

A G E N D A

FINANCE COMMITTEE

REGULAR MEETING
TUESDAY, MAY 28, 2019, AT 9:00 AM
BOARD ROOM – GATEWAY COMPLEX

1. MEETING CALLED TO ORDER: F. William Dorband, Chairman
2. ROLL CALL: Dorband, Autrey, Moderacki, Neff, Rosenzweig, Thomas and Yearout
3. APPROVAL OF REPORT OF APRIL 23, 2019 (Attachment)
4. RESIDENTS' FORUM
5. CHAIRMAN'S REPORT – ANNOUNCEMENTS
6. STAFF REPORTS
 - a. CEO – General Comments
 - b. CFO – Monthly GRF Financials (copy in GRF Board Office Finance Committee mailbox)
 - c. Director of Mutual and Trust Operations – Trust Facilities and Property Maintenance, Projects, and Machinery/Equipment Acquisition Reports (Attachments)
7. UNFINISHED BUSINESS
 - a. Continue discussion of Trust Estate Fund projections and budget. (Attachments)
8. NEW BUSINESS
 - a. Discuss On Bill Financing proposal for four energy efficient projects and consider recommendation to the Board. (Attachments)
9. ADJOURNMENT
10. NEXT REGULAR MEETING: Tuesday, June 25, 2019, at 9:00 a.m. in the Board Room at Gateway Complex.

cc: GRF Board

FINANCE COMMITTEE REPORT

REGULAR MEETING
TUESDAY, APRIL 23, 2019, AT 9:00 A.M.

A regular meeting of the Finance Committee was convened by F. William Dorband, Chairman, at 9:00 a.m. on Tuesday, April 23, 2019, in the Board Room at Gateway Complex.

Present, in addition to the Chairman, were Jean A. Autrey, Vice Chair, Paul J. Moderacki, Mary K. Neff, Paul Rosenzweig, and Deborah Thomas. Gery Yearout was excused. Also attending were Robert D. Kelso, President, Leslie Birdsall, Vice President, Geraldine Pyle, Secretary, and Kenneth Anderson, Director, GRF; Timothy O'Keefe, CEO; Richard S. Chakoff, CFO; Jeffrey P. Matheson; Amanda Davis, Accounting Manager; Deborah Rose, Senior Administrative Assistant, Executive Services; and five residents. Attendance

The report of the Committee's regular meeting of March 26, 2019, was approved as written. Report Approved

During the Residents' Forum, Dale Harrington thanked the Committee for its recommendation to the Board to increase the Member Transfer Fee to \$10,000 as it helps with other expenses and with the creek repair. Residents' Forum

There was no Chairman's Report. Chairman's Report

Mr. O'Keefe reported that the permit has been finalized for the solar farm. He also reported that there is a new ticketing system for the Recreation Department, which will remove cash processing. Mr. Matheson answered questions from members of the Committee. Staff Reports

Mr. Chakoff made an announcement that the Accounting Department has been restructured and that Amanda Davis has been made Accounting Manager. He then reviewed the GRF Statement of Operations for March, provided an overview of the General Fund Balance, reviewed the Trust Estate Fund balance, and answered questions from members of the Committee.

Mr. Chakoff then reviewed the Mutual Operations Division income statement for March.

Lastly, Mr. Chakoff reviewed the March Trust Facilities and Property Maintenance Report, the Capital Projects Budget and Expenditure Report, and the Machinery & Equipment Budget and Expenditure Report. Discussion followed. The Committee asked that Mr. Chakoff provide further clarification at the Committee's next regular meeting regarding the fuel management system upgrade on page 6c-3 of the agenda packet and to inform the Committee if this item was correctly budgeted.

The Chairman introduced agenda item 7a, continue discussion of Trust Estate Fund projections. After the Chairman's preliminary introduction of the line item, Ms. Thomas reviewed the MLS/MTF collections by month 2018-2019 on page 7a-4 of the agenda packet. Discussion followed. Mr. Chakoff then reviewed the Trust Estate Fund Projection on page 7a-1 of the agenda packet. Discussion followed.

Trust Estate
Fund
Projections

There being no further business to come before the Committee, the meeting was adjourned at 9:42 a.m.

Adjourn-
ment

The next regular meeting of the Finance Committee will be held on Tuesday, May 28, 2019, at 9:00 a.m. in the Board Room at Gateway Complex.

Next Mtg.
5/28/19

F. William Dorband, Chairman
Finance Committee

Reporting Period: April 2019

Reporting Period: April 2019

6c-1-2019-04 Trust Maintenance Cost Report

CAPITAL PROJECTS
BUDGET AND EXPENDITURE REPORT
Reporting Period APRIL 2019

Project	Approved Budget	Reporting Period Expenditures	Incurred To-Date	Forecast To-Complete	Est. Final Expenditure	Under/(Over) Budget
Gateway HVAC Replacement	615,000			615,000	615,000	0
Valley Wide Street Maintenance	520,000			520,000	520,000	0
Creek Restoration Design & Project Management	222,177		40,167	182,010	222,177	0
Fiber Optic Cable Phase I	60,000			60,000	60,000	0
Fiber Optic Cable Phase II	160,000			160,000	160,000	0
Repave MOD Parking Lot	211,500			211,500	211,500	0
Water Reclamation Facility Study	150,000	7,749	144,153	5,847	150,000	0
Corp Yard Fire & Domestic Water Lines Replacement	120,000			120,000	120,000	0
Gateway Workshops Renovation Design	83,000	13,970	64,888	18,112	83,000	0
Dollar Clubhouse Accessibility Improvements	105,000	390	38,065	66,935	105,000	0
Dollar Pool Plaster Replacement	85,000			85,000	85,000	0
Database Integration	55,000	1,523	5,166	49,834	55,000	0
Stanley Dollar Drive Parking	26,021		24,255	1,766	26,021	0
Golf Course Irrigation Pump Replacement	18,000			18,000	18,000	0
MOD Corporation Electrical Upgrade	16,000			16,000	16,000	0
TOTAL	2,446,698	23,631	316,694	2,130,004	2,446,698	0

Project	Unapproved Budget
Gateway Generator	225,000
Vista & Las Trampas Rooms Renovation-Hillside	100,000
Dollar Clubhouse Restroom Renovation-1st Floor	80,000
Oak Room Flooring Replacement	45,000
Rossmoor Web Portal	35,000
Recreation Office Partition Replacements	30,000
Event Center Trash and Recycling Containers	25,000
Gateway Large Conference Room Upgrade	20,000
Dollar Ranch Course Design Plans-Green/Fairway 14	10,000
Buckeye Tennis Complex Ball Wall	6,000
TOTAL	576,000

**MACHINERY & EQUIPMENT
BUDGET AND EXPENDITURE REPORT**
Reporting Period: APRIL 2019

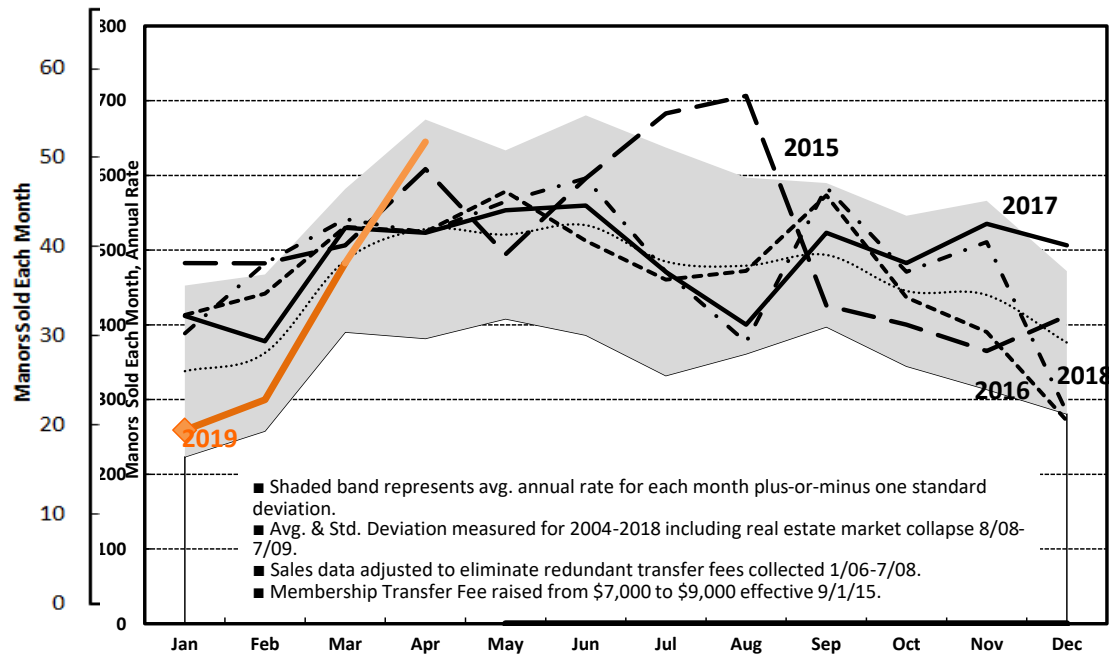
Project	Approved Budget	Incurred To-Date	Forecast To-Complete	Est. Final Expenditure	Under/(Over) Budget
MOD Vehicles	198,000		198,000	198,000	0
GRF Vehicles	114,000	100,445	13,555	114,000	0
Skid Loader	46,000		46,000	46,000	0
Tee Mower	38,000		38,000	38,000	0
Security Camera System	35,000	35,005	0	35,005	(5)
Utility Vehicle-Golf	32,000		32,000	32,000	0
Rossmoor Website Improvements	25,000		25,000	25,000	0
Vehicle Maintenance Software	16,000	15,945	0	15,945	55
Fuel Management System Upgrade NOTE 1	10,190	10,190	0	10,190	0
Heater Replacement-Dollar Clubhouse Pool	7,500		7,500	7,500	0
Ball Picker	5,000		5,000	5,000	0
TOTAL	526,690	161,585	365,055	526,640	50

NOTE 1: Cost for a MOD fuel island repair.

MOD Expenditures	198,000		198,000	198,000	0
GRF Expenditures	328,690	161,585	167,055	328,640	50
TOTAL	526,690	161,585	365,055	526,640	50

ROSSMOOR 2019 MEMBERSHIP TRANSFER FEES

Membership Transfer Fees					Percent Chg. vs. Prev. Yr.			% of Total Manor Sales	
April 2019			April 2018						
	Month	YTD	Month	YTD	Month	YTD		Month	YTD
Total Fees	53	139	43	159	23%	-13%		78%	79%
\$ Collected	477,000	1,251,000	387,000	1,431,000	23%	-13%	Excludes non-sale transfers		

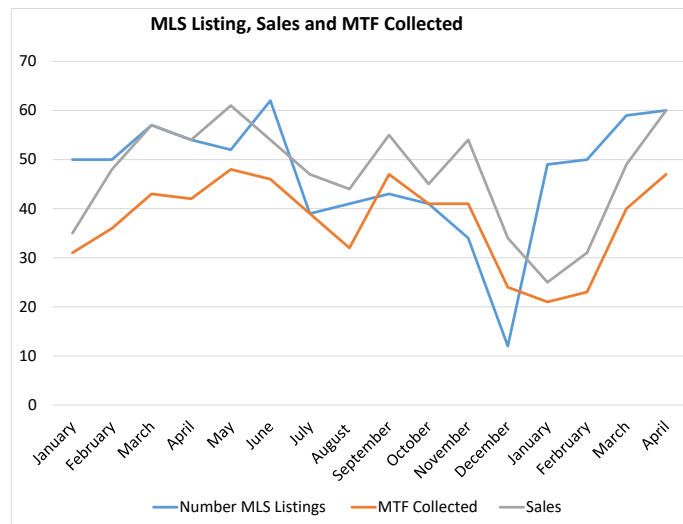
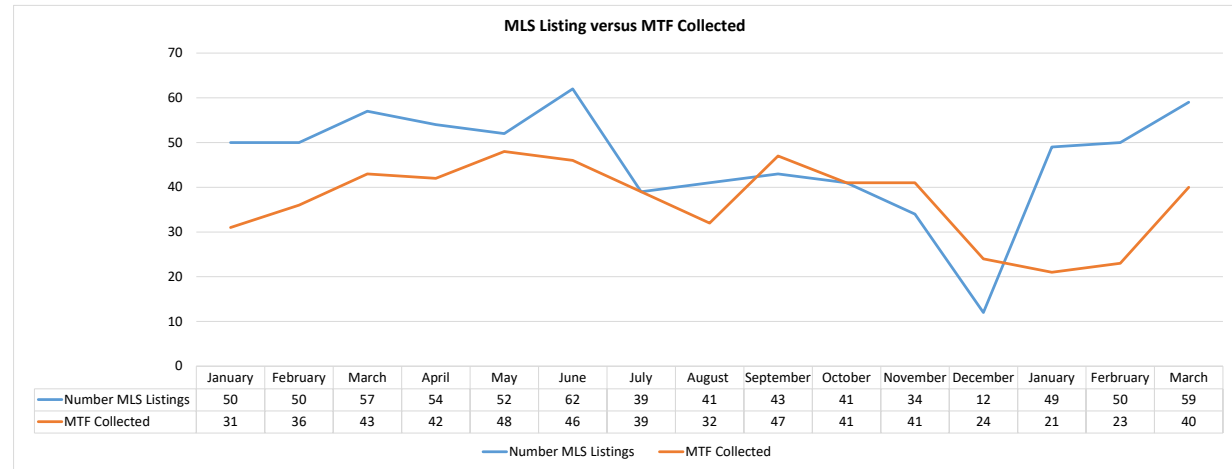


History of Transactions Generating Membership Fees

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2004	28	43	49	63	45	72	58	62	60	36	58	33	607
2005	38	26	42	41	36	34	27	34	32	29	32	28	399
2006	13	13	41	24	32	42	12	38	32	24	37	21	329
2007	33	23	33	30	38	28	36	32	35	36	23	18	365
2008	15	14	32	32	38	35	42	30	33	23	17	31	342
2009	17	23	24	26	28	27	35	43	42	49	39	38	391
2010	23	25	33	37	44	33	40	31	33	38	27	34	398
2011	15	24	38	45	42	47	39	47	40	52	34	46	469
2012	36	33	59	65	50	57	51	48	45	50	50	35	579
2013	42	32	46	55	63	40	64	42	46	42	41	30	543
2014	32	32	43	44	61	56	36	37	37	36	36	40	490
2015	41	37	43	50	42	49	58	60	35	34	30	35	514
2016	35	35	45	43	49	42	39	40	47	37	32	23	467
2017	35	29	45	43	47	46	40	34	43	41	44	43	490
2018	33	37	46	43	48	49	40	32	48	40	42	24	482
2019	22	23	41	53									139
Prev Yr YTD	33	70	116	159	207	256	296	328	376	416	458	482	

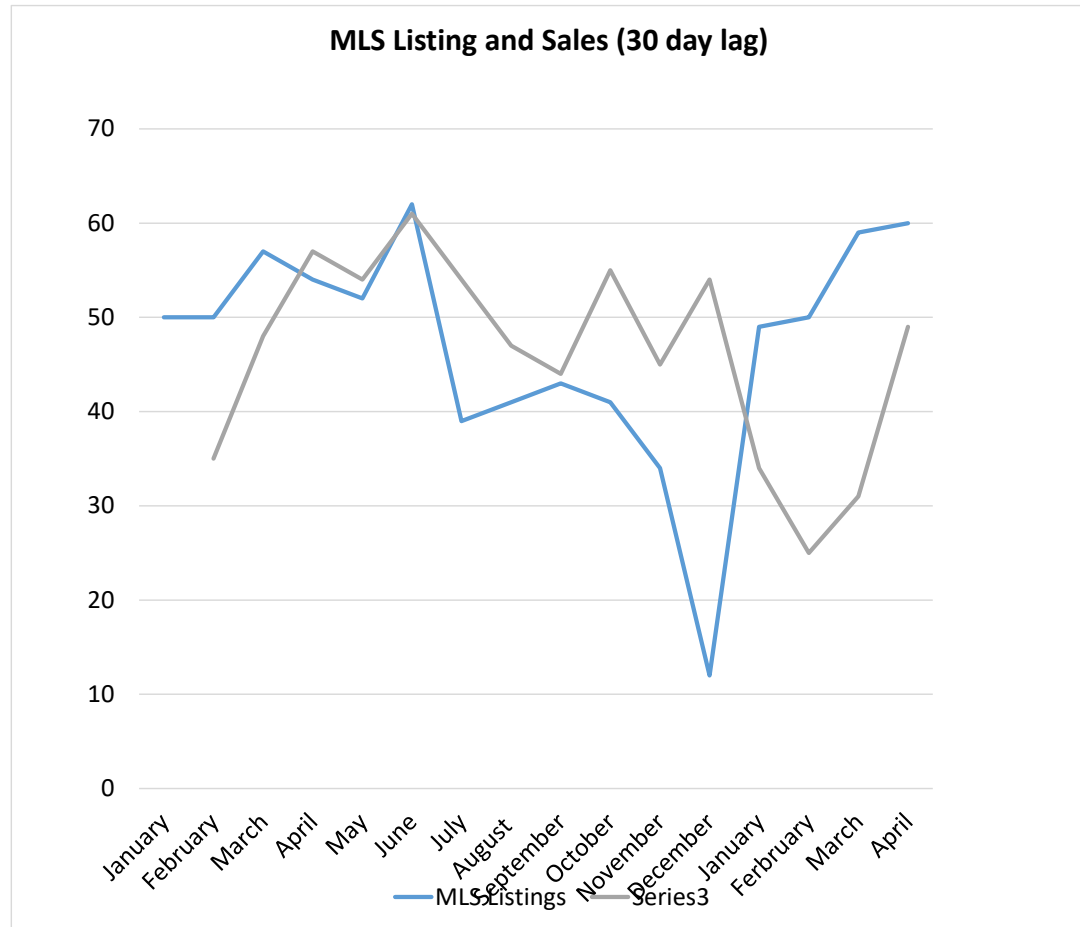
MLS LISTINGS VS MTF COLLECTED

	Number MLS Listings	MTF Collected	Sales
January	50	31	35
February	50	36	48
March	57	43	57
April	54	42	54
May	52	48	61
June	62	46	54
July	39	39	47
August	41	32	44
September	43	47	55
October	41	41	45
November	34	41	54
December	12	24	34
January	49	21	25
February	50	23	31
March	59	40	49
April	60	47	60

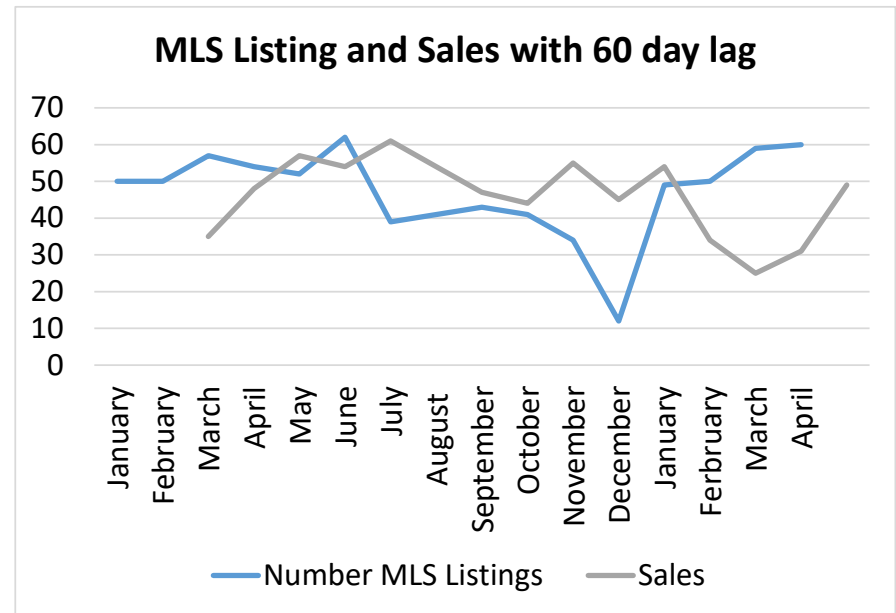


Number MLS Listings Sales

January	50	
February	50	35
March	57	48
April	54	57
May	52	54
June	62	61
July	39	54
August	41	47
September	43	44
October	41	55
November	34	45
December	12	54
January	49	34
Ferbruary	50	25
March	59	31
April	60	49



	Number MLS Listings	Sales
January	50	
February	50	
March	57	35
April	54	48
May	52	57
June	62	54
July	39	61
August	41	54
September	43	47
October	41	44
November	34	55
December	12	45
January	49	54
February	50	34
March	59	25
April	60	31
		49



Golden Rain Foundation
Trust Estate Fund Projection
in thousands (000's)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029 - 2038	Total
Beginning Balance 4/30/2019	3,612	1,118	375	1,239	2,240	3,457	4,260	5,249	5,814	6,852	7,857	3,612
<u>Estimated Revenues:</u>												
Membership transfer fees	2,349	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	42,000	82,149
Medical Center rent	453	694	711	729	747	766	785	804	825	845	9,706	17,065
Total	2,802	4,894	4,911	4,929	4,947	4,966	4,985	5,004	5,025	5,045	51,706	99,214
<u>Estimated Expenditures</u>												
Machinery & Equipment	167											167
Total per Long Range Plan(1)		1,557	1,471	1,663	1,592	2,052	1,912	2,382	2,328	2,786	20,794	38,537
Approved Projects (2)	2,130											2,130
Other Projects (3)	100	100	100	100	100	100	100	100	100	100	1,000	2,000
<u>Unapproved Projects</u>												
Water Reclamation	170	560	384	100								1,214
Gateway Studio Construction	800	800										1,600
Creek Restoration	500	500										1,000
<u>Debt Service:</u>												
Mechanics Bank loan #1-Creekside	500	749	749	749	749	749	749	749	378			6,121
Mechanics Bank loan #2-Event	538	785	757	730	703	676	649	622	595	568	228	6,851
Mechanics Bank loan #3-Fitness	391	586	586	586	586	586	586	586	586	586	2,637	8,302
Total Estimated Expenditures	5,296	5,637	4,047	3,928	3,730	4,163	3,996	4,439	3,987	4,040	24,659	67,922
Revenue minus expense	(2,494)	(743)	864	1,001	1,217	803	989	565	1,038	1,005	27,047	31,292
Ending Fund Balance	1,118	375	1,239	2,240	3,457	4,260	5,249	5,814	6,852	7,857	34,904	34,904

(1) Includes expenditures from long-range capital plan excluding water reclamation, Gateway studios and creek restoration

(2) Forecast to complete capital projects previously approved in process

(3) To account for various projects not currently planned that occur during the year

Meeting Date: May 28, 2019

***SUMMARY REPORT
GOLDEN RAIN FOUNDATION FINANCE COMMITTEE***

REPORT PREPARED BY:

Jeff Matheson, Director of Resident Services

REQUESTED ACTION/RECOMMENDATION:

Authorize the CEO to execute the Implementation Agreement with Enovity and the On Bill Financing (OBF) agreement with PG&E pending project approval from PG&E and the final firm price proposal from Enovity being substantially consistent with the budgetary estimate (attached).

BACKGROUND:

In December of 2018, the GRF Board authorized an agreement with Enovity to complete an evaluation of energy saving projects that would qualify for funding under the PG&E 0% On Bill Financing program. Enovity has reviewed the utility billing for GRF facilities and conducted onsite audits of facilities. Enovity has also met with staff to review options and recommendations. Based on the evaluation, Enovity has developed a proposal that includes four energy efficient measures.

The first measure is to convert all street lighting, parking lot lighting and exterior lighting to LED. The conversion would include the cobra head fixtures as well as the decorative fixtures. Most locations would have 27-watt lamps with some locations receiving 35-watt lamps. GRF has already converted some of the parking lots to LED. These locations will not be included. Some parking lot locations will receive an additional light fixture where currently needed.

The second measure is to convert all interior lighting to LED. The Fitness Center was constructed with LED lighting. This facility is not included. All other clubhouses and MOD will be included. The studios at Gateway will not be included as the lighting is planned for redesign and upgrade as part of the project. The Las Trampas Room will have some redesign to meet the new function of the room for performing arts. Interior lighting will also include lighting controls such as occupancy sensors where appropriate and cost effective.

The third proposal is to replace the HVAC system at MOD. The current system has exceeded the useful life and was on the preliminary replacement schedule for 2019. The new system will provide greater comfort and balanced zones for the various office spaces.

The fourth proposal is the replacement of the HVAC system at Hillside Clubhouse. This system is approaching the end of its useful life and has had many maintenance issues over the past several years. The current system is also noisy and results in complaints from residents using some of the rooms.

Other energy saving projects were reviewed, however, they did not meet the qualifications for funding under the PG&E OBF program. The program requires the funded projects collectively have a maximum of a 10-year payback. Adding the replacement of the HVAC system at Gateway would have caused the collective projects to exceed the 10-year payback.

The cost estimate for completion of the four projects is \$1,231,501. The full cost of the projects will be financed through the PGE 0% On Bill Financing program. The energy savings will be sufficient to pay for the full monthly costs of the loan. The loan will be paid back over 9.2 years or 11 months.

ATTACHMENTS:

1. Enovity Proposal
2. HVAC Cut Sheet Carrier
3. Lighting Cut Sheets

CRITERIA	Project:
Financial Impact	The four projects will be funded through the PG&E 0% On Bill Financing program. The total estimate for the projects is \$1,231,510. The estimated monthly energy savings is \$11,146.58 and the estimated monthly loan payment is \$11,094.61. The loan will be for a period of 9.2 years.
Operational Efficiencies	The LED and HVAC upgrades will result in energy savings as well as savings in supplies and maintenance costs.
Dependencies	Completion of the projects depends on final approval from PG&E. PG&E will review and verify all the energy savings calculations to make sure the monthly savings will offset the monthly loan payments.
Subsequent Actions	Enovity will firm up the energy savings estimates and submit to PG&E for approval. Once approved the CEO will execute the agreements as long as they are substantially consistent with the attached proposal.
Alternatives/Options	GRF could choose not to pursue the projects or GRF could choose to fund the projects through the Trust Estate Fund instead of the 0% OBF program from PG&E.
Time-Frame	The PG&E review process may take 30-90 days. Once PG&E approval has been received the project will be scheduled for construction.

Advantages/Benefits	The projects will result in energy savings and the use of the PG&E OBF program will result in no additional out of pocket expenses for GRF.
Disadvantages/Risks	PG&E may not approve the projects.

DESIGN-BUILD PROPOSAL

ENERGY EFFICIENCY PROJECT

ROSSMOOR COMMUNITY, WALNUT CREEK

Prepared For:



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Prepared By:



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May 17, 2019

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Budget

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EXECUTIVE SUMMARY

Enovity proposes to develop and implement energy efficiency measures (EEMs) at the Rossmoor Community located in Walnut Creek, California. The project will involve the installation of the following EEMs:

- LED Lighting Retrofit - Clubhouses
- LED Lighting Retrofit - Streetlights & Parking Lots
- HVAC Replacement for Hillside Clubhouse & Mutual Operations Division (MOD) Building

The total project cost is \$1,231,501 and has a simple payback of 9.2 years. A summary of the results are presented in Table 1.1.

Table 1.1. Project Summary

Description	Value
<i>Total Out of Pocket Costs (\$)</i>	\$0
<i>Total Project Costs (\$)</i>	\$1,231,501
<i>Cash Back (Utility Incentives) (\$)</i>	\$0
<i>Total Operating Cost Savings (\$/yr)</i>	\$133,759
<i>10-Year Net Present Value (\$)</i>	\$169,279
<i>10-Year Cumulative Cash Flow (\$)</i>	\$246,423
<i>Savings to Investment Ratio (SIR)</i>	1.2
<i>OBF Simple Payback Period (yr)</i>	9.2
<i>OBF Repayment Period (Months)</i>	111.0
<i>OBF Monthly Payment (\$/Month)</i>	(\$11,094.61)
<i>Monthly Operating Cost Savings (\$/Month)</i>	\$11,146.58

Table 1.2. Project EEM Breakdown

ENERGY EFFICIENCY PROJECT								
EEM #	Description	Electricity Savings (KWh/yr)	DEER Peak Demand Reduction (kW)	Natural Gas Savings (therms/yr)	Energy Cost Savings (\$/yr)	Estimated Utility Incentive (\$)	Measure Cost (\$)	Simple Payback (years)
EEM 1	Combined: LED Lighting (Interior, Exterior and Street) & HVAC Replacement	668,793	100	0	\$133,759	\$0	\$1,231,501	9.2
Total		668,793	100.0	0	\$133,759	\$0	\$1,231,501	9.2

Net Present Value (NPV)	\$169,279
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Energy - Simple Payback (years)	9.2
--	------------

Savings to Investment Ratio (SIR)	1.2
--	------------

OBF Loan Amount	\$1,231,501
Incentives & Rebates	\$0

10-Year Cumulative Cash Flow	\$246,423
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Supplemental Funding Required	\$0
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Simple Payback (Months)	111.0
Monthly OBF Payment	(\$11,094.61)

Monthly Operating Cost Savings	\$11,146.58
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FACILITY ENERGY RATE

The Rossmoor Community utilizes several different PG&E rate structures to deliver electricity to the campus. The following average rate of electricity was used in the energy savings analysis:

Annual Electricity Summary	Units
Current Price Of Energy	0.2000 \$/kWh*

** Current Price of Energy Used in Energy Saving Analysis
Utility Rate a mix of A-1, A-6, A-10, E-19 with most A10*

Budget

PROPOSED SCOPE OF SERVICES

Enovity will provide design-build construction services to implement the following scope of work.

EEM 1: Comprehensive Interior & Exterior LED Lighting Retrofit

Enovity proposes to upgrade some of the existing interior and exterior lighting systems to LED technologies. A preliminary lighting count was performed during the initial site visit covering the following facilities and exterior areas:

Interior Lighting Retrofit

- MOD – 25,800 sq. ft.
- Gateway Complex (exclude rooms being renovated Art, Wood, Lapidary, Sewing, Ceramics) – 53,500 sq. ft.
- Creekside Complex – 32,400 sq. ft.
- Dollar Clubhouse – 16,500 sq. ft.
- Hillside Complex (incl. table tennis) – 18,000 sq. ft.

Exterior Lighting Retrofit

- Street Lights
- Creekside Parking
- Tice, Del Valle
- Hillside Parking (Parking Lot lighting LED corn lamps already completed)
- Gateway Parking (Parking Lot lighting LED corn lamps already completed at front, drive and rear remaining)
- Dollar House (add 2-3 new poles w LED in dark areas)
- Pool Lighting (Dollar, Tice, Hillside)

The following table provides the unit pricing, fixture types and estimated quantities:

Table 3.1. Fixture Counts & Unit Pricing

Fixture Code	Retrofit Description	Fixture Count	Unit Cost
A	Cobra Head Streetlight - GE LED 27-35W Roadway ERLC005V440ADKBZ	293	\$843.24
B	Corn Lamp - Eiko LED Litespan HID Replacement 27W	200	\$400.13
C	Exterior Spot Light - Maxlite LED A21	16	\$70.72
D	4' 1-Lamp Strip - Carson Tech 18W TLED	438	\$229.99
E	1'x8' 2-lamp T12 Linear - Noribachi Eiko LED Strip	810	\$190.29
F	Metal Halide 60W to 100W - MaxLite PAR30 10W LED	741	\$93.96
G	Metal Halide 400W - Eiko LED Linear Wrap 32W	38	\$286.76
H	Outdoor Spot Light - MaxLite PAR38 13W	14	\$98.96
I	Indoor Wall Mounted - MaxLite LED A21	3	\$71.69
J	Indoor 2x2 Lights - MaxLite 2'x2' LED Retrokit	7	\$311.46
K	Indoor Spot Light - MaxLite PAR30 10W LED	17	\$97.93
L	Hanging Incandescent Decorative Lights - MaxLite LED A21	96	\$68.79
M	Indoor 2x4 T12 fixture - MaxLite 2'x4' LED Retrokit 35W	12	\$325.00
O	Corn Lamp - Eiko LED Litespan HID Replacement 80W	12	\$328.24
P	8' 1-Lamp Strip - Carson Tech 35W TLED Eiko LED Strip	20	\$190.29
		2,716	

A final audit and fixture count will be performed prior to implementation to true up the contract value based on the unit costs that are listed above as add pricing and inclusive of markup. All fixture types and lamp types will be submitted along with demonstration mockups for approval prior to installing the new LED systems. The new LEDs will reduce the lighting energy consumption by approximately 60% and will provide better light quality and reduce maintenance costs.

EEM 2: HVAC Replacement MOD Office & Hillside Clubhouse

There are a number of buildings where the site has expressed a desire to install new efficient HVAC systems and address comfort issues due to poor existing zoning at the MOD building. The table below provides assumed HVAC system types and sizes for the specific buildings. Proposed New Variable Refrigerant Volume (VRF) HVAC systems with heat recovery provide simultaneous heat and cool to different zones and new zoning configurations will be laid out for the current plan.

Table 3.2. HVAC Replacement List

Location	HVAC Systems
MOD Accounting	14 tons of VRF with eighteen (18) fan coils and ten (10) zones
MOD Offices & IT	20 tons with twenty-four (24) fan coils and sixteen (16) zones
Hillside Diablo Rm	2x 10-ton units
Hillside Pine Rm	1x 3-ton unit
Hillside Las Trampas Rm	2x 5-ton units

PROJECT SCHEDULE

Enovity has developed a conservative project schedule that provides ample time for review and approval by owner and PG&E and an estimated construction duration. Construction is scheduled to begin on 7/1/2019 based on the following:

1. OBF Agreement Issuance by PG&E by 5/24/2019.
2. Executed OBF Agreement between PG&E and Rossmoor by 5/31/2019
3. Executed Implementation Agreement between Enovity and Rossmoor on 5/31/2019

Construction will be completed on 10/18/2019. The LED Lighting project will be completed on 9/6/2019. The project, including M&V, is scheduled to be completed on 11/22/2019.

Task Name	Duration	Start	Finish
Audit	Completed		
Project Development & Preliminary Design	Completed		
Draft Proposal Submittal	1 day	Mon 06-03-19	Mon 06-03-19
Rossmoor Review & Approval	1 week	Thu 06-06-19	Mon 06-10-19
Project Submitted to PG&E	1 day	Mon 06-10-19	Mon 06-10-19
PG&E Review & Approval / Final Proposal Development	4 weeks	Thu 06-13-19	Mon 07-08-19
OBF Agreement / Implementation Agreement Signed	1 week	Thu 07-11-19	Mon 07-15-19
Mobilization & Coordination	1 week	Thu 07-18-19	Mon 07-22-19
Final Design & Submittals	2 weeks	Thu 07-18-19	Mon 07-29-19
Procurement	2 weeks	Thu 08-01-19	Mon 08-12-19
Construction (LED Lighting)	10 weeks	Thu 08-15-19	Mon 10-21-19
Construction (HVAC)	16 weeks	Thu 08-15-19	Mon 12-02-19
Certificate of Substantial Completion (LED Lighting)	1 day	Mon 10-21-19	Mon 10-21-19
Certificate of Substantial Completion (HVAC)	1 day	Mon 12-02-19	Mon 12-02-19
Final Testing & Commissioning	1 day	Thu 12-05-19	Thu 12-05-19
Training & Closeout	4 days	Fri 12-06-19	Mon 12-09-19
Final Inspection	1 day	Mon 12-09-19	Mon 12-09-19
M&V and Final Project Summary	4 weeks	Thu 12-12-19	Mon 01-06-20

PROPOSED FEE AND FINANCIAL ANALYSIS

Enovity proposes to complete this project for a **total project cost of \$1,231,501**. Complete transparency is provided by a detailed cost breakdown of the project. The detailed cost breakdown offers a summary of proposed project tasks as well as our subcontractor cost and markup. Enovity's typical financial analysis summary for the evaluation of energy efficiency improvements is included to support the favorable economic aspects of this project. The Project offers a **net present value of \$169,279** with a **savings-to-investment ratio of 1.2** and a positive **10-year cumulative cash flow of \$246,423**. The following tables show a summary of the project savings, detailed cost breakdown, schedule of values and detailed financial analysis:

Summary of Results

ENERGY EFFICIENCY PROJECT								
EEM #	Description	Electricity Savings (KWh/yr)	DEER Peak Demand Reduction (kW)	Natural Gas Savings (therms/yr)	Energy Cost Savings (\$/yr)	Estimated Utility Incentive (\$)	Measure Cost (\$)	Simple Payback (years)
EEM 1	Combined: LED Lighting (Interior, Exterior and Street) & HVAC Replacement	668,793	100	0	\$133,759	\$0	\$1,231,501	9.2
Total		668,793	100.0	0	\$133,759	\$0	\$1,231,501	9.2

Net Present Value (NPV)	\$169,279
-------------------------	-----------

Savings to Investment Ratio (SIR)	1.2
-----------------------------------	-----

10-Year Cumulative Cash Flow	\$246,423
------------------------------	-----------

Energy - Simple Payback (years)	9.2
---------------------------------	-----

OBF Loan Amount	\$1,231,501
Incentives & Rebates	\$0
Supplemental Funding Required	\$0

Simple Payback (Months)	111.0
Monthly OBF Payment	(\$11,094.61)
Monthly Operating Cost Savings	\$11,146.58

Detailed Cost Breakdown

Task Description	Subs, Material & Labor	Project Overhead & Profit 15.0%	Direct Expense Cost	Enovity Labor Cost	Total
Labor Costs					
Project Development, Scope of Work & Preliminary Design				\$31,540	\$31,540
Final Design & Mobilization				\$24,690	\$24,690
Construction Management				\$31,340	\$31,340
Commissioning & Training, & Closeout				\$17,850	\$17,850
OBF Annual M&V and O&M Follow-up				\$23,200	\$23,200
Construction					
LED Lighting Contractor	\$598,543	\$105,625			\$704,168
HVAC Contractor	\$256,700	\$45,300			\$302,000
Lighting Designer	\$15,000	\$2,647			\$17,647
Direct Cost					
Travel & Miscellaneous			\$5,000		\$5,000
OBF Bridge Funding @ 10% for 6 months			\$57,622		\$57,622
Bonding & Insurance @ \$8.75/\$1000 Cost			\$10,682		\$10,682
City Permit Fees @ 0.5%			\$5,762		\$5,762
Total	\$870,243	\$153,572	\$79,066	\$128,620	\$1,231,501

Schedule of Values

Milestone	Schedule Value
Project Development & Preliminary Design	\$31,540
Final Design & Mobilization	\$24,690
Construction	
City Permit & Fees	\$5,762
Bonding & Insurance	\$10,682
Procurement (@ 40% of mat. & lab)	\$409,526
Installation (@ 60% of mat. & lab)	\$614,289
Construction Management	\$31,340
Travel & Miscellaneous	\$5,000
Commissioning & Training	\$17,850
OBF Bridge Funding @ 10%	\$57,622
OBF - AP Annual M&V and O&M Followup - 10 years	\$23,200
Total Project	\$1,231,501

Financial Analysis Summary

Rossmoor Community - Recommended Energy Efficiency Project

Financial Analysis of Energy Efficiency Improvements Utilizing OBF Turnkey Approach

Simulating Streams of Cash Inflows and Outflows

Peak Demand Savings (kW)	100.0
Annual Energy Savings (kWh)	668,793
Annual Natural Gas Savings (therms)	0
Electrical Cost (\$/KWh)	\$0.2000
Natural Gas Cost (\$/therm)	\$0.8000

Total Out of Pocket Costs (\$)	\$ -
Total Financed Amount (\$)	\$1,231,501
Energy Savings (\$/yr)	\$133,759
Maintenance Savings (\$/yr)	\$0
Utility Incentive (\$)	\$0

Discount Rate	5.00%
Finance Rate	0.00%
Reinvestment Rate	10.00%
Inflation Rate	3.00%

	Today	End of	End of	End of	End of	End of	End of	End of	End of	End of	End of
Date:	0	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
CASH OUTFLOWS											
Single investment											
Phased investment \$	-	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (88,757)
Financed investment											
Subtotal \$	-	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (88,757)
Rebate/incentive											
SUBTOTAL OUTFLOWS \$	-	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (133,135)	\$ (88,757)
CASH INFLOWS											
Energy savings		\$ 133,759	\$ 137,772	\$ 141,905	\$ 146,162	\$ 150,547	\$ 155,063	\$ 159,715	\$ 164,507	\$ 169,442	\$ 174,525
Maintenance savings		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Rebate / Incentive / Cash Back ¹ \$	-										
SUBTOTAL INFLOWS \$	-	\$ 133,759	\$ 137,772	\$ 141,905	\$ 146,162	\$ 150,547	\$ 155,063	\$ 159,715	\$ 164,507	\$ 169,442	\$ 174,525
Annual Cash Flow \$	-	\$ 624	\$ 4,636	\$ 8,770	\$ 13,027	\$ 17,412	\$ 21,928	\$ 26,580	\$ 31,371	\$ 36,307	\$ 85,768
PV of Outflows (for SIR calculation) \$	-	\$ (126,795)	\$ (120,758)	\$ (115,007)	\$ (109,531)	\$ (104,315)	\$ (99,348)	\$ (94,617)	\$ (90,111)	\$ (85,820)	\$ (54,489)
PV of Inflows (for SIR calculation) \$	-	\$ 127,390	\$ 124,963	\$ 122,583	\$ 120,248	\$ 117,957	\$ 115,711	\$ 113,507	\$ 111,345	\$ 109,224	\$ 107,143
Annual Present Value	\$0.00	\$594	\$4,205	\$7,576	\$10,717	\$13,642	\$16,363	\$18,890	\$21,233	\$23,404	\$52,654

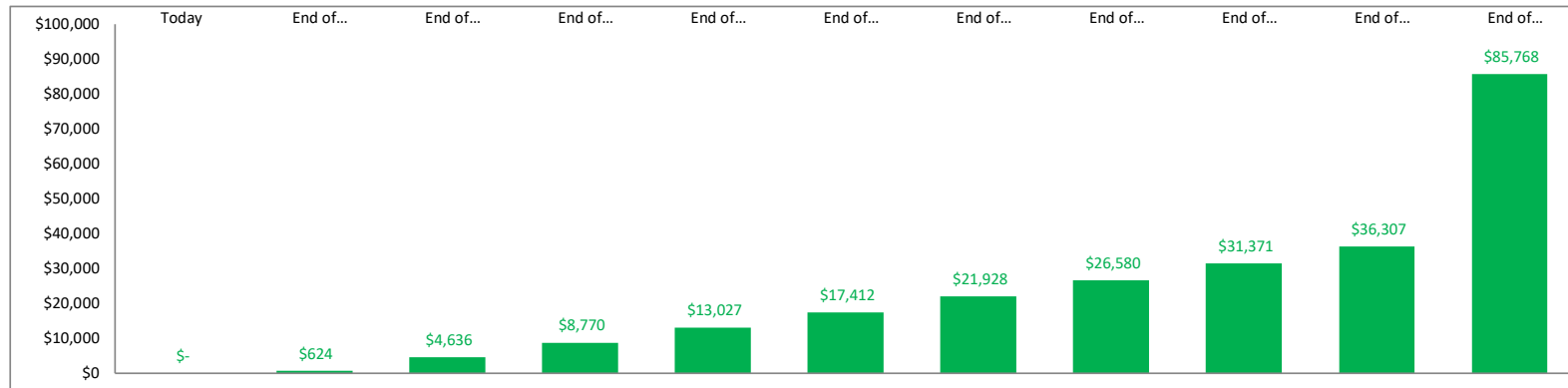
NOTE THAT CERTAIN RETURNS VARY DEPENDING ON THE LENGTH OF THE ANALYSIS TERM											
10-YEAR	1-YEAR	2-YEAR	3-YEAR	4-YEAR	5-YEAR	6-YEAR	7-YEAR	8-YEAR	9-YEAR	10-YEAR	
NPV \$ 169,279	\$594	\$4,799	\$12,375	\$23,092	\$36,735	\$53,098	\$71,988	\$93,221	\$116,625	\$169,279	
SIR 1.2	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	

NOTE 1: SIR calc removes any rebate/incentive received from first cost prior to calculating SIR. The rebate/incentive has been deducted from the total project cost for simplification.

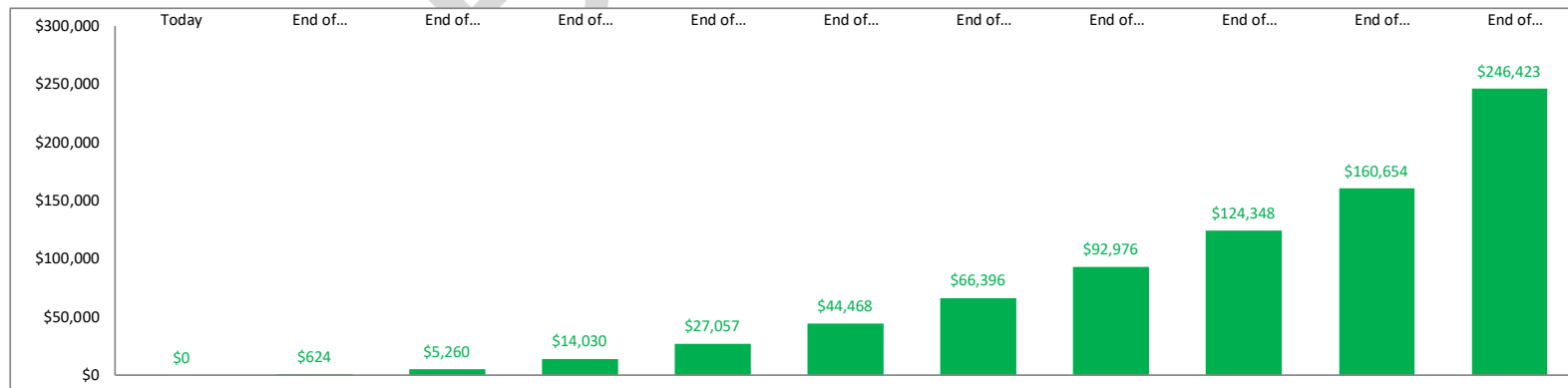
Cash Flow Chart

Rossmoor Community - Recommended Energy Efficiency Project

10-year Cash Flow



Cumulative 10-year Cash Flow



WARRANTY & EXCLUSIONS

Warranty

Enovity offers a 1-year warranty on all labor executed for this project. Enovity will warranty repair service on any system that has stopped working or ceased to function during normal operation.

The manufacturer's material warranties are as follows and are also noted in the material specifications in the Appendices:

- LED Lamps – 5 years
- LED Fixtures – 5 years
- LED Streetlights – 10 years
- LED Parking Lot Lighting – 10 years
- LED Exit signs – 10 years

Exclusions

- Survey, repairs, and/or modifications of existing systems other than those specifically included.
- Warranty or guarantee of existing equipment and devices.
- All cutting, coring, patching, painting, roofing, roof screens, etc.
- All overtime work beyond the typical 8 hour/day work schedule. This proposal assumes that all work will be performed during normal business hours.
- Removal and/or abatement of hazardous materials, etc.
- Traffic control for street lighting beyond basic cones and warning signs (e.g. flaggers).
- Any additional blocking or supports for fixture mounting.
- Any repairs or modifications to existing T-bar grid.

APPENDIX A:
LED lighting Product Cut Sheets

Budget



APPENDIX B: HVAC Product Cut Sheet

Budget



Carrier® Ductless Systems. Continuous Comfort. Endless Options.



Discover the infinite possibilities of Carrier® Ductless & VRF products.



Spring 2017

Carrier VRF

Single-phase VRF

36-60k
BTUh



38VMH-1P Heat Pump up to 18.6 SEER / up to 10.0 HSPF

Three-Phase VRF

72-432k
BTUh



38VMR Systems Heat Recovery up to 24.2 IEER / up to 30.0 SCHE

38VMH Systems Heat Pump up to 23.3 IEER / up to 4.29 COP

Indoor Units and Controls

high wall



four-way cassette



compact cassette



low static duct



outside air



floor console - recessed



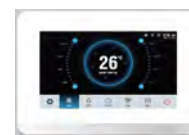
vertical AHU



medium static duct



touch screen



underceiling / floor console



high static duct



controller



up to 10 multiple styles



GE Evolve™
LED Roadway Lighting
ERLC

current
powered by GE



GE Evolve™**LED Roadway Lighting**
ERLC

The **Evolve** LED Roadway ERLC 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 a traditional HID fixture for additional operating cost savings.

Features:

- Optimized roadway photometric distributions
- **Evolve** light engine consisting of reflective technology designed to optimize application efficiency and minimize glare
- Die-Cast aluminum housing
- Light weight: 8.5 lbs
- System LPW performance: 102-133 LPW
- 10Kv/5kA surge protection standard
- Tool-Less option

Applications:

- Local Roadways
- Collector Roadways
- Major Roadway/Streets



Compatible with **LightGrid™** Outdoor Wireless Control System



To learn more about **GE Evolve LED Roadway ERLC Lighting**, go to: www.currentbyge.com



GE Evolve™

LED Roadway Lighting

ERLC



Project name _____

Date _____

Type _____

Typical Specifications: ERLC

LED & Optical

- **Output Range:** 1,860 - 6,350 lm
- **Photometric Options:** Type II Narrow, Type II/III[^], Type III, Type V.
- **System Efficacy:** 102-133
- **CCT:** 2700K, 3000K, 4000K, 5000K
High Brightness LED's @ 70 CRI Minimum

Lumen Maintenance Tables

Projected Lxx per IES TM-21 at 25°C for reference:

ERLC LUMEN OUTPUT CODES	DISTRIBUTIONS	LXX(10K)@HOURS		
		25,000 HR	50,000 HR	60,000 HR
02, 03, 04	A4, B4, C4	L96	L95	L94
05	A4, B4, C4	L94	L90	L89
06	A4, B4, C4	L90	L80	L77

ERLC LUMEN OUTPUT CODES	DISTRIBUTIONS	LXX(10K)@HOURS		
		25,000 HR	50,000 HR	60,000 HR
02, 03, 04, 05	V4	L96	L93	L93
06	V4	L94	L89	L88

Note: Projected Lxx based on LM80 (10,000 hour testing). DOE Lighting Facts Verification Testing Tolerances apply to initial luminous flux and lumen maintenance measurements.

Electrical

- **Input Voltage:** 120-277 volt. (no 347-480V)
- **Input Frequency:** 50/60Hz
- **Power Factor (PF)*:** > 90%
- **Total Harmonic Distortion (THD)*:** <20%

*System PF and THD specified at rated watts

Ratings

- **Surge Protection:** Per ANSI C136.2-2015
— 10kV/5kA "Enhanced: (40 Strikes)" - Standard on ERLC (02 - 06)
- **Safety:** UL/cUL Listed. UL 1598 listed, suitable for wet locations.
- **Environmental:** Compliant with the materials restrictions of RoHS.
- **EMI:** Title 47 CFR Part 15 Class A
- **Vibration:** 3G per ANSI C136.31-2010
- **LM-79 testing** in accordance with IESNA Standards
- **Ingress Rating:** IP66 optical enclosure rated per ANSI C136.25-2013
- **Impact:** IK08 Lens

- **Operating Temperature:**

PRODUCT ID	LUMEN OUTPUT	AMBIENT READING
ERLC	02-06	-40°C to 50°C

Construction & Finish

- **Housing:**
 - Aluminum Die Cast Enclosure
 - Casting-integral heat sink for maximum heat transfer
- **Lensing:** Impact resistant tempered glass, standard
- **Paint:** Corrosion resistant polyester powder painted, minimum 2.0 mil. thickness.
 - Standard Colors: Gray, Black, Dark Bronze & White
 - RAL & custom colors available
 - Optional coastal finish available.
- **Weight:** 8.5 Lbs

Warranty

- **System Warranty:** 5 Year Standard, 10 Year Optional

Controls

- **Dimming:**
 - Standard: 0-10V; Optional: DALI (Option U)
- **Sensors:**
 - Photo electric sensors (PE) available.
 - LightGrid™ compatible

Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Suggested HID Replacement Lumen Levels

- ~2,000–6,000 lumens to replace 50-100W HPS Cobra-head

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

CONVERSION FROM PREVIOUS GENERATION OPTICS TO CURRENT GENERATION OPTICS**			
PREVIOUS	DESCRIPTION	CURRENT	DESCRIPTION
A3	Type II Narrow	A4	Type II Narrow
B3	Type II Wide	B4	Type II/III [^]
C3	Type III	C4	Type III
D3	Type IV	None	
E3	Type II Enhanced Backlight	None	
		V4	Type V

**The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is do a lighting layout.

[^] See Page 5 for the typical ISO Plot of the B4 distribution. This optic is designed to address a Roadway Photometric Application and may classify as Type II or III.

GE Evolve™

LED Roadway Lighting

ERLC



Project name _____

Date _____

Type _____

E R L C

- - - - -

PROD. ID	VOLTAGE	LUMEN OUTPUT	DISTRIBUTION*	CCT	CONTROLS	COLOR	OPTIONS
E = Evolve R = Roadway L = Local C = Compact	0 = 120-277V* 1 = 120 2 = 208 3 = 240 4 = 277 8 = 120-240V* *Not available with fusing.	02* 03 04 05 06 *02 Lumen choice only offered for 120-240V.	A4 = Type II Narrow B4 = Type II/III^ C4 = Type III V4 = Type V	27 = 2700K 30 = 3000K 40 = 4000K 50 = 5000K	A = ANSI C136.41 7-pin D = ANSI C136.41 7-pin receptacle with Shorting Cap E = ANSI C136.41 7-pin receptacle with non-Dimming PE Control NOTE: Dimming controls wired for 0-10V standard unless DALI option "U" requested.	GRAY = Gray BLCK = Black DKBZ = Dark Bronze WHITE = White	B = Tether C1 = Captive Door F = Fusing G = Internal Bubble Level L = Tool-Less Entry M1 = Magnapak** R = Optional Secondary Enhanced Surge Protection (10kV/5kA) U = DALI Programmable + V1 = Variable Output via Field Adjustable Module*** Y = Coastal Finish* XXX = Special Options * Recommended for installations within 750 ft. from the coast. Contact Factory for Lead-Time. + Compatible with LightGrid 2.0 nodes. ** 40 fixtures per Magnapak ***No DALI available (U) or Fusing (F). System PF and THD specified at rated watts.

LUMEN OUTPUT	DISTRIBUTION	TYPICAL INITIAL LUMENS			TYPICAL SYSTEM WATTAGE	BUG RATING			IES FILE NUMBER			
		4000K/5000K	3000K	2700K		4000K/5000K	3000K	2700K	5000K	4000K	3000K	2700K
02	A4	1960	1920	1860	15	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_02A450_-120-240V/IES	ERLC_02A440_-120-240V/IES	ERLC_02A430_-120-240V/IES	ERLC_02A427_-120-240V/IES
	B4	2000	1960	1900		B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_02B450_-120-240V/IES	ERLC_02B440_-120-240V/IES	ERLC_02B430_-120-240V/IES	ERLC_02B427_-120-240V/IES
	C4	2000	1960	1900		B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_02C450_-120-240V/IES	ERLC_02C440_-120-240V/IES	ERLC_02C430_-120-240V/IES	ERLC_02C427_-120-240V/IES
	V4	1990	1950	1890		B1-U0-G0	B1-U0-G0	B1-U0-G0	ERLC_02V450_-120-240V/IES	ERLC_02V440_-120-240V/IES	ERLC_02V430_-120-240V/IES	ERLC_02V427_-120-240V/IES
03	A4	2940	2880	2800	23	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_03A450_-120-277V/IES	ERLC_03A440_-120-277V/IES	ERLC_03A430_-120-277V/IES	ERLC_03A427_-120-277V/IES
	B4	3000	2940	2860		B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_03B450_-120-277V/IES	ERLC_03B440_-120-277V/IES	ERLC_03B430_-120-277V/IES	ERLC_03B427_-120-277V/IES
	C4	3000	2940	2860		B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_03C450_-120-277V/IES	ERLC_03C440_-120-277V/IES	ERLC_03C430_-120-277V/IES	ERLC_03C427_-120-277V/IES
	V4	3100	3030	2950		B1-U0-G0	B1-U0-G0	B1-U0-G0	ERLC_03V450_-120-277V/IES	ERLC_03V440_-120-277V/IES	ERLC_03V430_-120-277V/IES	ERLC_03V427_-120-277V/IES
04	A4	3920	3840	3730	32	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_04A450_-120-277V/IES	ERLC_04A440_-120-277V/IES	ERLC_04A430_-120-277V/IES	ERLC_04A427_-120-277V/IES
	B4	4000	3920	3810		B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_04B450_-120-277V/IES	ERLC_04B440_-120-277V/IES	ERLC_04B430_-120-277V/IES	ERLC_04B427_-120-277V/IES
	C4	4000	3920	3810		B1-U0-G2	B1-U0-G2	B1-U0-G2	ERLC_04C450_-120-277V/IES	ERLC_04C440_-120-277V/IES	ERLC_04C430_-120-277V/IES	ERLC_04C427_-120-277V/IES
	V4	4030	3940	3840		B2-U0-G0	B2-U0-G0	B2-U0-G0	ERLC_04V450_-120-277V/IES	ERLC_04V440_-120-277V/IES	ERLC_04V430_-120-277V/IES	ERLC_04V427_-120-277V/IES
05	A4	4900	4800	4670	43	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_05A450_-120-277V/IES	ERLC_05A440_-120-277V/IES	ERLC_05A430_-120-277V/IES	ERLC_05A427_-120-277V/IES
	B4	5000	4900	4760		B1-U0-G2	B1-U0-G2	B1-U0-G2	ERLC_05B450_-120-277V/IES	ERLC_05B440_-120-277V/IES	ERLC_05B430_-120-277V/IES	ERLC_05B427_-120-277V/IES
	C4	5000	4900	4760		B1-U0-G2	B1-U0-G2	B1-U0-G2	ERLC_05C450_-120-277V/IES	ERLC_05C440_-120-277V/IES	ERLC_05C430_-120-277V/IES	ERLC_05C427_-120-277V/IES
	V4	5200	5090	4950		B2-U0-G0	B2-U0-G0	B2-U0-G0	ERLC_05V450_-120-277V/IES	ERLC_05V440_-120-277V/IES	ERLC_05V430_-120-277V/IES	ERLC_05V427_-120-277V/IES
06	A4	5880	5760	5600	55	B1-U0-G1	B1-U0-G1	B1-U0-G1	ERLC_06A450_-120-277V/IES	ERLC_06A440_-120-277V/IES	ERLC_06A430_-120-277V/IES	ERLC_06A427_-120-277V/IES
	B4	6000	5880	5700		B1-U0-G2	B1-U0-G2	B1-U0-G2	ERLC_06B450_-120-277V/IES	ERLC_06B440_-120-277V/IES	ERLC_06B430_-120-277V/IES	ERLC_06B427_-120-277V/IES
	C4	6000	5880	5700		B1-U0-G2	B1-U0-G2	B1-U0-G2	ERLC_06C450_-120-277V/IES	ERLC_06C440_-120-277V/IES	ERLC_06C430_-120-277V/IES	ERLC_06C427_-120-277V/IES
	V4	6350	6220	6050		B2-U0-G1	B2-U0-G1	B2-U0-G1	ERLC_06V450_-120-277V/IES	ERLC_06V440_-120-277V/IES	ERLC_06V430_-120-277V/IES	ERLC_06V427_-120-277V/IES

^ See Page 5 for the typical ISO Plot of the B4 distribution. This optic is designed to address a Roadway Photometric Application and may classify as Type II or III.

Photometrics:

Evolve™ LED Streetlight (ERLC)

ERLC

Type II Narrow
(05A440)

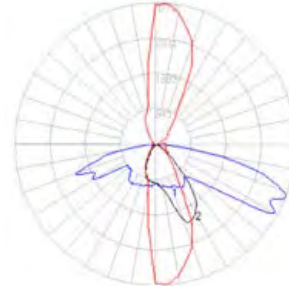
4,900 Lumens

4000K

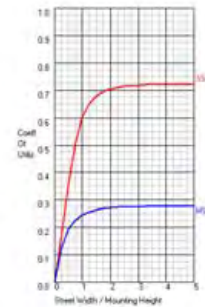
ERLC_05A440____.IES



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



— Vertical plane through horizontal angle of Max. Cd at 85°
— Horizontal cone through vertical angle of Max. Cd at 67°



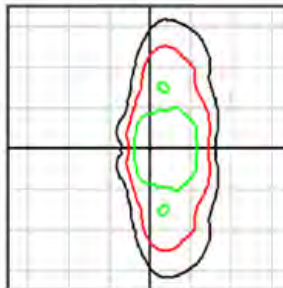
ERLC

Type II/III^
(05B440)

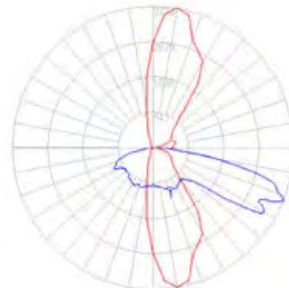
5,000 Lumens

4000K

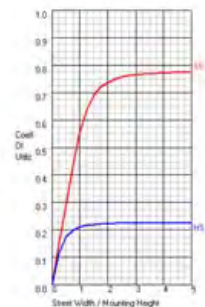
ERLC_05B440____.IES



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



— Vertical plane through horizontal angle of Max. Cd at 80°
— Horizontal cone through vertical angle of Max. Cd at 68°



ERLC

Type III
(05C440)

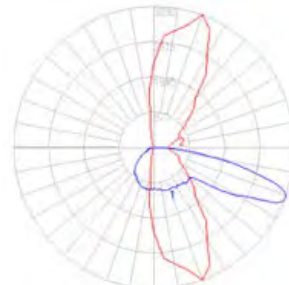
5,000 Lumens

4000K

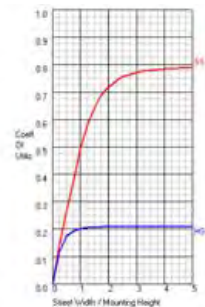
ERLC_05C440____.IES



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



— Vertical plane through horizontal angle of Max. Cd at 70°
— Horizontal cone through vertical angle of Max. Cd at 68°



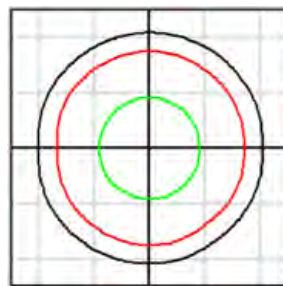
ERLC

Type V
(05V440)

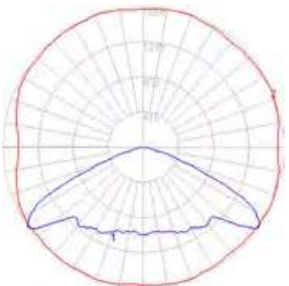
5,200 Lumens

4000K

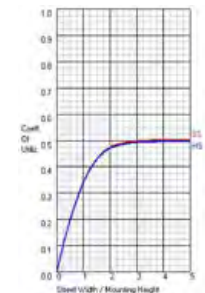
ERLC_05V440____.IES



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



— Vertical plane through horizontal angle of Max. Cd at 55°
— Horizontal cone through vertical angle of Max. Cd at 64°



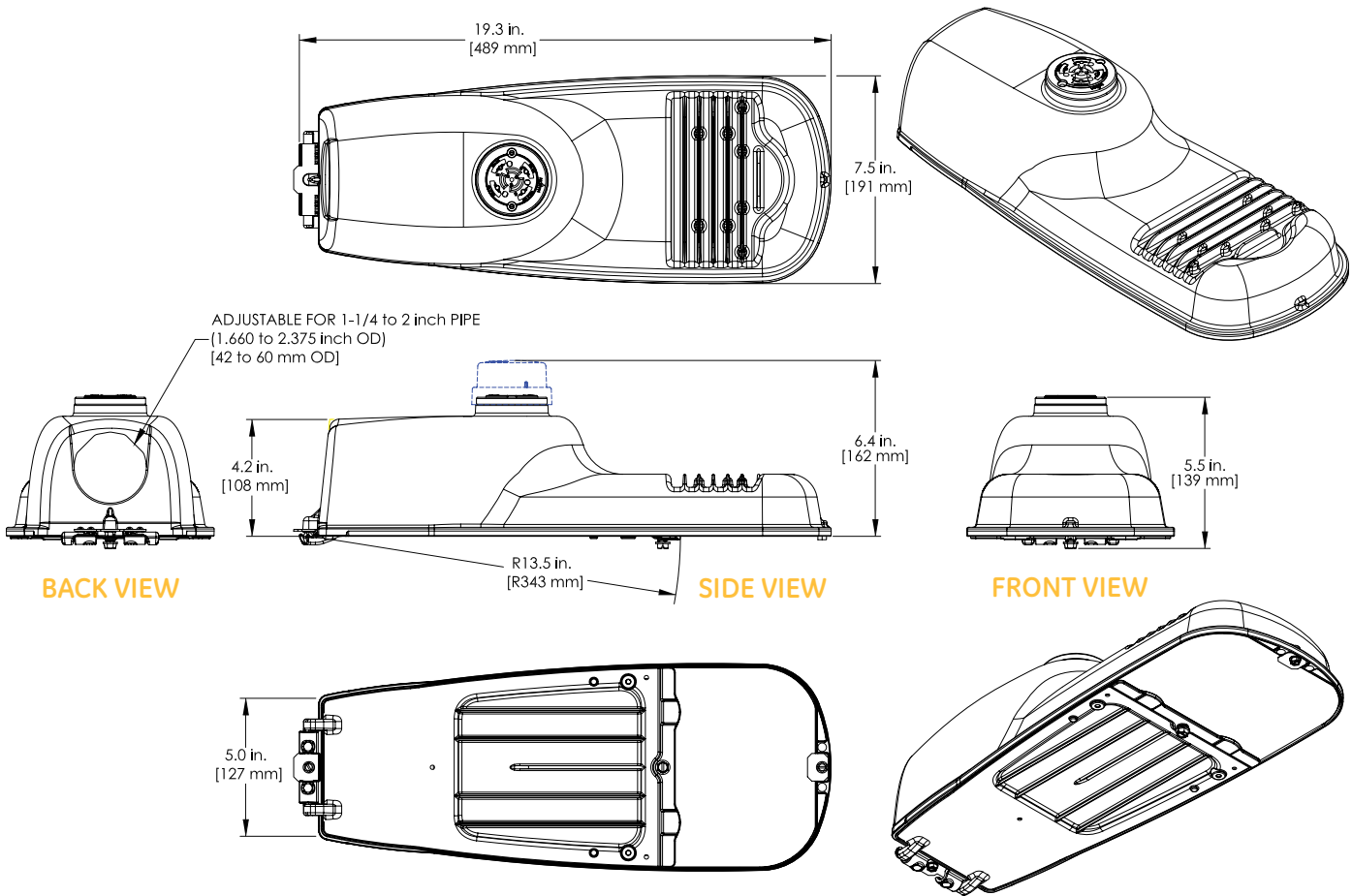
GE Evolve™

LED Roadway Lighting

ERLC

Product Dimensions:

Evolve™ LED Streetlight (ERLC)



DATA

- Approximate net weight: 8.5 lbs (3.8 kgs)
Contact manufacturer for specific configuration weight.
- Effective Projected Area (EPA): 0.3 sq ft max (0.029 sq m)

current
powered by GE

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STR : LED LINEAR STRIP

DESCRIPTION

- Ideal choice for size-restricted architectural applications
- Steady performance and long lifetime
- Continuous dimming to 10%

LISTINGS

- UL Listed for dry/damp locations
- DesignLights Consortium® Premium Qualified - meets the requirements for the highest DLC qualification for efficacy and lumen maintenance

LED CHARACTERISTICS

- Rated lifetime L70: 50,000 hours
- 4000K, 5000K CCT
- CRI: 80+
- 2C: 3,013lm @ 23W (131 lpw)
- 3C: 4,224lm @ 32W (132 lpw)
- 4C: 6,026lm @ 46W (131 lpw)

ELECTRICAL

- Input voltage: 100-277V
- Dimmable power supply (0-10V)
- Power Factor: >.90
- THD: <20%

CONSTRUCTION

- -4°F to 122°F (-20°C to +50°C) operating temperature

WARRANTY

- 5 year limited warranty; see eiko.com for warranty details

project name	type 8a-30
catalog number	
comments	voltage
approved by	date



APPLICATIONS

- Storage areas
- Utility areas
- Coves
- Display cases
- Retail
- Task lighting
- General area lighting



ORDERING INFORMATION

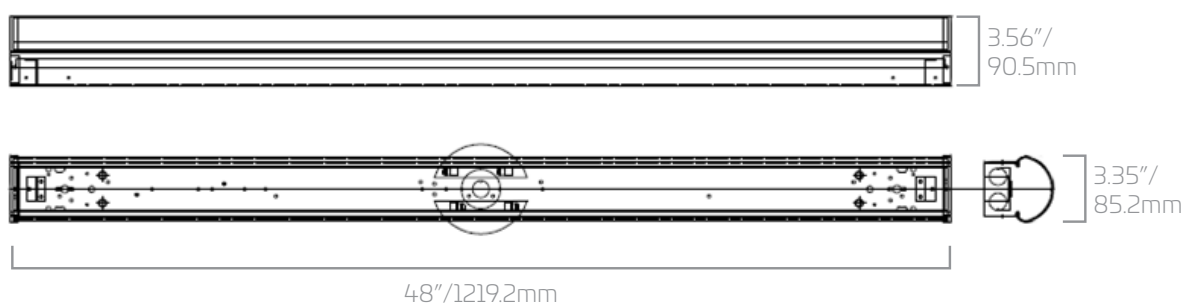
EXAMPLE: STR-2C-50K-U

Model	Package	CCT	Voltage
STR : LED Linear Strip	2C - 23W; 3,000/3,013 lm 3C - 32W; 4,000/4,224 lm 4C - 46W; 6,000/6,026 lm	40K - 4000K 50K - 5000K	U - 100-277V

Order Code	Item #	Watts	Lumens	CCT	CRI	Volts	Fluor. Equiv.	DLC Premium
09534	STR-2C-40K-U	23W	3,013	4000K	80+	120-277VAC	48W	✓
09820	STR-2C-50K-U	23W	3,000	5000K	80+	120-277VAC	48W	✓
09535	STR-3C-40K-U	32W	4,224	4000K	80+	120-277VAC	75W	✓
09821	STR-3C-50K-U	32W	4,200	5000K	80+	120-277VAC	75W	✓
09536	STR-4C-40K-U	46W	6,026	4000K	80+	120-277VAC	100W	✓
09822	STR-4C-50K-U	46W	6,000	5000K	80+	120-277VAC	100W	✓

✓DesignLights Consortium® Premium Qualified

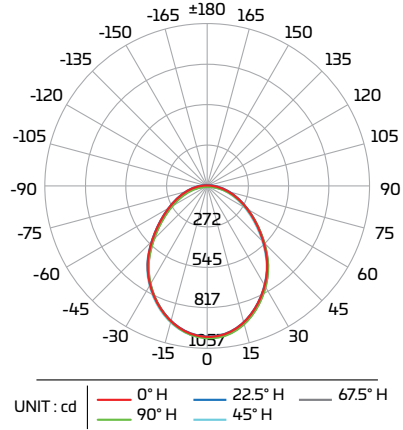
DIMENSIONS



AVAILABLE ACCESSORIES

Order Code	Item #	Description
09823	STR-LCK	LED Strip, Linear Connection Kit
09843	STR-LENS	Replacement Lens for STR Fixtures
09788	STR-4-WG-W	Wire Guard, 4 ft. LED Strip, White
09849	FHSCP-UNV-5WL	5W Emergency Battery Backup
09851	FHSCP-UNV-7.8WL	7.8W Emergency Battery Backup
09850	FHSCP-UNV-10.7WL	10.7W Emergency Battery Backup
09852	FHSCP-UNV-13.7WL	13.7W Emergency Battery Backup
09854	FHSCP-UNV-17WL	17W Emergency Battery Backup
09843	STR-LENS	Replacement Lens for STR Fixtures

ZONAL LUMEN SUMMARY		
Zone	Lumens	%Fixture
0-30	10574	26.5%
0-40	17015	42.7%
0-60	29063	72.9%
60-90	8293	20.8%
70-100	4593	11.5%
90-120	1563	3.9%
0-90	39357	93.7%
90-180	2531	6.3%
0-180	41088.8	100%



LED80WPT40KMOG-G6



Description	LED Litespan HID Replacement 80W 9600lm 4K 80CRI EX39 univ burn 120-277V
Ordering Code	09346
UNSPSC Code	39112102

Specifications

Voltage Rating	100~277
Voltage Type	AC
Watts	80
Lumens per Watt	120
Base Type	Mogul Screw with Long Prong (EX39)
MOL in/mm	9.21/234
MOD in/mm	5.87/149
Lumens	9600
CT deg K	4000
CRI	80+
Burning Position	Universal
Special Desc	Suitable for enclosed luminaires
Ambient Operating Temp Range	-20° C (-4° F) to 40° C (104° F)

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LED OMNIDIRECTIONAL A-LAMP**A21 JA8 SERIES****PRODUCT DESCRIPTION:**

Designed to meet Title 24 code for the State of California, this JA8 LED Dimmable A-lamp deliver even lighting equivalent to that of a 100W incandescent bulb. The omnidirectional lamp produces a soft and warm white light with a high color rendering, which reveals the natural color in any decor in its environment.

FEATURES:

- 17 Watts
- 1,600 lumens
- Available in 2700K & 3000K
- ENERGY STAR certified for 17A21DLED930/JA8, 17A21DLED927/JA8 pending (ETA: Mid March)
- CRI: ≥90
- R9: ≥50
- Beam Angle: 300°
- Min. Dimming: ≤10%
- 25,000 hour life (L70 standards)
- Power factor: ≥ 0.90
- Standard E26 base
- Mercury free
- Five year limited warranty

APPLICATIONS:

- Pendants
- Table and floor lamps
- Sconces
- Suitable for use in damp locations
- Not suitable for totally enclosed luminaire

MODEL SELECTION (Full list of order codes on pg. 2)

Typical order example: 10A19DLED930/JA8

17A21	DLED	
FAMILY	BASE & DIMMABILITY	CRI & CCT
17A21= 17 watts, Open Rated A21	DLED= E26, Dimmable	927/JA8= 90+ CRI, 2700K 930/JA8= 90+ CRI, 3000K

COMPATIBLE DIMMERS:

MAKE	DIMMER MODEL	MAKE	DIMMER MODEL
Lutron	CTCL-153P	Leviton	IPL06
Lutron	DVCL-153P	Leviton	IPI10
Lutron	LGCL-153P	Leviton	6631-LW
Lutron	S-600	Leviton	6683-IW

SPECIFICATIONS:**17A21DLED9xx/JA8**

ITEM	SPECIFICATION	DETAILS
GENERAL PERFORMANCE	Power Consumption	17W
	Lumens Delivered	1,600
	Efficacy (lm/w)	94
	CRI	≥90
	R9	≥50
	Color Temperature (CCT)	2700K, 3000K
	Lumen Maintenance (L70)	25,000 Hours
ELECTRICAL	Power Factor	≥0.90
	Input Voltage	120V
PHYSICAL	Base Type	E26
	Operating Temperature	-4°F - 104°F
CERTIFICATION	Environment	Dry, Damp
	Warranty	5 Year Limited

ORDERING:

ORDER CODE	MODEL	ENERGY STAR	WATTS	EQUIVALENCY	OUTPUT (LUMENS)	EFFICACY (lm/W)	CCT	CRI	DIMENSIONS (D" x MOL")
NON ENCLOSED MODELS - E26 BASE									
1408663	17A21DLED927/JA8	☆	17	100W Inc.	1600	94	2700K	≥90	2.83" x 5.27"
107851	17A21DLED930/JA8	★					3000K	91	

★ ENERGY STAR certified

☆ ENERGY STAR pending

LED PAR Lamps

PAR20, PAR30, PAR38 SERIES



6W PAR20



10W PAR30 Short Neck



10W PAR30 Long Neck



13W PAR38

PRODUCT DESCRIPTION:

MaxLite's energy-efficient PAR lamps offer 6-, 10-, and 13- watt LED replacements for 50-, 75-, and 90- incandescent lamps to significantly reduce your carbon footprint while maintaining a very high quality of light. Available in the PAR20, PAR30 (Short and Long Neck), and PAR38 sizes, Maxlite's lineup has industry leading light output, making it ideal for architectural and wall wash lighting in track, recessed and decorative lighting fixtures in retail, high-end residential and office environments. The LED Lamps produce a strong center beam candle power that provides bright and crisp lighting to showcase artwork and products.

FEATURES:

- 6W, 450 lumens, replaces 50W Inc.
- 10W, 750 lumens, replaces 75W Inc.
- 13W, 950 lumens, replaces 90W Inc.
- 120V / 60Hz
- 25° and 35° available
- 25,000 hour life at L70 standards
- CRI: ≥80
- Dimmable down to ten percent
- ENERGY STAR certified
- Operating temperature range: - 4° to 104°F
- Not for use in enclosed luminaires
- Five year warranty

MODEL SELECTION (Full list of order codes on pg. 2)

Typical order example: 6P20DLED40NF

	DLED		
FAMILY	DIMMABILITY	COLOR TEMPERATURE (CCT)	BEAM ANGLE
6P20 = 6 watts, PAR20 10P30 = 10 watts, PAR30 Short Neck 10P30LN = 10 watts, PAR30 Long Neck 13P38 = 13 watts, PAR38	DLED = Dimmable	27 = 2700K 30 = 3000K 40 = 4000K	NF = Narrow Flood 25° FL = Flood 35°

COMPATIBLE DIMMERS:

MAKE	DIMMER MODEL	MAKE	DIMMER MODEL
Lutron	CTCL-153P	Leviton	IPL06
Lutron	DVCL-153P	Leviton	IPI10
Lutron	LGCL-153P	Leviton	6631-LW
Lutron	S-600	Leviton	6683-IW

SPECIFICATIONS:

		PAR20	PAR30 Short Neck	PAR30 Long Neck	PAR38
ITEM	SPECIFICATION	6 WATTS	10 WATTS	10 WATTS	13 WATTS
GENERAL PERFORMANCE	Color Temperature	2700K, 3000K, 4000K	2700K, 3000K, 4000K	2700K, 3000K, 4000K	2700K, 3000K, 4000K
	Lumens Delivered (lm)	450	750	750	950
	Efficacy (lm/w)	75	75	75	73
	Equivalency	50W	75W	75W	90W
	CRI	≥80			
	Lumen Maintenance (L70)	25,000 hours			
ELECTRICAL	Power Factor	≥.90			
	Input Voltage	120V			
PHYSICAL	Operating Temperature	-4° F to 104° F			
APPLICATION	Environment	Dry, Damp			
	Certification	ETL, ENERGY STAR			
	Warranty	5 Year			

ORDERING:

ORDER CODE	MODEL	ENERGY STAR	WATTAGE	DELIVERED LUMENS	INCANDESCENT EQUIVALENCY	BEAM ANGLE	CBCP (cd)	CRI	CCT (K)	DIMENSION (MOL" X W")
PAR20										
102174	6P20DLED27FL	★	6	450	50W Inc.	35°	1150	82	2700K	3.33" x 2.48"
102281	6P20DLED27NF	★	6	450	50W Inc.	25°	1530	82	2700K	
102175	6P20DLED30FL	★	6	450	50W Inc.	35°	1075	82	3000K	
102282	6P20DLED30NF	★	6	450	50W Inc.	25°	1498	82	3000K	
102269	6P20DLED40FL	★	6	450	50W Inc.	35°	N/A	82	4000K	
102283	6P20DLED40NF	★	6	450	50W Inc.	25°	N/A	82	4000K	
PAR30 SHORT NECK										
102176	10P30DLED27FL	★	10	750	75W Inc.	35°	1725	80	2700K	3.44" x 3.74"
102284	10P30DLED27NF	★	10	750	75W Inc.	25°	3390	80	2700K	
102177	10P30DLED30FL	★	10	750	75W Inc.	35°	1720	80	3000K	
102285	10P30DLED30NF	★	10	750	75W Inc.	25°	3747	80	3000K	
102270	10P30DLED40FL	★	10	750	75W Inc.	35°	N/A	80	4000K	
102286	10P30DLED40NF	★	10	750	75W Inc.	25°	N/A	80	4000K	
PAR30 LONG NECK										
102178	10P30LNDLED27FL	★	10	750	75W Inc.	35°	1725	80	2700K	4.39" x 3.74"
102287	10P30LNDLED27NF	★	10	750	75W Inc.	25°	3390	80	2700K	
102179	10P30LNDLED30FL	★	10	750	75W Inc.	35°	1721	80	3000K	
102288	10P30LNDLED30NF	★	10	750	75W Inc.	25°	3747	80	3000K	
102271	10P30LNDLED40FL	★	10	750	75W Inc.	35°	N/A	80	4000K	
102289	10P30LNDLED40NF	★	10	750	75W Inc.	25°	N/A	80	4000K	
PAR38										
102180	13P38DLED27FL	★	13	950	90W Inc.	35°	2513	82	2700K	5.06" x 4.76"
102290	13P38DLED27NF	★	13	950	90W Inc.	25°	N/A	82	2700K	
102181	13P38DLED30FL	★	13	950	90W Inc.	35°	2470	82	3000K	
102291	13P38DLED30NF	★	13	950	90W Inc.	25°	N/A	82	3000K	
102272	13P38DLED40FL	★	13	950	90W Inc.	35°	N/A	82	4000K	
102292	13P38DLED40NF	★	13	950	90W Inc.	25°	N/A	82	4000K	

★ ENERGY STAR certified