	15400		B3-U0-G2	B3-U0-G2	ERS2_16G1X40	ERS2_16G1X30
ERS2									
ERS2	18	A1	17100	16500	157	B3-U0-G3	B3-U0-G3	ERS2_18A1X40	ERS2_18A1X30
ERS2		B1	17600	17000		B3-U0-G2	B3-U0-G2	ERS2_18B1X40	ERS2_18B1X30
ERS2		C1	18000	17400		B3-U0-G2	B3-U0-G2	ERS2_18C1X40	ERS2_18C1X30
ERS2		D1	17600	17000		B3-U0-G2	B3-U0-G2	ERS2_18D1X40	ERS2_18D1X30
ERS2		E1	18000	17400		B3-U0-G2	B3-U0-G2	ERS2_18E1X40	ERS2_18E1X30
ERS2		F1	18000	17400		B3-U0-G3	B3-U0-G2	ERS2_18F1X40	ERS2_18F1X30
ERS2		G1	18000	17400		B3-U0-G2	B3-U0-G2	ERS2_18G1X40	ERS2_18G1X30
ERS2									
ERS2	19	A1	18000	17400	162	B3-U0-G3	B3-U0-G3	ERS2_19A1X40	ERS2_19A1X30
ERS2		B1	18600	17900		B3-U0-G2	B3-U0-G2	ERS2_19B1X40	ERS2_19B1X30
ERS2		C1	19000	18300		B3-U0-G2	B3-U0-G2	ERS2_19C1X40	ERS2_19C1X30
ERS2		D1	18600	17900		B3-U0-G2	B3-U0-G2	ERS2_19D1X40	ERS2_19D1X30
ERS2		E1	19000	18300		B3-U0-G2	B3-U0-G2	ERS2_19E1X40	ERS2_19E1X30
ERS2		F1	19000	18300		B3-U0-G3	B3-U0-G3	ERS2_19F1X40	ERS2_19F1X30
ERS2		G1	19000	18300		B3-U0-G3	B3-U0-G2	ERS2_19G1X40	ERS2_19G1X30
ERS2									
ERS2	21	A1	20000	19300	193	B3-U0-G3	B3-U0-G3	ERS2_21A1X40	ERS2_21A1X30
ERS2		B1	20600	19900		B3-U0-G2	B3-U0-G2	ERS2_21B1X40	ERS2_21B1X30
ERS2		C1	21000	20300		B3-U0-G2	B3-U0-G2	ERS2_21C1X40	ERS2_21C1X30
ERS2		D1	20600	19900		B3-U0-G2	B3-U0-G2	ERS2_21D1X40	ERS2_21D1X30
ERS2		E1	21000	20300		B3-U0-G2	B3-U0-G2	ERS2_21E1X40	ERS2_21E1X30
ERS2		F1	21000	20300		B3-U0-G3	B3-U0-G3	ERS2_21F1X40	ERS2_21F1X30
ERS2		G1	21000	20300		B3-U0-G3	B3-U0-G3	ERS2_21G1X40	ERS2_21G1X30
ERS2									
ERS2	23	A1	21900	21100	219	B4-U0-G3	B3-U0-G3	ERS2_23A1X40	ERS2_23A1X30
ERS2		B1	22500	21700		B3-U0-G3	B3-U0-G2	ERS2_23B1X40	ERS2_23B1X30
ERS2		C1	23000	22200		B3-U0-G2	B3-U0-G2	ERS2_23C1X40	ERS2_23C1X30
ERS2		D1	22500	21700		B3-U0-G2	B3-U0-G2	ERS2_23D1X40	ERS2_23D1X30
ERS2		E1	23000	22200		B3-U0-G2	B3-U0-G2	ERS2_23E1X40	ERS2_23E1X30
ERS2		F1	23000	22200		B3-U0-G3	B3-U0-G3	ERS2_23F1X40	ERS2_23F1X30
ERS2		G1	23000	22200		B3-U0-G3	B3-U0-G3	ERS2_23G1X40	ERS2_23G1X30
ERS2									
ERS2	25	A1	23800	23000	243	B4-U0-G3	B4-U0-G3	ERS2_25A1X40	ERS2_25A1X30
ERS2		B1	24500	23600		B4-U0-G3	B3-U0-G3	ERS2_25B1X40	ERS2_25B1X30
ERS2		C1	25000	24100		B3-U0-G2	B3-U0-G2	ERS2_25C1X40	ERS2_25C1X30
ERS2		D1	24500	23600		B3-U0-G3	B3-U0-G3	ERS2_25D1X40	ERS2_25D1X30
ERS2		E1	25000	24100		B3-U0-G3	B3-U0-G3	ERS2_25E1X40	ERS2_25E1X30
ERS2		F1	25000	24100		B3-U0-G3	B3-U0-G3	ERS2_25F1X40	ERS2_25F1X30
ERS2		G1	25000	24100		B3-U0-G3	B3-U0-G3	ERS2_25G1X40	ERS2_25G1X30
ERS2									
ERS2	27	A1	25700	24800	275	B4-U0-G3	B4-U0-G3	ERS2_27A1X40	ERS2_27A1X30
ERS2		B1	26500	25600		B4-U0-G3	B4-U0-G3	ERS2_27B1X40	ERS2_27B1X30
ERS2		C1	27000	26000		B4-U0-G3	B4-U0-G3	ERS2_27C1X40	ERS2_27C1X30
ERS2		D1	26500	25600		B3-U0-G3	B3-U0-G3	ERS2_27D1X40	ERS2_27D1X30
ERS2		E1	27000	26000		B4-U0-G3	B4-U0-G3	ERS2_27E1X40	ERS2_27E1X30
ERS2		F1	27000	26000		B4-U0-G4	B4-U0-G3	ERS2_27F1X40	ERS2_27F1X30
ERS2		G1	27000	26000		B4-U0-G3	B4-U0-G3	ERS2_27G1X40	ERS2_27G1X30
ERS2									
ERS2	28	A1	26600	25600	280	B4-U0-G3	B4-U0-G3	ERS2_28A1X40	ERS2_28A1X30
ERS2		B1	27400	26400		B4-U0-G3	B4-U0-G3	ERS2_28B1X40	ERS2_28B1X30
ERS2		C1	28000	26900		B4-U0-G3	B4-U0-G3	ERS2_28C1X40	ERS2_28C1X30
ERS2		D1	27400	26400		B3-U0-G3	B3-U0-G3	ERS2_28D1X40	ERS2_28D1X30
ERS2		E1	28000	26900		B4-U0-G3	B4-U0-G3	ERS2_28E1X40	ERS2_28E1X30
ERS2		F1	28000	26900		B4-U0-G4	B4-U0-G3	ERS2_28F1X40	ERS2_28F1X30
ERS2		G1	28000	26900		B4-U0-G4	B4-U0-G3	ERS2_28G1X40	ERS2_28G1X30
ERS2									

# Photometrics

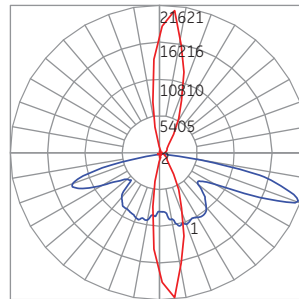
## Evolve™ LED Streetlight (ERS2)

### ERS2 Extra Narrow Asymmetric (27A1)

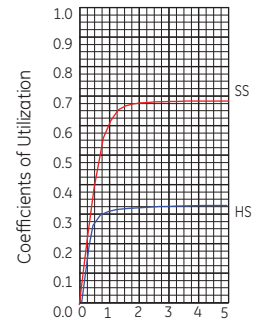
25,700 Lumens  
4000K  
ERS2\_27A1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



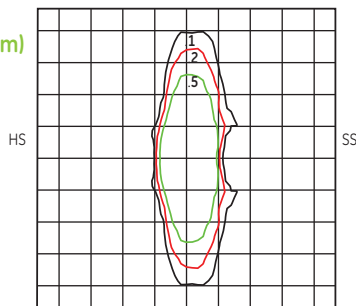
— Vertical plane through horizontal angle  
of maximum candlepower at 85°  
— Vertical plane through horizontal angle of 71°



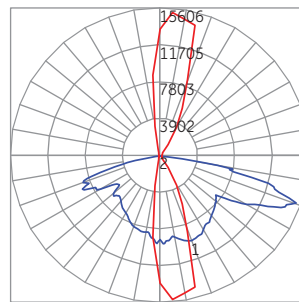
Street Width/Mounting Height

### ERS2 Narrow Asymmetric (Medium) (27B1)

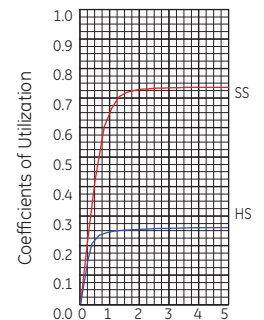
26,500 Lumens  
4000K  
ERS2\_27B1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



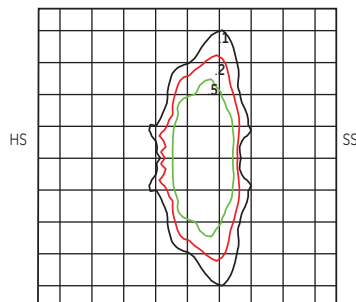
— Vertical plane through horizontal angle  
of maximum candlepower at 85°  
— Vertical plane through horizontal angle of 71°



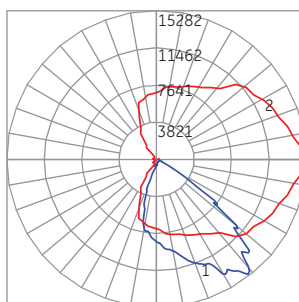
Street Width/Mounting Height

### ERS2 Asymmetric Short (27C1)

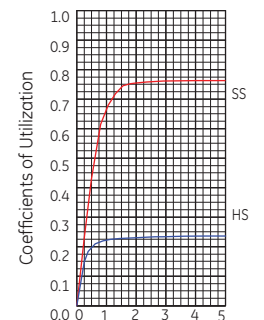
27,000 Lumens  
4000K  
ERS2\_27C1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



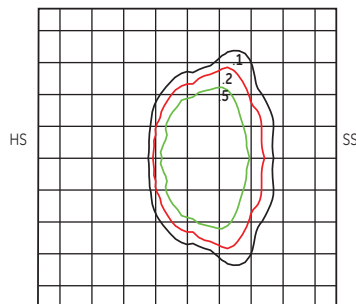
— Vertical plane through horizontal angle  
of maximum candlepower at 0°  
— Vertical plane through horizontal angle of 38°



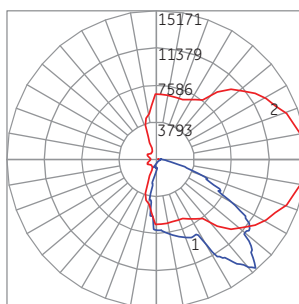
Street Width/Mounting Height

### ERS2 Asymmetric Forward (27D1)

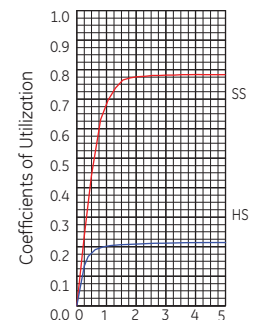
26,500 Lumens  
4000K  
ERS2\_27D1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade



— Vertical plane through horizontal angle  
of maximum candlepower at 5°  
— Vertical plane through horizontal angle of 41°



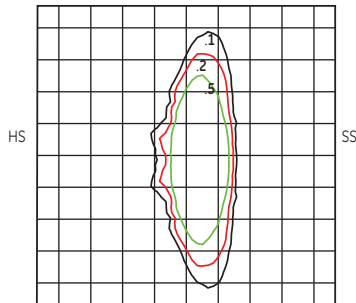
Street Width/Mounting Height

# Photometrics

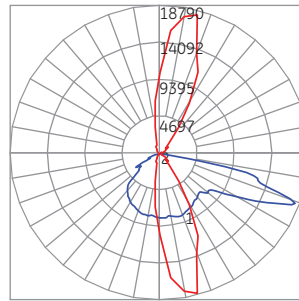
## Evolve™ LED Streetlight (ERS2)

### ERS2 Asymmetric Medium (27E1)

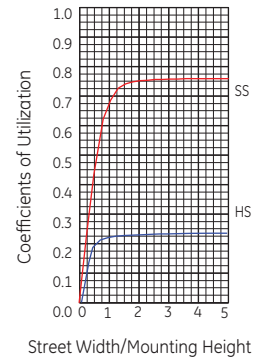
27,000 Lumens  
4000K  
ERS2\_27E1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

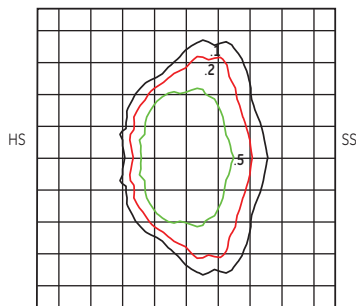


— Vertical plane through horizontal angle  
of maximum candlepower at 75°  
— Vertical plane through horizontal angle of 70°

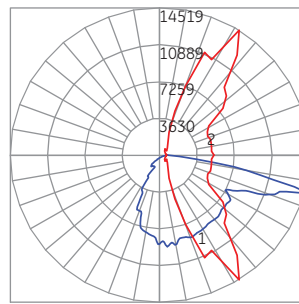


### ERS2 Asymmetric Wide (27F1)

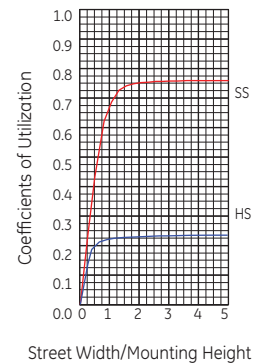
27,000 Lumens  
4000K  
ERS2\_27F1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

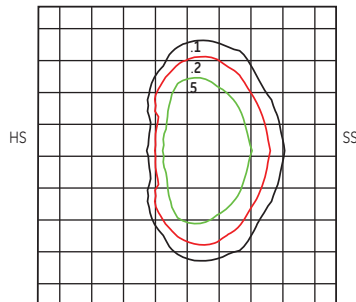


— Vertical plane through horizontal angle  
of maximum candlepower at 60°  
— Vertical plane through horizontal angle of 75°

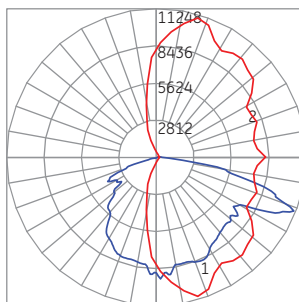


### ERS2 Asymmetric Extra Wide (27G1)

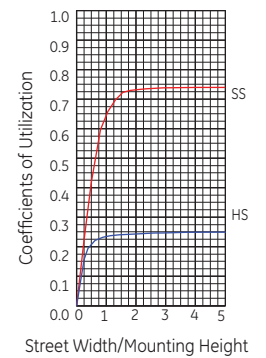
27,000 Lumens  
4000K  
ERS2\_27G1X40\_\_\_\_.IES



Grid Distance in Units of  
Mounting Height at 30' Initial  
Footcandle Values at Grade

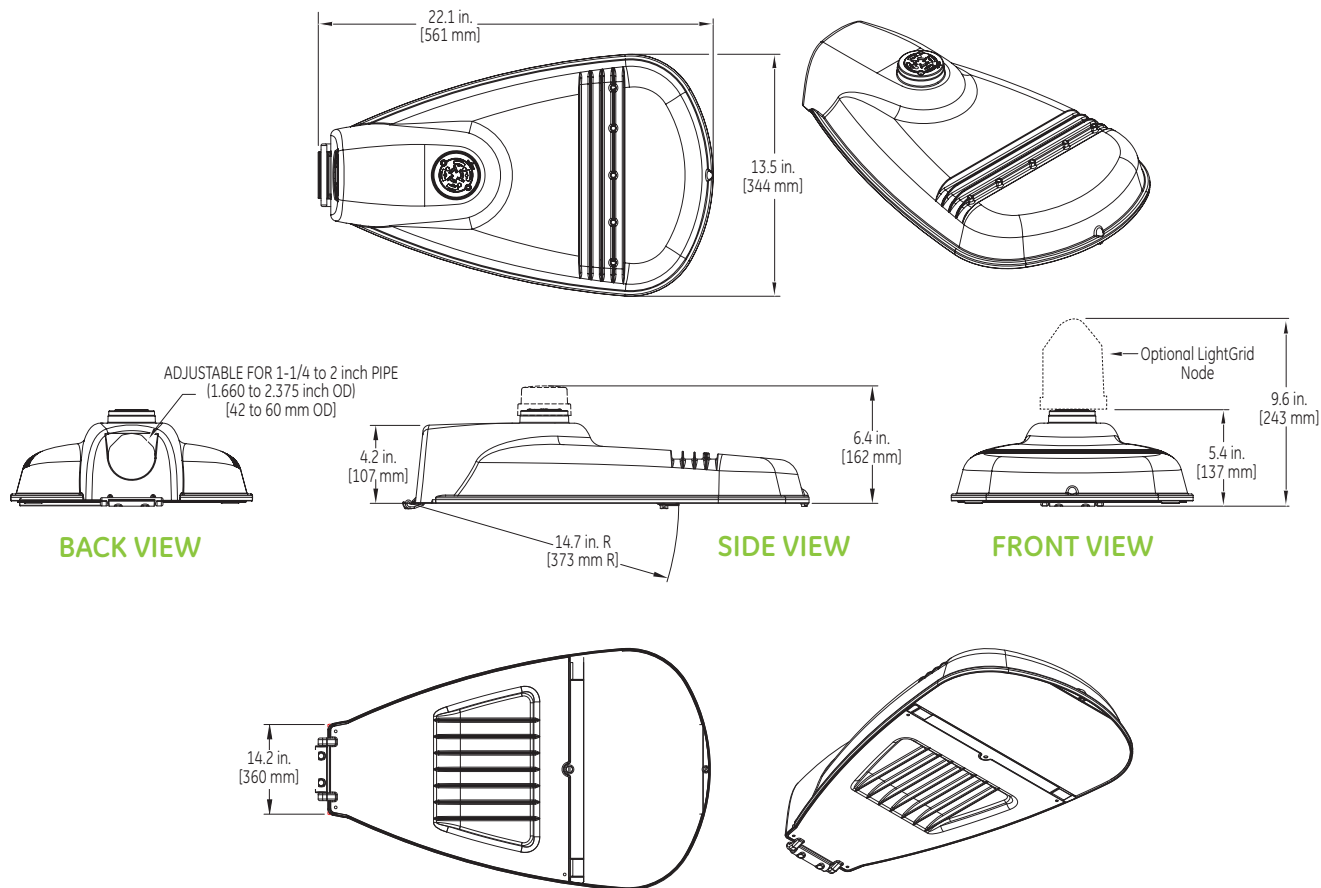


— Vertical plane through horizontal angle  
of maximum candlepower at 75°  
— Vertical plane through horizontal angle of 68°



## Product Dimensions

### Evolve™ LED Streetlight (ERL1)

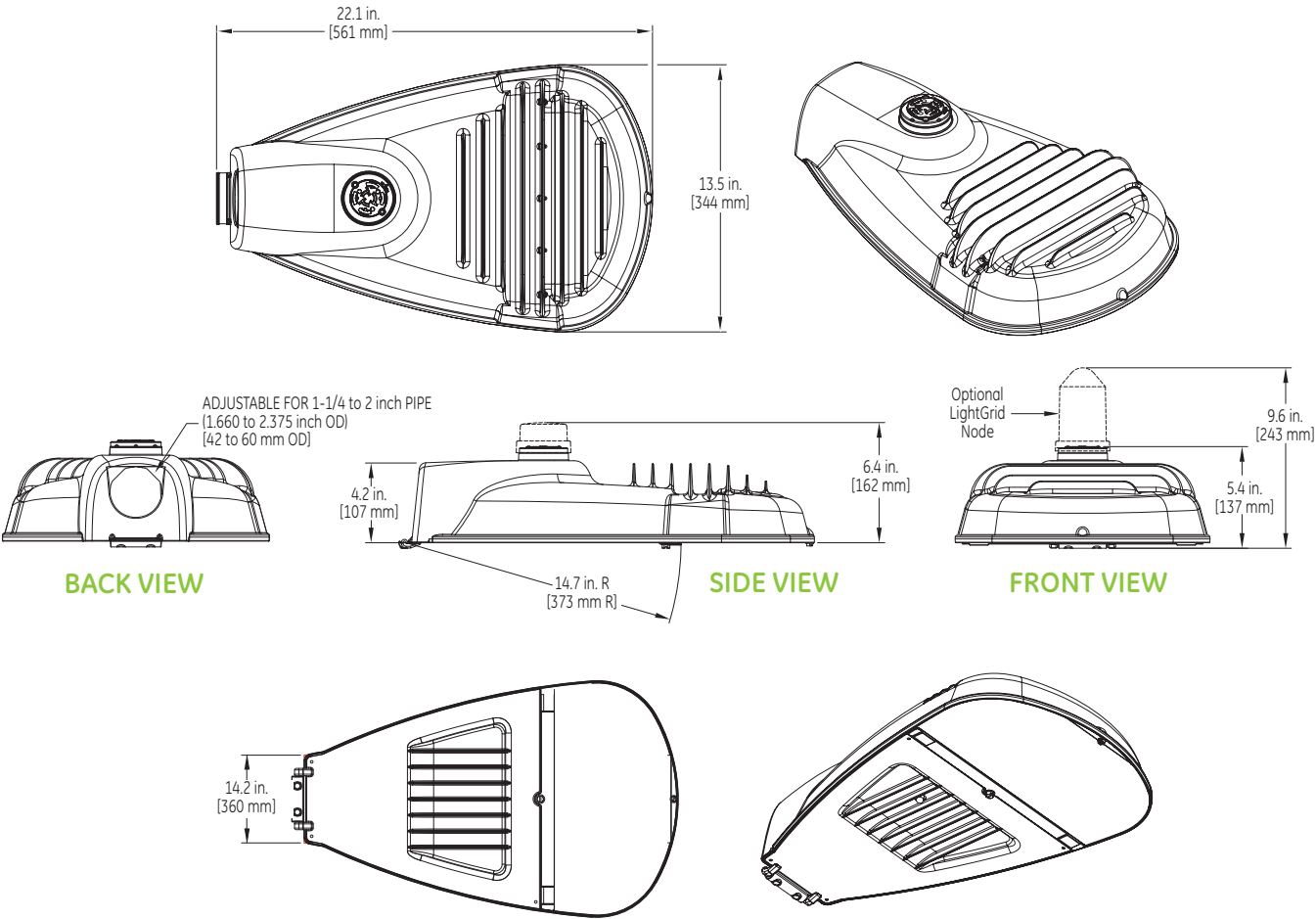


#### DATA

- Approximate net weight: 12.4 lbs (5.6 kgs) - Without XFMR
- Approximate net weight: 15.5 lbs (7 kgs) - With XFMR
- Effective Projected Area (EPA): 0.5 sq ft max (0.046 sq m)

# Product Dimensions

## Evolve™ LED Streetlight (ERLH)

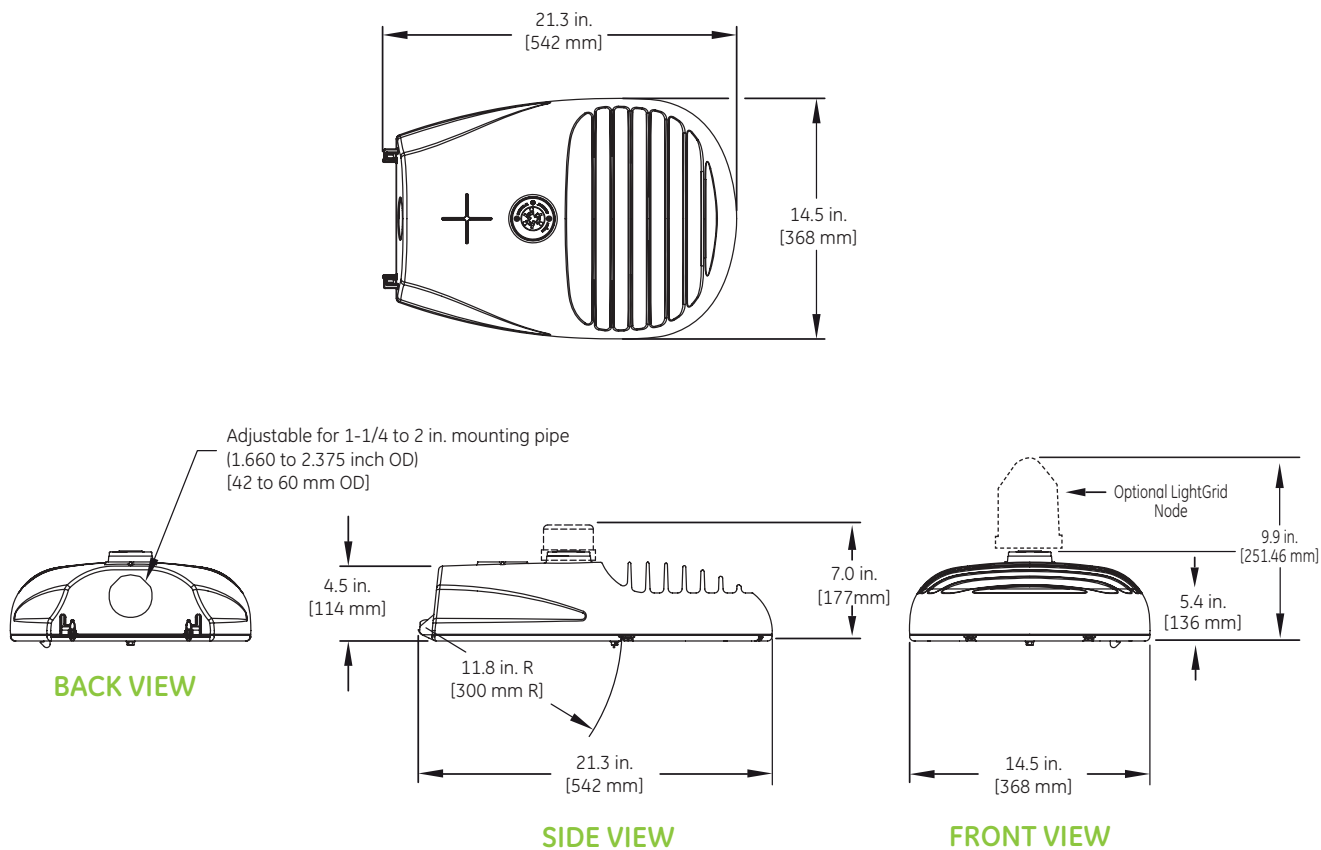


### DATA

- Approximate net weight: 15.15 lbs (6.9 kgs) - 2 Bolt Slipfitter
- Approximate net weight: 15.85 lbs (7.2 kgs) - 4 Bolt Slipfitter
- Effective Projected Area (EPA): 0.5 sq ft max (0.046 sq m)

# Product Dimensions

## Evolve™ LED Streetlight (ERS1)

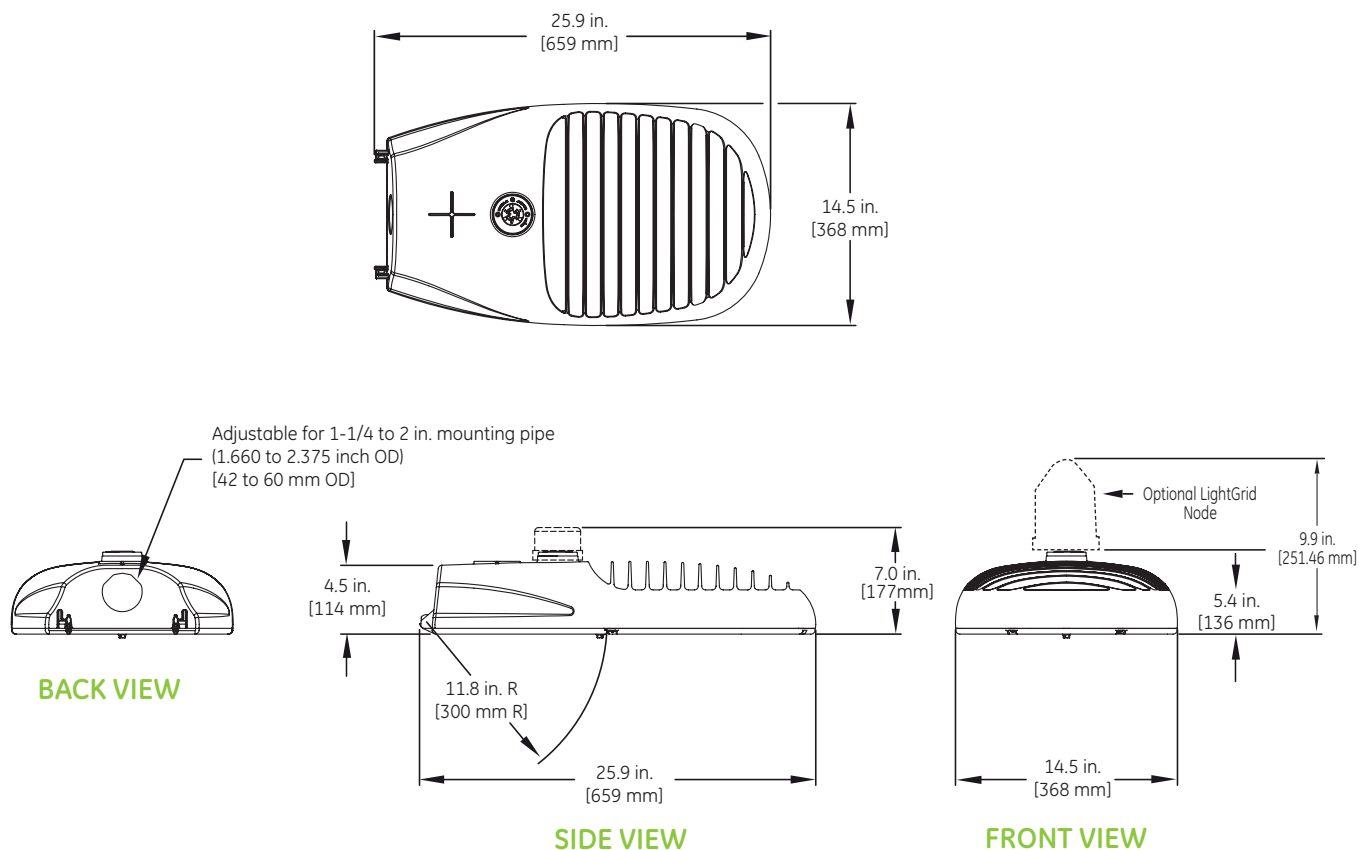


### DATA

- Approximate net weight: 20 lbs (9.1 kgs) to 25 lbs (11.4 kgs)
- Effective Projected Area (EPA): 0.5 sq ft max (0.046 sq m)

## Product Dimensions

### Evolve™ LED Streetlight (ERS2)



#### DATA

- Approximate net weight: 25 lbs (11.4 kgs) to 29 lbs (13.2 kgs)
- Effective Projected Area (EPA): 0.7 sq ft max (0.065 sq m)



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OLP3105 (Rev 04/14/16)





## Lighting

1975 Noble Road  
Cleveland, OH 44112  
USA

Applies to GE Evolve™ LED Luminaires purchased from GE between March 1, 2016 and the date on which this Limited Warranty document is later superseded.

### GE Evolve™ LED Luminaires Five-Year Limited Warranty

**WARRANTY:** Subject to the terms and conditions specified in this Limited Warranty, GE Lighting ("GE"), a business of General Electric Company, warrants that GE Evolve™ LED luminaires ("Product") purchased directly from GE will be free from: (a) defects in material and workmanship of electrical components until the earlier of (i) five (5) years from the date of manufacture, and (ii) 22,000 hours of operation; (b) defects in material and workmanship of non-electrical components until one (1) year from the date of manufacture; and (c) visible exterior-surface cosmetic defects in paint and material finishes (described as chips, pitting, corrosion, chalking/fading) exceeding 50% loss from the initial 60-degree gloss per ASTM D523-08, and other surface deterioration greater than 15% of the surface, in each case until five (5) years from the date of manufacture; provided, however, that GE does not warrant: (1) photoelectric controls and shorting caps, which are covered by the applicable warranties (if any) of the companies that manufacture these devices, and (2) paint and material finishes when Product is installed in a coastal application<sup>1</sup>, unless the Product is ordered with GE's Coastal Finish option (Y)<sup>2</sup>.

**REMEDY:** If a Product fails to meet the warranty set forth above, then GE will, at its option, either (i) repair the defective Product, (ii) provide a free replacement Product or replacement parts, F.O.B. GE's warehouse, or (iii) refund the purchase price paid to GE for the Product or replacement parts. Any replacement Product or part will be comparable in function, but may not be identical to the original. The replacement or repaired Product is warranted for the remainder of the original warranty period. GE is not responsible for labor and other costs associated with removal or reinstallation.

**TERMS AND CONDITIONS:** This Limited Warranty is VOID if Purchaser or the user fails to comply with any applicable instructions and recommendations of GE; if any components are replaced with components of other manufacturers; or if the Product is operated outside the specified electrical values or is subject to abnormal use or stress, including under/over voltage conditions, excessive switching cycles, and operation in environmental conditions (e.g., ambient temperature) outside normal specified operating range.

GE shall not be responsible for any failure of Products that result from external causes, including, but not limited to, acts of God; power surges that exceed product specification; improper power supply; fault or negligence of the Purchaser or user; improper or unauthorized use, installation, handling, storage, maintenance, alteration or service; any abuse, misuse, abnormal use or use in violation of any applicable standard, code or instructions for use in installations including those contained in the latest National Electrical Code (NEC), the Standards for Safety of Underwriters Laboratory, Inc. (UL), Standards for the American National Standards Institute (ANSI), in Canada, the Canadian Standards Association (CSA), Europe (CE), Australia (C-Tick); or any cause other than a defect in the material or workmanship of the Product itself.

Notwithstanding anything to the contrary in this Limited Warranty, the LED module of the Product shall not be deemed to fail to meet the warranties above unless ten percent (10%) or more of the LEDs in the module do not light.

This limited warranty extends only to Purchaser, but GE will honor, under the terms of this Limited Warranty, valid warranty claims by Purchaser arising from a failure to meet the above warranty when the Product has been resold in new condition and used only by the original end user.

**HOW TO MAKE A WARRANTY CLAIM:** GE must issue a Return Material Authorization (RMA#) for all requests for warranty review. To make a warranty claim, retain the failed Products and notify your GE sales or customer service representative in writing within thirty (30) days of the failure. After contacting GE and receiving an RMA number, Purchaser shall promptly return the Product after receiving instructions regarding if, when, and where to ship the Product. The Product must be returned within 10 days of receiving RMA number, and the shipping box must be clearly marked with RMA number. Failure to follow this procedure shall void this Limited Warranty. *GE reserves the right to examine all failed Product to determine the cause of failure and patterns of usage and shall be the sole judge as to whether any Product is defective and covered under this Limited Warranty.*

**LIMITS OF LIABILITY:** THE FOREGOING LIMITED WARRANTY CONSTITUTES THE SOLE AND EXCLUSIVE WARRANTY AND REMEDY OF THE PURCHASER AND THE SOLE LIABILITY OF GE FOR THE SPECIFIED LED LUMINAIRES AND IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY. NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OR IS TO BE IMPLIED. IN NO EVENT SHALL GE BE LIABLE FOR ANY OTHER COSTS OR DAMAGES INCLUDING LOST PROFITS, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

<sup>1</sup>Coastal application is defined as within one (1) mile of a subwater coastline.

<sup>2</sup>Coastal Finish, when offered, is Option Y in the ordering number logic for GE Evolve™ luminaires.



**GE Lighting Systems, Inc.**

## **TEN YEAR LIMITED WARRANTY**

### **GE Evolve™ LED light fixtures**

#### **Limited Warranty:**

GE Lighting Systems, Inc. ("Manufacturer") warrants to Purchaser that the GE Evolve™ LED fixtures (the "Product") will be free from defects in material and workmanship for the longer of ten (10) years from (i) the date of manufacture as identified by the date code on the Product, and (ii) the date that the Product is shipped by Manufacturer (if Purchaser can substantiate the Manufacturer's date of shipment). Manufacturer does not warrant the photoelectric controls, which are covered by the applicable warranty (if any) of the company that manufactured the photoelectric controls. As used herein, the term "Purchaser" means a purchaser for resale or for use in business.

#### **Terms And Conditions:**

This warranty applies only to Products that have been properly stored, installed, and maintained; operated within the specified electrical values; and operated in environmental conditions (e.g., temperature) within the normal specified operating range of the system. The warranties are VOID if Purchaser or the user fails to comply with any applicable instructions and recommendations of Manufacturer; if the Product is operated more than 4,400 hours per year; if any LED light components are replaced with components of other manufacturers, and in the event of conditions demonstrating abnormal use or stress, including under/over voltage conditions, excessive switching cycles, and operation at an ambient temperature higher than the normal specified operating range of the system. Manufacturer shall not be responsible for any failure of its products that result from external causes, including but not limited to acts of God; power surges that exceed product specification; improper power supply; fault or negligence of the Purchaser or user; improper or unauthorized use, installation, handling, storage, alteration or service; any abuse, misuse, abnormal use or use in violation of any applicable standard, code or instructions for use in installations including those contained in the latest National Electrical Code (NEC), the Standards for Safety of Underwriters Laboratory, Inc. (UL), Standards for the American National Standards Institute (ANSI), in Canada, the Canadian Standards Association (CSA), Europe (CE), Australia (C-Tick); or any cause other than a defect in the material or workmanship of the Product itself.

Notwithstanding anything to the contrary in this limited warranty document, the LED module of the Product shall not be deemed to fail to meet the warranties above unless ten percent (10%) or more of the LEDs in the module do not light.

#### **Remedy:**

If any Product fails to meet the foregoing warranties, Manufacturer shall correct such failure either by, at its option, (i) repairing any defective or damaged part or parts of the Products, or (ii) making available, F.O.B. Manufacturer's plant, any necessary repaired or replacement parts. Manufacturer is not responsible for labor and other costs and expenses.

#### **To Make a Warranty Claim:**

No products may be returned until Purchaser has contacted Manufacturer and received a Return Material Authorization ("RMA"). To make a warranty claim, retain the failed products and notify a GE Lighting Systems, Inc. customer service manager within thirty (30) days of the failure. After contacting and receiving an RMA number from Manufacturer, Purchaser shall promptly return the Product after receiving instructions regarding if, when, and where to ship the Product or part. The Product or part must be returned within 10 days of receiving RMA number, and the shipping box must be clearly marked with RMA number. Failure to follow this procedure shall void this warranty.

Manufacturer reserves the right to examine all failed Products to determine the cause of failure and patterns of usage and reserves the right to be the sole judge as to whether any Product or components are defective and covered under this warranty.

#### **Limits Of Liability:**

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY. NO IMPLIED STATUTORY WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. The provisions of this document constitute Manufacturer's sole warranties and Purchaser's sole and exclusive remedy for failure of Manufacturer's products to conform to the warranties specified above.

The total liability of Manufacturer on any and all claims of any kind, whether in contract, warranty, tort (including negligence), strict liability or otherwise, arising out of, connected with, or from Manufacturer's performance or breach of this warranty or from the manufacture, sale, delivery, resale, repair, replacement or use of any Product, or the furnishing of any service, shall in no event exceed the price allocable to the specific Product which gives rise to the claim; and any and all such liability shall terminate upon the expiration of Manufacturer's applicable warranty period specified in section (a) above. If Manufacturer furnishes advice or other assistance which concerns any product, or any system or equipment in which any such product may be installed, the furnishing of such advice or assistance shall not subject Manufacturer to any liability, whether in contract, warranty, tort (including negligence) or otherwise. IN NO EVENT WHETHER AS A RESULT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, SHALL MANUFACTURER BE LIABLE FOR LABOR CHARGES, LOSS OF PROFITS OR REVENUES, LACK OR LOSS OF PRODUCTIVITY, INTEREST CHARGES OR COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, SYSTEMS SERVICES OR PRODUCTS, COST OF PURCHASED OR REPLACEMENT POWER, DOWNTIME COSTS, DAMAGE TO OR LOSS OF USE OF PRODUCTS OR ANY RELATED EQUIPMENT, SYSTEM OR FACILITY, OR FOR SPECIAL, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES OF ANY NATURE.



# DPT Series

LED Decorative Post Top Luminaire

## Product Description

Don't get fooled into purchasing new luminaires or losing compliance with other decorative post-top lighting solutions. With the DPT Series, you can have all the great benefits of performance, energy savings and reduced maintenance of a LED luminaire, because it's designed to be a "luminaire within a luminaire." Designed to replace up to 70W Metal Halide or High Pressure Sodium and up to 175W Mercury Vapor lamps, the DPT luminaire utilizes a standalone UL 1598 compliant light engine and a universal mounting base that can be mounted in new or existing installations with both medium and mogul base sockets. Preserve the historic look of the streetscape, maintain safety and eliminate compliance hurdles with the DPT Series.

**Applications:** Decorative street, pathway and general area lighting

## Performance Summary

Utilizes Cree® LED Technology

Made in the U.S.A. of U.S. and imported parts

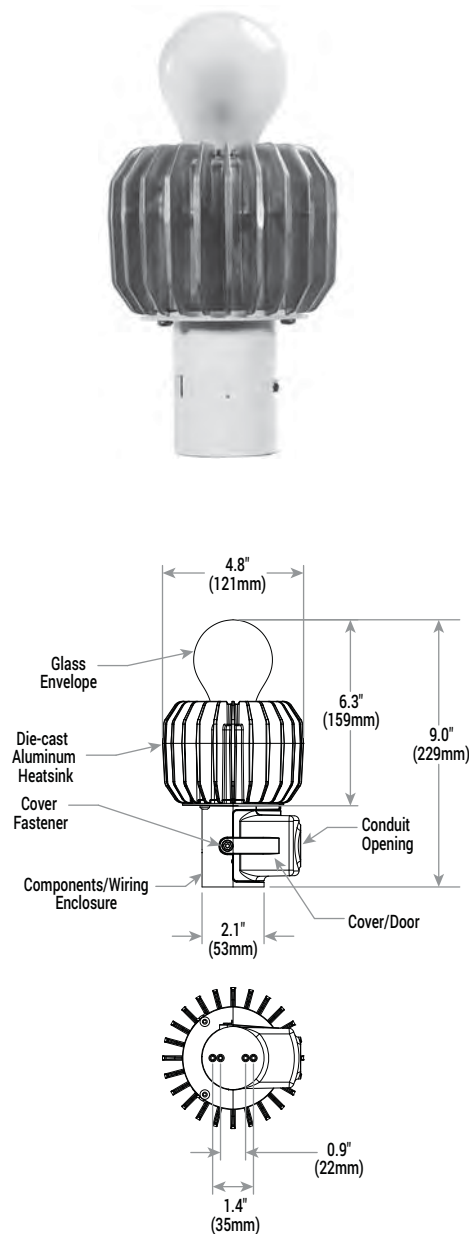
CRI: Minimum 70 CRI

CCT: 3000K (+/- 300K); 4000K (+/- 300K)

Limited Warranty†: 10 years on luminaire

## Accessories

Field-Installed	
<b>Backlight Control Shield</b> DPT-BLS - No hardware required - May not be used in combination with the uplight shield	<b>Uplight Shield for Base-Down Applications</b> DPT-ULSBD - Provides 65% cutoff - Required for DLC qualification - May not be used in combination with the backlight control shield



## Ordering Information

Example: DPT A SB FR A 30K-UL UF

DPT	A	SB	FR	A			UL	UF
Product	Version	Mounting	Lens	Input Power Designator	CCT	—	Voltage	Color Options
DPT	A	SB Surface/Base	FR Frosted Glass Lens	A 34W	30K 3000K 40K 4000K	— US * Canada	UL Universal 120-277V	UF Unfinished

† See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms



Rev. Date: V6 02/11/2015



US: [www.cree.com/lighting](http://www.cree.com/lighting)

T (800) 236-6800 F (262) 504-5415

Canada: [www.cree.com/canada](http://www.cree.com/canada)

T (800) 473-1234 F (800) 890-7507

## DPT Series - LED Decorative Post Top Luminaire

### Product Specifications

#### CREE® LED TECHNOLOGY

Cree's total systems approach to product development is a comprehensive engineering philosophy that combines the most advanced LED sources, driver technologies, optics and forms. The result is highly-reliable luminaire solutions for both indoor and outdoor applications that reduce energy use, extend lifetimes, and maximize illumination performance and quality.

#### CONSTRUCTION & MATERIALS

- High performance die cast aluminum heat sink with low copper content
- Polycarbonate base with conduit knockout on cover to access terminal board connections (12ga-20ga) for easy power hookup
- Universal mounting base includes hole patterns for installing into luminaires with both medium or mogul base sockets
- Includes two screws for mounting to existing socket plate
- Frosted glass bulb

#### ELECTRICAL SYSTEM

- **Input Voltage:** Integral 120-277V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- **Operating Temperature Range:** -30°C - +40°C (-40°F - 104°F)
- Integral 6kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

#### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Consult factory for CE Certified products
- 6kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets Buy American requirements within ARRA
- DLC qualified when ordered with uplight shield accessory. Please refer to [www.designlights.org/QPL](http://www.designlights.org/QPL) for most current information
- RoHS compliant. Consult factory for additional details

Electrical Data*					
Input Power Designator	System Watts 120-277V	Total Current			
		120V	208V	240V	277V
A	34	0.30	0.18	0.15	0.13

\* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 7% when operating between 120-277V +/- 10%

Recommended Cree® DPT Series Source Lumen Maintenance Factors (LMF) <sup>1</sup>						
Ambient	Input Power Designator	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Projected <sup>2</sup> LMF	75K hr Projected <sup>3</sup> LMF	100K hr Projected <sup>3</sup> LMF
5°C (41°F)	A	1.04	1.00	0.98	0.96	0.94
10°C (50°F)	A	1.03	0.99	0.97	0.95	0.93
15°C (59°F)	A	1.02	0.98	0.96	0.94	0.92
20°C (68°F)	A	1.01	0.97	0.95	0.93	0.91
25°C (77°F)	A	1.00	0.96	0.94	0.92	0.90

<sup>1</sup> Lumen maintenance values at 25°C (77°F) are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

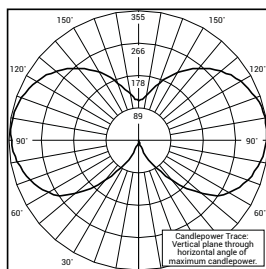
<sup>2</sup> In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

<sup>3</sup> In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

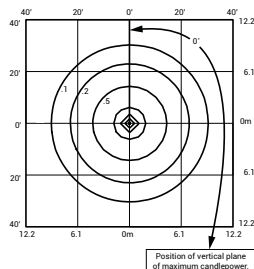
### Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

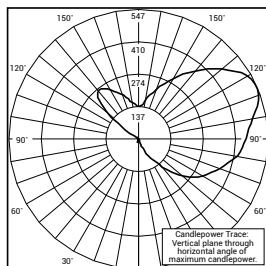
#### FR



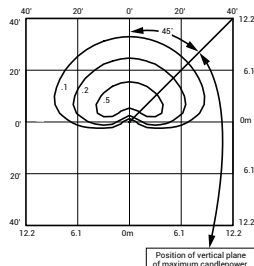
RESTL Test Report #: PL03785-003  
DPT A SB FR A 30K - UL UF  
Initial Delivered Lumens: 3,393



DPT A SB FR A 30K - UL UF  
Mounting Height: 10' (3.0m) A.F.G.  
Initial Delivered Lumens: 3,400  
Initial FC at grade



RESTL Test Report #: PL03785-004  
DPT A SB FR A 30K - UL UF w/DPT-BLS  
Initial Delivered Lumens: 2,547



DPT A SB FR A 30K - UL UF w/DPT-BLS  
Mounting Height: 10' (3.0m) A.F.G.  
Initial Delivered Lumens: 2,550  
Initial FC at grade

Frosted Glass Lens				
Input Power Designator	3000K		4000K	
	Initial Source Lumens <sup>*</sup>	BUG Ratings** Per TM-15-11	Initial Source Lumens <sup>*</sup>	BUG Ratings** Per TM-15-11
A	3,400	B1 U5 G2	3,780	B1 U5 G2

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf).

Frosted Glass Lens w/BLS Accessory				
Input Power Designator	3000K		4000K	
	Initial Source Lumens <sup>*</sup>	BUG Ratings** Per TM-15-11	Initial Source Lumens <sup>*</sup>	BUG Ratings** Per TM-15-11
A	2,550	B0 U5 G2	2,835	B0 U5 G3

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

\*\* For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: [www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf](http://www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf).



## DPT Series - LED Decorative Post Top Luminaire

### Photometry

All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory. To obtain an IES file specific to your project consult: <http://www.cree.com/lighting>.

FR W/ DPT-ULSBD

Frosted Glass Lens w/Uplight Shield Accessory		
Input Power Des- ignator	3000K	4000K
	Initial Source Lumens*	Initial Source Lumens*
A	3,115	3,209

\* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -4 and +10% of initial delivered lumens

**LIMITED WARRANTY FOR CREE® LED LIGHTING FIXTURES  
(INCLUDING BETALED® TECHNOLOGY and TRUEWHITE® TECHNOLOGY)**

This limited warranty is provided by the Cree company described below ("Seller") to you as the original purchaser of the LED lighting product that is identified on Seller's invoice reflecting its original purchase (the "Product"). The Seller is the Cree company identified as such on the invoice. This limited warranty may be transferred to subsequent purchasers of the Product, provided that such Product is resold in new condition and in its original packaging. Seller warrants that the Product, when delivered in new condition and in its original packaging, will be free of defects in material and workmanship for a period of **TEN (10) YEARS** from the date of original purchase. The determination of whether the Product is defective shall be made by Seller in its sole discretion with consideration given to the overall performance of the Product. A Product shall not be considered defective solely as a result of the failure of individual LED components to emit light if the number of inoperable components is less than 10% of the total number of LED components in the Product.

If Seller determines the Product is defective, Seller will elect, in its sole discretion, to refund you the purchase price of the Product, repair the Product or replace the Product. This limited warranty will not apply to loss or damage to the Product caused by: negligence; abuse; misuse; mishandling; improper installation, storage or maintenance; damage due to fire or acts of God; vandalism; civil disturbances; power surges; improper power supply; electrical current fluctuations; corrosive environment installations; induced vibration; harmonic oscillation or resonance associated with movement of air currents around the Product; alteration; accident; failure to follow installation, operating, maintenance or environmental instructions prescribed by Seller or applicable electrical codes; or improper service of the Product performed by someone other than Seller or its authorized service provider. This limited warranty excludes field labor and service charges related to the repair or replacement of the Product. **THIS LIMITED WARRANTY IS VOID IF THE PRODUCT IS NOT USED FOR THE PURPOSE FOR WHICH IT IS DESIGNED.**

Seller reserves the right to utilize new, reconditioned, refurbished, repaired or remanufactured products or parts in the warranty repair or replacement process. Such products and parts will be comparable in function and performance to an original product or part, as determined by Seller in its sole discretion, and warranted for the remainder of the original warranty period.

In order to make a warranty claim, you must notify Seller in writing within sixty (60) days after your discovery of the defect, provide proof of purchase such as the invoice and comply with Seller's other warranty requirements. Upon receiving that notice, Seller may require you to promptly return the Product to Seller, or its authorized service provider, freight prepaid. Your warranty claim should be addressed to Cree, Inc., 9201 Washington Avenue, Racine, WI 53406.

This limited warranty only applies to specified LED lighting fixtures. Any warranties applicable to finish, poles, tenons, mounts, Essentia® by Cree lighting products, Cree® LED lamps, Cree® LED bulbs, Cree® LED T8 Series lamps, UR Series LED upgrade kits, CR Series LED troffers enabled with SMARTCAST® Technology, ZR Series LED troffers enabled with SMARTCAST® Technology, CS Series linear luminaires enabled with SMARTCAST® Technology, KR Series downlights enabled with SMARTCAST® Technology, DR Series downlights, CR Series downlights, LR24™ troffers, certain BetaLED® Technology outdoor fixtures (specifically Class II as defined per IEC/EN60598), backup batteries, controls, occupancy sensors, photocells (except for those contained in RUL Series utility kits) and other fixture accessories can be found at [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty).

THE FOREGOING WARRANTY PROVISIONS ARE EXCLUSIVE AND ARE GIVEN AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY AGAINST INFRINGEMENT AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SELLER BE LIABLE FOR INCIDENTAL, COMPENSATORY, CONSEQUENTIAL, INDIRECT, SPECIAL OR OTHER DAMAGES. SELLER'S AGGREGATE LIABILITY WITH RESPECT TO A DEFECTIVE PRODUCT SHALL IN ANY EVENT BE LIMITED TO THE MONIES PAID TO SELLER FOR THAT DEFECTIVE PRODUCT.

This warranty is effective for purchases of Product on or after the effective date set forth below. Seller reserves the right to modify this warranty from time to time. Any modification of this warranty shall be effective for all orders placed with Seller on or after the effective date of such revised warranty.

Effective Date: March 22, 2016

## Cree FAQs

# 10-Year Limited Warranty - LED Lighting Fixtures, BetaLED® Technology, Cree TrueWhite® Technology and Cree® Essentia® LED Architectural Downlight

### Q: Which products are covered? Are there exclusions?

**A:** Cree's warranty covers the broadest product range in the industry. Please visit [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for detailed information.

Here is the list of exclusions:

1. All lamps (LRP-38™ LED lamps, LBR-30™ LED lamps and lamp accessories)
2. Entire series of CR downlights
3. LR24™ LED troffers
4. Emergency backup batteries
5. BetaLED® Technology outdoor, CE-compliant, Class II products
6. Third-party integrated controls
7. Button and Twistlock photocells
8. Occupancy controls

### Q: Is labor included in the warranty?

**A:** No, the warranty covers the repair or replacement of the product only.

### Q: What is the "10% LED failure"?

**A:** The product will be considered defective if at least 10% of the LEDs fail to illuminate.

### Q: Does the "10% LED failure" clause cover the driver?

**A:** Yes, if the driver fails and causes more than 10% of the LEDs to not operate properly, it would be considered defective and be covered.

### Q: What is Class II and what products fall under this category?

**A:** Class II refers to international and/or European luminaires that employ a reinforced insulation system without a protective earth ground and are designated as a Class II luminaire. This is an International and/or European code that is defined by IEC/EN60598.

### Q: I heard XSP Series is Class 2 UL. Is it covered?

**A:** The XSP Series of luminaires are covered by the new 10-year limited warranty.

### Q: I see CR Series LED downlights are not covered. What downlights are covered?

**A:** All downlights, excluding the CR Series LED downlights, are covered under the 10-year limited warranty. The warranty for the CR Series LED downlights remains at five years.

### Q: Is the CR150™ LED downlight covered by the 10-year limited warranty?

**A:** All downlights, excluding the CR Series, are covered under the 10-year limited warranty. However, the CR150™ may be reviewed for inclusion. Please contact your Cree sales representative for further information.

### Q: The warranty states 10 years, but some spec sheets give specific hours of life. What is the difference?

**A:** All of the Cree lighting specification sheets that require an update to the warranty messaging are being revised to state 10 years. This will take some time to complete due to the number of specification sheets existing. Our rated lifetimes are estimated according to industry standards to determine when the product will operate at 70 percent or greater of its initial lumen output (L70).

### Q: Why did the EB14 products change from a five year warranty to a one year warranty?

**A:** All accessories now fall under a common warranty which is: "period of ONE (1) YEAR from the date of original purchase." In some cases, the warranty may be longer if the length of the warranty extended to Cree by a third party manufacturer is longer than one year.

### Q: Is the 10-year limited warranty retroactive?

**A:** No, this warranty is effective for purchases of product on or after the effective date listed in the revised warranty. Please visit [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for detailed information.

If there are any further questions, please contact [info@cree.com](mailto:info@cree.com).

Cree, Inc.

[www.cree.com/lighting](http://www.cree.com/lighting)

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See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms. Cree®, TrueWhite®, BetaLED®, and Essentia®, are registered trademarks and the Cree logo, LRP-38™, LBR-30™, LR24™ and CR150™ are trademarks of Cree, Inc.

M0040\_A





# RIPLY LIGHTING CONTROLS

DIVISION OF SOUTHCONN TECHNOLOGIES INC

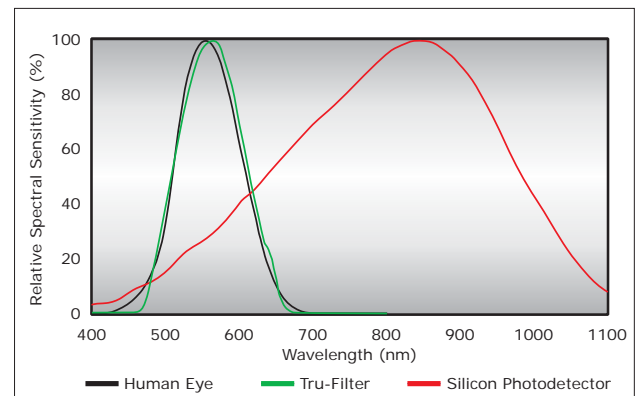
## Twist-Lock Electronic Photocontrol **Tru-Filter®**



### Ripley's line-up of exclusive **Tru-Filter® InfraRed- Filtering Photocontrols**

- Greater control
- Greater accuracy
- Overall energy savings

A single infrared-filtering phototransistor in each Tru-Filter® photocontrol, **filters out all sources of infrared** to mirror the spectral sensitivity of the human eye, and provide highly accurate control across the entire visual light spectrum.



**Tru-Filter® spectral sensitivity matches that of the Human Eye; while competitor's Silicon Photodetector comes nowhere close.**

With True-Filter®, Turn-ON / Turn-OFF events occur with much greater precision than that of competitor models utilizing silicon photodetectors and plastic infrared filters.

Plastic filters used by competitors only filter infrared that passes through the sensor window, not ALL sources—they eventually cause a shift of Turn-ON / Turn-OFF light levels—they fade over time due to UV

#### Other Exclusive Features:

Double-Sided Plated-Through Circuit Board (DSPT) for durability and reliability, Quad-Gate Technology for precision and consistency, Full Wave Rectification, Dual Zener Diodes, High Impact Thermoplastic Base, Solid Brass Contact Blades, UV Stabilized Permanent Color, High Impact Resistant Polypropylene Cover

Meets or exceeds rigid quality requirements of SouthConn Technologies Inc. and applicable ANSI C136.10, and C136.24 Standards

WARRANTY: 8 years from date of manufacture

Phone: 803-939-4700  
Fax: 803-939-4777  
E-mail: Sales@RipleyLC.com

[www.RipleyLC.com](http://www.RipleyLC.com)

PS-6100-046  
Tru-Filter Overview  
021511  
Rev. 1

TruFilter® models are available for 60 Hz Nominal Voltage applications, including: Multi-volt (120/208/240/277), 120 Volt, 240 Volt, 480 Volt, and 347 Volt

Refer to following page for specifications



## Tru-Filter® InfraRed-Filtering Photocontrols

### Model Selection



	6390TF	6246TF	6372TF	6394TF	6395TF
Nominal Voltage 50/60 Hz	120/208/240/277	120	240	480	347
Voltage Range	105—305	105—135	200—300	432-528	312-382
Fail Mode	On (contacts normally closed)				
Load Rating	1000 Watt Tungsten / 1800 VA Ballast				
Operating Temperature	-40C to +70C (-40F to +158F)				
Photocell	Infrared Filtering Silicon Phototransistor *				
Dielectric Strength	5000 Volts between current carrying parts and metal surfaces				
Surge Protection	320 Joule MOV 10,000 amp surge current			530 Joule MOV 10,000 amp surge current	
Power Consumption	0.5 watts @ 120 V				
Time Delay Off (Instant On)	3 to 5 seconds				
Operating Light Levels (Standard Settings)	Turn On 1.5 FC ± .25 / Turn Off by 2.25 FC / (Off:On Ratio = 1.5:1)				
High Impact / High Temperature Thermoplastic Base Temperature Rating	125° C				
ANSI Color Coded Cover	Blue	Gray	Maroon	Yellow	Green
Options	Option Code 1 (Add to end of Model Number)				
430 Joule MOV / 13,000 amp	-X	-X	-X	N/A	N/A
Fail Off	-FO	-FO	-FO	N/A	N/A
ANSI Color Coded Cap Options	Option Code 2 (Add to end of Model Number, after Option Code 1)				
Green	-GN	-GN	-GN	N/A	N/A
Black	-BK	-BK	-BK	N/A	N/A
Brown	-BN	-BN	-BN	N/A	N/A
Orange	-ORN	-ORN	-ORN	N/A	N/A
Operating Light Levels Option	Option Code 3 (Add to end of Model Number, after Option Code 2)				
Denotes Turn On point in FC	Specify 0.3—5.0 FC				

\* Photosensor pigment varies with lot source coding and has no effect on performance  
WARRANTY: 8 years from date of manufacture

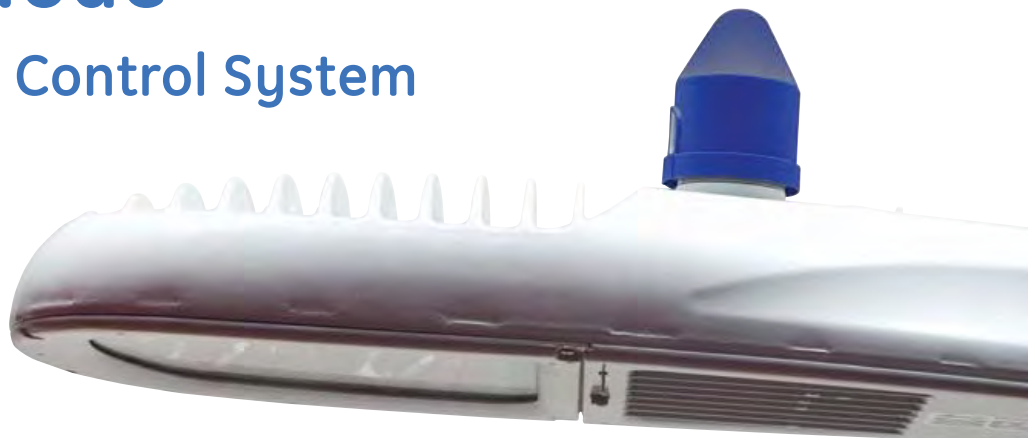
Phone: 803-939-4700  
Fax: 803-939-4777  
E-mail: Sales@RipleyLC.com

[www.RipleyLC.com](http://www.RipleyLC.com)

PS-6100-047  
Tru-Filter Models  
013012  
Rev. 2

# LightGrid™ Node

## Outdoor Wireless Control System



### Description

LightGrid™ Outdoor Wireless Control System from GE allows remote monitoring and control, utility-grade energy measurement and GPS mapping of streetlights.

### Applications

- Street Lighting
- Area Lighting



### Product Features

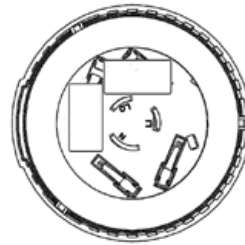
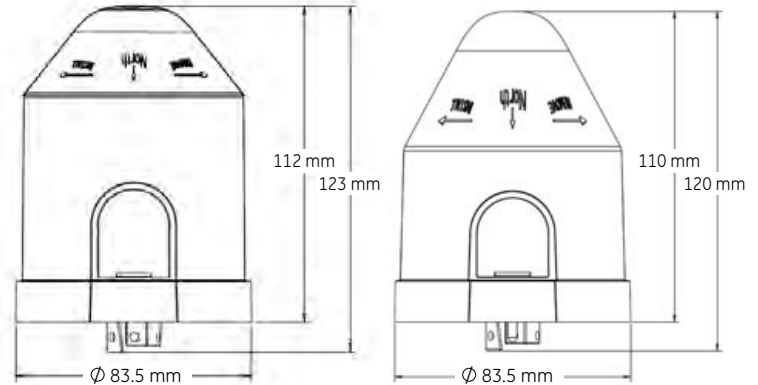
- Utility Grade Measurement up to 0.5% Accuracy
- Self-forming & self-restoring mesh network
- Static IPV6 data addressing and routing
- Reliable and Secure Encrypted Communications
- Nodes, gateway can be spaced up to 500m apart (Clear Line of Sight)
- Utility grade 15 minute time of use Energy consumption reporting
- Full Autonomous Photocell Functionality (No wireless network required)
- Time Based Lighting schedules to maximize energy savings
- Integrated GPS in each node for Real time Asset Reporting
- Dynamic Lumen Output Level Control
- Real time measurement and storage of Voltage, Current, Wattage, Power Factor, and Hours of operation



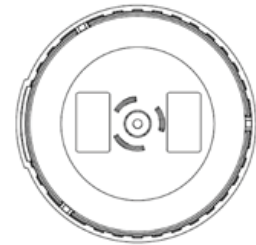
## Product Specifications

- Input Voltage: 120-277V, 347V and 480V
- Radio Frequency: 915 MHz ISM Band
- Network Communication: IEEE 802.15.4, 6LoWPAN, 50 Channel FHSS
- Addressing: IPv6
- Dimming: 0-10V
- Operating Temperature: -40 to +50C
- Surge: Meets ANSI C62.41 6KV, 3KA Combination Wave
- Power consumption i.e. <2W 120-277V, < 3W 347 and 480V
- Photocell: Complies with ANSI C136.10-2006
- GPS: Accuracy 3m (clear open sky)
- Security: AES Encryption and Certificate based authentication
- Utility Grade Energy Measurement: Complies with relevant sections of ANSI C12.20
- Complies with FCC Part 15 required sub sections
- Complies with UL 773, Wet Rated, Type 2 Outdoor
- Complies with ANSI C136.41-2013 (ANSI Dimming)
- Warranty: 5 yrs Standard. 10 yrs Extended Warranty Available

## Product Dimensions



ANSI Dimming



GE Dimming

## Ordering Number Logic

PRODUCT ID	VOLTAGE	PIN CONFIGURATION	PINS	METERING	GPS	MAX WATTAGE
E L W N	0 = 120/277 5 = 480 D = 347	D = GE Dimming N = Non Dimming A = ANSI Dimming	X = Future Use 5 = 5 Pin	R = 2% Revenue Grade U = 0.5% Utility Grade	G = GPS Capability	5 = 450 Watts X = Future Use



[www.gelighting.com](http://www.gelighting.com)

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CTRL001 (Rev 09/08/14)



GE  
Lighting

# wireless intelligence



LightGrid™ outdoor wireless lighting control system



imagination at work

# measurably smarter

LightGrid™ is a groundbreaking outdoor wireless control system for street and roadway lights. The unique technology inside this system allows for remote operation and monitoring of all fixtures through a Web-enabled central management system.

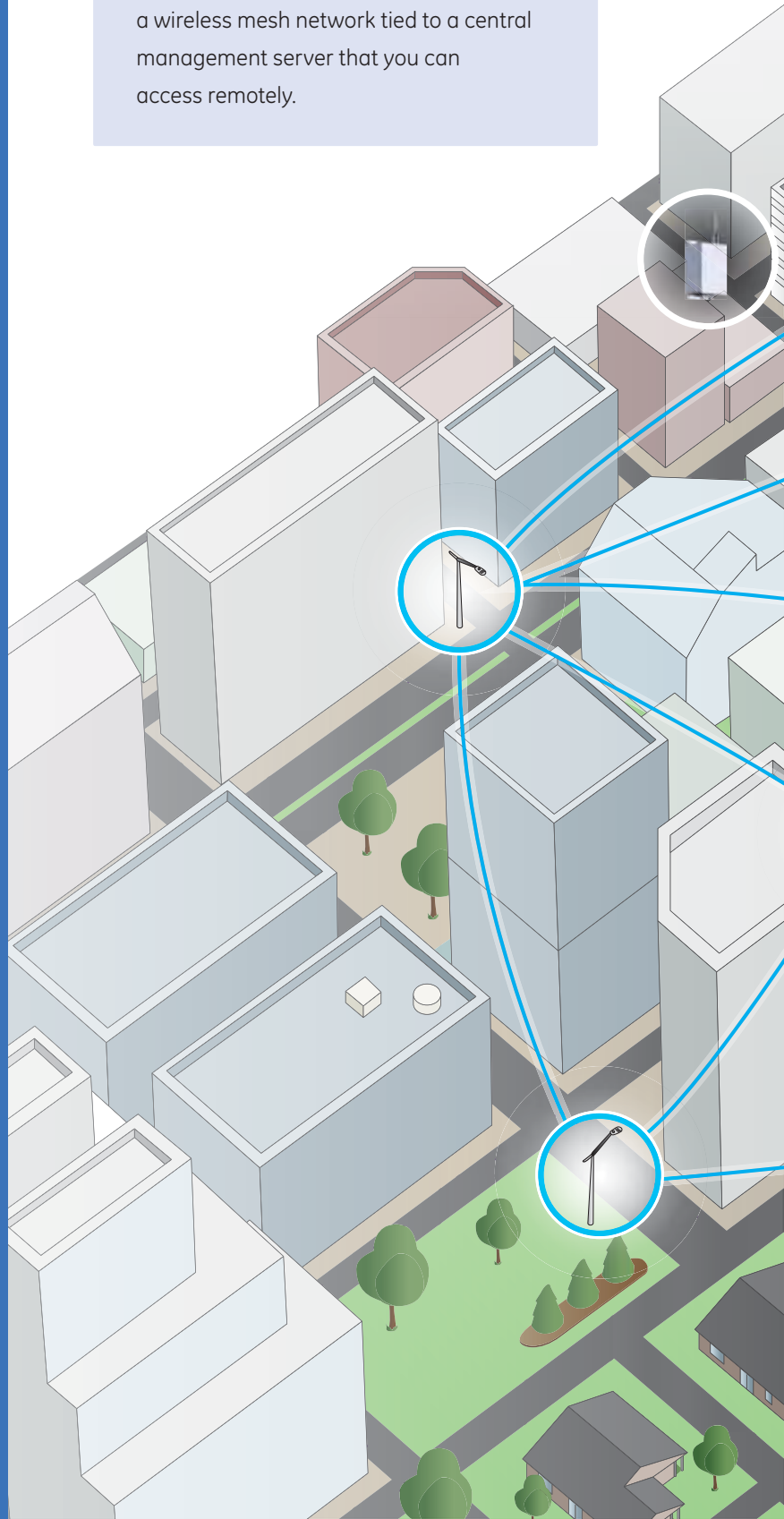
Designed with municipalities and transportation departments in mind, LightGrid offers many features, including:

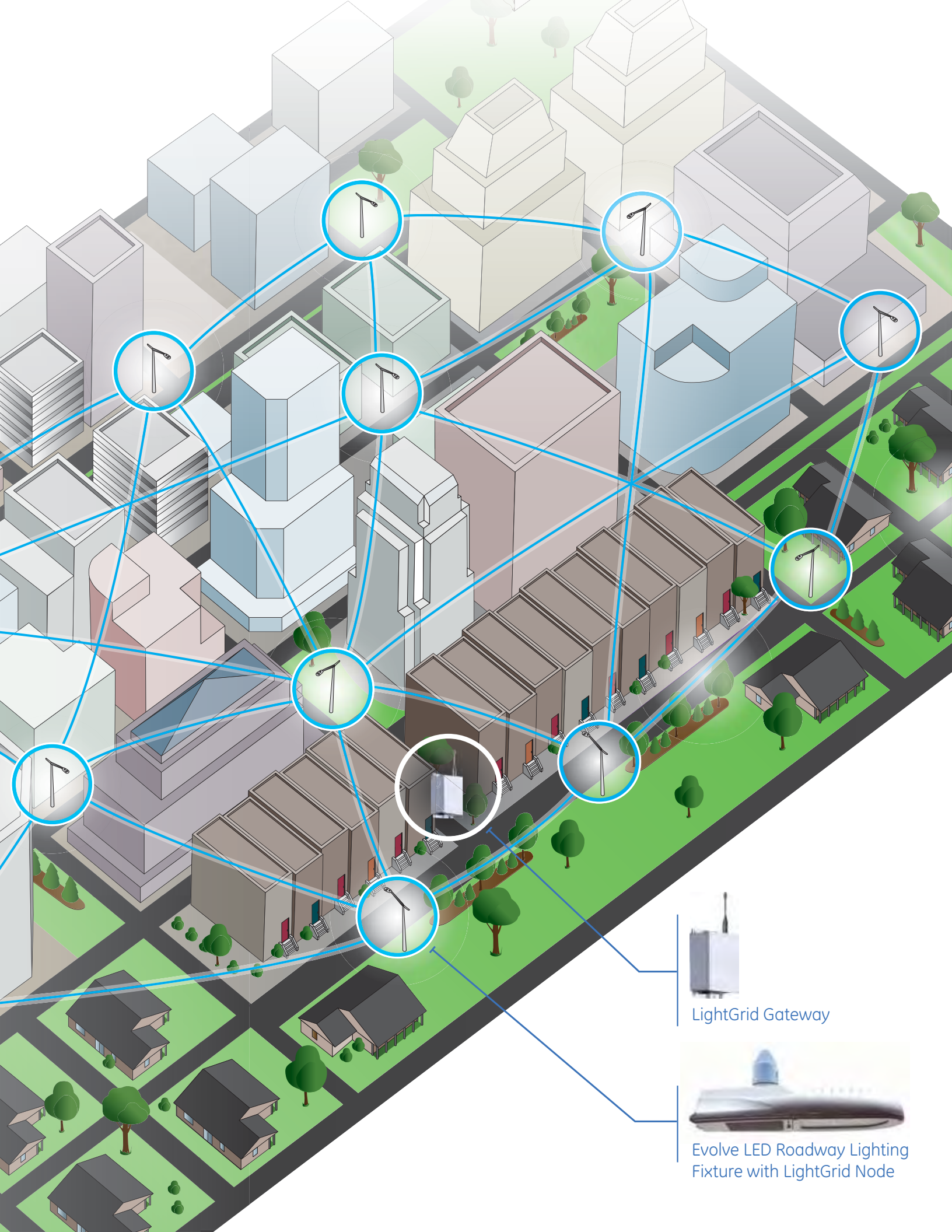
- Accurate, utility-grade energy metering per pole – you pay for what is used
- GPS chip embedded into node – always know the exact location of controllers and fixtures. Node automatically connects to network and acquires location in just minutes, reducing commissioning time.
- One-piece control – no special electronics necessary in the fixture. Node simply connects to external socket, so it can be added easily at any time.
- Operates with programmed schedules in case of network outage

Together with award-winning Evolve™ LED roadway lighting fixtures, LightGrid will deliver the energy efficiency, reliability and flexibility needed to optimize street and roadway lighting.

LightGrid puts you in control, from the office or on the go.

The node and gateway placement creates a wireless mesh network tied to a central management server that you can access remotely.



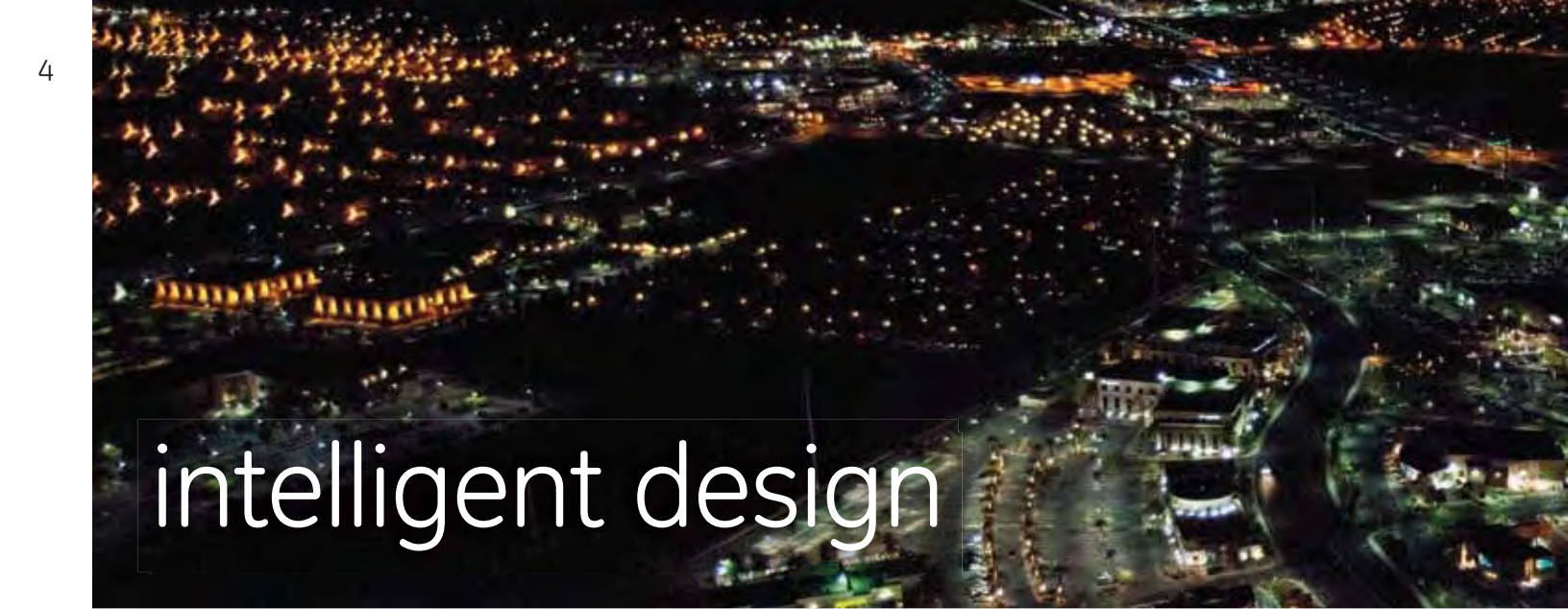


LightGrid Gateway



Evolve LED Roadway Lighting  
Fixture with LightGrid Node





# intelligent design

The LightGrid system is made up of three basic components: nodes, gateway(s) and server.

## LightGrid nodes

- Built-in GPS device lets you know the exact location of each fixture, which provides confirmation of installation, as well as making for more efficient maintenance
- Automatically connects to the network, reducing commissioning time
- Utility-grade metering means you pay for actual energy use, with measurement accuracy of  $\pm 2\%$
- One-piece control ensures no special electronics are needed as node connects to external socket
- Maximum fixture load: 450W
- Power consumption: 120-277VAC: 2W, 347VAC: 3W, 480VAC: 3W

## LightGrid gateways

Each LightGrid wireless gateway can control a mesh network made up of 500+ nodes. Protected by an IP66 enclosure, they're designed for reliable operation, even in the harshest environments.

- Automated GPS detection
- 500m line-of-sight range
- Output: Standard TCP-IP interface
- Input: 120-277VAC, 347-480VAC

## SPECIFICATIONS

### Node

- Maximum fixture load: 450W
- Power measurement accuracy:  $\pm 2\%$
- Power consumption: 120-277VAC: 2W, 347VAC: 3W, 480VAC: 3W
- Internal GPS
- Dimming control output: 0-10V

### Gateway

- Supports 500+ nodes
- Output: Standard TCP-IP interface
- High gain antenna
- Input: 120-277VAC, 347-480VAC
- IP66 enclosure

### Network

- Industry standard communications: IEEE 802.15.4 :6LoWPan
- 50 channel 902-928Mhz FHSS
- 500m line of site range





## LightGrid server

With LightGrid, lighting data for every fixture is accessible through a Web-based interface that can be hosted remotely. Protected by a high level of security encryption, our central management server offers secure login for all users.

Armed with actionable information, municipalities and transportation departments can implement smarter energy-saving strategies through more precise on/off and dimming schedules, particularly during a middle-of-the-night operation in low traffic areas. Other features include:

- Updates are easier with “over the air” firmware upgrades
- Send automated fault email notifications when something happens to a fixture
- Display GPS coordinates in the Google Maps format
- Present real-time lighting information with a single click
- Access scheduling, customized reporting, grouping and user access level management
- Manual dimming with detailed information



# energy wiser

Behind every Evolve LED roadway lighting fixture is a century of street lighting experience.  
Inside each is the most advanced GE optical system technology available.

## Evolve™ LED Scalable Cobrahead (ERS)

Recently named Best in Class by the U.S. Department of Energy in the Next Generation Luminaires™ Design Competition, the Evolve LED Scalable Cobrahead luminaire offers excellent lighting uniformity and control with low glare. By focusing more light on the road, where it's needed, Evolve fixtures have a higher Coefficient of Usage (CU) for greater application efficiency.

- 11+ years of service life to significantly reduce maintenance costs

## Evolve LED Streetlight (ERX)

Like the Scalable Cobrahead, our Evolve LED Streetlight lighting offers highly controlled light distribution with less waste and can be paired with programmable dimming options for even greater savings and control.

### ERS1, ERS2, ERS3, ERS4

- Replaces up to 400W HPS fixtures
- Accommodates one to four lane widths
- Optimized to meet existing and future Recommended Practices
- Reduces maintenance with long life (50,000 @ L85)
- Offers design flexibility with reversible optics



Each LightGrid node is designed to fit GE's Evolve Cobrahead fixtures, among others, attaching easily in minimal time to create the wireless mesh network that puts complete control at your fingertips.



### GE's solution for Tarentum Borough, Pa.

We replaced 100% of the existing street lighting and facilitated a financing strategy that resulted in a positive cash flow status from day one.

#### OPERATING IMPACT

- \$40,000 savings per year
- 66% energy savings per year
- Eliminated 100% of maintenance hassles and costs
- Positive cash flow status from day one

#### ENVIRONMENTAL IMPACT

- Reduced energy consumption by 223,000 kWh per year

"In a small town like this, you have to be very careful with each and every dollar," says Carl Magnetta Jr., mayor of Tarentum Borough. "We try to keep taxes as low as possible, and by going into this lighting program, we have saved ourselves a lot of money. This benefits everybody."



## the smartest grid on the block.

---

As energy efficiency and savings drive outdoor street and roadway lighting demands, control means much more than turning on the streetlights at dusk. Control means being able to program each fixture, on every street, individually. To brighten areas when more light is needed – or to dim them when it's not. And to detect and correct problems quickly to minimize complications. At GE, we offer you that kind of control with LightGrid – and make it easily accessible anytime, anywhere.

GE brings intelligent design to a simple, easy-to-use system that puts municipalities and transportation departments in complete control, delivering the energy efficiency, flexibility and low-maintenance functionality that cuts costs.

To learn more about the LightGrid Outdoor Wireless Lighting Control System, contact your independent lighting representative or visit [gelighting.com/lightgrid](http://gelighting.com/lightgrid).



imagination at work

Information provided is subject to change without notice. Please verify all details with GE. All values are design or typical values when measured under laboratory conditions, and GE makes no warranty or guarantee, express or implied, that such performance will be obtained under end-use conditions.





# LightGrid™ FAQ

## Outdoor Wireless Control System

### 1. What is LightGrid™?

**LightGrid™** is a breakthrough technology system from GE for Outdoor Wireless Control that allows remote monitoring and control, utility-grade energy metering and GPS mapping of streetlights.

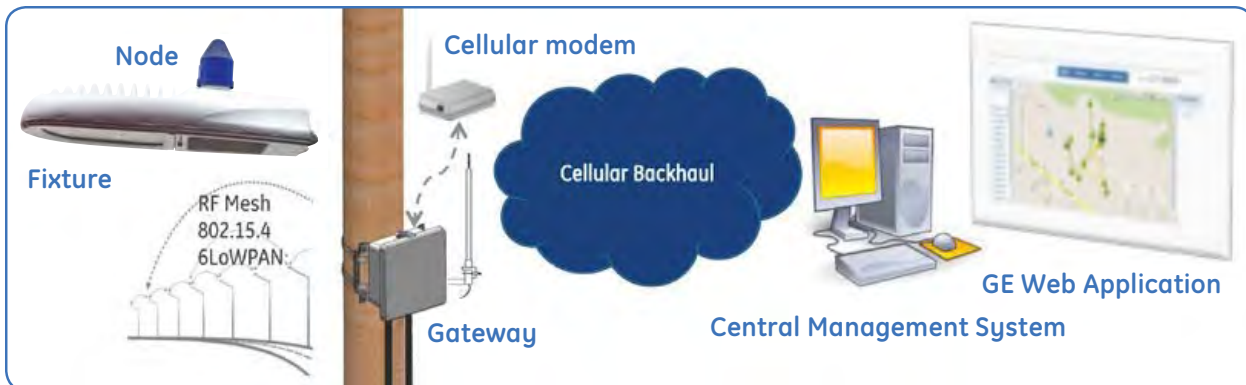


### 2. How does the LightGrid™ system work?

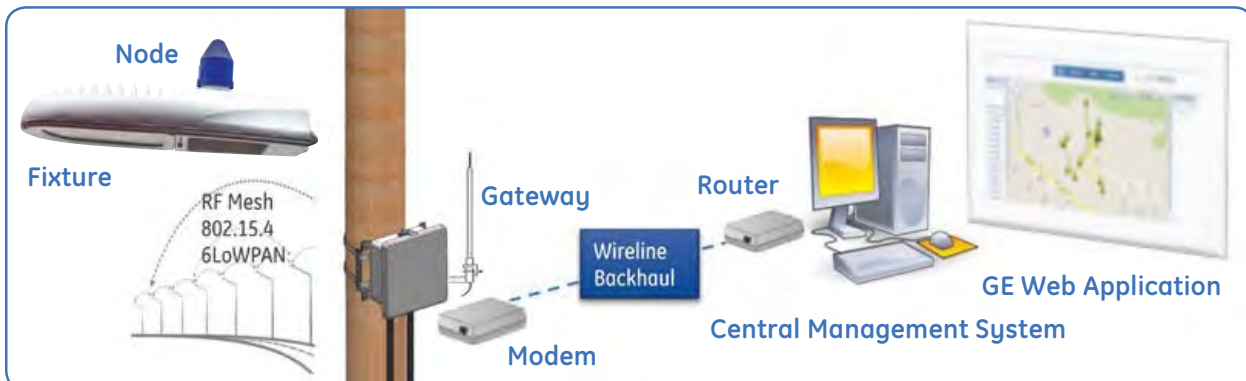
The architecture diagram below gives an overview of the **LightGrid™** system.

- Nodes reside on top of each Light Fixture.
- Nodes collect data (Voltage, Current...) for the respective fixture and send this information to the Central Management Server (CMS) via a Gateway
- The backhaul Network can be wireline or cell based
- The CMS can be installed at the customer site or hosted by GE Lighting
- The fixtures can be remotely configured, monitored and controlled (Turn on/off/dim..) by sending commands to the nodes via the Gateway from the CMS

### Cell Based Network



### Wireline Based Network



### 3. Can I install LightGrid™ at all my global locations?

LightGrid™ is designed to be a Global platform. However, most countries have strict regulatory requirement and restrictions on allowed frequencies for operation. Please contact us at [lightgrid@ge.com](mailto:lightgrid@ge.com) if you have a requirement for a specific country.

### 4. How secure is my data?

LightGrid™ system is designed to be highly secure using sophisticated encryption and certificate based authentication technologies.

### 5. What if I have more questions about LightGrid™?

Please contact us at [lightgrid@ge.com](mailto:lightgrid@ge.com). Our customer service team will be happy to assist you.

## LightGrid™ Node

### 1. What is the advantage of having a GPS in each node?

GPS in each node helps keep track of your assets by location (GPS coordinates). This will also be a way to keep track of any thefts in case you see unexpected "movement" of assets.

### 2. What is the advantage of having a Utility Grade Metering in every node?

LightGrid™ nodes are design to measure the power consumption by the respective fixtures to a high level of accuracy. This will provide the opportunity to "pay per use" and/or "pay per time of use" instead of a flat rate.

### 3. How do the nodes communicate to each other and to the Central Management System?

LightGrid™ nodes operate in a Mesh Network. They communicate to each other and to the Gateway using an industry standard 6LoWPAN protocol based on IEEE 802.15.4. The gateway communicates to the Central Management System using Cell or Fiber network.

### 4. Why did you select 6LoWPAN instead of Zigbee or other Industry standards?

6LoWPAN protocol addresses several needs that are more suitable for outdoor lighting controls such as the low bandwidth, low data rate, low power consumption and low cost.

### 5. What is OTA process?

OTA stands for Over The Air. GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. LightGrid™ system is designed in such a way that any changes made to the software that resides in the nodes can be sent over the air (OTA). This will avoid the hassle of physically accessing the Nodes for upgrades.

# LightGrid™ Gateway

## 1. Can Gateway software be upgraded through OTA process?

**Yes.** GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. LightGrid™ system is designed in such a way that any changes made to the software that resides in the gateway can be sent over the air (OTA). This will avoid the hassle of physically accessing the Gateways for upgrades.

## 2. How many nodes can be supported by 1 gateway?

Up to 500 Nodes can be supported using 1 gateway. This will however depend on the geographic location of the nodes with respect to the gateway. Nodes can communicate to each other and to the gateway up a distance of 1500 feet with a clear line of sight.

# LightGrid™ Backhaul Network

## 1. What happens if my backhaul network is down. Will my lights turn on at night?

**Yes.** LightGrid™ system is built to be fault tolerant. If the network is down for any reason, each node is designed to operate in stand alone mode and will continue to turn on and turn off the light fixture based on the Photocell input.

## 2. When my backhaul network is down, will I lose my energy consumption data?

LightGrid™ nodes are designed with internal memory. With this, the node can locally store data, such as power consumption by the fixture, up to 4 days. Once the back haul network is up and running, the node will transmit this data to the central management server.

## 3. What is the difference between using Cell vs Wireline? Is one system more secure than the other?

Both systems are equally secure. Please refer the "LightGrid™ Network" on the pros and cons on each approach.

## 4. If I select the cellular backhaul option who will activate my network?

GE Lighting will take care of activating your network.

## 5. If I select the cellular backhaul option what will be my monthly service fee?

Monthly service will depend on the amount data that you expect to transmit using the cell network on a monthly basis. GE Lighting team will work closely with you to assess your data needs and recommend the optimum data plan for you.

## 6. If I select the cellular backhaul option will I be dealing with the service providers such as Verizon or AT&T directly for billing?

**No.** You will be dealing only with GE Lighting or our nominated distributor/agent.

# LightGrid™ Central Management Server

## 1. Will GE Lighting host my data?

**Yes.** GE Lighting will gladly host your data. You will be able to access your data any time through a Web Interface using a secure Login ID and Password.

## 2. Can I host my own data?

**Yes.** LightGrid™ is designed to be a flexible system where you can either host your own data or GE Lighting will gladly host for you. Please refer the "LightGrid™ Server Options" to understand the pros and cons of each approach.

## 3. Will GE Lighting be launching new versions of the GUI software? How do I ensure I have the latest version?

**Yes.** GE Lighting will continue to upgrade software to add new features, fix any reported bugs to continuously improve the performance of the LightGrid™ system. If GE Lighting is hosting your data – the software upgrades will be done by GE Lighting and you will always get to use the latest version as per the maintenance contract. If you are hosting the data, GE Lighting offers an attractive software yearly maintenance package that you could purchase.

## 4. Will I be able to turn on and turn off the lights remotely?

**Yes.** LightGrid™ offers a user friendly interface for you to control your lights remotely. The access to this interface is protected through a secure login.

## 5. Will I be able to view the status of all the lights remotely?

**Yes.** LightGrid™ offers a user friendly "Map View" to remotely view the status of each of your light fixtures.

## 6. Will I be able to get real time data for any light fixture or groups of fixtures?

**Yes.** LightGrid™ offers a user friendly interface to remotely collect real time data for any fixture or groups of fixtures.



[www.gelighting.com](http://www.gelighting.com)

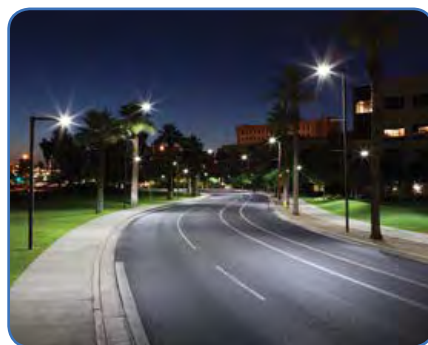
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CTRL006 (Rev 09/08/14)



# LightGrid™ Hosting

## Outdoor Wireless Control System



### Description

**LightGrid™ Outdoor Wireless Control System** from GE allows remote monitoring and control, utility-grade energy measurement and GPS mapping of streetlights. The Central management Server can be hosted by GE Lighting or Installed at Customer site. While both options offer best in class features and benefits, the hosted solution offers additional advantages of shortest possible install time, with no involvement of customer IT while delivering proven cost savings over installed solution

### Applications

- Street Lighting
- Area Lighting



### Hosted or Installed Solution

- Individual or Group remote monitoring and control
- Manual or Automatic dimming based on schedules
- Automated fault email notifications
- Real-time lighting information
- Customized reporting and user access level management
- High level of security encryption
- User-friendly, Intuitive software for analytics



## Hosted vs. Installed Solution Responsibility Matrix

Hosted Solution	GE Lighting	Customer
Data Back Up	Yes	No
Software Upgrades Installation	Yes	No
Server	Yes	No
IT Support	Yes	No
Other (Electricity, Air Conditioning, Server Room, Security...)	Yes	No

Installed Solution	GE Lighting	Customer
Data Back Up	No	Yes
Software Upgrades Installation	No	Yes
Server	No	Yes
IT Support	No	Yes
Other (Electricity, Air Conditioning, Server Room, Security...)	No	Yes



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CTRL005 (Rev 09/08/14)

GE  
Lighting

# LightGrid™ Server

## Outdoor Wireless Control System



### Description

LightGrid™ Outdoor Wireless Control System from GE allows remote monitoring and control, utility-grade energy measurement and GPS mapping of streetlights.

### Applications

- Street Lighting
- Area Lighting



### Product Features

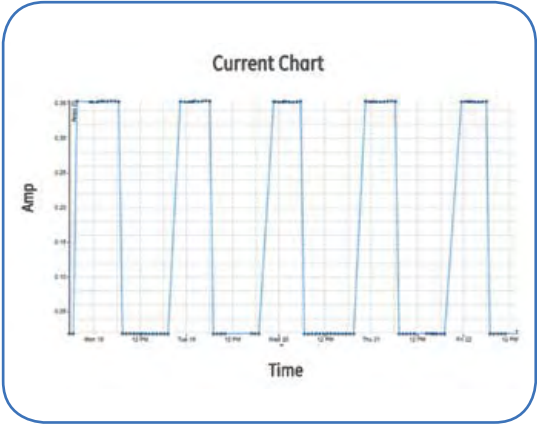
- Hosted or On-Premise Options Available
- Individual or Group remote monitoring and control
- Manual or Automatic dimming based on schedules
- Automated fault email notifications
- Real-time lighting information
- Customized reporting and user access level management
- High level of security encryption
- User-friendly, Intuitive software for analytics
- Web-based software allowing easier upgrades (Hosted)

### Product Specifications

- Complies with TALQ Specification
- Complies with MSSLC Specification
- Secure login for all users
- Nodes and Gateways display in the Google Maps format
- Real time access to fixture information—Individual or Group
- Real time control of fixtures (On/Off/Dim) - Individual or Group
- Secure communication to the Gateways and Nodes
- Customized reports for Energy Consumption and other Electrical Parameters



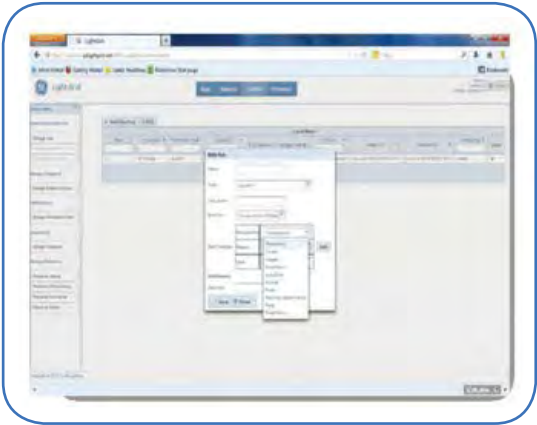
# Graphical User Interface



Users create customized historical performance reports for analytics.

The 'Schedule editor' window allows users to configure scheduling for a specific luminaire. It includes fields for 'Name' (test) and 'Description' (test sched 1). A table lists 'WeekDay' (10) and 'Action' (0). Below, the 'New row setup' section includes 'Day' (Weekdays), 'Time' (HR: 10, Min: 0), and 'Action' (0). Buttons for 'Save row', 'Delete row', and 'Cancel' are at the bottom. A note states: 'Allowed: 0-100; 0=OFF and 100=ON'.

Time of day scheduling of individual luminaires or customer defined groups.



Customized maintenance alerts delivered via email & text messaging.

The screenshot shows a control interface for a specific luminaire, identified by the ID 'End-point: lightD828C90010000018'. It displays various status and control parameters, including 'State' (light off), 'Manual positioning' (unlocked), and a table of settings like 'Light control' (0%), 'Percent of Power' (0%), 'On time' (118 s), 'New schedule allowed' (K:12A3), and 'Schedule' (Basic City Series 1: condition 1). A 'Close' button is at the bottom.

Luminaires can be dimmed individually or by user defined schedules.



Map view of asset locations.

## Ordering Number Logic

E

L

W

E

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PRODUCT ID	ANTENNA	FUTURE USE
E L W E	N = Network Design C = Commissioning T = Training S = Software Install I = Interface Eval	S = Standard - onsite R = Remote P = Premium



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CTRL003 (Rev 09/08/14)



# LightGrid™ Gateway

## Outdoor Wireless Control System

### Description

LightGrid™ Outdoor Wireless Control System from GE allows remote monitoring and control, utility-grade energy measurement and GPS mapping of streetlights.



### Product Features

- GPS module in every gateway
- Automatic gateway registration and display in MAP view
- Real-time update of the status of all the fixtures
- Self-forming & self-restoring mesh network
- Addressable via IPv6
- Nodes, gateway can be spaced up to 500m apart (Clear line of sight)
- Reliable and Secure Encrypted Communications

### Applications

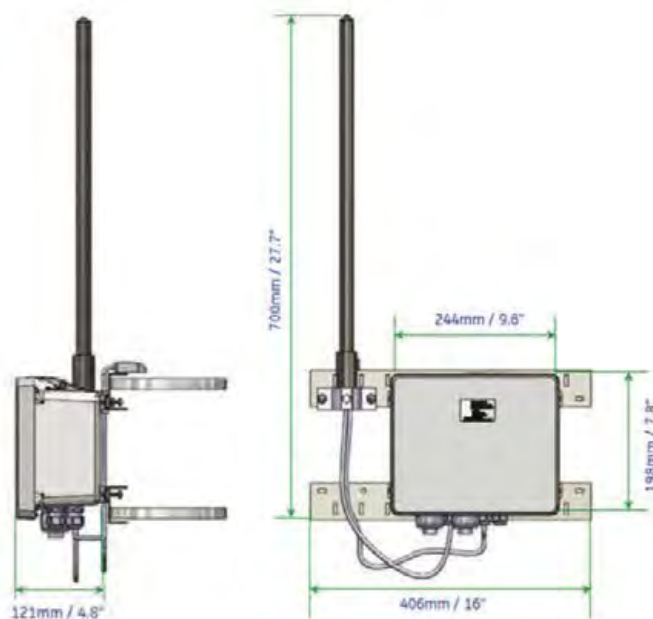
- Street Lighting
- Area Lighting



### Product Specifications

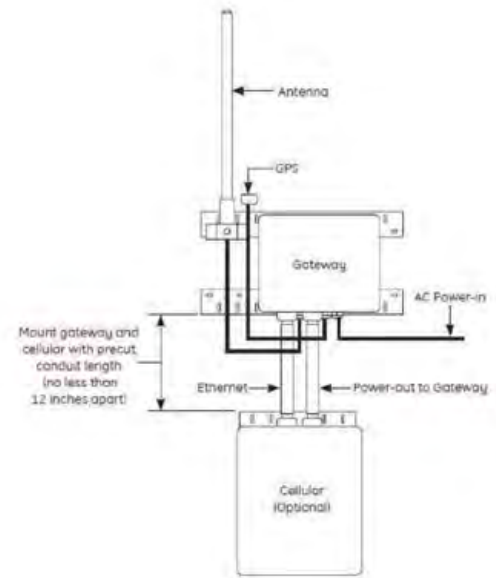
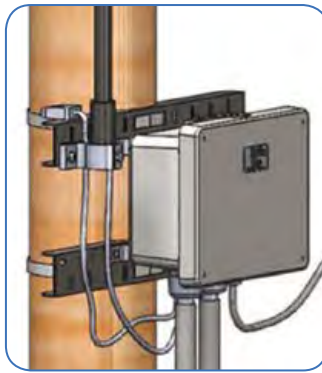
- Input Voltage: 120-277V, 347V—480V
- Operating Temperature: -40 to +50C
- Surge: Meets ANSI C62.41 6KV, 3KA Combination Wave
- Power Consumption: < 3W
- Frequency: 915 MHz ISM Band
- GPS: Accuracy 3m (clear open sky)
- Addressing: IPv6
- Security: AES Encryption, Certificate Based
- Network Communication: IEEE 802.15.4, 6LoWPAN, 50 Channel FHSS
- Backhaul Communication: Ethernet or Cell (with modem)
- Complies with FCC Part 15 Required Sub Sections
- Complies with UL 916
- Weight: 7 lbs.
- Warranty: 3 years

### Product Dimensions

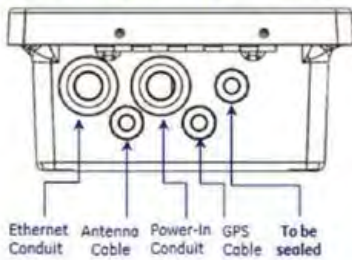


## Installation

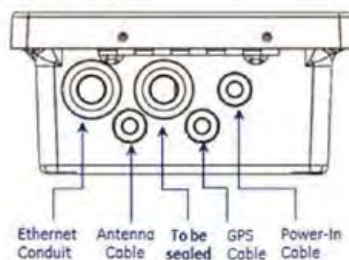
**Gateway** will contain two ¾" liquid-tight conduit fittings, and three liquid-tight glands to accommodate customer installation flexibility according to the diagram below, which may require customer to cap or seal unused fittings during installation.



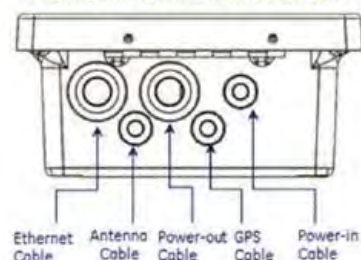
**OPTION 1: Power & Ethernet input using conduit (NO power-out to external device)**



**OPTION 2: Power-in via cable. Ethernet in via conduit (NO power-out to external device)**



**OPTION 3: Power-in via cable; Power & Ethernet out to cellular modem via conduit**



## Packaging

- 1 Gateway Enclosure
- Conduit fittings (2 pcs mounted to enclosure)
- Gland fittings (3 pcs mounted to enclosure)
- GPS module and cable (1 pcs mounted to gland)
- Antenna Cable (1 pc mounted to gland)
- Antenna Pole (1 pc to be installed)
- Pole Mounting Bracket (2 pcs mounted to enclosure)

## Ordering Number Logic

PRODUCT ID	VOLTAGE (UL)	ANTENNA	FUTURE USE	FUTURE USE	GPS	IP COMMUNICATION	OPTIONS
E L W N	0 = 120/277 H = 347/480	C = Standard 18" X = Future Lengths	X	X	G = GPS Capability N = N/A	C = Cat 5 Cable Only X = Future Use	None at this time



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CTRL002 (Rev 09/08/14)

Appendix C – Subcontractor's State of Florida  
Electrical Contractor License



STATE OF FLORIDA  
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION  
ELECTRICAL CONTRACTORS LICENSING BOARD

## LICENSE NUMBER

EC13002165

The ELECTRICAL CONTRACTOR  
Named below IS CERTIFIED  
Under the provisions of Chapter 489 FS.  
Expiration date: AUG 31, 2016

PLANAS, GONZALO  
G & R ELECTRIC CORP  
4450 E 10TH CT  
HIALEAH FL 33013



ISSUED: 08/11/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1408110001610

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

STATE OF FLORIDA  
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION  
ELECTRICAL CONTRACTORS LICENSING BOARD

## LICENSE NUMBER

EC13003998

The ELECTRICAL CONTRACTOR  
Named below IS CERTIFIED  
Under the provisions of Chapter 489 FS.  
Expiration date: AUG 31, 2016

PLANAS, GONZALO JR  
G & R ELECTRIC CORP  
4450 EAST 10 COURT  
HIALEAH FL 33013



ISSUED: 09/28/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1409280003362

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

STATE OF FLORIDA  
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION  
CONSTRUCTION INDUSTRY LICENSING BOARD

## LICENSE NUMBER

CGC1511532

The GENERAL CONTRACTOR  
Named below IS CERTIFIED  
Under the provisions of Chapter 489 FS.  
Expiration date: AUG 31, 2016

PLANAS, GONZALO JR  
G & R ELECTRIC CORP  
4450 EAST 10TH COURT  
HIALEAH FL 33013



ISSUED: 08/11/2014

DISPLAY AS REQUIRED BY LAW

SEQ # L1408110001375



## Appendix D – Bond Capacity Letter



## THE GUARANTEE COMPANY OF NORTH AMERICA USA

1800 Sutter Street, Suite 880  
Concord, CA 94520  
Tel: 925-566-6040  
Fax: 925-566-6045

June 24, 2016

Town of Miami Lakes  
6601 Main Street  
Miami Lakes, Florida 33014

Re: LED Street Light Conversion Program  
RFP No. 2016-34

To Whom It May Concern:

The Guarantee Company of North America USA is privileged to serve the surety bonding needs of Tanko Streetlighting, Inc. dba Tanko Lighting. The Guarantee Company of North America USA is admitted as a licensed surety in California with an A.M. Best rating of AVIII. Bonding capacity for Tanko Streetlighting, Inc. dba Tanko Lighting is \$5,000,000 single project/fourteen million aggregate.

Our consideration would be based on the satisfactory completion of our normal underwriting requirements, which include, but are not limited to, our satisfactory review and approval of the contract terms and conditions, our contractor's financial condition at that time, their overall work program, verification of project financing and other pertinent underwriting criteria.

Please be advised that this letter is not a commitment to provide any specific bond(s) and is provided solely as an indication of our support. The execution of any bond or bonds is a matter between the contractor and us. We assume no liability to you or any third party in providing this letter.

If you have any questions or require additional information, please do not hesitate to contact the undersigned.

Sincerely,

Vincent M. Scolari  
Attorney-In-Fact

VSM/pks

**CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT****CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California )

County of Santa Clara )On June 24, 2016 before me, P. K. Simicich, Notary Public,

Date

Here Insert Name and Title of the Officer

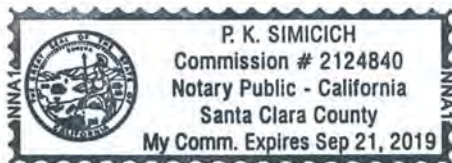
personally appeared Vincent M. Scolari

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.



Signature

Signature of Notary Public

Place Notary Seal Above

**OPTIONAL**

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

**Description of Attached Document**

Title or Type of Document: \_\_\_\_\_ Document Date: \_\_\_\_\_

Number of Pages: \_\_\_\_\_ Signer(s) Other Than Named Above: \_\_\_\_\_

**Capacity(ies) Claimed by Signer(s)**

Signer's Name: \_\_\_\_\_

☐ Corporate Officer — Title(s): \_\_\_\_\_☐ Partner — ☐ Limited ☐ General☐ Individual ☐ Attorney in Fact☐ Trustee ☐ Guardian or Conservator☐ Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_

Signer's Name: \_\_\_\_\_

☐ Corporate Officer — Title(s): \_\_\_\_\_☐ Partner — ☐ Limited ☐ General☐ Individual ☐ Attorney in Fact☐ Trustee ☐ Guardian or Conservator☐ Other: \_\_\_\_\_

Signer Is Representing: \_\_\_\_\_





# THE GUARANTEE COMPANY OF NORTH AMERICA USA

Southfield, Michigan

## POWER OF ATTORNEY

**KNOW ALL BY THESE PRESENTS:** That **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, a corporation organized and existing under the laws of the State of Michigan, having its principal office in Southfield, Michigan, does hereby constitute and appoint

*Vincent M. Scolari, Patricia K. Simicich, Felicia R. Gardner, Wendy R. Pastora, David J. Bachan, F. R. Hudson, III,  
Deborah L. Tablak, Charles M. Griswold, Yesenia Rivera  
McSherry & Hudson*

its true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise.

The execution of such instrument(s) in pursuance of these presents, shall be as binding upon **THE GUARANTEE COMPANY OF NORTH AMERICA USA** as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at the principal office.

The Power of Attorney is executed and may be certified so, and may be revoked, pursuant to and by authority of Article IX, Section 9.03 of the By-Laws adopted by the Board of Directors of **THE GUARANTEE COMPANY OF NORTH AMERICA USA** at a meeting held on the 31<sup>st</sup> day of December, 2003. The President, or any Vice President, acting with any Secretary or Assistant Secretary, shall have power and authority.

1. To appoint Attorney(s)-in-fact, and to authorize them to execute on behalf of the Company, and attach the Seal of the Company thereto, bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof; and
2. To revoke, at any time, any such Attorney-in-fact and revoke the authority given, except as provided below
3. In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.
4. In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner – Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

Further, this Power of Attorney is signed and sealed by facsimile pursuant to resolution of the Board of Directors of the Company adopted at a meeting duly called and held on the 6th day of December 2011, of which the following is a true excerpt:

RESOLVED that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any Power of Attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, contracts of indemnity and other writings obligatory in the nature thereof, and such signature and seal when so used shall have the same force and effect as though manually affixed.



IN WITNESS WHEREOF, **THE GUARANTEE COMPANY OF NORTH AMERICA USA** has caused this instrument to be signed and its corporate seal to be affixed by its authorized officer, this 23rd day of February, 2012.

**THE GUARANTEE COMPANY OF NORTH AMERICA USA**

Stephen C. Ruschak, Vice President

Randall Musselman, Secretary

STATE OF MICHIGAN  
County of Oakland

On this 23rd day of February, 2012 before me came the individuals who executed the preceding instrument, to me personally known, and being by me duly sworn, said that each is the herein described and authorized officer of The Guarantee Company of North America USA; that the seal affixed to said instrument is the Corporate Seal of said Company; that the Corporate Seal and each signature were duly affixed by order of the Board of Directors of



Cynthia A. Takai  
Notary Public, State of Michigan  
County of Oakland  
My Commission Expires February 27, 2018  
Acting in Oakland County

IN WITNESS WHEREOF, I have hereunto set my hand at The Guarantee Company of North America USA offices the day and year above written.

I, Randall Musselman, Secretary of **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney executed by **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, which is still in full force and effect.



IN WITNESS WHEREOF, I have thereunto set my hand and attached the seal of said Company this 24th day of June, 2016

Randall Musselman, Secretary

Appendix E – Completed Project Manager  
Experience Questionnaire Form

## PROJECT MANAGER EXPERIENCE QUESTIONNAIRE

### A. Project Manager

1. Name of Project Manager to be committed to this Project and continuously retained throughout this

Project: David Gruener

- a. Attach Project Manager's resume. Attached
- b. Employed by the Company: Tanko Lighting 3+ years
- c. Present position/job function: Senior Project Manager - Directs projects
- d. Years in present position/job function: 2 years
- e. Prior position with company (if applicable)  
Project Manager
- f. Years in prior position/job function: 1.5 years
- g. The Project Manager named above was assigned to the following comparable projects:

	<u>Project Name</u>	<u>Construction Cost</u>
i.	<u>City of Berkeley LED Street Light Conversion</u>	<u>\$2.92 million</u>
ii.	<u>City of Santa Clara LED Street Light Conversion</u>	<u>\$1.86 million</u>
iii.	<u>City of Vista LED Street Light Conversion</u>	<u>\$620,000</u>
h.	The Project Manager named above worked on the following projects for which Project Data Forms are submitted: (Note: If the designated Project Manager did not work in this capacity on at least two (2) comparable projects for which Project Data Forms were submitted, provide a Project Data Form for two (2) of the projects listed A.1.g above.	
i.	<u>City of Berkeley LED Street Light Conversion</u>	<u>\$2.92 million</u>
ii.	<u>City of Santa Clara LED Street Light Conversion</u>	<u>\$1.86 million</u>
iii.	<u></u>	<u></u>

### B. Construction Superintendent

1. Name of Construction Superintendent to be committed to this Project and continuously retained throughout this

Project: Gonzalo Planas, Jr. (with G&R Electric - subcontractor)

- a. Attach Construction Superintendent's resume. Please find attached.
- b. Employed by the Company: 15 years
- c. Present position/job function:  
President, Qualifier, construction manager/superintendent
- d. Years in present position/job function: 10 years
- e. Prior position with company (if applicable)  
Qualifier, Project Executive, Chief Estimator, and Design-Build Designer
- f. Years in prior position/job function: 5 years
- g. The Construction Superintendent named above was assigned to the following comparable projects:

	<u>Project Name</u>	<u>Construction Cost</u>
i.	<u></u>	<u></u>
ii.	<u></u>	<u></u>
iii.	<u></u>	<u></u>



- h. The Construction Superintendent named above worked on the following projects for which Project Data Forms are submitted: (Note: If the designated Construction Superintendent did not work in this capacity on at least two (2) comparable projects for which Project Data Forms were submitted, provide a Project Data Form for two (2) of the projects listed A.1.g above.

i.	Street Lighting for Normady Isles	\$242,824
ii.	Plantation Pointe LED Lights	\$461,000
iii.		

See Project Data Forms attached.

## David Gruener

Senior Project Manager, Tanko Lighting

---

David Gruener comes from a background of data management/analysis/visualization, marketing coordination, and systems implementation. He joined Tanko Lighting in April of 2013 and currently coordinates project management of the company's turn-key professional services, including GIS audit data collection and data reconciliation.

Prior to joining Tanko Lighting, Mr. Gruener worked as a Business Data Analyst at mFoundry, Inc. In this capacity, Mr. Gruener developed and implemented a client revenue, usage, and management database and managed the implementation of a business intelligence tool for data visualization. His duties included data analysis and reporting, systems implementation, revenue modeling and forecasting, database development and project management. He managed both staff and subcontractors and assisted mFoundry with growing from a small, start-up firm to being acquired by a Fortune 500 corporation.

Prior to his tenure with mFoundry, Mr. Gruener served as Data Analyst for Resource Solutions Group – an energy efficiency consulting firm. In this capacity, Mr. Gruener coordinated marketing outreach activities and led the data analysis and reporting for large, region-wide multi-layered energy efficiency rebate programs.

Mr. Gruener holds a Bachelor of Business Administration in Marketing from the University of Portland.

Mr. Gruener has served on a variety of Tanko Lighting projects during his tenure with the company. A small sample set of similar work successfully completed by Mr. Gruener includes the LED street light conversion projects for the Cities of Oakland, CA; Hayward, CA; Vacaville, CA; Rancho Cordova, CA; Mountain View, CA; and Pleasanton, CA.

# Gonzalo Planas Jr.

E-mail: [gplanas@bellsouth.net](mailto:gplanas@bellsouth.net)

Home- (305) 557-1740

Cell- (786) 412-9116

## **Education:**

University of Miami, Coral Gables, FL

- Bachelor of Science in Architectural Engineering, 05/2006
- Bachelor of Science in Civil Engineering, 05/2006

Florida International University

- Master of Science in Construction Management, 12/2007

## **Related Work Experience:**

**G&R Group Incorporated, General Contractor Services, Hialeah, FL**

**President/Owner, Qualifier, 09/06- present**

- Projects contracted and completed are as follows, but not limited to:
  - 900 Sq. Ft. Commercial Tenant Build-Out for shell building
  - Renovation for a 10,000 Sq. Ft. Commercial Warehouse
  - 850 Sq. Ft. Residential Remodel
  - Repair of wood siding and changing of all entry doors for a 286 Unit Apartment Conversion Project, including production of drawings for permit issuance
  - Installation and fabrication of cast-in-place concrete light pole bases
  - Provide construction and project management for Building Cooling Tower Replacement, including steel structural work
- Responsible for running day-to-day operations of company.
- Develop estimates for projects such as homes, buildings, and warehouses
- Supervise payroll items, invoices, and other office paper work
- Hire and supervise subcontractors for projects
- Work closely with county officials to process plans and resolve permit issues

**G&R Electric Corporation, Hialeah, FL**

**Qualifier, Project Executive, Chief Estimator, and Design-Build Designer, 01/01- present**

- Create, process, review, and distribute all change orders
- Organize and distribute project materials submittals
- Create applications for payments
- Recommend and perform Value Engineering for certain projects
- Responsible for designing plans on AutoCAD ranging from commercial and residential electrical layouts to electrical risers and meter bank designs
- Provide electrical calculations with all AutoCAD drawings
- Responsible for the development of all estimates for projects such as homes, buildings and warehouses
- Periodically create payroll items, invoices, and other office paper work
- Supervise and assist electricians in the field with different responsibilities pertaining to commercial, industrial, and residential electrical projects
- Work closely with county officials to process plans and resolve permit issues

**Milton Construction Corporation, Miami, FL**

**Superintendent Assistant and Project Manager Assistant,**

**Ten Story Residential Construction Project 01/06- 07/06**

- Observed topics dealing with the General Contracting business
- Responsible for organizing, maintaining and distributing all RFI's (Request For Information) received at the construction site office

- Maintained construction office drawings and shop drawings organized
- Assisted superintendent in supervising sub-contractor's work
- Attended meetings with city officials and owners pertaining to project issues that needed attention
- Assisted with quality control issues
- Performed daily construction site walk through to inspect and supervise all sub-contractor work
- Maintained a safe working environment at the construction site

**University of Miami Concrete Research, Coral Gables, FL**

**Research Assistant, 08/05- 05/06**

- Worked in the machine shop to fabricate items needed to conduct research
- Assisted researchers with measurements and records of experiments
- Mixed concrete samples and conducted tests with specific reinforcement methods

**L. Triana and Associates, Miami, FL**

**AutoCAD Draftsman, 03/05- 01/06**

- Responsible for designing plans on AutoCAD ranging from commercial and residential plumbing layouts to plumbing risers
- Provided pipe sizes and details with all plumbing drawings
- Reviewed and responded to shop drawings
- Worked closely with company president to design fire protection systems and electrical systems

**United Forming, Orlando, FL**

**Intern at a Major Hi-Rise Construction Site in Aventura Florida, 03/04- 07/04**

- Observed and learned topics dealing with formwork and reinforced concrete construction
- Learned basics dealing with cable placement for post tensioning in slabs and observed cable stressing
- Assisted project managers and superintendents with concrete take-offs and construction scheduling
- Assisted with quality control issues
- Created timesheets for payroll of employees
- Received and recorded all concrete and steel orders
- Recorded all purchase logs of materials and tools
- Organized, maintained, and distributed all RFI's (Request For Information) received at construction site office
- Sketched RFI information and changes onto most current set of structural and architectural plans
- Contacted and worked closely with structural engineer and architect with problems that needed attention
- Learned all matters that deal with safety when working at major construction sites

**Activities, Certificates, and Licenses:**

- Florida State Licensed General Contractor
- Florida State Licensed Electrical Contractor
- Florida State and Licensed Electrical Inspector
- ICC (International Code Congress) Electrical Inspector
- Presently in process of obtaining Florida Certification for an Electrical Plan Reviewer

**Skills:**

- Skilled in reading and understanding architectural/construction plans
- Microsoft Word, Excel, Power Point, FrontPage, AutoCAD, QuickBooks, Mapsource
- Fluent in Spanish

## PROJECT DATA FORM

(A separate data form is to be used for each qualifying project)

1. Project Name: \_\_\_\_\_ Plantation Pointe LED Lights \_\_\_\_\_
2. Project Location: \_\_\_\_\_ Plantation , FL \_\_\_\_\_
3. Project Title: \_\_\_\_\_
4. Project Number, if applicable: \_\_\_\_\_
5. Type of Construction: \_\_\_\_\_ Convert existing parking lot lights to LED \_\_\_\_\_

(i.e.: New, Renovation, Addition, Repair, Sidewalk/Curb/Gutter, Roadway reconstruction, Roadway resurfacing, Drainage, etc. Use all that apply.)

6. Size: (i.e.: Quantity of luminaires installed, etc.): \_\_\_\_\_ +/-200 fixtures \_\_\_\_\_
7. Scope of Work: \_\_\_\_\_ Provide new conduit, wiring, poles, light fixtures \_\_\_\_\_

8. How many bid submissions did the owner receive for the project? \_\_\_\_\_ unknown \_\_\_\_\_
9. Business name that constructed & managed this project: \_\_\_\_\_ Blue water Builders \_\_\_\_\_
10. How is this project similar to the Town's project? \_\_\_\_\_ LED parking and street lights \_\_\_\_\_
11. Cost of the project at time of bid: \$ \_\_\_\_\_ \$461,000 \_\_\_\_\_
12. Cost of work at completion: \$ \_\_\_\_\_ ongoing \_\_\_\_\_
13. LEED Certification a. Was this a LEED Certified Project: Yes \_\_\_\_\_ No X \_\_\_\_\_
- b. Minimum LEED Certification required: \_\_\_\_\_
- c. LEED Certification obtained: \_\_\_\_\_

14. Describe the sources and/or causes of the above differences in costs with reference to the following categories as determined by written change order, the public entity or the Architect/Engineer of Record (whichever had final authority): a. Errors or omissions:

- \_\_\_\_\_ % \$ \_\_\_\_\_
- b. Unforeseen/Hidden conditions: \_\_\_\_\_ % \$ \_\_\_\_\_
  - c. Owner generated changes: \_\_\_\_\_ % \$ \_\_\_\_\_
  - d. Regulatory agency changes: \_\_\_\_\_ % \$ \_\_\_\_\_
  - e. Contractor recommended changes: \_\_\_\_\_ % \$ \_\_\_\_\_
  - f. Other: \_\_\_\_\_ % \$ \_\_\_\_\_

Explain other: \_\_\_\_\_

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15. How many RFIs did your company submit with respect to the plans and specifications for the project? \_\_\_\_

16. What was the primary reasons for the RFIs:\_\_\_\_\_

17. What year did the project start construction? \_\_\_\_2016\_\_\_\_\_

18. What year did the project complete construction? \_\_\_\_ongoing\_\_\_\_\_

19. Project Timeframe for completion (number of calendar days): a. \_\_\_\_\_ Contract timeframe at time of bid/proposal date for Substantial Completion

b. \_\_\_\_\_ Contract timeframe at time of bid/proposal date for Final Completion (if different from Substantial Completion)

c. \_\_\_\_\_ Formally adjusted contract timeframe based on change orders (if none state N/A)

d. \_\_\_\_\_ Timeframe not covered under approved change orders (if none state N/A)

e. \_\_\_\_\_ Actual time between issuance of Notice to Proceed and date of Substantial Completion

f. \_\_\_\_\_ Actual time between date of Substantial Completion and Final Completion

g. \_\_\_\_\_ Total number of days between original contract timeframe and Substantial Completion

h. \_\_\_\_\_ Total number of days between original contract timeframe and Final Completion (if different from Substantial Completion)

20. If completion did not occur within the contract time established at bid/proposal date or within the formally adjusted contract time (as identified in item 17c above, explain the reason(s) for the delay:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

21. Total number of tasks on the punch list? \_\_\_\_\_

22. If punch list items were not completed/performed explain the reason(s):

\_\_\_\_\_All  
completed\_\_\_\_\_

23. Were liquidated damages or actual damages for delay assessed on this project?

Yes \_\_\_\_ No \_\_\_\_ If yes, state the amount: \$ \_\_\_\_\_

24. Name of the Project Manager: \_\_\_\_Gonzalo Planas Jr.\_\_\_\_\_

25. Name of the Construction Superintendent: \_\_\_\_Gonzalo Planas Jr.\_\_\_\_\_

26. Total amount of the work self-performed: \_\_100\_\_% \$ \_\_\_\_\_ a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

\_\_\_\_\_% \$ \_\_\_\_\_ RFP 2016-34 28

\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_

27. Were subcontractors used on the project? \_\_\_\_\_ yes \_\_\_\_\_X\_\_\_\_\_ no a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_

28. Were any Claims\* or Dispute filed on the project \_\_\_\_\_yes \_\_\_\_\_X\_\_\_\_\_ no

\*A Claim means a demand or assertion by your firm seeking as matter of right, adjustment or interpretation of contract terms, compensation, extension of time or other relief with respect to the terms of the contract or other disputes between the owner and your firm.

29. If a Claim(s) was filed on the project, provide the following details for each Claim\*: a. Dollar amount for Initial Claim: \_\_\_\_\_

b. Source of Claim: (e.g. contractor, subcontractor, supplier, etc.) \_\_\_\_\_

c. Method of resolution (e.g. negotiation, mediation, arbitration, litigation): \_\_\_\_\_

d. Final amount of Claim settlement: \_\_\_\_\_

30. If a formal Dispute(s) was filed on the project, provide the following details for each Dispute. Identify the reason for the Dispute and the resolution (use additional pages if necessary):

\_\_\_\_\_ N/A \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. Did your company fail/refuse to perform or complete any of work it was obligated to complete?

\_\_\_\_\_ yes \_\_\_\_\_X\_\_\_\_\_ no

If yes, explain what work was not performed/ completed and reasons why:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



32. Was your company required to perform any work under a directive to proceed pending the resolution of an interpretation of the contract or dispute?

\_\_\_\_\_ yes \_\_\_\_X\_\_\_\_ no

33. Identify up to four (4) constructability issues encountered by your company on the project and briefly describe how your company resolve each issue:

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34. Did your company perform any value engineering or other cost savings measures, which improved the quality of the project or saved cost? If yes, provide details and any cost savings.

\_\_\_\_\_NO\_\_\_\_\_

Project Owner's Name: \_\_\_\_\_  
Is the Project Owner a public entity? \_\_\_\_\_ yes \_\_\_\_X\_\_\_\_ no  
Contact Name for Project Owner: \_\_\_\_\_Blue Water Builders\_\_\_\_\_  
Contact Name's Title: \_\_\_\_\_Johnny Peng\_\_\_\_\_  
Project Owner's Address: \_\_\_\_\_8000 W Sunrise Blvd\_\_\_\_\_  
Project Owner's City, State, and Zip Code: \_\_\_\_\_Planation FL\_\_\_\_\_  
Contact Name's Telephone Number: \_\_\_\_\_954-900-6387\_\_\_\_\_  
Contact Name's Email Address: \_\_\_\_\_  
Architect/Engineer of Record: \_\_\_\_\_  
Architect/Engineer of Record Contact Name: \_\_\_\_\_  
Architect/Engineer of Record Contact Name's Telephone No.: \_\_\_\_\_  
Architect/Engineer of Record Contact Name Email Address: \_\_\_\_\_

## PROJECT DATA FORM

(A separate data form is to be used for each qualifying project)

1. Project Name: \_\_\_\_\_ Street Lighting for Normady Isles \_\_\_\_\_
2. Project Location: \_\_\_\_\_ Miami Beach, FL \_\_\_\_\_
3. Project Title: \_\_\_\_\_
4. Project Number, if applicable: \_\_\_\_\_
5. Type of Construction: \_\_\_\_\_ New street lights for existing residential neighborhood \_\_\_\_\_  
(i.e.: New, Renovation, Addition, Repair, Sidewalk/Curb/Gutter, Roadway reconstruction, Roadway resurfacing, Drainage, etc. Use all that apply.)
6. Size: (i.e.: Quantity of luminaires installed, etc.): \_\_\_\_\_
7. Scope of Work: \_\_\_\_\_ Provide new conduit, wiring, poles, light fixtures, and panels \_\_\_\_\_

8. How many bid submissions did the owner receive for the project? \_\_\_\_\_ 2 \_\_\_\_\_
9. Business name that constructed & managed this project: \_\_\_\_\_ City of Miami Beach \_\_\_\_\_
10. How is this project similar to the Town's project? \_\_\_\_\_ Street lights \_\_\_\_\_
11. Cost of the project at time of bid: \$ \_\_\_\_\_ \$165,831 \_\_\_\_\_
12. Cost of work at completion: \$ \_\_\_\_\_ \$242,824 \_\_\_\_\_
13. LEED Certification a. Was this a LEED Certified Project: Yes \_\_\_\_\_ No X \_\_\_\_\_  
b. Minimum LEED Certification required: \_\_\_\_\_  
c. LEED Certification obtained: \_\_\_\_\_

14. Describe the sources and/or causes of the above differences in costs with reference to the following categories as determined by written change order, the public entity or the Architect/Engineer of Record (whichever had final authority): a. Errors or omissions:

- \_\_\_\_\_ % \$ \_\_\_\_\_
- b. Unforeseen/Hidden conditions: \_\_\_\_\_ % \$ \_\_\_\_\_
  - c. Owner generated changes: \_\_\_\_\_ 100 \_\_\_\_\_ % \$ \_\_\_\_\_
  - d. Regulatory agency changes: \_\_\_\_\_ % \$ \_\_\_\_\_
  - e. Contractor recommended changes: \_\_\_\_\_ % \$ \_\_\_\_\_
  - f. Other: \_\_\_\_\_ % \$ \_\_\_\_\_

Explain other: \_\_\_\_\_

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16. What was the primary reasons for the RFIs: \_\_\_\_\_ Discrepancies in the plans and actual field conditions \_\_\_\_\_

h. \_\_\_\_\_ Total number of days between original contract timeframe and Final Completion (if different from Substantial Completion)

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\_\_\_\_\_All  
completed

26. Total amount of the work self-performed: 100 % \$                      a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

% \$ RFP 2016-34 28

\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_

27. Were subcontractors used on the project? \_\_\_\_\_ yes \_\_\_\_\_X\_\_\_\_\_ no a. If yes, specify the trade, percentage, and value (add additional pages if necessary)

\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_  
\_\_\_\_\_% \$ \_\_\_\_\_

28. Were any Claims\* or Dispute filed on the project \_\_\_\_\_yes \_\_\_\_\_X\_\_\_\_\_ no

\*A Claim means a demand or assertion by your firm seeking as matter of right, adjustment or interpretation of contract terms, compensation, extension of time or other relief with respect to the terms of the contract or other disputes between the owner and your firm.

29. If a Claim(s) was filed on the project, provide the following details for each Claim\*: a. Dollar amount for Initial Claim: \_\_\_\_\_

b. Source of Claim: (e.g. contractor, subcontractor, supplier, etc.) \_\_\_\_\_

c. Method of resolution (e.g. negotiation, mediation, arbitration, litigation): \_\_\_\_\_

d. Final amount of Claim settlement: \_\_\_\_\_

30. If a formal Dispute(s) was filed on the project, provide the following details for each Dispute. Identify the reason for the Dispute and the resolution (use additional pages if necessary):

\_\_\_\_\_ N/A \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. Did your company fail/refuse to perform or complete any of work it was obligated to complete?

\_\_\_\_\_ yes \_\_\_\_\_X\_\_\_\_\_ no

If yes, explain what work was not performed/ completed and reasons why:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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32. Was your company required to perform any work under a directive to proceed pending the resolution of an interpretation of the contract or dispute?

\_\_\_\_\_ yes \_\_\_\_X\_\_\_\_ no

33. Identify up to four (4) constructability issues encountered by your company on the project and briefly describe how your company resolve each issue:

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34. Did your company perform any value engineering or other cost savings measures, which improved the quality of the project or saved cost? If yes, provide details and any cost savings.

\_\_\_\_\_NO\_\_\_\_\_

Project Owner's Name: \_\_\_\_\_

Is the Project Owner a public entity? \_\_\_\_\_X\_\_\_\_\_ yes \_\_\_\_\_ no

Contact Name for Project Owner: \_\_\_Miami Beach CIP\_\_\_\_\_

Contact Name's Title: \_\_\_\_\_

Project Owner's Address: \_\_\_\_\_1700 Convenmtion Center

Dr\_\_\_\_\_

Project Owner's City, State, and Zip Code: \_\_\_\_\_Miami Beach,

FL\_\_\_\_\_

Contact Name's Telephone Number: \_\_305-673-7000\_\_\_\_\_

Contact Name's Email Address: \_\_\_\_\_

Architect/Engineer of Record: \_\_\_\_\_

Architect/Engineer of Record Contact Name: \_\_\_\_\_

Architect/Engineer of Record Contact Name's Telephone No.: \_\_\_\_\_

Architect/Engineer of Record Contact Name Email Address: \_\_\_\_\_

## Appendix F – Key Staff Resumes

## Jason Tanko

President and Founder, Tanko Lighting

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A life-long street light enthusiast, Jason Tanko created Tanko Streetlighting, Inc. (DBA: "Tanko Lighting") more than a decade ago with a focus on manufacturing, engineering and technical support for municipal street light projects. Given the need for street lighting-specific expertise, this quickly expanded into project management services. Today, Tanko Lighting functions as a full-service street lighting company, providing tailored, turnkey solutions for any street lighting project. Mr. Tanko continues to lead the company, serving as President, and provides oversight on engineering, product development, business development, and project management.

Mr. Tanko's success with Tanko Lighting is a result of his extensive educational and professional background. Prior to founding Tanko Lighting, Mr. Tanko enjoyed a long career in energy efficiency and electrical engineering. As a Project Manager for Newcomb Anderson Associates, Mr. Tanko implemented the highly-successful Power Savers program – an energy efficiency program for small businesses in San Francisco. During his tenure as an Electrical Engineer for the Massachusetts Institute of Technology Lincoln Laboratory, Mr. Tanko designed energy efficient low and medium voltage power and lighting systems. As an Electrical Engineer/Project Manager with Wilson Construction Engineering Services, Mr. Tanko engineered and managed new construction and major electrical infrastructure projects. Mr. Tanko served as a District Engineer for Puget Sound Energy, in which he coordinated outage management, operations, budget and maintenance activities and supervised line crews for East King County, WA. As a Senior Engineer with Boeing Commercial Airplane Group, Mr. Tanko designed and drafted electrical systems for airplane equipment. During his tenure as an Electrical Engineer/Designer with Team Engineering, Inc., Mr. Tanko designed and drafted power distribution, lighting, and building control systems for commercial and public buildings.

With a Bachelor of Science in Electrical Engineering (Seattle University), a Master of Business Administration (Seattle University), a C-10 Electrical Contractor's License in the State of California, and an A-17 Contractor's License in the State of Arizona, Mr. Tanko is well-versed in electrical principles and has remarkable acumen for business.

Mr. Tanko has served on every Tanko Lighting project since the company's inception in 2003. The majority of these projects have focused on municipal street lighting. A small sample of successful projects completed under Mr. Tanko's tenure include LED street light conversion projects for the Towns of Sharon, MA; Winchester, MA; and the Cities of Vacaville, CA; Rancho Cordova, CA; Mountain View, CA; Pleasanton, CA; Napa, CA; Hayward, CA; Vallejo, CA; and Morgan Hill, CA.



## David Gruener

Senior Project Manager, Tanko Lighting

---

David Gruener comes from a background of data management/analysis/visualization, marketing coordination, and systems implementation. He joined Tanko Lighting in April of 2013 and currently coordinates project management of the company's turn-key professional services, including GIS audit data collection and data reconciliation.

Prior to joining Tanko Lighting, Mr. Gruener worked as a Business Data Analyst at mFoundry, Inc. In this capacity, Mr. Gruener developed and implemented a client revenue, usage, and management database and managed the implementation of a business intelligence tool for data visualization. His duties included data analysis and reporting, systems implementation, revenue modeling and forecasting, database development and project management. He managed both staff and subcontractors and assisted mFoundry with growing from a small, start-up firm to being acquired by a Fortune 500 corporation.

Prior to his tenure with mFoundry, Mr. Gruener served as Data Analyst for Resource Solutions Group – an energy efficiency consulting firm. In this capacity, Mr. Gruener coordinated marketing outreach activities and led the data analysis and reporting for large, region-wide multi-layered energy efficiency rebate programs.

Mr. Gruener holds a Bachelor of Business Administration in Marketing from the University of Portland.

Mr. Gruener has served on a variety of Tanko Lighting projects during his tenure with the company. A small sample set of similar work successfully completed by Mr. Gruener includes the LED street light conversion projects for the Cities of Oakland, CA; Hayward, CA; Vacaville, CA; Rancho Cordova, CA; Mountain View, CA; and Pleasanton, CA.

## Lizzy Kay

Project Manager, Tanko Lighting

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Lizzy Kay has extensive experience with project management and field logistics. She currently assists with the management, implementation and coordination of projects.

Prior to joining Tanko Lighting, Ms. Kay served in a variety of environmental consultancy roles. As an Environmental Action Advisor for the United States Peace Corps, Ms. Kay was stationed in West Africa, where she managed multiple environmental projects, including securing funding, managing budgets, coordinating participants and partners, and developing and implementing monitoring and evaluation programs. As a Technical Analyst for Salas O'Brian Engineers, Inc., Ms. Kay developed proposals and statements of qualifications, prepared reports, and supported the firm's business development efforts.

Ms. Kay holds a Bachelor of Science degree in Environmental Science from the University of Oregon.

Ms. Kay has served on a variety of Tanko Lighting projects during her tenure with the company. Recent projects include the LED streetlight acquisition and/or conversion projects for the Cities of Oakland, CA, Santa Ana, CA, West Hollywood, CA, Vista, CA, and the Island of Kauai.

## Drew Taylor

Lead Project Data Analyst, Tanko Lighting

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Drew Taylor has extensive experience with Geographic Information Systems (GIS) focused on urban street infrastructure. He joined Tanko Lighting in 2014 and leads the company's data management and analysis services.

Prior to joining Tanko Lighting, Mr. Taylor served in a variety of analyst roles, including as Technical Analyst for San Francisco Municipal Transportation Agency's *SF Park* Program, as well as Community Planning Assistant for the San Francisco Bicycle Coalition, Managing GIS Specialist for Insignia Environmental, GIS Planning Specialist for RECON Environmental, Inc., and Cartographic Technician for the City of Santa Monica's Information Systems Division. Further, Mr. Taylor has extensive field experience, including his tenure as Global Positioning System Field Technician for the California Conservation Corps' GPS Data Collection Program.

Mr. Taylor holds a Bachelor of Arts degree in History (with a concentration on Geographic Information Systems) from the California Polytechnic State University.

Mr. Taylor has served on a variety of Tanko Lighting projects during his tenure with the company. A small sample set of similar work successfully completed by Mr. Taylor includes the LED street light conversion projects for the Cities of Pleasanton, CA; Vallejo, CA; and Morgan Hill, CA.

## Derek Ichien

Field Auditor, Tanko Lighting

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Derek Ichien has a thorough background in crucial aspects of sustainability, field sampling, and environmental science, including a solid familiarity with data collection as related to energy efficiency in the built environment. He joined Tanko Lighting in 2014 and supports the company's data collection and field auditing services.

Prior to joining Tanko Lighting, Mr. Ichien served as a Hydrology Intern with the Humboldt State River Institute, where he conducted field data collection and analysis for hydrology projects. Further, Mr. Ichien worked on environmental impact assessments for the Samoa Peninsula and provided research and statistical analysis for Humboldt State University's Climate Action Plans.

Mr. Ichien holds a Bachelor of Science degree in Environmental Science, Energy and Climate (with a Geospatial Science minor) from Humboldt State University.

Mr. Ichien has served on a variety of Tanko Lighting projects during his tenure with the company. A small sample set of similar work successfully completed by Mr. Gruener includes the completed GIS audits for the Island of Kauai, and the Cities of Modesto, CA; Vista, CA; and the Towns of Rocky Hill, CT and Berlin, CT.

# **Gonzalo Planas**

E-mail: grelect@bellsouth.net

Home- (305) 823-2265

Cell- (305) 796-1047

## **Education:**

High School, Havana Cuba

## **Related Work Experience:**

**G&R Electric Corporation**, Hialeah, FL

**Qualifier, President**, 1986- present

- Manage day-to-day company operations for this Florida State Certified Electrical contracting Firm
- Coordinate all field operating work crews on a daily basis
- Recommend and perform Value Engineering for clients
- Supervise payroll items, invoices, and other office paper work
- Supervise and at times assist electricians in the field with different responsibilities pertaining to commercial, industrial, and residential electrical projects
- Work closely with county officials to process plans and resolve permit issues

**FPI Electric Corp.**, Miami, FL

**Electrician and Superintendent**,

**Various Projects** 1979-1986

- Supervise and worked with electrical workers in various construction sites
- Directed and coordinated work crews in electrical projects

## **Certificates and Licenses:**

- Florida State Licensed Electrical Contractor
- ICC (International Code Congress) Electrical Inspector

## **Volunteer Activates:**

- Baynanza Bay Clean Up
- Inner City kids fishing tournament
- After School All Stars Programs

## **Memberships:**

- Miami Outboard Club Current member
- ICC Member
- NFPA Member
- UL Listed Electrical Company for Fire Alarms

## **Skills:**

- Skilled in reading and understanding architectural/construction plans
- Fluent in Spanish

# Gonzalo Planas Jr.

E-mail: [gplanas@bellsouth.net](mailto:gplanas@bellsouth.net)

Home- (305) 557-1740

Cell- (786) 412-9116

## **Education:**

University of Miami, Coral Gables, FL

- Bachelor of Science in Architectural Engineering, 05/2006
- Bachelor of Science in Civil Engineering, 05/2006

Florida International University

- Master of Science in Construction Management, 12/2007

## **Related Work Experience:**

**G&R Group Incorporated, General Contractor Services, Hialeah, FL**

**President/Owner, Qualifier, 09/06- present**

- Projects contracted and completed are as follows, but not limited to:
  - 900 Sq. Ft. Commercial Tenant Build-Out for shell building
  - Renovation for a 10,000 Sq. Ft. Commercial Warehouse
  - 850 Sq. Ft. Residential Remodel
  - Repair of wood siding and changing of all entry doors for a 286 Unit Apartment Conversion Project, including production of drawings for permit issuance
  - Installation and fabrication of cast-in-place concrete light pole bases
  - Provide construction and project management for Building Cooling Tower Replacement, including steel structural work
- Responsible for running day-to-day operations of company.
- Develop estimates for projects such as homes, buildings, and warehouses
- Supervise payroll items, invoices, and other office paper work
- Hire and supervise subcontractors for projects
- Work closely with county officials to process plans and resolve permit issues

**G&R Electric Corporation, Hialeah, FL**

**Qualifier, Project Executive, Chief Estimator, and Design-Build Designer, 01/01- present**

- Create, process, review, and distribute all change orders
- Organize and distribute project materials submittals
- Create applications for payments
- Recommend and perform Value Engineering for certain projects
- Responsible for designing plans on AutoCAD ranging from commercial and residential electrical layouts to electrical risers and meter bank designs
- Provide electrical calculations with all AutoCAD drawings
- Responsible for the development of all estimates for projects such as homes, buildings and warehouses
- Periodically create payroll items, invoices, and other office paper work
- Supervise and assist electricians in the field with different responsibilities pertaining to commercial, industrial, and residential electrical projects
- Work closely with county officials to process plans and resolve permit issues

**Milton Construction Corporation, Miami, FL**

**Superintendent Assistant and Project Manager Assistant,**

**Ten Story Residential Construction Project 01/06- 07/06**

- Observed topics dealing with the General Contracting business
- Responsible for organizing, maintaining and distributing all RFI's (Request For Information) received at the construction site office



- Maintained construction office drawings and shop drawings organized
- Assisted superintendent in supervising sub-contractor's work
- Attended meetings with city officials and owners pertaining to project issues that needed attention
- Assisted with quality control issues
- Performed daily construction site walk through to inspect and supervise all sub-contractor work
- Maintained a safe working environment at the construction site

**University of Miami Concrete Research, Coral Gables, FL**

**Research Assistant, 08/05- 05/06**

- Worked in the machine shop to fabricate items needed to conduct research
- Assisted researchers with measurements and records of experiments
- Mixed concrete samples and conducted tests with specific reinforcement methods

**L. Triana and Associates, Miami, FL**

**AutoCAD Draftsman, 03/05- 01/06**

- Responsible for designing plans on AutoCAD ranging from commercial and residential plumbing layouts to plumbing risers
- Provided pipe sizes and details with all plumbing drawings
- Reviewed and responded to shop drawings
- Worked closely with company president to design fire protection systems and electrical systems

**United Forming, Orlando, FL**

**Intern at a Major Hi-Rise Construction Site in Aventura Florida, 03/04- 07/04**

- Observed and learned topics dealing with formwork and reinforced concrete construction
- Learned basics dealing with cable placement for post tensioning in slabs and observed cable stressing
- Assisted project managers and superintendents with concrete take-offs and construction scheduling
- Assisted with quality control issues
- Created timesheets for payroll of employees
- Received and recorded all concrete and steel orders
- Recorded all purchase logs of materials and tools
- Organized, maintained, and distributed all RFI's (Request For Information) received at construction site office
- Sketched RFI information and changes onto most current set of structural and architectural plans
- Contacted and worked closely with structural engineer and architect with problems that needed attention
- Learned all matters that deal with safety when working at major construction sites

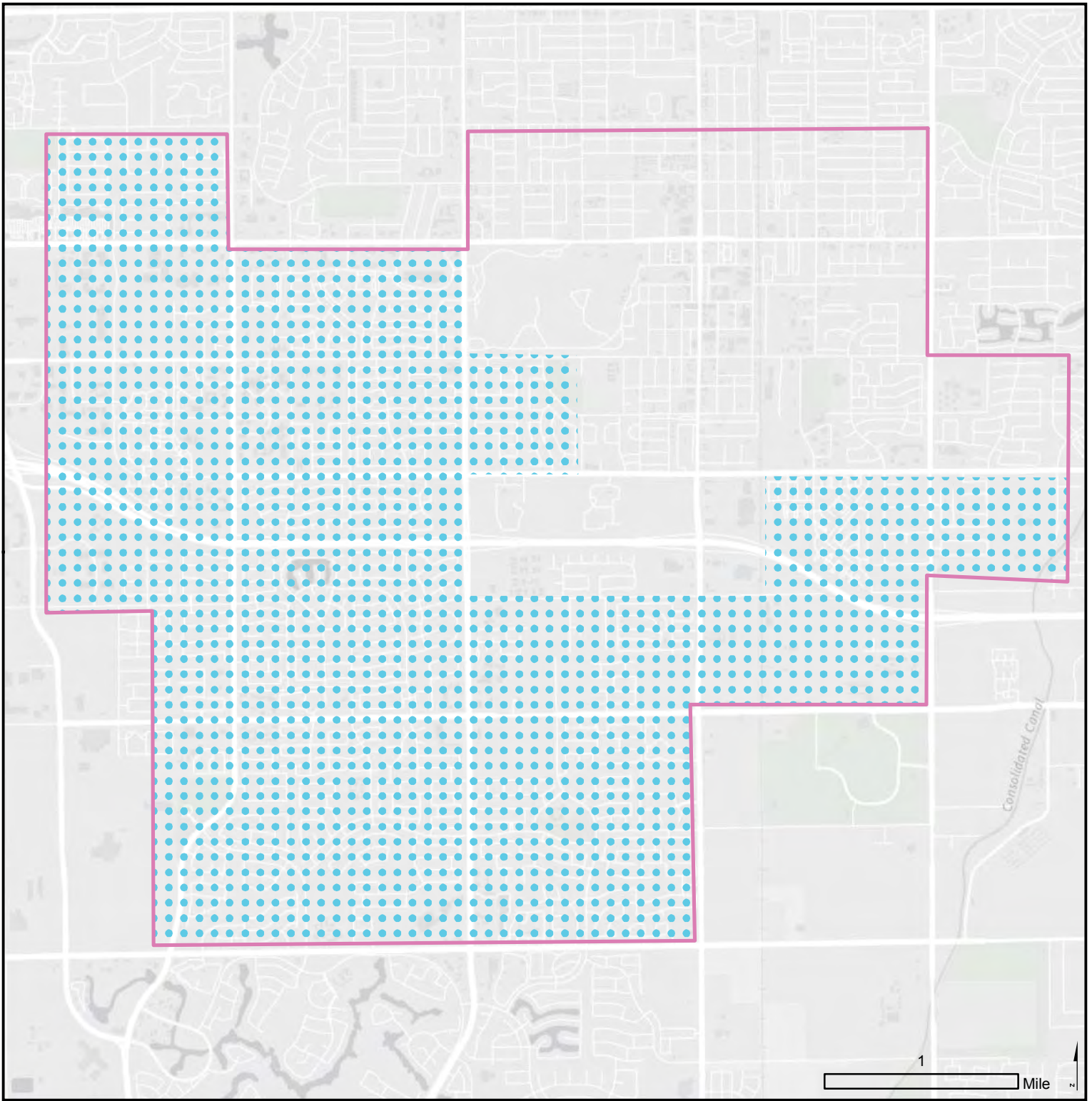
**Activities, Certificates, and Licenses:**

- Florida State Licensed General Contractor
- Florida State Licensed Electrical Contractor
- Florida State and Licensed Electrical Inspector
- ICC (International Code Congress) Electrical Inspector
- Presently in process of obtaining Florida Certification for an Electrical Plan Reviewer

**Skills:**

- Skilled in reading and understanding architectural/construction plans
- Microsoft Word, Excel, Power Point, FrontPage, AutoCAD, QuickBooks, Mapsource
- Fluent in Spanish

## Appendix G – Sample Reports



# Weekly Audit Report

- Audit Complete
- ▭ City Boundary

## Street Light Audit Summary for November 3rd - 7th, 2014

Total Fixtures (Approx):	5,033	Remaining Fixtures:	791
Fixtures Audited:	4,242	Percent Complete:	84%

# City Audit Report

LED Streetlight Conversion: Audit Phase  
Reported Issues: November 3 - November 7, 2014









POLE NUMBER	ISSUE REPORTED	AUDIT DATE	APPROX. ADDRESS	COORDINATES
8380	Major Tree Obstruction	11/5/2014	38.462089, -122.176626	2392 Lansdowne Blvd
8807	Pole Damaged - Missing Parts	11/6/2014	38.46168, -122.176697	2354 Lansdowne Blvd
8385	Pole Damaged - Missing Parts	11/3/2014	38.259741, -122.177123	2326 Lansdowne Pl
8384	Pole Leaning	11/3/2014	38.564279, -122.182153	2362 Shade Overlook Dr
8380	Pole Damaged - Missing Parts - Pole Leaning	11/5/2014	38.462007, -122.180102	2326 Lansdowne Pl
8807	Pole Leaning	11/5/2014	38.462007, -122.180103	2362 Shade Overlook Dr
8563	Pole Leaning	11/6/2014	38.46168, -122.176697	2563 Shade Cir

# Installation Map

LED Street Light Conversion: Installation Map Book

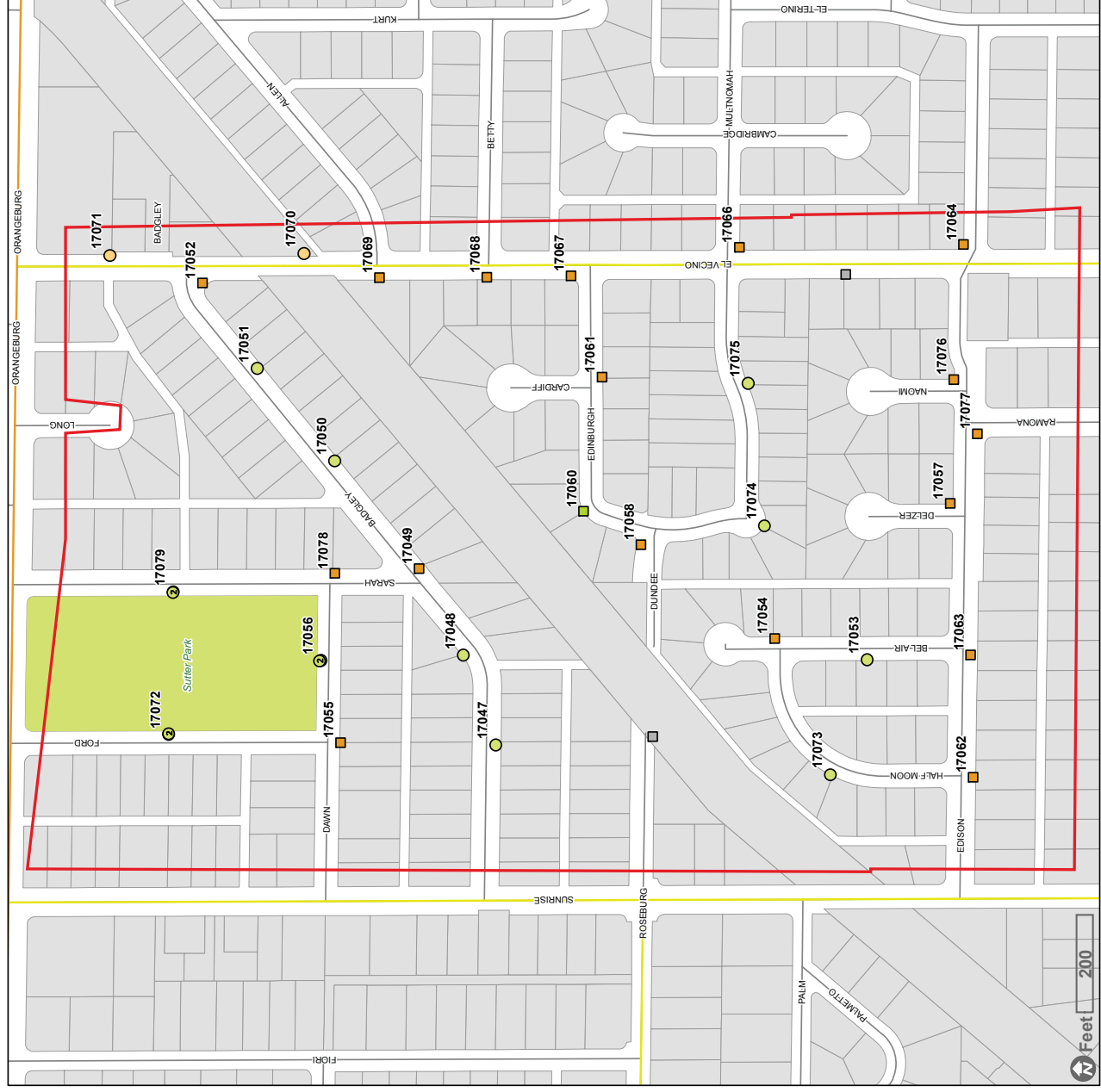
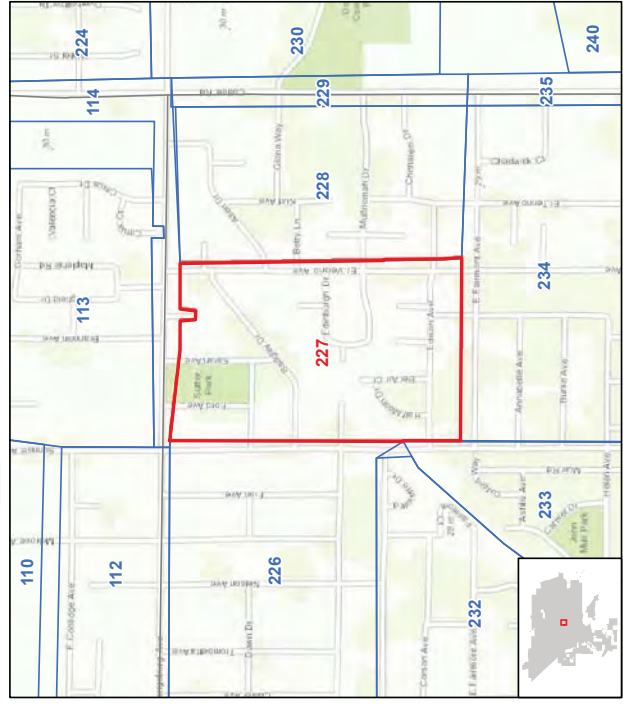
☐ Installation Area 227

## Fixture Installation

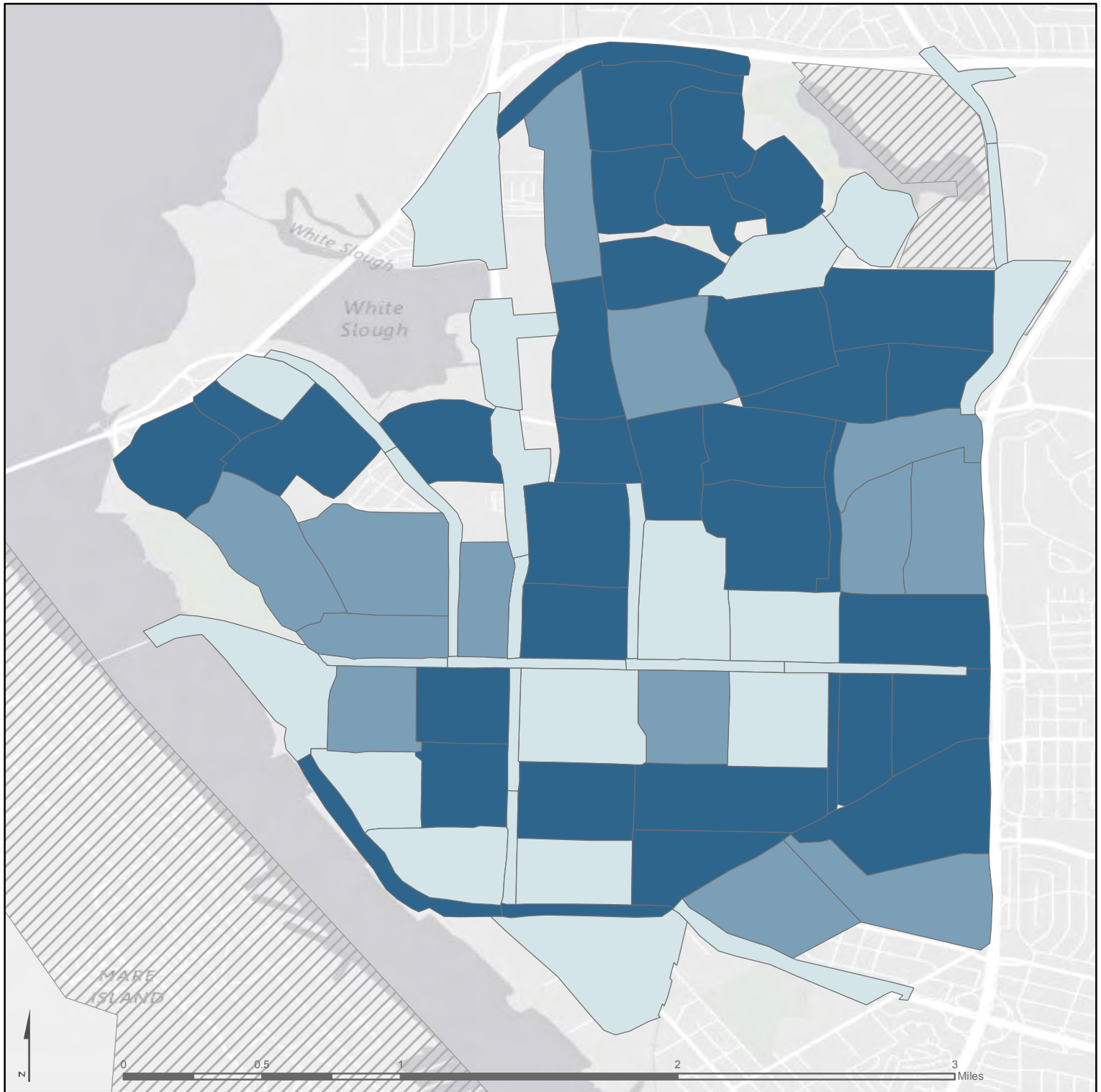
-  48W Cree XSP1 Type 2 (BXSP-B-HT-2ME-A-40K-UL-SV-N-Q8-SPX) (14 fixtures)
-  53W Cree XSP1 Type 3 (BXSP-B-HT-3ME-A-40K-UL-SV-N-Q9-SPX) (1 fixtures)
-  73W Cree XSP2 Type 2 (BXSP-B-HT-2ME-B-40K-UL-SV-N-Q6-SPX) (2 fixtures)
-  73W Cree XSP2 Type 3 (BXSP-B-HT-3ME-B-40K-UL-SV-N-Q6-SPX) (17 fixtures)
-  Do Not Replace (2 fixtures)
-  2 Twin Pole

## Base Map

- Residential — City Boundary — Adjacent Install Area — Private or High Voltage — Parcels — Park  
 Arterial — School  
 Collector — Hospital  
 Highway — Government Facility



## LED STREETLIGHT CONVERSION PROJECT: INSTALL PHASE



**INSTALL STATUS:**  PENDING  IN PROGRESS  COMPLETE  PRIVATE AREA

**INSTALLS COMPLETED NOVEMBER 3rd - 7th, 2014: 544**

**TOTAL INSTALLS COMPLETED TO DATE: 4,035**

**TOTAL FIXTURES TO BE INSTALLED: 7,260**

**PERCENT COMPLETE: 48%**

MAP DATE: 11/6/2014





## City Install Report

LED Streetlight Conversion: Install Phase

Reported Issues: November 3 - November 7, 2014



POLE NUMBER	INSTALLED	ISSUE REPORTED	INSTALL DATE	COORDINATES	APPROX. ADDRESS
x8385	Yes	No Power - repaired bad fuse	11/3/2014	38.462089, -122.176626	2392 Lansdowne Blvd
x8384	Yes	No Power - repaired bad fuse	11/3/2014	38.46168, -122.176697	2354 Lansdowne Blvd
x8380	Yes	No Power - repaired bad fuse	11/5/2014	38.259741, -122.177123	2326 Lansdowne Pl
x8807	Yes	No Power	11/5/2014	38.564279, -122.182153	2362 Shade Overlook Dr
x8563	Yes	No Power	11/6/2014	38.462007, -122.180102	2563 Shade Cir

## Appendix H – Proposer Reference Forms

**PROPOSER'S REFERENCE FORM**

Proposers shall provide three (3) references of clients which have utilized proposer's services within the last three (3) years.

- 1) Name of Client Entity: Town of Winchester, MA  
 Address: 71 Mt Vernon St.  
 City/State/Zip: Winchester, MA 01890  
 Contact: Susan McPhee  
 Title: Energy Conservation Coordinator  
 Email Address: sgmcphee@me.com  
 Telephone: 781-507-5880  
 Scope of Work: Auditing services, design, rebate/rate change, training, and logistical support (including commissioning).  
 Project Start/End Dates: February - October 2014  
 Contract Amount: \$ \$414,850 (Total Project Cost)
  
- 2) Name of Client Entity: City of Berkeley, CA  
 Address: 1947 Center Street, Fourth Floor  
 City/State/Zip: Berkeley, CA 94704  
 Contact: Reeve Battle  
 Title: Assistant Civil Engineer, Public Works Department, Engineering Division  
 Email Address: rbattle@cityofberkeley.info  
 Telephone: 510-981-6336  
 Scope of Work: GIS auditing services, design, product procurement, installation management services (overseeing a qualified subcontractor), rebate/rate change, training, logistical support (including commissioning), and environmental disposal.  
 Project Start/End Dates: April 2014 - December 2015  
 Contract Amount: \$ \$3.15 million
  
- 3) Name of Client Entity: City of Santa Clara, CA (Silicon Valley Power)  
 Address: 1500 Warburton Avenue  
 City/State/Zip: Santa Clara, CA 95050  
 Contact: Mary Medeiros McEnroe  
 Title: Public Benefit Program Manager  
 Email Address: mmedeiros@santaclaraca.gov  
 Telephone: 408.615.6646  
 Scope of Work: GIS auditing services, design, product procurement, installation management services (overseeing a qualified subcontractor), rebate/rate change, training, logistical support (including commissioning), and environmental disposal.  
 Project Start/End Dates: September 2014 - March 31, 2016  
 Contract Amount: \$ \$1.863 million

## Appendix I – Price Worksheet

## PRICE PROPOSAL FORM\*

RFP 2016-34 LED STREET LIGHT CONVERSION PROGRAM	
Fixtures – TOTAL (Price Worksheet Line <del>K18</del> <b>L18</b> )	\$243,382.33
Monitoring & Control System – TOTAL (Price Worksheet Line <b>M18</b> )	\$143,481.15
Installation – TOTAL (Price Worksheet Line <del>L18</del> <b>N18</b> )	\$121,713.30
Fixture, Monitoring & Control System, and Installation – TOTAL PROPOSAL PRICE (Price Worksheet Line <b>O18</b> )	\$508,576.78
Fixture, Monitoring & Control System, and Installation (Price Worksheet Line <b>O18</b> ) <b>TOTAL PROPOSAL PRICE Written in Words:</b> Five hundred fifty five thousand five hundred seventy six dollars and seventy eight cents	
Cost for complete pole replacement if needed to include all mobilization, equipment, installation, materials, labor, tools, machinery, transportation, supervision: \$5,000 (marbelite pole)	
<b>PROPOSAL OPTION**</b>	
Financing APR	2.65 %
Term Length	96 months
Monthly payment	\$5,931.66
Name of Financing Institution: <u>TCF National Bank; Equipment Finance</u>	
Institution Contact Name: <u>Gene Rogero</u> Phone Number: <u>706-705-1392</u> , Cell: <u>706-591-9057</u>	
<b><u>EXTENDED WARRANTY OR OTHER COVERAGE OPTION BEYOND THE MINIMUM REQUIREMENT</u></b> <b><u>(Section 1.4):</u></b>	
# of additional years available: <u>9</u> @ Cost per year \$ <u>3,558.33</u>	


\* Price Spreadsheet (Excel format) must be included in Proposer's submittal package as a hard copy and in electronic format on the CD-ROM or flash drive.

\*\* Proposed financing arrangement shall include a clause allowing the Town to prepay all or part of the balance owed under the note at any time without penalty.

Proposer agrees to supply the products and services at the prices above in accordance with the terms, conditions and specifications contained in this RFP.

Firm's Name: Tanko Streetlighting INC F.E.I.N. No.: 26-2819585

Town/State/Zip: San Francisco, CA 94124

Signature of Authorized Signatory: 

Printed Name/Title: Jason Tanko - President Email Address: jason@tankolighting.com

# TOWN OF MIAMI LAKES

## LED Conversion Program- Price Worksheet 06-30-16

Location	Existing Lighting Type	Quantity	Watt	FPL cost per existing light per unit, per month	Proposed Lamp	Proposed Monitoring and Control System	Quantity	Lumens	Watt	Fixture Cost per Unit	Monitoring and Control system cost per unit	Installation Cost per Unit	Fixture, Monitoring & Control System, and Installation Cost per Unit
Town of Miami Lakes Street Lights													
Cobra Heads	HPS 0700	2	76 \$	1.98	ERL1-0-03-B1-40-A-GRAY	GE LIGHTS-0	2	2900	25 \$	249.38 \$	156.81 \$	133.02 \$	539.11
Cobra Heads	HPS 0100	541	108.5 \$	2.78	ERL1-0-04-B1-40-A-GRAY	GE LIGHTS-0	541	3900	35 \$	255.70 \$	156.81 \$	133.02 \$	545.53
Cobra Heads	HPS 0150	92	162.8 \$	4.06	ERL1-0-06-F1-40-A-GRAY	GE LIGHTS-0	92	6000	53 \$	272.92 \$	156.81 \$	133.02 \$	562.65
Cobra Heads	HPS 0200	153	271.7 \$	5.92	ERL1-0-07-F1-40-A-GRAY	GE LIGHTS-0	153	7000	67 \$	296.36 \$	156.81 \$	133.02 \$	596.19
Cobra Heads	HPS 0250	11	271.26 \$	7.86	ERL1-0-09-F1-40-A-GRAY	GE LIGHTS-0	11	8500	88 \$	314.95 \$	156.81 \$	133.02 \$	604.35
Cobra Heads	HPS0400	14	434 \$	11.39	ERLH-0-13-F1-40-A-GRAY	GE LIGHTS-0	14	13000	125 \$	427.97 \$	156.81 \$	133.02 \$	717.80
Decorative Fixture- Contempo 245 15M MTI RS GL	HPS 0100	36	108.5 \$	2.78	DPT-A-36-FR-A-40K-UL-UP / DPT-U-SMD	GE LIGHTS-0	36	3300	35 \$	249.31 \$	156.81 \$	133.02 \$	538.04
Decorative Fixture accom style black fiber glass and aluminum	HPS 0100	76	108.5 \$	2.78	DPT-A-36-FR-A-40K-UL-UP / DPT-U-SMD	GE LIGHTS-0	76	3300	35 \$	249.31 \$	156.81 \$	133.02 \$	538.04
TOTALS										245,392.33 \$	145,481.15 \$	121,733.30 \$	508,576.78 \$



**TOWN OF MIAMI LAKES**  
**LED Conversion Program - Schedule of Values**

<b>Firm</b>	<b>Trade Category</b>	<b>Estimated Cost of the Work</b>	<b>Notes</b>
Tanko Lighting	Project Management, Procurement, Data Management	\$ 291,895.63	(Note that this includes the base bid only and not the Monitoring & Control System costs.)
G&R Electric Corp	Installation, traffic control, field safety, disposal	\$ 73,200.00	

## Appendix J – Financing Offer



July 8, 2016

Town of Miami Lakes  
6601 Main Street  
Miami Lakes FL

**Re: Municipal Lease/Purchase Financing**

Dear Sir or Madam:

TCF Equipment Finance, a division of TCF National Bank ("TCF") is pleased to propose to the Town of Miami Lakes the following tax-exempt lease/purchase transaction as outlined below. Under this transaction, the Town of Miami Lakes would enter into a municipal lease/purchase agreement with TCF for the purpose of acquiring a new High Efficiency Street Lighting from Tanko Lighting. This is a proposal only and is subject to final review and approval by both the Lessor and Lessee.

<b>LESSEE:</b>	Town of Miami Lakes, Florida
<b>LESSOR:</b>	TCF Equipment Finance, its affiliates or assignees
<b>EQUIPMENT:</b>	High Efficiency Street Lighting
<b>PROJECT COST:</b>	\$508,577.00
<b>TERM:</b>	8 Years
<b>INTEREST RATE:</b>	2.65%
<b>SEMI-ANNUAL PAYMENTS:</b>	16 @ \$35,590.00
<b>FIRST PAYMENT DUE:</b>	January 2017
<b>CLOSING FEES:</b>	None charged by Lessor
<b>PRICING:</b>	The Rate and Payments outlined above are <u>locked</u> for 30 days, provided this transaction is closed/funded prior to that time. After 30 days, the final Rate and Payments shall be adjusted commensurately to the market in effect at the time of funding and shall be fixed for the entire lease term. This proposal shall expire if it is not accepted by the Lessee within 10 days of the proposal date.
<b>ESCROW FUNDING:</b>	Upon closing of this transaction and at the direction of the Lessee, TCF shall fund the amount financed into an Escrow Account which shall be used to disperse milestone payments during the installation period to Tanko Lighting. All interest earnings shall be for the

account of the Lessee. Any set-up fees charged by the Escrow Agent (not to exceed \$500) shall be paid by lessee or capitalized into the total amount financed.

**DOCUMENTATION:**

Lessor shall provide all of the documentation necessary to close this transaction. This documentation shall be governed by the laws of the State of Florida.

**TITLE / INSURANCE:**

Lessee shall retain title to the equipment during the lease term. Lessor shall be granted a perfected security interest in the equipment and the Lessee shall keep the equipment free from any/all liens or encumbrances during the term. Lessee shall provide adequate loss and liability insurance coverage, naming Lessor as additional insured and loss-payee.

**CREDIT UNDERWRITING:**

Transaction has been pre-screened by the Lessor. The Lessee shall provide any additional information that the Lessor may need in order to complete its final credit due-diligence.

We appreciate this opportunity to offer a TCF Financing Solution. Please do not hesitate to contact me if you have any questions at **(706) 705-1392**. Upon acceptance of this proposal, please scan and e-mail to my attention at [grogero@tcfef.com](mailto:grogero@tcfef.com). Thank you again.

Sincerely,



Gene Rogero  
Vice President

**ACCEPTANCE**

As a duly authorized agent of the **Town of Miami Lakes**, I hereby accept the terms of this proposal as outlined above and intend to close this financing with TCF, subject to final Town Council approval.

ACCEPTED: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

PHONE: \_\_\_\_\_

WE ARE PROVIDING THE INFORMATION CONTAINED HEREIN FOR INFORMATIONAL PURPOSES ONLY IN CONNECTION WITH POTENTIAL ARMS-LENGTH COMMERCIAL BANKING TRANSACTIONS. IN PROVIDING THIS INFORMATION, WE ARE ACTING FOR OUR OWN INTEREST AND HAVE FINANCIAL AND OTHER INTERESTS THAT DIFFER FROM YOURS. WE ARE NOT ACTING AS A MUNICIPAL ADVISOR OR FINANCIAL ADVISOR TO YOU, AND HAVE NO FIDUCIARY DUTY TO YOUR OR ANY OTHER PERSON PURSUANT TO SECTION 15B OF THE SECURITIES EXCHANGE ACT OF 1934. THE INFORMATION CONTAINED IN THIS DOCUMENT IS NOT INTENDED TO BE AND SHOULD NOT BE CONSTRUED AS "ADVICE" WITHIN THE MEANING OF SECTION 15B OF THE SECURITIES EXCHANGE ACT OF 1934 AND THE MUNICIPAL ADVISOR RULES OF THE SEC. WE ARE NOT RECOMMENDING THAT YOU TAKE AN ACTION WITH RESPECT TO THE INFORMATION CONTAINED HEREIN. BEFORE ACTING ON THIS INFORMATION, YOU SHOULD DISCUSS IT WITH YOUR OWN FINANCIAL AND/OR MUNICIPAL, LEGAL, ACCOUNTING, TAX AND OTHER ADVISORS AS YOU DEEM APPROPRIATE. IF YOU WOULD LIKE A MUNICIPAL ADVISOR THAT HAS LEGAL FIDUCIARY DUTIES TO YOU, THEN YOU ARE FREE TO ENGAGE A MUNICIPAL ADVISOR TO SERVE IN THAT CAPACITY.

## Appendix K – Required Forms

## ANTI-KICKBACK AFFIDAVIT

CALIFORNIA  
STATE OF ~~FLORIDA~~ }

SAN FRANCISCO }  
COUNTY OF ~~MIAMI-DADE~~ }

ss: City of San Francisco

I, the undersigned, hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the Town of Miami Lakes, its elected officials, and \_\_\_\_\_ or its design consultants, as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: \_\_\_\_\_

Title: PRESIDENT

Sworn and subscribed before this

27 day of June, 2016

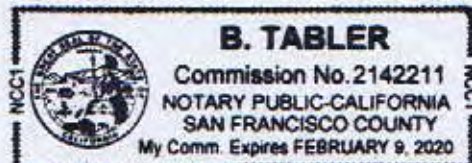
B. Tabler

Notary Public, State of ~~Florida~~ CALIFORNIA

B. Tabler

(Printed Name)

My commission expires: 2/9/20





### DRUG-FREE WORKPLACE CERTIFICATION

Preference shall be given to businesses with drug-free workplace programs. Pursuant to Section 287.087, Florida Statutes, whenever two or more competitive solicitations that are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a response received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie responses will be followed if none of the tied providers has a drug free workplace program. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under proposal a copy of the statement specified in Subsection (1).
4. In the statement specified in Subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 894, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on any employee who is so convicted or require the satisfactory participation in a drug abuse assistance or rehabilitation program as such is available in the employee's community.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of applicable laws, rules and regulations.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

TANKO SPECIAL LIGHTING, INC.  
BUSINESS NAME

  
FIRM'S SIGNATURE



**SWORN STATEMENT ON PUBLIC ENTITY CRIMES  
SECTION 287.133(3)(a), FLORIDA STATUTES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted to the Town of Miami Lakes  
by JASON TANKO, PRESIDENT  
[print individual's name and title]  
for TANKO STREETLIGHTING, INC. ("TANKO LIGHTING")  
[print name of entity submitting sworn statement]  
whose business address is  
220 BAYSHORE BLVD  
SAN FRANCISCO, CA 94124  
and (if applicable) its Federal Employer Identification Number (FEIN) is 26-2819585  
(If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: \_\_\_\_\_)
2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)9g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or the United States, including, but not limited to, any bid or contract for goods and services to be provided to any public entity or an agency or political subdivision of any other state or of the United States involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction or a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
  - a. A predecessor or successor of a person convicted of a public entity crime; or
  - b. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, will be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months will be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an entity.



6. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement. [Indicate which statement applies.]

☒ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, not any affiliate of the entity, has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ This entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. [attach a copy of the final order]

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO

UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES, FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

\_\_\_\_\_  
Signature of Entity Submitting Sworn Statement

Sworn to and subscribed before me this 27 day of June, 2016

Personally known ☒

OR produced identification ☒

Notary Public – State of California

driver's license

My commission expires 2/9/20

(type of identification)

B. Tabler

(Printed, typed or stamped commissioned name notary public)





## CONFLICT OF INTEREST AFFIDAVIT

State of California }} SS: City of San FranciscoCounty of San Francisco }

JASON TANKO being first duly sworn, deposes and says that he/she is the  
 (Owner, Partner, Officer, Representative or Agent) of TANKO STREETLIGHTING, INC. the Bidder that  
 has submitted the attached Bid/Proposal and certifies the following:

Bidder certifies by submitting its Bid that no elected official, committee member, or employee of the Town has a financial interest directly or indirectly in this transaction or any compensation to be paid under or through this transaction, and further, that no Town employee, nor any elected or appointed officer (including Town committee members) of the Town, nor any spouse, parent or child of such employee or elected or appointed officer of the Town, may be a partner, officer, director or proprietor of Bidder and further, that no such Town employee or elected or appointed officer, or the spouse, parent or child of any of them, alone or in combination, may have a material interest in the Bidder/Proposer. Material interest means direct or indirect ownership of more than 5% of the total assets or capital stock of the Bidder. Any contract award containing an exception to these above described restrictions must be expressly approved by the Town Council. Further, Bidder recognizes that with respect to this solicitation, if any Bidder violates or is a party to a violation of the ethics ordinances or rules of the Town, the provisions of Miami-Dade County Code Section 2-11.1, as applicable to Town, or the provisions of Chapter 112, part III, Fla. Stat., the Code of Ethics for Public Officers and Employees, such Bidder/Proposer may be disqualified from furnishing the goods or services for which the bid or proposal is submitted and may be further disqualified from submitting any future bids or proposals for goods or services to Town. The terms "Bidder" as used herein, include any person or entity making a bid herein to Town or providing goods or services to Town.

Bidder further certifies that the price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any other of its agents, representatives, owners, employees or parties in interest, including this affiant.

Signed, sealed and delivered in the presence of:

B. [Signature]

Witness

By: [Signature]JASON TANKO

(Printed Name)

PRESIDENT

(Title)

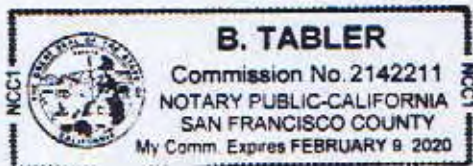
BEFORE ME, the undersigned authority, personally appeared JASON TANKO to me well known and known by me to be the person described herein and who executed the foregoing Affidavit and acknowledged to and before me that he executed said Affidavit for the purpose therein expressed.

WITNESS, my hand and official seal this 27 day of June, 2016.

My Commission Expires: 2/9/20

B. [Signature]

Notary Public State of ~~Florida~~ at Large  
California





## NON-COLLUSIVE AFFIDAVIT

State of California }

} ss: City of San Francisco

County of San Francisco }JASON TANKO

being first duly sworn, deposes and says that:

- a) He/she is the Owner (Owner, Partner, Officer, Representative or Agent) of TANKO STREETLIGHTING, INC., the Bidder that has submitted the attached Proposal;
- b) He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
- c) Such Proposal is genuine and is not collusive or a sham Proposal;
- d) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or to refrain from proposing in connection with such work; or have in any manner, directly or indirectly, sought by person to fix the price or prices in the attached Proposal or of any other Bidder, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed work;
- e) The price or prices quoted in the attached Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any other of its agents, representatives, **owners, employees or parties in interest, including this affiant.**

Signed, sealed and delivered in the presence of:

B. [Signature]

Witness

[Signature]

Witness

By: [Signature]JASON TANKO

(Printed Name)

PRESIDENT

(Title)



## NON-COLLUSIVE AFFIDAVIT (CONTINUED)

## ACKNOWLEDGMENT

State of California )

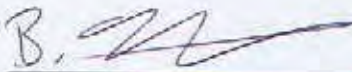
) ss: City of San Francisco

County of San Francisco

BEFORE ME, the undersigned authority, personally appeared JASON TANKO to me well known and known by me to be the person described herein and who executed the foregoing Affidavit and acknowledged to and before me that he executed said Affidavit for the purpose therein expressed.

WITNESS, my hand and official seal this 27 day of June, 2016.

My Commission Expires: 2/9/20



Notary Public State of ~~Florida~~ at Large <sup>RT</sup>  
California



**CERTIFICATE OF AUTHORITY  
(IF CORPORATION)**

I HEREBY CERTIFY that at a meeting of the Board of Directors of Tanko Streetlighting, Inc., a corporation organized and existing under the laws of the State of California, held on the 2nd day of July, 2014, a resolution was duly passed and adopted authorizing (Name) Jason Tanko as (Title) President of the corporation to execute proposals on behalf of the corporation and providing that his/her execution thereof, attested by the secretary of the corporation, is the official act and deed of the corporation. I further certify that said resolution remains in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this 27th day of June, 20 16.

Secretary:  Print: Clare Bressani Tanko

**CERTIFICATE OF AUTHORITY  
(IF PARTNERSHIP)**

I HEREBY CERTIFY that at a meeting of the Board of Directors of \_\_\_\_\_, a partnership organized and existing under the laws of the State of \_\_\_\_\_, held on the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, a resolution was duly passed and adopted authorizing (Name) \_\_\_\_\_ as (Title) \_\_\_\_\_ of the to execute proposals on behalf of the partnership and provides that his/her execution thereof, attested by a partner, is the official act and deed of the partnership.

I further certify that said partnership agreement remains in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand this \_\_\_\_\_, day of \_\_\_\_\_, 20 \_\_\_\_\_.

Partner: \_\_\_\_\_ Print: \_\_\_\_\_

**CERTIFICATE OF AUTHORITY  
(IF JOINT VENTURE)**

Joint ventures must submit their joint venture agreement indicating that the person signing this Bid is authorized to sign Bid documents on behalf of the joint venture and submit the appropriate Certificate of Authority (corporate, partnership, or individual).

**CERTIFICATE OF AUTHORITY  
(IF INDIVIDUAL)**

I HEREBY CERTIFY that, I (Name) \_\_\_\_\_, individually and doing business as (d/b/a) \_\_\_\_\_ (If Applicable) have executed and am bound by the terms of the Proposal to which this attestation is attached.

IN WITNESS WHEREOF, I have hereunto set my hand this \_\_\_\_\_, day of \_\_\_\_\_, 20 \_\_\_\_\_.

Signed: \_\_\_\_\_ Print: \_\_\_\_\_



## NOTARIZATION

STATE OF California

) SS:

COUNTY OF San Francisco

The foregoing instrument was acknowledged before me this 27 day of June, 2016, by Clare Bressani Tanko, who is personally known to me or who has produced driver's license as identification and who (did) take an oath.

B. [Signature]

SIGNATURE OF NOTARY PUBLIC

STATE OF ~~FLORIDA~~ CALIFORNIAB. Tabler

PRINTED, STAMPED OR TYPED

NAME OF NOTARY PUBLIC



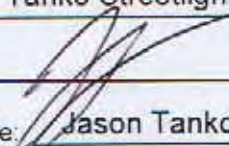
**RFP 2016-34**  
**ADDENDUM ACKNOWLEDGEMENT FORM**

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Listed below are the dates of issue for each Addendum received in connection with this RFP:

Addendum No. <u>1</u>	Dated <u>6/8/16</u>
Addendum No. <u>2</u>	Dated <u>6/14/16</u>
Addendum No. <u>3</u>	Dated <u>6/17/16</u>
Addendum No. <u>4</u>	Dated <u>6/24/16</u>
Addendum No. <u>5</u>	Dated <u>6/30/16</u>
Addendum No. <u>6</u>	Dated <u>6/30/16</u>
Addendum No. <u>7</u>	Dated <u>7/6/16</u>
Addendum No. <u>      </u>	Dated <u>                    </u>
Addendum No. <u>      </u>	Dated <u>                    </u>

       No Addendum issued for this RFP

Firm's Name: Tanko Streetlighting, Inc. "Tanko Lighting"  
Signature:   
Printed Name/Title: Jason Tanko, President

## Appendix L – Proposer Profile Form



### PROPOSER PROFILE FORM

By submitting this Proposal, firm certifies the truth and accuracy of all information contained herein.

Proposer's Business Name Tanko Streetlighting, Inc. ("Tanko Lighting")

Contact Person Jason Tanko Title President

Email Address jason@tankolighting.com Phone Number 415-254-7579

#### A. Business Information

1. How many years has your company been in business under its current name and ownership? 8 years - previously was Sole Proprietorship (Tanko Streetlighting Services) since 2003.

a. Professional Licenses/Certifications (include name and number)*	Issuance Date
<u>California C-10 Electrical Contractor License</u>	<u>May 2014</u>
<u>Arizona A-17 Electrical Contractor License</u>	<u>June 2015</u>
<u>Massachusetts DCAM Certification</u>	<u>February 2015</u>
<u>DOE Qualified ESCO</u>	<u>May 2015</u>

b. Date company licensed by the State of Florida or Miami-Dade County: N/A - Subcontractor is licensed - see proposal.

c. State and Date of Incorporation: CA - March 2008

c. What is your primary business? Project management for municipal street light conversion projects. (This answer should be specific)

2. Name and Licenses of any prior companies:

Name of Company	License No.	Issuance Date
<hr/>		
<hr/>		

3. Type of Company (circle one):

Corporation      "S" Corporation      LLC      Sole Proprietorship

Tanko Lighting is an S Corporation

Other:

**(Corporations will be required to provide a copy of their corporate resolution prior to executing a contract).**

## 4. Company Ownership

## a. Identify all owners of the company

Name	Title	% of ownership
Jason Tanko	President	50%
Clare Bressani Tanko	Vice President	50%

b. Is any owner identified above an owner in another company? ☐ Yes ☒ No

If yes, identify the name of the owner, other company names, and % ownership

## c. Identify all individuals authorized to sign for the company, indicating the level of their authority ( check applicable boxes and for other provide specific levels of authority)

Name	Title	Signatory Authority			
		All	Cost	No-Cost	Other
Jason Tanko	President	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clare Bressani Tanko	Vice President/Secretary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Explanation for Other:

## 5. Employee Information

Total No. of Employees: 25 Number of Managerial/Admin. Employees: 20

Number of Trades Personnel and total number per classification:

(Apprentices must be listed separately for each classification)

N/A

6. Has any owner or employee of the company ever been convicted of a federal offense or moral turpitude: If yes, please explain:

No.

7. Insurance Information (**Attach Firm's current Certificate of Liability Insurance**) - Attached  
a. Insurance Carrier name & address: Traveler's Property Casualty Company of America

PO Box 660317, Dallas, TX 75266-0317

- b. Insurance Contact Name, telephone, & e-mail: Vince Scolari, 408-550-2132;  
vscolari@mcsberryandhudson.com

- c. Insurance Experience Modification Rating (EMR): 77%  
(if no EMR rating please explain why)

- d. Number of Insurance Claims paid out in last 5 years & value: 1 - \$454.00

8. Bank References:

Bank	Address/City/State/Zip	Telephone
JP Morgan Chase	60 Mission Street, 5th Floor, San Francisco, CA 94105;	(415) 315-5915

9. Attach a financial statement including proposer's latest balance sheet and income statement showing the following items:

- Current Assets (e.g. cash, joint venture accounts, accounts receivable, notes, receivable, accrued income, deposits, materials, real estate, stocks and bonds, equipment, furniture and fixtures, inventory and prepaid expenses)
- Net Fixed Assets
- Other Assets
- Current Liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, real estate encumbrances and accrued payroll taxes)
- Other Liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings)

State the name of the firm preparing the financial statement and date thereof:

Hood & Strong, LLC - April 2015 - NOTE: THESE ARE CONFIDENTIAL DOCUMENTS.

Is this financial statement for the identical organization named on page one?

X  Yes        No

If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g. parent-subsiary).

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10. Have any claims lawsuits been filed against your company in the past 5 years? If yes, identify all where your company has either settle or an adverse judgment has been issued against your company. Identify the year basis for the claim or judgment & settlement unless the value of the settlement is covered by a written confidentiality agreement.  No.
- 

11. To the best of your knowledge is your company or any officers of your company currently under investigation by any law enforcement agency or public entity? If yes, provide details:
- No.
- 

12. Has your company been assessed liquidated damages or defaulted on a project in the past five (5) years? ☐ Yes ☒ No (If yes, provide an attachment that provides an explanation of the project and an explanation.

13. Has your company been cited for any OSHA violations in the past five (5) years? If yes, please provide an attachment including all details on each citation. ☐ Yes ☒ No

14. Provide an attachment listing all of the equipment, with a value of \$3,000 or greater, owned by your company. Please find attached.

15. Provide an attachment listing of all equipment that your company does not own but plans to rent, lease, or borrow for the performance of the work. N/A

16. Subcontractors:

Name	Trade/Work to be performed	% of Work	License No.
G&R Electric Corp.	Installation, disposal, safety, traffic control	~20%	EC13003998

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# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
05/24/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER LIC #0056172 1-888-845-2248 McSherry & Hudson  160 West Santa Clara Street Suite 715 San Jose, CA 95113		CONTACT NAME: PHONE (A/C, No. Ext): 408-550-2130 FAX (A/C, No): 408-550-2119 E-MAIL ADDRESS:															
INSURED Tanko Street Lighting, Inc. DBA: Tanko Lighting 220 Bayshore Blvd.  San Francisco, CA 94124		<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: TRAVELERS PROP CAS CO OF AMER</td> <td>25674</td> </tr> <tr> <td>INSURER B: HISCOX INS CO INC</td> <td>10200</td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: TRAVELERS PROP CAS CO OF AMER	25674	INSURER B: HISCOX INS CO INC	10200	INSURER C:		INSURER D:		INSURER E:		INSURER F:	
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INSURER C:																	
INSURER D:																	
INSURER E:																	
INSURER F:																	

## COVERAGES

CERTIFICATE NUMBER: 46927607

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.


INSR LTR	TYPE OF INSURANCE			ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS		
A	GENERAL LIABILITY					630-8470L003-TIL-16	05/19/16	05/19/17	EACH OCCURRENCE	\$ 2,000,000	
	<input checked="" type="checkbox"/>	COMMERCIAL GENERAL LIABILITY							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 100,000	
	<input type="checkbox"/>	CLAIMS-MADE	<input checked="" type="checkbox"/>	OCCUR	MED EXP (Any one person)				\$ 5,000		
	<input type="checkbox"/>				PERSONAL & ADV INJURY				\$ 2,000,000		
	<input type="checkbox"/>				GENERAL AGGREGATE				\$ 4,000,000		
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG				\$ 2,000,000		
	<input checked="" type="checkbox"/>	POLICY	<input type="checkbox"/>	PRO-JECT	<input type="checkbox"/>				LOC	\$	
	<input type="checkbox"/>										
A	AUTOMOBILE LIABILITY					BA-8470L003-TIL-16	05/19/16	05/19/17	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000	
	<input checked="" type="checkbox"/>	ANY AUTO			SCHEDULED AUTOS				BODILY INJURY (Per person)	\$	
	<input type="checkbox"/>	ALL OWNED AUTOS	<input type="checkbox"/>	NON-OWNED AUTOS	BODILY INJURY (Per accident)				\$		
	<input checked="" type="checkbox"/>	HIRED AUTOS	<input checked="" type="checkbox"/>		PROPERTY DAMAGE (Per accident)				\$		
	<input type="checkbox"/>								\$		
A	<input checked="" type="checkbox"/>	UMBRELLA LIAB		<input checked="" type="checkbox"/>	OCCUR	CUP-8470L003-TIL-16	05/19/16	05/19/17	EACH OCCURRENCE	\$ 3,000,000	
	<input type="checkbox"/>	EXCESS LIAB		<input type="checkbox"/>	CLAIMS-MADE				AGGREGATE	\$ 3,000,000	
	<input type="checkbox"/>	DED	<input type="checkbox"/>	RETENTION \$					\$		
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			Y / N <input checked="" type="checkbox"/> Y	N / A	UB-4E963854-16	05/19/16	05/19/17	<input checked="" type="checkbox"/> WC STATUTORY LIMITS	<input type="checkbox"/> OTHER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)								E.L. EACH ACCIDENT	\$ 1,000,000	
	If yes, describe under DESCRIPTION OF OPERATIONS below								E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000	
									E.L. DISEASE - POLICY LIMIT	\$ 1,000,000	
B	Professional/E&O					MPL1485834.16	05/19/16	05/19/17	Each/Aggregate 2,000,000		

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

RE: Proof of Insurance

## CERTIFICATE HOLDER

## CANCELLATION

Proof of Insurance c/o Tanko Street Lighting, Inc. DBA: Tanko Lighting  220 Bayshore Blvd.  San Francisco, CA 94124  USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE 
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ACORD 25 (2010/05)

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wilsonk19

46927607



## Equipment List – Tanko Lighting

*Provide an attachment listing all of the equipment, with a value of \$3,000 or greater, owned by your company.*

- Yale Forklift
- Komatsu Forklift
- Dodge Ram Truck
- Prius Sedan
- Prius Sedan
- IT Server

Please note that Tanko Lighting's installation subcontractor – G&R Electric – owns one 45 foot-reach bucket truck, one 60 foot-reach bucket truck, as well as one flatbed trailer and additional trucks and fleet vehicles.