

#### **Public Works Committee**

Wednesday, June 8, 2022 3:30PM

40 McMaster Street, Ballston Spa, NY 12020

Chair: Phil Barrett

#### Members:

C. Eric Butler Diana Edwards Scott Ostrander-VC Tom Richardson Kevin Veitch Sandra Winney

- I. Welcome and Attendance
- II. Approval of the minutes of the May 4, 2022 meeting.
- III. Authorizing the use of ARPA funding for two (2) Public Works projects and amending the 2022 budget in relation thereto - Chad Cooke, Public Works
- IV. Authorizing a Task Order with National Grid for an LED lighting replacement project at Saratoga County Facilities located at the County Farm Road complex and amending the budget in relation thereto – Chad Cooke, Public Works
- Other Business V.
- VI. Adjournment



## SARATOGA COUNTY AGENDA ITEM REQUEST FORM

**TO:** Steve Bulger, County Administrator Ridge Harris, Deputy County Administrator Michael Hartnett, County Attorney Therese Connolly, Clerk of the Board Stephanie Hodgson, Director of Budget

CC: Jason Kemper, Director of Planning and Economic Development Bridget Rider, Deputy Clerk of the Board Matt Rose, Management Analyst Clare Giammusso, County Attorney's Office Audra Hedden, County Administrator's Office

**DEPARTMENT:** Department of Public Works

DATE: 5/31/22

**COMMITTEE:** Public Works

RE: ARPA funding for two (2) Public Works projects

1. Is a Resolution Required:

Yes, Other

2. Proposed Resolution Title:

Authorize the use of ARPA funding and amend the 2022 budget in relation thereto

3. Specific Details on what the resolution will authorize:

Authorize the use of ARPA funding for two (2) Public Works projects including a bridge rehabilitation on County Route 49 over the Kayaderosseras Creek in the Town of Milton totaling \$1,695,000 and the rehabilitation of 1.84 miles of County Route 33 in the Town of Wilton totaling \$1,647,000. Total budget amendment is \$3,342,000.

This column must be completed prior to submission of the request.

County Attorney's Office Consulted

•	budget lines and imp	eeded: YES or NO NO pact must be provided.	County Administrator's Office Consulted
		s for impacted budget lines. re than four lines are impacted.)	
Revenue	e		
Accoun	nt Number	Account Name	Amount
D.50-	5031	Transfer from General Fund	\$3,342,000
A.90-	4089	Federal Aid	\$3,342,000
Expense	e		
Accoun	nt Number	Account Name	Amount
D.50.	501-7502	Contracted Highway Services	\$3,342,000
A.90.	920-9900.D	Transfer to County Road Fund	\$3,342,000
Source	of Revenue Balance Sta	te Aid Federal Aid	Other
Fund E			
Fund E			\$3,342,000
	ify Budget Impact:		\$3,342,000
			\$3,342,000
Ident	er	D.50.501-7502, A.90.92	
Ident Othe	er		
Ident Othe	G/L line impacted		

BUDGET IMPACT STATEMENT: Funding will require an appropriation of \$3,342,000 utilizing ARPA funds.

6.		rere Amendments to the Compensation Schedule?  Human Resources Consulted  YES or NO (If yes, provide details)
		Is a new position being created? Y N
	a.	Effective date
		Salary and grade
	b.	Is a new employee being hired? Y N
		Effective date of employment
		Salary and grade
		Appointed position:
		Term
	c.	Is this a reclassification? Y N
		Is this position currently vacant? Y N
		Is this position in the current year compensation plan? Y N
7.	Does	this item require hiring a Vendors/Contractors: Y N Purchasing Office Consulted
,•	a.	Were bids/proposals solicited: Y N Purchasing Office Consulted Purchasing Office Consulted
	b.	Type of Solicitation
	c.	Is the vendor/contractor a sole source: Y N
	d.	If a sole source, appropriate documentation has been submitted and approved by Purchasing Department? Y N N/A
	e.	Commencement date of contract term:
	f.	Termination of contract date:
	g.	Contract renewal and term:
	h.	Contact information:
	i.	Is the vendor/contractor an LLC, PLLC or partnership:
	j.	State of vendor/contractor organization:
	k.	Is this a renewal agreement: Y N
	1.	Vendor/Contractor comment/remarks:

8.	Is a gr	rant being accepted: YES or NO	County Administrator's Office Consulted
	a.	Source of grant funding:	
	b.	Agency granting funds:	
	c.	Amount of grant:	
	d.	Purpose grant will be used for:	
	e.	Equipment and/or services being purchased with the grant:	
	f.	Time period grant covers:	
	1.	Time period grant covers.	
	g.	Amount of county matching funds:	
	h.	Administrative fee to County:	
9.	Suppor	ting Documentation:	
		Marked-up previous resolution	
		No Markup, per consultation with County Attorney	
		Program information summary	
		Copy of proposal or estimate	
		Copy of grant award notification and information	
	<b>/</b>	Other TIP Project Approval Summary	
10.	Rem		
	See	attached TIP project approval summary	

## CDTC TIP Update 2022-2027

#### **Projects Approved 4-27-2022**

Sponsor	Project ID	Name	Amount Approved
Saratoga County 59		Dimmick Rd - Bridge Replacement	\$1.805M
Saratoga County	57	CR 49 (West Milton Rd) – Bridge Rehab over	\$1.695M
ARPA FUNDS		Kayaderosseras Creek	
Saratoga County 61		Rehabilitation of Bridge- Heath Road over	\$0.374M
		Sturdevant Creek	
Saratoga County	56	CR 33 (Ballard Rd.) Pavement Preservation	\$1.647M
ARPA FUNDS			

#### **Projects Approved 5-4-2022**

Sponsor	Project ID	Name	Amount Approved
Saratoga County	66	Zim Smith Northern Trail Extension	\$0.5M
Saratoga County	54	CR 109 (Kinns Rd.) & Plank Rd., Intersection	\$1.977M
	Improvements		
Town of Halfmoon	own of Halfmoon 82 NYS Rt. 236 and Guideboard Road (CR 94),		\$0.5M
		Intersection Improvements	
Town of Malta	83	East Line Rd and NYS Rt. 67 Roundabout	\$1.0M
Town of Clifton Park	73	NYS Rt 146@Miller/Tanner Rd, and NYS Rt. 146 @	\$0.5M
	Waite Rd. – 2 Roundabouts		
Town of Wilton	89	NYS Rt. 50 Safety Improvements	\$0.5M

#### **DOT Projects Located within Saratoga County, Approved**

Sponsor	Project ID	Name	Amount Approved
NYSDOT	41	NYS Route 32 over Fish Creek	\$1.298M
NYSDOT	26	Ballard Rd. @ Exit 16/I-87, Interchange Improvements & Bridge Replacement	\$9.000M
NYSDOT	33	Nelson Ave. Extension over I-87, Bridge Replacement	\$5.330M
NYSDOT	35	Riverview Rd. Over I-87, Bridge Replacement	\$7.975M

#### **DOT & Sar. Co. Projects Within Saratoga County Not Approved**

Sponsor	Project ID	Name	Amount
NYSDOT 40 NYS		NYS Route 29 over D&H RR, Bridge Replacement	\$1.936M
Saratoga County 55		Ballard Rd. (CR 33) over Snook Kill, Bridge	\$2.955M
		Replacement	
Saratoga County	65	Viall Ave. over Anthony Kill, Bridge Replacement	\$3.059M
Saratoga County	63	Tabor Rd. over Dwaas Kill, Bridge Replacement	\$4.306M
Saratoga County 62		Nelson Ave. Ext. (CR 64) over Kayaderosseras	\$0.557M
		Creek, Bridge Rehab	
Saratoga County	60	Dix Bridge Rehabilitation	\$2.298M
Saratoga County	64	Tiffault Rd. Superstructure Replacement	\$1.853M
Saratoga County	58	Charlton Rd. (CR 51), Pavement Preservation	\$2.346M



## SARATOGA COUNTY AGENDA ITEM REQUEST FORM

TO: Steve Bulger, County Administrator Ridge Harris, Deputy County Administrator Michael Hartnett, County Attorney Therese Connolly, Clerk of the Board Stephanie Hodgson, Director of Budget

CC: Jason Kemper, Director of Planning and Economic Development Bridget Rider, Deputy Clerk of the Board Matt Rose, Management Analyst Clare Giammusso, County Attorney's Office Audra Hedden, County Administrator's Office

**DEPARTMENT:** Department of Public Works

**DATE:** May 25, 2022

**COMMITTEE:** Public Works

RE: National Grid Task Order for LED lighting project

1. Is a Resolution Required:

Yes, Contract Approval

2. Proposed Resolution Title:

See attached draft resolution

3. Specific Details on what the resolution will authorize:

Authorize a task order with National Grid for the construction of an energy saving LED lighting project at the County Farm Road complex. This column must be completed prior to submission of the request.

County Attorney's Office Consulted

	Is a Budget Amendment needed: YES or NO If yes, budget lines and impact must be provided.  Any budget amendments must have equal and offsetting entries.					
			or impacted budget lines. than four lines are impacted.	)		
	Revenue					
	Account Nun	nber	Account Name	Amount		
	A.0599.B		Appropriated Fund Balan	ıce \$277,586		
	Expense					
	Account Nun	nber	Account Name	Amount		
	A.50.000-	7094	Bldg Components Rea	lty \$277,586		
	Source of Rev	Vanua				
	Source of Ite	venue				
	Fund Balance		Aid Federal Ai	d Other		
		ce State	Aid Federal Ai	d Other		
5.	Fund Balanc <b>\$277,586</b>	ce State	Aid Federal Ai	d Other		
5.	Fund Balanc <b>\$277,586</b>	ce State	Aid Federal Ai	d Other		
5.	Fund Balance \$277,586 Identify Bu	ee State	Aid Federal Ai	d Other		
5.	Fund Balance \$277,586  Identify But Other  a. G/I	ee State	A.50.000-7094	d Other		
5.	Fund Balance \$277,586  Identify But Other  a. G/I b. But	ee State	A.50.000-7094	d Other		

6.	Are th	ere Amendments to the Compensation Schedule?	Human Resources Consulted
		YES or NO (If yes, provide details)	_
	a.	Is a new position being created? Y N	
		Effective date	
		Salary and grade	
	b.	Is a new employee being hired? Y N	
		Effective date of employment	
		Salary and grade	
		Appointed position:	
		Term	
	c.	Is this a reclassification? Y N	
		Is this position currently vacant? Y N	
		Is this position in the current year compensation plan?	N
_	_		
7.		this item require hiring a Vendors/Contractors: Y N	Purchasing Office Consulted
	a.	Were bids/proposals solicited: Y N	
	b.	Type of Solicitation Professional Service	
	c.	Is the vendor/contractor a sole source: Y N	
	d.	If a sole source, appropriate documentation has been submitt Purchasing Department? Y N/A N/A	ed and approved by
	e.	Commencement date of contract term: Upon execution	
	f.	Termination of contract date: Upon project completion	
	g.	Contract renewal and term: N/A	
	h.	Contact information: National Grid 1125 Broadway Albany, NY 12204	
	i.	Is the vendor/contractor an LLC, PLLC or partnership: No	
	j.	State of vendor/contractor organization: NY	
	k.	Is this a renewal agreement: Y N	
	1.	Vendor/Contractor comment/remarks:	
		This project will be facilitated through the County's Mas National Grid, executed by the Board, for energy savin from two (2) National Grid authorized project expediter Solutions providing a better value proposal.	g projects. DPW solicited bids

8.	Is a gr	rant being accepted:	ES or	NO	County Administrator's Office Consulted
	a.	Source of grant funding:			
	b.	Agency granting funds:			
	c.	Amount of grant:			
	d.	Purpose grant will be use	d for:		
	e.	Equipment and/or service	s being pur	rchased with the grant:	
	f.	Time period grant covers			
	g.	Amount of county match	ng funds:		
	h.	Administrative fee to Cou	inty:		
9.	Suppor	ting Documentation:			
		Marked-up previous reso	lution		
		No Markup, per consulta	tion with C	County Attorney	
		Program information sun	nmary		
		Copy of proposal or estir	nate		
		Copy of grant award noti			
	<b>~</b>	Other draft resolution	n and dr	aft task order	
10.	Rem	arks:			
	Prop	posals received from the	following	National Grid authorized	d Project Expediters:
	Cen	trica Business Solutions	\$277,586	3	
	LED	DES	\$397,551		



#### SARATOGA COUNTY BOARD OF SUPERVISORS

#### **RESOLUTION XX - 2022**

Introduced by Public Works: Supervisors Barrett, Butler, Edwards, Ostrander, Richardson, K. Veitch and Winney

AUTHORIZING THE CHAIRMAN TO EXECUTE A TASK ORDER WITH NIAGARA MOHAWK POWER CORPORATION D/B/A NATIONAL GRID FOR THE IMPLEMENTATION AND INSTALLATION OF AN LED LIGHTING REPLACEMENT PROJECT AT SARATOGA COUNTY FACILITIES LOCATED AT THE COUNTY FARM ROAD COMPLEX IN THE TOWN OF MILTON, NEW YORK AND AMENDING THE BUDGET IN RELATION THERETO

WHEREAS, Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid") previously offered its services to the County, at no cost, to serve as General Contractor to manage the County's energy conservation project, which services were to include, but not be limited to, arranging for the provision of engineering and design studies, and initial labor, material, supplies and equipment, which services National Grid would assign to subcontractors via Task Orders; and

WHEREAS, pursuant to Resolution 264-2019, this Board authorized the Chair of the Board to execute a Master Agreement for Energy Conservation and Management Services with National Grid for the provision of General Contractor services in managing the County's construction of energy conservation projects; which General Contractor services were to be provided at no cost to the County; and

WHEREAS, National Grid has requested that the County execute an implementation task order requiring payment in the amount of \$308,604.97 to National Grid for purposes of paying subcontractor Centrica Business Solutions Services Inc. ("CBSS") for the installation of energy efficient LED lighting to replace all existing lights at the County's Animal Shelter, Correctional Facility and Department of Public Works facilities; and

WHEREAS, National Grid has pre-qualification standards that the subcontractors performing this work must meet prior to selection by National Grid; and

WHEREAS, Centrica Business Solutions Services has met all subcontractor requirements as determined by National Grid; and

WHEREAS, the County hopes to receive incentives for this project by the electric utility National Grid in the amount of approximately \$31,019 which would result in an approximate six year simple pay back on energy savings; and

WHEREAS, our Law and Finance Committee and the Commissioner of Public Works have recommended that the Chairman be authorized to execute an implementation task order with National Grid in the amount of \$308,604.97 for the implementation and installation of an LED lighting replacement project at the County's Animal Shelter, Correctional Facility and Department of Public Works facilities; now, therefore, be it

RESOLVED, that the Chair of the Board is authorized to execute an implementation task order with Niagara Mohawk Power Corporation, d/b/a National Grid, of Syracuse, New York, in the amount of \$308,604.97 for the implementation and installation of an LED lighting replacement project at the County's Animal Shelter, Correctional Facility and Department of Public Works facilities; and, be it further

RESOLVED, that the form and substance of said implementation task order shall be subject to the approval of the County Attorney; and, be it further

RESOLVED, that the 2022 County Budget is amended as follows:

#### PUBLIC WORKS:

Appropriations:

Increase Acct. #: A.50.000-7094 – Bldg Components Realty \$277,586

Revenue:

Increase Acct. #: A.0599.M – Appropriated Fund Balance \$277,586

and, be it further

**RESOLVED**, this Resolution shall take effect immediately.

<u>BUDGET IMPACT STATEMENT</u>: Funding for this agreement will require an appropriation from fund balance in the amount of \$277,586.



#### **SECTION 1: PROJECT DETAILS**

Subcontractor	Centrica Business Solutions Services Inc. (CBSS) – Formerly SmartWatt Energy, Inc.	
National Grid Entity	Niagara Mohawk Power Corporation	
Project ID	20220517	
Project Name	County of Saratoga LED Lighting Improvement Project	
Start Date	May 17, 2022	
End Date	December 31, 2022	
Total Approximate Cost [USD\$]	\$308,604.97	
Master Services Agreement	Master Services Agreement between National Grid and SmartWatt Energy, Inc. effective August 5, 2015	

#### **SECTION 2: PROJECT AUTHORIZATION**

National Grid and Service Firm hereby acknowledge and agree to the terms of this Project Statement and to the performance of the Services and provision of the Deliverables specified in this Project Statement by Subcontractor for and on behalf of National Grid in accordance with the terms and conditions of the Master Services Agreement.

#### Attached Herein:

- National Grid and Centrica Business Solutions Services Inc. Proposal No. 20220517 submitted to the County of Saratoga, NY
- Saratoga County IGA Acceptance Letter dated May, 17 2022

#### **Authorizations:**

Becky Badalato		
UESC Project Administrator, National Grid		Date
	Signature	Date

#### **Proposal for an Energy Conservation Project Implementation at**

County of Saratoga, NY

National Grid Proposal Number: 20220517

**SUBMITTED TO** 

County of Saratoga 40 McMaster Street Ballston Spa, 12020

**PROPOSAL SUBMITTED BY** 



www.nationalgridus.com

and



National Grid USA Service Co. on behalf of the Niagara Mohawk d.b.a. National Grid 1125 Broadway Albany, NY 12204

May 17, 2022

#### 1. INTRODUCTION

National Grid is pleased to offer this proposal for an energy conservation project implementation for the County of Saratoga through the Utility Energy Services Contract (UESC) Program. The UESC Program gives municipalities the opportunity to meet conservation goals by expeditiously implementing economically viable energy efficiency projects that reduce energy and water consumption.

National Grid selected a Sub-Contractor, Centrica Business Solutions Services Inc. (CBSS) Formerly SmartWatt Energy, Inc. ("SmartWatt"), per the direction of the County. CBSS performed an Investment Grade Audit (IGA) that was completed on April 18, 2022. The findings of the IGA indicate that County of Saratoga Sewer District facility is a candidate for LED lighting upgrades and replacement providing energy savings. The IGA has identified first year energy cost savings of \$46,532.71.

#### 2. PROJECT ORGANIZATION

The proposed IGA may, at the County of Saratoga option, be implemented in accordance with the conditions described in the attached Master Agreement for Energy Conservation and Management Services ("Master Agreement"). All terms and conditions shall be as listed in the Master Agreement unless modified by the Task Order as discussed below. For this project, National Grid intends to subcontract the services described in Attachment A to CBSS (Formerly SmartWatt). CBSS may or may not sub-contract portions of the required services subject to approval of the customer.

#### 3. TECHNICAL PROPOSAL

#### a. Scope of Services

National Grid proposes to install the one (1) Facility Improvement Measure (FIM) described in the attached Investment Grade Audit dated 4/18/2022 in Attachment B. The total cost of the project will be \$308,604.97. The scope of services will be performed at the following facilities at County of Saratoga:

County Jail DPW Complex Animal Shelter

The IGA analysis included energy savings projections using accepted methodologies, in-house installation pricing, FIM specifications and design documentation. The FIM included in the IGA are summarized in the following table:

FIM#	Measure
1	Lighting Upgrades and Replacements

More detail on all proposed FIMs can be found in the IGA under Attachment B.

After evaluation and acceptance of the IGA, the County of Saratoga has elected to proceed with the Implementation Phase. Prior to proceeding, the parties shall agree upon a statement of work necessary for the engineering, design, and implementation of FIMs, a time frame for completion of the work, and price or cost cap. County of Saratoga will include the costs of the IGA into the implementation phase.

#### **Overall Program Phases**

Phase I (complete)	Preliminary Audit	No Cost
Phase II (complete)	Investment Grade Audit a) Cost estimating and effectiveness b) Preliminary detailed design.	\$0
Phase III	Implementation: a) Detailed Engineering & Design b) Procurement c) Construction	\$308,604.97

#### b. Proposal Costs

Total Phase III Cost	\$308,604.97
National Grid UESC Administrative Expense	\$9,258
Estimated sub-contractor costs for Phase III	\$299,346.97

#### 4. OTHER

#### a) Terms and Conditions

EQUAL OPPROTUNITY National Grid shall comply with all applicable laws, ordinances and regulations, including non-discrimination and labor laws. National Grid and the County agree that for the duration of this Agreement, they will not discriminate against any employee, applicant for employment, or person requesting services because of race, creed, color, national origin, disability, age, sex, marital status, sexual preference or source of payment.

#### 2) INDEMNIFICATION

- a. Centrica shall indemnify and hold Owner and its employees harmless from all claims for bodily injury and damage to property that may arise from the performance of the Work or the Services, to the extent caused by the negligent acts or omissions of Centrica or anyone for whose acts Centrica is liable.
- b. Owner shall indemnify and hold Centrica and its employees harmless from all claims for bodily injury and damage to property (excluding damage for which Owner assumes the risk of loss) that may arise in connection with the Project to the extent caused by the negligent acts or omissions of Owner or anyone for whose acts Owner is liable.
- 3) **POLICY TERMS** Owner shall be named as an additional insured on all coverage obtained by Centrica as required per the terms of agreement with National Grid, except Workers Compensation coverage, and such policies shall be primary and non-contributory with respect to any liability coverage maintained by Owner. The foregoing policies shall contain a provision that coverage will not be cancelled or not renewed

until at least thirty (30) days' prior written notice has been given to Owner. Certificates of Insurance showing such coverage to be in force shall be filed with Owner prior to commencement of the Work and the Services.

4) WAGES FOR TRADE LABOR. Centrica and subcontractors performing trade labor shall pay trade laborer employed on the project jobsite not less than the prevailing wage rates (including fringe benefits) listed in the NYS Department of Labor Prevailing Wage Labor Rate determination (PRC#) for the project for corresponding classes of trade laborer. Copies of certified payroll shall accompany invoices to owner.

#### b) Task Order or Contract

The Task Order shall be approved by the Chairman of the Board after both County of Saratoga and National Grid review and approve the necessary documents for this project. All documents relating to this project can be either emailed or mailed to:

#### **County of Saratoga**

40 McMaster Street Ballston Spa, NY 12020

Attention: Chad Cooke, PE

Commissioner of Public Works

Saratoga County Department of Public Works

E-mail: <u>CCooke@saratogacountyny.gov</u>

Phone: (518)-885-2235

For National Grid: 21265 NYS Route 232 Watertown, NY 13601

Attention: Becky Badalato

**Business Development Manager** 

E-mail: becky.badalato@nationalgrid.com

Phone: (315) 785-7227

#### **Payment Terms**

Customer has selected to fund the project by cash. Subcontractor bills using percent complete invoicing based on the reflected schedule of completion. The Customer must approve schedule of values (Table 1) prior to the Subcontractor invoicing. All bills submitted by Subcontractor to Customer must be accompanied by a Customer voucher duly executed and supported by Subcontractor.

Table 1: Schedule of Values

ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE %	SC	HEDULED VALUE \$
1	Engineering and Development	6%	\$	18,516.30
2	General Conditions	5%	\$	15,430.25
3	Project Management	4%	\$	12,344.20
4	Lighting Material	35%	\$	108,011.74
5	Lighting Installation	40%	\$	123,441.99
6	As-Built/Closeout	10%	\$	30,860.49
Total		100%	\$	308,604.97

Upon completion of the project:

a) Subcontractor shall pay the full National Grid fee of \$9,258.

#### 5. PROPOSER QUALIFICATIONS

#### **Corporate Profiles**

National Grid - National Grid is an international energy delivery company. In the U.S., National Grid delivers electricity to approximately 3.3 million customers in Massachusetts, New Hampshire, New York, and Rhode Island, and manages the electricity network on Long Island under an agreement with the Long Island Power Authority (LIPA). It is the largest distributor of natural gas in the northeastern U.S., serving approximately 3.4 million customers in Massachusetts, New Hampshire, New York and Rhode Island. National Grid also owns over 4,000 megawatts of contracted electricity generation that provides power to over one million LIPA customers. National Grid offers nationally recognized energy conservation programs which have been recognized as EPA's Energy Star 2010 partner of the year.

Centrica Business Solutions Services Inc. (CBSS) - Formerly SmartWatt Energy Inc. - Is a leading nationwide provider of turnkey energy-efficiency solutions. We are dedicated to lowering businesses' operational costs through demand-side energy reduction strategies. CBSS provides whole building energy assessments and implements renewable energy systems, lighting upgrades, control system enhancements, variable frequency drive (VFD) upgrades, HVAC enhancements and other energy conservation measures to help commercial, industrial, institutional, and government customers and utilities meet their sustainability goals. CBSS also maintains status as a National Grid tier one partner and an approved contractor on National Grid's Project Expeditor (PEX) program.

#### **For National Grid**

Sincerely,

Becky Badalato
Business Development Manager



#### **Attachment A**

Becky Badalato National Grid 21265 NYS Route 232 Watertown, New York 13601 May 17, 2022

Subject: IGA Implementation Proposal for County of Saratoga

Dear Becky;

On behalf of Centrica Business Solutions Service Inc. (CBSS) - Formerly SmartWatt Energy, Inc., I am pleased to submit herewith our proposal to perform the implementation of the findings within the attached Investment Grade Audit (IGA) at the County of Saratoga. The scope of work is based on the IGA presented on April 18, 2022. Through discussions with you and County staff we have confirmed the final Facility Improvement Measure (FIM) to be installed under this implementation phase of work.

#### Project Overview:

County of Saratoga has authorized National Grid to proceed with implementation of an energy savings project as described in the IGA conducted by Centrica Business Solutions Services Inc. (Formerly SmartWatt) dated (4/18/2022).

CBSS is pleased to submit herewith its formal Firm Fixed Price IGA valued at \$308,604.97 covering performance implementation as defined under the attached Scope of Work (SOW).

CBSS is pleased to have the opportunity to partner with National Grid, and we eagerly anticipate working with you on this phase of the County of Saratoga Energy Conservation Project. CBSS is looking forward to demonstrating to the County of Saratoga and National Grid our depth of experience and expertise in developing comprehensive energy solutions.

CBSS appreciates this opportunity and looks forward to a long and mutually beneficial relationship with National Grid. Please feel free to contact the undersigned should you have any questions concerning the attached.

Sincerely,

Mitch Tombs
Account Executive

Centrica Business Solutions Services Inc. (CBSS) - Formerly SmartWatt Energy, Inc.

Cell: 315.532.7584

Email: Mitch.Tombs@Centrica.com



#### **Project Management/Implementation Overview**

Geoff Frey, Senior Project Manager at CBSS will have the overall responsibility for managing and executing the construction phase of this project. The table below lists the major milestones for this project. The dates below are approximate. A detailed WBS will be provided as part of the Project Management Plan presented during the construction phase.

Task Name	Duration	Start	Finish
Saratoga County LED Lighting	81 days	Fri 7/1/22	Fri 10/21/22
Pre Construction	25 days	Fri 7/1/22	Thu 8/4/22
Task Order Issued	0 days	Fri 7/1/22	Fri 7/1/22
Material Procurement	25 days	Fri 7/1/22	Thu 8/4/22
Preconstruction Kickoff Meeting	1 day	Wed 7/27/22	Wed 7/27/22
Construction	49 days	Mon 8/8/22	Thu 10/13/22
Animal Shelter LED Lighting Installation	4 days	Mon 8/8/22	Thu 8/11/22
DPW Complex LED Lighting Installation	10 days	Fri 8/12/22	Thu 8/25/22
County Jail LED Lighting Installation	30 days	Fri 8/26/22	Thu 10/6/22
Substantial Completion	0 days	Thu 10/6/22	Thu 10/6/22
Punchlist	5 days	Fri 10/7/22	Thu 10/13/22
Closeout	6 days	Fri 10/14/22	Fri 10/21/22
As-Built	5 days	Fri 10/14/22	Thu 10/20/22
Closeout Meeting	1 day	Fri 10/21/22	Fri 10/21/22

#### **Scope of Work**

Please see Attachment B (County of Saratoga – Investment Grade Audit).

## **Attachment B**



# Saratoga County, NY – LED Lighting Improvement Project

Mitch Tombs | Account Executive

April 18, 2022

## Centrica Business Solutions (CBS)

#### Formerly SmartWatt Energy Inc. – Acquired by CBS in 2019

Same local team Ballston Lake, NY Office is the North American Headquarters

Fully turnkey with in-house teams Lighting audit/design, Project Management, Installation No subcontractor = "one throat to choke"

#### Previous Lighting Project across County Buildings: completed by us in 2012

We've already installed lighting in these buildings, which is still existing 10 years later. We know what we're looking for and what is needed to get it done again.

#### Saratoga County Sewer District Solar PV Project: completed by us in 2020

581 kW ground mount solar pv system designed & installed

#### Saratoga County Sewer District LED Lighting Project: completed by us in 2021

Upgraded all interior & exterior lighting to LED (993 fixtures), including lighting controls

Centrica Business Solutions Centrica Business Solutions

## **Project Summary**

- Centrica performed an investment grade audit and the following County Facilities:
  - County Jail
  - DPW Complex
  - Animal Shelter

### Facility Improvement Measures (FIMs)

#	FIM Name	FIM Description
1	LED Lighting Improvements	Upgrade or replace all existing fluorescent or HID lighting technology to LED

Centrica Business Solutions Powering business advantage

## LED Lighting Improvements

- Retrofit existing interior fluorescent lighting with LED lamps & drivers
- Replace any existing exterior HID lighting (area lights, wall-packs, floods lights) with new LED lighting.
- Replace existing T-5 highbays in DPW Garages with new LED fixtures, with sensors





Centrica Business Solutions Powering business advantage 4

## **Project Financials**

Building	kWh Saved	Ma	Annual aintenance Savings	nergy Savings shting & HVAC)	Tot	tal Cost Savings (Annual)	Total Cost	Utili	ity Incentive	Cost	t After Incentive	Payback (Years)
Animal Shelter	18,868.34	\$	739.74	\$ 2,075.52	\$	2,815.26	\$ 27,936.47	\$	2,908.61	\$	25,027.86	9.25
County Jail	200,200.98	\$	9,825.69	\$ 22,022.11	\$	31,847.80	\$ 208,946.81	\$	20,398.92	\$	188,547.89	5.73
DPW Complex	81,631.71	\$	2,890.16	\$ 8,979.49	\$	11,869.65	\$ 71,721.69	\$	7,711.47	\$	64,010.22	5.81
Totals	300,701.03	\$	13,455.59	\$ 33,077.12	\$	46,532.71	\$ 308,604.97	\$	31,019.00	\$	277,585.97	5.97



Rate: based on billing analysis of existing utility bills = \$.098

Existing wattage of T8 lamps: 28W not 32W

Rebate: accurate based on National Grid project calculator

Material: Tier 1 products & all DLC approved (5- or 10-year warranty)

**Jail:** We know what it takes to install this scope because we've already done it before.

- Our price includes full scope based on our in-person audit (prints aren't up to date)
- Cells have bi-level control (requires multiple ballasts in each fixture) factored into project
- All lifts required are included
- Current PW Rate being used

Centrica Business Solutions Powering business advantage 5

## Thank you

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# Energy Calculations & Scope Line by Line



							Pre-Install	l (Baseline)					ı			Post-Install	(Pronosed)				Business So		Lighting En	erøy Savinøs		Interactive F	nergy Saving		Energy	Savines
Action	Map Location	Location Description	# of Baseline Fixtures	Pre-Install Fiature Code	Pre Watts Per Fixture	Pre Watt per Fixture (Low)		Peak kW Demand	Pre kW (Low)	Pre Hours of August Operation	Post Hours of Annual Operation	Pro kWh	Proposed # of Fintures	Proposed Fixture Code	Proposed Action Description	Proposed Watts per Fixture	Proposed Watts per Fixture (Low	Proposed kW (High)	Proposed kW Demand	Proposed Hours of Annual Operation	Proposed Hours of Annual Operation (Low	Azzual Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Sared
1	102	Open Floor Accounting	73	TT/2FB32/t-NP	59	0	4.307	4.31	0.00	2,346	0	10,106	73	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	1.90	1.90	2,346	Mede)	4,454	2.41	5,653	0.32	0.8	0.12	678	3.18	6,331
2	104	Commissioner's Office	4	TT/2FB32/E-NP	59	0	0.236	0.24	0.00	2,346	0	554	4	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED  Benjarement Type C lemms and (1) 2-lemm	26	0	0.10	0.10	2,346		244	0.13	310	0.32	78.1	0.12	37	78.22	347
1	105	Deputy Commissioner	4	TT/2FB32/E-NP	59	0	0.236	0.24	0.00	2,346	0	554	4	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,346		244	0.13	310	0.32	78.1	0.12	37	78.22	347
4	105	Electric Room	1	TF/2F2B/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346		61	0.03	61	0.32	19.5	0.12	7	19.55	68
	100	Deputy Commissioner	6	TT/2FB32/E-NP	59			0.05						2 Placeholder(s), 26W	driver  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp				_											
5						0	0.354		0.00	2,346		831				26		0.16	0.16	2,346		366	0.20	465	0.32	117.1	0.12	56	117.33	520
6	110	Computer Room	6	TT/2F832/E-NP	59	0	0.354	0.35	0.00	2,346	0	831	6	2 Placeholder(s), 26W	Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.16	0.16	2,346	0	366	0.20	465	0.32	117.1	0.12	56	117.33	520
7	111	Mechanical Room	3	1H4/2F28/E-NP	52	0	0.156	0.16	0.00	2,346	0	366	3	2 Placeholder(s), 26W		26	0	0.08	0.08	2,346	۰	183	0.08	183	0.32	58.6	0.12	22	58.64	205
	112	Record Storage	28	TF/2F28/E-NP	52	0	1.456	1.46	0.00	2,346	0	3,416	28	2 Placeholder(s), 26W	Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing floure using (2) LED	26	0	0.73	0.73	2,346	۰	1,708	0.73	1,708	0.32	546.6	0.12	205	547.35	1,913
9	112	Kitchenette	1	O4/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	0	61	0.03	61	0.32	19.5	0.12	7	19.55	68
10	116	Conference	20	TT/2FB32/t-NP	59	0	0.59	0.59	0.00	2,346	0	1,384	10	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.26	0.26	2,346	0	610	0.33	774	0.32	195.2	0.12	93	195.55	867
11	117	Womens	2	TT/2FB32/E-NP	59	0	0.118	0.12	0.00	2,346	0	277	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	0	122	0.07	155	0.32	39.0	0.12	19	39.11	173
12	118	Janitor	2	CF/23W2L	50	0	0.1	0.10	0.00	2,346	0	235	2	2 Placeholder(s), 16W	driver Replace existing PL lamp with a new Keystone LED PL replacement bulb Rebuild existing forum using (2) LED Replacement Type C lamps and (1) 2-lamp	16	0	0.03	0.03	2,346	0	75	0.07	160	0.32	24.0	0.12	19	24.10	179
13	119	Mens	2	TT/2F832/E-NP	59	0	0.118	0.12	0.00	2,346	0	277	2	2 Placeholder(s), 26W	Bahadid solution flower value (2) LED	26	0	0.05	0.05	2,346	0	122	0.07	155	0.32	39.0	0.12	19	39.11	173
14	120	Print Room	2	TT/2FB32/E-NP	59	0	0.118	0.12	0.00	2,346	0	277	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fisure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346	0	122	0.07	155	0.32	39.0	0.12	19	39.11	173
15	121	Vestibule	2	TT/2FB32/E-NP	59	0	0.118	0.12	0.00	2,346	0	277	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp	26	0	0.05	0.05	2,346	0	122	0.07	155	0.32	39.0	0.12	19	39.11	173
16	0	Hall From Admin	1	IHB/4F32/E-NP	112	0	0.112	0.11	0.00	2,607	0	292	1	4 Placeholder(s), 52W	Replacement Type C lamps and (1) 4-lamp driver Replace existing high bay with a new IBG	52	0	0.05	0.05	2,607	0	136	0.05	156	0.00	0.0	0.00	0	0.06	156
17	0	Open Floor High bays	52	HB/6F28/E-HP 54/2F28/E-NP	188	0	9.776	9.78	0.00	2,607	0	25,487 271	52	LED High Bay, 200W	LED Highbay 93w 15000im  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	100 26	0	5.20	5.20	1,825 2,607	782	9,490	4.58 0.05	15,997	0.00	0.0	0.00	0	4.58 0.05	15,997
19	0	114	2	54/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 20W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
20	0	Cage	2	54/2F28/E-NP	52		0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	Reparement type C lamps and (1) 2-temp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-temp	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
		Office	4	34/2/20/E-NP	45		0.104	0.10		2,607			4	3 Placeholder(s), 18W	Reparement Type C lamps and (1) 2-tamp driver Rebuild existing floure using (3) LED Replacement Type C lamps and (1) 4-tamp		0	0.05	0.05	2,607		188	0.05							
21	0	Office				0		0.53	0.00		0	469	14		driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp	18	0		_		0		0.11	282	0.00	0.0	0.00	0	0.11	282
	0		14	TT/3F17/E-NP	45		0.63		0.00	2,607	0	1,643		3 Placeholder(s), 18W	Replacement Type C lamps and (1) 4-lamp driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp			0.25	0.25	2,607	0	657			0.00	0.0	0.00	0	0.38	986
23	0	118	5	TT/3F17/E-NP	45	0	0.225	0.23	0.00	2,607	0	587	5	3 Placeholder(s), 18W		18	0	0.09	0.09	2,607	0	235	0.14	352	0.00	0.0	0.00	0	0.14	352
24	0	120	1	W4/2F28/E-NP	52	0	0.052	0.05	0.00	2,607	0	136	1	2 Placeholder(s), 26W	driver  Rebuild existing four-using (2) LED  Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing four-using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,607	۰	68	0.03	68	0.00	0.0	0.00	0	0.03	68
25	0	Mens	10	54/2F28/E-NP	52	0	0.52	0.52	0.00	2,607	0	1,356	10	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.26	0.26	2,607	۰	678	0.26	678	0.00	0.0	0.00	0	0.26	678
26	0	Mens	1	1H4/2F28/E-NP	52	0	0.052	0.05	0.00	2,607	0	136	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED	26	0	0.03	0.03	2,607	0	68	0.03	68	0.00	0.0	0.00	0	0.03	68
27	0	123A	1	W2/2F17/E-NP	30	0	0.03	0.03	0.00	2,607	0	78	1	2 Placeholder(s), 27W	Benjarament Type C James and (1) 2-James	27	0	0.03	0.03	2,607	0	70	0.00		0.00	0.0	0.00	0	0.00	8
28	0	Break Room	8	TF/2F28/E-NP	52	0	0.416	0.42	0.00	2,607	0	1,085		2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.21	0.21	2,607	0	542	0.21	542	0.00	0.0	0.00	0	0.21	542
29	0	123C	1	1H4/2F2E/E-NP	52	0	0.052	0.05	0.00	2,607	0	136	1	2 Placeholder(s), 26W	Rebuild existing floure using (2) LED Replacement Type: (largus and (1) 2-largu driver Rebuild existing floure using (2) LED Replacement Type: C largus and (1) 2-largu driver Rebuild existing floure using (2) LED Replacement Type: (1) LED Rebuild existing floure using (2) LED	26	0	0.03	0.03	2,607	0	68	0.03	68	0.00	0.0	0.00	0	0.03	68
30	0	1238	2	1H4/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,607	0	136	0.05	136	0.00	0.0	0.00	0	0.05	136
31	0	124	1	1H4/2F28/E-NP	52	0	0.052	0.05	0.00	2,607	0	136	1	2 Placeholder(s), 26W	driver	26	0	0.03	0.03	2,607	۰	68	0.03	68	0.00	0.0	0.00	0	0.03	68
32	0	127	3	TF/2F28/E-NP	52	0	0.156	0.16	0.00	2,607	0	407	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,607	0	203	0.08	203	0.00	0.0	0.00	0	0.08	203
33	0	Parts	16	VT4/2F28/E-NP	52	0	0.832	0.83	0.00	2,607	0	2,169	16	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED	26	0	0.42	0.42	2,607	۰	1,085	0.42	1,085	0.00	0.0	0.00	0	0.42	1,085
34	0	Stairs	3	1H4/2F2E/E-NP	52	0	0.156	0.16	0.00	2,607	0	407	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED	26	0	0.08	0.08	2,607	۰	203	0.08	203	0.00	0.0	0.00	0	0.08	203
35	0	Office	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
36	0	Lifts	2	VTB/2F110/ESM	237	0	0.474	0.47	0.00	2,607	0	1,216	2	LED Strip 8', 65W	Replace existing 8' fluorescent fisure with a new Acusty CLX 8' LED Fisture. 38w 6000im	65	0	0.13	0.13	2,607		339	0.34	897	0.00	0.0	0.00	0	0.34	897
37	0	Lifts	4	IHE/4F32/E-NP	112	0	0.448	0.45	0.00	2,607	0	1,168	4	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp	52	0	0.21	0.21	2,607		542	0.24	626	0.00	0.0	0.00	0	0.24	626
38	0	Paint	1	IHE/4F32/E-NP	112	0	0.112	0.11	0.00	2,607	0	292	1	4 Placeholder(s), 52W	driver Rebuild existing floure using (4) LED Replacement Type C lamps and (1) 4-lamp	52	0	0.05	0.05	2,607	0	136	0.05	156	0.00	0.0	0.00	0	0.06	156
39	0	Paint Sooth	28	VT4/4F32/E-NP	112	0	3.136	3.14	0.00	2,607	0	8,176	28	4 Placeholder(s), 60W	driver Replace existing lamps with (4) new Keystone LED Replacement lamp, direct wire. 6500k	60	0	1.68	1.68	2,607		4,380	1.46	3,795	0.00	0.0	0.00	0	1.46	3,796
40	0	Mezz Above Parts	4	58/4F32/E-NP	112	0	0.448	0.45	0.00	2,607	0	1,168	4	4 Placeholder(s), 52W	wire. 6500k  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp driver	52	0	0.21	0.21	2,607		542	0.24	626	0.00	0.0	0.00	0	0.24	626
41	0	Mezz Above Traffic	2	1H4/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
42	0	Traffic	3	58/2F32/E-NP	59	0	0.177	0.18	0.00	2,607	0	461	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.08	0.08	2,607		203	0.10	258	0.00	0.0	0.00	0	0.10	258
43	0	Traffic	2	54/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	driver  Rebuild existing foure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
44	0	Traffic	5	i/sa	60	0	0.3	0.30	0.00	2,607	0	782	5	1 Keystone A-Limp 60W replacement 9W	Replacement Type C lamps and (1) 2-lamp driver (s), Replace existing A lamp with a new Keystone LED Alamp replacement bulb	9	0	0.05	0.05	2,607	0	117	0.26	665	0.00	0.0	0.00	0	0.26	665
45	0	Traffic	1	1/150	150	0	0.15	0.15	0.00	2,607	0	391	1	1 Keystone A-Lamp 60W replacement 9W	LED Alamp replacement bulb (s), Replace existing A lamp with a new Xeystone LED Alamp replacement bulb	9	0	0.01	0.01	2,607	0	23	0.14	368	0.00	0.0	0.00	0	0.14	368

							Pre-Install								I	Post-Install	(Proposed)				Propagal		Lighting Ene			Interactive E			Energy S	
Action	Nap Location #	Location Description	# of Baseline Fixtures	Pre-Install Finture Code	Pre Wattx Per Fixture	Pre Watt per Fixture (Low)	e Pre kW(high)	Peak kW Demand	Pre kW (Low)	Pro Hours of Aurecal Operation	Post Hours of Annual Operation (Low)		Proposed # of Fixtures	Proposed Fixture Code		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Mode)	Proposed kW (High)	Proposed kW Demand	Proposed Hours of Annual Operation	Hours of Annual Operation (Low Mode)	Annual Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
46	0	Body Shop	11	VT4/2528/E-NP	52	0	0.572	0.57	0.00	2,607	0	1,491	11	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.29	0.29	2,607		746	0.29	746	0.00	0.0	0.00	0	0.29	746
47	0	Body Shop	1	54/2F28/E-NP	52	0	0.052	0.05	0.00	2,607		136	1	2 Placeholder(s), 26W	driver Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,607		68	0.03	68	0.00	0.0	0.00	0	0.03	68
48	0	Welding	2	54/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,607		136	0.05	136	0.00	0.0	0.00	0	0.05	136
49	0	Welding	1	IHS/4F32/E-NP	112	0	0.112	0.11	0.00	2,607	0	292	1	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp	52	0	0.05	0.05	2,607	0	136	0.06	256	0.00	0.0	0.00	0	0.06	156
50	0	Welding	0	ADD	0	0	0	0.00	0.00	2,607	0	0	2	LED High Bay, 100W	driver  Replace existing high bay with a new IBG  LED Highbay 93w 15000im	100	0	0.20	0.20	2,607	0	521	-0.20	-521	0.00	0.0	0.00	0	-0.20	-521
51	0	Metal Shop	1	1/60	60	0	0.06	0.06	0.00	2,607	0	156	1	1 Keystone A-Lamp 60W replacement 9W	LED Highbay 93w 15000lm  ), Replace existing A lamp with a new Xeystone LED Alamp replacement bulb  Rebuild existing foure using (4) LED	9	0	0.01	0.01	2,607	0	23	0.05	133	0.00	0.0	0.00	0	0.05	133
52	0	Metal Shop	1	IHE/4F32/E-NP	112	0	0.112	0.11	0.00	2,607	0	292	1	4 Placeholder(s), 52W	Replacement Type C lamps and (1) 4-lamp driver Rebuild existing floure using (2) LED	52	0	0.05	0.05	2,607	0	136	0.06	256	0.00	0.0	0.00	0	0.06	156
53	0	Metal Shop	2	IH4/2F28/E-NP	52	0	0.104	0.10	0.00	2,607	0	271	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,607	0	136	0.05	136	0.00	0.0	0.00	0	0.05	136
54	0	Washbays	13	VT4/2F54/E-T5	117	0	1.521	1.52	0.00	2,607	0	3,965	13	2 Placeholder(s), 50W	Replacement Type C lamps and (1) 2-lamp driver	50	0	0.65	0.65	2,607	0	1,695	0.87	2,271	0.00	0.0	0.00	0	0.87	2,271
55	0	Washbays	3	VT8/4F32/E-NP	112	0	0.336	0.34	0.00	2,607	0	876	3	4 Placeholder(s), 52W	driver  Rebuild existing floure using (4) LED  Replacement Type C lamps and (1) 4-lamp driver	52	0	0.16	0.16	2,607	۰	407	0.18	469	0.00	0.0	0.00	0	0.18	469
56	0	Washbays		VT4/2F54/E-T5	117	0	0.936	0.94	0.00	2,607	0	2,440		2 Placeholder(s), 50W	Replacement Type C lamps and (1) 2-lamp driver	50	0	0.40	0.40	2,607	0	1,043	0.54	1,397	0.00	0.0	0.00	0	0.54	1,397
57 58	0	Washbays Quanson Hut	12	MH/300	30 342	0	0.36 4.104	0.36 4.10	0.00	2,607 4,380	0	939 17,976	12	No Fixture Action LED Flood Light, 45W	No Action  Replace existing fixure with a new Acuity	30 45	0	0.36	0.36	2,607 4,380		939 2,365	3.56	15,610	0.00	0.0	0.00	0	0.00 3.56	15,610
59	0	Back DPW Lot	2	HPS/250	295	0	0.59	0.59	0.00	4,380		2,584	2	1 Placeholder(s), 63W	TFX1 LED flood light. 42w 4753 lumens Replace existing metal hallide/hps lamp with a new Keystone LED replacement lamp. 63w 9168 lumens	63	0	0.13	0.13	4,380		552	0.46	2,032	0.00	0.0	0.00	0	0.46	2,032
60	0	Snow Plow Lights	4	HPS/250	295	0	1.18	1.18	0.00	4,380	0	5,168	4	1 Placeholder(s), 63W	Replace existing metal hallide/hps lamp with a new Keystone LED replacement lamp. 63w	63	0	0.25	0.25	4,380		1,104	0.93	4,065	0.00	0.0	0.00	0	0.93	4,065
61	0	Boller Room	21	1H4/2F28/E-NP	52	0	1.092	1.09	0.00	2,607	0	2,847	21	2 Placeholder(s), 26W	Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.55	0.55	2,607		1,424	0.55	1,424	0.00	0.0	0.00	0	0.55	1,424
62	0	Vest to Mezz	1	IH4/2F28/E-NP	52	0	0.052	0.05	0.00	2,607	0	136	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,607		68	0.03	68	0.00	0.0	0.00	0	0.03	68
63	0	Garage 2	10	HB/6F28/E-HP	188	0	1.88	1.88	0.00	2,607	0	4,901	10	LED High Bay, 90W	Replace existing high bay with a new IBG LED Highbay 76w 12000lm	90	0	0.90	0.90	1,825	782	1,643	0.98	3,259	0.00	0.0	0.00	0	0.98	3,259
64	0	Garage 2	26	IH4/2F28/E-NP	52	0	0.832	0.83	0.00	2,607		2,169	16	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.42	0.42	2,607	۰	1,085	0.42	1,085	0.00	0.0	0.00	0	0.42	1,085
65	0	Garage 3	10	нв/6728/с-нр	188	0	1.88	1.88	0.00	2,607	0	4,901	10	LED High Buy, 90W	Replace existing high bay with a new IBG LED Highbay 76w 12000lm Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	90	0	0.90	0.90	1,825	782	1,643	0.98	3,259	0.00	0.0	0.00	0	0.98	3,259
66	0	Garage 3	4	IH4/2F28/E-NP	52	0	0.208	0.21	0.00	2,607	0	542	4	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.10	0.10	2,607	۰	271	0.10	271	0.00	0.0	0.00	0	0.10	271
67	0	Salt Shed	10	VT4/2F54/E-T5	117	0	1.17	1.17	0.00	2,607	0	3,050	10	2 Placeholder(s), 50W	driver  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	50	0	0.50	0.50	2,607	0	1,304	0.67	1,747	0.00	0.0	0.00	0	0.67	1,747
68	0	Building 12	12	\$4/2F\$4/E-T\$	117	0	1.404	1.40	0.00	2,607	0	3,660	12	2 Placeholder(s), 50W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	50	0	0.60	0.60	2,607	0	1,564	0.80	2,096	0.00	0.0	0.00	0	0.80	2,096
69	0	Building 12 Foreman Offices	6	54/2F28/t-NP	52	0	0.312	0.31	0.00	2,607	0	813	6	2 Placeholder(s), 26W	Rebuild existing four eusing (2) LED Replacement Type C lamps and (1) 2-lamp driver No Action No Action	26	0	0.16	0.16	2,607	0	407	0.16	407	0.00	0.0	0.00	0	0.16	407
70	0	Assembly Area Womens	15	58/2F32/E-NP TF/2F28/E-NP	59		0.885	0.89	0.00	730 730	313	645 76	15 2	No Fisture Action No Fisture Action	No Action	59	0	0.89	0.89	1,043		923 108	0.00	-277	0.00	0.0	0.00	0	0.00	-277 -33 -33
72	0	Womens	2		52	0	0.104	0.10	0.00	730	313	76	2	No Fixture Action	No Action	52	0	0.10	0.10	1,043	0	105	0.00	-33	0.00	0.0	0.00	0	0.00	+33
72 73 74	0 0	Mens Storage Crematory	2 2 2 4	TF/2F28/E-NP TF/2F28/E-NP S8/2F95/E5M	52 52 52 52 207	0	0.104 0.104 0.828	0.10 0.10 0.83	0.00	730 730 730 521	313 313 0	76 76 432	2 2 4	No Fixture Action No Fixture Action No Fixture Action	No Action No Action No Action	52 52 207	0 0	0.10 0.10 0.83	0.10 0.10 0.83	1,043 1,043 521	0	108 108 432	0.00 0.00 0.00	-33 -33 0	0.00	0.0 0.0 0.0	0.00 0.00 0.00	0	0.00 0.00 0.00	-33 -33 0
72 73 74 75 76	0 0 0	Mens Storage Crematory Crematory Exterior	2 2 2 4 2	TF/2F28/E-NP TF/2F28/E-NP	52 52 52 207 52 15	0 0 0	0.104 0.104 0.104 0.828 0.104 0.105	0.10 0.10 0.83 0.10	0.00 0.00 0.00 0.00 0.00	730 730 521 521 2,086	313 313 0 0	76 76 432 54 219	2 2 4 2 7	No Fixture Action No Fixture Action No Fixture Action No Fixture Action 1 Piaceholder(s), SW	No Action No Action No Action No Action Replace existing PL lamp with a new	52	0 0 0 0	0.10 0.10 0.83 0.10	0.10 0.10 0.83 0.10	1,043 1,043 521 521 2,086	0 0 0 0	108 108 108 432 54	0.00 0.00 0.00 0.00	-33 -33 0 0	0.00	0.0 0.0 0.0 0.0 0.0	0.00	0 0 0 0	0.00	-33 -33 0 0
77	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Mens Storage Crematory Crematory	2 2 2 4 2 7	TF/2F28/E-NP TF/2F28/E-NP S8/2F95/ESM VT4/2F28/E-NP	52 52 52 207 52 15	0 0 0	0.104 0.104 0.828 0.104 0.105	0.10 0.10 0.83 0.10	0.00 0.00 0.00	730 730 521 521	313 313 0 0	76 76 432 54 219	2 2 4 2 7	No Fisture Action No Fisture Action No Fisture Action No Fisture Action	No Action  No Action  No Action  No Action  And Action  Replace existing PL lamp with a new Keystone LED FL replacement bulb  Replace existing PL lamp with a new Keystone LED FL replacement bulb	52 52 207 52	0 0 0 0	0.10 0.10 0.83 0.10	0.10 0.10 0.83 0.10	1,043 1,043 521 521	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	108 108 432 54 117	0.00 0.00 0.00 0.00 0.00	-33 -33 0 0 102	0.00 0.00 0.00 0.00 0.32	0.0 0.0 0.0 0.0 37.4	0.00 0.00 0.00 0.00 0.12	21	0.00 0.00 0.00 0.00 37.43	-33 0 0 114
77 78	101 104	Mons Storage Crematory Crematory Exterior Vestbade Lobby	3	TT/21/23/L-NP TT/21/23/L-NP TT/21/23/L-NP S1/21/25/L-NP VT4/22/23/L-NP CT/23/W1L CT/23/W1L CT/23/W1L	28 15	0	0.104 0.104 0.828 0.104 0.105 0.084	0.10 0.10 0.83 0.10 0.11 0.08	0.00	730 730 521 521 521 2,086 2,086	313 313 0 0 0	76 76 432 54 219 175	3 8	No Fishers Action  No Fishers Action  No Fishers Action  No Fishers Action  2 Placeholder(s), SW  2 Keystone 4-Pin LED, (Sortzental, 13  Watel(s), GW  1 Placeholder(s), SW	No Action No Action No Action No Action No Action No Action Replace existing PL liersp with a new Keystone LED PL replacement bulb Replace existing PL liersp bulb a new Keystone LED PL replacement bulb Replace existing PL liersp with a new Keystone LED PL replacement bulb Replace existing PL liersp with a new	52 52 207 52 8	0	0.10 0.10 0.83 0.10 0.05 0.00	0.10 0.10 0.83 0.10 0.06	1,043 1,043 521 521 2,086 2,086	0	108 108 432 54 117 0	0.00 0.00 0.00 0.00 0.05 0.05	-33 -33 0 0 102 175	0.00 0.00 0.00 0.00 0.32 0.32	0.0 0.0 0.0 0.0 0.0 37.4 0.0	0.00 0.00 0.00 0.12 0.12	21	0.00 0.00 0.00 0.00 37.43 0.08	-33 0 0 114 196
77 78 79	101 104 105	Mens Storage Cremitory Cremitory Esterior Uestibule Lobby Room 105	3 8 1	TT/2128/E-NP TT/2128/E-NP S8/2795/ESM V14/2928/E-NP CT/13W1L CT/13W1L CT/13W1L TT/2932/E-NP	28 15 59	0	0.104 0.104 0.828 0.104 0.105 0.084 0.12	0.10 0.10 0.81 0.10 0.11 0.08 0.12	0.00	730 730 521 521 521 2,086 2,086 2,086	313 313 0 0 0 0	76 76 432 54 219 175 250	3 8	No Tristare Action 1 Placeholder(s), BW 1 Raystone 4-Pin LED, Printernetal, 11 Wystone 4-Pin LED, Printernetal, 11 1 Placeholder(s), BW 2 Placeholder(s), 20W	No Action No Action No Action No Action No Action No Action Replace existing PL lamp with a new Enginee LDP replacement buth Replace acting PL lamp with a new Enginee LDP replacement buth Replace existing PL lamp with a new Enginee LDP replacement buth Replace existing PL lamp with a new Enginee LDP replacement buth Replace most Type PL replacement buth Replace most Type Clamps and (1) Lamp Replacement Type Clamps and (1) Lamp	52 52 2007 52 8 0	0	0.10 0.10 0.81 0.10 0.06 0.00 0.00	0.10 0.10 0.33 0.10 0.05 0.05	1,043 1,043 521 521 2,086 2,086 2,086 2,086	0 0	108 108 432 54 117 0	0.00 0.00 0.00 0.00 0.00 0.05 0.08	-33 -33 0 0 202 175 117	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7	0.00 0.00 0.00 0.00 0.12 0.12 0.12	21 14 4	0.00 0.00 0.00 0.00 37.43 0.08 42.77	133 0 0 114 196 131
77 78 79	101 104 105	Mores Storage Crematory Crematory Enterior Verbbule Lobby Room 105	1	TI/2738/E-N0 TI/2738/E-N0 SM/2795/ESM VT4/2728/E-N0 CI/13W1L CI/13W1L TI/2F32/E-N0 TI/2F32/E-N0	28 15 59	0	0.104 0.104 0.122 0.104 0.105 0.105 0.105 0.12 0.059	0.10 0.10 0.83 0.10 0.11 0.08 0.12	0.00 0.00 0.00 0.00 0.00 0.00	730 730 731 521 2,086 2,086 2,086 1,460	313 313 0 0 0 0	76 76 432 54 219 175 250 86	3 8 1	No Tisture Action 1 Flaceholder(i), EW 1 Flaceholder(i), EW 2 Flaceholder(i), EW 2 Placeholder(i), EW 2 Placeholder(i), 2GW	No Action No Action No Action No Action Special Conference of the Conference Special Conference of the Conference Special Conference of the Conference of the Conference Special Conference of the Conference of the Conference Special Conference of the Conference of	52 52 207 52 8 0 8 26	0	0.10 0.10 0.83 0.10 0.06 0.00 0.00	0.10 0.10 0.33 0.10 0.06 0.06	1,043 1,043 521 521 2,086 2,086 2,086 2,086	0 0	108 108 432 54 117 0 133 54	0.00 0.00 0.00 0.00 0.05 0.05	-33 -33 0 0 102 175 117 32	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39	-33 0 0 114 196 131 36
77 78 79 80	101 104 105 106	More Storage Constitivy Constitivy Estates Verelable Linky Room 105 Room 105	3 8 1	TIT/12/03/-NP TIT/12/03/-NP SS/2795/ESM SS/2795/ESM CF/23/MTL CF/26/MTL CF/26/MTL TF/272/E-NP TT/2722/E-NP TT/2722/E-NP	28 15 59 59	0	0.104 0.104 0.828 0.104 0.105 0.084 0.12 0.059	0.10 0.10 0.83 0.10 0.11 0.08 0.12 0.06	0.00 0.00 0.00 0.00 0.00 0.00 0.00	730 730 521 521 2,086 2,086 2,086 1,460	313 313 0 0 0 0 0 0 0 625	76 76 432 54 219 175 250 86 86	3 8 1 1	No Trates Action To Trates Action 1 Proceedings, 100 1 Proceductor(s), 100 2 Placeholder(s), 200 2 Placeholder(s), 2000 2 Placeholder(s), 2000 2 Placeholder(s), 2000 2 Placeholder(s), 2000	No Action To Action To Action To Action To Action To Action Replace entiting Jump with a new Replace entiting Jump with a new Replace entiting To Lamp with a new Replace and To Action Replace and To Action Replace and To Action Replace entiting To Lamp with a new Replace entity Topic Compared (1) 2 Amp Replace entity Top	52 52 207 52 8 0 8 26 26	0	0.10 0.10 0.83 0.10 0.05 0.05 0.00	0.10 0.10 0.83 0.10 0.05 0.05 0.05	1,043 1,043 1,043 521 521 2,086 2,086 2,086 2,086 2,086 2,086	0 0	108 108 432 54 117 0 133 54 54 54 54	0.00 0.00 0.00 0.00 0.05 0.01 0.06	-33 -33 0 0 0 202 275 117 32	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7 17.4	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4 4	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39	33 0 0 1114 1196 1131 36 36 36
77 78 79	101 104 105	Mores Storage Crematory Crematory Enterior Verbbule Lobby Room 105	1	TI/2738/E-N0 TI/2738/E-N0 SM/2795/ESM VT4/2728/E-N0 CI/13W1L CI/13W1L TI/2F32/E-N0 TI/2F32/E-N0	28 15 59	0	0.104 0.104 0.122 0.104 0.105 0.105 0.105 0.12 0.059	0.10 0.10 0.83 0.10 0.11 0.08 0.12	0.00 0.00 0.00 0.00 0.00 0.00	730 730 731 521 2,086 2,086 2,086 1,460	313 313 0 0 0 0	76 76 432 54 219 175 250 86	3 8 1	No Tisture Action 1 Flaceholder(i), EW 1 Flaceholder(i), EW 2 Flaceholder(i), EW 2 Placeholder(i), EW 2 Placeholder(i), 2GW	The Action No. Action	52 52 52 207 52 8 0 8 26	0	0.10 0.10 0.83 0.10 0.06 0.00 0.00	0.10 0.10 0.33 0.10 0.06 0.06	1,043 1,043 521 521 2,086 2,086 2,086 2,086	0 0	108 108 432 54 117 0 133 54	0.00 0.00 0.00 0.00 0.05 0.05	-33 -33 0 0 102 175 117 32	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39	-33 0 0 114 196 131 36
77 78 79 80	101 104 105 106	More Storage Constitivy Constitivy Estates Verelable Linky Room 105 Room 105	3 8 1	TIT/12/03/-NP TIT/12/03/-NP SS/2795/ESM SS/2795/ESM CF/23/MTL CF/26/MTL CF/26/MTL TF/272/E-NP TT/2722/E-NP TT/2722/E-NP	28 15 59 59	0	0.104 0.104 0.828 0.104 0.105 0.084 0.12 0.059	0.10 0.10 0.83 0.10 0.11 0.08 0.12 0.06	0.00 0.00 0.00 0.00 0.00 0.00 0.00	730 730 521 521 2,086 2,086 2,086 1,460	313 313 0 0 0 0 0 0 0 625	76 76 432 54 219 175 250 86 86	3 8 1 1	No Trates Action To Trates Action 1 Proceedings, 100 1 Proceductor(s), 100 2 Placeholder(s), 200 2 Placeholder(s), 2000 2 Placeholder(s), 2000 2 Placeholder(s), 2000 2 Placeholder(s), 2000	The Actions To Action of the A	52 52 207 52 8 0 8 26 26	0	0.10 0.10 0.83 0.10 0.05 0.05 0.00	0.10 0.10 0.83 0.10 0.05 0.05 0.05	1,043 1,043 1,043 521 521 2,086 2,086 2,086 2,086 2,086 2,086	0 0	108 108 432 54 117 0 133 54 54 54 54	0.00 0.00 0.00 0.00 0.05 0.01 0.06	-33 -33 0 0 0 202 275 117 32	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7 17.4	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4 4	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39	33 0 0 114 196 131 36 36 71 36
77 78 79 80 81	201 204 205 206 207	More Storage Consultry Consultry Esterior Versible Lobby Room 105 Room 106 Room 107	3 8 1 1	TT/212/E-NP TT/212/E-NP S8/279/55M S8/279/55M S7/219/55M CF/25W1L CF/25W1L CF/25W1L TF/312/E-NP TF/312/E-NP TF/312/E-NP	28 15 59 59 59	0	0.104 0.105 0.128 0.105 0.105 0.105 0.105 0.105 0.084 0.12 0.059 0.059	0.10 0.10 0.81 0.81 0.10 0.11 0.08 0.12	0.00 0.00 0.00 0.00 0.00 0.00 0.00	730 730 730 521 521 521 2,085 2,085 2,086 1,460 1,460 1,460	313 313 0 0 0 0 0 0 626 626	76 76 432 54 219 175 250 86 86	3 8 1 1 1 1 2 2	No Tristine Actions No Tristine Action No Tristine No Tristin	The Actions To Action of the A	52 52 52 207 52 8 0 26 26	0	0.10 0.10 0.83 0.10 0.05 0.00 0.00 0.03	0.10 0.10 0.31 0.31 0.10 0.05 0.05 0.00 0.03	1,043 1,043 1,043 521 521 2,086 2,086 2,086 2,086 2,086 2,086	0 0 0	108 108 412 54 117 0 113 54 54 54	0.00 0.00 0.00 0.00 0.05 0.05 0.03	33 33 0 0 0 0 202 275 237 32 32 32 64	0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7 17.4 17.4	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4 4 4 8	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39 17.39	33 0 0 114 1196 131 36 36 36 71
77 78 79 80 81 82	101 104 105 106 107 108	More Services of S	3 8 1 1 1 1 2 2 1 1	TI/1748C-NP TI/774BC-NP SE/7796/TSM SE/7796/TSM CF/13W1L CF/13W1L CF/13W1L TI/3742/E-NP TI/3742/E-NP TI/3742/E-NP TI/3742/E-NP	28 25 59 59 59 59	0	0.104 0.104 0.028 0.104 0.028 0.105 0.105 0.084 0.122 0.059 0.059 0.059	0.10 0.10 0.31 0.10 0.31 0.10 0.11 0.08 0.12 0.06 0.06 0.06	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	730 730 730 521 521 2,086 2,086 2,086 1,460 1,460 1,460 1,460	311 311 311 311 311 311 311 311 311 311	76 76 412 76 412 54 219 175 220 86 86 86 86	3 8 1 1 1 1 2 2 1 1	The Trainer Actions No Trainer Actions No Trainer Actions No Trainer Actions The Trainer Actions I Be Trainer Actions I Please Action I Please	The Action of th	52 52 52 207 52 8 0 0 26 26 26 26	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.10 0.10 0.83 0.10 0.05 0.00 0.00 0.00 0.00 0.03	0.10 0.10 0.11 0.10 0.10 0.10 0.10 0.10	1,041 1,043 1,043 321 2,086 2,086 2,086 2,086 2,086 2,086 2,086 2,086	0 0 0 0 0 0 0 0 0	108 108 432 54 117 0 133 54 54 108 54 108	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	33 - 33 - 33 - 33 - 34 - 34 - 34 - 34 -	0.00 0.00 0.00 0.00 0.00 0.32 0.32 0.32	0.0 0.0 0.0 0.0 37.4 0.0 42.7 17.4 17.4 17.4	0.00 0.00 0.00 0.00 0.00 0.12 0.12 0.12	21 14 4 4 4 8	0.09 0.09 0.09 0.00 37.43 0.08 42.77 17.39 17.39 17.39	33 0 0 114 196 131 36 36 71 36
77 78 79 80 81 82 83	101 104 105 106 107 108 109	Mon.  Strong of Contract of Co	3 8 1 1 1 1 2 1 1 6 6	11/3/3/16-NP 11/3/3/16-NP 3M/3/3/16-NP 3M/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP 11/3/3/16-NP	28 15 59 59 59 59 59	0	0.104 0.104 0.128 0.104 0.128 0.105 0.084 0.12 0.099 0.099 0.099	0.100 0.101 0.102 0.103 0.103 0.101 0.101 0.102 0.105 0.105 0.006 0.006 0.006 0.006 0.006	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	730 730 731 731 331 2,085 2,085 2,085 1,460 1,460 1,460 1,460 1,460	1313 1313 1313 0 0 0 0 0 0 0 0 0 0 0 0 0	76 76 76 432 432 54 219 175 250 86 86 86 86 86 172	3 8 1 1 1 1 2 2 1 1 6 6	The State Acidity No Traver Acidity No Traver Acidity No Traver Acidity The State Acid Acidity The State Acid Acidity The State Acid Acidity The State Acid Acid Acid Acid Acid The State Acid Acid Acid Acid Acid The State Acid Acid Acid Acid Acid Acid Acid Acid	The Marketine of the Control of the	52 52 52 207 52 207 52 8 0 0 E 26 26 26 26 26	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.10 0.13 0.13 0.13 0.10 0.05 0.00 0.00 0.00 0.00 0.00 0.00	0.10 0.10 0.11 0.11 0.10 0.05 0.00 0.00	1,045 1,045 1,045 1,045 1,045 1,045 1,045 1,066	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	108 108 108 108 108 109 109 109 109 109 109 109 109 109 109	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	33 - 33 - 33 - 33 - 34 - 34 - 34 - 34 -	0.00 0.00 0.00 0.00 0.00 0.00 0.32 0.32	0.0 0.0 0.0 0.0 0.0 32.4 0.0 42.7 17.4 17.4 17.4 17.4 17.4	0.00 0.00 0.00 0.00 0.12 0.12 0.12 0.12	21 14 4 4 4 8 8	0.00 0.00 0.00 0.00 37.41 0.08 42.77 17.39 17.39 34.77 17.39	33 0 0 114 196 131 36 36 36 71 36 214
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77 78 79 80 81 82 83 84 85 86 87	100 1 104 105 106 106 107 107 108 110 111 111 111 111 111 111 111 111	Mon.	3 8 1 1 1 2 2 1 1 6 6 1 1 1 3 3 3 3	TO[2728A.RD. TO[27	28 15 59 59 59 59 59 112 112		0.104 0.104 0.104 0.104 0.105 0.008 0.109 0.009 0.009 0.009 0.009 0.118 0.009 0.009 0.134 0.009	0.150 0.151 0.152 0.152 0.151 0.151 0.151 0.151 0.155	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	780 780 780 780 781 311 321 321 321 321 321 321 321 321 32	1313 1313 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	76 76 76 76 776 776 776 776 776 776 776	3	The Chicago Addition of Ch	The Actions of the Control of the Co	22 52 52 52 52 52 52 52 52 52 52 52 52 5		0.10 0.10 0.10 0.10 0.00 0.00 0.00 0.00	0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	1,041 1,041 1,041 1,041 1,041 1,041 1,041 1,041 1,046 1,086		108 108 108 108 108 108 108 108 108 108	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	-31 -33 -33 -33 -33 -33 -33 -33 -33 -33	0.00 0.00 0.00 0.00 0.00 0.12 0.12 0.12	0.0 0.0 0.0 0.0 0.0 27.4 0.0 42.7 17.4 17.4 17.4 17.4 17.4 104.1 17.4 104.1	0.00 0.00 0.00 0.00 0.01 0.12 0.12 0.12	21 14 4 4 4 4 8 8 4 23 8 8 8 45 45	0.00 0.00 0.00 0.00 37.43 0.08 42.77 17.39 17.39 17.39 17.39 17.39 17.39 17.39 104.32	-33 0 0 114 114 156 131 36 36 36 71 36 214 77 77
77 78 79 80 81 82 83 84 85 86 87 88	100 100 100 100 100 100 100 100 100 100	Mon.	3 8 1 1 1 2 2 1 1 1 3 3 3 1 1	TO[27280.00 TO[272800.00 TO[27280.00 TO[272800.00 TO[2	28 15 59 59 59 59 59 59 59 59 112 112 59		0.104 0.104 0.104 0.106 0.106 0.106 0.106 0.106 0.107 0.009 0.009 0.009 0.118 0.009 0.009 0.136 0.009	0.150 0.151 0.152 0.152 0.151 0.151 0.151 0.151 0.155	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	780 780 780 780 780 781 311 321 321 321 321 321 321 321 321 32	233 233 233 233 233 233 233 233 233 233	76 76 76 76 776 776 776 776 776 776 776	1 1 1 2 2 1 1 6 1 1 1 1 1 1 1 1 1 1 1 1	The State Actions The State Action The S	The Actions of the Control of the Co	22 12 25 25 26 26 26 26 26 26 26 26 26 26 26 26 26		0.10 0.10 0.10 0.10 0.00 0.00 0.00 0.00	0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	1,041 1,043 1,043 1,043 1,043 1,043 1,046 1,066		108 108 108 108 108 108 108 108 108 108	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	-31 -33 -33 -33 -33 -33 -33 -33 -33 -33	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.0 0.0 0.0 0.0 0.0 0.0 127.4 0.0 127.4 127.4 127.4 127.4 127.4 104.1 127.4 104.1 104.1	0.00 0.00 0.00 0.12 0.12 0.12 0.12 0.12	21 14 4 4 4 8 8 4 23 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.00 0.00 0.00 0.00 0.00 17.41 0.08 42.77 17.39 17.39 17.39 104.32 17.39 104.32 17.39	-33
77 78 79 80 81 82 83 84 85 86 87 88 89 90	201 204 205 205 205 205 205 205 205 205 205 205	Mon.	3 8 1 1 1 2 2 1 3 3 3 1 1 2 2	10/2742A 600 10/27	28 15 59 59 59 59 59 59 59 59 112 112 59 59		0.1054 0.1054 0.1054 0.1059 0.009 0.009 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.109 0.118	0.00 0.00 0.00 0.00 0.00 0.10 0.11 0.00 0.12 0.00 0.12 0.00 0.00	0.00   0.00	780 780 781 781 781 781 781 781 788 7.088	331 332 0 0 0 0 0 0 0 0 635 635 636 636 0 0 0 0 0 0 0 0 0 0 0 0 0	76	3	Sen Filler an Addition The Filler and The Filler and The Filler The Fill	The Actions of the Control of the Co	22 22 23 24 25 26 26 26 26 26 26 26 26 26 26 26 26 26		0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	0.15	1,045 1,047 1,047 1,047 1,047 1,047 1,046 1,066		1088   1088	0.00	-33 -43 -43 -43 -43 -43 -43 -43 -43 -43	6.00 6.00 6.00 6.00 6.00 6.00 6.00 6.00	0.0 0.0 0.0 0.0 0.0 0.0 27.4 17.4 17.4 17.4 17.4 104.1 127.4 104.1 104.1 104.1 104.1 104.1	0.00 0.00 0.00 0.00 0.00 0.12 0.12 0.12	21 14 4 4 4 8 8 4 23 8 8 8 8 8 8 8 8 8	0.00 0.00 0.00 0.00 17.41 0.08 42.77 17.39 17.39 17.39 17.39 17.39 10.432 17.39 10.432 17.39 10.432 17.39	-33 0 0 1144 1996 133 36 36 36 71 36 214 77 77 420 420
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77 78 79 80 81 82 83 84 85 86 87 88 89 90 90 91	201 204 207 208 209 208 209 210 211 211 212 213 214 215 216 217 218 218 217 218	Mon.	3 8 1 1 2 2 1 1 2 2 2 2 1 1	**************************************	28 15 50 50 50 50 50 50 50 50 50 50 50 50 50		0.005 0.025 0.025 0.025 0.025 0.035 0.036 0.036 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.039	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00   0.00	780 780 780 781 321 321 321 321 321 320 320 320 320 320 320 320 320 320 320	533 533 533 533 533 6 6 6 6 6 6 6 6 6 6	75 75 75 75 75 75 75 75 75 75 75 75 75 7	1 1 2 1 1 2 2 1 1 1 2 2 2 1 1 1 1 1 1 2 2 2 2 1	The State Actions of Control C	The Actions of the Control of the Co	22 22 22 25 26 226 226 226 226 226 226 2		0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	0.00	1,043 1,043 1,043 1,043 1,043 1,045 1,046		100 100 100 100 100 100 100 100 100 100	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	431 432 432 432 433 434 434 435 437 437 437 437 437 437 437 437 437 437	6.00 6.00 6.00 6.00 6.00 6.00 6.00 6.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	6.60 6.60 6.60 6.60 6.60 6.60 6.12 6.12 6.12 6.12 6.12 6.12 6.12 6.12	21 14 4 4 8 8 23 8 8 8 8 8 8 8	0.00 0.00 0.00 0.00 0.00 17.41 0.08 42.77 17.29 17.29 17.29 14.29 17.29 19.41 17.39	-33 -35 -35 -35 -35 -35 -35 -35 -35 -35
77 78 79 80 80 81 82 83 84 85 86 87 88 89 90 91 92	101 104 107 108 109 110 110 111 111 112 113 114 115 116 117 118 118	Mon.	3	**************************************	28 15 59 59 59 59 59 59 59 59 59 59 59 59 59		0.005 0.025 0.025 0.025 0.025 0.035 0.036 0.036 0.039 0.039 0.039 0.039 0.039 0.039 0.039 0.038 0.039 0.039	0.00	600 600 600 600 600 600 600 600 600 600	700 700 700 700 700 700 700 700 700 700	101   102   103	88 102 123 123 123 123 123 123 123 123 123 12	2 2 1 1 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	The State Acidity The State Ac	The Actions of the Control of the Co	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	630 630 633 633 633 633 633 633 633 633	1000 1000 1000 1000 1000 1000 1000 100		1940 1940 1940 1940 1940 1940 1940 1940	0.00	32 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.00	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	600 600 600 600 600 600 600 600 600 600	21 14 4 4 4 8 8 23 8 8 8 8 8 8 8	0.00 0.00 0.00 0.00 0.00 17.41 0.08 42.77 17.29 17.29 14.29 17.29 19.430 19.430 19.430 19.430 19.430 19.430 19.430 19.430 19.430 19.430	-31 -31 -0 -0 -1144 -1196 -1311 -36 -36 -36 -71 -36 -214 -420 -77 -77 -420 -420 -77 -77 -71 -71 -77 -77 -77
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								(Baseline)	_		Post Hours of	_				Post-Install	(Proposed)			Proposed	Proposed		Lighting En			Interactive E			Energy S	
Action	Map Location	Location Description		Pre-Install Finture Code		Fre Watt per Fisture (Low)	Pre kW(high)	Peak kW Demand	Pre kW (Low)		(Low)	Pro kWb	Proposed # of Fixtures	Proposed Fixture Code	Proposed Action Description  Rebuild existing floure using (2) LED  Replacement Type C larges and (1) 2-large			Proposed kW (High)		Proposed Hours of Annual Operation	Яссој		kW Demand Saved	kWh Saved	kW Interactive Factor	kW Saved	kWh Interactive Factor	kWh Saved	kW Demand Saved	kWh Saved
99	122	Room 122	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,086	0	108	0.07	64	0.32	34.7	0.12	8	34.77	71
100	123	Room 123	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
101	124	Room 124	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp  Archiver	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
102	125	Room 125	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
103	126	Room 126	1	\$4/2832/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
104	127	Room 127	1	\$4/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
105	128	Room 128 Room 129	2	54/2F32/E-NP CF/13W1L	59 15	0	0.118	0.12	0.00	1,460 2,086	626	172	2	2 Placeholder(s), 26W 1 Placeholder(s), 8W	Replacement Type C lamps and (1) 2-lamp driver Replace existing PL lamp with a new	26 8	0	0.05	0.05	2,086	0	108	0.07	64 15	0.32	34.7	0.12	8	34.77	71
107	130	Hallway	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2	2 Placeholder(s), 26W	Reystone LED PL replacement bulb Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26		0.05	0.05	2,086		108	0.07	138	0.32	34.7	0.12	17	34.77	154
108	130	Hallway	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	driver  Rebuild exhiting floure using (2) LED Replacement Type C lamps and (1) 2-famp driver  Rebuild exhiting floure using (3) LED Replacement Type C lamps and (1) 4-famp driver  Rebuild exhiting floure using (3) LED Replacement Type C lamps and (1) 4-famp driver  Rebuild exhiting floure using (3) LED Replacement Type C lamps and (1) 4-famp Rebuild exhiting floure using (2) LED Replacement Type C lamps and (1) 2-famp driver  Are build exhiting floure using (2) LED Replacement Type C lamps and (1) 2-famp driver	26	0	0.03	0.03	2,086		54	0.03	69	0.32	17.4	0.12	8	17.39	77
109	131	Room 131	15	VT4/3832/E-NP	85		1.275	1.28	0.00	2,086	0	2,659	15	3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp	39	0	0.59	0.59	2,086	0	1,220	0.69	1,439	0.32	390.4	0.12	173	391.14	1,612
110	131	Room 131	1	VT4/3832/E-NP	85		0.085	0.09	0.00	2,086	0	177	1	3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp	39	0	0.04	0.04	2,086	0	81	0.05	96	0.32	26.0	0.12	12	26.08	107
111	132	Room 132	4	TF/2F32/E-NP	59	0	0.236	0.24	0.00	2,086	0	492	4	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,086		217	0.13	275	0.32	69.4	0.12	33	69.54	308
112	132	Room 132	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086		54	0.03	69	0.32	17.4	0.12	8	17.39	77
113	133	Room 133	23	VT4/3832/E-NP	85	0	1.955	1.96	0.00	2,086	0	4,078	23	3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39		0.90	0.90	2,086		1,871	1.06	2,207	0.32	598.7	0.12	265	599.74	2,471
114	133	Room 133	1	VT4/3832/E-NP	85	0	0.085	0.09	0.00	2,086	0	177	1	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp	39		0.04	0.04	2,086		81	0.05	96	0.32	26.0	0.12	12	26.08	107
115	134	Room 134	1	CF/13W1L	15	0	0.015	0.02	0.00	2,086	0	31	1	1 Placeholder(s), SW	driver  Replace existing PL lamp with a new Keystone LED PL replacement bulb Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp		0	0.01	0.01	2,086	0	17	0.01	15	0.32	5.3	0.12	2	5.35	16
116	135	Viewing Corridor	3	TF/2F32/E-NP	59	0	0.177	0.18	0.00	2,086	0	369	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,086	0	163	0.10	206	0.32	52.1	0.12	25	52.16	231
117	135	Viewing Corridor	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,086	0	54	0.03	69	0.32	17.4	0.12	8	17.39	77
118	136	Room 136		VT4/3F32/E-NP	85	0	0.68	0.68	0.00	2,086	0	1,418		3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.31	0.31	2,086	0	651	0.37	768	0.32	208.2	0.12	92	208.61	860
119	136	Room 136	1	VT4/3F32/E-NP	85	0	0.085	0.09	0.00	2,086	0	177	1	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.04	0.04	2,086	0	81	0.05	96	0.32	26.0	0.12	12	26.08	107
120	137	Room 137	5	TF/4F32/E-NP	112	0	0.56	0.56	0.00	2,086	0	1,168	5	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.26	0.26	2,086	0	542	0.30	626	0.32	173.5	0.12	75	173.83	701
121	138	Room 138	6	TF/4F32/E-NP	112	0	0.672	0.67	0.00	2,086	0	1,402	6	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.31	0.31	2,086	0	651	0.36	751	0.32	208.2	0.12	90	208.60	841
122	139	Room 139	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,086	0	108	0.07	138	0.32	34.7	0.12	17	34.77	154
123	140	Room 140	3	TF/2F32/E-NP	59	0	0.177	0.18	0.00	2,086	0	369	3	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,086	0	163	0.10	206	0.32	52.1	0.12	25	52.16	231
124	141	Room 141	4	TF/4F32/E-NP	112	0	0.448	0.45	0.00	2,086	0	934	4	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.21	0.21	2,086	0	434	0.24	501	0.32	138.8	0.12	60	139.07	561
125	141	Room 141	1	TF/4F32/E-NP	112	0	0.112	0.11	0.00	2,086	0	234	1	4 Placeholder(s), 52W	driver Rebuild existing figure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.05	0.05	2,086	0	108	0.06	125	0.32	34.7	0.12	15	34.77	140
126	142	Room 142	2	TF/4F32/E-NP	112	0	0.224	0.22	0.00	2,086	0	467	2	4 Placeholder(s), 52W	driver Rebuild existing foure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.10	0.10	2,086	0	217	0.12	250	0.32	69.4	0.12	30	69.53	280
127	143	Room 143	3	TF/2928/E-NP	52	0	0.156	0.16	0.00	2,086	0	325	3	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,086	0	163	0.08	163	0.32	52.1	0.12	20	52.14	182
128	144	Room 144	5	TF/4F32/E-NP	112	0	0.56	0.56	0.00	2,086	0	1,168	5	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.26	0.26	2,086	0	542	0.30	626	0.32	173.5	0.12	75	173.83	701
129	145	Room 145	2	54/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,086	0	108	0.07	138	0.32	34.7	0.12	17	34.77	154
130	146	Room 146	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,086	0	54	0.03	32	0.32	17.4	0.12	4	17.39	36
131	147	Room 147	10	54/2F32/E-NP	59	0	0.59	0.59	0.00	2,086	0	1,231	10	2 Placeholder(s), 26W	driver  Rebuild existing foure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing foure using (3) LED  Replacement Type C lamps and (1) 4-lamp	26	0	0.26	0.26	2,086	0	542	0.33	688	0.32	173.5	0.12	83	173.86	771
132	148	Room 148	2	VT4/3832/E-NP	85	0	0.17	0.17	0.00	2,086	0	355	2	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.08	0.08	2,086	0	163	0.09	192	0.32	52.1	0.12	23	52.15	215
133	149	Room 149	3	VT4/3832/E-NP	85	0	0.255	0.26	0.00	2,086	0	532	3	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp driver	39	0	0.12	0.12	2,086	0	244	0.14	288	0.32	78.1	0.12	35	78.23	322
134	150	Room 150	2	TF/4F32/E-NP	112	0	0.224	0.22	0.00	1,460	626	327	2	4 Placeholder(s), 52W	driver  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp driver	52	0	0.10	0.10	2,086	0	217	0.12	110	0.32	69.4	0.12	13	69.53	123
135	151	Room 151	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,086	0	108	0.07	64	0.32	34.7	0.12	8	34.77	71
136	152	Hallway	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,086	0	54	0.03	69	0.32	17.4	0.12	8	17.39	77
137	153	Mens	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,086		54	0.03	32	0.32	17.4	0.12	4	17.39	36
138	154	Womens	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086		54	0.03	32	0.32	17.4	0.12	4	17.39	36
139	155	Room 155	2	\$4/2832/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,086		108	0.07	64	0.32	34.7	0.12	8	34.77	71
140	156	Room 156	2	TF/4F32/E-NP	112	0	0.224	0.22	0.00	1,460	626	327	2	4 Placeholder(s), 52W	driver  Rebuild existing floure using (4) LED  Replacement Type C lamps and (1) 4-lamp driver  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp	52	0	0.10	0.10	2,086		217	0.12	110	0.32	69.4	0.12	13	69.53	123
141	157	Hallway	3	TF/2F32/E-NP	59	0	0.177	0.18	0.00	2,086	0	369	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,086		163	0.10	206	0.32	52.1	0.12	25	52.16	231
142	157	Hallway	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2.	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,086		108	0.07	138	0.32	34.7	0.12	17	34.77	154
143	158	Room 158	7	VT4/3832/E-NP	85	0	0.595	0.60	0.00	2,086	0	1,241	7	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp driver	39	0	0.27	0.27	2,086	0	569	0.32	672	0.32	182.2	0.12	81	182.53	752
144	158	Room 158	1	VT4/3832/E-NP	85	0	0.085	0.09	0.00	2,086	0	177	1	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.04	0.04	2,086	0	81	0.05	96	0.32	26.0	0.12	12	26.08	107
145	159	Room 159	5	VT4/3832/E-NP	85	0	0.425	0.43	0.00	2,086	0	885	5	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.20	0.20	2,086	0	407	0.23	480	0.32	130.1	0.12	58	130.38	537
					-										une.															

							Pre-Install	(Baseline)								Post-Install	Proposed)						Lighting En	ergy Savings		Interactive E			Energy S	Savings
Action	Nap Location	Location Description	# of Baseline Fixtures	Pre-Install Finture Code	Pre Watts Per Fixture	Pre Watt per Fixture (Low)	Pre kW(high)	Peak kW Demand	Pre kW (Low)	Pre Hours of Aurual Operation	Post Hours of Annual Operation (Low)		Proposed # of Fintures	Proposed Fixture Cade		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Node)	Proposed kW (High)	Proposed kW Demand	Proposed Hours of Azzzail Operation	Proposed Hours of Annual Operation (Low Mode)	Annual Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
146	160	Room 160	2	\$4/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,086	۰	108	0.07	138	0.32	34.7	0.12	17	34.77	154
147	161	Room 161	1	VT4/3F32/E-NP	85	0	0.085	0.09	0.00	2,086	0	177	1	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp	39	0	0.04	0.04	2,086		81	0.05	96	0.32	26.0	0.12	12	26.08	107
148	162	Room 162	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086		54	0.03	69	0.32	17.4	0.12	8	17.39	77
149	163	Room 163	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	2,086	0	246	2	2 Placeholder(s), 26W	driver  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,086		108	0.07	138	0.32	34.7	0.12	17	34.77	154
150	263	Room 163	1	TF/2F32/E-NP	59	0	0.059	0.06	0.00	2,086	0	123	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086		54	0.03	69	0.32	17.4	0.12	8	17.39	77
151	164	Room 164	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	Replacement Type: (Iurnya and (1) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type: (Iurnya and (1) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type: (Iurnya and (1) 2-lamp	26	0	0.05	0.05	2,086		108	0.07	64	0.32	34.7	0.12	8	34.77	71
152	165	Room 165	1	TF/2F32/E-NP	59		0.059	0.06	0.00	1,460	626	86	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,086		54	0.03	32	0.32	17.4	0.12	4	17.39	36
153	166	Room 166	2	TF/4F32/E-NP	112	0	0.224	0.22	0.00	1,460	626	327	2	4 Placeholder(s), 52W	driver  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp	52	0	0.10	0.10	2,086		217	0.12	110	0.32	69.4	0.12	13	69.53	123
154	167	Room 167	4	TF/2F32/E-NP	59	0	0.236	0.24	0.00	1,460	626	345	4	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,086		217	0.13	128	0.32	69.4	0.12	15	69.54	143
155	168	Room 168	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,086		108	0.07	64	0.32	34.7	0.12	8	34.77	71
156	169	Room 169	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,086		108	0.07	64	0.32	34.7	0.12	8	34.77	71
157	170	Room 170	2	TF/2F32/E-NP	59	0	0.118	0.12	0.00	1,460	626	172	2	2 Placeholder(s), 20W	driver  Rebuild existing fixure using (2) LED	26	0	0.05	0.05	2,086		108	0.07	64	0.32	34.7	0.12	8	34.77	71
157	0	Exterior Can Lights	5	CF/13W1L	15		0.075	0.05	0.00	2,086	0	156	5	2 Placeholder(s), 20W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Replace existing PL lamp with a new		0	0.04	0.04	2,086		83	0.07	73	0.32	26.7	0.12	9	26.73	82
159	0	County Juli		TF/2F28/E-NP	52	0	0.416	0.42	0.00	8,760	0	3,644		2 Placeholder(s), 26W	Keystone LED PL replacement bulb Rebuild existing fixure using (2) LED	26	0	0.21	0.21	8,760		1,822	0.21	1,822	0.32	583.1	0.12	219	583.27	2,041
160	0	Mens	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Replacement Type C lemps and (1) 2-lamp driver  Rebuild existing flour using (2) LED  Replacement Type C lemps and (1) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type C lemps and (2) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type C lemps and (1) 2-lamp driver  Rebuild existing floure using (2) LED  Replacement Type C lemps and (1) 2-lamp driver	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
161	0	Ladies	2	TF/2F2S/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
162		Training	4	TF/2F2B/E-LP	43	0	0.172	0.17	0.00	2,346	0	404	4	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,346		244	0.07	160	0.32	78.1	0.12	19	78.16	179
163		Hall	7	TF/2F28/E-NP	52	0	0.364	0.36	0.00	8,760	0	3,189	7	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.18	0.18	8,760		1,594	0.18	1,594	0.32	510.2	0.12	191	510.36	1,786
164	0	Hall	2	LED/30	30	0	0.06	0.06	0.00	8,760	0	526	2	No Fixture Action	driver No Action Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	30	0	0.06	0.06	8,760	0	526	0.00	0	0.32	168.2	0.12	0	168.19	0
165	0	Office	2	TF/2F28/E-LP	43	0	0.086	0.09	0.00	2,346	0	202	2	2 Placeholder(s), 26W		26	0	0.05	0.05	2,346	0	122	0.03	80	0.32	39.0	0.12	10	39.08	89
166	0	Office	4	TF/2F2B/E-LP	43	0	0.172	0.17	0.00	2,346	0	404	4	2 Placeholder(s), 26W	Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.10	0.10	2,346	0	244	0.07	160	0.32	78.1	0.12	19	78.16	179
167	0	Evidence	2	TF/2F28/E-LP	43	0	0.086	0.09	0.00	2,346	0	202	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	0	122	0.03	80	0.32	39.0	0.12	10	39.08	89
168	0	Evidence 2	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing flour using (2) LED  Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing flour using (2) LED  Replacement Type C lamps and (1) 2-lamp driver  No Action  No Action	26	0	0.05	0.05	2,346	0	122	0.05	122	0.32	39.0	0.12	15	39.10	137
169 170 171	0	Female Locker Male Locker Male Locker 2	4 5	LED/30 LED/30 LED/30	30 30 30	0	0.12 0.12 0.15	0.12 0.12 0.15	0.00	2,346 2,346 2,346	0	282 282 352	4 5	No Fixture Action No Fixture Action No Fixture Action	No Action No Action	30 30	0 0	0.12 0.12 0.15	0.12 0.12 0.15	2,346 2,346 2,346	0	282 282 352	0.00 0.00 0.00	0	0.32 0.32 0.32	90.1 90.1 112.6	0.12 0.12 0.12	0	90.10 90.10 112.63	0 0
172	0	Male Locker 2 Shower	2	CIR/32W	40	0	0.08	0.08	0.00	2,346	0	188	2	Drum, 6W	Retrokit existing fixture with a new Remphos LED board kit. 6w.  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	6	0	0.01	0.01	2,346	0	28	0.07	160	0.32	9.0	0.12	19	9.08	179
173	0	Janitor	1	54/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	۰	61	0.03	61	0.32		0.12	7	19.55	68
174	0														driver Rebuild existing fixure using (2) LED											19.5			-	
175		Ladies	2	54/2928/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Retroict existing fixture with a new Remotos.	26	0	0.05	0.05	2,346	۰	122	0.05	122	0.32	39.0	0.12	15	39.10	137
	0	Ladles	2	CIR/32W	40	0	0.08	0.08	0.00	2,346	0	188	2	Drum, 6W	driver Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Retroist existing flatere with a new Remphos LED board kit. 6w. Rebuild existing frater using (2) LED	6	0	0.01	0.01	2,346	۰	28	0.07	160	0.32	39.0 9.0	0.12	19	9.08	179
	0	Ladies Stains	2	CIR/32W 54/2F28/E-NP	40	0	0.08	0.08	0.00	2,346 8,760	0	185	2	Drum, 6W 2 Placeholder(s), 26W	driver  Rebuild enisting four existing (2) LED  Replacement Type C larrys and (1) 2-larry driver  Retrolit existing fauther with a new Retrolit  LED board Nt. Sw.  Rebuild enisting four existing (2) LED  Replacement Type C larrys and (1) 2-larry driver  driver	6 26	0	0.01	0.01	2,346 8,760	0	28 456	0.07	160 456	0.32	39.0 9.0 145.8	0.12 0.12 0.12	19	9.08	179 510
177	0	Ladles	2	CIR/32W	40	0	0.08	0.08	0.00	2,346	0	188	2	Drum, 6W	driver  Rebuild existing finance using [2] LED Replacement Type C. Isramy and [3] 2.2 farry driver  Retroist existing fishure with a new Retroist  Extra based bit. For  Rebuild existing finance using [2] LED driver  Replacement Type C. Isramy and [3] 2.2 farry driver  Rebuild existing finance using [2] LED Replacement Type C. Isramy and [3] 2.4 farry driver  driver	6	0	0.01	0.01	2,346	۰	28	0.07	160	0.32	39.0 9.0	0.12	19	9.08	179 510 1,020 0
177	0	Ladies Stairs Visitation Walting	2	CIR/32W 54/2F28/E-NP	40	0	0.08	0.08 0.10 0.21	0.00	2,346 8,760 8,760	0	185	2	Drum, 6W 2 Placeholder(s), 26W 2 Placeholder(s), 26W	device the black desiring floors using [5] LED Replacement Type Currys and [1] LED Replacement Type Currys and [1] Jerry Metolic using floors with a row Rempton Health of the State of the	6 26	0	0.01	0.01	2,346 8,760 8,760	0	28 456	0.07	160 456	0.32 0.32 0.32	39.0 9.0 145.8 291.5	0.12 0.12 0.12 0.12	19	9.08 145.82 291.64	179 510 1,020
177	0 0	Ladies Stains Visitation Waiting Visitation Waiting	2 2 4	C1R/32W S4/2F2B/E-NP S4/2F2B/E-NP LED/30	40 52 52 52	0	0.08 0.104 0.208	0.08 0.10 0.21	0.00	2,345 8,760 8,760 8,760	0 0	188 911 1,822 263	2 2 4	Drum, 6W 2 Placeholder(s), 26W 2 Placeholder(s), 26W No Fisture Action	denote the content of	6 26 26 30	0 0	0.01	0.01	2,346 8,760 8,760 8,760	0	28 456 911 263	0.07 0.05 0.10	160 436 921	0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1	0.12 0.12 0.12 0.12 0.12	19 55 109	9.08 145.82 291.64 84.10	179 510 1,020 0
177 178 179	0 0 0	Ledies  Stain  Violation Watting  Violation Watting  Metal Detector  Storage  Violatins	2 4 1 1	CIR/32W 54/2F28/E-NP 54/2F28/E-NP LED/30 VN4/3F28/E-NP	40 52 52 52 30 76	0 0 0	0.08 0.104 0.208 0.03 0.076 0.076	0.08 0.10 0.21 0.03 0.08	0.00	2,346 8,760 8,760 8,760 8,760 8,760 2,346	0 0 0	188 911 1,822 263 666 178	2 2 4 1 1	Drum, 6W  2 Placeholder(s), 26W  2 Placeholder(s), 26W  8 Tirthurk-Action  3 Placeholder(s), 39W  3 Placeholder(s), 39W  2 Placeholder(s), 26W	driver  Related entities from unite [2] 12D  Replacement for the driver of the Color of the Colo	6 26 26 30	0	0.01 0.05 0.10 0.03 0.04	0.01 0.05 0.10 0.03 0.04	2,346 8,760 8,760 8,760 8,760 2,346	0 0	28 456 911 263 342 92	0.07 0.05 0.10 0.00 0.04 0.04	160 456 931 0	0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3	0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39	9.08 145.82 291.64 84.10 109.36 29.32	179 510 1,020 0 363 97
177 178 179	0 0 0 0 0 0 0	Ledies Stain Visitation Walting Visitation Walting Metal Detector Storage	2 2 4 1 1 1 1	C1R/32W  54/2F28/E-NP  54/2F28/E-NP  LED/30  VN4/3F28/E-NP  54/3F28/E-NP	40 52 52 30 76	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.08 0.104 0.108 0.03 0.076	0.08 0.10 0.21 0.03 0.08	0.00	2,346 8,760 8,760 8,760 8,760 2,346	0 0 0 0	188 911 1,822 263 666	2 2 4 1 1 1 1	Churs, 6W 2 Placeholden(s), 26W 2 Placeholden(s), 26W 3 Placeholden(s), 26W 3 Placeholden(s), 26W 3 Placeholden(s), 39W	Comment of the Commen	6 26 26 30 39	0	0.01 0.05 0.10 0.03 0.04	0.01 0.05 0.10 0.03 0.04	2,346 8,760 8,760 8,760 8,760 2,346	0 0 0	28 456 911 263 342	0.07 0.05 0.10 0.00 0.04	160 456 911 0 324	0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3	0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39	9.08 145.82 291.64 84.10 109.36 29.32	179 510 1,020 0 363 97
177 178 179 180 181	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ladies States Violated on Walting Violated on Walting Violated on Walting Metal Detector Storage Violated Walting Violated Walting	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CER/32W  5A/2F2R/E-NP  5A/2F2R/E-NP  LED/30  VNA/3F2R/E-NP  5A/3F2R/E-NP  VNA/3F2R/E-NP  LED/30	40 52 52 30 76 76 52	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.06 0.104 0.108 0.03 0.076 0.076	0.08 0.10 0.21 0.03 0.08 0.08	0.00	2,346 8,760 8,760 8,760 8,760 2,346 8,760 8,760	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188 911 1,822 263 666 178 6,833 1,051	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Drum, 6W  2 Placeholder(s), 26W  2 Placeholder(s), 26W  89 Tributer Action  3 Placeholder(s), 39W  3 Placeholder(s), 39W  2 Placeholder(s), 30W  No Tributer Action	And the second of the second o	6 26 26 30 39 26 30	0	0.01 0.05 0.10 0.03 0.04 0.04	0.01 0.05 0.10 0.03 0.04 0.04	2,346 8,760 8,760 8,760 8,760 2,346 8,760	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	28 456 911 263 342 92 3,416	0.07 0.05 0.10 0.00 0.04 0.04	150 436 911 0 324 87 3,416	0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 10 410	9.08 145.82 291.64 84.10 109.36 29.32 1093.64 336.38	179 510 1,020 0 363 97 3,826
177 178 179 180 181 182 183 184	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ladies  States  Valuation Warding  Valuation Warding  Walleton Warding  Metal Defeator  Storage  Ved Hald  Ved Hald  De Hald  De Park  Final	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIR/32W  5A/372R/t-NP  5A/372R/t-NP  LEC/320  VH4/372R/t-NP  SA/372R/t-NP  LEC/320  VH4/372R/t-NP  LEC/320  SA/372R/t-NP  LEC/320  SA/372R/t-NP  LEC/320  TF/372R/t-NP	40 52 52 30 76 76 52 30	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.08 0.104 0.106 0.03 0.076 0.076 0.178 0.12 0.26 0.06 0.06 0.06 0.06 0.06 0.06 0.0	0.08 0.10 0.21 0.03 0.08 0.78 0.12 0.26 0.08 0.36	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2,346 8,760 8,760 8,760 8,760 1,760 2,346 8,760 2,346 2,346 2,346 8,760	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188 911 1,822 263 666 178 6,833 1,051 610 188	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 5 4 4 5 5	Durin, SW  2 Pleach-sider(s), 25W  2 Pleach-sider(s), 25W  3 Pleach-sider(s), 25W  No Politice Action  3 Pleach-sider(s), 25W  3 Pleach-sider(s), 25W  2 Pleach-sider(s), 25W  1 This child of the Company of the Compan	And the second process of the second process	5 26 26 30 29 26 30 26		0.01 0.05 0.10 0.03 0.04 0.04 0.19 0.12 0.13	0.01 0.05 0.10 0.03 0.04 0.04 0.39 0.12 0.13	2,346 8,760 8,760 8,760 8,760 2,346 8,760 2,346 2,346 8,760	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	28 456 911 263 342 92 3,416 1,051 305 75	0.07 0.05 0.10 0.00 0.04 0.04 0.39 0.00 0.13	150 456 911 0 124 87 3,416 0 325 113	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 10 410 0	9.08 145.82 291.64 84.10 109.36 29.32 1090.64 336.38 97.74 24.08 510.36	179 510 1,020 0 363 97 3,826 0 342 126 1,786
177 178 179 180 181 182 183	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Leifes Stain Violation Walting Violation Walting Violation Walting Metal Detector Storage Vost Hall Violation Storage Freak	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C38/32W  5A/3728/t-NP  5A/3728/t-NP  14E0/30  VN4/3728/t-NP  14E0/30  VN4/3728/t-NP  14E0/30  5A/3728/t-NP  14E0/30  C7/38W41	40 52 52 52 30 76 76 52 30 52		0.08 0.104 0.108 0.03 0.076 0.076 0.78 0.12 0.26	0.08 0.10 0.21 0.03 0.08 0.08 0.78 0.12 0.26	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2,346 8,760 8,760 8,760 8,760 8,760 2,346 8,760 2,346 2,346		188 911 1,822 263 666 178 6,833 1,051 610	2 2 4 4 1 1 1 1 1 1 1 1 1 5 4 4 5 5 4 4	Down, GW  2 Placeholder(s), 2009  2 Placeholder(s), 2009  2 Placeholder(s), 2009  3 Placeholder(s), 2009  3 Placeholder(s), 2009  3 Placeholder(s), 2009  2 Placeholder(s), 2009  3 Placeholder(s), 2009  1 Placeholder(s), 2009	And the second process of the second process	6 26 26 30 39 39 26 30 26 8		0.05 0.10 0.03 0.04 0.04 0.39 0.12 0.13	0.01 0.05 0.10 0.03 0.04 0.04 0.39 0.12 0.13	2,346 8,760 8,760 8,760 8,760 2,346 8,760 2,346 2,346		28 456 911 263 342 92 3,416 1,051 305	0.07 0.05 0.10 0.04 0.04 0.04 0.09 0.00	160 456 911 0 324 87 2,416 0 305	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 10 410 0 37	9.08 145.82 291.64 84.10 109.36 29.32 1093.64 336.38 97.74 24.08	179 510 1,020 0 363 97 3,826 0 342
177 178 179 180 181 182 183 184 185	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Larles State Violation Walling Violation Walling Violation Walling Violation Walling Violation Walling Maid Challes Maid Challes State Violation Death Death Maid Total Death Maid Note Note Note Note Note Note Note Note	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	C18/32W  5A/2728/E-NP  5A/2728/E-NP  VN44/3728/E-NP  VN44/3728/E-NP  VN44/3728/E-NP  VN4/3728/E-NP  C1/20/20  5A/3728/E-NP  LEC/30  5A/3728/E-NP  LEC/30  LEC/30  LEC/30  LEC/30  LEC/30  LEC/30  LEC/30  LEC/30	40 52 52 52 30 76 76 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 30 52 52 52 52 52 52 52 52 52 52 52 52 52		0.08 0.104 0.108 0.03 0.03 0.076 0.076 0.12 0.12 0.16 0.08	0.08 0.10 0.21 0.03 0.08 0.08 0.08 0.78 0.12 0.26 0.08	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2,346 8,760 8,760 8,760 8,760 8,760 2,346 8,760 2,346 8,760 2,346 8,760	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188 911 1,822 263 666 178 6,833 1,051 610 188 3,189 526 732	2 2 4 1 1 1 1 1 1 1 5 4 4 7 7 2 2	Durin, 6W  2 Placeholder(s), 25W  2 Placeholder(s), 25W  50 Florier Artist  3 Placeholder(s), 25W  51 Florier Artist  1 Placeholder(s), 25W  7 Placeholder(s), 25W  7 Placeholder(s), 25W  1 Placeholder(s), 25W  2 Placeholder(s), 25W  1 Placeholder(s), 25W  No florier Artist  1 Placeholder(s), 25W  No florier Artist	And the second process of the second process	6 26 26 30 26 30 26 30 26 30 26 30 26 30 26 30 26 30 26 30 26 30 26 30 30 30 30 30 30 30 30 30 30 30 30 30		0.01 0.05 0.10 0.03 0.04 0.04 0.12 0.12 0.13	0.01 0.05 0.10 0.03 0.04 0.04 0.39 0.12 0.13 0.03 0.01 0.03	2,346 8,760 8,760 8,760 8,760 2,346 8,760 2,346 8,760 2,346 8,760		28 456 911 263 342 92 3,416 1,051 305 75 1,594	0.07 0.05 0.10 0.10 0.00 0.04 0.04 0.19 0.00 0.11	160 436 911 0 324 87 3,415 0 325 113 1,594	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 100 0 0 39 110 410 0 37 14 191 0 444	9.08 145.82 291.64 84.10 109.36 29.32 1093.64 336.38 97.74 24.08 510.36 168.19	179 510 1,020 0 363 97 3,826 0 342 126 1,786
177 128 129 180 180 181 182 183 184 185 186 186	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Larlies  State  Volume Walling  Volume Walling  Mand Charles  State  State  Mand Charles  State  Sta	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22W 54/272R R0 55/272R R0 55/272R R0 55/272R R0 55/272R R0 55/272R R0 57/272R R0 57/272R R0 57/272R R0 57/272R R0 57/272R R0	40 52 52 50 76 76 52 52 52 52 52 52 52 52		0.08 0.104 0.208 0.208 0.276 0.276 0.12 0.26 0.384 0.06 0.312 0.112	0.08 0.10 0.21 0.05 0.08 0.08 0.08 0.78 0.12 0.26 0.30 0.31	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,346 8,700 8,700 8,700 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346		188 911 1,822 263 606 178 6,833 1,051 610 188 3,189 526 732	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Durin, GW  2 Placeholder(d), 25W  2 Placeholder(d), 25W  50 Flacet Adoption  3 Placeholder(d), 25W  3 Placeholder(d), 25W  2 Placeholder(d), 25W	And the second process of the second process	6 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.05 0.04 0.04 0.04 0.12 0.13 0.03 0.12 0.15 0.05 0.16 0.06	0.01 0.05 0.10 0.03 0.10 0.04 0.04 0.39 0.12 0.11 0.03 0.18 0.06	2,346 8,760 8,760 8,760 8,760 2,346 8,760 2,346 2,346 8,760 2,346 8,760 2,346		28 456 911 263 342 92 1,416 1,051 305 73 1,594 526 366 183	0.07 0.05 0.10 0.00 0.04 0.04 0.04 0.05 0.10 0.10 0.10 0.10 0.11 0.05 0.11 0.05	160 456 911 224 E7 3,416 0 355 113 1,594 0 366 110	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2 168.2 117.1 58.6	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 110 410 0 37 144 191 0 444 14	9.08 145.82 291.64 94.10 109.36 29.32 1092.64 336.38 97.74 24.08 510.36 156.19 117.29 58.62	179 510 1,020 0 363 97 3,826 0 342 126 1,786 0 410
177 178 179 180 181 182 183 184 185 186 187	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Letter  Town  Volution Working  Volution Working  Volution Working  Moral Schoolse  Storage  Volution  Storage  Volution  Final  Final  Final  Final  Collectionsp  Collectionsp  Swell  Swell	2 2 4 4 5 5 4 7 7 2 2 6 6 3 4 4	CR/22W  54/272R NO  54/272R NO  54/272R NO  54/272R NO  54/272R NO  55/272R NO  55/272R NO  55/272R NO  55/272R NO  57/272R NO	40 52 52 30 76 52 30 52 30 52 30 52 43		0.08 0.104 0.205 0.205 0.276 0.276 0.12 0.26 0.364 0.065 0.312 0.129 0.305 0.312	0.08 0.10 0.21 0.03 0.08 0.08 0.08 0.12 0.26 0.08 0.36 0.31 0.13	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2,346 8,700 8,700 8,700 8,700 8,700 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346 8,700 2,346	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188 911 1,822 263 606 178 6,833 1,051 610 188 3,189 526 732 303	2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwm, RW  2 Pleasheder(s), 2009  2 Pleasheder(s), 2009  3 Pleasheder(s), 2009  3 Pleasheder(s), 2009  3 Pleasheder(s), 2009  2 Pleasheder(s), 2009  2 Pleasheder(s), 2009  1 Pleasheder(s), 2009  1 Pleasheder(s), 2009  2 Pleasheder(s), 2009	And the second process of the second process	6 26 26 30 30 26 8 75 26 26 26 26 26		0.01 0.05 0.10 0.03 0.04 0.04 0.05 0.12 0.13 0.13 0.03 0.18 0.06 0.16	0.01 0.05 0.10 0.03 0.04 0.04 0.12 0.13 0.13 0.13 0.13 0.15 0.15 0.16 0.16	2,346 8,740 8,740 8,740 8,740 8,740 8,740 8,740 2,346 8,740 2,346 8,740 2,346 8,740 2,346 2,346 2,346 2,346		28 456 511 553 542 553 542 553 553 553 553 553 553 553 553 553 55	0.07 0.05 0.10 0.00 0.04 0.04 0.05 0.00 0.13 0.05 0.18 0.05 0.16 0.16	1400 416 911 0 324 87 3,415 0 305 113 1,194 0 366 120	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 64.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2 166.2 117.1 58.6	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 100 0 39 10 410 0 37 14 191 0 44 14 29	9.08 145.82 291.64 84.10 109.36 1093.64 136.30 136.30 510.36 136.19 117.29 58.62 78.19	179 510 1,020 0 363 97 3,826 0 342 126 1,786 0 410 134 273
1277 179 180 180 181 182 183 184 185 186 187 188 189		Letter  Total  Volume	2 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22/04  M/27/21/R R0P  M/27/21/R R0P  M/27/21/R R0P  M/27/21/R R0P  M/47/21/R R0P	40 52 52 52 50 50 52 52 52 52 52 52 52 52 52 52 52 52 52		0.08 0.104 0.205 0	0.08 0.10 0.21 0.23 0.08 0.08 0.08 0.12 0.26 0.10 0.36 0.36 0.31 0.31	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,346 8,700 8,700 8,700 8,700 8,700 8,700 1,346 8,700 8,700 8,700 1,346 1,700 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346 2,346		188 911 1,822 263 666 178 6,833 1,051 610 188 3,189 526 732 303 488	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwm, RW  2 Place Indicate (), 2009  2 Place Indicate (), 2009  3 Place Indicate (), 2009  2 Place Indicate (), 2009  3 Place Indicate (), 2009  1 Place Indicate (), 2009  1 Place Indicate (), 2009  2 Place Indicate (), 2009	And the second process of the second process	6 26 26 26 26 26 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.01 0.04 0.04 0.04 0.10 0.11 0.03 0.11 0.03 0.18 0.06 0.10 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.03 0.04 0.04 0.39 0.12 0.13 0.03 0.16 0.06 0.16 0.06 0.10	2,346 8,740 8,740 8,740 8,740 8,740 8,740 8,740 8,740 8,740 2,346 8,740 2,346 8,740 2,346 2,346 2,346 2,346 2,346 2,346		28 456 456 911 911 263 342 92 92 1,416 1,651 205 73 1,594 528 566 183 244 244	0.07 0.05 0.10 0.00 0.04 0.04 0.09 0.05 0.11 0.05 0.11 0.05 0.11 0.05 0.11 0.05 0.11 0.05	160 416 911 0 1 124 87 87 1 135 1 135 1 135 1 135 1 120 1 120 1 144 1 145 1 14	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 64.1 109.3 29.3 1,099.2 236.4 97.6 24.0 510.2 166.2 117.1 58.6 78.1	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 10 410 0 37 14 191 0 441 29	9.08 145.82 291.64 84.10 109.36 28.32 1093.64 1384.39 1093.64 28.32 24.08 510.36 1464.19 117.29 58.62 78.19	179 510 1,020 0 363 97 3,826 0 126 126 1,786 0 410 134 273 273
177 178 179 180 181 182 183 184 185 186 187 188 189		Leifen  Stein  Volledin Welling  Volledin Welling  Volledin Welling  Stein Stein  Stein Stein  Stein Stein  Stein Stein  Stein Stein  S	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22/W  M/27/20/R R0P	40 52 52 52 50 76 76 52 30 52 20 52 30 52 43 52 43		0.08 0.104 0.208	0.08 0.10 0.21 0.03 0.08 0.08 0.08 0.12 0.25 0.08 0.36 0.36 0.36 0.36 0.31 0.31 0.31	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,346 8,700 8,700 8,700 8,700 8,700 8,700 2,346 8,700 2,346 8,700 2,346		188 911 1,822 263 666 178 6,813 1,091 610 188 3,189 526 532 468 468	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwin, 600  2 Pleashedor(s), 2009  2 Pleashedor(s), 2009  3 Pleashedor(s), 2009  3 Pleashedor(s), 2009  3 Pleashedor(s), 2009  2 Pleashedor(s), 2009  3 Pleashedor(s), 2009  2 Pleashedor(s), 2009	And the second process of the second process	6 26 26 26 26 26 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.01 0.04 0.04 0.04 0.13 0.13 0.03 0.14 0.05 0.15 0.05 0.16 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.03 0.04 0.04 0.39 0.11 0.11 0.01 0.18 0.06 0.16 0.08 0.10 0.10	2,346 8,760 8,760 8,760 8,760 8,760 2,346 8,760 2,346 2,346 2,346 2,346 2,346 2,346		28 456 911 283 283 284 285 285 285 285 285 285 285 285 285 285	0.07 0.05 0.10 0.00 0.04 0.04 0.09 0.11 0.05 0.11 0.05 0.11 0.05 0.11 0.05 0.10 0.10	160 456 511 0 0 124 511 511 511 511 511 511 511 511 511 51	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 64.1 109.3 29.3 1,099.2 386.4 24.0 510.2 168.2 117.1 58.6 78.1	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 39 10 410 37 14 191 0 441 29 29	9.08 145.82 291.64 84.19 1993.6 29.32 1993.6 197.74 24.08 156.19 117.29 55.62 78.19 78.19	179 510 1,020 0 363 97 3,826 0 1,26 1,26 0 1134 273 273
1277 129 129 120 130 131 132 133 134 135 136 137 138 139 139 139 139 139 139 139 139 139 139		Letter  State  Volution Walling  Volution Walling  Most of Minister  Storage  Vest real  Volution  Storage  Vest real  Storage  Death  Storage  Death  Storage  Chica, Storage  Storage  Chica, Storage  Storage  Chica, Storage  Storage  Chica, Storage  Chica, Storage  Chica  C	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22/00 54/22/00 NP 54/22/00	40 52 52 52 52 52 52 52 52 52 52 52 52 52		0.08 0.104 0.208	0.08 0.10 0.21 0.03 0.08 0.08 0.08 0.08 0.18 0.18 0.26 0.36 0.00 0.31 0.11 0.21 0.17	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,346 8,700 8,700 8,700 8,700 8,700 1,346 8,700 2,346 8,700 2,346		188 911 1,822 263 666 178 6,833 1,091 610 188 7,109 526 732 303 488 604	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Davin, RIV  2 Placeholder(s), 2009  2 Placeholder(s), 2009  3 Placeholder(s), 2009  2 Placeholder(s), 2009	And the second process of the second process	6 26 26 26 26 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.05 0.10 0.04 0.04 0.12 0.13 0.13 0.15 0.16 0.06 0.10 0.10 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.05 0.10 0.04 0.04 0.39 0.11 0.13 0.13 0.15 0.05 0.16 0.10 0.10 0.10 0.10	2,346 8,760 8,760 8,760 8,760 8,760 2,346 8,760 2,346 8,760 2,346 2,346 2,346 2,346 2,346 2,346 2,346		28 456 911 921 283 284 284 284 284 284 284 284 284 284 284	0.07 0.05 0.10 0.00 0.04 0.04 0.09 0.03 0.11 0.05 0.13 0.05 0.10 0.00 0.10 0.07	160 456 511 0 0 124 125 125 125 125 125 125 125 125 125 125	0.32 0.32 0.32 0.32 0.32 0.32 0.32 0.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2 166.2 117.1 58.6 78.1 78.1	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 100 0 0 100 110 110 110 110 110 110	9.08 145.82 291.64 84.19 199.36 199.36 199.36 197.74 24.00 111.729 55.62 78.19 78.19 78.10	179 510 1,020 0 0 363 97 3,826 0 342 126 0 410 134 273 273 179
177 178 179 180 180 181 181 183 184 185 189 189 189 189 190 190 191 192 192		Letter  State  Volution Willing  Worker Wilder  Most Franch  Von trad  Von trad  Strat  Strat	2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CRAZENS 54/372/00 NO 54/372/00	40 52 52 52 52 52 52 52 52 52 52 52 52 52		0.08 0.104 0.106 0.001 0.076 0.076 0.176 0.19 0.106 0.117 0.106 0.117 0.106 0.117 0.106 0.117 0.106	0.08 0.10 0.21 0.21 0.02 0.08 0.08 0.08 0.12 0.26 0.36 0.31 0.33 0.31 0.31 0.31 0.31	0.000 0.000	2,366 8,700 8,700 8,700 8,700 8,700 8,700 8,700 1,366 8,700 2,366 8,700 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366 2,366		188 911 1,822 261 666 178 6,833 1,091 610 188 3,189 526 488 404 404	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwin, RW 2 Placeholder(s), 2009 2 Placeholder(s), 2009 3 Placeholder(s), 2009	And the second process of the second process	6 25 26 26 26 26 26 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.05 0.10 0.04 0.04 0.13 0.13 0.13 0.13 0.15 0.16 0.06 0.10 0.10 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.05 0.10 0.04 0.04 0.39 0.11 0.03 0.18 0.06 0.10 0.10 0.10 0.10 0.10 0.10	2,346 8,760 8,760 8,760 8,760 8,760 8,760 8,760 8,760 1,740 2,346 1,740 2,346		28 456 511 522 524 524 524 524 524 524 522 53 556 556 556 556 556 556 556 556 556	0.07 0.05 0.10 0.00 0.00 0.04 0.09 0.00 0.11 0.05 0.15 0.10 0.10 0.10 0.10	140 456 911 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6.32 6.32 6.32 6.32 6.32 6.32 6.32 6.32	39.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 97.6 24.0 510.2 117.1 58.6 78.1 78.1 78.1	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12	19 55 109 0 100 110 110 110 110 110 110 110 1	9.00 145.82 201.64 84.15 1093.64 1093.64 1093.64 135.03 1072.64 24.00 151.03 166.13 117.29 117.29 117.29 78.10 78.10 78.10 78.10	179 510 1,020 6 9 363 97 3,826 6 342 126 0 410 134 273 273 179 179 199
1277 1292 1279 1800 1801 1801 1803 1803 1804 1805 1809 1809 1809 1809 1809 1809 1809 1809		Letter  State  Volution Wilding  Volution Wilding  Volution Wilding  Volution  Storage  Vol trial  Storage  Stora  Stora  Storage  Stora  Storage	2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22/04 54/27/28/4 NP	40 52 52 52 50 76 78 52 50 52 50 52 52 52 52 52 52 52 53 52 53 52 53 53 52 53 53 53 54 53 54 55 55 56 57 58 58 58 58 58 58 58 58 58 58 58 58 58		0.08 0.104 0.208 0.076 0.076 0.076 0.17 0.12 0.26 0.08 0.104 0.105 0.107 0.117 0.108 0.108	0.08 0.10 0.21 0.21 0.03 0.08 0.08 0.08 0.12 0.26 0.30 0.31 0.33 0.33 0.33 0.33 0.33 0.33	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,366 8,700 8,700 8,700 8,700 8,700 1,366 8,700 2,366 8,700 2,366		188 911 1.82 280 1.60 666 1.72 1.60 1.72 1.60 1.72 1.60 1.72 1.60 1.72 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.60	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwin, 600  2 Placeholder (J. 2000)  2 Placeholder (J. 2000)  3 Placeholder (J. 2000)  2 Placeholder (J. 2000)  3 Placeholder (J. 2000)	And the second of the second o	6 26 26 26 26 26 26 26 26 26 26 26 26 26		0.01 0.05 0.10 0.05 0.04 0.04 0.04 0.05 0.12 0.13 0.03 0.10 0.10 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.10 0.10 0.10 0.02 0.04 0.11 0.13 0.13 0.13 0.15 0.16 0.16 0.16 0.16 0.10 0.10 0.10 0.10	2,346 8,760 8,760 8,760 8,760 8,760 8,760 8,760 8,760 8,760 1,740 2,346 1,740 1,740 2,346		28 456 511 523 542 544 524 524 526 556 556 556 556 556 556 556 556 556	0.07 0.05 0.10 0.00 0.00 0.04 0.09 0.00 0.13 0.05 0.15 0.10 0.10 0.10 0.10 0.10 0.10	1460 456 911 9 124 87 3,416 0 305 113 1,194 0 120 244 120 244 120 120 120 120 120 120 120 120 120 120	6.32 6.32 6.32 6.32 6.32 6.32 6.32 6.32	29.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 24.0 510.2 146.2 117.1 58.6 78.1 78.1 78.1	6.12 6.12 6.12 6.12 6.12 6.12 6.12 6.12	19 100 100 100 100 100 100 100 100 100 1	9.00 145.42 201.64 84.10 105.56 29.32 1093.64 336.30 107.24 24.00 131.36 147.20 137.20 137.20 147.20 77.10 78.10	179 510 1,020 0 363 97 3,826 0 1,266 126 127 127 129 129 129 129 129 129 129 129 129 129
177 178 179 179 180 180 180 180 180 180 180 180 180 180		Letter  State  Volution Willing  Worker William  Moral Reductor  Storage  Vol trail  Street  S	2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CRAZZEN  54/372/04/80 PO  55/372/04/80 P	60 13 13 13 15 15 15 15 15 15 15 15 15 15 15 15 15		0.08 0.104 0.208 0.076 0.076 0.076 0.176 0.12 0.26 0.08 0.104 0.109 0.109 0.117 0.108	0.08 0.10 0.21 0.01 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	2,346 8,700 8,700 8,700 8,700 8,700 1,346 8,700 2,346 8,700 2,346		188 511 1,822 263 666 666 666 660 172 6,833 1,895 1,895 1,896 1,89	2 2 2 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwin, RW 2 Placeholder(s), 2009 2 Placeholder(s), 2009 3 Placeholder(s), 2009	An experiment of the control of the	1 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		0.01 0.05 0.10 0.05 0.04 0.04 0.04 0.05 0.03 0.12 0.13 0.03 0.10 0.10 0.10 0.10 0.10 0.10	0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01	2,346 8,750 8,760 8,760 8,760 8,760 1,760		28 456 511 521 546 556 512 522 546 556 512 522 546 556 512 546 556 512 546 556 512 512 512 512 512 512 512 512 512 512	0.07 0.05 0.10 0.04 0.04 0.04 0.05 0.13 0.05 0.10 0.05 0.10 0.07 0.10 0.10 0.10 0.10 0.10 0.10	140 456 911 122 122 122 122 122 122 122 122 122	6.32 6.32 6.32 6.32 6.32 6.32 6.32 6.32	29.0 9.0 145.8 291.5 84.1 109.3 20.3 1,093.2 336.4 24.0 510.2 146.3 117.1 58.6 78.1 78.1 78.1 78.1 39.0	632 632 632 632 632 632 632 632 632 632	19 100 100 100 100 100 100 100 100 100 1	9.00 145.82 201.64 84.10 1003.64 1003.64 135.00 1003.64 135.00 1003.64 135.00 137.24 24.00 131.20 131.20 131.20 131.20 78.10	179 510 1,020 6 363 97 3,826 0 1,26 126 1,786 0 134 410 134 273 179 179 189 510
1277 1292 1279 1800 1801 1801 1803 1803 1804 1805 1809 1809 1809 1809 1809 1809 1809 1809		Letter  State  Volution Wilding  Volution Wilding  Volution Wilding  Volution  Storage  Vol trial  Storage  Stora  Stora  Storage  Stora  Storage	2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CR/22/04 54/27/28/4 NP	40 52 52 52 50 76 78 52 50 52 50 52 52 52 52 52 52 52 53 52 53 52 53 53 52 53 53 53 54 53 54 55 55 56 57 58 58 58 58 58 58 58 58 58 58 58 58 58		0.08 0.104 0.208 0.076 0.076 0.076 0.17 0.12 0.26 0.08 0.104 0.105 0.107 0.117 0.108 0.108	0.08 0.10 0.21 0.21 0.03 0.08 0.08 0.08 0.12 0.26 0.30 0.31 0.33 0.33 0.33 0.33 0.33 0.33	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	2,366 8,700 8,700 8,700 8,700 8,700 1,366 8,700 2,366 8,700 2,366		188 911 1.82 280 1.60 666 1.72 1.60 1.72 1.60 1.72 1.60 1.72 1.60 1.72 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.60	2 2 2 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Dwin, 600  2 Placeholder (J. 2000)  2 Placeholder (J. 2000)  3 Placeholder (J. 2000)  2 Placeholder (J. 2000)  3 Placeholder (J. 2000)	And the second of the second o	1 25 25 25 25 25 25 25 25 25 25 25 25 25		0.01 0.05 0.10 0.05 0.04 0.04 0.04 0.05 0.12 0.13 0.03 0.10 0.10 0.10 0.10 0.10 0.10	0.01 0.05 0.10 0.10 0.10 0.10 0.02 0.04 0.11 0.13 0.13 0.13 0.15 0.16 0.16 0.16 0.16 0.10 0.10 0.10 0.10	2,346 8,760 8,760 8,760 8,760 8,760 8,760 8,760 8,760 8,760 1,740 2,346 1,740 1,740 2,346		28 456 511 523 542 544 524 524 526 556 556 556 556 556 556 556 556 556	0.07 0.05 0.10 0.00 0.00 0.04 0.04 0.03 0.13 0.05 0.10 0.10 0.10 0.10 0.10 0.10 0.10	1460 456 911 9 124 87 3,416 0 305 113 1,194 0 120 244 120 244 120 120 120 120 120 120 120 120 120 120	6.32 6.32 6.32 6.32 6.32 6.32 6.32 6.32	29.0 9.0 145.8 291.5 84.1 109.3 29.3 1,093.2 336.4 24.0 510.2 146.2 117.1 58.6 78.1 78.1 78.1	6.12 6.12 6.12 6.12 6.12 6.12 6.12 6.12	19 100 100 100 100 100 100 100 100 100 1	9.00 145.42 201.64 84.10 105.56 29.32 1093.64 336.30 107.24 24.00 131.36 147.20 137.20 137.20 147.20 77.10 78.10	179 510 1,020 0 363 97 3,826 0 1,266 126 127 127 129 129 129 129 129 129 129 129 129 129

					Pre-Install	(Baseline)								Post-Install (	Proposed)						Lighting Ene	ergy Savings		Interactive Er	nergy Savings		Energy S	Savings
Action Map Location	Location Description	# of Execute Pre-Install Fixture Code	Pre Wattx Per Fixture	Pre Watt per Fixture (Low)	Pre kW(high)	Peak kW Demand	Pre kW (Low)	Pre Hours of Annual Operation	Post Hours of Annual Operation (Low)		Proposed # of Fixtures	Proposed Fixture Code		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Mode)	Proposed kW (High)	Proposed kW Demand	Proposed Hours of Azerail Operation	Proposed Hours of Annual Operation (Low	Azzual Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
198 0	Restroom	1 54/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	0	61	0.03	61	0.32	19.5	0.12	7	19.55	68
199 0	Guns supply Closet	2 54/2F28/E-NP	52		0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
			32										driver						Ů									
200 0	Closet	1 54/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,346	٥	61	0.03	61	0.32	19.5	0.12	7	19.55	68
201 0	Closet 2	1 54/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,346	۰	61	0.03	61	0.32	19.5	0.12	7	19.55	68
202 0	Hall	4 TF/2F28/E-LP	43	0	0.172	0.17	0.00	8,760	0	1,507	4	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	8,760	۰	911	0.07	596	0.32	291.5	0.12	71	291.60	667
203 0	Hall	1 TF/2F28/E-NP	52		0.052	0.05	0.00	8,760	0	456	1	2 Placeholder(s), 26W	driver Rebuild existing floure using (2) LED Replacement Typer Clareps and (1) 2-larep driver Rebuild existing floure using (2) LED Replacement Typer Clareps and (1) 2-larep driver Replacement Typer Clareps and (1) 2-larep driver Rebuild existing floure using (2) LED Replacement Typer Clareps and (1) 2-larep driver driver	26	0	0.03	0.03	8,760		228	0.03	228	0.32	72.9	0.12	27	72.91	255
204 0	Storage Records	3 TF/3F28/E-LP	63	0	0.189	0.19	0.00	2,346	0	443	3	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp	39	0	0.12	0.12	2,346		275	0.07	269	0.32	87.9	0.12	20	87.92	189
													driver Rebuild existing fixure using (3) LED															
205 0	Storage 2	3 TF/3F28/E-LP	63	0	0.189	0.19	0.00	2,346	0	443	3	3 Placeholder(s), 39W	Replacement Type C lamps and (1) 4-lamp driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp	39	0	0.12	0.12	2,346	۰	275	0.07	169	0.32	87.9	0.12	20	87.92	189
206 0	Office	4 TF/3F28/E-LP	63	0	0.252	0.25	0.00	2,346	0	591	4	3 Placeholder(s), 39W	Replacement Type C lamps and (1) 4-lamp driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp	39	0	0.16	0.16	2,346	٥	366	0.10	225	0.32	117.1	0.12	27	117.23	252
207 0	Office	4 TF/3F28/E-LP	63	0	0.252	0.25	0.00	2,346	0	591	4	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.16	0.16	2,346	۰	366	0.10	225	0.32	117.1	0.12	27	117.23	252
208 0	Office	4 TF/3F28/E-LP	63	0	0.252	0.25	0.00	2,346	0	591	4	3 Placeholder(s), 39W	Replacement Type C larrys and (1) 4-larry driver Rebuild existing floure using (3) LED Replacement Type C larrys and (1) 4-larry driver Rebuild existing floure using (1) LED	39	0	0.16	0.16	2,346	0	366	0.10	225	0.32	117.1	0.12	27	117.23	252
209 0	Office	4 TF/3F2E/E-LP	63		0.252	0.25	0.00	2,346	0	591	4	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.16	0.16	2,346		366	0.10	225	0.32	117.1	0.12	27	117.23	252
210 0	Office	9 TF/3F28/E-LP	63	0	0.567	0.57	0.00	2,346	0	1,330	9	3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp	39	0	0.35	0.35	2,346		824	0.22	507	0.32	263.6	0.12	61	263.77	568
211 0	Lobby	18 CF/32W3L	34		0.612	0.61	0.00	8,760	0	5,361	18	1 Keystone 4-Pin LED, Horizontal, 11-	driver Replace existing PL lamp with a new	11		0.20	0.20	8,760		1,734	0.41	3,627	0.32	555.0	0.12	435	555.45	4,062
212 0	Outside Entrance	18 1/65	65		1.17	1.17	0.00	8,760	0	10,249	18	Watt(s), 11W 1 Placeholder(s), 17W	Keystone LED PL replacement bulb Relamp existing foture with a new Green creative A21 17w LED replacement lamp and	17		0.31	0.31	8,760		2,681	0.85	7,569	0.32	857.8	0.12	908	858.64	8,477
213 0	Lobby Hall	4 CF/32W1L	34		0.136	0.14	0.00	8,760		1,191	4	1 Keystone 4-Pin LED, Horizontal, 11- Watt[s], 11W	bypass electronic ballast.	11		0.04	0.04	8,760		385	0.09	806	0.32	123.3	0.12	97	123.43	903
214 0	Lobby Hall	9 TF/2F2B/E-NP	52		0.468	0.47	0.00	8,760	0	4,100	9	Wattjs], 11W 2 Placeholder(s), 26W	Replace existing PL lamp with a new Keystone LED PL replacement bulb Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.23	0.23	8,760		2,050	0.23	2,050	0.32	655.9	0.12	246	656.18	2,296
215 0	Penthouse Not on Drawing	6 54/2F28/E-NP	52	0	0.312	0.31	0.00	2,346	0	732	6	2 Placeholder(s), 26W	Reputement type C samps and (1) 2-samp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	26	0	0.16	0.16	2,346		366	0.16	366	0.32	117.1	0.12	44	117.29	410
													driver  Rebuild existing fixure using (3) LED															
216 0	Upper Controls Unit C	12 TT/3F17/E-NP	45	0	0.54	0.54	0.00	2,346	0	1,267	12	3 Placeholder(s), 18W		18	0	0.22	0.22	2,346	0	507	0.32	760	0.32	162.2	0.12	91	162.51	851
217 0	Lower Controls Unit C	6 TT/3F17/E-NP	45	0	0.27	0.27	0.00	2,346	0	634	6	3 Placeholder(s), 18W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	18	0	0.11	0.11	2,346	0	253	0.16	380	0.32	81.1	0.12	46	81.25	426
218 0	Secure Lock	1 VN4/2F28/E-NP	52	0	0.052	0.05	0.00	8,760	0	456	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	8,760	۰	228	0.03	228	0.32	72.9	0.12	27	72.91	255
219 0	Storage	16 TF/3F28/E-NP	76	0	1.216	1.22	0.00	2,346	0	2,853	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.62	0.62	2,346	0	1,464	0.59	1,389	0.32	468.5	0.12	167	469.13	1,556
220 0	Booking	12 TF/2F28/E-NP	52	0	0.624	0.62	0.00	8,760	0	5,466	12	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26		0.31	0.31	8,760		2,733	0.31	2,733	0.32	874.6	0.12	328	874.91	3,061
221 0	3 Cells	10 TF/2F28/E-NP	52	0	0.52	0.52	0.00	5,840		3,037	10	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26		0.26	0.26	5,840		1,518	0.26	1,518	0.32	485.9	0.12	182	486.15	1,701
222 0	Showers	2 VN4/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346	_	122	0.05	122	0.32	39.0	0.12	15	39.10	137
				1							_ ^		driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp															
223 0	Storage Evidence	3 TF/2F2S/E-NP	52	0	0.156	0.16	0.00	2,346	0	366	3	2 Placeholder(s), 26W		26	0	0.08	0.08	2,346	۰	183	0.08	283	0.32	58.6	0.12	22	58.64	205
224 0	Storage Files/Cuffs	3 54/2F28/E-NP	52	0	0.156	0.16	0.00	2,346	0	366	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (3) LED	26	0	0.08	0.08	2,346	٥	183	0.08	183	0.32	58.6	0.12	22	58.64	205
225 0	Office	2 TF/3F2E/E-LP	63	0	0.126	0.13	0.00	2,346	0	296	2	3 Placeholder(s), 39W	Replacement Type C lamps and (1) 4-lamp driver	39	0	0.08	0.08	2,346	0	183	0.05	113	0.32	58.6	0.12	14	58.61	126
226 0	Storage	2 TF/3F2B/E-LP	63	0	0.126	0.13	0.00	2,346	0	296	2	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.08	0.08	2,346	۰	183	0.05	113	0.32	58.6	0.12	14	58.61	126
227 0	Office	2 TF/2F2B/E-LP	43	0	0.086	0.09	0.00	2,346	0	202	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C Jamps and (1) 2-Jamp	26	0	0.05	0.05	2,346	0	122	0.03	80	0.32	39.0	0.12	10	39.08	89
228 0	Restroom	1 VT4/2F2B/E-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346		61	0.02	40	0.32	19.5	0.12	5	19.54	45
229 0	Medical Restroom	1 VT4/2F28/E-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	driver  Rebuld ontitrig flour using [2] LED  Replacement Type C lamps and [3] 24 arep  driver  Rebuld ontitrig flour using [2] LED  Replacement Type C lamps and [3] 24 arep  driver  Rebuld ontitrig flour using [2] LED  Replacement Type C lamps and [3] 24 arep  driver  Rebuld ontitrig flour using [2] LED  Rebuld ontitrig flour using [2] LED  Rebuld ontitrig flour using [2] LED	26	0	0.03	0.03	2,346		61	0.02	40	0.32	19.5	0.12	5	19.54	45
													driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp															
230 0	ban	1 TF/2F28/t-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	driver	26	0	0.03	0.03	2,346	۰	61	0.02	40	0.32	19.5	0.12	5	19.54	45
231 0	Storage	1 TF/2F28/E-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	۰	61	0.02	40	0.32	19.5	0.12	5	19.54	45
232 0	Restroom	1 VT4/2F28/E-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,346	0	61	0.02	40	0.32	19.5	0.12	5	19.54	45
233 0	Exam	1 TF/2F28/t-LP	43	0	0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,346	۰	61	0.02	40	0.32	19.5	0.12	5	19.54	45
234 0	Hall	2 TF/2F2S/E-NP	52		0.104	0.10	0.00	8,760	0	911	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	8,760		456	0.05	456	0.32	145.8	0.12	55	145.82	510
235 0	Electrical	1 54/2F28/E-LP	43		0.043	0.04	0.00	2,346	0	101	1	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp  driver	26	0	0.03	0.03	2,346		61	0.02	40	0.32	19.5	0.12	5	19.54	45
236 0	Medical	4 TF/2F2S/E-NP	**	0	0.208	0.21	0.00	2,346	0	488		2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,346		244	0.10	244	0.32	78.1	0.12	29	78.19	273
			34										Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (1) 4-lamp						-									
237 0	Visit	2 VN4/3F2E/E-NP	76	0	0.152	0.15	0.00	2,346	0	357	2	3 Placeholder(s), 39W	Replacement Type C lamps and (1) 4-lamp driver Rebuild existing fixure using (3) LED	39	0	0.08	0.08	2,346	۰	183	0.07	174	0.32	58.6	0.12	21	58.64	194
238 0	Visit 2	2 VN4/3F2E/E-NP	76	0	0.152	0.15	0.00	2,346	0	357	2	3 Placeholder(s), 39W	Replacement Type C lamps and (1) 4-lamp driver Rebuild existing fixure using (2) LED	39	0	0.08	0.08	2,346	٥	183	0.07	174	0.32	58.6	0.12	21	58.64	194
239 0	Storage	4 TF/2F2B/E-LP	43	0	0.172	0.17	0.00	2,346	0	404	4	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.10	0.10	2,346	۰	244	0.07	160	0.32	78.1	0.12	19	78.16	179
240 0	Tollet	1 VNA/2F2E/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	۰	61	0.03	61	0.32	19.5	0.12	7	19.55	68
241 0	Education	10 TF/2F28/E-NP	52		0.52	0.52	0.00	2,346	0	1,220	10	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.26	0.26	2,346		610	0.26	610	0.32	195.2	0.12	73	195.48	683
242 0	Mechanical	3 54/2128/E-NP	52	0	0.156	0.16	0.00	2,346	0	366	3	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.08	0.08	2,346		183	0.08	183	0.32	58.6	0.12	22	58.64	205
243 0	Storage	1 54/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.03	0.03	2,346		61	0.03	61	0.32	19.5	0.12	7	19.55	68
													driver  Rebuild existing fixure using (2) LED															
244 0	Storage	2 TF/2F2B/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	٥	122	0.05	122	0.32	39.0	0.12	15	39.10	137

							Pre-Install	(Baseline)					I			Post-Install	(Proposed)						Lighting En	ergy Savings		Interactive E	nergy Savings		Energy	Savings
Action	Nap Location	Location Description	# of Baseline Fixtures	Pre-Install Finture Code	Pro Watts Per Fixture	Pre Watt per Fixture (Low)	Pre kW(high)	Peak kW Demand	Pre kW (Low)	Pro Hours of Austral Operation	Post Hours of Annual Operation		Proposed # of Fixtures	Proposed Fixture Code		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Mode)	Proposed kW (High)	Proposed kW Demand	Proposed Hours of August Operation	Proposed Hours of Annual Operation (Low	Azzzai Proposed kWh	kW Demand Saved	kWh Saved	kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
245	0	Strip Room	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346	Mede)	122	0.05	122	0.32	39.0	0.12	15	39.10	137
246	0	Center tower A	6	54/2F28/E-NP	52	0	0.312	0.31	0.00	2,346	0	732	6	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.16	0.16	2,346		366	0.16	366	0.32	117.1	0.12	44	117.29	410
247	0	Rec Area	3	LED/30	30	0	0.09	0.09	0.00	2,346	0	211	3	No Fixture Action	driver No Action Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp	30	0	0.09	0.09	2,346	0	211	0.00	0	0.32	67.6	0.12	0	67.58	0
248	0	Cell A Unit 1 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W		52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
249	0	Cell A Unit 1 Walkway		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	Rebuild existing fluor using (2) LED Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fluor using (3) LED Replacement Type C lamps and (2) 4-lamp driver Replacement Type C lamps and (2) 4-lamp driver	26	0	0.21	0.21	5,840	0	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
250	0	Cell A Unit 1 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp driver	39	0	0.62	0.62	5,840	۰	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
251	0	Cell A Unit 1 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), SW	Keystone LED PL replacement bulb		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78 48	239.32	733 445
252 253	0	Showers  Cell A Unit 2 Common Space	7	CIR/32W TF/4F28/E-NP	40	0	0.693	0.08	0.00	5,840	0	467	7	Drum, 6W 4 Placeholder(s), 52W	LED board kit. 6w.  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp	6 52	0	0.01	0.01	5,840	0	2,126	0.07	1,921	0.32	22.4	0.12	48	22.49	2,152
254	0	Cell A Unit 2 Walkway		VT4/2528/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	driver  Rebuild existing foure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.21	0.21	5,840		1,215	0.21	1,215		388.7	0.12			1,360
															Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp										0.32			146	388.92	
255 256	0	Cell A Unit 2 Cells	16	O4/3F28/E-NP	76 15	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	driver Replace existing PL lamp with a new	39	0	0.62	0.62	5,840	0	3,644 748	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872 733
257	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Keystone LED PL replacement bulb  Retrokit existing fixture with a new Remphos  LED broand kit. few.	6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	239.32	445
258	0	Cell A Unit 3 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	LED board kit. Sw.  Rebuild existing feure using (4) LED  Replacement Type C lamps and (1) 4-lamp	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
259	0	Cell A Unit 3 Walkway		VT4/2928/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.21	0.21	5,840		1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
260	0	Cell A Unit 3 Cells	16	04/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
261	0	Cell A Unit 3 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), BW	driver Replace existing PL lamp with a new Keystone LED PL replacement bulb		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78	239.32	733
262	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Keystone LED FL replacement bulb Retrokit existing fixture with a new Remphos LED board kit. 6w.	6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	22.49	445
263	0	Cell A Unit 4 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
264	0	Cell A Unit 4 Walloway		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.21	0.21	5,840	۰	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
265	0	Cell A Unit 4 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp driver	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
266	0	Cell A Unit 4 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), BW	Replace existing PL lamp with a new Keystone LED PL replacement bulb		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78	239.32	733
267	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Retrokit existing fixture with a new Remphos LED board kit. 6w.  Rebuild existing fixure using (4) LED	6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	22.49	445
268	0	Cell A Unit 5 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Replacement Type C lamps and (1) 4-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
269	0	Cell A Unit 5 Walkway		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp	26	0	0.21	0.21	5,840	۰	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
270	0	Cell A Unit 5 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Replacement Type C lamps and (2) 4-lamp driver Replace existing PL lamp with a new	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
271	0	Cell A Unit 5 Cells Showers	16 2	CF/13W1L CIR/32W	15 40	0	0.24	0.24	0.00	5,840	0	1,402	16 2	1 Placeholder(s), BW Drum, 6W	Retrokit existing fixture with a new Remphos	5	0	0.13	0.13	5,840	0	748 70	0.11	654	0.32	239.2	0.12	78 48	239.32	733 445
273	0	Cell A Unit 6 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	LED board kit. 6w.  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
274	0	Cell A Unit 6 Walkway		VT4/2528/E-NP	52		0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.21	0.21	5,840		1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
275		Cell A Unit 6 Cells	16	O4/3F28/E-NP	76		1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	replacement type C lamps and (1) 2-amp driver Rebuild existing floure using (3) LED Replacement Type C lamps and (2) 4-lamp driver Replace existing PL lamp with a new	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
276	0	Cell A Unit 6 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(x), SW	driver  Replace existing PL lamp with a new  Keystone LED PL replacement bulb		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78	239.32	733
277	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Retrokit existing fiature with a new Remphos. LED board kit. 6w. Replace existing PL lamp with a new	6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	22.49	445
278	0	A Tower	11	CF/18W1L	20	0	0.22	0.22	0.00	2,346	0	516	11	1 Placeholder(s), BW			0	0.09	0.09	2,346	0	205	0.13	310	0.32	66.1	0.12	37	66.21	347
279	0	Controls + Restroom	2	\$4/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing feaver using (2) LED Replacement Type C larrops and (1) 2-larrop driver Rebuild existing feaver using (2) LED Replacement Type C larrops and (1) 2-larrop driver Replacement Type C larrops and (1) 2-larrop driver	26	0	0.05	0.05	2,346	۰	122	0.05	122	0.32	39.0	0.12	15	39.10	137
280	0	Controls + Restroom	1	O4/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing foure using (2) LED	26	0	0.03	0.03	2,346	0	61	0.03	61	0.32	19.5	0.12	7	19.55	68
281	0	Contact visiting		TF/2F28/E-NP	52	0	0.416	0.42	0.00	8,760	0	3,644		2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.21	0.21	8,760	0	1,822	0.21	1,822	0.32	583.1	0.12	219	583.27	2,041
282	0	Contact visiting	2	VT4/2F28/E-NP	52	0	0.104	0.10	0.00	8,760	0	911	2	2 Placeholder(s), 26W		26	0	0.05	0.05	8,760	0	456	0.05	456	0.32	145.8	0.12	55	145.82	510
283	0	Non-contact visiting	2	VT4/2928/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	0	122	0.05	122	0.32	39.0	0.12	15	39.10	137
284	0	A Sub-day area	18	VT4/2F28/E-NP	52	0	0.936	0.94	0.00	5,840	0	5,466	18	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.47	0.47	5,840	0	2,733	0.47	2,733	0.32	874.6	0.12	328	875.07	3,061
285	0	Public Visiting	2	VT4/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	0	122	0.05	122	0.32	39.0	0.12	15	39.10	137
286	0	Foyer	4	TF/2F28/E-NP	52	0	0.208	0.21	0.00	2,346	0	481	4	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,346	0	244	0.10	244	0.32	78.1	0.12	29	78.19	273
287	0	Foyer	1	LED/30	30	0	0.03	0.03	0.00	2,346	0	70	1	No Fixture Action	No Action  Rebuild existing floure using (2) LED  Replacement Type C lamps and (1) 2-lamp	30	0	0.03	0.03	2,346	0	70	0.00	0	0.32	22.5	0.12	0	22.53	0
288	0	Stairs	4	O4/2F28/E-NP	52	0	0.208	0.21	0.00	8,760	0	1,822	4	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	8,760	0	911	0.10	911	0.32	291.5	0.12	109	291.64	1,020
289	0	Hall	15	TF/2F28/E-NP LED/30	52 30	0	0.78	0.78	0.00	8,760 8,760	0	6,833	15	2 Placeholder(s), 26W No Fixture Action	No Action	26 30	0	0.39	0.39	8,760 8,760	0	3,416 1,051	0.39	3,416	0.32	1,093.2	0.12	410	1093.64 336.38	3,826
291	0	Corridor to Xitchen	3	TF/2F28/E-NP	52	0	0.156	0.16	0.00	8,760	0	1,367	3	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.08	0.08	8,760		683	0.08	683	0.32	218.6	0.12	82	218.73	765
292 293	0	Contidor to Kitchen Kitchen	1 13	LED/30 LED/30	30	0	0.03	0.03	0.00	8,760 5,840	0	263 2,278	1 13	No Fixture Action No Fixture Action	No Action No Action	30	0	0.03	0.03	8,760 5,840	0	263 2,278	0.00	0	0.32 0.32	84.1 728.8	0.12 0.12	0	84.10 728.83	0
294	0	Kitchen	4	W4/2F28/E-NP	52	0	0.208	0.21	0.00	5,840	0	1,215	4	2 Placeholder(s), 26W	Orlive  No Action  No Action  Rebuild existing floure using [2] LED  Replacement Type C larges and [1] 2-large  driver  Rebuild existing floure using [2] LED  Replacement Type C larges and [1] 7-larges and [1] 7-larges and [1] 7-larges [1] 10 larges [1]	26	0	0.10	0.10	5,840	0	607	0.10	607	0.32	194.4	0.12	73	194.46	680
295	0	Office	1	TF/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	driver	26	0	0.03	0.03	2,346	0	61	0.03	61	0.32	19.5	0.12	7	19.55	68
296	0	Laundry	4	VT4/2928/E-NP	52	0	0.208	0.21	0.00	2,346	0	488	4	2 Placeholder(s), 26W	Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.10	0.10	2,346	0	244	0.10	244	0.32	78.1	0.12	29	78.19	273
297	0	Restroom	2	VT4/2528/E-NP	52		0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346	0	122	0.05	122	0.32	39.0	0.12	15	39.10	137
				1	1	1							1		driver															

							Pre-Install	(Baseline)								Post-Install							Lighting En	ergy Savings		Interactive E	nergy Saving	S	Energy 5	šavings
Action	Map Location	Location Description	# of Baseline Fixtures	Pre-Install Finture Code	Pre Watts Per Fixture	Fre Watt per Fixture (Low)	e Pre kW(high)	Peak kW Demand	Pre kW (Low)	Pre Hours of Austral Operation	Post Hours of Annual Operation (Low)		Proposed # of Fixtures	Proposed Fixture Code		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Mode)	Proposed kW (High)	Proposed kW Demand	Proposed Heurs of August Operation	Proposed Hours of Annual Operation (Low	Annual Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
298	0	Storage	9	54/2F28/E-NP	52	0	0.468	0.47	0.00	2,346	0	1,098	9	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.23	0.23	2,346	0	549	0.23	549	0.32	175.7	0.12	66	175.93	615
299 300	0	Storage Panels	3	LED/30 54/2F28/E-NP	30 52	0	0.06	0.06	0.00	2,346 2,346	0	141	3	No Fisture Action 2 Placeholder(s), 26W	driver No Action Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	30 26	0	0.06	0.06	2,346 2,346	0	141	0.00	0 283	0.32	45.1 58.6	0.12	0 22	45.05 58.64	205
301	0	Storage	5	TF/2F28/E-NP	52	0	0.26	0.26	0.00	2,346	0	610	5	2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.13	0.13	2,346		305	0.13	305	0.32	97.6	0.12	37	97.74	342
302	0	Fan	1	\$4/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	122	1	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346		61	0.03	61	0.32	19.5	0.12	7	19.55	68
303	0	Chapel	12	TF/2F28/E-NP	52	0	0.624	0.62	0.00	2,346	0	1,464	12	2 Placeholder(s), 26W	Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.31	0.31	2,346		732	0.31	732	0.32	234.3	0.12	88	234.58	820
304	0	Mechanical	3	54/2F28/E-NP	52	0	0.156	0.16	0.00	2,346	0	366	3	2 Placeholder(s), 26W	driver Rebuild existing foure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.08	0.08	2,346		183	0.08	183	0.32	58.6	0.12	22	58.64	205
305	0	Paint Storage	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
305	0	Comissary	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
307	0	Tower B 1st	6	VT4/2528/E-NP	52	0	0.312	0.31	0.00	2,346	0	732	6	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.16	0.16	2,346		365	0.16	366	0.32	117.1	0.12	44	117.29	410
308	0	Cell B Unit 1 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED	52	0	0.36	0.36	5,840		2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
309	0	Cell 5 Unit 1 Walksray		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	driver  Rebuild existing fleure using (2) LED  Replacement Type C lamps and (2) 2-lamp driver	26	0	0.21	0.21	5,840		1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
310	0	Cell 8 Unit 1 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (2) 4-lamp driver	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
311	0	Cell B Unit 1 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), SW	Replace existing PL lamp with a new Keystone LED PL replacement bulb Retrokit existing fixture with a new Remphos		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78	239.32	733
312	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W		6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	22.49	445
313	0	Cell B Unit 2 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Rebuild existing flour using (4) LED Replacement Type C lamps and (1) 4-lamp driver Rebuild existing floure using (2) LED Replacement Type C lamps and (1) 2-lamp	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
314	0	Cell & Unit 2 Walloway		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W		26	0	0.21	0.21	5,840	0	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
315	0	Cell B Unit 2 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp driver Replace existing PL lamp with a new	39	0	0.62	0.62	5,840	۰	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
316	0	Cell B Unit 2 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(x), EW	Replace existing PL lump with a new Keystone LED PL replacement bulb Retrokit existing fixture with a new Remphos		0	0.13	0.13	5,840	0	748	0.11	654	0.32	239.2	0.12	78	239.32	733
317	0	Showers  Cell B Unit 3 Common Space	7	CIR/32W TF/4F28/E-NP	40	0	0.08	0.08	0.00	5,840	0	4,047	7	Drum, 6W 4 Placeholder(s), 52W	LED board kit. 6w.  Rebuild existing five using (4) LED  Replacement Type C lamps and (1) 4-lamp	6 52	0	0.01	0.01	5,840	0	70 2,126	0.07	1,921	0.32	22.4	0.12	48	22.49	445 2,152
319	0	Cell & Unit 3 Walksray		VT4/2928/E-NP	52		0.416	0.42	0.00	5,840		2,429		2 Placeholder(s), 26W	driver Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26		0.21	0.21	5,840		1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
320	0	Cell B Unit 3 Cells	16	04/3F28/E-NP	76	0	1.216	1.22	0.00	5,840		7.101	16	3 Placeholder(s), 39W	driver Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp	39		0.62	0.62	5,840		3,644	0.59	3.457	0.32	1.166.1	0.12	415	1166.72	3.872
321	0	Cell 8 Unit 3 Cells	16	CF/13W1L	15		0.24	0.24	0.00	5,840		1,402	16	1 Placeholder(s), SW	driver Replace existing PL lamp with a new			0.13	0.13	5.840		748	0.11	654	0.32	239.2	0.12	78	239.32	733
322	0	Showers	2	CIR/32W	40		0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Keystone LED PL replacement bulb Retrokit existing fisture with a new Remphos LED board kit. 6w.		0	0.01	0.01	5,840		70	0.07	397	0.32	22.4	0.12	48	22.49	445
323	0	Cell B Unit 4 Common Space	7	TF/4F28/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp	52	0	0.36	0.36	5,840		2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
324	0	Cell 5 Unit 4 Walloway		VT4/2528/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.21	0.21	5,840		1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
325	0	Cell B Unit 4 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (2) 4-lamp	39	0	0.62	0.62	5,840		3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
326	0	Cell B Unit 4 Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), SW	Replace existing PL lamp with a new		0	0.13	0.13	5,840		748	0.11	654	0.32	239.2	0.12	78	239.32	733
327	0	Showers	2	CIR/32W	40	0	0.08	0.08	0.00	5,840	0	467	2	Drum, 6W	Keystone LED PL replacement bulb Retrokit existing fiature with a new Remphos LED board kit. 6w. Rebuild existing fixure using (4) LED	6	0	0.01	0.01	5,840	0	70	0.07	397	0.32	22.4	0.12	48	22.49	445
328	0	Cell B Unit 5 Common Space	7	TF/4F2S/E-NP	99	0	0.693	0.69	0.00	5,840	0	4,047	7	4 Placeholder(s), 52W	Rebuild existing fixure using (4) LED Replacement Type C lamps and (1) 4-lamp driver Rebuild existing fixure using (2) LED	52	0	0.36	0.36	5,840	0	2,126	0.33	1,921	0.32	680.2	0.12	231	680.57	2,152
329	0	Cell B Unit 5 Walksury		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver	26	0	0.21	0.21	5,840	0	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
330	0	Cell B Unit 5 Cells	16	O4/3F28/E-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C famps and (2) 4-lamp driver Replace existing PL lamp with a new Keystone LED PL replacement bulb	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
331 332	0	Cell B Unit 5 Cells Showers	16 2	CF/13W1L CIR/32W	15 40	0	0.24	0.24	0.00	5,840	0	1,402	16 2	1 Placeholder(s), SW Drum, 6W	Retrokit existing fixture with a new Remphos	6	0	0.13	0.13	5,840		748	0.11	654	0.32	239.2	0.12	78 48	239.32 22.49	733 445
332	0	Showers Cell B Unit 6 Common Space	7	TF/4F28/E-NP	99	0	0.08	0.08	0.00	5,840	0	467	7	4 Placeholder(s), 52W	LED board kit. 6w.  Rebuild existing fixure using (4) LED  Replacement Type C lamps and (1) 4-lamp	52	0	0.01	0.01	5,840		2,126	0.07	1,921	0.32	680.2	0.12	48	680.57	2,152
334	0	Cell 5 Unit 6 Walloway		VT4/2F28/E-NP	52	0	0.416	0.42	0.00	5,840	0	2,429		2 Placeholder(s), 26W	driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.21	0.21	5,840	0	1,215	0.21	1,215	0.32	388.7	0.12	146	388.92	1,360
335	0	Cell 8 Unit 6 Cells	16	04/3F28/t-NP	76	0	1.216	1.22	0.00	5,840	0	7,101	16	3 Placeholder(s), 39W	driver  Rebuild existing fixure using (3) LED  Replacement Type C lamps and (2) 4-lamp	39	0	0.62	0.62	5,840	0	3,644	0.59	3,457	0.32	1,166.1	0.12	415	1166.72	3,872
336	0	Cell & Unit & Cells	16	CF/13W1L	15	0	0.24	0.24	0.00	5,840	0	1,402	16	1 Placeholder(s), EW	Banlans existing PI James with a new		0	0.13	0.13	5,840		748	0.11	654	0.32	239.2	0.12	78	239.32	733
337	0	B Sub-day area	18	VT4/2928/E-NP	52	0	0.936	0.94	0.00	5,840	0	5,466	18	2 Placeholder(s), 26W	Keystone LED PL replacement bulb Rebuild existing fixore using (2) LED Replacement Type C lamps and (1) 2-lamp driver	26	0	0.47	0.47	5,840		2,733	0.47	2,733	0.32	874.6	0.12	328	875.07	3,061
338	0	Strip Room	2	TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	244	2	2 Placeholder(s), 26W	Rebuild existing fixure using (2) LED Replacement Type C lamps and (1) 2-lamp	26	0	0.05	0.05	2,346		122	0.05	122	0.32	39.0	0.12	15	39.10	137
339	0	Tower B	2	CIR/32W	40	0	0.08	0.08	0.00	2,346	0	188	2	Drum, 6W	Retrold existing fixture with a new Remphos	6	0	0.01	0.01	2,346		28	0.07	160	0.32	9.0	0.12	19	9.08	179
340	0	Tower B	12	CF/18W1L	20	0	0.24	0.24	0.00	2,346	0	563	12	1 Placeholder(s), SW	Replace existing PL lamp with a new Keystone LED PL replacement bulb		0	0.10	0.10	2,346	0	225	0.14	338	0.32	72.1	0.12	41	72.23	378
341	0	B Rec Area	3	LED/SO	30	0	0.09	0.09	0.00	4,380	0	394	3	No Fixture Action	No Action  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	30	0	0.09	0.09	4,380		394	0.00		0.32	126.1	0.12	0	126.14	0
342	0	B Tower Contact visiting	2	TT/2528/E-NP	52	0	0.416	0.42	0.00	8,760	0	3,644	2	2 Placeholder(s), 26W 2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.21	0.21	8,760	0	1,822	0.21	1,822	0.32	583.1	0.12	219	583.27	2,041
343	0	B Tower Contact visiting  B Tower Non-contact visiting	2	VT4/2F28/E-NP	52	0	0.104	0.10	0.00	8,760 2,346	0	911	2	2 Placeholder(s), 26W 2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp driver	26	0	0.05	0.05	8,760 2,346		456	0.05	456	0.32	145.8 39.0	0.12	55 15	145.82 39.10	510 137
344	0	B Tower Non-contact visiting  Lock	1	VT4/2F28/E-NP TF/2F28/E-NP	52	0	0.104	0.10	0.00	2,346	0	122	1	2 Placeholder(s), 26W 2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26 26	0	0.05	0.05	2,346	0	61	0.05	122 61	0.32		0.12	7		137
345	0	Lock Maintenance Office	9	TF/2F28/E-NP SA/2F28/E-NP	52	0	0.052	0.05	0.00	2,346	0	1,098	9	2 Placeholder(s), 26W 2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp	26	0	0.03	0.03	2,346	0	549	0.03	549	0.32	19.5	0.12	7 66	19.55 175.93	68
	0	Maintenance Office	9	54/2F28/E-NP	52		0.468	0.47		2,346 8,760	0		1	2 Placeholder(s), 26W 2 Placeholder(s), 26W	Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fixure using (2) LED  Replacement Type C lamps and (1) 2-lamp		0	0.23	0.23	2,346 8,760	0		0.23	549 228	0.32	72.9	0.12	27	175.93 72.91	255
347						0	0.052		0.00			455			Replacement Type C lamps and (1) 2-lamp driver  Rebuild existing fivure using (3) LED  Replacement Type C lamps and (1) 4-lamp driver	26						228		228						255
348	0	Elevator Vestibule	1	TT/3F17/E-NP	45	0	0.045	0.05	0.00	8,760	0	394	1	3 Placeholder(s), 18W	Replacement Type C lamps and (1) 4-lamp driver	18	0	0.02	0.02	8,760	0	158	0.03	237	0.32	50.5	0.12	28	50.48	265

							Pre-Install	(Baseline)					Post-Install (Proposed)								Lighting Energy Savir			igs Interactive Energy Savings				Energy Savings		
	Map Location	Excation Description	# of Baseline Fixtures	Pre-Install Fiature Code	Pro Watts Por Fixture	Pre Watt per Fixture (Low)	Pre kW (high)	Peak kW Demand	Pre kW (Low)	Pre Hours of Annual Operation	Post Hours of Annual Operation (Low)		Proposed # of Fixtures	Proposed Fixture Code		Proposed Watts per Fixture	Proposed Watts per Fixture (Low Mode)	Proposed kW (High)	Proposed kW Demand	Proposed Hours of August Operation	Proposed Hours of Annual Operation (Low Mode)	Azzzail Proposed kWh	kW Demand Saved		kW Interactive Factor		kWh Interactive Factor		kW Demand Saved	kWh Saved
349	0	Elevator	1	54/3F28/E-NP	76	0	0.076	0.08	0.00	2,346	0	178	1	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.04	0.04	2,346	0	92	0.04	87	0.32	29.3	0.12	10	29.32	97
350	0	Mechanical outside	1	54/3F28/E-NP	76	0	0.076	0.08	0.00	2,346	0	178	1	3 Placeholder(s), 39W	Rebuild existing fixure using (3) LED Replacement Type C lamps and (1) 4-lamp driver	39	0	0.04	0.04	2,346	0	92	0.04	87	0.32	29.3	0.12	10	29.32	97
351	0	Exterior Wall Heads	6	MH/250	295	0	1.77	1.77	0.00	4,380	0	7,753	6	1 Placeholder(s), 63W	Replace existing metal hallide/hps lamp with a new Keystone LED replacement lamp. 63w 9268 lumens	63	0	0.38	0.38	4,380	0	1,656	1.39	6,097	0.32	529.8	0.12	732	531.20	6,829
352	0	Exterior Poles	11	MH/250	295	0	3.245	3.25	0.00	4,380	0	14,213	11	1 Placeholder(s), 63W	Replace existing metal hallide/hps lamp with a new Keystone LED replacement lamp. 63w 9268 lumens	63	0	0.69	0.69	4,380	0	3,035	2.55	11,178	0.32	971.3	0.12	1,341	973.86	12,519
353	0	Exterior Wallpacks	3	MH/250	295	0	0.885	0.89	0.00	4,380	0	3,876	3	1 Placeholder(s), 63W	Replace existing metal hallide/hps lamp with a new Keystone LED replacement lamp. 63w 9168 lumens	63	0	0.19	0.19	4,380	0	828	0.70	3,048	0.32	264.9	0.12	366	265.60	3,414
354	0	Exterior Wallpacks	1	LED/30	30	0	0.03	0.03	0.00	4,380	0	131	1	No Fixture Action	No Action	30	0	0.03	0.03	4,380	0	131	0.00	0	0.32	42.0	0.12	0	42.05	0
355	0	Exterior Poles	2	LED/30	30	0	0.06	0.05	0.00	4,380	0	263	2	No Fixture Action	No Action	30	0	0.06	0.06	4,380	0	263	0.00	0	0.32	84.1	0.12	0	84.10	0
356	0	Lobby	8	CF/32W2L	68	0	0.544	0.54	0.00	8,760	0	4,765		2 Keystone 4-Pin LED, Horizontal, 11- Watt(s), 22W	Replace existing PL lamp with a new Keystone LED PL replacement bulb	22	0	0.18	0.18	8,760	0	1,542	0.37	3,224	0.32	493.4	0.12	387	493.73	3,611
			1929	]				120.97				509,060	1921	]					62.28			233,498	69.69	275,563	96	59,812	26	24,764	088,62	100,327

# **Lighting Material Cut Sheets**



## CC1322MTP T8 ELECTROMAGNETIC BALLAST







#### **DESCRIPTION**

1 x 13W CFL | 120 Input Voltage | Normal Power Factor | Preheat Start

**STARTING METHOD:** Preheat **LAMP CONNECTION: Series INPUT VOLTAGE:** 120VAC + 5% -10% **INPUT FREQUENCY:** 60 Hz **BALLAST FACTOR (LIGHT OUTPUT): Normal WARRANTY:** 3 Years

#### **PRODUCT FEATURES**

• Sound Rated: A

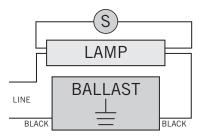
• Minimum Starting Temperature: 50°F, 10°C • Maximum Case Temperature: 194°F, 90°C

- UL, cUL 935 Listed (Class P, Outdoor, Type 1)
- Thermally Protected

#### **ELECTRICAL SPECIFICATIONS**

Lamp Type	No. of Lamps	Input Volts	Input Watts	Input Current (Amps)	Power Factor	Crest Factor	Ballast Factor	Ballast Efficacy Factor	Max. THD %
F14T8	1	120	16	0.33	0.40	1.70	0.80	5.00	15
F15T8	1	120	16	0.27	0.49	1.67	0.71	4.44	15
F18T8	1	120	16	0.25	0.51	1.56	0.71	4.44	15
F14T12	1	120	16	0.33	0.40	1.70	0.80	5.00	15
F15T12	1	120	16	0.30	0.46	0.56	0.85	5.31	15
F20T12	1	120	16	0.25	0.58	1.65	0.65	5.31	15
CFT13W/GX23	1	120	16	0.26	0.50	1.67	0.93	5.81	15
FC6T9 20W	1	120	17.5	0.24	0.60	1.56	0.73	4.17	15
FC8T9 22W	1	120	18	0.30	0.51	1.59	0.73	4.06	15

#### **WIRING DIAGRAM**

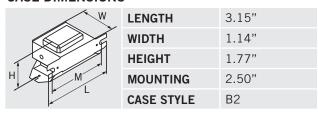




## CC1322MTP T8 ELECTROMAGNETIC BALLAST

#### **MECHANICAL SPECIFICATIONS**

#### **CASE DIMENSIONS**



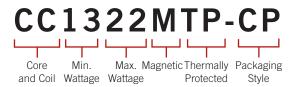
#### STANDARD LEAD LENGTHS\*

BLACK	1 x 9", 1 x 18"
*Consult Keystone for spec	ial lead length requirements

#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
CC1322MTP-CP	Carton Pack	TBD	Active

#### **CATALOG NUMBER BREAKDOWN**



RoHS Compliant





## KTLD-2LT5HO-UV-22C-VDIM CONSTANT CURRENT LED DRIVER FOR TYPE C 15HO LAMPS

#### **DESCRIPTION**

Constant Current Output | 120-277V Input | 0-10V Dimming

**DRIVER TYPE:** Constant Current

**OUTPUT CURRENT:** 500A × 2 Channels

**INPUT POWER:** 25W × 2

**MAX. CURRENT** 0.49A@120V

MAX. OUTPUT POWER: 48W

**WARRANTY:** 5 Years

#### PRODUCT FEATURES

- Compatible with Keystone external drive T5HO LED lamps
- Meets FCC Part 15 (Class B) consumer limits
- Short circuit overload and open load protection
- Type 1 outdoor, uuitable for dry and damp locations
- UL8750 Recognized component

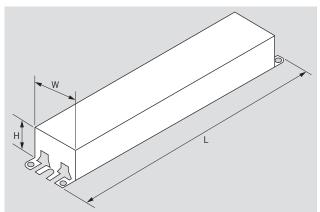
- Dimmable with 0–10V Dimmer
- Operating temperature: -20°C/-4°F to 45°C/113°F
- 85°C/185°F maximum case temperature
- Input frequency: 50/60 Hz
- THD: <20%

#### **ELECTRICAL SPECIFICATIONS**

INPUT CHARACTERISTICS			оит	PUT CHARACTERIST	ics	FEATURES	
Input Voltage	Input Power	Power Factor	Max. Current	Max. Output Power	Max. Current	Output Voltage	Efficiency
120-277Vac	25W × 2	>0.9	0.49A@120V	45W	500A × 2 Channels	36-45Vdc	88%

#### **MECHANICAL SPECIFICATIONS**

#### **CASE DIMENSIONS**



LENGTH (L)	9.50"
WIDTH (W)	1.33"
HEIGHT (H)	1.10"

<sup>\*</sup>TC Point (85°C) is noted on each driver label

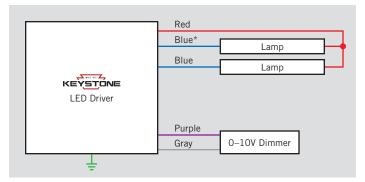




## KTLD-2LT5HO-UV-22C-VDIM CONSTANT CURRENT LED DRIVER FOR TYPE C T5HO LAMPS

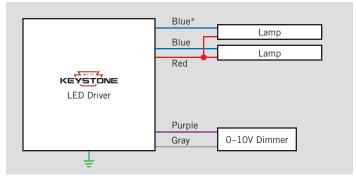
#### **WIRING**

#### **DOUBLE-ENDED WIRING**



<sup>\*</sup> For 1 lamp application, cap off 1 blue lead

#### SINGLE-ENDED WIRING



\* For 1 lamp application, cap off 1 blue lead

#### **STANDARD LEAD LENGTHS\***

Input	Black	30.00"
	White	30.00"
Output	Red	30.00"
	Blue	30.00"
Dimming	Purple	30.00"
	Gray	30.00"

Lead wires are 18 AWG 105° C/600V.

#### ORDERING INFORMATION

Order Code	Packaging Style	Pack Quantity	Item Status
KTLD-2LT5HO-UV-22C-VDIM-CP	Carton Pack	25	Active

#### **CATALOG NUMBER BREAKDOWN**

### KTLD-2LT5HO-UV-22C-VDIM-CP

2 3 4

- 1 Keystone Technologies LED Driver
- 2 Number of Lamps
- 3 Lamp Type
- 4 High Output
- 5 120-277V Input
- 6 Lamp Wattage
- 7 0-10V Dimming
- 8 Packaging Style

<sup>\*</sup>Consult Keystone for special lead length requirements.





### KTLD-2LT8-UV-8C-VDIM CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **DESCRIPTION**

CALUS ROHSE 5YEAR Compliant 5WARRANTY



Constant Current Output | 120-277V Input | 0-10V Dimming

**DRIVER TYPE:** Constant Current MAX. OUTPUT POWER: 16.7W INPUT VOLTAGE: 120-277Vac ±10% OUTPUT VOLTAGE: 36~45 Vdc **OUTPUT CURRENT:** 185mA x 2 channels

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Compatible with Keystone External Drive T8 LED Lamps
- Meets FCC Part 15 (Class B) Consumer Limits
- Short Circuit Overload and Open Load Protection
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- UL8750 Recognized Component

- Dimmable with 0-10V Dimmer
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- 85°C/185°F Maximum Case Temperature
- Input Frequency: 50/60 Hz
- THD: < 20%

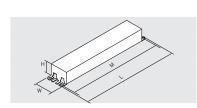
### SPECIFICATIONS

#### **ELECTRICAL SPECIFICATIONS**

	INPUT CHA	RACTERISTICS		(	OUTPUT CHARACTERISTIC	cs	FEATURES
Input Voltage	Input Power	Power Factor	Max. Current	Max. Output Power	Rated Output Current	Output Voltage	Efficiency
120-277Vac	20.4W	>0.9	0.17A @ 120V	16.7W	185mA x 2 Channels	36-45Vdc	88%

#### MECHANICAL SPECIFICATIONS

#### **CASE DIMENSIONS**



KTLD-2LT8-UV-xxC-VDIM					
LENGTH	9.5"				
WIDTH	1.3"				
HEIGHT	1.1"				
MOUNTING	8.9"				

<sup>\*</sup>TC Point (85°C) is noted on each driver label





### KTLD-2LT8-UV-8C-VDIM

CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **MECHANICAL SPECIFICATIONS**

#### STANDARD LEAD LENGTHS\*

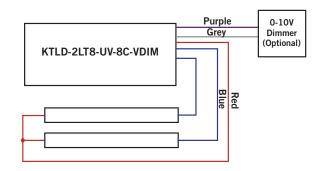
WHITE	30.00"
BLACK	30.00"
RED	30.00"
BLUE	30.00"
PURPLE	30.00"
GRAY	30.00"

**CASE MATERIAL:** Metal

INPUT WIRES	18 AWG 105°C/600V
<b>OUTPUT WIRES</b>	18 AWG 105°C/600V

<sup>\*</sup>Consult Keystone for special lead length requirements.

#### **WIRING DIAGRAM**

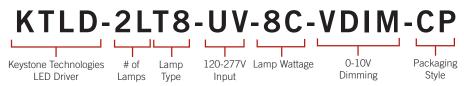


\*For 1 Lamp application, cap off 1 blue lead

#### ORDERING INFORMATION

ORDER CODE		PACKAGING STYLE	PACK QTY.	ITEM STATUS	
	KTLD-2LT8-UV-8C-VDIM-CP	Carton Pack	25	Active	

#### **CATALOG NUMBER BREAKDOWN**



ROHSE SYEAR COmpliant 5YEAR





## KTLD-2LT8-UV-12C-VDIM CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **DESCRIPTION**

Constant Current Output | 120-277V Input | 0-10V Dimming

DRIVER TYPE: Constant Current

MAX. OUTPUT POWER: 24.3W

INPUT VOLTAGE: 120-277Vac ±10%

OUTPUT VOLTAGE: 36~45 Vdc

**OUTPUT CURRENT:** 270mA x 2 channels

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Compatible with Keystone External Drive T8 LED Lamps
- Meets FCC Part 15 (Class B) Consumer Limits
- Short Circuit Overload and Open Load Protection
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- UL8750 Recognized Component

- Dimmable with 0-10V Dimmer
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- 85°C/185°F Maximum Case Temperature
- Input Frequency: 50/60 Hz
- THD: < 20%

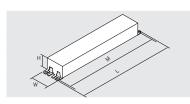
### SPECIFICATIONS

#### **ELECTRICAL SPECIFICATIONS**

INPUT CHARACTERISTICS			OUTPUT CHARACTERISTICS			FEATURES	
Input Input Power Voltage Power Factor Max. Current			Max. Output Power	Rated Output Current	Output Voltage	Efficiency	
120-277Vac	28.8W	>0.9	0.24A @ 120V	24.3W	270mA x 2 Channels	36-45Vdc	88%

#### MECHANICAL SPECIFICATIONS

#### **CASE DIMENSIONS**



KTLD-2LT8-UV-xxC-VDIM			
LENGTH	9.5"		
WIDTH	1.3"		
HEIGHT	1.1"		
MOUNTING	8.9"		

<sup>\*</sup>TC Point (85°C) is noted on each driver label





## KTLD-2LT8-UV-12C-VDIM CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **MECHANICAL SPECIFICATIONS**

#### STANDARD LEAD LENGTHS\*

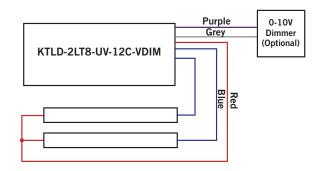
WHITE	30.00"
BLACK	30.00"
RED	30.00"
BLUE	30.00"
PURPLE	30.00"
GRAY	30.00"

**CASE MATERIAL:** Metal

INPUT WIRES	18 AWG 105°C/600V
<b>OUTPUT WIRES</b>	18 AWG 105°C/600V

<sup>\*</sup>Consult Keystone for special lead length requirements.

#### WIRING DIAGRAM



\*For 1 Lamp application, cap off 1 blue lead

#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KTLD-2LT8-UV-12C-VDIM-CP	Carton Pack	25	Active

#### **CATALOG NUMBER BREAKDOWN**



Keystone Technologies • 1390 Welsh Road, North Wales, PA 19454 • Phone (800) 464-2680 • Fax (888) 966-0556 • www.keystonetech.com

CALUS ROHSE 5YEAR Compliant 5WARRANTY





## KTLD-4LT8-UV-8C-VDIM CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **DESCRIPTION**

Constant Current Output | 120-277V Input | 0-10V Dimming

DRIVER TYPE: Constant Current

MAX. OUTPUT POWER: 33.3W

INPUT VOLTAGE: 120-277Vac ±10%

OUTPUT VOLTAGE: 36~45 Vdc

**OUTPUT CURRENT:** 185mA x 4 channels

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Compatible with Keystone External Drive T8 LED Lamps
- Meets FCC Part 15 (Class B) Consumer Limits
- Short Circuit Overload and Open Load Protection
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- UL8750 Recognized Component

- Dimmable with 0-10V Dimmer
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- 85°C/185°F Maximum Case Temperature
- Input Frequency: 50/60 Hz
- THD: < 20%

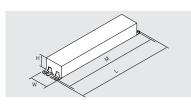
### SPECIFICATIONS

#### **ELECTRICAL SPECIFICATIONS**

INPUT CHARACTERISTICS			OUTPUT CHARACTERISTICS			FEATURES	
Input Voltage	Input Power	Power Factor	Max. Current	Max. Output Power	Rated Output Current	Output Voltage	Efficiency
120-277Vac	40.8W	>0.9	0.34A @ 120V	33.3W	185mA x 4 Channels	36-45Vdc	88%

#### MECHANICAL SPECIFICATIONS

#### **CASE DIMENSIONS**



KTLD-4LT8-UV-xxC-VDIM		
LENGTH	9.5"	
WIDTH	1.8"	
HEIGHT	1.3"	
MOUNTING	8.9"	

<sup>\*</sup>TC Point (85°C) is noted on each driver label





### KTLD-4LT8-UV-8C-VDIM

CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **MECHANICAL SPECIFICATIONS**

#### STANDARD LEAD LENGTHS\*

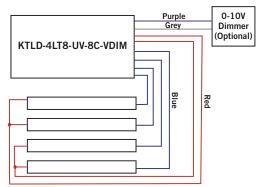
WHITE	30.00"
BLACK	30.00"
RED	30.00"
BLUE	30.00"
PURPLE	30.00"
GRAY	30.00"

**CASE MATERIAL:** Metal

INPUT WIRES	18 AWG 105°C/600V
OUTPUT WIRES	18 AWG 105°C/600V

<sup>\*</sup>Consult Keystone for special lead length requirements.

#### WIRING DIAGRAM



\*For 3 Lamp applications, cap off 1 blue lead

#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KTLD-4LT8-UV-8C-VDIM-CP	Carton Pack	25	Active

#### CATALOG NUMBER BREAKDOWN



ROHSE SYEAR COMPLIANT





### KTLD-4LT8-UV-12C-VDIM CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **DESCRIPTION**

Constant Current Output | 120-277V Input | 0-10V Dimming

**DRIVER TYPE:** Constant Current MAX. OUTPUT POWER: 48.6W INPUT VOLTAGE: 120-277Vac ±10% OUTPUT VOLTAGE: 36~45 Vdc **OUTPUT CURRENT:** 270mA x 4 channels

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Compatible with Keystone External Drive T8 LED Lamps
- Meets FCC Part 15 (Class B) Consumer Limits
- Short Circuit Overload and Open Load Protection
- Type 1 Outdoor, Suitable for Dry and Damp Locations
- UL8750 Recognized Component

- Dimmable with 0-10V Dimmer
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- 85°C/185°F Maximum Case Temperature
- Input Frequency: 50/60 Hz
- THD: < 20%

### SPECIFICATIONS

#### **ELECTRICAL SPECIFICATIONS**

INPUT CHARACTERISTICS			OUTPUT CHARACTERISTICS			FEATURES	
Input Input Power Voltage Power Factor Max. Current			Max. Output Power	Rated Output Current	Output Voltage	Efficiency	
120-277Vac	57.6W	>0.9	0.48A @ 120V	48.6W	270mA x 4 Channels	36-45Vdc	88%

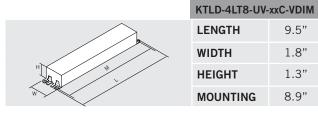
9.5"

1.8"

1.3" 8.9"

#### MECHANICAL SPECIFICATIONS

#### **CASE DIMENSIONS**



<sup>\*</sup>TC Point (85°C) is noted on each driver label





## KTLD-4LT8-UV-12C-VDIM

#### CONSTANT CURRENT LED DRIVERS FOR TYPE C LED T8 LAMPS

#### **MECHANICAL SPECIFICATIONS**

#### STANDARD LEAD LENGTHS\*

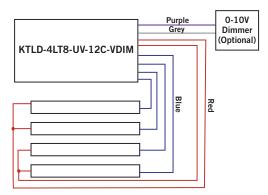
WHITE	30.00"
BLACK	30.00"
RED	30.00"
BLUE	30.00"
PURPLE	30.00"
GRAY	30.00"

#### **CASE MATERIAL:** Metal

INPUT WIRES	18 AWG 105°C/600V
OUTPUT WIRES	18 AWG 105°C/600V

<sup>\*</sup>Consult Keystone for special lead length requirements.

#### WIRING DIAGRAM

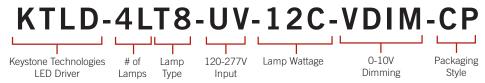


\*For 3 Lamp applications, cap off 1 blue lead

#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KTLD-4LT8-UV-12C-VDIM-CP	Carton Pack	25	Active

#### **CATALOG NUMBER BREAKDOWN**



Keystone Technologies • 1390 Welsh Road, North Wales, PA 19454 • Phone (800) 464-2680 • Fax (888) 966-0556 • www.keystonetech.com

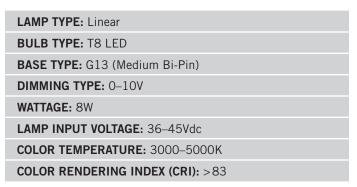




## KT-LED8T8-24G-8XX-E

#### **DESCRIPTION**

8W T8 LED Tube | Type C | 3000–5000K | >83 CRI | 0–10V Dimming





- Compatible with Keystone external drive LED drivers
- Replacement for conventional fluorescent lamps
- 50,000+ hour lifetime
- Type C application for custom installations and maximum efficiency
- Environmentally friendly: No mercury used











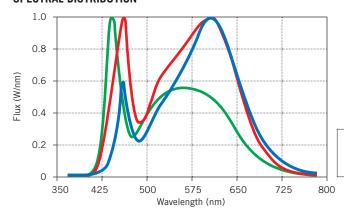


- Instant startup
- Frosted glass eliminates pixelation
- UL Classified (pending)
- Operating temperature: -20°C/-4°F to 45°C/113°F
- 120+ lumens per watt
- DLC Listed

#### **OPERATING SPECIFICATIONS**

		KTLD-2LT8-UV-8C-VDIM						KTLD-4LT8-UV-8C-VDIM						
		1 Lamp				2 Lamps			3 Lamps	S				
Catalog Number	Color Temp.	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Power Factor									
KT-LED8T8-24G-830-E	3000K	9W	1,100	122 lm/W	18W	2,200	122 lm/W	27W	3,300	122 lm/W	36W	4,400	122 lm/W	>0.9
KT-LED8T8-24G-835-E	3500K	9W	1,125	125 lm/W	18W	2,250	125 lm/W	27W	3,375	125 lm/W	36W	4,500	125 lm/W	>0.9
KT-LED8T8-24G-840-E	4000K	9W	1,150	128 lm/W	18W	2,300	128 lm/W	27W	3.450	128 lm/W	36W	4,600	128 lm/W	>0.9
KT-LED8T8-24G-850-E	5000K	9W	1,200	133 lm/W	18W	2,400	133 lm/W	27W	3,600	133 lm/W	36W	4,800	133 lm/W	>0.9





#### RATED LIFE

**L70 (Hours)** 50,000

BEAM ANGLE: 240°

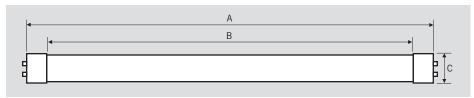
VISIBLE LIGHT AREA: 325°





## KT-LED8T8-24G-8XX-E

#### PHYSICAL CHARACTERISTICS

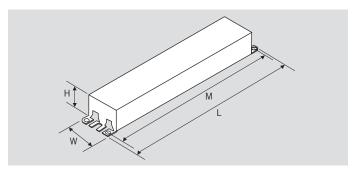


#### LAMP DIMENSIONS

A (Body Length)	23.23"
B (Illuminated Length)	22.12"
C (Diameter)	1.00"

NOMINAL LENGTH: 48"

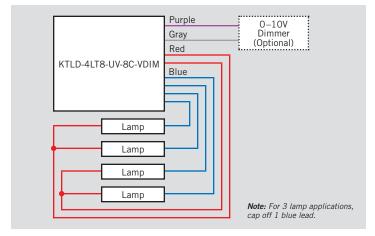
BASE TYPE: G13 (Medium Bi-Pin)

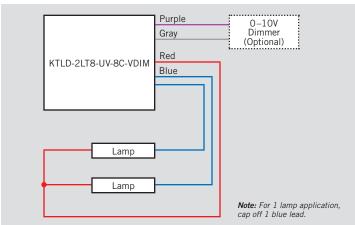


#### **DRIVER DIMENSIONS**

KTLD-2LT8-UV	-8C-VDIM	KTLD-4LT8-UV-8C-VDIM					
Length (L)	9.50"	Length (L)	9.60"				
Width (W)	1.30"	Width (W)	1.80"				
Height (H)	1.10"	Height (H)	1.30"				
Mounting (M)	8.90"	Mounting (M)	8.90"				

#### **WIRING DIAGRAMS**









## KT-LED8T8-24G-8XX-E

#### **ORDERING INFORMATION**

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED8T8-24G-8XX-E-CP	Carton Pack (Egg Crate Packaging)	25	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**

KT-LED8T8-24G-8XX-E

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Type
- 5 Nominal Length (Inches)
- **6** Glass Construction
- **7** 800 Series
- **8** Color Temperature
- 9 External Drive Series





## KT-LED9.5A19-O-8XX REPLACEMENT LAMP

#### **DESCRIPTION**

9.5W A19 Lamp | 2700-5000K | > 80 CRI | Omni-Directional

**LAMP TYPE:** A19

BASE TYPE: E26 (Medium)

WATTAGE: 9.5W

**COLOR TEMPERATURE:** 2700–5000K

**COLOR RENDERING INDEX (CRI):** >80

**WARRANTY:** 2 Years

**RATED LIFE:** L70 (15,000 Hours)

#### TYPICAL APPLICATIONS

- Table, Desk, and Floor Lamps
- Wall Sconces
- Surface Mount Ceiling Fixtures
- General Lighting
- Pendant Lights

#### **PRODUCT FEATURES**

- Energy Efficient, 80%+ Energy Savings over Legacy Equivalents
- Lower Heat Generation than Legacy Equivalents
- PF > 0.70
- Complies with Part 15 of FCC
- Durable Plastic housing lowers the risk for breakage
- ANSI complaint construction ensures fitment for intended applications

- Operating temperature range -4°F/-20°C to 95°F/35°C • Long Life minimizes replacement and maintenance costs
- Meets Energy Star requirements
- UL Listed
- Smooth diffused lens for comfortable glare free performance
- UL enclosed rated, suitable for use in totally enclosed luminaires
- Smooth, uniform dimming









#### **ELECTRICAL AND PERFORMANCE SPECIFICATIONS**

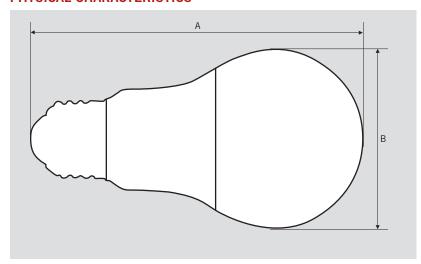
Keystone Catalog Number	Description	Color Temp	Input Voltage	Rated Lamp Wattage	Legacy Equivalent Wattage	Base Type	Lumens	CRI	Light Distribution	Dimmable	Efficacy
KT-LED9.5A19-0-827	A19 bulb. Omni-Directional, dimmable	2700K	120V	9.5W	60W halogen	E26	800	>80	230°	Yes	84 lm/W
KT-LED9.5A19-0-830	A19 bulb. Omni-Directional, dimmable	3000K	120V	9.5W	60W halogen	E26	800	>80	230°	Yes	84 lm/W
KT-LED9.5A19-0-835	A19 bulb. Omni-Directional, dimmable	3500K	120V	9.5W	60W halogen	E26	800	>80	230°	Yes	84 lm/W
KT-LED9.5A19-0-840	A19 bulb. Omni-Directional, dimmable	4000K	120V	9.5W	60W halogen	E26	800	>80	230°	Yes	84 lm/W
KT-LED9.5A19-0-850	A19 bulb. Omni-Directional, dimmable	5000K	120V	9.5W	60W halogen	E26	800	>80	230°	Yes	84 lm/W





## KT-LED9.5A19-O-8XX REPLACEMENT LAMP

#### PHYSICAL CHARACTERISTICS



#### **PACKAGING**

Carton Quantity	60 pcs
Carton Dimensions	15.55" × 13.07" × 10"
Carton Weight	9.9 lbs

#### LAMP DIMENSIONS

A (Length)	4.33"
B (Diameter)	2.36"

BASE TYPE: E26 (Medium)

#### **ORDERING INFORMATION**

ORDER CODE	CARTON QUANTITY	ITEM STATUS
KT-LED9.5A19-O-8XX	60 pcs	Active

#### **CATALOG NUMBER BREAKDOWN**

### KT-LED9.5A19-O-8XX

1 2 3 4 5

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Shape
- 5 Omni-Directional
- 6 800 Series
- 7 Color Temperature





### KT-LED12T8-48G-8XX-E

T8 LED LAMP

#### **DESCRIPTION**











12W T8 LED Tube | Type C | 3000-5000K | >83 CRI | 0-10V Dimmable

LAMP TYPE: Linear	COLOR TEMPERATURE: 3000-5000K
BULB TYPE: T8 LED	COLOR RENDERING INDEX (CRI): >83
BASE TYPE: G13 (Medium Bi-Pin)	WARRANTY: 5 Years

WATTAGE: 12W

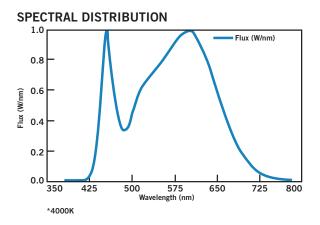
#### PRODUCT FEATURES

- Compatible with Keystone External Drive LED Drivers
- Replacement for Conventional Fluorescent Lamp
- 50,000+ Hour Lifetime
- Type C Application for Custom Installations and Maximum Efficiency
- · Environmentally Friendly: No Mercury Used

- Instant Startup
- Frosted Glass Eliminates Pixelation
- UL Classified\*
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- 120+ Lumens per Watt
- DLC Listed

#### **OPERATING SPECIFICATIONS**

				KTLD-2LT8-UV-12C-VDIM				KTLD-4LT8-UV-12C-VDIM									
					1 Lamp		2 Lamps			3 Lamps				4 Lamps			
Catalog Number	Color Temp.	CRI	Input Voltage	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Power Factor	Dimming Type
KT-LED12T8-48G-830-E	30K	>83	120- 277V	13W	1650lm	127lm/W	26W	3300lm	127lm/W	39W	4950lm	127lm/W	52W	6600Im	127lm/W	>0.9	0-10V
KT-LED12T8-48G-835-E	35K	>83	120- 277V	13W	1700lm	131lm/W	26W	3400lm	131Im/W	39W	5100lm	131lm/W	52W	6800lm	131lm/W	>0.9	0-10V
KT-LED12T8-48G-840-E	40K	>83	120- 277V	13W	1750lm	135lm/W	26W	3500lm	135lm/W	39W	5250lm	135lm/W	52W	7000lm	135lm/W	>0.9	0-10V
KT-LED12T8-48G-850-E	50K	>83	120- 277V	13W	1800lm	139lm/W	26W	3600lm	139Im/W	39W	5400lm	139lm/W	52W	7200lm	139lm/W	>0.9	0-10V



#### **RATED LIFE**

L70 (Hours) 50,000

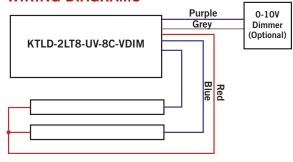


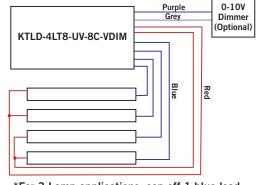


### KT-LED12T8-48G-8XX-E

T8 LED LAMP

#### **WIRING DIAGRAMS**



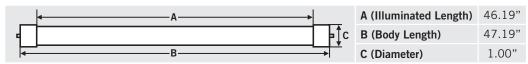


\*For 1 Lamp application, cap off 1 blue lead

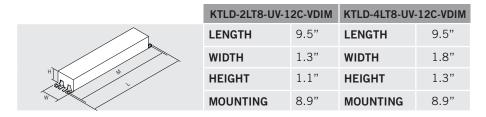
\*For 3 Lamp applications, cap off 1 blue lead

#### PHYSICAL CHARACTERISTICS

#### LAMP DIMENSIONS



NOMINAL LENGTH: 48" BASE TYPE: G13 (Medium Bi-Pin)



#### **ORDERING INFORMATION**

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED12T8-48G-8xx-E-CP	Carton Pack (Egg Crate Packaging)	25	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**







## KT-LED12T8-U6P-8XX-E

#### **DESCRIPTION**

12W T8 U-Bend LED | Type C | 3500-5000K | > 82 CRI | 0-10V Dimming









LAMP TYPE: U-Bend **BULB TYPE: T8 LED** BASE TYPE: G13 (Medium Bi-Pin)

**DIMMING TYPE:** 0–10V

WATTAGE: 12W

**COLOR TEMPERATURE: 3500-5000K COLOR RENDERING INDEX (CRI):** >80

#### **PRODUCT FEATURES**

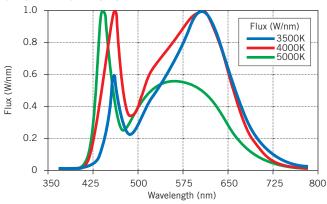
- UL Type C LED tubes, powered by Keystone Type C LED drivers
- UL Classified Std. 1598C
- Plastic construction
- Operating temperature: -20°C/-4°F to 45°C/113°F
- THD <15% at full driver load
- PF > 0.90 at full driver load

- 0−10V dimmable
- 50,000+ hours lifetime
- Keystone tube and driver pairing wires are exactly the same as an Instant Start T8 ballast for quick and easy installation
- · Low optical flicker

#### LAMP SPECIFICATIONS

		Driver: K1	Driver: KTLD-1LT8-UV-12C-VDIM								
			Driver: KTLD-2LT8-UV-12C-VDIM								
			1 Lamp 2 Lamps								
Catalog Number	Color Temp.	Nominal Input Power	Nominal Lumens	Nominal Efficacy	<b>Nominal Input Power</b>	Nominal Lumens	Nominal Efficacy	Power Factor			
KT-LED12T8-U6P-835-E	3500K	13W	1700 lm	130 lm/W	26W	3400 lm	130 lm/W	>0.9			
KT-LED12T8-U6P-840-E	4000K	13W	1750 lm	134 lm/W	26W	3500 lm	134 lm/W	>0.9			
KT-LED12T8-U6P-850-E	5000K	13W	1800 lm	138 lm/W	26W	3600 lm	138 lm/W	>0.9			

#### SPECTRAL DISTRIBUTION



#### RATED LIFE

L70 (Hours) 50,000



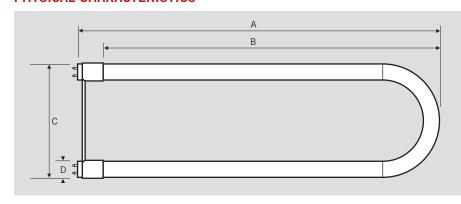


## KT-LED12T8-U6P-8XX-E T8 U-BEND LED LAMP

#### **DRIVER SPECIFICATIONS**

Catalog Number	Description	Dimensions
KTLD-1LT8-UV-12C-VDIM	Driver for (1) T8 U-Bend lamp; 120–277V input, 0–10V dimming; 270mA output current	1.10" × 1.30" × 9.50"
KTLD-2LT8-UV-12C-VDIM	Driver for (2) T8 U-Bend lamps; 120–277V input, 0–10V dimming; 270mA output current	1.10" × 1.33" × 9.50"

#### **PHYSICAL CHARACTERISTICS**

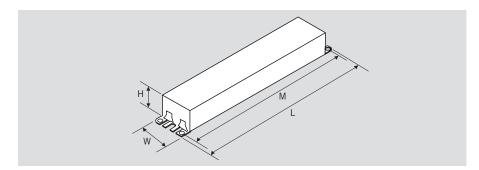


#### LAMP DIMENSIONS

A (Body Length)	22.55"
B (Illuminated Length)	20.71"
C (Body Width)	5.98"
D (Diameter)	1.10"

**NOMINAL LENGTH: 48**"

BASE TYPE: G13



#### **DRIVER DIMENSIONS**

KTLD-1LT8-UV-	12C-VDIM	KTLD-2LT8-UV-12C-VDIM				
Length (L)	9.50"	Length (L)	9.50"			
Width (W)	1.30"	Width (W)	1.30"			
Height (H)	1.10"	Height (H)	1.10"			
Mounting (M)	8.90"	Mounting (M)	8.90"			

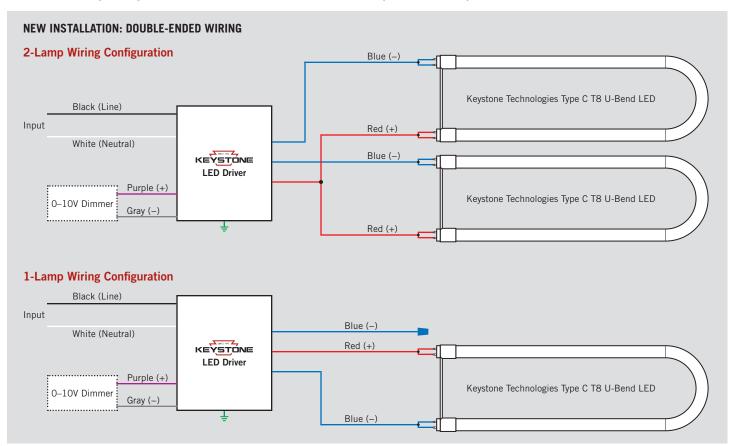




## KT-LED12T8-U6P-8XX-E T8 U-BEND LED LAMP

#### WIRING INSTRUCTIONS

- 1. Shut off power.
- 2. Wire according to diagrams (as shown below). Note: Do not leave any loose wires exposed.



(continued on page 4)

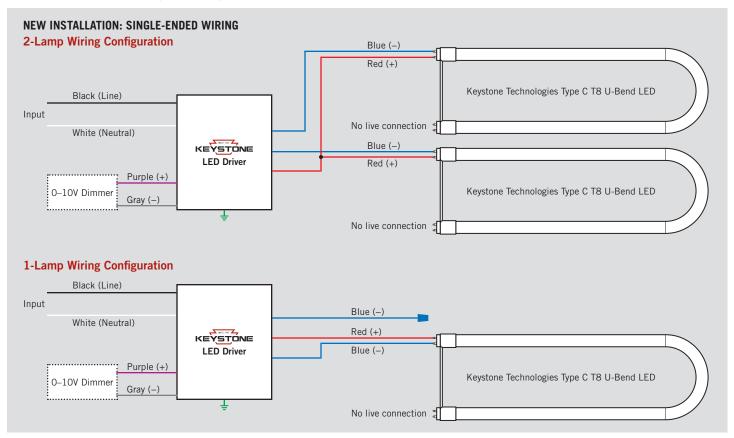




### KT-LED12T8-U6P-8XX-E

T8 U-BEND LED LAMP

#### **WIRING INSTRUCTIONS** (continued)



- 3. Close compartment cover and make sure live parts are not accessible. Affix field-applied label in a visible section inside the luminaire.
- 4. Install the LED tubes and cover the diffuser (if applicable).
- 5. Turn on power and verify that the tubes are working correctly. If not, immediately turn off power and contact Keystone Technologies.

#### **ORDERING INFORMATION**

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED12T8-U6P-8XX-E	Carton Pack (Egg Crate Packaging)	25	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**

## KT-LED12T8-U6P-8XX-E

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Type
- 5 Nominal Size
- 6 Plastic Construction
- **7** 800 Series
- 8 Color Temperature
- 9 External Drive Series



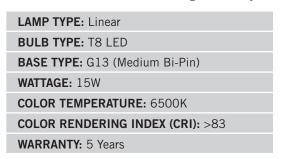


## KT-LED15T8-48GC-865-D

T8 LED LAMP

#### DESCRIPTION

15W T8 LED | 6500K | >83 CRI | High Efficiency



#### PRODUCT FEATURES

- Replacement for Conventional Fluorescent Lamp
- 50.000+ Hour Lifetime
- Approximately 40% More Energy Efficient that Standard F32T8 Lamps
- Environmentally Friendly: No Mercury Used
- Instant Startup
- Frosted Lens Eliminates Pixelation
- UL Classified













- Operating Temperature: -20°C/-4°F to 45°C/113°F
- Integral Driver (Isolated), Eliminates the Need for External Driver or Ballast
- 110+ Lumens per Watt
- Improved Lamp Durability with Shatterproof Coated Glass
- ETL Sanitation Listed NSF/ANSI Standard 2 Food Equipment

#### **OPERATING SPECIFICATIONS**

#### **ELECTRICAL CHARACTERISTICS**

Input Voltage	Power Consumption	Power Factor	Input Current
120-277Vac	15W	>0.9	0.16A @ 120V 0.07A @ 277V

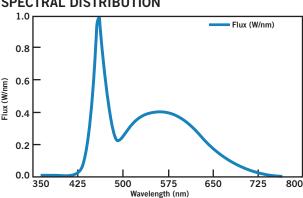
#### **RATED LIFE**

L70 (Hours)	50.000

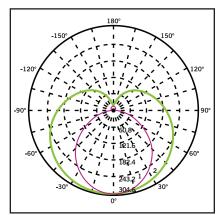
#### PHOTOMETRIC CHARACTERISTICS

Color Temperature (CCT)	6500K
Luminous Flux	1900 lm
Color Rendering Index (CRI)	>83
Efficacy	127 lm/W
Beam Angle	240°
Visible Light Area	325°

#### SPECTRAL DISTRIBUTION



#### POLAR CANDELA DISTRIBUTION



Maximum Candela = 1248.55 Located at Horizontal Angle = 0, Vertical Angle 0

- 1. Violet Vertical Plane through Horizontal Angles (90-270)
- 2. Green Vertical Plane through Horizontal Angles (0-180)

Keystone Technologies • 1390 Welsh Road, North Wales, PA 19454 • Phone (800) 464-2680 • Fax (888) 966-0556 • www.keystonetech.com





7

RED

BLUE

WITH SHUNTED SOCKETS.

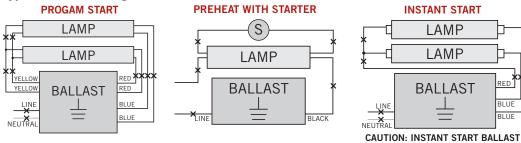
### KT-LED15T8-48GC-865-D

T8 LED LAMP

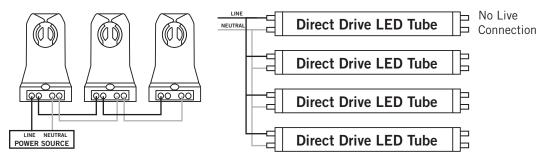
#### WIRING DIAGRAMS

1. Cut all existing connections to ballast as shown below and remove ballast.

#### Typical Ballast Configurations:



2. Re-wire fixture as shown below.





Connect wires directly to these terminals

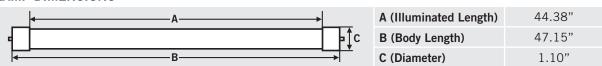
#### **CAUTION:** Use only non-shunted lampholders.

Do not install product in a fixture with shunted lampholders (found in all fixtures using instant start ballasts). If the current lampholders are shunted, remove them and replace them with non-shunted lampholders. Make new connections directly to terminals as indicated above.

Keystone can provide any style replacement lampholders. Call us at 800-464-2680.

#### PHYSICAL CHARACTERISTICS

#### LAMP DIMENSIONS

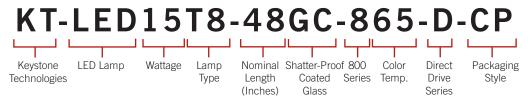


**NOMINAL LENGTH: 48"** BASE TYPE: G13 (Medium Bi-Pin)

#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED15T8-48GC-865-D /G3-CP	Carton Pack (Egg Crate Packaging)	25	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**







#### **DESCRIPTION**

22W T5 LED Tube | Type C | 3500-5000K | > 82 CRI | 0-10V Dimming

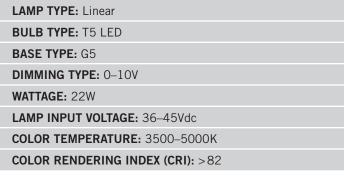














#### **PRODUCT FEATURES**

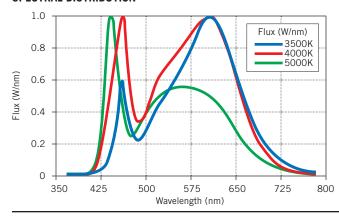
- UL Type C LED tubes, powered by Keystone Type C LED drivers
- UL Classified Std. 1598C
- Glass construction with metal end caps
- Operating temperature: -20°C/-4°F to 45°C/113°F
- THD <15% at full driver load
- PF > 0.90 at full driver load

- 0−10V dimmable
- 50,000+ hours lifetime
- Keystone tube and driver pairing wires either single-ended or double-ended. See wiring diagrams for details and common ballast retrofit scenarios
- · Low optical flicker

#### LAMP SPECIFICATIONS

Driver: KTLD-2LT5HO-UV-				HO-UV-1	2C-VDIM			Driver:	KTLD-4LT	5HO-UV-1	2C-VDIM			
			1 Lamp			2 Lamps			3 Lamps			4 Lamps		
Catalog Number	Color Temp.	Nominal Input Power	Nominal Lumens	Nominal Efficacy	Power Factor									
KT-LED22T5H0-48G-835-E	3500K	25W	3200 lm	128 lm/W	50W	6400 Im	128 lm/W	75W	9600 lm	128 lm/W	100W	12800 lm	128 lm/W	>0.9
KT-LED22T5H0-48G-840-E	4000K	25W	3300 lm	132 lm/W	50W	6600 lm	132 lm/W	75W	9900 lm	132 lm/W	100W	13200 lm	132 lm/W	>0.9
KT-LED22T5H0-48G-850-E	5000K	25W	3400 lm	136 lm/W	50W	6800 lm	136 lm/W	75W	10200 lm	136 lm/W	100W	13600 lm	136 lm/W	>0.9





#### **RATED LIFE**

L70 (Hours) 50,000

BEAM ANGLE: 240°

VISIBLE LIGHT AREA: 325°

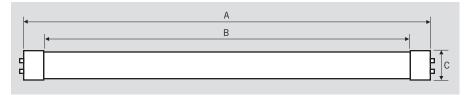




#### **DRIVER SPECIFICATIONS**

Catalog Number	Number Description						
KTLD-2LT5HO-UV-12C-VDIM	Driver for (2) 4' T5 Type C lamps; 120–277V input, 0–10V dimming; 520mA output current	1.10" × 1.33" × 9.50"					
KTLD-4LT5HO-UV-12C-VDIM	Driver for (4) 4' T5 Type C lamps; 120–277V input, 0–10V dimming; 520mA output current	1.30" × 1.80" × 9.60"					

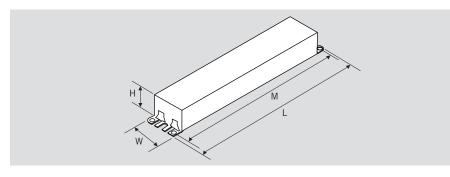
#### PHYSICAL CHARACTERISTICS



#### LAMP DIMENSIONS

A (Body Length)	47.24"
B (Illuminated Length)	45.50"
C (Diameter)	0.63"

NOMINAL LENGTH: 48" BASE TYPE: G5

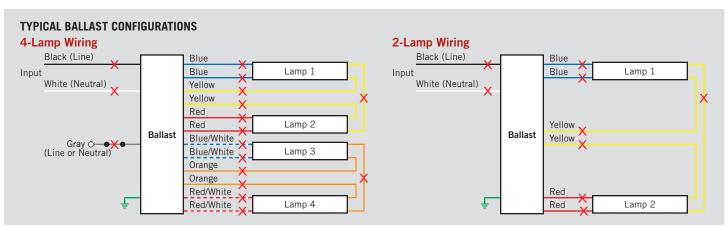


#### **DRIVER DIMENSIONS**

KTLD-2LT5HO-UV-12C-VDIM		KTLD-4LT5HO-UV-12C-VDIM		
L (Length)	9.50"	L (Length)	9.60"	
W (Width)	1.33"	W (Width)	1.80"	
H (Height)	1.10"	H (Height)	1.30"	
M (Mounting)	8.90"	M (Mounting)	8.90"	

#### **WIRING INSTRUCTIONS**

- 1. Shut off power.
- 2. Remove existing fluorescent tube(s) and diffuser (if applicable).
- 3. Open ballast compartment cover, cut all wires (as shown below), and remove existing ballast. Disconnect starter (if applicable).



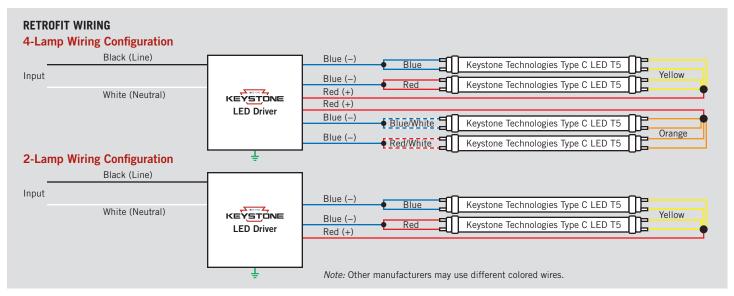
(continued on page 3)

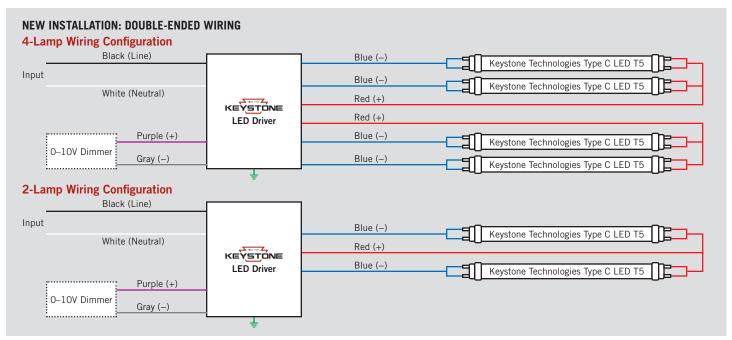




#### **WIRING INSTRUCTIONS** (continued)

- 4. Check the mounting holes of ballast to see whether they are suitable to install LED driver. If not, drill new holes for mounting. Install LED driver to luminaire using screws.
- 5. Wire according to diagrams (as shown below). Note: Do not leave any loose wires exposed.



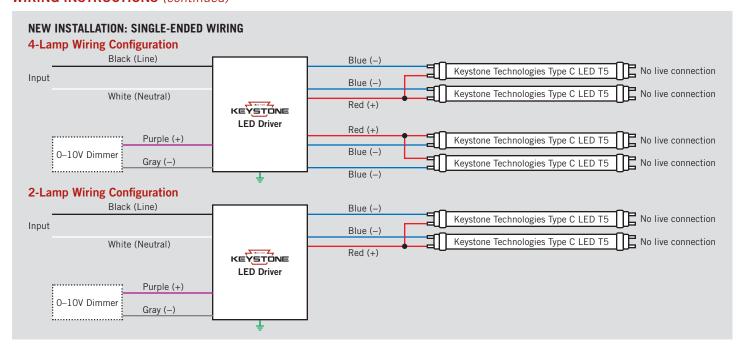


(continued on page 4)





#### **WIRING INSTRUCTIONS** (continued)



- 6. Close compartment cover and make sure live parts are not accessible. Affix field-applied label in a visible section inside the luminaire.
- 7. Install the LED tubes and cover the diffuser (if applicable).
- 8. Turn on power and verify that the tubes are working correctly. If not, immediately turn off power and contact Keystone Technologies.

#### **ORDERING INFORMATION**

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED22T5H0-48G-8XX-E	Carton Pack (Egg Crate Packaging)	25	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**

## KT-LED22T5HO-48G-8XX-E

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Type
- 5 Nominal Length (Inches)
- 6 Glass Construction
- 7 800 Series
- 8 Color Temperature
- 9 External Drive Series





### KT-LED63HID-H-EX39-840-D

HID REPLACEMENT LED LAMP

#### DESCRIPTION

63W HID Replacement LED Lamp | 4000K | 80 CRI | IP64 Rated





#### **PRODUCT FEATURES**

- Replacement for conventional metal halide lamp
- · Ideal for wallpack retrofit applications
- Optimized for horizontal applications with directional light output from opening LED assembly construction
- Non-dimmable; Do not dim
- 50,000+ hour lifetime
- Environmentally friendly: No mercury used
- Instant startup
- DLC Listed

- UL Listed
- Operating temperature: -40°C/-40°F to 45°C/113°F in enclosed fixture
- Integral driver, eliminates the need for external driver or ballast; Includes 4kV surge protection
- IP64 Rated; integrated heat sink quickly dissipates heat and guides water intrusion out of the lamp
- Horizontal orientation
- Suitable for use in fully enclosed fixture

#### **OPERATING SPECIFICATIONS**

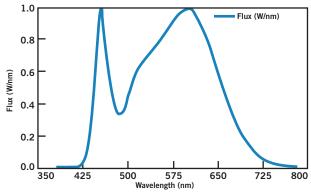
#### **ELECTRICAL CHARACTERISTICS**

Input Voltage	Power Consumption	Power Factor	Input Current
120-277Vac	63W	>0.9	0.53@120V, 0.23@277V

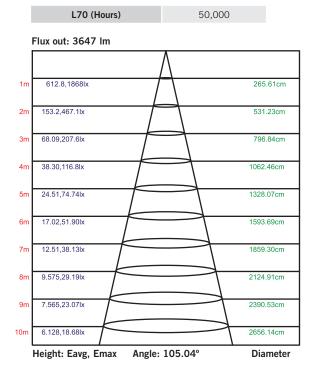
#### PHOTOMETRIC CHARACTERISTICS

Color Temperature (CCT)	4000K	Efficacy	146 lm/W
Luminous Flux	9,198 lm	Beam Angle	180°
Color Rendering Index (CRI)	80		

#### SPECTRAL DISTRIBUTION



#### **RATED LIFE**







### KT-LED63HID-H-EX39-840-D

HID REPLACEMENT LED LAMP

#### **WIRING DIAGRAM**

#### STEP 1

**Disconnect power.** Disconnect and remove existing ballast, capacitor, and/or ignitor (where applicable) from fixture.

# Ballast Capacitor Capacitor No

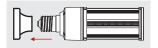
#### STEP 2

Rewire for line voltage to the lamp socket.



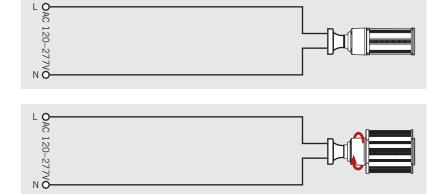
#### STEP 3

Install new LED replacement lamp. Ensure lamp is operating properly when power is turned on.

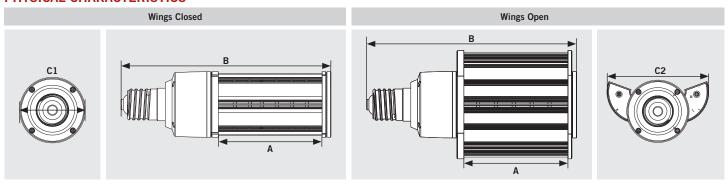


#### STEP 4

Rotate lamp base and open wings accordingly toward direction of desired lumination.



#### PHYSICAL CHARACTERISTICS



#### LAMP DIMENSIONS

A (Illuminated Length)	5.83"	C (Diameter)	3.23"
B (Body Length)	11.12"	C2 (Width, Wings Open)	5.26"

BASE TYPE: EX39 (Mogul) Rotatable





### KT-LED63HID-H-EX39-840-D

#### HID REPLACEMENT LED LAMP

#### **ORDERING INFORMATION**

Order Code	Packaging Style	Pack Quantity	Item Status
KT-LED63HID-H-EX39-840-D-DP	Distributor Pack (Individual Cartons)	16	Quick Ship

#### **CATALOG NUMBER BREAKDOWN**

KT-LED63HID-H-EX39-840-D-DP

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Type
- **5** Horizontal Orientation
- 6 Base Type
- **7** 800 Series
- **8** Color Temperature
- 9 DirectDrive Series
- 10 Packaging Style





## KT-LED82P-H-8xx-D

2-PIN\_LED\_LAMP









#### DESCRIPTION

8W 2-Pin LED Lamp | 2700K, 3000K, 3500K, 4000K, 5000K | ≥83 CRI

**LAMP TYPE:** Compact **BULB TYPE: 2-Pin LED** BASE TYPE: G24d

WATTAGE: 8W

COLOR TEMPERATURE: 2700K, 3000K, 3500K, 4000K, 5000K

**COLOR RENDERING INDEX (CRI):** ≥83

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Replaces 26W/32W/42W G24d & G24g CFL Lamps
- 50,000+ Hour Lifetime
- Approximately 50% More Energy Efficient than Traditional CFL
- Environmentally Friendly: No Mercury Used
- Instant Startup

- Frosted Lens Eliminates Pixelation
- Integral Driver, Eliminates the Need for External Driver or Ballast
- UL Recognized and UL Classified
- Operating Temperature: -20°C/-4°F to 45°C/113°F
- Up to 5x Longer Life than Traditional CFL Lamps
- Horizontal Orientation

#### **OPERATING SPECIFICATIONS**

#### **ELECTRICAL CHARACTERISTICS**

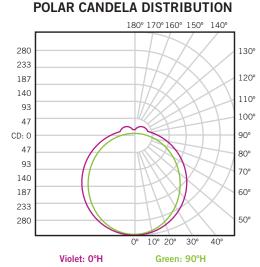
Input Voltage	Lamp Wattage	Power Factor	System Wattage
120-277V	8W	>0.9	8W

#### PHOTOMETRIC CHARACTERISTICS

Color Temperature (CCT)	2700K	3000K	3500K	4000K	5000K
Luminous Flux	900 lm	900 lm	900 lm	950 lm	950 lm
Color Rendering Index (CRI)	≥83	≥83	≥83	≥83	≥83
Bare Lamp Efficacy	113 lm/W	113 lm/W	113 lm/W	119 lm/W	119 lm/W
Beam Angle	>120°	>120°	>120°	>120°	>120°

#### RATED LIFE

L70 (Hours)	50,000



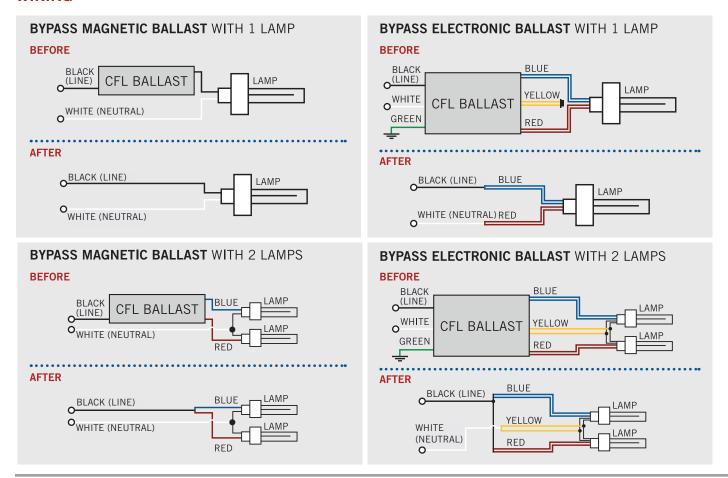




### KT-LED82P-H-8xx-D

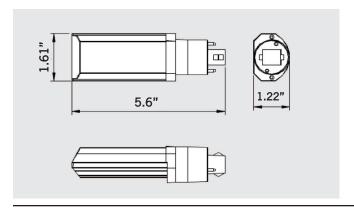
2-PIN LED LAMP

#### **WIRING**



#### PHYSICAL CHARACTERISTICS

#### LAMP DIMENSIONS



Keystone Technologies • 1390 Welsh Road, North Wales, PA 19454 • Phone (800) 464-2680 • Fax (888) 966-0556 • www.keystonetech.com





## KT-LED82P-H-8xx-D

2-PIN LED LAMP

#### **ORDERING INFORMATION**

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED82P-H-8xx-D-DP	Distributor Pack	50	Quick Ship

#### CATALOG NUMBER BREAKDOWN







### KT-LED94P-H-8XX-S

4-PIN LED LAMP











#### **DESCRIPTION**

9W I 4-Pin LED Lamp I 2700K, 3000K, 3500K, 4000K, 5000K I >80CRI I CFL Ballast Compatible

**LAMP TYPE:** Compact **BULB TYPE:** 4-Pin LED

BASE TYPE: G24q/GX24q LAMP WATTAGE: 9W

INPUT TYPE: Ballast Compatible

**WARRANTY:** 5 Years



#### **PRODUCT FEATURES**

- Plug and Play: Directly Compatible with Most Existing CFL Ballasts.
   Contact Keystone for Ballast Compatibility List.
- Replacement for Conventional 13W, 18W, 26W, and 42W G24q Lamps
- Last Up to 5x Longer for Traditional CFL Lamps

- UL Classified and UL Recognized Component
- Operating Temperature: -20°C/-4°F to 45°C /113°F
- Listed on DLC QPL
- Non-Dimmable, and Not for Use in Fully Enclosed Fixtures.

#### **OPERATING SPECIFICATIONS**

Catalog Number	Color	Base Type	Orientation	CRI	Power Factor	Input Voltage	Lamp Wattage	System Wattage*	Lumens*	Rated Life
KT-LED94P-H-827-S	2700K	G24q	Horizontal	>80	Ballast		9	11	920	50,000 Hrs.
KT-LED94P-H-830-S	3000K	G24q	Horizontal	>80			9	11	980	50,000 Hrs.
KT-LED94P-H-835-S	3500K	G24q	Horizontal	>80		Dependent		11	980	50,000 Hrs.
KT-LED94P-H-840-S	4000K	G24q	Horizontal	>80			9	11	1050	50,000 Hrs.
KT-LED94P-H-850-S	5000K	G24q	Horizontal	>80			9	11	1050	50,000 Hrs.

\* Values based off of typical 2x26W CFL Ballast.

#### PERFORMANCE SPECIFICATIONS

Original Best Wattage	System Wattage Per Lamp	Lumens Per Lamp (at 3000K)		
13W	6.5	415		
18W	7.5	480		
26W	11	980		
42W	12	1000		

<sup>\*</sup> Values based off of typical 2x26W CFL Ballast.



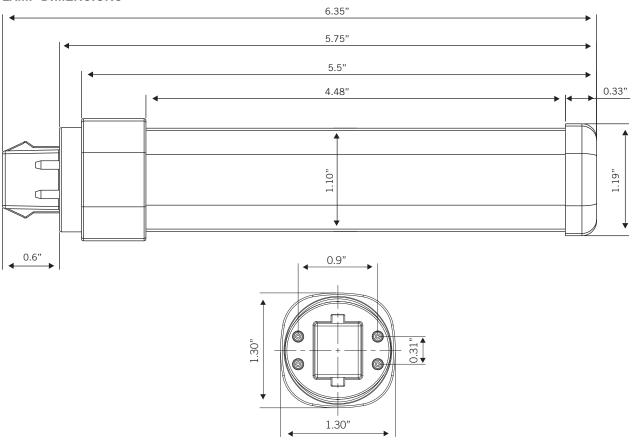


### KT-LED94P-H-8XX-S

4-PIN LED LAMP

#### PHYSICAL CHARACTERISTICS

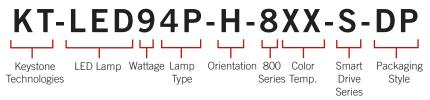
#### LAMP DIMENSIONS



#### ORDERING INFORMATION

ORDER CODE	PACKAGING STYLE	PACK QTY.	ITEM STATUS
KT-LED94P-H-8xx-S-DP	Distributor Pack	6	Active

#### **CATALOG NUMBER BREAKDOWN**





### KT-LEDXXA21-O-E26-8XX

#### REPLACEMENT LAMP

#### **DESCRIPTION**

14-20W Commercial A21 Lamp | 2700-5000K | > 80 CRI | Omni-Directional

**LAMP TYPE:** Commercial A21

BASE TYPE: E26 (Medium)

**WATTAGE: 14–20W** 

**COLOR TEMPERATURE: 2700-5000K** 

**COLOR RENDERING INDEX (CRI):** >80

**WARRANTY:** 5 Years

#### **PRODUCT FEATURES**

- Up to 75% energy saving compared to legacy equivalent lamps
- Can be used in base-up or base-down position
- Rated for open and enclosed fixtures
- Large metal heatsink for optimal heat dissipation
- THD < 20%
- PF > 0.90

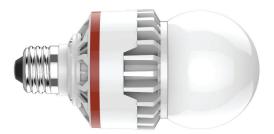












- Operating temperature range  $-4^{\circ}\text{F}/-20^{\circ}\text{C}$  to  $113^{\circ}\text{F}/45^{\circ}\text{C}$ ;  $95^{\circ}\text{F}/35^{\circ}\text{C}$  max for fully enclosed fixture
- Ideal for post top, bollards, and outdoor corridor lighting
- Suitable for dry and damp location
- Meets Energy Star requirements
- UL 1993 and 1598C Rated pending

#### **ELECTRICAL AND PERFORMANCE SPECIFICATIONS**

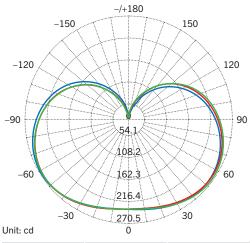
Keystone Catalog Number	Description	Color Temp	Input Voltage	Rated Lamp Wattage	Legacy Equivalent Wattage	Base Type	Lumens	CRI	Light Distribution	Dimmable	Efficacy
KT-LED14A21-O-E26-827	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	2700K	120-277V	14W	100W incand.	E26	1760 L	>80	340	No	126 Im/W
KT-LED14A21-0-E26-830	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	3000K	120-277V	14W	100W incand.	E26	1790 L	>80	340	No	128 lm/ <b>W</b>
KT-LED14A21-O-E26-840	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	4000K	120-277V	14W	100W incand.	E26	1900 L	>80	340	No	136 lm/W
KT-LED14A21-0-E26-850	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	5000K	120-277V	14W	100W incand.	E26	1960 L	>80	340	No	140 lm/W
KT-LED20A21-0-E26-827	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	2700K	120-277V	20W	150W incand.	E26	2500 L	>80	340	No	125 Im/W
KT-LED20A21-0-E26-830	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	3000K	120-277V	20W	150W incand.	E26	2540 L	>80	340	No	127 lm/W
KT-LED20A21-0-E26-840	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	4000K	120-277V	20W	150W incand.	E26	2720 L	>80	340	No	136 lm/W
KT-LED20A21-0-E26-850	Commerical A21 bulb. Universal input voltage, Omni-directional, Non-dimmable	5000K	120-277V	20W	150W incand.	E26	2760 L	>80	340	No	138 Im/ <b>W</b>
KT-LED20A21-O-E26-827-DIM	Commerical A21 Bulb. Omni-directional, TRIAC dimmable	2700K	120V	20W	150W incand.	E26	2460 L	>80	340	Yes	123 Im/W
KT-LED20A21-O-E26-830-DIM	Commerical A21 Bulb. Omni-directional, TRIAC dimmable	3000K	120V	20W	150W incand.	E26	2500 L	>80	340	Yes	125 Im/W
KT-LED20A21-O-E26-840-DIM	Commerical A21 Bulb. Omni-directional, TRIAC dimmable	4000K	120V	20W	150W incand.	E26	2620 L	>80	340	Yes	131 lm/W
KT-LED20A21-O-E26-850-DIM	Commerical A21 Bulb. Omni-directional, TRIAC dimmable	5000K	120V	120W	150W incand.	E26	2660 L	>80	340	Yes	133 lm/W



# KT-LEDXXA21-O-E26-8XX REPLACEMENT LAMP

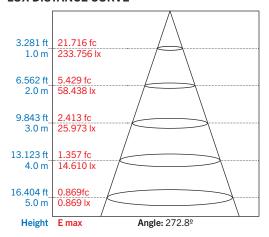
#### **OPERATING SPECIFICATIONS**

#### POLAR CANDELA DISTRIBUTION



C Plane	50% MaxAng.	10% MaxAng.
C240.0_60.0	272.8	343.2
C0.0_180.0	272.5	342.3
C90.0_270.0	273.0	342.8

#### **LUX DISTANCE CURVE**

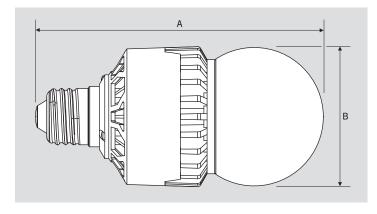


Note: The curves indicate the illuminated area and the average illumination when the luminaire is at a different distance.

#### **RATED LIFE**

170 (11)	25 222
L70 (Hours)	25,000

#### PHYSICAL CHARACTERISTICS



#### LAMP DIMENSIONS

A (Length)	5.26"
B (Diameter)	2.56"

BASE TYPE: E26 (Medium)

#### **PACKAGING**

Carton Quantity	24 pcs
<b>Carton Dimensions</b>	11.6" × 13.38" × 15"
Carton Weight	19.1 lbs



# KT-LEDXXA21-O-E26-8XX REPLACEMENT LAMP

#### **ORDERING INFORMATION**

CATALOG NUMBER	PACK QTY.	EASY CODE	UPC
KT-LED14A21-O-E26-827	24 pcs	MKD-50	843654122700
KT-LED14A21-O-E26-830	24 pcs	LTE-35	843654122717
KT-LED14A21-O-E26-840	24 pcs	XEF-64	843654122724
KT-LED14A21-O-E26-850	24 pcs	XOI-75	843654122731
KT-LED20A21-O-E26-827	24 pcs	GAU-17	843654122748
KT-LED20A21-O-E26-830	24 pcs	SXF-69	843654122755
KT-LED20A21-O-E26-840	24 pcs	OPF-90	843654122762
KT-LED20A21-O-E26-850	24 pcs	XJH-40	843654122779
KT-LED20A21-O-E26-827-DIM	24 pcs	CLA-73	843654122786
KT-LED20A21-O-E26-830-DIM	24 pcs	JRC-19	843654122793
KT-LED20A21-O-E26-840-DIM	24 pcs	TMJ-80	843654122809
KT-LED20A21-O-E26-850-DIM	24 pcs	QHI-50	843654122816

#### **CATALOG NUMBER BREAKDOWN**

### KT-LEDXXA21-O-E26-8XX

2 3 4

- 1 Keystone Technologies
- 2 LED Lamp
- 3 Wattage
- 4 Lamp Style
- 5 Omni-Directional
- 6 Base Type
- 7 800 Series
- **8** Color Temperature















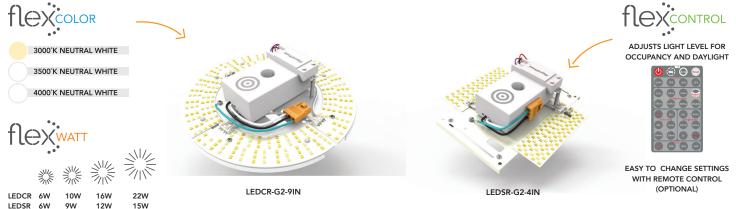




PWR FACTOR/THD

# retrofitting with flexibility

5 STYLES, 4 LUMEN PACKAGES, 3 COLOR TEMPERATURES, MULTIPLE CONTROL OPTIONS, 1 PERFECT SOLUTION FOR ALL YOUR RETROFITS.



#### ALL STYLES SHOWN ON PAGE 4

#### 12 RETROFIT KITS IN 1 WITH FLEXWATT™ & FLEXCOLOR™ TECHNOLOGY

- Eliminate ordering and stocking multiple wattages and color temperatures. Product offers 12 SKUs in 1 unit which can easily be configured to 4 different wattage packages and 3 different CCTs.
- Product ships at a default color temp (K) and wattage setting (install as is, or tailor the settings to fit your needs at your facility or on the job site)
- Save on labor costs by having us factory pre-set the wattage and color temperature to fit your project needs.

#### **UL 1598C LISTED RETROFIT KIT**

• Can in-field retrofit existing fixtures or be used as a light engine by OEMs to build your own fixtures.

#### **FUTURE PROOF YOUR LIGHTING**

• User replaceable and upgradeable light engine.

#### SUITABLE FOR DRY & DAMP LOCATIONS







#### FLEXCONTROL™ TECHNOLOGY

- Order control ready or basic control (integrated high/low and daylight sensor) or wireless advanced control.
- Vandal Resistant Sensors are completely adjustable and hidden behind the fixture lens.
- Adjustable via remote for sensitivity, duration of time at high light level before dimming to low, duration of time at low light level before dimming to off (factory default is to disable), daylight hold-off, and the dimmed light level.

#### ADAPTABLE MOUNTING

- Integrated rare-earth magnets for easy placement.
- Cut-out in center of driver allows for threaded rods.
- Flexible wiring options accommodates various wiring configurations.
- Multiple holes for self-tapping screws.

10 YEAR WARRANTY, L70 > 100,000HRS

OPTIONAL EMERGENCY BATTERY BACKUP



#### PART NUMBER BUILDER

RPT-P-LEDSR-G2-4IN-8L-830-FWFC

MF	R	FAMILY	PRODUCT	GEN	SIZE	LUMEN CODE	COLOR	FUNCTION	OPTIONS
RI	PT	Р		G2				FWFC	
			LEDCR LEDSR		_4IN →	▶ 8L, 14L, 23L, 31L ▶ 8L, 14L, 17L, 21L ▶ 8L, 14L, 17L, 21L	830=3000K/85CRI 835=3500K/85CRI 840=4000K/85CRI	FWFC= FlexWatt + FlexColor	OCC=high/low motion sensor EMG=90 min emergency battery backup LVD=120-277V line voltage dimming
		G EXAMPLI R-G2-9IN-14I			14INE →	▶ 8L, 14L, 17L, 21L ▶ 8L, 14L, 17L, 21L	040-4000IV 03CIVI		2.5 .20 2.7o voltage diffilling

Default lumen package (wattage and CCT) are shown below in bold. There are two ways to achieve a non-default lumen package and/or CCT:

1. You can easily adjust in field via our FlexWatt and FlexColor internal switches. 2. Have us adjust the FlexWatt and FlexColor at the factory for an additional charge.

	ORDE	ERING C	UIDE							
	CASE QTY	QUICK E	NERGY STAR	REMPHOS PART #	QUICK SHIP UPC CODE	LUMEN OUTPUT (LM)	WATTAGE (W)	LPW	CCT (K)	WARRANTY (YRS)
	20		•	RPT-P-LEDCR-G2-9IN-8L-830-FWFC		780	6	130	3000	10
	20		•	RPT-P-LEDCR-G2-9IN-8L-835-FWFC		780	6	130	3500	10
	20		•	RPT-P-LEDCR-G2-9IN-8L-840-FWFC		816	6	136	4000	10
	20		•	RPT-P-LEDCR-G2-9IN-14L-830-FWFC		1370	10	137	3000	10
	20		•	RPT-P-LEDCR-G2-9IN-14L-835-FWFC		1440	10	144	3500	10
œ	20	•	•	RPT-P-LEDCR-G2-9IN-14L-840-FWFC	844006010676	1370	10	137	4000	10
LEDCR	20	•	•	RPT-P-LEDCR-G2-9IN-14L-840-FWFC-OCC	844006010683	1370	10	137	4000	10
=	20		•	RPT-P-LEDCR-G2-9IN-23L-830-FWFC		2256	16	141	3000	10
	20		•	RPT-P-LEDCR-G2-9IN-23L-835-FWFC		2240	16	140	3500	10
	20		•	RPT-P-LEDCR-G2-9IN-23L-840-FWFC		2352	16	147	4000	10
	20		•	RPT-P-LEDCR-G2-9IN-31L-830-FWFC		2970	22	135	3000	10
	20		•	RPT-P-LEDCR-G2-9IN-31L-835-FWFC		3080	22	140	3500	10
	20		•	RPT-P-LEDCR-G2-9IN-31L-840-FWFC		3124	22	142	4000	10
	20		•	RPT-P-LEDSR-G2-XIN-8L-830-FWFC		780	6	130	3000	10
	20		•	RPT-P-LEDSR-G2-XIN-8L-835-FWFC		780	6	130	3500	10
	20	•	•	RPT-P-LEDSR-G2-4IN-8L-840-FWFC	844006010690	816	6	136	4000	10
	20	•		RPT-P-LEDSR-G2-4IN-8L-840-FWFC-OCC	844006010706	816	6	136	4000	10
	20	•	•	RPT-P-LEDSR-G2-9IN-8L-840-FWFC	844006010713	816	6	136	4000	10
	20	•		RPT-P-LEDSR-G2-9IN-8L-840-FWFC-OCC	844006010720	816	6	136	4000	10
	20	•	•	RPT-P-LEDSR-G2-14INE-8L-840-FWFC	844006010737	816	6	136	4000	10
	20	•		RPT-P-LEDSR-G2-14INE-8L-840-FWFC-OCC	844006010744	816	6	136	4000	10
œ	20	•	•	RPT-P-LEDSR-G2-14INM-8L-840-FWFC	844006010751	816	6	136	4000	10
LEDSR	20	•		RPT-P-LEDSR-G2-14INM-8L-840-FWFC-OCC	844006010768	816	6	136	4000	10
=	20		•	RPT-P-LEDSR-G2-XIN-14L-830-FWFC		1370	10	137	3000	10
	20		•	RPT-P-LEDSR-G2-XIN-14L-835-FWFC		1440	10	144	3500	10
	20		•	RPT-P-LEDSR-G2-XIN-14L-840-FWFC		1370	10	137	4000	10
	20		•	RPT-P-LEDSR-G2-XIN-17L-830-FWFC		1692	12	141	3000	10
	20		•	RPT-P-LEDSR-G2-XIN-17L-835-FWFC		1680	12	140	3500	10
	20		•	RPT-P-LEDSR-G2-XIN-17L-840-FWFC		1764	12	147	4000	10
	20		•	RPT-P-LEDSR-G2-XIN-21L-830-FWFC		2025	15	135	3000	10
	20		•	RPT-P-LEDSR-G2-XIN-21L-835-FWFC		2100	15	140	3500	10
	20		•	RPT-P-LEDSR-G2-XIN-21L-840-FWFC		2130	15	142	4000	10





#### HOW DOES IT WORK?

Our exclusive LED driver is designed to operate at 90%+ efficiency at each wattage setting. Standard drivers would have much lower efficiency as low as 60% and would result in poor performance and

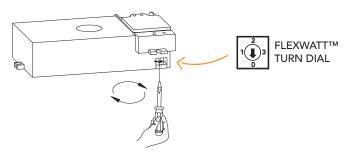
#### WHAT ARE THE WATTAGE CHOICES?

Please reference this table and the ordering guide on the last page of the cut sheet.

FLEXWATT TURN DIAL POSITION									
STYLE	0	1	2	3					
LEDCR	6W (8L)	10W (14L)	16W (23L)	22W (31L)					
LEDSR	6W (8L)	10W (14L)	12W (17L)	15W (21L)					

#### HOW EASY IS IT TO SET?

Simply slide off the driver door, adjust the 4-position turn dial with a small, flat-head screw driver, and replace the door. Quick and easy. Can be "locked-out" to prevent field-adjustability if desired.





#### HOW DOES IT WORK?

We select the highest efficacy, multiple color LED diodes from quality suppliers, and mount them on the same circuit board. A proprietary LED binning process ensures color consistency between fixtures. The FlexColor technology controller ensures the correct color is selected, every time.

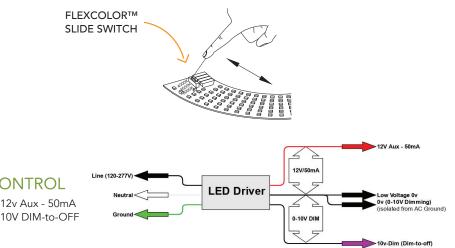
#### WHAT ARE THE COLOR CHOICES?

3000k, 3500k and 4000k. Please reference this table and the ordering guide on the last page of the cut sheet.

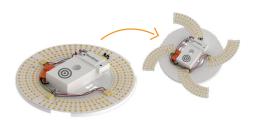
FLEXCOLO	FLEXCOLOR SLIDE SWITCH POSITION					
TOP	MIDDLE	воттом				
3000K	3500K	4000K				

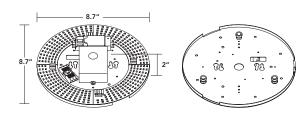
#### HOW EASY IS IT TO SET?

Adjust the 3-position slide switch with your finger. Quick and easy. Can be "locked-out" to prevent field-adjustability if desired.



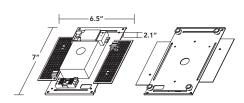






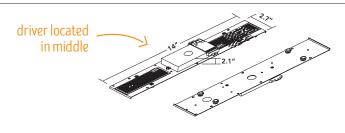
LEDCR-G2-9IN (EXPANDABLE LED BOARDS)

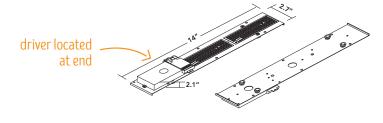




LEDSR-G2-4IN (EXPANDABLE LED BOARDS)

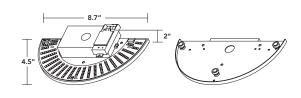






LEDSR-G2-14INE (FIXED LED BOARDS)





LEDSR-G2-9IN (FIXED LED BOARDS)







RETROFIT THESE FIXTURES & MORE



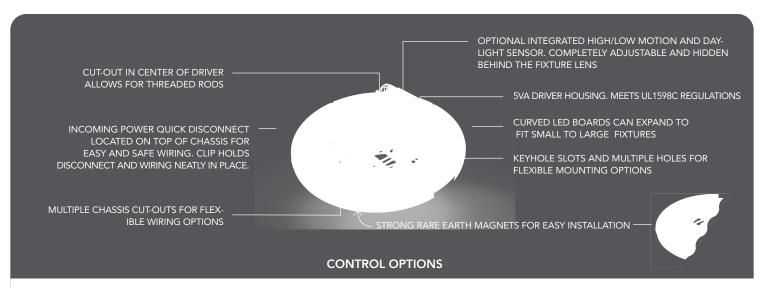




SURFACE MOUNTS

VANITIES/LINEARS

WALL MOUNTS







All LEDCR/SR models come standard as factory enabled to add controls at the factory, in the field or at a later date. Driver comes with 10V dimming and 12V DC power wiring.

#### BASIC CONTROL



Integrated high frequency, high/low motion and daylight sensor. Can be mounted behind glass or plastic lens. Purchase optional remote control to adjust settings.

ORDERING CODES
SENSOR = OCC / RC = HNSIII REMOTE

#### ADVANCED WIRELESS CONTROL





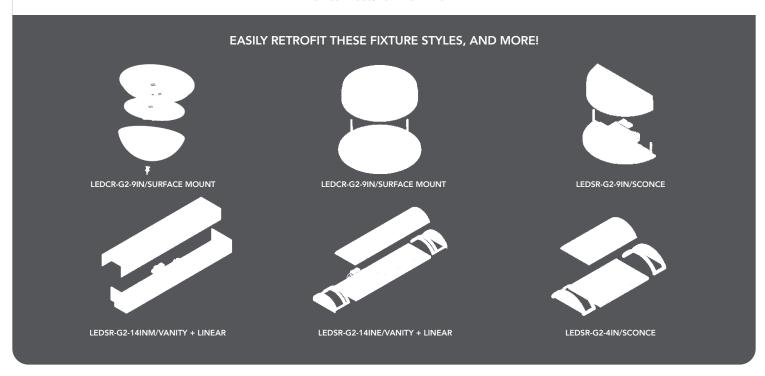




PHILIPS CLUTRON.

We partner with Magnum, avi-on, Philips, Lutron and other intelligent wireless lighting control systems. Allows for occupancy sensing, daylight harvesting, grouping, scheduling, high-end trim and more. Adjust settings via iPhone/Android apps. Contact us for

CONTACT US FOR ORDERING CODES







### **FDC** Flood Light Contractor

F	DC	Н	Н	ug

FDCX X-Large









FDCL Large







The Flood Light Contractor Series luminaire is a high performance lighting solution that comes in Small, Medium, Large, X-Large, and Huge. This versatile fixture has a slim rugged aluminum housing, watertight compartment for driver, and efficient heat sink. A variety of mounting options are available including Knuckle, Trunnion, Slipfitter, and Yoke. This FDC series is an excellent price-competitive solution without compromising quality that is ideal for signage, roadways, security, and general lighting applications.

#### **APPLICATIONS**

Landscape lighting, signage, internal roadways, parking lots, and general area lighting

#### REPLACEMENT

Up to 1000W Metal Halide



Wide Flood Distribution



Narrow Flood Distribution

#### PROJECT: CATALOG #: FIXTURE TYPE: **NOTES:**







#### PERFORMANCE INFORMATION

	1		
SERIES NUMBER	WATT	LUMENS	ССТ
FDCS 20 G1 5K	15W	2,000	5000K
FDCS 35 G1 5K	27W	3,600	5000K
FDCM 60 G1 5K	45W	5,650	5000K
FDCM 80 G1 5K	60W	7,450	5000K
FDCL 93 G1 5K	70W	8,900	5000K
FDCL 130 G1 5K	100W	13,300	5000K
FDCX 180 G1 5K	135W	18,000	5000K
FDCX 180 NFL G1 5K	135W	18,000	5000K
FDCX 260 G1 5K	200W	26,200	5000K
FDCX 260 NFL G1 5K	200W	26,500	5000K
FDCH 350 G1 5K*	250W	34,500	5000K
FDCH 350 NFL G1 5K*	250W	34,500	5000K
FDCH 480 G1 5K	350W	50,000	5000K
FDCH 480 NFL G1 5K	350W	49,500	5000K

\*DLC Pending

Luminaire	Size	Lumen Output	Light	Generation	Voltage	ССТ	Finish	Dimming	Mount	Options
Туре	-	350	Distribution	_	Ů				_	'
Flood Light Contractor	<b>□ 5</b> = Small	☐ <b>20</b> 2,000 Lumens/15 Watt ☐ <b>35</b> 3,600 Lumens/27 Watt	■ <b>BLANK=</b> Wide Flood 7Hx6V	Generation 1	□ <b>BLANK</b> = 120-277V	□4K= 4000K □5K=	□ BLANK= Dark Bronze □ C=	BLANK= Non- dimming D=	BLANK= Knuckle Mount T=	■ <b>BLANK</b> = No Option ■ <b>P</b> = Button Photocell
	☐ <b>M</b> = Medium	□ <b>60</b> 5,650 Lumens/45 Watt □ <b>80</b> 7,450 Lumens/60 Watt				5000K	Custom**	Dimming	Trunnion Mount	
	□ <b>L</b> = Large	□ 93 8,900 Lumens/70 Watt □ 130 13,300 Lumens/100 Watt			□ BLANK= 120-277V □ HVU= 347-480V				☐ <b>T</b> =  Trunnion Mount ☐ <b>S</b> =  Slipfitter Mount	
	□ <b>X</b> =	□ <b>180</b> 18,000 Lumens/135 Watt	□BLANK=	1						Only available for FDC X and FDC H
	X-Large	□ <b>260</b> 26,200 Lumens/200 Watt	Wide Flood 7Hx6V							□ <b>EL UNV-8W</b> = Emergency Battery Backup
			□ NFL=							
	□ <b>H</b> = Huge	☐ <b>350</b> 34,500 Lumens/250 Watt ☐ <b>480</b> 49,500 Lumens/350 Watt	Narrow Flood 4Hx4V						□ <b>Y</b> = Yoke Mount	

<sup>\*\*</sup>For a custom color, please call to place your order



#### **SPECIFICATIONS**

#### HOUSING

One-piece die-cast aluminum housing with heat sink for effective conductive and convective cooling. The vented housing isolates the LED module from the driver. The LED driver is directly assembled on the casting for a low operative temperature and a long life span. The doorframe is sealed with an extruded silicone gasket to prevent moisture from accumulating.

#### AMBIENT TEMPERATURE

Suitable for use in -40°C to +45°C (-40°F to 113°F).

#### MOUNTING

#### **Knuckle Mount**

½ NPS adjustable knuckle mount in aluminum.

#### **Trunnion Mount**

Adjustable trunnion mount in aluminum for direct surface mounting with bolt to lock in the aiming angle.

#### **Slipfitter Mount**

Adjustable slipfitter mount in aluminum that fits 2-3/8" O.D. tenon. Includes set screws for securing luminaire to tenon and aiming angle markings with bolt to lock in the aiming angle.

#### **Yoke Mount**

Adjustable Yoke Mount with bolt to lock aiming angle, painted for corrosion. Direct mounting to surface.

#### **EFFICACY**

Up to 138 lumens per watt (see individual wattage data).

#### **CCT AND CRI**

4000K and 5000K CCT available; 70 CRI

#### **OPTICS**

Superior lighting uniformity for vertical and horizontal NEMA 7HX6V and 4HX4V flood distribution while reducing back light from poles.

#### ELECTRICAL

High efficiency current driver above 90%. 50/60Hz operation with standard 120-277 input. Standard PC UNV B3-Button Photocell. FDCS & FDCM is non-dimmable. FDCL, FDCX & FDCH with 0-10V dimming option.

#### FINISH

Dark Bronze coat finish with superior resistance to corrosion and weather. Custom colors available.

#### WARRANTY

5-year limited warranty. Comprehensive warranty terms can be located on www.slgus.com.

#### CERTIFICATIONS

UL listed for wet locations. Design Lights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC qualified. Please visit www.slgus.com to confirm which versions are qualified.

#### MOUNTING



1/2" NPS Knuckle Mount Small and Medium size only



**Trunnion Mount**Small and Medium size only



Trunnion Mount
Large and X-Large size only



Slipfitter Mount Large and X-Large size only



Yoke Mount Huge size only

#### **OPTIONS**

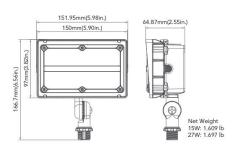


PC UNV B3

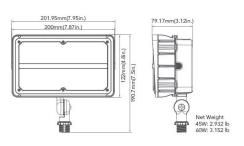


#### **DIMENSIONS**

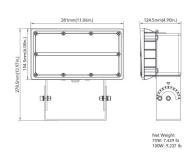
**SMALL** 15W & 27W Knuckle Mount



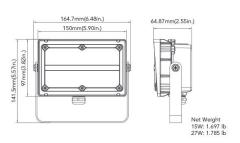
MEDIUM 45W & 60W Knuckle Mount



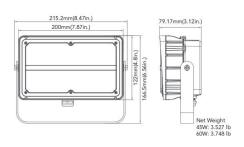
LARGE 70W, 90W, 100W Trunnion Mount



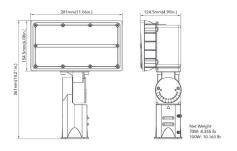
**SMALL** 15W & 27W Trunnion Mount



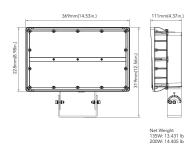
**MEDIUM** 45W & 60W Trunnion Mount



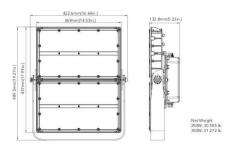
**LARGE** 70W, 90W, 100W Slipfitter Mount



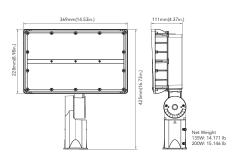
X-LARGE 135W & 200W Trunnion Mount



**HUGE** 250W & 350W Yoke Mount



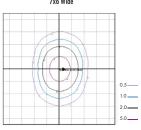
X-LARGE 135W & 200W Slipfitter Mount





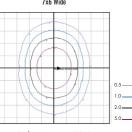
#### **PHOTOMETRIC**

FDCS 35 G1 5K 7x6 Wide



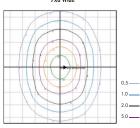
Total Lamp Lumens = 3479.6 Maximum Calculated Value = 7.97 Fc

FDCM 80 G1 5K 7x6 Wide



Total Lamp Lumens = 7434.5 Maximum Calculated Value = 16.24 Fc

#### FDCL 130 G1 5K 7x6 Wide



Total Lamp Lumens = 13299 Maximum Calculated Value = 29.95 Fc

#### 4HX4V only suitable for 135W, 200W, 250W, 350W



Horizontal Footcandles Arrangement: Single Light Loss Factor = 1.00 Scale: 1 in = 7.5 ft Mounting Height = 15.00 ft

#### PERFORMANCE DATA

#### 4K & 5K

Distance Type	Wattage	Voltage	Lumen Output	Efficacy (LPW)	CRI Min	Replacement
7HX6V	15W	120-277V	2,000 Lm	133	70	70W MH
7HX6V	27W	120-277V	3,600 Lm	133	70	100W MH
7HX6V	45W	120-277V	5,650 Lm	126	70	150W MH
7HX6V	60W	120-277V	7,450 Lm	124	70	175W MH
7HX6V	60W	347-480V	7,600 Lm	127	70	175W MH
7HX6V	70W	120-277V	8,900 Lm	127	70	250W MH
7HX6V	70W	347-480V	9,300 Lm	133	70	250W MH
7HX6V	90W	347-480V	12,400 Lm	138	70	400W MH
7HX6V	100W	120-277V	13,300 Lm	133	70	400W MH
7HX6V	135W	120-277V	18,000 Lm	132	70	400W MH
7HX6V	135W	347-480V	18,000 Lm	132	70	400W MH
4HX4V	135W	120-277V	18,000 Lm	132	70	400W MH
4HX4V	135W	347-480V	18,000 Lm	132	70	400W MH
7HX6V	200W	120-277V	26,000 Lm	130	70	400W MH
7HX6V	200W	347-480V	26,000 Lm	130	70	400W MH
4HX4V	200W	120-277V	26,000 Lm	130	70	400W MH
4HX4V	200W	347-480V	26,000 Lm	130	70	400W MH
7HX6V	250W	120-277V	34,500 Lm	138	70	750W MH
7HX6V	250W	347-480V	34,500 Lm	138	70	750W MH
4HX4V	250W	120-277V	34,500 Lm	138	70	750W MH
4HX4V	250W	347-480V	34,500 Lm	138	70	750W MH
7HX6V	350W	120-277V	50,000 Lm	137	70	1000W MH
7HX6V	350W	347-480V	50,000 Lm	137	70	1000W MH
4HX4V	350W	120-277V	49,500 Lm	137	70	1000W MH
4HX4V	350W	347-480V	49,500 Lm	13 <i>7</i>	70	1000W MH



#### **ELECTRICAL LOAD**

	Current (A)							
Wattage	120V	208V	240V	277V	347V	480V		
15W	0.13	0.07	0.06	0.05	0.04	0.03		
27W	0.23	0.13	0.11	0.10	0.08	0.06		
45W	0.38	0.22	0.19	0.16	0.13	0.09		
60W	0.50	0.29	0.25	0.22	0.17	0.13		
70W	0.58	0.34	0.29	0.25	0.20	0.15		
90W	0.75	0.43	0.38	0.32	0.26	0.19		
100W	0.83	0.48	0.42	0.36	0.29	0.21		
135W	1.13	0.65	0.56	0.49	0.39	0.28		
200W	1.6 <i>7</i>	0.96	0.83	0.72	0.58	0.42		
250W	2.08	1.20	1.04	0.90	0.72	0.52		
350W	2.92	1.68	1.46	1.26	1.01	0. <i>7</i> 3		

#### Lumen Ambient Temperature (LAT) Multipliers

Ambi	Lumen Multiplier	
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	<b>77</b> °F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

#### Projected LED Lumen Maintenance

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance	1	0.97	0.97	0.96



#### **EPA**

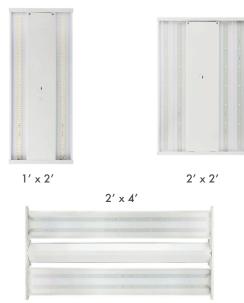
Wattage			<b>*</b> *				
	1	2 @90°	2 @120°	2@180°	3 @90°	3 @120°	4 @90°
70W/100W	0.2885	0.6097	0.7475	0.577	0.8982	0.8196	0.8982
135W/200W	0.3868	0.8125	0.9973	0.7736	1.1993	1.0874	1.1993
250W/350W	0.536	1.061	1.278	1.072	1.597	1.803	1.597



CENERATION 1 2 2	 	

PROJECT:	
CATALOG #:	
FIXTURE TYPE:	
NOTES:	

### HE Series High Bay Gen 1 & 2



The *HE Series High Bay Gen 1 & 2* provides high lumen output and efficiency in three sizes,  $1' \times 2'$ ,  $2' \times 2'$ , and  $2' \times 4'$ . This luminaire has high temperature polycarbonate lens to reduce yellowing and directs light to desired locations.

#### **APPLICATIONS**

Industrial, Education, and Retail applications, etc.

#### REPLACEMENT

4 LampT8 32W, 4 Lamp T5HO 54W, 6 Lamp T5HO 54W, 8 Lamp T5HO 54W, 10 Lamp T5HO 54W, 12 Lamp T5HO 54W

# REMIUM FC (UL) ROMPLIANT (ID)

#### PERFORMANCE INFORMATION

SERIES NUMBER	WATT	LUMENS	сст	SIZE
HE 120 G2 4K	90W	12,200	4000K	1' x 2'
HE 120 G2 5K	90W	12,400	5000K	1' x 2'
HE 170 G2 4K	130W	17,400	4000K	1' x 2'
HE 170 G2 5K	130W	17,600	5000K	1' x 2'
HE 240 G2 4K	180W	24,200	4000K	2' x 2'
HE 240 G2 5K	180W	24,500	5000K	2' x 2'
HE 290 G2 4K	210W	28,200	4000K	2' x 2'
HE 290 G2 5K	210W	28,500	5000K	2' x 2'
HE 360 G1 4K	270W	35,500	4000K	2' x 4'
HE 360 G1 5K	270W	36,000	5000K	2' x 4'
HE 400 G1 4K	300W	39,500	4000K	2' x 4'
HE 400 G1 5K	300W	40,000	5000K	2' x 4'
HE 500 G1 4K	370W	49,500	4000K	2' x 4'
HE 500 G1 5K	370W	50,350	5000K	2' x 4'

ORDER	DRDERING GUIDE EXAMPLE: HE 120 G2 4K										
Luminaire Type	Lumen Output	Optic Lens	Generation	Voltage	ССТ	Finish	Options				
□ <b>HE</b> Lensed High Bay	☐ 120 12,200 Lumens ☐ 170 17,400 Lumens ☐ 240 24,200 Lumens ☐ 290 28,200 Lumens ☐ 360 35,500 Lumens ☐ 400 39,500 Lumens ☐ 500 49,500 Lumens	□ <b>BLANK=</b> Frosted Lens	_G2	□ BLANK= 120-277V □ HVU 347-480V	□ <b>4K</b> 4000K □ <b>5K</b> 5000K	BLANK= White	BLANK=No Option  MS-FSP-212=Motion Sensor (Choose 1)  L3= L3 Lens*  L7=L7 Lens**  HBP-112-L7-OEM=High/Low-Bay PIR On/Off Sensor  EL UNV-8W= 8W Emergency Battery Kit  EL UNV-16W=16W Emergency Battery Kit  SPD-277= 5KA/10KV Surge Protection device, single phase protection with 120-277V input  SPD-480= 10KA/20KV Surge Protection device, single phase protection with 277-480V input				

\*Max 20 ft mounting height.

 $\label{thm:provements} \mbox{Due to continuous product improvements, specification and/or equipment updates may change without notice.}$ 

<sup>\*\*</sup> Max 40 ft mounting height.



#### **SPECIFICATIONS**

#### HOUSING

Aluminum alloy

#### AMBIENT TEMPERATURE

Suitable for use in -40°C to 55°C (-40°F to 131°F)

#### **MOUNTING**

Aircraft cable included or Pendant mount

#### **EFFICACY**

Up to 136 lumens per watt (see individual wattage data)

#### **CCT AND CRI**

4000K and 5000K CCT available; 80CRI

#### LENS

Frosted diffuser polycarbonate lens

#### WARRANTY

10-year limited warranty. Comprehensive warranty terms can be located on www.slgus.com.

#### **ELECTRICAL**

Class 2 Constant Current Driver efficiency (90% standard); 50/60Hz available in 120-277V or 347-480V; 0-10V Dimming standard.

#### **ENERGY DATA**

Power factor above 90%.

#### **FINISH**

White coat finish

#### **CERTIFICATIONS**

UL Listed for damp locations. FCC compliant. RoHs compliant. Design Lights Consortium® (DLC) Premium qualified product.

#### **OPTIONS**







MS-FSP-L3/L7 Lens

The MS-FSP-212 provides multi-level control base on motion and daylight level. Requires L3 or L7 lens depending the mounting height.

Operation Voltage	Shape	Adjustable Time Delay		Operating Temperature		Mounting Height For MS-FSP-L7
120/277V	Cone	30 sec - 30 min	0-10 sec	-40°F to 158°F	20 ft*	40 ft**

<sup>\*</sup>Covers a 40 ft diameter when mounting height is 20 ft. Coverage is equal to 2x the height.

<sup>\*\*</sup>Covers a 100 ft diameter when mounting height is 40 ft. Coverage is equal to 2.5x the height



#### **OPTIONS CONTINUED**



M1 (HBP-112-L7-OEM)

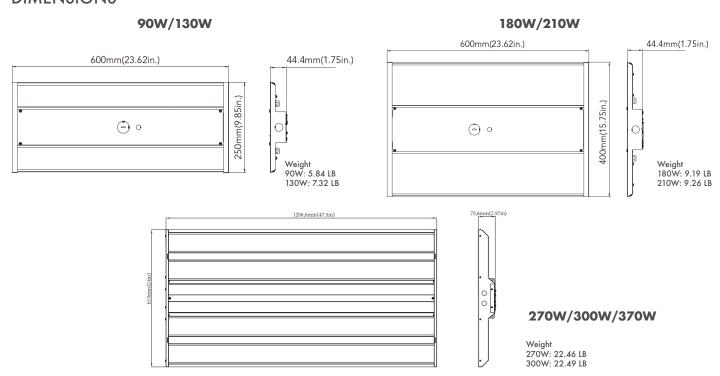
High/Low-Bay PIR On/Off Sensor

The *HBP-112-L7-OEM* on/off PIR motion sensor ideal for warehouses, distribution centers, gymnasiums, and other indoor applications.

Operation Voltage	Mounting Height	Coverage	Shape	Adjustable Time Delay	Operating Temperature	Applications
120V/ 277V/ 347V	15-40 ft	2.5x Height*	Cone	5/10/15/20/30 min. Default 15 min.	0°C to 70°C 32°F to 158°F	Indoor Only

<sup>\*</sup>Covers a 100 ft diameter when the mounting height is 40 ft.

#### **DIMENSIONS**





#### **PHOTOMETRIC**



#### PERFORMANCE COMPARISON

Product Series	Wattage	Lumens	Efficacy (Lm/W)	Replaces	Voltage	Max Mounting Height	DLC
HE 120 G2	90W	12,200 Lm	136 Lm/W	4 Lamp T8 32W	120-277V 347-480V	15-25 ft	Premium
HE 170 G2	130W	17,400 Lm	134 Lm/W	4 Lamp T5HO 54W	120-277V 347-480V	20-35 ft	Premium
HE 240 G2	180W	24,200 Lm	134 Lm/W	6 Lamp T5HO 54W	120-277V 347-480V	25-40 ft	Premium
HE 290 G2	210W	28,200 Lm	134 Lm/W	8 Lamp T5HO 54W	120-277V 347-480V	30-40 ft	Premium
HE 360 G1	270W	35,500 Lm	131 Lm/W	10 Lamp T5HO 54W	120-277V	35-45 ft	Premium
HE 400 G1	300W	39,500 Lm	132 Lm/W	10 Lamp T5HO 54W	120-277V	Up to 50 ft	Premium
HE 500 G1	370W	49,500 Lm	134 Lm/W	12 Lamp T5HO 54W	120-277V	Up to 50 ft	Premium

 $\label{thm:provements} \mbox{Due to continuous product improvements, specification and/or equipment updates may change without notice.}$ 



ELECTRICAL LOA	<b>ND</b>	Current (A)							
Series Number	Wattage	120V	208V	240V	277V	347V	480V		
HE 120 G2 5K	90W	0.75	0.43	0.38	0.32	0.26	0.19		
HE 170 G2 5K	130W	1.08	0.63	0.54	0.47	0.37	0.27		
HE 240 G2 5K	180W	1.50	0.87	0.75	0.65	0.52	0.38		
HE 290 G2 5K	210W	1. <i>7</i> 5	1.01	0.88	0.76	0.61	0.44		
HE 360 G1 5K	270W	2.25	1.30	1.13	0.97	0. <i>7</i> 8	0.56		
HE 400 G1 5K	300W	2.50	1.44	1.25	1.08	0.86	0.63		
HE 500 G1 5K	370W	3.08	1. <i>7</i> 8	1.54	1.34	1.07	0.77		

#### PROJECTED LUMINAIRE MAINTENANCE

	Operating Hours							
Ambient Temperature	0	10,000	25,000	50,000	75,000	100,000		
25°C / 77°F	1	0.98	0.95	0.86	0.79	0.72		

#### AMBIENT TEMPERATURE RATING

Mounting	Suspended	Surface
Standard Temperature Rating	131 °F / 55°C	113°F / 45°C

#### PROJECTED LUMINAIRE MAINTENANCE

Ambient Te	emperature	Lumen Multiplier
0°C	32°F	1.03
5°C	41°F	1.03
10°C	50°F	1.021
15°C	59°F	1.01
20°C	68°F	1.01
25°C	<i>77</i> °F	1.00
30°C	86°F	.98
35°C	95°F	.89
40°C	104°F	.79

Due to continuous product improvements, specification and/or equipment updates may change without notice.

10643 W. Airport Boulevard, Suite #400 | Houston, Texas | 713-389-5680 | sales@slgus.com



PROJECT:	
CATALOG #:	
FIXTURE TYPE:	
NOTES:	

### TSC Industrial Strip Contractor Series Gen 1



The TSC Industrial Strip Contractor Series Gen 1 has dieformed housing with convertible end plates to create a continuous row of illumination. This sleek luminaire is available in two sizes 4 ft and 8 ft with a width of 3.3" that is ideal for retrofit T8 lengths or new construction applications for commercial, industrial, retail and residential.

#### **APPLICATIONS**

Warehouses, Retail stores, Utility, and Fabrication areas, etc.

#### **REPLACEMENT**

1 Lamp T8 32W, 2 Lamp T8 32W, 3 Lamp T8 32W, 4 Lamp T8 32W, 2 Lamp T5HO 54W

## DLC 5.0





#### PERFORMANCE INFORMATION

SERIES NUMBER	WATT	LUMENS	ССТ
TSC 4 30 G1 4K	25W	3,250	4000K
TSC 4 30 G1 5K	25W	3,350	5000K
TSC 4 45 G1 4K	35W	4,550	4000K
TSC 4 45 G1 5K	35W	4,550	5000K
TSC 4 60 G1 4K	45W	5,850	4000K
TSC 4 60 G1 5K	45W	5,850	5000K
TSC 8 85 G1 4K	65W	8,450	4000K
TSC 8 85 G1 5K	65W	8,450	5000K
TSC 8 100 G1 4K	<i>7</i> 5W	9,750	4000K
TSC 8 100 G1 5K	<i>7</i> 5W	9,750	5000K

#### **OPTIONS**







HBP-112-L7-OEM

BRI819P-B-D

EL UNV-10W

ORDER	ORDERING GUIDE EXAMPLE: TSC 4 45 G1 5K									
Luminaire Type	Size	Lumen Output	Generation	Voltage	ССТ	Finish	Options			
		350								
☐ TSC	<b>4=</b>	☐ <b>30</b> 3,350 Lumens	□ G1	☐ BLANK=	<b>□4K</b>	☐ BLANK=	☐ BLANK=No Option			
Industrial Strip	4 ft	<b>45</b> 4,550 Lumens		120-277V	.	☐ <b>HBP-112-L7-OEM=</b> High/Low-Bay PIR On/ Off Sensor				
Contractor		☐ <b>60</b> 5,850 Lumens	-		5000K		BRI819P-B-D= PIR Motion/Photo Sensor,			
Series	<b>□ 8=</b> 8 ft	□ <b>85</b> 8,450 Lumens □ <b>100</b> 9,750 Lumens					120/277V AC, 1-10V Dimming (Choose one)			
							☐ <b>L1=</b> 360° Lens (Max. 25ft mounting height)			
							L2= 360° Lens (Max. 40ft mounting height)			
							☐ EL UNV-10W=Emergency Backup Controller ☐ RC-TSC G1=Row connector			
							■ WG-TSC 4 G1= 4 ft wire guards			



#### **SPECIFICATIONS**

#### HOUSING

Body consists of fabricated 22ga steel

#### AMBIENT TEMPERATURE

Suitable for use in -20°C to 50°C (-4°F to 122°F)

#### **MOUNTING**

Surface mounting

#### **EFFICACY**

Up to 130 lumens per watt (see individual wattage data)

#### CCT AND CRI

4000K and 5000K CCT available; 80+CRI

#### OPTICS

Frosted acrylic lens.

#### WARRANTY

5-year limited warranty. Comprehensive warranty terms can be located on www.slgus.com.

#### **ELECTRICAL**

High quality constant-current drivers rated for 50/60Hz operation, 120-277V input. Standard 0-10V dimmer.

#### **ENERGY DATA**

Power factor above 90%.

#### LIFETIME

L70 > 50,000 hrs @ 25°C

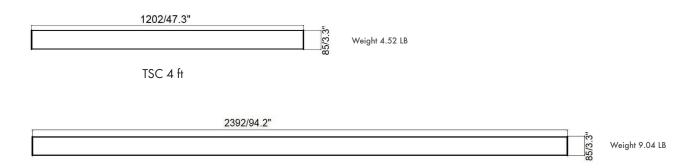
#### FINISH

White Polyester Powder coat with 88% reflectivity, painted after fabrication.

#### CERTIFICATIONS

UL Listed for damp locations. Design Lights Consortium® (DLC) Premium 5.0 qualified product. Not all versions of this product may be DLC qualified. Please visit www.slgus.com to confirm which versions are qualified.

#### **DIMENSIONS**



TSC 8 ft



#### **OPTIONS**



HBP-112-L7-OEM
High/Low-Bay PIR On/Off Sensor

The *HBP-112-L7-OEM* on/off PIR motion sensor ideal for warehouses, distribution centers, gymnasiums, and other indoor applications.

Operation Voltage	Mounting Height	Coverage	Shape	Adjustable Time Delay	Operating Temperature	Applications
120V/ 277V/ 347V	15-40 ft	2.5x Height*	Cone	5/10/15/20/30 min. Default 15 min.	0°C to 70°C 32°F to 158°F	Indoor Only

<sup>\*</sup>Covers a 100 ft diameter when the mounting height is 40 ft.



BRI819-P-B-D Motion Sensor, 1-10V Dimming

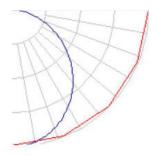
The *BR1819-P-B-D* provides multi-level occupancy control with 1-10V adjustable dimming. This motion sensor can be attached externally to the fixture. Requires L1 or L2 lens depending on the mounting height.

Operation Voltage	Shape	Adjustable Time Delay	Operation Temperature	Mounting Height for L1	Mounting Height for L2
120/277V	Cone	10 sec - 60 min (adjustable)	-40°F to 167°F (-40°C to 75°C)	Max 25ft*	Max 40ft**

<sup>\*</sup>Covers a 30 ft diameter when the mounting height is 25 ft.

<sup>\*\*</sup>Covers a 60 ft diameter when the mounting height is 40 ft.

#### **PHOTOMETRIC**



TSC 4 60 G1 4K

#### **ELECTRICAL LOAD**

		Current (A)				
Series Number	Wattage	120V	208V	240V	277V	
TSC 4 30 G1 5K	25W	0.21	0.12	0.10	0.09	
TSC 4 45 G1 5K	35W	0.29	0.17	0.15	0.13	
TSC 4 60 G1 5K	45W	0.38	0.22	0.19	0.16	
TSC 8 85 G1 5K	65W	0.54	0.31	0.27	0.23	
TSC 8 100 G1 5K	<i>7</i> 5W	0.63	0.36	0.31	0.27	

 $\label{thm:provements} \mbox{Due to continuous product improvements, specification and/or equipment updates may change without notice.}$