PASCOAG
UTILITY DISTRICT

Pascoag Electric • Pascoag Water

253 Pascoag Main Street
P.O. Box 107
Pascoag, RI 02859
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www.pud-ri.org

RIPUC Docket 4534

Pascoag Utility District's Demand Side Management Program 2015

RIPUC DOCKET NO.4534

Pascoag Utility District
Electric Department

In Re: Pascoag Utility District's
Demand Side Management Program-2015

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November 17, 2014

Ms. Luly Massaro
Clerk of the Commission
Rhode Island Public Utilities Commission
89 Jefferson Blvd.
Warwick RI 02888

Re: RIPUC Docket No. 4534

Dear Ms. Massaro:

On behalf of Pascoag Utility District ("Pascoag" or the "District"), we herewith file an original and nine copies of Pascoag's proposed Demand Side Management Program for 2015. This submission includes Pascoag's Executive Summary, Program Details for 2015, reconciliation of 2014 DSM activities and budget, and other schedules that support this docket.

If you have any questions please do not hesitate to contact me.

Very truly yours,

Harle J. Round

Harle J. Round
Customer Service Supervisor/DSM Coordinator

Cc: Ms. Karen Lyons, Esquire
Mr. William Bernstein, Esquire

Pascoag Utility District
Demand Side Management Programs - 2015 Proposed Budget

Estimated carry over from 2013	$	39,000
Estimated sales for 2014	$	115,330
Net 2014 budget	$	154,330

			2015 Proposed Budget	
	Residential Program			
DR1501	ENE Residential Conservation (ECHO)	$	2,400	12 month @ $200
DR1502	Home Energy Audits with Incentives	$	3,600	10 Audits @ $220, with 10% rebates up to $100, 5 free cfl's & smart power strip
DR1503	Energy Star Appliance Rebates	$	9,000	Up to 106 incentives
DR1504	Refrigerators/Freezer Buy Back	$	1,035	$50 incentive & $19 removal fee for a Refrigerator or Freezer; up to 15 rebates
DR1505	Energy Efficient Windows/Doors	$	2,500	up to 166 window at $15 or up to 62 doors at $40
DR1506	Heating System Incentive	$	3,000	12 Rebates at $250
DR1507	ENERGY STAR qualified Water Heaters	$	900	6 Rebates at $150
DR1508	Energy Star Lighting fixtures& ceiling/ventilation fans	$	1,000	up to 20 rebates at $50 maximum
DR1509	Home Office Equipment/Home Electronics	$	2,500	50 Rebates at $50
DR1510	Geothermal System	$	100	To keep the line item open
DR1511	New Construction	$	2,080	4 Rebates up to $520 maximum
DR1512	Central Air Conditioning	$	1,500	5 Rebates up to $300 maximum
DR1513	Change a Light Campaign	$	750	15 Rebates up to $50 maximum
DR1514	Smart Power Strips	$	200	25% rebate (average cost is between $27-$37)
DR1515	ENERGY STAR Pool Pumps	$	500	10% of cost up to $100 maximum; 5 Rebates
DR1516	Desk Calendars- with DSM rebate information	$	852	450- Desk Top Calendars with DSM rebate information
DR1517	Committed for 2013 Programs	$	2,000	To accommodate programs with depleted funds from 2014
	Net Residential	**$**	**33,917**	
	Industrial/Commercial			
DI1501	Energy Star Incentive - Office Equipment	$	500	10 Rebates up to $50 maximum
DI1502	Burrillville Municipal Buildings	$	27,597	Burrillville Municipal Building Incentives
DI1503	Committed Funds- Lighting & EE Projects	$	12,000	Money to be available for Commercial & Industrial Energy Efficiency Projects.
DI1504	Consultation Fees	$	1,000	To consult with Rise, National Grid, & ENE
DI1505	Energy Star Commercial Appliance	$	700	2 Appliances up to a maximum of $350
DI1506	LED Street Light Incentive	$	26,526	Balance of Incentive from 2014 $17,684 & $8,852 incentive on 52 additional LED Street Lights
	Net Industrial/Commercial	**$**	**68,323**	
	Administrative/Ad/Education			
DA1501	Administrative	$	21,000	Administrative labor, mileage, supplies, training session with a luncheon for the CSR's
DA1502	Funds for Follow-up to Successful Programs	$	2,148	To be used on more successful programs
DA1503	Outreach/Education	$	10,000	Billing inserts, Energy Saving Coloring books, Culver conservation items, and the DEED membership.
DA1504	Jesse Smith Library Partnership	$	3,700	To partner with the Jesse Smith Library on an Energy Efficiency Project.
DA1505	Community Events	$	10,242	To promote Energy Efficient @ Community Events(Green Festival, Family fair, ...)
DA1506	Energy Efficiency Management continuing education	$	4,500	Tuition, fight, hotel, meals, books, NEEP 2 day conference, and webinars
DA1507	Program Research and Development	$	500	Funds for future development of programs
	Net Administrative/Ad/Education	**$**	**52,090**	
	Estimated DSM 2013 Budget/ Expenses/ Balance	**$**	**154,330**	

Pascoag's 2015 Demand Side Management Program
Executive Summary: Submitted by Harle J. Round

Residential Programs:

The Residential Programs proposed by Pascoag Utility District for 2015 will mirror our 2014 programs, with adjustments to some of the line items based on activity in the programs over the past year.

The District continues its partnership with ENERGY STAR, a U.S. Environmental Protection Agency (EPA) voluntary program that helps businesses and individuals save money and protect our climate through superior energy efficiency. It is the District's goal to encourage our customers to buy ENERGY STAR compliant products to help control consumption, demand, and reduce greenhouse gas emissions that are contributing to global warming. ENERGY STAR compliant appliances and electronics are being positioned as part of the solution to rising energy costs, and the need for energy efficiency to reduce greenhouse gas emissions. The ENERGY STAR programs that we have in place continue to experience a high customer demand.

However, The District will continue to monitor its programs and will seek permission to reallocate funds should certain programs not perform to expectations. The District is pleased with the activity in the programs for 2014. The District will be adjusting the 2015 line item budget according to this year's activity.

Energy New England ('ENE') - The energy hot line continues to be a very good resource for the residential customer. Customers with questions about high energy demand can call the toll free number for assistance. Many questions can be answered over the phone. The customer is also offered a home energy audit. Pascoag Utility District is a member of the Energy Advisory committee that meets three to four times a year and discusses the latest information on energy conservation issues. ENE also attended our Green Public Power Festival to discuss energy conservation and home energy audits with interested customers. The ENE fee will remain at $200 per month in 2015 for a total budget of $2400.

ENERGY STAR Audits are a very educational tool for homeowners. ENE performed nine audits as of October 2014. Each home owner was given a report on ways to save energy. Many of the upgrades that are suggested in the audits correspond with programs set up for rebates by the District. It is our finding that the customers will take the report and over several years replace things like the boiler, windows, doors, appliances, light fixtures, and light bulbs, thereby taking advantage of the applicable rebates. The phone surveys that were given this year showed that the customers were very satisfied with the audits they received, they were made aware that there is incentive money available for implementing the suggested improvements on their audits.

The District would like to continue to offer the home energy audits in 2015. The District would like to keep the number of audits at ten at a cost of $220 each and have $100 for each audit available for audit recommendations that are not covered by the rebate programs. The District would also like to continue to supply 5 free CFL's and a smart power strip with each audit. The budget for this line item will remain at $3,600.

Rebates for ENERGY STAR Appliances continue to be one of our most popular programs. The District has processed rebates totaling $7,871.55 though the end of October. The District is proposing a budget of $9,000 in 2015.

The District added a Refrigerator/Freezer Buy-Back Program in 2012. This program encourages our customers to reduce their power bills by giving up an old inefficient refrigerator or freezer. This will help cut the demand of each refrigerator/freezer that is removed and our customers save between 503 to 1,285 kWh annually. The District proposed a budget of $1,020 in 2014 with an incentive of $68. In 2015, the District is proposing a budget of $1,035 which will allow for 15 incentives. The rebate includes a removal fee of $19.

The ENERY STAR Window and Door incentive had an approved budget, of $2,500 in 2014. The activity for this line item has been steady with incentives totaling $2,455 being issued through October. The budget will remain at $2,500 with a rebate of $15 per window up to 10 windows and $40 per door up to 2 Doors.

The ENERGY STAR Heating Systems program had an approved budget of $3,000 in 2014. The District has processed 12 boiler rebates and has depleted the funds for this program. The District would like to continue to fund this line item at $3,000 in 2015 and keep the rebate of 10% up to $250.

The District would like to continue an incentive for the ENERGY STAR qualified Heat Pump Water Heaters and Energy Star Solar Water Heater in combination with an electric hot water heater. Heating water accounts for approximately 15 % of a home's energy use. High efficiency water heaters use 10 to 50 percent less energy than standard models, saving homeowners money on their utility bills. The District had two rebates in 2014 for heat pump water heaters. The District would like to continue to offer a rebate of 15% with a maximum rebate of $150; this would allow 6 incentives with a budget of $900, in 2015.

ENERGY STAR Lighting Fixtures and Ceiling & Ventilations Fans had a budget of $1,000 in 2014 and we have issued $433.66 in incentives. The District would like to continue this line item again next year with a budget of $1,000 and will continue to educate its customers.

ENERGY STAR Home Office/Electronic equipment has an approved budget of $2,500 and we have processed rebates totaling $1,144.96. The District would like fund this program at the same level in 2015.

The District seeks to retain the line for Geothermal Systems with a budget of $100. This will continue to leave the line item open should we have a request for a geothermal system. The District will drop the Electric heat conversion incentive.

New Construction rebates remain slow as a direct result of the economy. The District processed one rebate for $50 through October of 2014. The District is requesting to fund this program at the same level in 2015. When the economy recovers and the construction of new

homes continues, this line item will hopefully entice the contractors to install ENERGY STAR qualified equipment, which will result in more efficient homes. The $2,080 request will allow the District to process four rebates.

Central Air Conditioning had a budget of $1,500 in 2014 and the District processed four rebates. The District would like to continue to offer a tiered rebate for central air conditioning. The rebates range from $200 - $300 and are detailed on page 9 of Schedule C. The District believes that a customer purchasing a unit with a higher SEER and EER rating should receive a larger rebate. The ductless mini-spit heat pumps are becoming more popular. They are being used to replace air conditioners and heating in older homes. These units are 30% more efficient, give more comfort and control, and can deliver both cooling in the summer and heating in the winter with high efficiency. They are a great solution for additions to homes. In the cold climates, consumers are advised to retain a supplemental heating system in case back-up heat is needed on very cold days. The District will rebate based on the cooling seasonal energy efficiency rating (SEER) and energy efficiency ratio (EER). The District would like fund this program at the same level in 2015.

The District would like to continue the Change a Light Campaign. The program remains very active. The District processed $545.89 in rebates out of a budget of $750 in 2014. In 2015, the District would like to fund this program at the same level in 2015.

In 2014, the District purchased seven-hundred Energy Conservation Calendars for a total cost of $2,730.06. These calendars highlight an energy efficiency tip each month, and the District was able to customize the calendar with a page dedicated to promoting the DSM programs and incentives that are offered. The calendars were distributed to the walk in customer. The District would like to purchase 450 desk top calendars in 2015 for a total budget of $852.00

In 2014, the District continued the Smart Power Strip incentive because today's electronics continue to draw electricity that we pay for but do not use. The "Smart" power strip prevents this waste by plugging the main device (computer, TV, etc.) into the primary outlet and its peripherals (printer/scanner or VCR/cable box, etc.) into the other outlets. When the main device is shut down the high-tech sensors detect this and shut everything else down. The Smart power strips can save up to 72% of the energy a system uses, eliminating 640 lbs. of CO2 per year and also offers state-of-the-art surge protection. One rebate was processed in 2014 for this line item. The District would like to continue to offer an incentive of 25% up to a maximum of $25 with a budget of $200, in 2015.

The District would like to continue to offer an ENERGY STAR Pool Pump incentive. Many customers in the District's territory have pools, and each one of these pools use a pool pump which re-circulates water through a filter to maintain water clarity and hygiene. What most pool owners don't realize is how much energy their pool pumps are wasting. Pool pump speeds vary based on the pool's operation. A conventional pool pump with one speed is set to run at the highest speed required to clean the pool. This leads to wasted energy during filtration operations by running faster than necessary. The ENERGY STAR certified pool pumps can run

at different speeds and be programmed to match the pools operation with its appropriate pool pump speed. The energy saved is considerable and will save thousands of dollars over its lifetime. On average, an ENERGY STAR pool pump in our area saves over 1,143 kWh or $160 in a 6 month period from May through September, making the payback less than five years. They also run quieter and help to prolong the life of the pool's filtering system. The District is proposing a rebate of 10% of the cost up to a maximum rebate of $100; the proposed budget would be for $500.

The District is estimating a carryover of $39,000 from 2014; the District will use $37,000 of this carryover in the 2015 budget and would like to place $2,000 into a line item called Committed for 2014 rebates. This would allow us to use these funds to satisfy any outstanding qualified applications in the various residential programs, where the funds have been depleted or for rebates that are received after the books have been closed for 2014. In 2014, the District was able to satisfy $1,840.45 in rebates that qualified in 2013,but the program funds were depleted. If the carry over funds placed in the Committed for 2014 Program exceeds the request for qualified rebates, the District proposes moving these funds to the Follow-up to Successful Programs line item and would then seek permission from the Public Utility Commission and Division of Public Utilities and Carriers, to reallocate the funds as needed in 2015.

The Commercial and Industrial Programs

The ENERGY STAR Office Equipment and Electronics Program that was available to our commercial and industrial customers continued to be active this year. We have processed ten rebates totaling $255. The District would like to continue this program with the same level of funding for 2015, with $500.

Lighting Projects completed in 2014:

As of this filing no rebates have been processed in 2014 but we are working closely with the following projects.

- The District is still working with the RIPEP to help encourage the Town of Burrillville to move forward with energy efficient measures. Rhode Island College is working to evaluate the energy usage on all the municipal buildings.

- The District is working with EYE Lighting to retrofit 8 Metal Halide Street lights and 4 high pressure sodium street lights with LED bulbs for the Town of Burrillville. The retrofit kits will qualify for a $200 rebate that will total $2,400.

- The Harrisville Fire District has signed a contract to retrofit the Fire Station. The total project cost is $9,730; the estimated incentive is $4,438.

- The Harrrisille Water Department has requested an audit to retrofit their District office.

- Lockheed Windows Corp received an energy audit from RISE in 2014; the total project cost was $49,925, and the estimated DSM rebate is $19,970. Unfortunately the cost of the total project to retrofit eighty-eight 400 watt Metal Halide Low Bay lights to LED Hi-Bay lights was too expensive so they have decided not to move forward with the project.

The District has only identified two projects for 2015:

The Burrillville Municipal Buildings- the District is working with the RI Public Energy Partnership (RIPEP) and the town of Burrillville to identify municipal buildings and make them more efficient. The District had RISE conduct several audits for the school systems in 2012 and hopes that this new partnership will help them to move forward with energy efficiency measures in 2015. The District would like to allocate $27,597 for the Burrillville municipal buildings in 2015.

The Harrisville Fire District office has been identified but because the audit has not been completed we would have to use funds from the Committed Funds for Lighting Projects and Energy Efficiency Measures.

Committed Funds for Lighting Projects and Energy Efficiency Measures - The District will accommodate the Harrisville Fire District, in 2014, with an incentive from this program. The District would like to continue to fund this line item with $12,000 to accommodate lighting projects and energy efficiency projects that have not been identified. This would allow us to have funds available and give us some flexibility should a commercial or industrial customer want to go forward with a new or retrofit lighting project or other energy efficiency measure on a first come first serve basis.

The Consultation fees line item is funded at $1,000 to provide assistance from National Grid, RISE Engineering, or Energy New England with the calculation of energy savings on commercial and industrial projects. In 2015, we would like to fund this line item at $1,000.

The ENERGY STAR Commercial Appliances program has processed four rebates, in 2014 that consist of 2 dehumidifiers, 1 ice machine, and 1 refrigerator. In 2015, the District is requesting a budget of $700 for commercial appliances with rebates of 10 % up to $350 and residential appliances using the same amounts from the residential program and making them available under this line item for the commercial customers.

LED Street Light Incentive- the District has received final approval for a grant of $62,500 from the Region Greenhouse Gas Initiative (RGGI) as administered by the RI Office of Energy Resources. The District will use the allocated RGGI funds, in conjunction with a portion of PUD's 2014 Demand Side Management LED Street Light Incentive of $17,068, and a contribution from its capital reserve funds of $7,003 to pay for this project. Based on the estimates the District has received for the LED street lights, street light arms, miscellaneous materials, and use of the Districts' internal labor and transportation to implement the project, the total estimated cost is $86,571.00. This will allow us to purchase 250 LED street lights.

The District will submit an additional rebate in 2015 based on the following assumptions: The District uses the grant money of $62,500 and the District's capital funds of $7,003 to purchase and install $69,503 worth of LED Street Lights. This would qualify the District for an established LED street light incentive of 50% totaling $34,751.50. We only have $17,068 allocated to this line item in 2014, so we would request that the District be allowed to submit the additional rebate of $17,684 in 2015. This will allow us to purchase 53 additional LED 25 Watt LED street light fixtures in 2015 with the rebate money and receive a rebate of $8,842. The District would like to fund this line item at $25,536 in 2015.

The Administration/Ad/Education

The District staff spends many hours reconciling the budgets, processing rebates, working with potential rebate customers, reporting to the State of Rhode Island Public Utility Commission, and researching new programs. The budget for the Administration line item was $21,000 which covers the time spent to oversee this most worthwhile endeavor. The District will continue the annual training session for the customer service representatives to ensure they are able to discuss the criteria for the various programs with the customers; this training session would also include a luncheon.

Funds for Follow-Up to Successful Programs- this program has allowed the District to move funds to the more successful programs as needed. The District has several programs with depleted funds and will be submitting a request to reallocate the entire balance of $2,990 to the more successful programs. The District would like to keep this line item open in 2015 with a budget of $2,148.

Customer Outreach Program - the District worked with the web designer to update our conservation programs and rebate forms on the web site in January of 2015, advertise in the Bargain Buyer, and bill inserts to promote the DSM Programs. The District used $793 to pay for the DEED membership. The District used some of the funds to purchase energy conservation materials from Culver and Walker Clay Co.

The District would like to continue the Outreach and Education line item in 2015 and fund it with $10,242. This will allow the District to update the website with the programs for 2015 at www.pud-ri.org. The District would also use some of these funds for advertisements in the Bargain Buyer, utilize bill inserts with our programs in 2015, and purchase energy efficiency material to educate our customers, which will include booklets on energy efficiency, along with energy conservation materials purchased at Culver Company and Walker WC Clay Co. The District would also like to purchase a 2015 membership to the Demonstration of Energy Efficiency Developments Program (DEED).

Community Events -The 8th Annual Public Power Green Festival was hosted on Saturday, September 6, 2014. The District partnered with the Town of Burrillville's Parks and Recreation Department to host the event at the Still Water Mill Center. The first five-hundred

customers received insulated lunch bags filled with energy efficient materials and recycling tips. There were activities for children, which included a coloring contest, decorating door hangers, bucket rides, face painting and games.

Many vendors attended the Green Festival this year and a list of vendors has been included in this filing under Schedule H along with a map of the event. This event continues to grow each year. The District hosted a booth which provided customers with energy conservation handouts and a free CFL light bulb for the adults and a bank in the shape of a house with our logo and the message "Helping you Save Energy!" The District's staff helped out on the welcome booth, on the table with raffle items, and with rides on the bucket truck. The raffle items were donated by the vendors and local businesses to raise money for the Back Pack Project, a nonprofit agency that helps children in need. The event was very successful and by sharing the cost with the Town, the District was able to attend other events in the community.

In 2015, The District would like to continue the line item for the community events. We will continue to partner with Burrillville Parks and Recreation to host the Green Festival and have them help with expenses and labor. This will allow the District to host energy efficiency workshops at the farmers market during the summer season, attend the Family Fair and Celebrate Burrillville Event, and if money allows participate with the Downtown Pascoag Association event.

Jesse Smith Library Partnership- the Jesse Smith Memorial Library in conjunction with the Public Works Department and the Pascoag Utility District encouraged students in grades K-6 to create Earth Day Posters depicting why it is important to recycle and conserve energy in Burrillville. A total of twelve winning posters were chosen to be included in a 2015 calendar which will contain energy conservation and recycling tips. An awards ceremony was held on April 16, 2014 to recognize the winners of the contest. The District would like to fund this line item at $3,700, which would allow the District staff to visit the schools to kick off the contest in 2015 and allow us to create and purchase energy conservation and recycling calendars for 2016 and help host the awards ceremony with the Library and the Burrillville DPW.

In 2014, the DSM coordinator was unable to attend the APPA Academy. The DSM Coordinator was able to take advantage of webinars offered by APPA. The District is going through a financial and customer information software change and time has been very limited this year.

The District would like to fund the Energy Efficiency Management Education line item at $4,500 in 2015. This would allow her to participate in one of the APPA Educational Conferences offering courses on energy efficiency, and give her the opportunity to attend the NEEP and NECA conferences in 2015. Twenty hours of continuing education in the energy efficiency field is required every two years to maintain the Energy Efficiency Certificate.

Program Research and Development was created when the District wanted to research LED Street lights. The line item gives the District the ability to research products for possible incentives. The District would like to fund this line item with $500 in 2015.

Pascoag's proposed budget is based on a forecast of Sales for 2015 of 57,665,000 kWhr. The estimated budget is rounded up to $115,330 for 2015. The District anticipates a $39,000 carryover fund from 2014 which would bring the total 2015 budget to $154,330.

2015 Program Details- Residential, Commercial and Industrial, Administrative/Ad and Customer Education and Outreach

Residential Programs

In 2015, Pascoag plans to continue all of the current Residential Programs from 2014. The customer demand still continues and the District believes these programs will continue to be successful in 2015. This Summary will detail the programs proposed for 2015 and will review the success of the 2014 programs. New this year, the Utility District would like to offer a rebate Energy Star certified clothes dryers.

Energy New England – Residential Conservation Services $2,400:

Pascoag will continue its relationship with Energy New England ("ENE") in 2015. The Residential Conservation Service ("RCS") provides invaluable technical support to the District staff as well as its customers.

In addition to this support, ENE supplies fulfillment materials to the customers of the District. The materials include energy smart CD's, conservation booklets, and reference materials and resources. ENE sponsors a toll free energy hot line that is available to customers during normal business hours. Pascoag refers customers with high consumption complaints to this hot line after performing a meter test to rule out a faulty meter. If the customers' questions can not be resolved over the phone, ENE schedules a home energy audit which goes into greater detail as to how the customer can conserve energy. This year Pascoag tested over 5 meters[1] and sent letters to each customer referring these customers to the toll free energy hot line. ENE attended the 8th Annual Green Festival and answered energy related questions and handed out flyers on energy efficiency.

ENE also sponsors an Advisory Group. The Advisory Group includes people from several municipal utilities from the entire New England area. This group meets quarterly to share ideas on all aspects of energy conservation. Pascoag is a member of the Advisory Group.

The cost for this service will remain at $200 month in 2015.

Audits with Follow-Up Incentives-$3,600:

Pascoag would like to provide ten audits in 2015, along with a maximum rebate of $100 for incentive follow-up. This would allow the following:

10- Audits @ $220 each	$2,200
Money available for 10 incentives @ $100 each	$1,000
5 free CFL's & Smart Power Strip	$ 400

[1] Meters were proven to be within acceptable accuracy limits.

ENE price has increased to $220 for each home energy audit, in 2015. The increase is primarily due to fees associated with materials and increases in wages. Measures that are often suggested by Energy New England include insulation for the walls and attic, weather stripping, pipe insulation, and electrical outlet insulation. The District does not have rebates for these items and would like to continue to offer a rebate of 10%, up to $100 per customer, to encourage them to implement these recommendations. The suggested measures must be implemented in the same calendar year as the audit to qualify for the incentive and can not be a duplicate of a program already established for rebates.

The District will continue to provide 5 free CFL's bulbs and a Smart Power Strip with each audit. These additional items will help save $54 annually in electricity cost associated with the lighting and $30 per year in standby electric.

Pascoag has no auditors on staff, and it is more cost effective to use ENE's certified auditors.

ENERGY STAR Appliance Rebates: $9,000

Pascoag would like to fund this line item at $9,000 in 2015. This program continues to be our most popular program.

When a customer purchases an appliance they have to remember that it has two price tags: what you pay to take it home and what you pay for the energy and the water it uses. ENERGY STAR compliant models use 10-50% less energy and water compared to the standard models.

A compliant clothes washer uses 20% less energy and 35% less water over the life of the washer, saving enough money to pay for the matching dryer. A compliant dehumidifier uses 15% less energy than a standard model; a compliant dishwasher uses 10% less energy and use 20% less water than a standard model; a compliant refrigerator and/or freezer uses 15% less energy than non qualified models and are 20% more efficient than the minimum federal standard; a compliant air conditioner uses 10% less energy than a standard model; and a room air cleaner uses 40% less than the standard models; water coolers use 50% less energy than conventional models. By reducing energy consumption with ENERGY STAR qualified appliances customers save money by using less, helping to reduce greenhouse gas emissions and helping in the fight against climate change.

The District would like to add electric clothes dryers to the list of rebates this year. Clothes dryers use more energy than any other household appliance, contributing to higher energy bills. ENERGY STAR certified dryers use 20% less energy than conventional models.

Many of the District customers call before making an appliance purchase to make sure the models they are interested in qualify for rebates.

A residential customer purchasing an ENERGY STAR compliant appliance will receive a rebate of up to 10% not to exceed the following for each appliance; refrigerator, freezer, clothes washer, and electric clothes dryers up to $75. A customer purchasing an ENERGY STAR compliant dishwasher or air purifier will receive an incentive up to $50; an ENERGY STAR air conditioner will receive an incentive up to $25; an ENERGY STAR dehumidifier will receive incentive up to $20.

Refrigerator/Freezer Buyback Program: $1,035

The District would like to continue a refrigerator/freezer buyback program in 2015. This program will encourage our customers to reduce their power bills by giving up an old inefficient refrigerator or freezers. An average 14 year old spare refrigerator or freezer uses between 1,250 and 2,225 kWh per year and can amount to 25% of the annual electricity used in a typical household. The Energy Star web site estimates there are 16.9 million inefficient freezers and 12.7 million inefficient refrigerators, all over 10 years old, in use across America. The District increased the incentive from $50 to $68 to offset the recycle charge in 2014 which increased the activity for this program. The District would like to increase the budget in 2015 to allow the removal of 15 refrigerators or freezers and ensure that they don't end up back on the grid in someone else's home. A second refrigerator/freezer removal program will cut demand and reduce the residential energy consumption.

The customer must contact the District office so we can verify the following requirements for a second refrigerator or freezer:

- They must be between 10 to 30 cubic feet using inside measurements.
- The refrigerator or freezer must be in working order.
- The customer will fill out a form with the model and make of the refrigerator/freezer and give the approximate age.

Once this criteria is verified the customer will be instructed to call Waste Management at1-800-972-4545 to schedule an appointment to pick up the appliance. Once the pickup is verified, the customer will receive a $69 rebate which will be applied to their electric account.

The District would like to increase the funds to this line item to $1,035; a rebate of $50 and a removal fee of $19 will allow us to process 15 incentives.

ENERGY STAR Windows/Skylights and Doors Incentive: $2,500

The budget for 2014 was $2,500 and by October the District has processed $2,455 in rebates. The District would like to keep the funding at the same level in 2015. When a customer purchases ENERGY STAR compliant windows, doors and sky lights for the northern area, they will realize energy savings in lower energy use. These windows and doors also help reduce heat loss in winter and offer protection from the summer sun, and reduce condensation and interior fading. ENERGY STAR qualified windows, doors and skylights keep your home cooler in the summer and warmer in the winter.

The District will keep the incentive at $15 per window, up to a maximum of ten windows per customer and $40 per door, allowing two doors per customer. To qualify all windows and doors must meet energy efficiency standards:

Windows:

Northern Climate Zone	U Factor	SHGC
	≤0.30	Any
	=0.31	≥0.35
	=0.32	≥0.40

Skylights:

Northern Climate Zone	U Factor	SHGC
	≤0.55	Any

Doors:

Glazing level	U Factor	SHGC
Opaque	≤0.21	No rating
≤1/2 Lite	≤0.27	≤0.30
>½ Lite	≤0.32	≤0.30

ENERGY STAR Heating System Incentives: $3,000

The District would like to continue the funding for heating system replacement at $3,000, in 2015. The District issued 12 rebates totaling $3,000 as of October of 2014.

With the price of fuel to heat a home today, many homeowners are replacing their older systems with ENERGY STAR compliant gas and oil boilers/furnaces and making every drop of fuel count. Although these products are expensive to purchase up front, the cost difference is paid back over time through lower energy bills.

The ENERGY STAR compliant oil and gas furnaces have annual fuel utilization efficiency (AFUE) ratings of 83% and 90%, or higher, making them up to 16% more efficient than standard models.

ENERGY STAR qualified boilers have annual utilization efficiency (AFUE) rating of 85% or greater. Whether the fuel is gas or oil, they use about 6% less energy than a standard boiler, they achieve greater efficiency with improved features like electronic ignition that eliminates the need to have a pilot light burning all the time; new combustion technologies that extract more heat from the same amount of fuel; and sealed combustion that uses outside air to fuel the burner, reducing drafts and improving safety.

The District would like to keep the incentive at $250 in 2015. This will allow twelve customers to take advantage of this program.

ENERGY STAR Solar and Electric Heat Pump Water Heaters: $900

The District would like to offer an incentive on ENERGY STAR qualified solar hot water heaters and ENERGY STAR heat pump water heaters. The potential for savings are listed below:

ENERGY STAR Solar Water Heaters can be used in combination with another back-up system. Using the sunshine to heat or preheat the water in combination with an electric tank water heater as backup will save $250 a year on the electric bill, and reduce the load on the electric water heater by 2,500 kWh per year.

ENERGY STAR Heat Pump Water Heaters can save the average household $300 per year compared to a standard electric hot water heater. A General Electric GeoSpring hybrid electric heat pump water heater uses 1,856 kWh per year compared to the standard electric tank water heater that uses 4,881 kWh per year, a savings of 3,025 kWh or $423 at 14 cents per kWh.

The District processed two rebates in 2014 for a heat pump water heater.

An incentive of 10% of the cost, not to exceed $150 will allow us to process six incentives in 2015.

ENERGY STAR Lighting Fixtures/Ceiling and Ventilation Fans: $1,000

The District would like to fund this program at the same level in 2015. We would like to continue the fifty percent rebate on lighting fixtures and ENERGY STAR ceiling and ventilation fans. The District processed 10 rebates totaling $433.66, as of October 2014.

ENERGY STAR qualified lighting fixtures use one-quarter less energy than traditional lighting. They distribute light more efficiently and more evenly than the standard fixture. They come in hundreds of decorative styles including portable fixtures like table, desk and floor lamps, and hard-wired fixture options like front porch, dinning room, kitchen ceiling and under-cabinet, hallway ceiling and wall bathroom vanity fixtures and ceiling fan lighting fixtures. Many fixtures have convenient features such as dimming on some indoor models and automatic daylight shut-off and motion sensors on outdoor models. Replacing the five most used fixtures in a home with ENERGY STAR qualified models can save up to $70 each year in energy cost.

ENERGY STAR ceiling fans/light combination units and ventilation fans. ENERGY STAR qualified ventilation fans are 70% more efficient than standard models, operate with less noise, have high performance motors, and improved blade design that provides better performance. The ENERGY STAR qualified ceiling fan/light combination units are over 50% more efficient than standard models, use improved motors and also have a better blade design.

The incentive will remain at 50%, with a cap of $50.

Home Office Equipment/Home Electronics: $2,500

The District would like to fund this line item at $2,500 in 2015. The incentives for this line item will remain 15% of the cost, up to a maximum rebate of $50. The District has processed $1,445 in rebates through October. The District feels that the demand for office and electronic rebates will continue to be strong especially in the month of December.

ENERGY STAR compliant office equipment such as computers, monitors and imaging equipment like printers and copiers help to eliminate waste though special energy efficient designs. They use less electricity and when they are not in use enter into a low-power mode. The specifications for many office products continue to change making it more difficult to earn the ENERGY STAR label. The products now use as much as 60% less electricity than standard equipment. If every home office product purchased in the United States this year met ENERGY STAR requirements, we would save more than $100 million in annual energy cost, prevent 1.4 billion pounds of green house gases, equivalent to taking 125,000 cars off the road, and save more than 900 million kWh of electricity. The products that fall under office equipment are: computers, laptops, copiers, fax machines, digital duplicators, external power adapters, notebook computers/tablet PC's, mailing machines, computer monitors, digital picture frames, printers, scanners, all in one units, water coolers, and computer servers.

ENERGY STAR compliant home electronics use as much as 60% less energy. Even when these electronics are off they use power for features like clock displays and remote controls. The average home has roughly two TVs, three telephones and a

DVD player. Approximately 10% of a households power use is devoted to TV-related activities. There are about 275 million TV's currently in use in the U.S., consuming over 50 billion kWh of energy each year. An average size ENERGY STAR qualified TV uses 40% less energy than a standard model, an ENERGY STAR qualified 60-inch television will be, on average, 60 % more efficient than a standard model. ENERGY STAR qualified TV's are viewed with an on mode power consumption level that allows a consumer to realize a savings by curbing the energy associated with downloading program guide data. A Set-top box is a cable, satellite, internet protocol or other device that is used to receive a television signal from a specific source that delivers them to a consumers' display and or recording device, such as a television or DVR; these set-top boxes are getting more energy intensive. In fact, a home using two set-top boxes is using significantly more electricity than it takes to run a new refrigerator – roughly 500 kWh every year. ENERGY STAR qualified set-top boxes are at least 40 % more efficient than conventional models.

The products that fall under home electronics are audio/video such as Home-Theater-in-a-box systems, audio amplifiers, AV receivers, shelf systems, DVD players, Blu-ray disc players, docking stations for audio amplification or optical disc drive functions, battery charging systems such as cordless power tools, cordless yard care tools, hand held vacuums, personal care products, digital-to-analog converter boxes, cordless phones, and combination units, external power adapters, televisions and set-top boxes imaging equipment.

The District would like to fund this line item at $2,500 with a rebate of 15% not to exceed $50.

Incentives for Geothermal Systems or a Ground Source Heat Pump (GHP): $100

Although the District has no firm commitments for this line item, we would like to continue to keep the line item open because of the potential savings.

The geothermal heat pumps are similar to ordinary heat pumps, but they use the ground instead of the outside air to provide heating, air conditioning and hot water. By using the earth's natural heat they are among the most efficient and comfortable heating and cooling technologies currently available. They use about 45% less energy than a standard heat pump, and they are quieter than a conventional system. ENERGY STAR certified heat pumps must meet the following specifications:

Product Type	EER[2]	COP[3]
Water to air		
Closed Loop water-to-water	17.1	3.6
Open loop water-to-air	21.1	4.1
Water to Water		
Closed Loop water-to-water	16.1	3.1

[2] Energy Efficiency Rating (EER)
[3] Coefficient of performance (COP)

Open Loop water-to-water	20.1	3.5
Direct Ground Expansion		
DGX	16.0	3.6

The District would like to keep this line open should there be any future request. Geothermal heat pumps also qualify for tax credits of 30% of the cost with no upper limits through December 3, 2016.

The incentive would be 5% of the cost with a maximum rebate of $350.

New Construction Rebates: $2,080

The District has processed one rebate in 2014.

This line item is an excellent way to encourage the contractors to upgrade to ENERGY STAR compliant windows, doors, skylights, heating systems, appliances, lighting fixtures, central air conditioning, and water heaters. Since the current building code in the town of Burrillville does not require the contractors to install Energy Star compliant products, the District feels this program is a great way to encourage energy efficiency in the construction process and to reduce the demand for electricity from these new housing developments.

The District would like to continue to fund this program at $2,080 in 2015.
The budget of $2080 will allow us to process four rebates with a cap of $520 per unit /home:

ENERGY STAR Boiler/Furnace	$250
ENERGY STAR Windows/Sky Lights, limit of 10 @ $15	$150
ENERGY STAR Doors, limit of 2 @ $40	$80
ENERGY STAR Appliances at $50 each	$50
ENERGY STAR Lighting Fixtures/ Ventilation fans	$20
ENERGY STAR Solar and Electric Heat Pump Water Heater	$100
Central Air Conditioning, with an SEER of 14 or greater	$150

Central Air Conditioning: $1,y500

The District has processed four rebates totaling $1,100 in 2014. The District would like continue to fund this line item to $1,500 in 2015.

About one-seventh of all the electricity in the US is used to air condition buildings. ENERGY STAR qualified central air conditioners have a higher seasonal efficiency rating (SEER) than standard models, which makes them 15 % more efficient than standard models. ENERGY STAR certified central air conditioners must meet the following specifications:

Central AC / Air Source Heat Pump	**SEER**	**EER**	**HSPF**	**Proposed Incentive Amount**
Single package	≥14.0	≥11		$200
Split System	≥14.5	≥12	≥8.2	$200
	≥15	≥12.5	≥8.5	$250
	≥16	≥13	≥8.5	$300
Ductless Mini-split Heat Pump	**SEER**	**EER**	**HSPF**	**Proposed Incentive Amount**
	≥16	≥12	≥8.2	$200
	≥19	≥12.5	≥10	$250
	≥20	≥13	≥10	$300

The District is proposing a tiered incentive based on the efficiency of the cooling unit. This would allow up to 5 rebates.

Energy Star Light Bulbs: $750

The ENERGY STAR label on lighting means you are getting a product that is superior in energy efficiency. ENERGY STAR qualified compact fluorescent light bulbs (CFLs) use seventy-five percent less energy than incandescent bulbs and last six to ten times longer. ENERGY STAR decorative light strings use 70% less energy than conventional incandescent light strings, last ten times longer, and are cool to the touch. The ENERGY STAR qualified decorative light strings that feature LED technology are 90% more efficient. The electricity consumed by just one 7-watt incandescent bulb, can power 140 LEDs or enough to light a 25 foot string of LEDs.

The District proposes a rebate of 50% of the cost of the LED & CFL light bulbs with a cap of $50 per customer.

Desk Calendars with DSM Rebate Information: $852

Last year the District purchased 700 calendars and distributed them to our walk in customers. These calendars are produced by Energy Savers and feature energy saving tips each month. It shows the customer what to look for when purchasing ENERGY STAR compliant products, and is a great way to advertise our programs,

since the calendars featured our 2014 programs and rebate amounts on the inside page.

In 2015, the District would like to purchase 450 Desk Calendars that are personalized with information about the DMS rebates and directs our customers to our web site for applications.

The District is proposing a budget of $852 for this line item.

"Smart" Power Strips: $200

The District will continue to offer an incentive on smart power strips. They are a way to reduce the amount of power being drawn by computers and electronic accessories when they are not in use. The smart power strips monitor power consumption and can sense the difference between when a device is on or off and can shut the power off, eliminating the idle current being drawn from the item. Most smart power strips have two always-on outlets, a master control outlet and 2-6 controlled outlets that automatically turn off or on as the master appliance is turned on or off.
A study by the Department of Energy showed that 15% of the energy used in the average home is just for standby current. The smart power strips save on average $30 per year.

The incentive will remain at 25%, up to a maximum rebate of $25.

ENERGY STAR Qualified Pool Pump Program: $500

The District is proposing a rebate on ENERGY STAR qualified pool pumps which will include the two-speed and variable speed models that are listed on the ENERGY STAR web site.

The Department of Energy and Environmental Protection Agency has set new ENERGY STAR criteria for pool pumps. ENERGY STAR rated pool pumps use 30% - 72% less energy. The estimated cost savings from operating an ENERGY STAR efficient pool pump is $160 per year, making the payback period less than three year.

The District is proposing a rebate of 10 percent, not to exceed $100, this would allow for 5 rebates in 2015.

Committed for 2014 Programs: $2,000

In 2014 the Public Utilities Commission allowed the District to keep a line item called "Committed for 2013 Programs" and fund it with money that was carried over

from the 2013 DSM budget. This allowed us to use $2,000 from the carry over funds from 2013 and rebate 24 customers who had submitted qualified rebates for programs in which the funds had been depleted.

The District is estimating a carryover of funds from 2014 at $39,000. The District will use $37,000 of these funds in the 2015 budget and use $2,000 to satisfy 2014 qualified rebates for customers who do not receive a rebate because the funds for a particular program had been depleted in 2014 or for rebates that are turned in after the books are closed for 2014; the cutoff date for 2014 rebates would be February 15, 2015.

Commercial and Industrial Programs

ENERGY STAR Incentive – Office Equipment/Electronics: $500

The District issued seven incentives totaling $255 through October of 2014. The District continues to promote this program. The District would like to continue this program at the same level of funding in 2015.

The office equipment and electronics have the same savings that are mentioned in the Home Office Equipment/Home Electronics program. The incentive will remain at 25% of the cost, with a cap not to exceed $50.

Industrial and Commercial Projects 2014:

The Harrisville Fire District will qualify for a rebate on a mixture of new and retrofit lighting; the total rebate is estimated at 4,438 and should be completed in 2014. *Please see Schedule J for a detailed report.*

2014 Town of Burrillville LED Street Light Retrofit Project:
The District is working with EYE lighting to help the Town of Burrillville retrofit 8 Metal Halide Street Lights and 4 High Pressure Sodium Street lights. The two different style street light heads were shipped to EYE Lighting in order for their engineers to design the LEDioc™ LED retrofit solution. Each retrofit kit will qualify for a $200 rebate and the Town will realize substantial kWh savings along with a reduction in maintenance fees. *Please see Schedule J the specification spreadsheet.*

2014 Harrisville Water District Lighting Project:

The Harrisville Water District has been requested an audit to retrofit the lighting at the Harrisville Water Districts Office. RISE has been notified and will be performing the audit soon. It is very likely that this project will be completed in 2015.

Exotic Nails & Star Tans $2,462 – RISE Engineering performed an energy audit for the owner of both of these locations in 2013. Both rebates would have included retrofit lighting and lighting controls. The incentive for Exotic Nails was estimated at $711 and the incentive for Star Tans was estimated at $1,751. Unfortunately the owner was not interested in moving forward with the audit suggestions and has since sold the business.

2014 LED Street Light Incentive: $17,068

An LED Street light incentive was approved on October 25, 2013, for a rebate of 50% of the cost of the LED Street light, photo eye, arms and installation. The District will be placing an order for 250 LED Street lights using a $62,500 grant from the RGGI funds in conjunction with $7,003 of Pascoag's capital reserve funds and $17,068 rebate from the DSM program. *Please see Schedule J for the Districts Proposal for the RGGI Grant.*

2015 Lighting Projects:

The District would like to keep the rebates for lighting projects at 60% on retrofit projects and 40% on new lighting projects in 2015. These incentives have enticed customers to make the necessary changes to increase their energy efficiencies.

The District has identified the following projects for 2015:

The Burrillville Municipal Buildings $27,597 – The District continues to participate in the Municipal Working Group of the RI Public Energy Partnership (RIPEP). The group is trying to identify public buildings and make them 20% more energy efficient. The District has several lighting audits that were performed by RISE in 2012 and hopes to identify other areas for improvement. The District is hoping that this will lead to energy efficiency projects that qualify for DSM rebates. The District is currently gathering consumption reports for all the municipal buildings in our service territory and will give this information to the University of RI for analysis. The District would like to allocate $27,597 to this project in 2015. *Please see RISE's Audits under Schedule G.*

Committed Funds 2014- Lighting Projects: $12,000

The District would like to allocate funds to this line item in order to accommodate unidentified and identified projects. Often, businesses will approach the District after the file date, and ask to be considered for a rebate on a project. This line item gives the District a source of funds to work from, so we do not miss out on an opportunity to work with our business customers on energy efficiency projects.

In 2014, the District was able to accommodate the Harrisville Fire Department Lighting Project. This allows us to be proactive and have the ability to work with our customers when they are ready to go forward with a project.

The District would like to allocate $12,000 to this line item and make the funds available on a first come first serve basis.

Consultation fees: $1,000

National Grid, RISE Engineering and Energy New England continue to provide verification of savings on the commercial and industrial projects on an as needed basis. This line item will remain at $1,000.

ENERGY STAR Commercial Appliances: $700

The District processed one rebate for an ENERGY STAR commercial ice machine, two dehumidifiers and one refrigerator. The District would like to continue to offer the businesses the same rebate criteria as seen under the residential appliance program for residential appliances.

The following appliance would qualify for rebates:

Commercial Dishwashers that earn the ENERGY STAR rating on average are 25 % more energy efficient and twenty-five percent more water efficient than standard models.

Commercial Fryers that earn the ENERGY STAR rating are up to 25% more energy efficient than standard models. They also offer shorter cook times and higher production rates through advanced burner and heat exchanger designs.

Commercial Ice Machines that earn the ENERGY STAR rating are on average 15% percent more energy efficient and ten percent more water efficient than standard models.

Commercial Hot Food Holding Cabinets that have earned the ENERGY STAR rating are 60% more efficient than standard models. Models that meet the requirements incorporate better insulation, reducing heat loss, and may also offer additional energy saving devices such as magnetic door gaskets, auto-door closures, or Dutch doors.

Commercial Griddles that earn the ENERGY STAR rating are about 10% more energy-efficient than standard models. A qualified grill can save 2,270 kWh annually.

Commercial Ovens that earn the ENERGY STAR rating are 20% more energy-efficient than standard models. These ovens can save 1,870 kWh annually.

Commercial Refrigerators & Freezers that meet the ENERGY STAR specifications will be 30% more energy efficient than a standard option because they are designed with components such as ECM evaporator and condenser fan motors, hot gas anti-sweat heaters, or high-efficiency compressors that will reduce energy consumption.

Commercial Steam Cookers, also known as compartment steamers that meet the ENERGY STAR qualifications are up to15% more energy-efficient than standard models. They can save 6,270 kWh annually.

Commercial Clothes Washers: choosing an ENERGY STAR qualified commercial washer for a laundry facility will save a significant amount of money and provide the residents with the best laundry performance possible. On average facilities will realize a savings of $141.60 in electricity the first year and on average they will trim $1,000 per washer from their utility bills over a ten year period.

ENERGY STAR Vending Machines-a typical vending machine that meets the ENERGY STAR criteria will save more than 1,500 kWh per year compared to a non-qualified model. New and rebuilt ENERGY STAR refrigerated beverage vending machines are 50% more energy efficient than standard machines because they incorporate more efficient compressors, fan motors and lighting systems. They come with low power mode options that allow the machine to be placed in a low-energy lighting and low-energy refrigeration state during times of inactivity.

The District proposes a rebate of 10% with a cap of $350 for commercial appliance or the following for the smaller Residential Appliances:

A commercial or industrial customer purchasing an ENERGY STAR compliant residential appliance will receive a rebate of up 10% not to exceed the following for each appliance; refrigerator, freezer, clothes washer, and dryers up to $75. A customer purchasing an ENERGY STAR compliant dishwasher or air purifier will receive an incentive up to $50; an ENERGY STAR air conditioner will receive an incentive up to $25; an ENERGY STAR dehumidifier will receive incentive up to $20. The same savings would apply as listed under residential ENERGY STAR Appliance Rebates.

Public Street Light Incentive: $26,526

In 2015, the District would like fund this line item with $26,526 to be used for a Public LED Street Light Incentive. This would allow the District to continue replacing High Pressure Sodium (HPS) street lights with LED street lights. The District feels this continues to be an excellent use of DSM dollars because it benefits all the District's customers with lower public street light assessments while helping

the District become more energy efficient. The LED Street lights that are purchased in 2014, will qualify for a 50% rebate of $34,752. A rebate of $17,068 will be issued in 2014 and the balance of the rebate will be issued in 2015 for $17,684. The District will use the $17,684 to purchase 53 additional LED Street lights that will qualify for an additional rebate of $8,842.

Administrative/Ad/ Education

Administrative Expenses: $21,000

The funds will be used to pay for staff time, schools and seminars related to DSM, and reimbursement of mileage when employees use their private vehicles for DSM related activities.

Pascoag has two Customer Service Representatives who devote many hours to the DSM programs by working with the customers, taking the applications for rebates on the various programs and answering questions over the phone and in person. The DSM Coordinator spends many hours researching the compliance of the various rebates that are submitted, reconciling the DSM programs, and updating existing programs as well as creating new programs for the next year and requesting reallocation of funds. In addition, the Assistant General Manager works with the commercial and industrial customers on various C & I projects and performs site visits.

The District would also like to perform a training session with the Customer Service Representatives and include a luncheon again this year to train them on the latest criteria regarding DSM rebates for 2015.

The District would like to fund this line item at $21,000 in 2015.

Follow-Up to Successful Programs: $2,148

The District is requesting a line item to allow some flexibility in transferring funds up to ten percent to other programs with a high customer demand. If the carry over funds exceed our estimate, the District is proposing to move these funds to the Funds for Follow-up to Successful Programs line item in the 2015 budget. Any transfer would only be done with the Division's approval.

Education/Outreach Program: $10,000

The District worked with the website designer this year to update and promote the DSM program. The District is very happy with the results and encourages the Districts customers to visit the site at www.pud-ri.org . The web site allows

customers to go on line and view the available DSM programs, it also allows them to down load rebate forms. The feedback has been very positive from the customers who have used the site. Many of the rebate forms that we have processed this year have been downloaded from the internet.

The District paid for two flyers that were inserted in the bills to promote the DSM Programs in both the Commercial/Industrial and Residential programs. The District purchased the following fulfillment items from Culver and Walker Clay Company which all had a conservation message on them: Desk Calendars, LED flash lights and LED key chain lights. The District has depleted much of the giveaway items and will place another order this fall.

The District took many opportunities to educate the public on energy efficiency matters this year; we attended the Family Fair, the RI Public Power Energy Meetings, the Celebrate Burrillville event, and hosted several energy efficiency and sustainable workshops at the Burrillville Farmers Markets over the summer.

The District would like to use some of these funds to update the website in 2015, process bill inserts promoting the various programs, and to run advertisements in the local paper, to purchase fulfillment materials, such as night lights, refrigerator thermostats, chip clips and other conservation materials which will be given away at the Districts Customer outreach events.

The District would like to purchase an annual subscription to the DEED Program again in 2015, this allows us to see what other utilities across the United States are doing in regards to energy efficiency projects.

Jesse Smith Library Partnership - $3,700

The District partnered with the Jesse Smith Library and Burrillville Department of Public Works (DPW) for an Earth Day Contest which encouraged students grades K - 8 to draw posters on why recycling and energy conservation was important. The top twelve posters were chosen for prices and will be included in a 2015 Calendar with recycling and conservation messages. An awards ceremony was held at the library and each participant received a certificate issued by the town council.

In 2015, The District would like to partner with the Jesse Smith Library and the DPW; this would allow us to continue the partnership for an Earth Day Poster contest for both energy efficiency and recycling. The District would like to visit the schools to kick off the contest. A budget of $3,700 is requested and would be used to help fund prices, materials, labor, and refreshments for the awards ceremony and allow us to create calendars with the posters that will hang in customers' homes for twelve months.

Community Events: $10, 242

In 2014, funds were used to purchase supplies, place advertisements in the Bargain Buyer, and to pay for staff time at the 8th Annual Green Festival. Many hours were dedicated to the preparation of the event. The Pascoag Utility District partnered with the Town of Burrillville's Parks & Recreation Department and hosted the event at the Stillwater Mill Center at 100 Tinkham Lane. This partnership continues to very rewarding. The Festival had something for everyone. Festival goers learned about the local products and ideas to help them conserve energy and create a new sustainable lifestyle. There were free crafts, face painting, games, and bucket truck rides for the children. The event was very successful raising funds from a raffle for a local nonprofit agency called the Backpack Project. The weather for this event was beautiful and the attendance was very high. A survey that was given to the vendors came back with most rating the event as excellent.

The District would like to continue the line item for Community Events. The District will continue the partnership with the Town of Burrillville Parks and Recreation Department in hosting the Green Festival again next year. This will allow us to attend other events in the community, to promote the DSM programs available to the District's customers at other community events as funds allow.

The District will continue with the energy efficiency and sustainable workshops, this will allow us to promote the available rebates and find guess speakers to discuss energy efficient measures.

The District would like to fund this line item at $10,242 in 2015.

Energy Efficiency Education funds: $4,500

The DSM Coordinator completed the Energy Efficiency Certificate Program in May of 2012. To maintain certification, she must complete 20 hours of additional approved continuing education training (not limited to APPA offerings) every two years. Unfortunately she was unable to attend the APPA Conservation Conference in 2014 due to time restraints directly related to a financial and customer information software conversion

.

To utilize some of the continuing education funds, she was able to attend take a couple of webinar in energy efficiency.

There are opportunities for more education in this field, in 2015. The District is hoping that APPA will offer courses in the energy efficiency field listed as "Commercial Energy Services that Work" and "Residential Energy Services that Work". If the courses are not offered the DSM Coordinator would like to attend the NEEP two day workshops, the NECA Conference and take webinars as they become available.

The funding for this line item will remain at $4,500 in 2015.

Program Research and Development: $500

The District would like to fund this line item with $500 to have a source of funds to help develop future energy efficient programs.

Demand Side Management Programs - 2014 Approved Budget with Expenses

	Estimate	Actual
Estimated Carry Over 2013	$ 34,000	34,359.66
Estimated sales for 2014	$ 109,500	
Net 2014 budget	$ 143,500	143,859.66

		2014 Approved Budget	Expenses	Balance	
	Residential Program				
DR1401	ENE Residential Conservation (ECHO)	$ 2,400.00	$ 1,800.00	$ 600.00	8 months
DR1402	Home Energy Audits with Incentives	$ 3,600.00	$ 2,600.00	$ 1,000.00	13 Audits
DR1403	Energy Star Appliance Rebates	$ 9,000.00	$ 7,871.55	$ 1,128.45	37 Refrigerators, 27 Air Conditioners, 28 Clothes Washers, 29 Dishwashers, 4 Dehumdifers
DR1404	Refrigerators/Freezer Buy Back	$ 1,020.00	$ 578.73	$ 441.27	9 Refrigererator buy backs
DR1405	Energy Efficient Windows/Doors	$ 2,500.00	$ 2,455.00	$ 45.00	104 Windows and 18 Doors
DR1406	Heating System Incentive	$ 3,000.00	$ 3,000.00	$ -	12 Boilers
DR1407	ENERGY STAR qualified Water Heaters	$ 900.00	$ 294.50	$ 605.50	2 Hybrid hot water heaters
DR1408	Energy Star Lighting fixtures and fans	$ 1,000.00	$ 433.66	$ 566.34	2 Ceiling fans, 16 Lighting fixtures, 1 floor lamp
DR1409	Home Office Equipment/Home Electronics	$ 2,500.00	$ 1,144.96	$ 1,355.04	8 TV's, 1 Battery Back-up, 3 monitors, 1 Answering Machine, 3 Printers, 5 Computers, 2 Phone
DR1410	Electric Heat Conversion/Geothermal System:	$ 100.00	$ -	$ 100.00	no activity
DR1411	New Construction	$ 2,080.00	$ 50.00	$ 2,030.00	no activity
DR1412	Central Air Conditioner Incentive	$ 1,500.00	$ 1,100.00	$ 400.00	3 Heat Pump Central AC, 1 Duckless Central AC
DR1413	Change a Light Campaign	$ 750.00	$ 545.89	$ 204.11	151 LED Bulbs 6 Watts up to 23 Watts, 19 CFL Bulbs
DR1414	Energy Conservation Calendars	$ 2,730.00	$ 2,730.06	$ (0.06)	700 Calendars
DR1415	Smart Power Strips	$ 200.00	$ 25.00	$ 175.00	1 smart strip
DR1416	ENERGY STAR Pool Pumps	$ 500.00	$ -	$ 500.00	no activity
DR1417	Committed for 2013 Programs	$ 2,000.00	$ 1,840.45	$ 159.55	3 Cothes Washers, 3 Refrigerators, 2 Dishwasher, 1 Refrigerator Buy-Back, 3 TV's, 6 Led Utility Lights, 15-20 Watt LED Bulbs, 35 Windows, 2 boilers
	Net Residential	**$ 35,780.00**	**$ 26,469.80**	**$ 9,310.20**	
	Industrial/Commercial				
DI1401	Energy Star Incentive - Office Equipment	$ 500.00	$ 255.00	$ 245.00	1 Printer, 2 Monitors, 2 Wyse Terminals
DI1402	Burrillville Municipal Buildings	$ 26,000.00	$ -	$ 26,000.00	no activity
DI1403	Exotic Nails & Sun Tans Incentive	$ 2,462.00	$ -	$ 2,462.00	no activity
DI1404	Commited Funds- Lighting & EE Projects	10000	$ -	$ 10,000.00	no activity
DI1405	Consultant Fees	1000	$ -	$ 1,000.00	no activity
DI1406	Energy Star Commerical Appliances	700	$ 360.00	$ 340.00	2 Dehumidifers, 1 Ice Machine
DI1407	LED Street Light Incentive	$ 17,068.00	$ -	$ 17,068.00	no activity
	Net Industrial/Commercial	**$ 57,730.00**	**$ 615.00**	**$ 57,115**	
	Administrative/Ad/Education				
DA1401	Administrative	$ 21,000.00	$ 12,673.48	$ 8,326.52	2 kill a watt meters, mileage, & labor
DA1402	Funds for Follow-up to Successful Programs	$ 2,990.00	$ -	$ 2,990.00	no Activity
DA1403	Outreach/Education	$ 9,000.00	$ 1,350.09	$ 7,649.91	Out reach at the Farmers Market, Deed Membership
DA1404	Jesse Smith Library Partnership	$ 2,000.00	$ 336.45	$ 1,663.55	Supplies, Food, Labor
DA1405	Community Events	$ 10,000.00	$ 3,999.40	$ 6,000.60	Family Fair Time Sheet, Food, Green Festival Sign Changes
DA1406	Energy Efficiency Management continuing education	$ 4,500.00	$ 101.56	$ 4,398.44	TimeSheet & miliage for Energy Advisory Meeting
DA1407	Program Research and Development	$ 500.00	$ -	$ 500.00	no Activity
	Unassigned Dollars from Carry-over	$ 359.66	$ -	$ 359.66	
	Net Administrative/Ad/Education	**$ 50,350**	**$ 18,461**	**$ 31,888.68**	
	Estimated DSM 2014 Budget/ Expenses/ Balance	**$ 143,859.66**	**$ 45,545.78**	**$ 98,313.88**	

Pascoag Utility District
Savings associated with completed conservation projects for 2014

Project	***KW Savings***	***kWh Savings***	***Dollars ($0.154/whir)***
4 Central Air Conditioner:		*792 x 4 = 3,168 kWh*	*$ 488.95*
Light bulb rebates CFL & LED Bulbs		*30,732 kWh*	*$4,733.00*
Office Equipment		*1556 kWh*	*$ 239.62*
Refrigerator Buy Back		*7,465*	*$1,149.61*
Appliance Rebates 2014		*29,010 x.0.154*	*$4,467.54*
10 Residential Boiler Replacements	*Energy Cost Saved $126 x10 =$1260.00* *Energy Consumption Saved (MMBTU) 5 x 10= 50* *Energy Consumption (Gallons) 36 x 10= $360 Gallons*		
Windows and Doors *8 Homes replacing 10 Windows*	*Replacing Single pane windows would be a savings of $4,008 annually* *Replacing Double pane windows would be a savings of $1,616 annually*		

Total KWh Saved: 71,931

Pascoag Utility District- Electric Department ("Department")
Demand Side Management Charge

The following provisions will be apply to reflect charges collected under the Demand Side Management Program, pursuant to "An Act Relating to the Utility Restructuring Act of 1996", #96-H 8124 Substitute B, Section 39-2-1.2(b).

The District proposes to include a charge of 2.3 mills per kilowatt-hour delivered to fund a demand side management program and renewable energy resources. The allocation of this revenue between demand side management programs and renewable energy resources shall be determined by the Commission.

The District will submit semi-annual reports to the Commission documenting funds collected and expended. In the event that revenue collected over or under anticipated revenue, the Department shall apply to the Commission for an annual "true-up".

Approval Issued:

Requested Effective Date: January 1, 1998

Approval Date: March 20, 1998

PROGRAM INFORMATION

Products that save energy & help prevent climate change

Certified Products </products/certified-products> How a Product Earns the Label </products/how-product-earns-energy-star-label>

Save Energy at Home <http://www.energystar.gov/index.cfm?c=products.pr_save_energy_at_home>

Join Our Movement <http://www.energystar.gov/index.cfm?fuseaction=globalwarming.showpledgehome>

Product Specifications Search </products/spec>

Clothes Dryers for Consumers

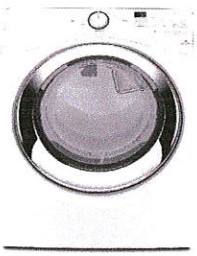
(Are you a partner? See For Partners </products/certified-products/detail/17517/partners>)

Overview </products/certified-products/detail/clothes_dryers?qt-consumers_product_tab=0#qt-consumers_product_tab>

Specification </products/certified-products/detail/clothes_dryers?qt-consumers_product_tab=1#qt-consumers_product_tab>

Buying Guidance </products/certified-products/detail/clothes_dryers?qt-consumers_product_tab=2#qt-consumers_product_tab>

ENERGY STAR certified dryers use 20 percent less energy than conventional models without sacrificing features or performance. They do this using innovative energy saving technologies, such as moisture sensors that detect when clothes are dry and automatically shut the dryer off. Many ENERGY STAR dryers also include convenient features, such as steam cycles that can help save time on ironing clothes by preventing wrinkles.



More than 80 percent of American homes have a clothes dryer, so the savings opportunity is huge. If all clothes dryers sold in the US were ENERGY STAR certified, Americans could save $1.5 billion each year in utility costs and prevent greenhouse gas emissions equivalent to more than 2 million vehicles. To choose a dryer that saves energy and money while protecting the environment, look for the ENERGY STAR label.

Get the most efficiency from your ENERGY STAR certified dryer by considering the following:

- **Sensor Drying.** Use sensor drying, not timed drying. ENERGY STAR dryer models incorporate advanced moisture sensors to help you reduce your dryer's energy use. This feature ensures that your dryer will automatically shut off when clothes are dry
- **Low heat setting.** Longer drying cycles on a low heat setting use less energy. When you purchase an ENERGY STAR certified clothes dryer, look in the informational materials shipped with the product for which cycle was tested for certification and how the dryer's other cycles or settings may use more or less energy.
- **Consider gas.** Eighty percent of dryers in the US are electric. If you have the option, consider using a gas dryer to save money and reduce your environmental impact.
- **Savings by the pair.** An ENERGY STAR certified washer/dryer pair will save even more energy and money while doing your laundry. Clothes washers that have earned the ENERGY STAR incorporate advanced technology and functionality to get significantly more water out of your clothes in its final spin cycle than a conventional model. This makes it easier for clothing to dry in an ENERGY STAR certified dryer using less heat. Less heat means energy savings and reduced wear and tear on your clothes caused by over-drying.

Did you know

Clothes dryers use more energy than any other household appliance, contributing to higher energy bills and unwanted carbon pollution.

RESOURCES

Find a Store <http://www.energystar.gov/index.cfm?fuseaction=store.store_locator>

Special Offers <http://www.energystar.gov/rebate-finder>

RELATED PRODUCTS

Air Purifiers (Cleaners) </www.energystar.gov/products/certified-products/detail/air-purifiers-cleaners>

Clothes Washers </www.energystar.gov/products/certified-products/detail/clothes-washers>

Dehumidifiers </www.energystar.gov/products/certified-products/detail/dehumidifiers>

Dishwashers </www.energystar.gov/products/certified-products/detail/dishwashers>

Freezers </www.energystar.gov/products/certified-products/detail/freezers>

Refrigerators </www.energystar.gov/products/certified-products/detail/refrigerators>

Water Coolers </www.energystar.gov/products

RE: 2015 kwhrs
Judy Allaire
Flag for follow up. Start by Wednesday, October 08, 2014. Due by Wednesday, October 08, 2014.
Sent: Wednesday, October 08, 2014 11:57 AM
To: Harle Round
Sounds good to me

From: Harle Round
Sent: Wednesday, October 08, 2014 11:41 AM
To: Judy Allaire
Subject: RE: 2015 kwhrs

Hi Judy,

57665 MWH X 1000= 57,665,000 x.002 = $115,330 DSM Budget

Does this sound right?

From: Judy Allaire
Sent: Wednesday, October 08, 2014 10:24 AM
To: Harle Round
Subject: 2015 kwhrs

Hi Harle

Sorry forgot to get this over to you. ENE is projecting a total of 57,665 MWH's, a decrease from last year's based primarily on the phase-out of DPI.

Thanks

Judy

walkerCLAY
Passionate About Promotional Products

DESK CALENDAR ARTWORK
- IMPRINT COLOR: BLACK-
- IMPRINT LOCATION: PER TEMPLATE-
DO NOT PRINT TEMPLATE

Please visit our web site for a full list of the Demand Side Management residential rebates. All rebates will be applied to your active electric account. You can down load the applications from our website @ www.pud-ri.org or you can come into the office to pick them up. Please bring in proof that the products are ENERGY STAR compliant and the sales receipts.
***All rebates are subject to funds availability ***
Please see the rebate forms for criteria

Lighting and Lighting control rebates are available on commercial and industrial accounts – please call the District office for approval and to check on the availability of funds before starting a lighting project. The rebates are 60% on a retrofit lighting project and 40% on a new lighting project.

The District also offers commercial and industrial incentives on the following:
- HVAC Systems
- High Efficiency Motors
- Compressed Air
- Variable Speed Drives

PASCOAG UTILITY DISTRICT
Helping you save energy!
401-568-6222
www.pud-ri.org

To place an order, call Walker-Clay, Inc. • 800.343.5948 • www.walker-day.com

PASCOAG UTILITY DISTRICT
Helping you save energy!

Compliments of Pascoag Utility District
Visit us at www.pud-ri.org For the latest storm and energy efficiency information and rebate forms.
Like US on Facebook at www.facebook.com/PascoagUtilityDistrict or follow us on Twitter @PascoagUtility

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PREVIEW ILLUSTRATION
FOR APPROXIMATE POSITIONING OF ARTWORK ONLY.
COLOURS AND ARTWORK SCALING MAY NOT BE EXACT.

FRONT

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BACK

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Please see the rebate forms for criteria

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- Compressed Air
- Variable Speed Drives

JOB # / VERSION	FINAL CLIENT APPROVAL	Fax approval to: 781-294-1172	IMPORTANT:
35771-1 / 3			PLEASE review this proof carefully for spelling, errors and omissions. Your signature constitutes acceptance of full responsibility for all errors, omissions and legal and ethical compliance in this document.
Sales Order # / Version #	Date	Client Signature	

Summary Sheet for all Estimated Events

Expenses

Total Expenses	Estimate	Actual
	$10,242.00	

Total Expenses	Estimate	Actual
Green Festival 2015	$6,481.00	
Family Fair	$742.00	
Celebrate Burrillville	$734.00	
Summer Work Shop	$631.00	
Pumpkin Event	$1,654.00	
Totals	**$10,242.00**	**$0.00**

	Estimate	Actual

	Estimate	Actual

	Estimate	Actual

	Estimate	Actual

Totals	**$0.00**	**$0.00**

Estimate for Pascoag Utility District's Green Festival Expenses 2014

Expenses

Total Expenses	Estimate	Actual
	$6,481.00	

Labor	Estimate	Actual
Pre-event Labor	$1,350.00	
Staff Labor-day of event	$2,808.00	
Totals	**$4,158.00**	**$0.00**

Energy Conservation Materials	Estimate	Actual
250 CFL Light Bulbs	$550.00	
Energy Efficiency Materials	$700.00	
Totals	**$1,250.00**	**$0.00**

Advertisements	Estimate	Actual
Bargin Buyer Ad	$324.00	
Photocopying/Printing	$74.00	
Change Banner dates	$75.00	
Totals	**$473.00**	**$0.00**

	Estimate	Actual
POP UP Tent	$300.00	
Totals	**$300.00**	**$0.00**

Refreshments	Estimate	Actual
Food Drinks for the PUD Staff	$200.00	
water/hand sanitizer	$50.00	
Totals	**$250.00**	

Program	Estimate	Actual
Misc. Items/Games/ supplies	$300.00	$0.00
Totals	**$300.00**	**$0.00**

Prizes	Estimate	Actual
Ribbons/Plaques/Trophies		
Gifts		
Totals	**$0.00**	**$0.00**

Attachment 4

Estimate for the Family Fair Expenses for 2015

Expenses

Total Expenses	Estimate	Actual
	$742.00	

Labor	Estimate	Actual
CSS	$132.00	
AA	$179.00	
CSR 1	$156.00	
Totals	**$467.00**	**$0.00**

Misc. Items	Estimate	Actual
Misc. Items	$200.00	
Totals	**$200.00**	**$0.00**

Advertisements	Estimate	Actual
Totals	**$0.00**	**$0.00**

	Estimate	Actual
Totals	**$0.00**	**$0.00**

Refreshments	Estimate	Actual
Food Drinks for the PUD Staff	$45.00	
Candy for the kids	$30.00	
Totals	**$75.00**	

Program	Estimate	Actual
Games/ supplies		$0.00
Totals	**$0.00**	**$0.00**

Prizes	Estimate	Actual
Ribbons/Plaques/Trophies		
Gifts		
Totals	**$0.00**	**$0.00**

Celebrate Burrillville Estimate for 2015

Expenses

Total Expenses	Estimate	Actual
	$734.00	

Labor	Estimate	Actual
CSS	$132.00	
AA	$179.00	
CSR 1	$156.00	
Totals	**$467.00**	**$0.00**

Misc. Items	Estimate	Actual
Misc. Items	$192.00	
Totals	**$192.00**	**$0.00**

Advertisements	Estimate	Actual
Totals	**$0.00**	**$0.00**

	Estimate	Actual
Totals	**$0.00**	**$0.00**

Refreshments	Estimate	Actual
Food Drinks for the PUD Staff	$45.00	
Candy for the kids	$30.00	
Totals	**$75.00**	

Program	Estimate	Actual
		$0.00
Totals	**$0.00**	**$0.00**

Prizes	Estimate	Actual
Ribbons/Plaques/Trophies		
Gifts		
Totals	**$0.00**	**$0.00**

Estimate for a Summer Work Shop in 2015

Expenses

Total Expenses	Estimate	Actual
	$631.00	

Labor	Estimate	Actual
CSS	$132.00	
AA	$179.00	
Totals	**$311.00**	**$0.00**

Refreshments	Estimate	Actual
Food Drinks for the PUD Staff	$25.00	
Candy for the kids	$15.00	
Totals	**$40.00**	

Misc. Items/ Handouts		
Misc. Items	$280.00	
Totals	**$280.00**	**$0.00**

Program		
		$0.00
Totals	**$0.00**	**$0.00**

Advertisements		
Totals	**$0.00**	**$0.00**

Prizes		
Ribbons/Plaques/Trophies		
Gifts		
Totals	**$0.00**	**$0.00**

Totals	**$0.00**	**$0.00**

Estimate for the Downtown Pascoag & Neighborhood Association Pumpkin Event

Expenses

Total Expenses	Estimate	Actual
	$1,654.00	

Labor	Estimate	Actual
CSS	$132.00	
AA	$179.00	
CSR1	$156.00	
CSR2	$156.00	
Totals	**$623.00**	**$0.00**

Misc. Items/ Handouts	Estimate	Actual
300 LED Flashlights	$900.00	
Totals	**$900.00**	**$0.00**

Advertisements	Estimate	Actual
Totals	**$0.00**	**$0.00**

	Estimate	Actual
Totals	**$0.00**	**$0.00**

Refreshments	Estimate	Actual
Food Drinks for the PUD Staff	$60.00	
Candy for the kids	$61.00	
Totals	**$121.00**	

Program	Estimate	Actual
Vendor Fee	$10.00	$0.00
Totals	**$10.00**	**$0.00**

Prizes	Estimate	Actual
Totals	**$0.00**	**$0.00**

TOWN OF BURRILLVILLE AUDITS

Schedule G

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Exotic Nails

Financial Summary

Total Project Cost	$	1,019
UPSTREAM Incentives	$	-
Estimated Utility Electric Incentive	$	(711)
Enhanced Utility Incentive	$	-
Customer Net Cost	$	308
Estimated Energy Cost Savings Annually	$	269
Estimated Maintenance Savings	$	39
Return on Investment (ROI)		100%
Simple Payback in Years		1.0

Energy Savings

kW Reduction	kWh Reduction
0.61	1,853

Pollution Savings

CO2 Reduction (lbs)	NOx Reduction (lbs)	SO2 Reduction (lbs)
1,779	0.5	0.1

Prepared: 9/29/2013

RISE

ECM: Lighting & Sensors

Facility Name: Exotic Nails
Facility Address: 64 Main St
City, State, Zip: Burrillville RI
Contact: Roy Fonseca

LOCATION					EXISTING CONDITIONS						PROPOSED CONDITIONS						SENSOR DETAIL		ENERGY SAVINGS	
Line Item	Floor	Room Number / Description	Room Name	Fixture Type	Existing Device Code	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Device Code	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	1st	Exotic Nails	Rear Room	C1	4F40SEM	4 LAMP 2X4	1	3,500	140	0.14	490	2F28EEL	NF 2 LAMP T8 28W 2X4 ERGO	1	3,500	42	0.04	147			0.10	343
2	1st	Exotic Nails	Rear Room	I1	1I0060	60W INC	1	2,000	60	0.06	120	1L011	RL 11W A19 SCREW IN	1	2,000	11	0.01	22			0.05	98
3	1st	Exotic Nails	Bathroom	I1	1I0060	60W INC	3	2,000	60	0.18	360	1L011	RL 11W A19 SCREW IN	3	1,200	11	0.03	40	WS250	1	0.15	320
4	1st	Exotic Nails	Retail Area	H1	1R0035	35W HALOGEN TRACK LIGHT	8	3,500	45	0.36	1,260	1L006	RL 6W LED GU-10	8	3,500	6	0.05	168			0.31	1,092
			TOTALS				13			0.74	2,230			13			0.13	377		1	0.61	1,853

Prepared 9/28/2013

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Star Tans

Financial Summary

Total Project Cost	$	2,918
UPSTREAM Incentives	$	-
Estimated Utility Electric Incentive	$	(1,751)
Enhanced Utility Incentive	$	-
Customer Net Cost	$	1,167
Estimated Energy Cost Savings Annually	$	925
Estimated Maintenance Savings	$	255
Return on Investment (ROI)		101%
Simple Payback in Years		1.0

Energy Savings

kW Reduction	kWh Reduction
1.84	6,376

Pollution Savings

CO2 Reduction (lbs)	NOx Reduction (lbs)	SO2 Reduction (lbs)
6,121	1.6	0.2

Prepared: 10/30/2013

RISE

ECM: Lighting & Sensors

Facility Name	Star Tan
Facility Address	66 Main St
City, State, Zip	Burrillville RI
Contact	Roy Fonseca

LOCATION					EXISTING CONDITIONS						PROPOSED CONDITIONS							SENSOR DETAIL		ENERGY SAVINGS	
Line Item	Floor	Room Number / Description	Room Name	Fixture Type	Existing Device Code	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Device Code	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	1st	Star Tan	Retail Area	H1	1R0035	35W HALOGEN TRACK LIGHT	4	3,500	45	0.18	630	1L010	RL 7W LED GU-10	4	3,500	10	0.04	140			0.14	490
2	1st	Star Tan	Storage Room	D1	2F40SEM	2 LAMP U/6" 2X2	1	2,000	70	0.07	140	2F17ESL	NF 2 LAMP T8 17W 2X2 ERGO	1	2,000	27	0.03	54			0.04	86
3	1st	Star Tan	Waxing Room	D1	2F40SEM	2 LAMP U/6" 2X2	1	3,500	70	0.07	245	2F17ESL	NF 2 LAMP T8 17W 2X2 ERGO	1	3,500	27	0.03	95			0.04	151
4	1st	Star Tan	Rooms 1,2,3,4,5	H2	1R0035	35W HALOGEN RECESSED 4" CAN	16	3,500	45	0.72	2,520	1L010	RL 7W LED GU-10	16	3,500	10	0.16	560			0.56	1,960
5	1st	Star Tan	Common Area	H2	1R0035	35W HALOGEN RECESSED 4" CAN	20	3,500	45	0.90	3,150	1L010	RL 7W LED GU-10	20	3,500	10	0.20	700			0.70	2,450
6	1st	Star Tan	Hall	I2	1I0040	40W INC CANDLEABRA	6	3,500	40	0.24	840	1L004	RL 4W LED SCREW IN	6	3,500	4	0.02	84			0.22	756
7	1st	Star Tan	Restroom	I1	1I0060	60W INC	1	2,000	60	0.06	120	1L011	RL 11W A19 SCREW IN	1	1,200	11	0.01	13	WS250	1	0.05	107
8	1st	Star Tan	Tanning Booth	D1	2F40SEM	2 LAMP U/6" 2X2	2	3,500	70	0.14	490	2F17ESL	NF 2 LAMP T8 17W 2X2 ERGO	2	2,100	27	0.05	113	WS250	2	0.09	377
			TOTALS				51			2.38	8,135			51			0.54	1769		3	1.84	6,376

Prepared 10/30/2013

RISE
ENGINEERING

Financial Summary

Location: Burrillville HS	Total Project Cost	Estimated PUD Incentive	Customer's Net Cost	Estimated Annual Electrical Savings	Estimated Annual Maintenance Savings	Estimated Annual HVAC Savings	Return on Investment	Years to Payback
Café	$12,575	$5,030	$7,545	$1,337	$360	$750	32%	3.1
PE Gym	$12,340	$4,936	$7,404	$2,565	$420	$500	47%	2.1
Band & Chorus	$3,995	$1,598	$2,397	$139	$150	$550	35%	2.9
Auditorium	$55,995	$22,398	$33,597	$1,350	$750	$1,250	10%	10.0
Exterior	$22,725	$9,090	$13,635	$3,285	$900	$0	31%	3.3
Total	$107,630	$43,052	$64,578	$8,676	$2,580	$3,050	22%	4.5

PASCOAG UTILITY REBATES

It's important to note that the PUD incentives provided in this report, while they are consistent with the current available programs, should be considered estimated until written approval is granted by PUD. RISE Engineering will prepare and submit all necessary applications and documentation on your behalf.

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - High School Café
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

Estimated Current Lighting Load (Wattage)			10,920	Watts
Estimated Proposed Lighting Load (Wattage)			5,376	Watts
Estimated Lighting Load Savings (Wattage)			**5,544**	Watts
Estimated Current Lighting Usage (kWh)			13,104	kWh
Estimated Proposed Lighting Usage (kWh)			4,193	kWh
Estimated Lighting Usage Savings (kWh)			**8,911**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	1,966	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	629	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**1,337**	
Estimated Total Job Cost		**$**	**12,575.00**	
Estimated Utility Incentive				
Estimated Customer Net Cost		**$**	**7,545.00**	
Maintenance Savings		**$**	**360**	
Net Heating and AC Savings		**$**	**750**	
Simple Payback (Customer Share/Bill Savings):		Years =	**3.1**	

RISE
ENGINEERING

Burrillville School District - High School Café
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	Café	H1	400w MH /HB	24	1,200	455	10.92	13,104	NF 6L 4' T8/HL ECOLYTE (2)3 Lamp Dimming Ballast	24	780	224	5.376	4,193	DT-300	4	5.54	8,911
TOTALS				24			10.92	13,104		24			5.376	4,193		4	5.54	8,911

Category: ECS	Prefix:	Fixture Series (Name):
Energy Conservation Series	ECO	EcoLyte

Lighting Technologies | GE Lighting North America | ADVANCE | PHILIPS | SYLVANIA | alanod | VS Vossloh-Schwabe

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

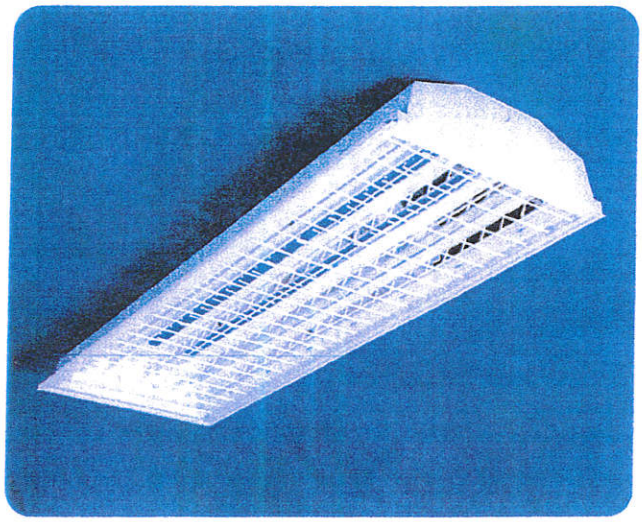
EcoLyte Series high performance fluorescent high/low bay luminaire

GENERAL DESCRIPTION

The EcoLyte (ECO) Series has been developed as an energy efficient alternative to HID lighting systems. This series utilizes "High Intensity Fluorescent" technology to dramatically reduce energy consumption, improve quality of light and provide instant-on operation. It also offers many switching and sensor options.

Typical applications for this type of product are interior spaces with high mounting heights where high lumen output is required. Applications include:

- Retail – "Big Box" – Distribution Centers and Warehouses
- Industrial, Commercial and Manufacturing Areas
- School Gymnasiums, Auditoriums and Convention Centers
- Ice Rinks, Indoor Courts and Sports Arenas



DESIGN FEATURES / SPECIFICATIONS

CONSTRUCTION
- Precision die formed from 22 ga. cold rolled steel.
- Mechanically fastened or resistance welded depending on model.
- Heavy gauge steel (CRS) or aluminum alloy may be custom ordered.
- Finish to be pre-painted gloss white polyester powder coat.
- Post-painted polyester powder coat finishes are available. Consult factory for all special colors and finishes.
- Heavy guage steel (NYC) and heavy guage aluminum are available as alternate materials.

REFLECTOR
- Precision die formed optics which has been designed for maximum efficiency and photometric properties using the latest CAD software.
- Choice of optics includes focused, normal and spread beam distribution. Consult factory for custom optics design and spacing criteria options.
- Choice of materials include:
  - Alanod Miro4® Enhanced Specular Aluminum, 95% total reflectance, 25 year warranty.
  - Enhanced Specular Aluminum, 92% total (min.) reflectance, 25 year warranty.
  - High Reflectance White Powder Coated Aluminum, 91% total reflectance, 10 year warranty.
  - Polished Aluminum, 87% total (min.) reflectance, 25 year warranty.
  - Consult factory for availability of all other material choices.

LAMPHOLDERS
- Vossloh-Schwabe® premium type featuring:
  - Anti-vibration internal lamp locking design
  - High temperature resistant ("T" marking).
  - Heat and UV blocking shield to prevent degradation of material.
  - Multi-point contact design for optimum lamp pin contact.
  - Produced in accordance with DIN ISO 9001 and IEC standards.

BALLASTS
- All standard ballasts are electronic, energy saving, thermally protected, Class-P, non-PCB, Sound Rated "A", 0 degree (Type 1 Outdoor). Verify with factory for latest information regarding High Temperature (HT) or Extreme Low Temperature (XLT) rated ballast options.
- UL/CSA certified, where applicable. Compliant with Federal Ballast Law (Public Law 100-357, 1988).
- Choice of ballast factors. L=Low, N=Normal, H=High.
- Choice of dedicated, universal or special voltage - Consult factory for available options.
- Warranted by ballast manufacturer. Typical ballast warranty is for 5 years (120-277v) and 3-years (347-480v). Consult factory for latest warranty information.

LAMPS
- Supplied by others unless otherwise specified.
- Factory installed if required - Consult factory.
- Lamp type, CRI ratings, temperature colors, lamp life ratings are all viable options which can be supplied - Consult factory for information.

LAMP SHIELDING
- Lamp shielding options include:
  - Heavy duty painted or zinc-plated wire guards.
  - Flat or drop dish lenses, clear acrylic, clear polycarbonate, high light transmission white, prismatic and linear prism lenses.
  - Louvers and cross-blade baffles - Consult factory.

MOUNTING
- The luminaire may be surface mounted or may be suspended by pendant, threaded rod, hook, chain or cable. (Mounting hardware supplied by others unless otherwise specified).
- Custom mounting options / accessories.

ELECTRICAL
- Luminaire is bi-national listed and labeled (UL 1598 and CSA C22.2 No. 250.0-00) and is suitable for damp locations.
- Product includes luminaire disconnect as specified in NEC 410.73(G), 2005 Edition, and CEC part I, rule 30-308(4), 2006 Edition.

QUALITY CONTROL
- All fixtures and retrofit kits are designed, fabricated, assembled and tested at RENOVA's manufacturing facility. All fixtures are 100% lamp tested, inspected and labeled prior to shipment.

GUARANTEE
- RENOVA warrants all fixtures to be free of defects in manufacturing and workmanship for a period of (1) year from date of purchase. This warranty excludes damage of any kind resulting from improper installation, misuse, abuse, accidents, mis-application, or natural disasters. Please refer to the "Terms and Conditions" section of the RENOVA website for additional information.

Note: RENOVA products are constantly being improved; therefore, the information shown is subject to change without notice. Always consult your lighting representative or RENOVA Lighting Systems, Inc. for the latest information.

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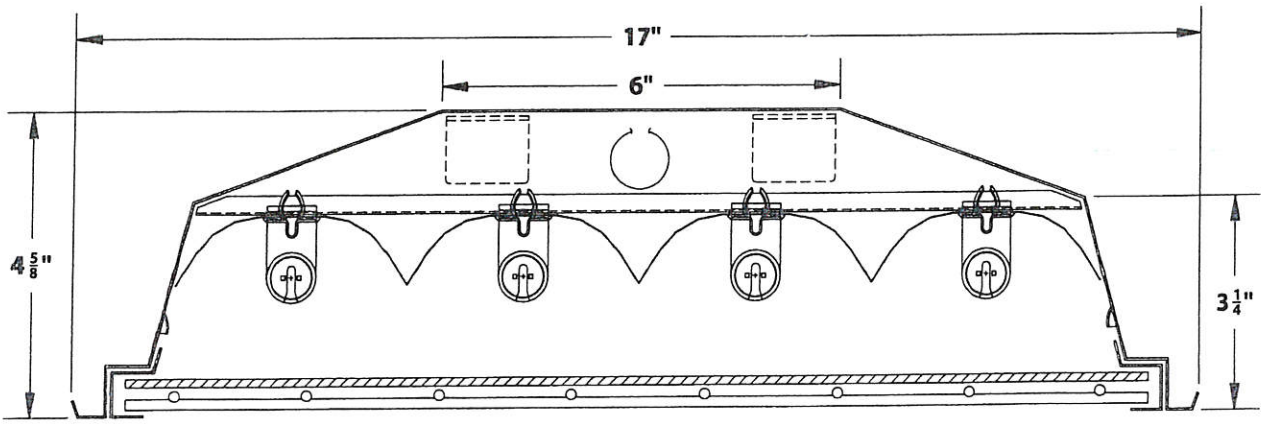
Category: ECS
Energy Conservation Series

Prefix:
ECO

Fixture Series (Name):
EcoLyte

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

4-Lamp T5 HO EcoLyte Cross Section Shown



ORDERING GUIDE

CATEGORY	SERIES	SIZE		REFLECTOR MATERIAL	REFLECTOR PHOTOMETRY		NUMBER OF LAMPS		LAMP TYPE (WATTAGE)	BALLAST VOLTAGE	NUMBER OF BALLASTS	LAMPS PER BALLAST	BALLAST FACTOR	OPTIONS
ECS	- ECO	4	-	M	N	-	4		54	- UNV	- 2	2	H	- AWW
Energy Conservation Series	ECO - ECOLYTE	4 - 48" 8 - 96"		M - MIRO4 (95% TR) E - ENHANCED ALUMINUM (92% TR min.) W - WHITE (91% TR) A - ALUMINUM (87% TR min.) R - MIRO4 MICRO-MATT (95% TR)	F - FOCUSED N - NORMAL S - SPREAD C - CUSTOM OPTICS *N - NORMAL IS STANDARD *(BLANK)=N *C - CUSTOM OPTICS ARE DESCRIBED IN OPTIONS BOX		2 - 2L 3 - 3L 4 - 4L 5 - 5L 6 - 6L	4' ECOLYTE	32 32w T8 54 54w T5HO	120 - 120v, 60 Hz 277 - 277v, 60 Hz 347 - 347v, 60 Hz UNV - 120v - 277v, 60 Hz 480 - 480v, 60 Hz XXX - Less Ballast	(BLANK) - 1 2 - 2 3 - 3 4 - 4	1 - 1 2 - 2 3 - 3 4 - 4	L - Low N - Normal H - High	OOW - Open Style OWW - White Wire-Guard AOW - Clear Acrylic Lens AWW - White Wire-Guard & Clear Acrylic Lens
							4 - 4L 6 - 6L 8 - 8L 10 - 10L 12 - 12L	8' ECOLYTE						

IES SUSTAINING MEMBER

MADE IN THE USA

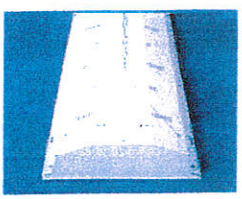
c UL us LISTED

Photometric data, IES files and all other information is available upon request.

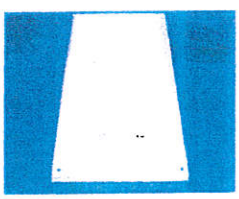
Veteran
OWNED AND OPERATED

***ADDITIONAL OPTIONS**
(See "Options" sheet for all available options)

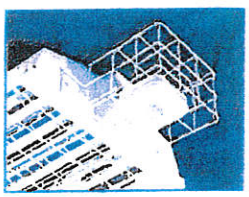

Vossloh Locking Lampholders (Standard)

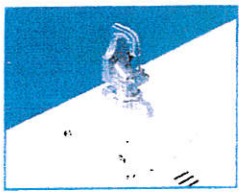

Custom V-Cables (Optional) (Installed or Separate)

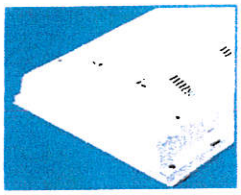

White Cross-Blade Louver (Optional)


10%-20% Uplight (Optional)

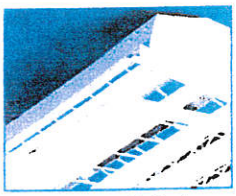

Center Mounting Detail (Standard) (Accepts Optional J-Box)


Sensor & Guard (Optional)


Center-Mount J-Box & Heavy-Duty Hanging Hook (Optional)


Dual Vented Housing (To Control Lamp/Ballast Temp.)


Quick Wire Access Plate (Standard)


Frame Door (Optional) (Cam Latch Provides Quick Access)

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RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - High School PE Gym
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

Estimated Current Lighting Load (Wattage)		9,828	Watts
Estimated Proposed Lighting Load (Wattage)		6,552	Watts
Estimated Lighting Load Savings (Wattage)		**3,276**	Watts
Estimated Current Lighting Usage (kWh)		29,484	kWh
Estimated Proposed Lighting Usage (kWh)		12,383	kWh
Estimated Lighting Usage Savings (kWh)		**17,101**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$ 4,423	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$ 1,857	
Estimated Proposed Annual Lighting Bill Savings:		**$ 2,565**	
Estimated Total Job Cost		**$ 12,340.00**	
Estimated Utility Incentive		$ [illegible]	
Estimated Customer Net Cost		**$ 7,404.00**	
Maintenance Savings		**$ 420**	
Net Heating and AC Savings		**$ 500**	
Simple Payback (Customer Share/Bill Savings):	Years =	**2.1**	

RISE
ENGINEERING

Burrillville School District - High School PE Gym
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
0	PE GYM	H3	6L 4' T5HO	28	3,000	351	9.83	29,484	4L 4' T5HO (re-wire from 6 lamp to 4 lamp)	28	1,890	234	6.55	12,383	CMRB-9	28	3.28	17,101
TOTALS				**28**			**9.83**	**29,484**		**28**			**6.55**	**12,383**		**32**	**3.28**	**17,101**

Category: ECS	Prefix:	Fixture Series (Name):
Energy Conservation Series	ECO	EcoLyte

Universal Lighting Technologies | GE Lighting North America | ADVANCE | PHILIPS sense and simplicity | SYLVANIA | alanod | VOSSLOH SCHWABE

RENOVA™

Innovative Lighting Ideas
Energy Efficient Solutions

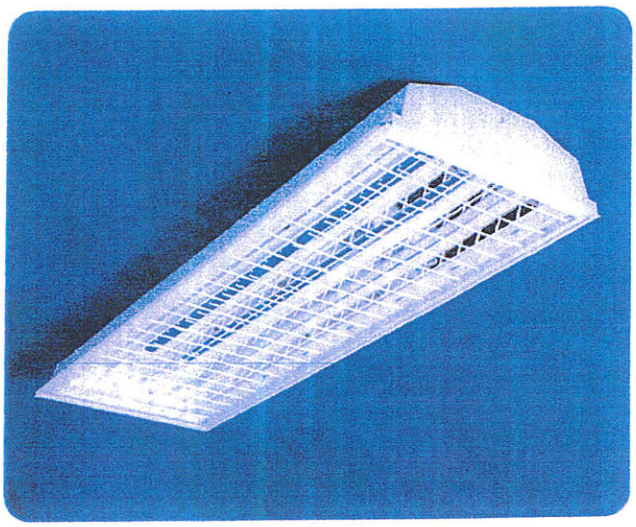
EcoLyte Series high performance fluorescent high/low bay luminaire

GENERAL DESCRIPTION

The EcoLyte (ECO) Series has been developed as an energy efficient alternative to HID lighting systems. This series utilizes "High Intensity Fluorescent" technology to dramatically reduce energy consumption, improve quality of light and provide instant-on operation. It also offers many switching and sensor options.

Typical applications for this type of product are interior spaces with high mounting heights where high lumen output is required. Applications include:

- Retail – "Big Box" – Distribution Centers and Warehouses
- Industrial, Commercial and Manufacturing Areas
- School Gymnasiums, Auditoriums and Convention Centers
- Ice Rinks, Indoor Courts and Sports Arenas



DESIGN FEATURES / SPECIFICATIONS

CONSTRUCTION
- Precision die formed from 22 ga. cold rolled steel.
- Mechanically fastened or resistance welded depending on model.
- Heavy gauge steel (CRS) or aluminum alloy may be custom ordered.
- Finish to be pre-painted gloss white polyester powder coat.
- Post-painted polyester powder coat finishes are available. Consult factory for all special colors and finishes.
- Heavy guage steel (NYC) and heavy guage aluminum are available as alternate materials.

REFLECTOR
- Precision die formed optics which has been designed for maximum efficiency and photometric properties using the latest CAD software.
- Choice of optics includes focused, normal and spread beam distribution. Consult factory for custom optics design and spacing criteria options.
- Choice of materials include:
  - Alanod Miro4® Enhanced Specular Aluminum, 95% total reflectance, 25 year warranty.
  - Enhanced Specular Aluminum, 92% total (min.) reflectance, 25 year warranty.
  - High Reflectance White Powder Coated Aluminum, 91% total reflectance, 10 year warranty.
  - Polished Aluminum, 87% total (min.) reflectance, 25 year warranty.
  - Consult factory for availability of all other material choices.

LAMPHOLDERS
- Vossloh-Schwabe® premium type featuring:
  - Anti-vibration internal lamp locking design
  - High temperature resistant ("T" marking).
  - Heat and UV blocking shield to prevent degradation of material.
  - Multi-point contact design for optimum lamp pin contact.
  - Produced in accordance with DIN ISO 9001 and IEC standards.

BALLASTS
- All standard ballasts are electronic, energy saving, thermally protected, Class-P, non-PCB, Sound Rated "A", 0 degree (Type 1 Outdoor). Verify with factory for latest information regarding High Temperature (HT) or Extreme Low Temperature (XLT) rated ballast options.
- UL/CSA certified, where applicable. Compliant with Federal Ballast Law (Public Law 100-357, 1988).
- Choice of ballast factors. L=Low, N=Normal, H=High.
- Choice of dedicated, universal or special voltage - Consult factory for available options.
- Warranted by ballast manufacturer. Typical ballast warranty is for 5 years (120-277v) and 3-years (347-480v). Consult factory for latest warranty information.

LAMPS
- Supplied by others unless otherwise specified.
- Factory installed if required - Consult factory.
- Lamp type, CRI ratings, temperature colors, lamp life ratings are all viable options which can be supplied - Consult factory for information.

LAMP SHIELDING
- Lamp shielding options include:
  - Heavy duty painted or zinc-plated wire guards.
  - Flat or drop dish lenses, clear acrylic, clear polycarbonate, high light transmission white, prismatic and linear prism lenses.
  - Louvers and cross-blade baffles - Consult factory.

MOUNTING
- The luminaire may be surface mounted or may be suspended by pendant, threaded rod, hook, chain or cable. (Mounting hardware supplied by others unless otherwise specified).
- Custom mounting options / accessories.

ELECTRICAL
- Luminaire is bi-national listed and labeled (UL 1598 and CSA C22.2 No. 250.0-00) and is suitable for damp locations.
- Product includes luminaire disconnect as specified in NEC 410.73(G), 2005 Edition, and CEC part I, rule 30-308(4), 2006 Edition.

QUALITY CONTROL
- All fixtures and retrofit kits are designed, fabricated, assembled and tested at RENOVA's manufacturing facility. All fixtures are 100% lamp tested, inspected and labeled prior to shipment.

GUARANTEE
- RENOVA warrants all fixtures to be free of defects in manufacturing and workmanship for a period of (1) year from date of purchase. This warranty excludes damage of any kind resulting from improper installation, misuse, abuse, accidents, mis-application, or natural disasters. Please refer to the "Terms and Conditions" section of the RENOVA website for additional information.

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Category: ECS
Energy Conservation Series

Prefix:
ECO

Fixture Series (Name):
EcoLyte

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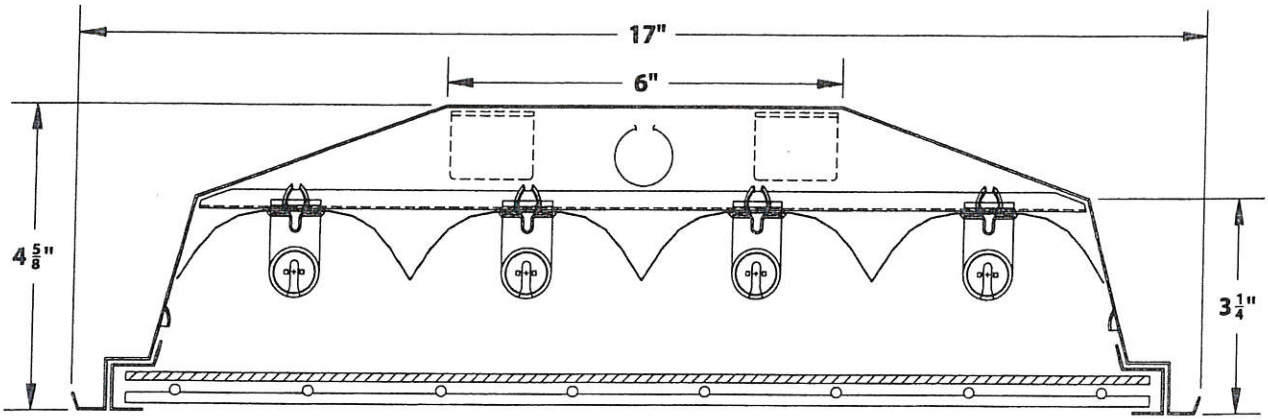
Energy Efficient Solutions

4-Lamp T5 HO EcoLyte Cross Section Shown



ORDERING GUIDE

CATEGORY	SERIES	SIZE		REFLECTOR MATERIAL	REFLECTOR PHOTOMETRY		NUMBER OF LAMPS		LAMP TYPE (WATTAGE)	BALLAST VOLTAGE	NUMBER OF BALLASTS	LAMPS PER BALLAST	BALLAST FACTOR		OPTIONS
ECS	- ECO	4	-	M	N	-	4		54	- UNV	- 2	2	H	-	AWW
Energy Conservation Series	ECO - ECOLYTE	4 - 48" 8 - 96"		M - MIRO4 (95% TR) E - ENHANCED ALUMINUM (92% TR min.) W - WHITE (91% TR) A - ALUMINUM (87% TR min.) R - MIRO4 MICRO-MATT (95% TR)	F - FOCUSED N - NORMAL S - SPREAD C - CUSTOM OPTICS *N - NORMAL IS STANDARD *(BLANK)=N *C - CUSTOM OPTICS ARE DESCRIBED IN OPTIONS BOX		2 - 2L 3 - 3L 4 - 4L 5 - 5L 6 - 6L (4' ECOLYTE) 4 - 4L 6 - 6L 8 - 8L 10 - 10L 12 - 12L (8' ECOLYTE)		32 32w T8 54 54w T5HO	120 - 120v, 60 Hz 277 - 277v, 60 Hz 347 - 347v, 60 Hz UNV - 120v - 277v, 60 Hz 480 - 480v, 60 Hz XXX - Less Ballast	(BLANK) - 1 2 - 2 3 - 3 4 - 4	1 - 1 2 - 2 3 - 3 4 - 4	L - Low N - Normal H - High		00W - Open Style 0WW - White Wire-Guard A0W - Clear Acrylic Lens AWW - White Wire-Guard & Clear Acrylic Lens *ADDITIONAL OPTIONS (See "Options" sheet for all available options)

IES SUSTAINING MEMBER

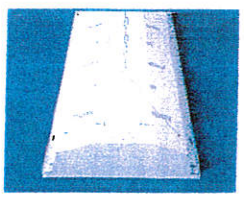
MADE IN THE USA

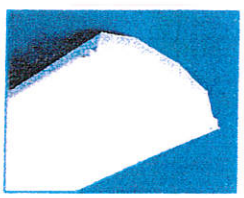
c UL us LISTED

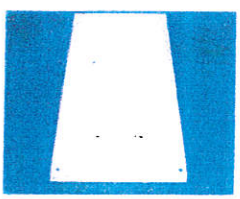
Photometric data, IES files and all other information is available upon request.

Veteran OWNED AND OPERATED

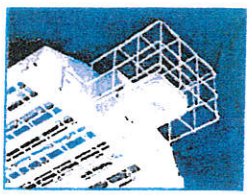

Vossloh Locking Lampholders (Standard)


Custom V-Cables (Optional) (Installed or Separate)

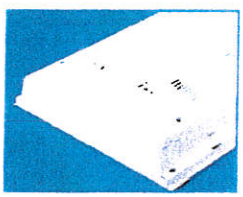

White Cross-Blade Louver (Optional)


10%-20% Uplight (Optional)

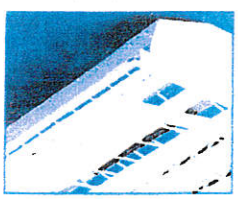

Center Mounting Detail (Standard) (Accepts Optional J-Box)


Sensor & Guard (Optional)


Center-Mount J-Box & Heavy-Duty Hanging Hook (Optional)


Dual Vented Housing (To Control Lamp/Ballast Temp.)


Quick Wire Access Plate (Standard)


Frame Door (Optional) (Cam Latch Provides Quick Access)

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RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - High School Band & Chorus
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

Estimated Current Lighting Load (Wattage)			2,950	Watts
Estimated Proposed Lighting Load (Wattage)			2,180	Watts
Estimated Lighting Load Savings (Wattage)			**770**	Watts
Estimated Current Lighting Usage (kWh)			3,540	kWh
Estimated Proposed Lighting Usage (kWh)			2,616	kWh
Estimated Lighting Usage Savings (kWh)			**924**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	531	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	392	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**139**	
Estimated Total Job Cost		**$**	**3,995.00**	
Estimated Utility Incentive		$	(1,598.00)	
Estimated Customer Net Cost		**$**	**2,397.00**	
Maintenance Savings		**$**	**150**	
Net Heating and AC Savings		**$**	**550**	
Simple Payback (Customer Share/Bill Savings):	Years =		**2.9**	

RISE
ENGINEERING

Burrillville School District - High School Band & Chorus
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	kW Saved	kWh Saved
2	Band Room	H2	250w MH (Blue platform)	4	1,200	295	1.18	1,416	Kit 200w PS/MH LINEAR	4	1,200	218	0.872	1,046	0.31	370
3	Chorus Room	H2	250w MH (Blue platform)	6	1,200	295	1.77	2,124	Kit 200w PS/MH LINEAR	6	1,200	218	1.308	1,570	0.46	554
TOTALS				10			2.95	3,540		10			2.18	2,616	0.77	924

200 Watt Pulse Start

UNI-FORM PULSE START METAL HALIDE LIGHTING SYSTEMS

60375
DATA SHEET

VENTURE LIGHTING

UNI-FORM
PULSE START METAL HALIDE LIGHTING SYSTEMS

SUPER PULSE START
Long Life | SPU
Extended Life Lamps

MHL 200W/H75/ED28/PS/740

GENERAL Characteristics

Lamp Type	MH Pulse Start Single Ended
ANSI Code	M136/E
Bulb Shape	ED28
Base Type	Mogul (E39)
Bulb Finish	Clear
Rated Life	40000 hours
Operating Position	Horizontal ±75°
Dimming	50% Rated Power

ELECTRICAL

Lamp Watts	200
Lamp Oper. Voltage (Nom.)	132

SUSTAINABILITY

Recycling Program	Smartpac® 800-451-2606
Picograms Hg per Mean Lumen Hour	45
MR-Credit 4 Reduced Mercury in Lamps	1 LEED point
EISA 2007 Compliant	Yes

PHOTOMETRIC

Initial Lumens	19000
Scotopic Lumens (S/P 1.7)	32300
Lumens Per Watt	95
Lamp Lumen Depreciation (LLD)	.86 (86%) @ 16000 hours
Correlated Color Temperature	4000K
Chromaticity Coordinates (CIE-x,y)	.385 .390
Color Rendering Index (CRI)	68

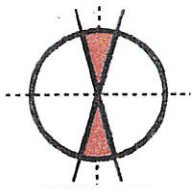
NOTES

Lamp performance ratings published in this data sheet are based on operation with approved electronic ballasts. Performance of position-rated lamps outside of their tolerances will result in poor performance. Minimum Starting Temperature: -40°C/°F. To calculate nighttime Scotopic lumens, multiply the lumen rating by the S/P ratio. **LEED V3, MR CREDIT 4: Sustainable Purchasing - Reduced Mercury in Lamps is awarded 1 point for projects which at least 90% of all mercury-containing lamps purchased during the performance period comply and meet the target for mercury content of 90 picograms per lumen-hour or less.

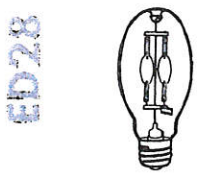
PHYSICAL

Bulb Diameter	3.5" (90mm)
Max. Overall Length (MOL)	8.3" (211mm)
Light Center Length (LCL)	5.0" (127mm)
Effective Arc Length	27.9mm
Max. Base Temperature (°C)	210
Max. Bulb Temperature (°C)	400
Socket Pulse Rating (KV)	4
Luminaire Type	Enclosed Rated

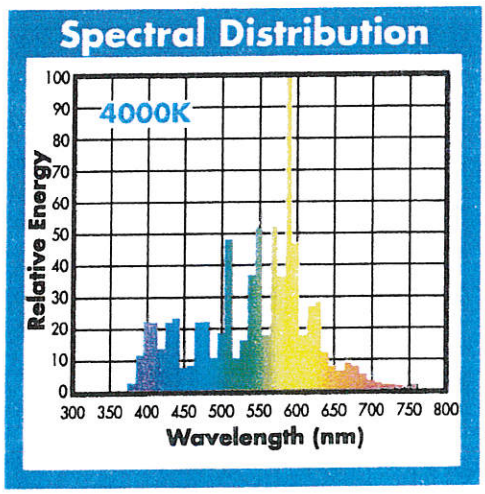
Patent Pending

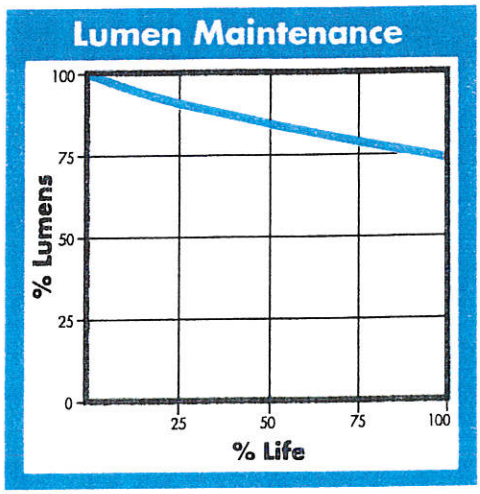


HOR ±75°
Horizontal



Dia. = 3.5" (90mm)
MOL = 8.3" (211mm)
LCL = 5.0" (127mm)
Base = Mogul (E39)





(800) 451-2606
or (440) 248-3510
Fax: (800) 451-2605
10295 Philipp Parkway
Streetsboro, Ohio 44241 USA
E-mail: venture@adlt.com
VentureLighting.com

THIS LAMP CONFORMS TO FEDERAL STANDARD 21 CFR 1040.30

Warning: This lamp can cause skin burn and eye inflammation from shortwave ultraviolet radiation if outer envelope of the lamp is broken or punctured. Do not use where people will remain for more than a few minutes unless adequate shielding or other safety precautions are used. Lamps that will automatically extinguish when outer envelope is broken or punctured are commercially available.

This Product is Recyclable Through Smartpac®

Revision: 10/27/2011 # 2995-1

VLI-09925S11-0411

VENTURE® LIGHTING

UNI-FORM® PULSE START SYSTEM

BALLAST SPECIFICATION

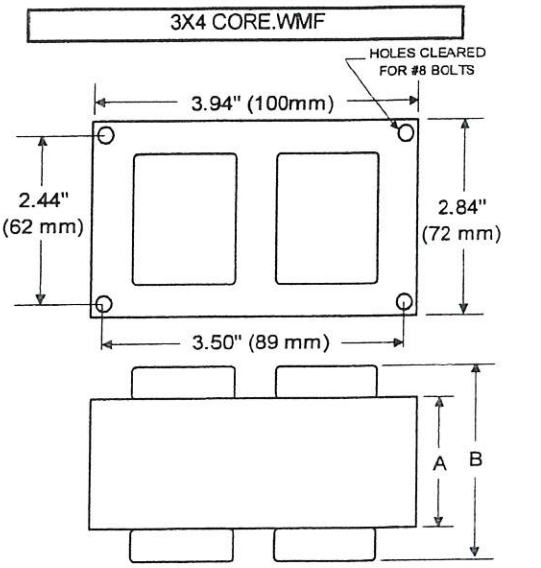
200W M136

Pulse Start Metal Halide

V90D7312

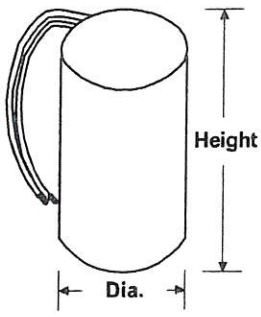
60 Hz CWA

Input Volts	120	208	240	277
Line Current (Amps)				
Operating	1.90	1.10	0.95	0.85
Open Circuit	1.25	0.70	0.60	0.50
Starting	1.25	0.70	0.60	0.50
Recommended Fuse (Amps)	5	3	3	3
Regulation				
Line Volts	±10%	±10%	±10%	±10%
Lamp Watts	±9%	±9%	±9%	±9%
Temperature Ratings				
Insulation Class	180 (H)	180 (H)	180 (H)	180 (H)
Coil Temperature Code	A	A	A	A
Benchtop Coil Rise	59.9	60.7	59.1	50.9
Power Factor (Min)	90%	90%	90%	90%
Input Watts	227 W	227 W	227 W	227 W
Efficiency	88%	88%	88%	88%
NOM. Open Circuit Voltage	250	250	250	250
Input Voltage At Lamp Dropout	90	156	180	208
Min Ambient Starting Temp	-20°F/-30°C*	-20°F/-30°C*	-20°F/-30°C*	-20°F/-30°C*
60 HZ TEST PROCEDURES				
High Potential Test (Volts)				
1 Minute	1,600 V	1,600 V	1,600 V	1,600 V
1 Second	1,900 V	1,900 V	1,900 V	1,900 V
Open Circuit Voltage Test (V)	225 - 275	225 - 275	225 - 275	225 - 275
Short Circuit Current Test (A)				
Secondary Current Min	1.95	1.95	1.95	1.95
Secondary Current Max	2.40	2.40	2.40	2.40
Input Current Min	0.90	0.55	0.45	0.40
Input Current Max	1.40	0.80	0.70	0.60
CORE and COIL Specifications				
Dimension (A)	2.50 in	2.50 in	2.50 in	2.50 in
Dimension (B)	3.90 in	3.90 in	3.90 in	3.90 in
Weight	8.0 lb's	8.0 lb's	8.0 lb's	8.0 lb's
Lead Lengths	12 "	12 "	12 "	12 "
Capacitor Requirement				
Microfarads	15.0 uf	15.0 uf	15.0 uf	15.0 uf
Volts (Min)	330 V	330 V	330 V	330 V

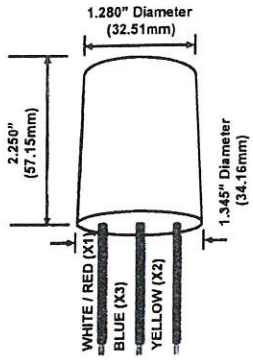


Capacitor:	ACG329
Microfarads:	15.0 uf
Volts (Max):	330 V
Case Temp (Max):	100 °C
Height (Max):	2.80 in
Dia (Max):	1.60 in

Ignitor:	BVS-041
Case Temp (Max):	105 °C
BTL Distance (Max):	2 ft



Dry Type Capacitor with Leads



Ordering Information Add Suffix for options

C - With Capacitor

K - Prewired, with Capacitor and Bracket Kit

B - With Welded Bracket, no cap

CB - With Capacitor and Welded Bracket

* -40°F/-40°C Min Ambient Starting Temp with Venture Lamp
Coil material: primary Cu and secondary Cu

RoHS compliant on all manufactured products after August 1, 2007

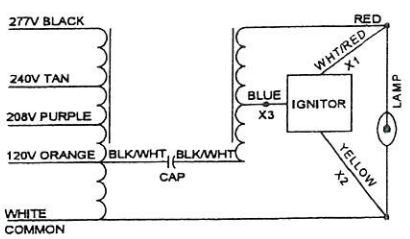
Data is based upon tests performed by Venture Lighting in a controlled environment and is representitive of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.

Complies with the Energy Independence and Security Act of 2007 and California Title 20 Appliance Efficiency Regulations

c UL us

c SP us

RoHS



1/14/2009 Production

32000 Aurora Road ▼ Solon,Ohio 44139 ▼ 800-451-2606 ▼ 440-248-3510 ▼ Fax 800-451-2605 ▼ Fax 440-349-7771 ▼ www.venturelighting.com

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - High School Auditorium
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

Estimated Current Lighting Load (Wattage)			10,000	Watts
Estimated Proposed Lighting Load (Wattage)			2,500	Watts
Estimated Lighting Load Savings (Wattage)			**7,500**	Watts
Estimated Current Lighting Usage (kWh)			12,000	kWh
Estimated Proposed Lighting Usage (kWh)			3,000	kWh
Estimated Lighting Usage Savings (kWh)			**9,000**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	1,800	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	450	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**1,350**	
Estimated Total Job Cost		**$**	**55,995.00**	
Estimated Utility Incentive		$	(22,398.00)	
Estimated Customer Net Cost		**$**	**33,597.00**	
Maintenance Savings		**$**	**750**	
Net Heating and AC Savings		**$**	**1,250**	
Simple Payback (Customer Share/Bill Savings):	Years =		**10.0**	

RISE
ENGINEERING

Burrillville School District - High School Auditorium
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	kW Saved	kWh Saved
4	Auditorium	I1	200w Inc. (Can on Pendent)	50	1,200	200	10.00	12,000	50w LED (On Pendent)	50	1,200	50	2.5	3,000	7.50	9,000
TOTALS				**50**			**10.00**	**12,000**		**50**			**2.5**	**3,000**	**7.50**	**9,000**

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - High School Exterior
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

Estimated Current Lighting Load (Wattage)			6,050	Watts
Estimated Proposed Lighting Load (Wattage)			1,050	Watts
Estimated Lighting Load Savings (Wattage)			**5,000**	Watts
Estimated Current Lighting Usage (kWh)			26,499	kWh
Estimated Proposed Lighting Usage (kWh)			4,599	kWh
Estimated Lighting Usage Savings (kWh)			**21,900**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	3,975	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	690	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**3,285**	
Estimated Total Job Cost		**$**	**22,725.00**	
Estimated Utility Incentive		$	(9,090.00)	
Estimated Customer Net Cost		**$**	**13,635.00**	
Maintenance Savings		**$**	**900**	
Net Heating and AC Savings		**$**	-	
Simple Payback (Customer Share/Bill Savings):	Years =		**3.3**	

RISE
ENGINEERING

Burrillville School District - High School Exterior
2300 Bronco Highway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	kW Saved	kWh Saved
5	Eyeball Wall Packs	I2	70w MH Eye Balls	36	4,380	95	3.42	14,980	13w LED WALL PACK	36	4,380	13	0.47	2,050	2.95	12,930
6	Canopy Lights	I3	70w MH Canopy Lights	10	4,380	95	0.95	4,161	40w LED CANOPY	10	4,380	40	0.40	1,752	0.55	2,409
7	Tower lights	I4	100W METAL HALIDE	14	4,380	120	1.68	7,358	13w LED WALL PACK	14	4,380	13	0.18	797	1.50	6,561
TOTALS				**60**			**6.05**	**26,499**		**60**			**1.05**	**4,599**	**5.00**	**21,900**

RAB LIGHTING

WPLED13DC

JOB NAME: _____

DATE: _____

TYPE: _____

DESCRIPTION

LED 13 Watt Wallpacks

SPECIFICATIONS

Starting Amps/Operating Amps
12V DC/3.5A, 24V DC/3.5A

Country of Origin
Designed by RAB in New Jersey and assembled in Taiwan

Trade Agreements Act Compliant
This product is a product of Taiwan and a "designated country" end product that complies with the Trade Agreements Act.

GSA Schedule
This product is suitable for listing on the GSA Schedule of the US General Services in accordance with FAR Subpart 25.4

Cold Weather Starting
The minimum starting temperature is -22F/-30C

Ambient Temperature
Suitable for use in 50C (122F) ambient temperatures

LED Light Engine
Multi-chip 13W high output long life LED DC Driver 12-24V DC

Surge Protection
N/A

Color Temperature (Nominal CCT)
5000 K

Fixture Efficacy
71 Lumens per Watt

Color Accuracy
66 CRI

Lumen Maintenance
The LED will deliver 70% of its initial lumens at 50,000 hours of operation.

Finish
Chip and fade resistant polyester powder coat finish.

Color Stability
RAB LEDs exceed industry standards for chromatic stability.

Color Uniformity
RAB•s range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2008.

Green Technology
RAB LEDs are Mercury and UV free.

Dark Sky Approved
The International Dark Sky Association has approved this product as a full cutoff, fully shielded luminaire.

For use on LEED Buildings
IDA Dark Sky Approval means that this fixture can be used to achieve LEED Credits for Light Pollution Reduction.

Patents
The design of the LPACK is protected by U.S. Pat. D604,004 and patents pending in Canada, China and Taiwan.

IESNA LM-79 & IESNA LM-80 Testing
RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80, and have received the Department of Energy "Lighting Facts" label.

Gaskets
High Temperature Silicone

Warranty
RAB LED fixtures give you peace of mind because both the fixture and light engine components are backed by RAB's 5 Year Warranty. For more information,

Equivalency
The WPLED13 is Equivalent in delivered lumens to a 100W Metal Halide Wallpack.

HID Replacement Range
The WPLED13 can be used to replace 70-150W Metal Halide Wallpacks based on delivered lumens.

DIMENSIONS

ORDERING INFORMATION

	Total Watts	Lamp Type	Lamp Base	Ballast	Starting Amps/ Operating Amps 120V	208V	240V	277V	Input Watts	LAMP ANSI	Initial Lumens	Lamp Hours
LED Lamp supplied with fixture	13	LED	Heat-sink	DC Driver 12-24V DC					15.0	N/A	1064	50000
Factory Installed Options Add suffix to Catalog Number	Photocontrol for 277V (/PC2)				Photocontrol for 120V (/PC)							

Note: Specifications may change without notice

RAB Lighting, Inc. • 170 Ludlow Ave• Northvale, NJ 07647 • Tel: 888 RAB-1000 • Fax: 888 RAB-1232 • www.rabweb.com

RAB LIGHTING

CLED2X20

JOB NAME: _____

DATE: _____

TYPE: _____

DESCRIPTION

40 Watts of energy efficient ceiling mounted LED lighting. LED Light Engine lasts 50,000 hours. 5 year warranty. Flush mount fixture bracket. LED Light Engine included.

SPECIFICATIONS

UL Listing
Damp Locations

LED Light Engine
Two Multi-chip 10W high output long life LED Driver Constant Current, Class 2

Heatsink
Cast aluminum thermal management system for optimal heat sinking. Designed for cool operation, most efficient output and maximum LED life by minimizing LED junction temperature

Lumen Maintenance
The LED will deliver 70% of its initial lumens at 50,000 hours of operation

Housing
Precision die cast aluminum housing and lens framing

Finish
Chip and fade resistant polyester powder coat finish

Green Technology
RAB LEDs are Mercury, Arsenic and UV free.

Patents
The design of the CLED is protected by U.S. Patent D608,040, D615,689 and patents pending in Canada, China, Taiwan and Mexico

Warranty
RAB LED fixtures give you peace of mind because both the fixture and light engine components are backed by RAB's 5 Year Warranty. For more information,

Color Stability
RAB LEDs exceed industry standards for chromatic stability.

Color Uniformity
RAB•s range of CCT (Correlated color temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products ANSI C78.377-2008.

LED
Lamp supplied with fixture

Cold Weather Starting
The minimum starting temperature is -40F/-40C

Total Harmonic Distortion
THD = 7.7%

Driver
Automatic Voltage Sensing Driver for 120 _ 277 volts

Ambient Temperature
Suitable for use in 40C (104F) ambient temperatures

Fixture Efficacy
64 Lumens per Watt

Color Accuracy
69 CRI

Color Temperature (Nominal CCT)
5099 K

IESNA LM-79 & IESNA LM-80 Testing
RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and 80

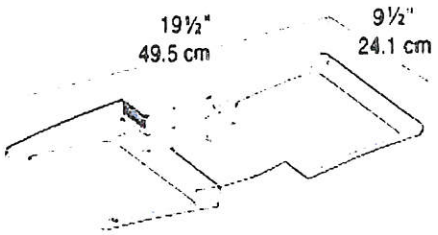
Equivalency
The CLED2X20 is Equivalent in delivered lumens to a 100W Metal Halide Ceiling Fixture.

HID Replacement Range
The CLED2X20 can be used to replace 100-150W Metal Halide Ceiling Lights based on delivered lumens.

Color
Bronze

Weight
12.2

DIMENSIONS



ORDERING INFORMATION

Total Watts	Lamp Type	Lamp Base	Ballast	Starting Amps/ Operating Amps 120V	208V	240V	277V	Input Watts	LAMP ANSI	Initial Lumens	Lamp Hours
40	LED	Heat-sink	Constant Current	0.38	0.23	0.2	0.17	43.0	N/A	2764	50000

Factory Installed Options
Add suffix to Catalog Number

Note: Specifications may change without notice

RAB Lighting, Inc. • 170 Ludlow Ave• Northvale, NJ 07647 • Tel: 888 RAB-1000 • Fax: 888 RAB-1232 • www.rabweb.com

RISE
ENGINEERING

Financial Summary

Location: Burrillville Schools	Total Project Cost	Estimated PUD Incentive	Customer's Net Cost	Estimated Annual Electrical Savings	Estimated Annual Maintenance Savings	Estimated Annual HVAC Savings	Return on Investment	Years to Payback
High School	$107,630	$43,052	$64,578	$8,676	$2,580	$3,050	22%	4.5
Levy Café	$11,995	$4,798	$7,197	$1,808	$475	$275	36%	2.8
Steere Farm Gym	$4,435	$1,774	$2,661	$784	$135	$100	38%	2.6
Callahan Gym	$11,285	$4,514	$6,771	$2,437	$315	$350	46%	2.2
Total	$135,345	$54,138	$81,207	$13,705	$3,505	$3,775	26%	3.9

PASCOAG UTILITY REBATES

It's important to note that the PUD incentives provided in this report, while they are consistent with the current available programs, should be considered estimated until written approval is granted by PUD. RISE Engineering will prepare and submit all necessary applications and documentation on your behalf.

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - Levy Café
2300 Bronco Hywy
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

11/13/2012

Estimated Current Lighting Load (Wattage)			5,900	Watts
Estimated Proposed Lighting Load (Wattage)			1,660	Watts
Estimated Lighting Load Savings (Wattage)			**4,240**	Watts
Estimated Current Lighting Usage (kWh)			14,750	kWh
Estimated Proposed Lighting Usage (kWh)			2,698	kWh
Estimated Lighting Usage Savings (kWh)			**12,053**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	2,213	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	405	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**1,808**	
Estimated Total Job Cost		**$**	**11,995.00**	
Estimated Utility Incentive		$	(4,798.00)	
Estimated Customer Net Cost		**$**	**7,197.00**	
Maintenance Savings		**$**	**475**	
Net Heating and AC Savings		**$**	**275**	
Simple Payback (Customer Share/Bill Savings):		Years =	**2.8**	

RISE
ENGINEERING

Burrillville School District - Levy Café
2300 Bronco Hyway
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	Café	H1	250w MH 2x2	20	2,500	295	5.90	14,750	4L4 28W T8/LP 8' IND w/Tube Guard & CMRB-6	20	1,625	83	1.66	2,698	CMRB-9	9	4.24	12,053
TOTALS				**20**			**5.90**	**14,750**		**20**		**83**	**1.66**	**2,698**		**9**	**4.24**	**12,053**

Category: ECS
Energy Conservation Series

Prefix:
EGI

Fixture Series (Name):
Economy Grade Ind.

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

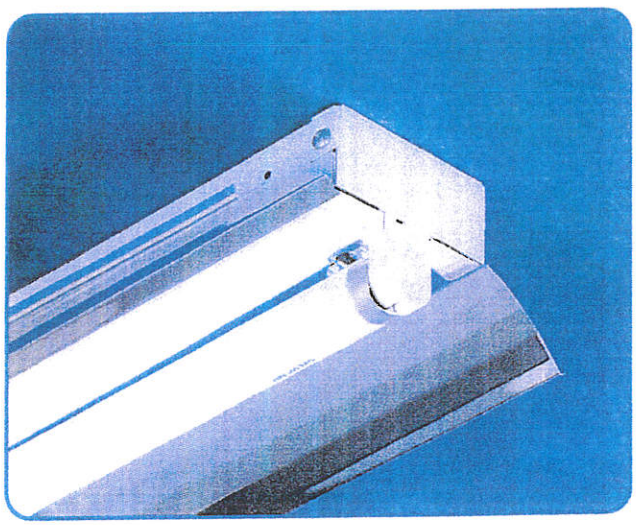
Economy Grade Industrial Series general purpose fluorescent luminaire

GENERAL DESCRIPTION

The Economy Grade Industrial (EGI) Series has been developed for general illumination for surface or pendant mounted applications. This series utilizes computer designed reflector technology for optimal fixture efficiency, reduction of energy consumption and improved quality of light. It also provides instant-on operation and offers many other energy saving options.

Typical applications for this type of product are interior spaces where appearance and performance are important. Applications include:

- Industrial, Commercial and Manufacturing Areas
- Warehouse Spaces – Isle and Open Areas
- Storage Facilities and Specialized Retail Applications
- Schools, Colleges and Universities



DESIGN FEATURES / SPECIFICATIONS

CONSTRUCTION
- Precision die formed from 22 ga. cold rolled steel.
- Mechanically fastened or resistance welded depending on model.
- Heavy gauge steel (CRS) or aluminum alloy may be custom ordered.
- Finish to be pre-painted gloss white polyester powder coat.
- Post-painted polyester powder coat finishes are available. Consult factory for all special colors and finishes.
- Heavy guage steel (NYC) and heavy guage aluminum are available as alternate materials.

REFLECTOR
- Precision die formed optics which has been designed for maximum efficiency and photometric properties using the latest CAD software.
- Choice of optics includes focused, normal and spread beam distribution. Consult factory for custom optics design and spacing criteria options.
- Choice of materials include:
  - Alanod Miro4® Enhanced Specular Aluminum, 95% total reflectance, 25 year warranty.
  - Enhanced Specular Aluminum, 92% total (min.) reflectance, 25 year warranty.
  - High Reflectance White Powder Coated Aluminum, 91% total reflectance, 10 year warranty.
  - Polished Aluminum, 87% total (min.) reflectance, 25 year warranty.
  - Consult factory for availability of all other material choices.

LAMPHOLDERS
- Vossloh-Schwabe® premium type featuring:
  - Anti-vibration internal lamp locking design
  - High temperature resistant ("T" marking).
  - Heat and UV blocking shield to prevent degradation of material.
  - Multi-point contact design for optimum lamp pin contact.
  - Produced in accordance with DIN ISO 9001 and IEC standards.

BALLASTS
- All standard ballasts are electronic, energy saving, thermally protected, Class-P, non-PCB, Sound Rated "A", 0 degree (Type 1 Outdoor). Verify with factory for latest information regarding High Temperature (HT) or Extreme Low Temperature (XLT) rated ballast options.
- UL/CSA certified, where applicable. Compliant with Federal Ballast Law (Public Law 100-357, 1988).
- Choice of ballast factors. L=Low, N=Normal, H=High.
- Choice of dedicated, universal or special voltage - Consult factory for available options.
- Warranted by ballast manufacturer. Typical ballast warranty is for 5 years (120-277v) and 3-years (347-480v). Consult factory for latest warranty information.

LAMPS
- Supplied by others unless otherwise specified.
- Factory installed if required - Consult factory.
- Lamp type, CRI ratings, temperature colors, lamp life ratings are all viable options which can be supplied - Consult factory for information.

MOUNTING
- The luminaire may be surface mounted or may be suspended by pendant, threaded rod, hook, chain or cable. (Mounting hardware supplied by others unless otherwise specified).
- Custom mounting options / accessories are available - Consult factory.

ELECTRICAL
- Luminaire is bi-national listed and labeled (UL 1598 and CSA C22.2 No. 250.0-00) and is suitable for damp locations.
- Product includes luminaire disconnect as specified in NEC 410.73(G), 2005 Edition, and CEC part I, rule 30-308(4), 2006 Edition.

QUALITY CONTROL
- All fixtures and retrofit kits are designed, fabricated, assembled and tested at RENOVA's manufacturing facility. All fixtures are 100% lamp tested, inspected and labeled prior to shipment.

GUARANTEE
- RENOVA warrants all fixtures to be free of defects in manufacturing and workmanship for a period of (1) year from date of purchase. This warranty excludes damage of any kind resulting from improper installation, misuse, abuse, accidents, mis-application, or natural disasters. Please refer to the "Terms and Conditions" section of the RENOVA website for additional information.

Note: RENOVA products are constantly being improved; therefore, the information shown is subject to change without notice. Always consult your lighting representative or RENOVA Lighting Systems, Inc. for the latest information.

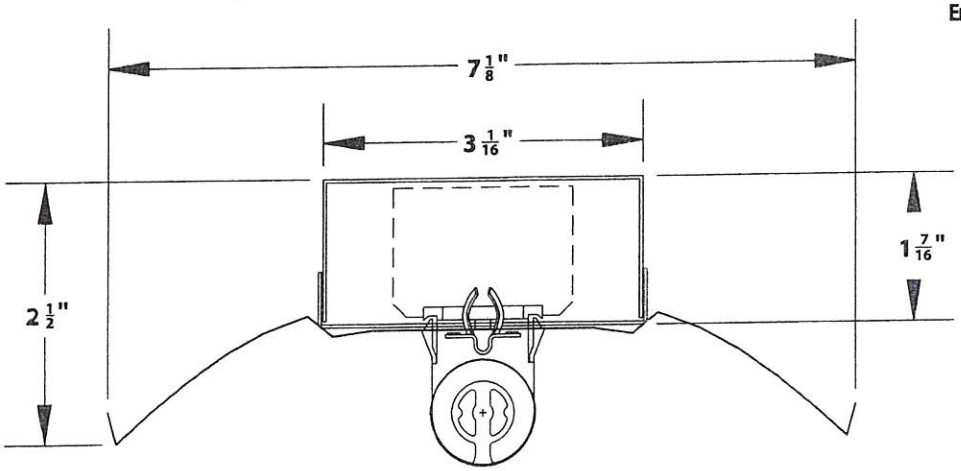
Category: ECS
Energy Conservation Series

Prefix:
EGI

Fixture Series (Name):
Economy Grade Ind.

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

2-Lamp T8 Economy Grade Ind. Cross Section Shown



ORDERING GUIDE

CATEGORY	SERIES	SIZE	REFLECTOR MATERIAL	REFLECTOR PHOTOMETRY	NUMBER OF LAMPS	LAMP TYPE (WATTAGE)	BALLAST VOLTAGE	NUMBER OF BALLASTS	LAMPS PER BALLAST	BALLAST FACTOR	OPTIONS
ECS -	EGI -	4 -	M -	N -	2 -	32 -	UNV -	1	2	N -	

CATEGORY: ECS — Energy Conservation Series

SERIES: EGI — SGI - ECONOMY GRADE INDUSTRIAL

SIZE: 2 - 24" · 3 - 36" · 4 - 48" · 5 - 72" · 8 - 96"

REFLECTOR MATERIAL: M - MIRO4 (95% TR) · E - ENHANCED ALUMINUM (92% TR min.) · W - WHITE (91% TR) · A - ALUMINUM (87% TR min.) · R - MIRO4 MICRO-MATT (95% TR)

REFLECTOR PHOTOMETRY: F - FOCUSED · N - NORMAL · S - SPREAD · C - CUSTOM OPTICS · *N - NORMAL IS STANDARD *(BLANK)=N · *C - CUSTOM OPTICS ARE DESCRIBED IN OPTIONS BOX

NUMBER OF LAMPS: 2' - 4' HSG: 1 - 1L · 2 - 2L · 6' & 8' HSG: 2 - 2L · 4 - 4L

LAMP TYPE (WATTAGE): 2' - 4' HSG: 17 17w T8 · 25 25w T8 · 32 32w T8 · 14 14w T5 · 21 21w T5 · 28 28w T5 · 6' & 8' HSG: 24 24w T5HO · 39 39w T5HO · 54 54w T5HO

BALLAST VOLTAGE: 120 - 120v, 60 Hz · 277 - 277v, 60 Hz · 347 - 347v, 60 Hz · UNV - 120v - 277v, 60 Hz · 480 - 480v, 60 Hz · xxx - Less Ballast

NUMBER OF BALLASTS: (BLANK) - 1 · 2 - 2 · 3 - 3 · 4 - 4

LAMPS PER BALLAST: 1 - 1 · 2 - 2 · 3 - 3 · 4 - 4

BALLAST FACTOR: L - Low · N - Normal · H - High

OPTIONS: *ADDITIONAL OPTIONS (See "Options" sheet for all available options)

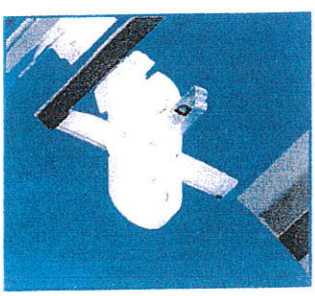
IES SUSTAINING MEMBER

MADE IN THE USA

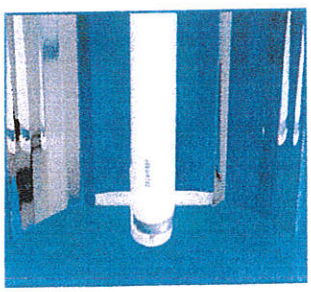
c UL us LISTED

Photometric data, IES files and all other information is available upon request.

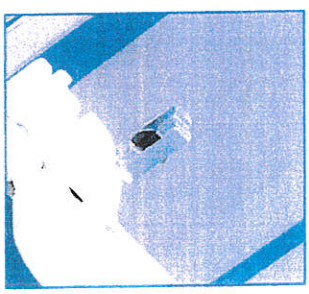
Veteran OWNED AND OPERATED



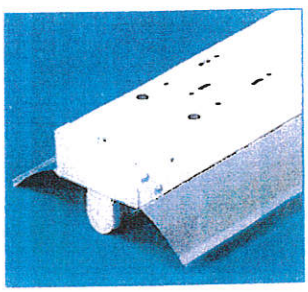
Vossloh Locking Lampholders (Standard)



Multi-Faceted Reflector (Designed for Maximum Efficiency)



Captive Quarter-Turn Fastener (Allows Toolless Access to Ballast Compartment)



Mounting Details (Included in all Housings)

Note: RENOVA products are constantly being improved; therefore, the information shown is subject to change without notice. Always consult your lighting representative or RENOVA Lighting Systems, Inc. for the latest information.

RENOVA Lighting Systems, Inc. • **15 Wellstown Road** • **Ashaway, RI 02804** • **(800) 635-6682** • **www.renova.com**

sensorswitch®

CMRB 6

HIGH BAY 360° SENSOR
FIXTURE MOUNT BOX • LINE VOLTAGE • PASSIVE INFRARED (PIR)

SPECIFICATIONS

FEATURES
100% Digital PIR Detection,
Excellent RF Immunity
360° Coverage Pattern
Self-Contained Relay,
No Power Pack Needed
No Minimum Load Requirements
Interchangeable Hot & Load Wires,
Impossible to Wire Backwards
Push-Button Programmable
Adjustable Time Delays
No Field Calibration or Sensitivity
Adjustments Required
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min defatult)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
3.63" H x 3.63" W x 1.50" D
(9.22 cm x 9.22 cm x 3.81 cm)
6 oz
1/2" knockout
White

ELECTRICAL SPECS
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
None
1/4 HP
50/60 Hz
Sinks < 20mA;
~40 Ballasts @ .5mA each

ENVIRONMENTAL SPECS
14° to 160° F (-10° to 71° C)

-14° to 160° F (-26° to 71° C)

20 to 90% non-condensing

OVERVIEW
Designed for mounting heights of up to 45 ft (13.72 m), the **CMRB 6** High Bay 360° sensor provides Passive Infrared (PIR) occupancy detection over a 15-20 ft (4.57-6.10 m) radial coverage pattern that overlaps the areas lit by a typical high bay fixture. This line voltage sensor switches loads directly without the need for a power pack. The **CMRB 6** sensor mounts directly to the end of a lighting fixture through an extended 1/2 inch chase nipple, and is ideal for individual on/off control of T5/T8 fluorescent lighting. HID bi-level fixtures can also be controlled when the Start-to-High (SH) option is added to the **CMRB 6**. For multiple fixture control, multiple low voltage **CMB 6**, **CMB 50**, and/or **HMB 10** Series High Bay sensors with power packs are recommended. For lower mounting height applications, **CMRB 9** or **CMRB 10** Series sensors are recommended.

SENSOR OPERATION
The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a self-contained relay switches the connected lighting load on. The sensor is line powered, switches line voltage, and requires no field calibration or sensitivity adjustments

LAMPMAXIMIZER®
This sensor also contains patent pending LampMaximizer technology that allows users to aggressively target energy savings while still protecting lamp life. A minimum on timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than lamp warranties specify.

A standard occupancy time delay is also present that ensures lights turn off (assuming minimum on timer has elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, but is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the units push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+, that determines the optimum time delay in order to maximize both lamp life and energy savings. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

OPTIONS

START-TO-HIGH TIMER (SH)
- Upon power up sensor holds lights on and high for 20 min

OCCUPANCY CONTROLLED DIMMING (D)
- Provides dimming outputs to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting

PHOTOCELL (P)
- Ideal for high bay applications with skylights
- Photocell looks out through rear of sensor enclosure
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

DOWN LOOKING PHOTOCELL (PD)
- Ideal for high bay applications with daylight entering space from side windows or bay doors
- Photocell views down through sensor lens
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

347 VAC (347)
- Allows sensor to be powered from and switch 347 VAC

LOW TEMP/HIGH HUMIDITY (LT)
- Sensor is corrosion resistant to moisture
- Operates down to -40° F/C

c UL us LISTED

TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING INFO

CMRB 6 [START-TO-HIGH] [DIMMING] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

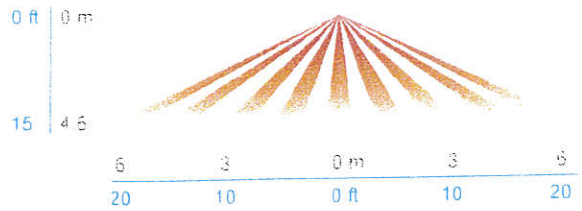
START-TO-HIGH	DIMMING	PHOTOCELL	VOLTAGE	TEMP/HUMIDITY
Blank = No STH	Blank = None	Blank = None	Blank = 120/277 VAC	Blank = Standard
SH = w/STH	D = Occupancy Controlled Dimming	P = Up Looking Photocel	347 = 347 VAC	LT = Low Temp
		PD = Down Looking Photocell		

COVERAGE PATTERN

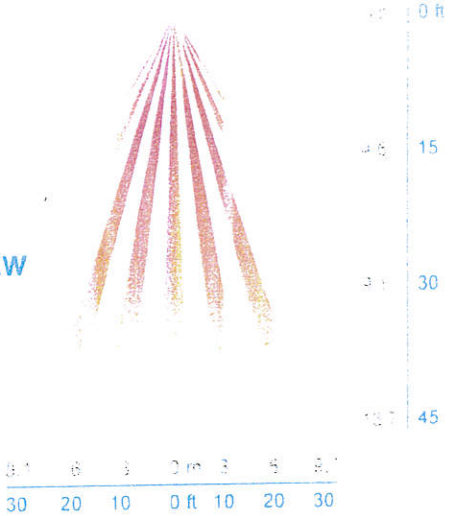
HIGH BAY 360° LENS

- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. **walking**) up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion (e.g. **forklifts**) up to a 45 ft (13.72 m) mounting height

LOW VIEW



HIGH VIEW



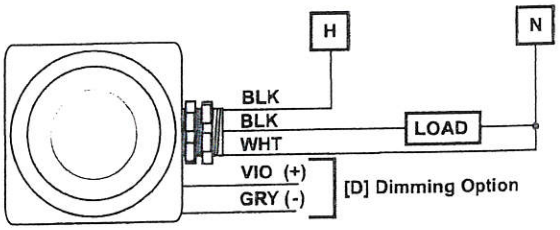
WIRING (DO NOT WIRE HOT)

STANDARD WIRING

BLACK* - Line Input
BLACK* - Load Output
WHITE - Neutral

} *BLACK wires can be reversed

347 VAC OPTION (347)
Black wires are replaced w/ Red wires



INITIAL POWER UP
The sensor's relay is shipped in a latched closed position so the lights will come on upon initial power-up. If the lights do not immediately turn on (initial installation only) the latching relay opened during shipment and will close within 30 secs.

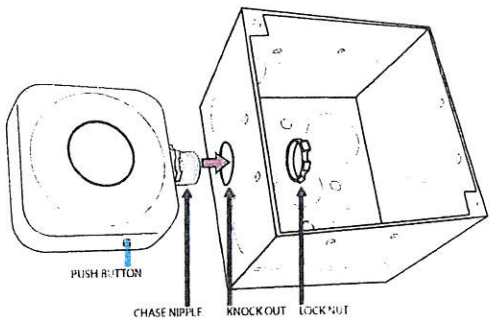
Note: If the sensor loses power, the internal relay will latch to on.

DIMMING OPTION (D)

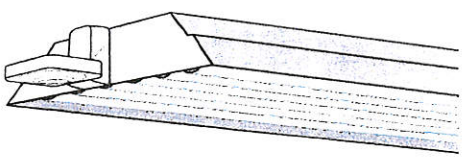
VIOLET - Connect to Violet control wire from 0-10 VDC dimmable ballast
GRAY - Connect to Gray common wire from ballast

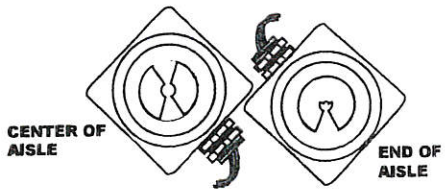
INSTALLATION

- Sensor mounts through a 1/2" knockout hole to a fixture or junction box.
- A label kit is included to mask off half of the sensor's coverage pattern for end of aisle, or trim the side viewing to create a rectangular pattern for center of aisle.
- If the sensor's field-of-view is partially blocked by the fixture housing, the FB3 Fixture Bracket (not included) can be used to lower the sensor down to a level where its view is not impaired.



FB3





PROGRAMMING
Refer to instruction card IC7.001 for default settings and directions on programming the sensor via the push-button.

sensorswitch

A SensorSwitch Company

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - Steere Farm Gym
2300 Bronco Hywy
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

11/13/2012

Estimated Current Lighting Load (Wattage)			2,655	Watts
Estimated Proposed Lighting Load (Wattage)			1,404	Watts
Estimated Lighting Load Savings (Wattage)			**1,251**	Watts
Estimated Current Lighting Usage (kWh)			7,965	kWh
Estimated Proposed Lighting Usage (kWh)			2,738	kWh
Estimated Lighting Usage Savings (kWh)			**5,227**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	1,195	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	411	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**784**	
Estimated Total Job Cost		**$**	**4,435.00**	
Estimated Utility Incentive		$	(1,774.00)	
Estimated Customer Net Cost		**$**	**2,661.00**	
Maintenance Savings		**$**	**135**	
Net Heating and AC Savings		**$**	**100**	
Simple Payback (Customer Share/Bill Savings):		Years =	**2.6**	

RISE
ENGINEERING

Burrillville School District - Steere Farm Gym
2300 Bronco Hywy
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	Gym	H1	250w MH 2x2	9	3,000	295	2.66	7,965	NF 4L4' T8/HL 2x4 w/wire guard & occupancy sensor	9	1,950	156	1.40	2,738	CMRB-9	9	1.25	5,227
TOTALS				**9**			**2.66**	**7,965**		**9**		**156**	**1.40**	**2,738**		**9**	**1.25**	**5,227**

Category: ECS
Energy Conservation Series

Prefix:
ECO

Fixture Series (Name):
EcoLyte

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

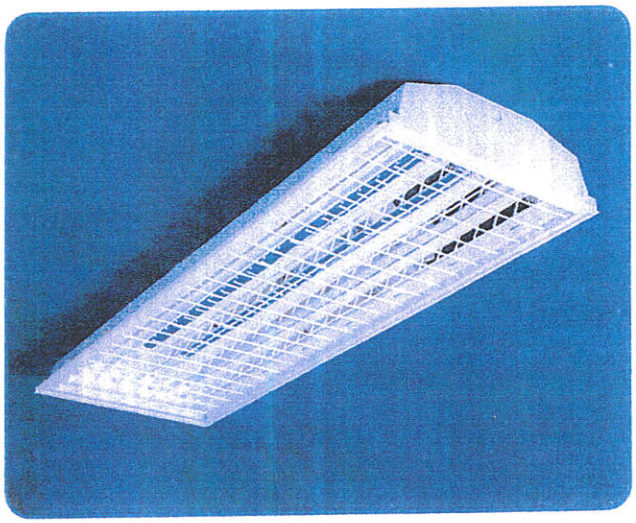
EcoLyte Series high performance fluorescent high/low bay luminaire

GENERAL DESCRIPTION

The EcoLyte (ECO) Series has been developed as an energy efficient alternative to HID lighting systems. This series utilizes "High Intensity Fluorescent" technology to dramatically reduce energy consumption, improve quality of light and provide instant-on operation. It also offers many switching and sensor options.

Typical applications for this type of product are interior spaces with high mounting heights where high lumen output is required. Applications include:

- Retail – "Big Box" – Distribution Centers and Warehouses
- Industrial, Commercial and Manufacturing Areas
- School Gymnasiums, Auditoriums and Convention Centers
- Ice Rinks, Indoor Courts and Sports Arenas



DESIGN FEATURES / SPECIFICATIONS

CONSTRUCTION
- Precision die formed from 22 ga. cold rolled steel.
- Mechanically fastened or resistance welded depending on model.
- Heavy gauge steel (CRS) or aluminum alloy may be custom ordered.
- Finish to be pre-painted gloss white polyester powder coat.
- Post-painted polyester powder coat finishes are available. Consult factory for all special colors and finishes.
- Heavy guage steel (NYC) and heavy guage aluminum are available as alternate materials.

REFLECTOR
- Precision die formed optics which has been designed for maximum efficiency and photometric properties using the latest CAD software.
- Choice of optics includes focused, normal and spread beam distribution. Consult factory for custom optics design and spacing criteria options.
- Choice of materials include:
  - Alanod Miro4® Enhanced Specular Aluminum, 95% total reflectance, 25 year warranty.
  - Enhanced Specular Aluminum, 92% total (min.) reflectance, 25 year warranty.
  - High Reflectance White Powder Coated Aluminum, 91% total reflectance, 10 year warranty.
  - Polished Aluminum, 87% total (min.) reflectance, 25 year warranty.
  - Consult factory for availability of all other material choices.

LAMPHOLDERS
- Vossloh-Schwabe® premium type featuring:
  - Anti-vibration internal lamp locking design
  - High temperature resistant ("T" marking).
  - Heat and UV blocking shield to prevent degradation of material.
  - Multi-point contact design for optimum lamp pin contact.
  - Produced in accordance with DIN ISO 9001 and IEC standards.

BALLASTS
- All standard ballasts are electronic, energy saving, thermally protected, Class-P, non-PCB, Sound Rated "A", 0 degree (Type 1 Outdoor). Verify with factory for latest information regarding High Temperature (HT) or Extreme Low Temperature (XLT) rated ballast options.
- UL/CSA certified, where applicable. Compliant with Federal Ballast Law (Public Law 100-357, 1988).
- Choice of ballast factors. L=Low, N=Normal, H=High.
- Choice of dedicated, universal or special voltage - Consult factory for available options.
- Warranted by ballast manufacturer. Typical ballast warranty is for 5 years (120-277v) and 3-years (347-480v). Consult factory for latest warranty information.

LAMPS
- Supplied by others unless otherwise specified.
- Factory installed if required - Consult factory.
- Lamp type, CRI ratings, temperature colors, lamp life ratings are all viable options which can be supplied - Consult factory for information.

LAMP SHIELDING
- Lamp shielding options include:
  - Heavy duty painted or zinc-plated wire guards.
  - Flat or drop dish lenses, clear acrylic, clear polycarbonate, high light transmission white, prismatic and linear prism lenses.
  - Louvers and cross-blade baffles - Consult factory.

MOUNTING
- The luminaire may be surface mounted or may be suspended by pendant, threaded rod, hook, chain or cable. (Mounting hardware supplied by others unless otherwise specified).
- Custom mounting options / accessories.

ELECTRICAL
- Luminaire is bi-national listed and labeled (UL 1598 and CSA C22.2 No. 250.0-00) and is suitable for damp locations.
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RENOVA Lighting Systems, Inc. • **15 Wellstown Road** • **Ashaway, RI 02804** • **(800) 635-6682** • **www.renova.com**

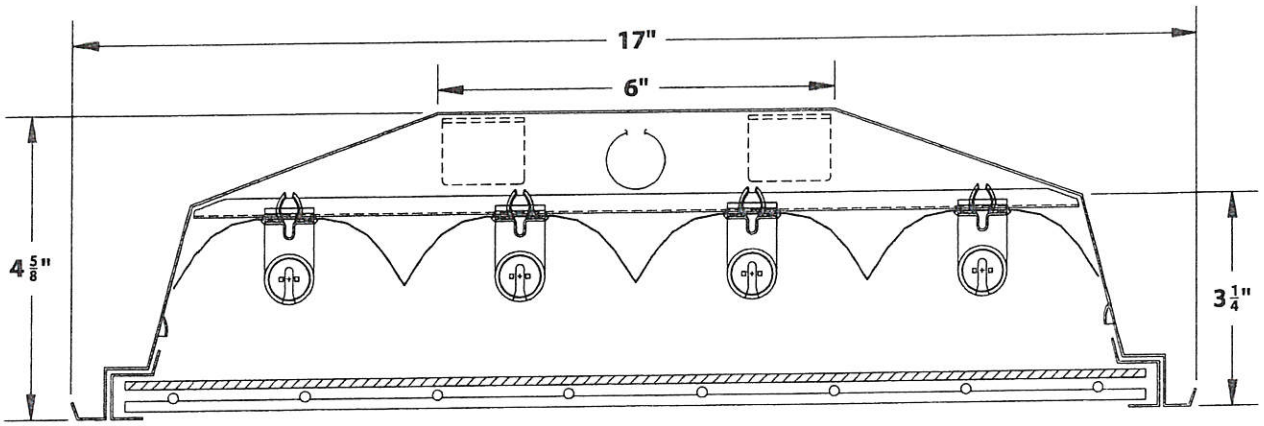
Category: ECS
Energy Conservation Series

Prefix:
ECO

Fixture Series (Name):
EcoLyte

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

4-Lamp T5 HO EcoLyte Cross Section Shown



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ECS	- ECO	4	- M	N	- 4	54	- UNV	- 2	2	H	- AWW

CATEGORY — ECS: Energy Conservation Series

SERIES — ECO: ECOLYTE

SIZE — 4: 4-48", 8: 95"

REFLECTOR MATERIAL — M: MIRO4 (95% TR); E: ENHANCED ALUMINUM (92% TR min.); W: WHITE (91% TR); A: ALUMINUM (87% TR min.); R: MIRO4 MICRO-MATT (95% TR)

REFLECTOR PHOTOMETRY — F: FOCUSED; N: NORMAL; S: SPREAD; C: CUSTOM OPTICS; *N: NORMAL IS STANDARD *(BLANK)=N; *C: CUSTOM OPTICS ARE DESCRIBED IN OPTIONS BOX

NUMBER OF LAMPS — 4' ECOLYTE: 2: 2L, 3: 3L, 4: 4L, 5: 5L, 6: 6L; 8' ECOLYTE: 4: 4L, 6: 6L, 8: 8L, 10: 10L, 12: 12L

LAMP TYPE (WATTAGE) — 32: 32w T8, 54: 54w T5HO

BALLAST VOLTAGE — 120: 120v, 60 Hz; 277: 277v, 60 Hz; 347: 347v, 60 Hz; UNV: 120v - 277v, 60 Hz; 480: 480v, 60 Hz; xxx: Less Ballast

NUMBER OF BALLASTS — (BLANK): 1, 2: 2, 3: 3, 4: 4

LAMPS PER BALLAST — 1: 1, 2: 2, 3: 3, 4: 4

BALLAST FACTOR — L: Low, N: Normal, H: High

OPTIONS — OOW: Open Style; OWW: White Wire-Guard; AOW: Clear Acrylic Lens; AWW: White Wire-Guard & Clear Acrylic Lens

*ADDITIONAL OPTIONS
(See "Options" sheet for all available options)

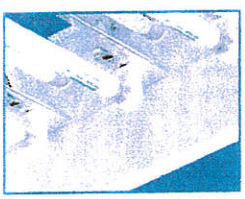
IES SUSTAINING MEMBER

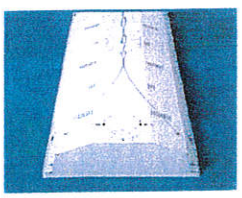
MADE IN THE USA

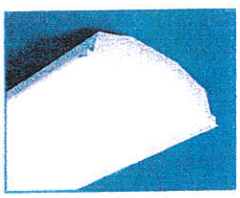
c UL us LISTED

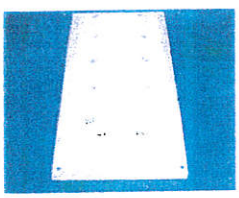
Photometric data, IES files and all other information is available upon request.

Veteran
OWNED AND OPERATED

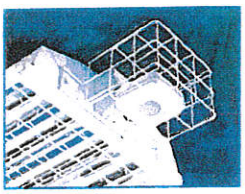

Vossloh Locking Lampholders (Standard)

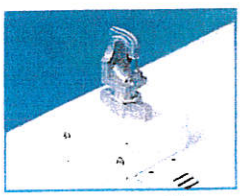

Custom V-Cables (Optional) (Installed or Separate)

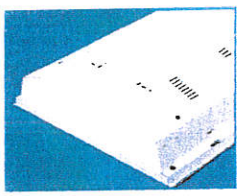

White Cross-Blade Louver (Optional)


10%-20% Uplight (Optional)

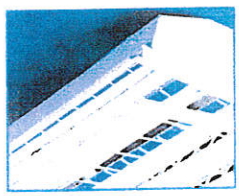

Center Mounting Detail (Standard) (Accepts Optional J-Box)


Sensor & Guard (Optional)


Center-Mount J-Box & Heavy-Duty Hanging Hook (Optional)


Dual Vented Housing (To Control Lamp/Ballast Temp.)


Quick Wire Access Plate (Standard)


Frame Door (Optional) (Cam Latch Provides Quick Access)

Note: RENOVA products are constantly being improved; therefore, the information shown is subject to change without notice. Always consult your lighting representative or RENOVA Lighting Systems, Inc. for the latest information.

RENOVA Lighting Systems, Inc. • **15 Wellstown Road** • **Ashaway, RI 02804** • **(800) 635-6682** • **www.renova.com**

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CMRB 6

HIGH BAY 360° SENSOR
FIXTURE MOUNT BOX • LINE VOLTAGE • PASSIVE INFRARED (PIR)

SPECIFICATIONS

FEATURES
100% Digital PIR Detection,
Excellent RF Immunity
360° Coverage Pattern
Self-Contained Relay,
No Power Pack Needed
No Minimum Load Requirements
Interchangeable Hot & Load Wires,
Impossible to Wire Backwards
Push-Button Programmable
Adjustable Time Delays
No Field Calibration or Sensitivity
Adjustments Required
Convenient Test Mode
100 hr Lamp Burn-in Timer
Green LED Indicator

- Protects Lamp Life while Maximizing Energy Savings
- Minimum On Timer (15 min default)
- Occ. Time Delay (10 min defatult)
- LampMaximizer+ Mode - Optimizes Lamp Life & Energy Savings (disabled by default)
- Switch Counter (in 1000's)
- Total Lamp On Time (in khrs)

PHYSICAL SPECS
3.63" H x 3.63" W x 1.50" D
(9.22 cm x 9.22 cm x 3.81 cm)
6 oz
1/2" knockout
White

ELECTRICAL SPECS
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
None
1/4 HP
50/60 Hz
Sinks < 20mA;
~40 Ballasts @ .5mA each

ENVIRONMENTAL SPECS
14° to 160° F (-10° to 71° C)

-14° to 160° F (-26° to 71° C)

20 to 90% non-condensing

OVERVIEW
Designed for mounting heights of up to 45 ft (13.72 m), the **CMRB 6** High Bay 360° sensor provides Passive Infrared (PIR) occupancy detection over a 15-20 ft (4.57-6.10 m) radial coverage pattern that overlaps the areas lit by a typical high bay fixture. This line voltage sensor switches loads directly without the need for a power pack. The **CMRB 6** sensor mounts directly to the end of a lighting fixture through an extended 1/2 inch chase nipple, and is ideal for individual on/off control of T5/T8 fluorescent lighting. HID bi-level fixtures can also be controlled when the Start-to-High (SH) option is added to the **CMRB 6**. For multiple fixture control, multiple low voltage **CMB 6**, **CMB 50**, and/or **HMB 10** Series High Bay sensors with power packs are recommended. For lower mounting height applications, **CMRB 9** or **CMRB 10** Series sensors are recommended.

SENSOR OPERATION
The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a self-contained relay switches the connected lighting load on. The sensor is line powered, switches line voltage, and requires no field calibration or sensitivity adjustments

LAMPMAXIMIZER®
This sensor also contains patent pending LampMaximizer technology that allows users to aggressively target energy savings while still protecting lamp life. A minimum on timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than lamp warranties specify.

A standard occupancy time delay is also present that ensures lights turn off (assuming minimum on timer has elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, but is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the units push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+, that determines the optimum time delay in order to maximize both lamp life and energy savings. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

OPTIONS

START-TO-HIGH TIMER (SH)
- Upon power up sensor holds lights on and high for 20 min

OCCUPANCY CONTROLLED DIMMING (D)
- Provides dimming outputs to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting

PHOTOCELL (P)
- Ideal for high bay applications with skylights
- Photocell looks out through rear of sensor enclosure
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

DOWN LOOKING PHOTOCELL (PD)
- Ideal for high bay applications with daylight entering space from side windows or bay doors
- Photocell views down through sensor lens
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

347 VAC (347)
- Allows sensor to be powered from and switch 347 VAC

LOW TEMP/HIGH HUMIDITY (LT)
- Sensor is corrosion resistant to moisture
- Operates down to -40° F/C

c UL us LISTED

TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING INFO

CMRB 6 [START-TO-HIGH] [DIMMING] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

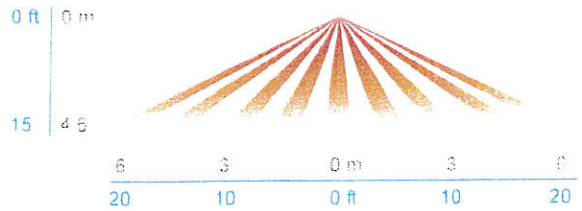
START-TO-HIGH	DIMMING	PHOTOCELL	VOLTAGE	TEMP/HUMIDITY
Blank = No STH	Blank = None	Blank = None	Blank = 120/277 VAC	Blank = Standard
SH = w/STH	D = Occupancy Controlled Dimming	P = Up Looking Photocel	347 = 347 VAC	LT = Low Temp
		PD = Down Looking Photocell		

COVERAGE PATTERN

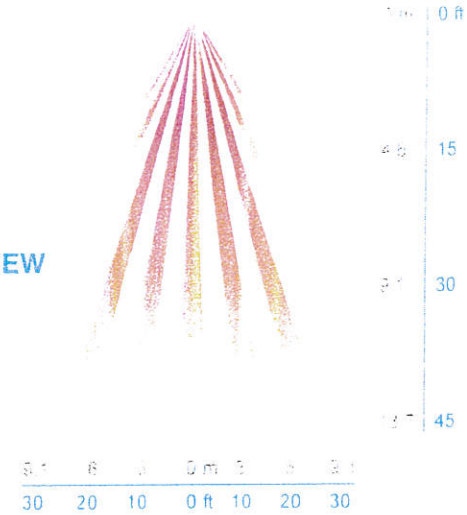
6 HIGH BAY 360° LENS

- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. **walking**) up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion (e.g. **forklifts**) up to a 45 ft (13.72 m) mounting height

LOW VIEW



HIGH VIEW



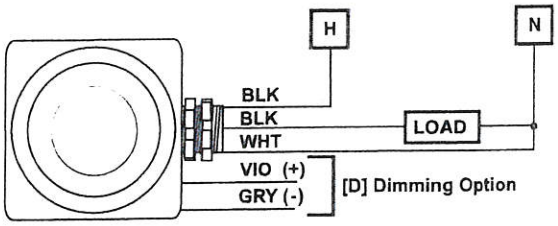
WIRING (DO NOT WIRE HOT)

STANDARD WIRING

BLACK* - Line Input
BLACK* - Load Output
WHITE - Neutral

} *BLACK wires can be reversed

347 VAC OPTION (347)
Black wires are replaced w/ Red wires



INITIAL POWER UP

The sensor's relay is shipped in a latched closed position so the lights will come on upon initial power-up. If the lights do not immediately turn on (initial installation only) the latching relay opened during shipment and will close within 30 secs.

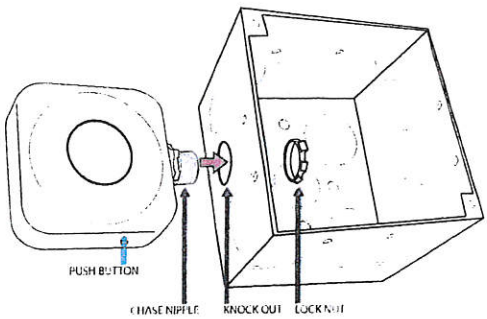
Note: If the sensor loses power, the internal relay will latch to on.

DIMMING OPTION (D)

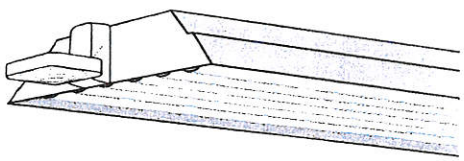
VIOLET - Connect to Violet control wire from 0-10 VDC dimmable ballast
GRAY - Connect to Gray common wire from ballast

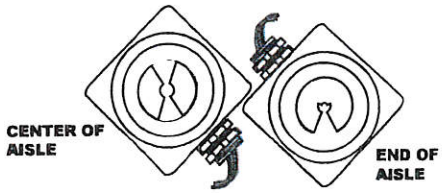
INSTALLATION

- Sensor mounts through a 1/2" knockout hole to a fixture or junction box.
- A label kit is included to mask off half of the sensor's coverage pattern for end of aisle, or trim the side viewing to create a rectangular pattern for center of aisle.
- If the sensor's field-of-view is partially blocked by the fixture housing, the FB3 Fixture Bracket (not included) can be used to lower the sensor down to a level where its view is not impaired.



FB3





PROGRAMMING

Refer to instruction card IC7.001 for default settings and directions on programming the sensor via the push-button.

sensorswitch

A Quality Brands Company
30 Industrial Park Road Wallingford CT 06492

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

Burrillville School District - WLC Gym
2300 Bronco Hywy
Harrisville, RI 02830
Dave Fontes
-

Proposal Summary

11/13/2012

Estimated Current Lighting Load (Wattage)			9,555	Watts
Estimated Proposed Lighting Load (Wattage)			4,704	Watts
Estimated Lighting Load Savings (Wattage)			**4,851**	Watts
Estimated Current Lighting Usage (kWh)			23,888	kWh
Estimated Proposed Lighting Usage (kWh)			7,644	kWh
Estimated Lighting Usage Savings (kWh)			**16,244**	kWh
Estimated Current Annual Lighting Bill:	kWh * 0.15	$	3,583	
Estimated Proposed Annual Lighting Bill:	kWh * 0.15	$	1,147	
Estimated Proposed Annual Lighting Bill Savings:		**$**	**2,437**	
Estimated Total Job Cost		**$**	**11,285.00**	
Estimated Utility Incentive		$	4,514.00	
Estimated Customer Net Cost		**$**	**6,771.00**	
Maintenance Savings		**$**	**315**	
Net Heating and AC Savings		**$**	**350**	
Simple Payback (Customer Share/Bill Savings):		Years =	**2.1**	

RISE
ENGINEERING

Burrillville School District - WLC Gym
2300 Bronco Hywy
Harrisville, RI 02830
Dave Fontes

Line Item	Room Name	Fixture Type	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1	GYM	H1	400w MH /HB	21	2,500	455	9.56	23,888	NF 6L 4' T8/HL ECOLYTE (2)3 Lamp Ballast	21	1,625	224	4.70	7,644	CMRB-6	21	4.85	16,244
TOTALS				**21**			**9.56**	**23,888**		**21**		**224**	**4.70**	**7,644**		**21**	**4.85**	**16,244**

Category: ECS	Prefix:	Fixture Series (Name):
Energy Conservation Series	ECO	EcoLyte

Universal Lighting Technologies | GE Lighting North America | ADVANCE | PHILIPS | SYLVANIA | alanod | VS

RENOVA™

Innovative Lighting Ideas
Energy Efficient Solutions

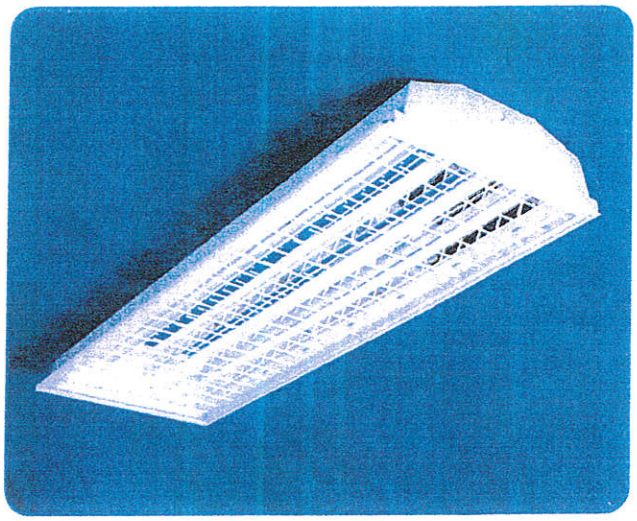
EcoLyte Series high performance fluorescent high/low bay luminaire

GENERAL DESCRIPTION

The EcoLyte (ECO) Series has been developed as an energy efficient alternative to HID lighting systems. This series utilizes "High Intensity Fluorescent" technology to dramatically reduce energy consumption, improve quality of light and provide instant-on operation. It also offers many switching and sensor options.

Typical applications for this type of product are interior spaces with high mounting heights where high lumen output is required. Applications include:

- Retail – "Big Box" – Distribution Centers and Warehouses
- Industrial, Commercial and Manufacturing Areas
- School Gymnasiums, Auditoriums and Convention Centers
- Ice Rinks, Indoor Courts and Sports Arenas



DESIGN FEATURES / SPECIFICATIONS

CONSTRUCTION
- Precision die formed from 22 ga. cold rolled steel.
- Mechanically fastened or resistance welded depending on model.
- Heavy gauge steel (CRS) or aluminum alloy may be custom ordered.
- Finish to be pre-painted gloss white polyester powder coat.
- Post-painted polyester powder coat finishes are available. Consult factory for all special colors and finishes.
- Heavy guage steel (NYC) and heavy guage aluminum are available as alternate materials.

REFLECTOR
- Precision die formed optics which has been designed for maximum efficiency and photometric properties using the latest CAD software.
- Choice of optics includes focused, normal and spread beam distribution. Consult factory for custom optics design and spacing criteria options.
- Choice of materials include:
  - Alanod Miro4® Enhanced Specular Aluminum, 95% total reflectance, 25 year warranty.
  - Enhanced Specular Aluminum, 92% total (min.) reflectance, 25 year warranty.
  - High Reflectance White Powder Coated Aluminum, 91% total reflectance, 10 year warranty.
  - Polished Aluminum, 87% total (min.) reflectance, 25 year warranty.
  - Consult factory for availability of all other material choices.

LAMPHOLDERS
- Vossloh-Schwabe® premium type featuring:
  - Anti-vibration internal lamp locking design
  - High temperature resistant ("T" marking).
  - Heat and UV blocking shield to prevent degradation of material.
  - Multi-point contact design for optimum lamp pin contact.
  - Produced in accordance with DIN ISO 9001 and IEC standards.

BALLASTS
- All standard ballasts are electronic, energy saving, thermally protected, Class-P, non-PCB, Sound Rated "A", 0 degree (Type 1 Outdoor). Verify with factory for latest information regarding High Temperature (HT) or Extreme Low Temperature (XLT) rated ballast options.
- UL/CSA certified, where applicable. Compliant with Federal Ballast Law (Public Law 100-357, 1988).
- Choice of ballast factors. L=Low, N=Normal, H=High.
- Choice of dedicated, universal or special voltage - Consult factory for available options.
- Warranted by ballast manufacturer. Typical ballast warranty is for 5 years (120-277v) and 3-years (347-480v). Consult factory for latest warranty information.

LAMPS
- Supplied by others unless otherwise specified.
- Factory installed if required - Consult factory.
- Lamp type, CRI ratings, temperature colors, lamp life ratings are all viable options which can be supplied - Consult factory for information.

LAMP SHIELDING
- Lamp shielding options include:
  - Heavy duty painted or zinc-plated wire guards.
  - Flat or drop dish lenses, clear acrylic, clear polycarbonate, high light transmission white, prismatic and linear prism lenses.
  - Louvers and cross-blade baffles - Consult factory.

MOUNTING
- The luminaire may be surface mounted or may be suspended by pendant, threaded rod, hook, chain or cable. (Mounting hardware supplied by others unless otherwise specified).
- Custom mounting options / accessories.

ELECTRICAL
- Luminaire is bi-national listed and labeled (UL 1598 and CSA C22.2 No. 250.0-00) and is suitable for damp locations.
- Product includes luminaire disconnect as specified in NEC 410.73(G), 2005 Edition, and CEC part I, rule 30-308(4), 2006 Edition.

QUALITY CONTROL
- All fixtures and retrofit kits are designed, fabricated, assembled and tested at RENOVA's manufacturing facility. All fixtures are 100% lamp tested, inspected and labeled prior to shipment.

GUARANTEE
- RENOVA warrants all fixtures to be free of defects in manufacturing and workmanship for a period of (1) year from date of purchase. This warranty excludes damage of any kind resulting from improper installation, misuse, abuse, accidents, mis-application, or natural disasters. Please refer to the "Terms and Conditions" section of the RENOVA website for additional information.

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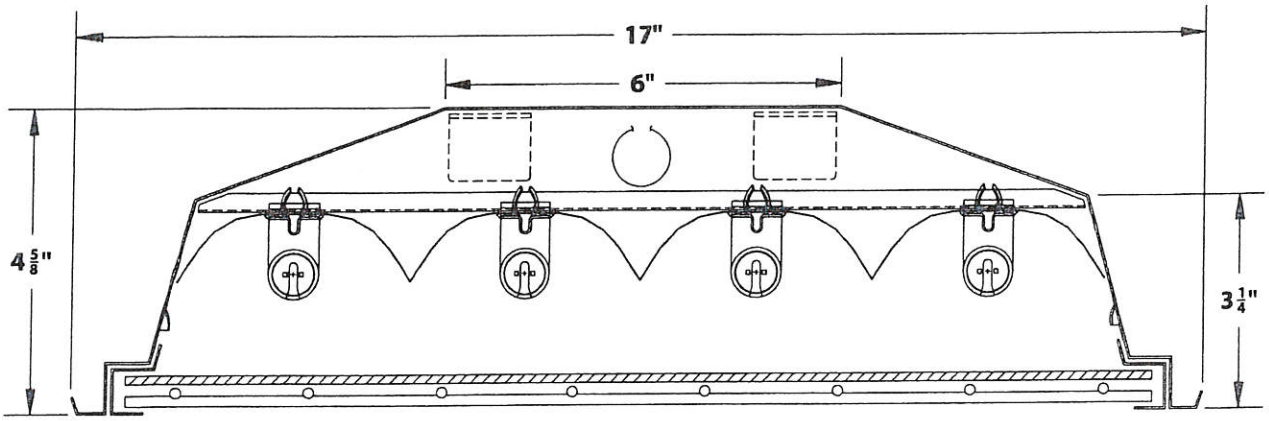
Category: ECS
Energy Conservation Series

Prefix:
ECO

Fixture Series (Name):
EcoLyte

RENOVA™
Innovative Lighting Ideas
Energy Efficient Solutions

4-Lamp T5 HO EcoLyte Cross Section Shown



ORDERING GUIDE

CATEGORY	SERIES	SIZE	REFLECTOR MATERIAL	REFLECTOR PHOTOMETRY	NUMBER OF LAMPS	LAMP TYPE (WATTAGE)	BALLAST VOLTAGE	NUMBER OF BALLASTS	LAMPS PER BALLAST	BALLAST FACTOR	OPTIONS
ECS	- ECO	4	- M	N	- 4	54	- UNV	- 2	2	H	- AWW

CATEGORY — Energy Conservation Series

SERIES — ECO - ECOLYTE

SIZE
- 4 - 48"
- 8 - 96"

REFLECTOR MATERIAL
- M - MIRO4 (95% TR)
- E - ENHANCED ALUMINUM (92% TR min.)
- W - WHITE (91% TR)
- A - ALUMINUM (87% TR min.)
- R - MIRO4 MICRO-MATT (95% TR)

REFLECTOR PHOTOMETRY
- F - FOCUSED
- N - NORMAL
- S - SPREAD
- C - CUSTOM OPTICS

*N - NORMAL IS STANDARD *(BLANK)=N

*C - CUSTOM OPTICS ARE DESCRIBED IN OPTIONS BOX

NUMBER OF LAMPS
- 4' ECOLYTE: 2 - 2L, 3 - 3L, 4 - 4L, 5 - 5L, 6 - 6L
- 8' ECOLYTE: 4 - 4L, 6 - 6L, 8 - 8L, 10 - 10L, 12 - 12L

LAMP TYPE (WATTAGE)
- 32 32w T8
- 54 54w T5HO

BALLAST VOLTAGE
- 120 - 120v, 60 Hz
- 277 - 277v, 60 Hz
- 347 - 347v, 60 Hz
- UNV - 120v - 277v, 60 Hz
- 480 - 480v, 60 Hz
- xxx - Less Ballast

NUMBER OF BALLASTS
- (BLANK) - 1
- 2 - 2
- 3 - 3
- 4 - 4

LAMPS PER BALLAST
- 1 - 1
- 2 - 2
- 3 - 3
- 4 - 4

BALLAST FACTOR
- L - Low
- N - Normal
- H - High

OPTIONS
- OOW - Open Style
- OWW - White Wire-Guard
- AOW - Clear Acrylic Lens
- AWW - White Wire-Guard & Clear Acrylic Lens

***ADDITIONAL OPTIONS**
(See "Options" sheet for all available options)

IES SUSTAINING MEMBER

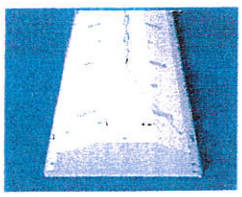
MADE IN THE USA

c UL us LISTED

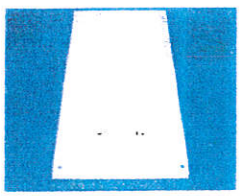
Photometric data, IES files and all other information is available upon request.

Veteran OWNED AND OPERATED

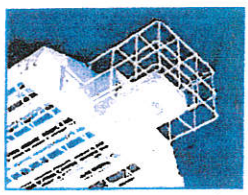

Vossloh Locking Lampholders (Standard)

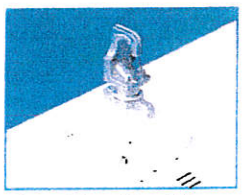

Custom V-Cables (Optional) (Installed or Separate)

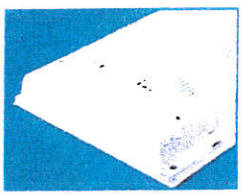

White Cross-Blade Louver (Optional)


10%-20% Uplight (Optional)

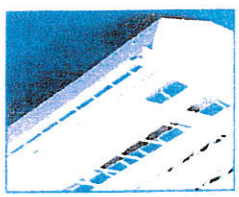

Center Mounting Detail (Standard) (Accepts Optional J-Box)


Sensor & Guard (Optional)


Center-Mount J-Box & Heavy-Duty Hanging Hook (Optional)


Dual Vented Housing (To Control Lamp/Ballast Temp.)


Quick Wire Access Plate (Standard)


Frame Door (Optional) (Cam Latch Provides Quick Access)

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sensorswitch

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FIXTURE MOUNT BOX • LINE VOLTAGE • PASSIVE INFRARED (PIR)

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Excellent RF Immunity
360° Coverage Pattern
Self-Contained Relay,
No Power Pack Needed
No Minimum Load Requirements
Interchangeable Hot & Load Wires,
Impossible to Wire Backwards
Push-Button Programmable
Adjustable Time Delays
No Field Calibration or Sensitivity
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6 oz
1/2" knockout
White

ELECTRICAL SPECS
800 W @ 120 VAC
1200 W @ 277 VAC
1500 W @ 347 VAC
None
1/4 HP
50/60 Hz
Sinks < 20mA;
~40 Ballasts @ .5mA each

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14° to 160° F (-10° to 71° C)

-14° to 160° F (-26° to 71° C)

20 to 90% non-condensing

OVERVIEW
Designed for mounting heights of up to 45 ft (13.72 m), the **CMRB 6** High Bay 360° sensor provides Passive Infrared (PIR) occupancy detection over a 15-20 ft (4.57-6.10 m) radial coverage pattern that overlaps the areas lit by a typical high bay fixture. This line voltage sensor switches loads directly without the need for a power pack. The **CMRB 6** sensor mounts directly to the end of a lighting fixture through an extended 1/2 inch chase nipple, and is ideal for individual on/off control of T5/T8 fluorescent lighting. HID bi-level fixtures can also be controlled when the Start-to-High (SH) option is added to the **CMRB 6**. For multiple fixture control, multiple low voltage **CMB 6**, **CMB 50**, and/or **HMB 10** Series High Bay sensors with power packs are recommended. For lower mounting height applications, **CMRB 9** or **CMRB 10** Series sensors are recommended.

SENSOR OPERATION
The sensor detects changes in the infrared energy given off by occupants as they move within the field-of-view. When occupancy is detected, a self-contained relay switches the connected lighting load on. The sensor is line powered, switches line voltage, and requires no field calibration or sensitivity adjustments

LAMPMAXIMIZER®
This sensor also contains patent pending LampMaximizer technology that allows users to aggressively target energy savings while still protecting lamp life. A minimum on timer, factory set at 15 minutes, helps preserve lamp life by eliminating all lamp cycles shorter than lamp warranties specify.

A standard occupancy time delay is also present that ensures lights turn off (assuming minimum on timer has elapsed) if no occupancy is detected. This timer is factory set at 10 minutes to promote energy savings, but is adjustable between 30 seconds and 20 minutes. These adjustments can be done manually, through the units push-button, or automatically every two weeks through an advanced mode, called LampMaximizer+, that determines the optimum time delay in order to maximize both lamp life and energy savings. Additionally, this sensor maintains statistics on total lamp on time and number of cycles.

START-TO-HIGH TIMER (SH)
- Upon power up sensor holds lights on and high for 20 min

OCCUPANCY CONTROLLED DIMMING (D)
- Provides dimming outputs to control 0-10 VDC dimmable ballasts
- Provides a second occupancy time-out period that enables the lights to go to a dim setting before turning off
- Adjustable max/min dim setting

PHOTOCELL (P)
- Ideal for high bay applications with skylights
- Photocell looks out through rear of sensor enclosure
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

DOWN LOOKING PHOTOCELL (PD)
- Ideal for high bay applications with daylight entering space from side windows or bay doors
- Photocell views down through sensor lens
- Auto set-point calibration
- Two selectable modes of operation
- On/Off mode: Photocell has full control during periods of occupancy
- Inhibit mode: Photocell can prevent lights from turning on if adequate daylight is available, but cannot turn lights off

347 VAC (347)
- Allows sensor to be powered from and switch 347 VAC

LOW TEMP/HIGH HUMIDITY (LT)
- Sensor is corrosion resistant to moisture
- Operates down to -40° F/C

c UL US LISTED

TITLE 24
MADE in U.S.A.
5 YEAR WARRANTY

ORDERING INFO — CMRB 6 [START-TO-HIGH] [DIMMING] [PHOTOCELL] [VOLTAGE] [TEMP/HUMIDITY]

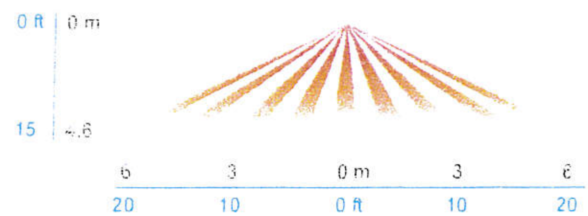
START-TO-HIGH	DIMMING	PHOTOCELL	VOLTAGE	TEMP/HUMIDITY
Blank = No STH	Blank = None	Blank = None	Blank = 120/277 VAC	Blank = Standard
SH = w/STH	D = Occupancy Controlled Dimming	P = Up Looking Photocel	347 = 347 VAC	LT = Low Temp
		PD = Down Looking Photocell		

COVERAGE PATTERN

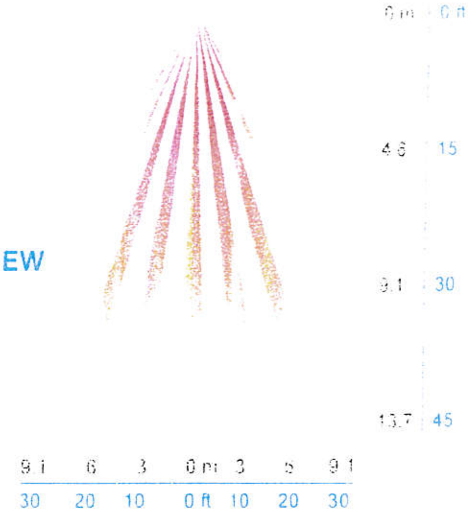
HIGH BAY 360° LENS

- Best choice for 15 to 45 ft (4.57 to 13.72 m) mounting heights
- 15 to 20 ft (4.57 to 6.10 m) radial coverage overlaps area lit by a typical high bay fixture
- Excellent detection of large motion (e.g. **walking**) up to a 35 ft (10.76 m) mounting height
- Excellent detection of extra large motion (e.g. **forklifts**) up to a 45 ft (13.72 m) mounting height

LOW VIEW



HIGH VIEW

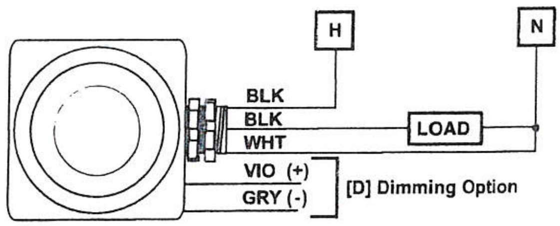


WIRING (DO NOT WIRE HOT)

STANDARD WIRING

BLACK* - Line Input
BLACK* - Load Output
WHITE - Neutral

*BLACK wires can be reversed



347 VAC OPTION (347)

Black wires are replaced w/ Red wires

INITIAL POWER UP

The sensor's relay is shipped in a latched closed position so the lights will come on upon initial power-up. If the lights do not immediately turn on (initial installation only) the latching relay opened during shipment and will close within 30 secs.

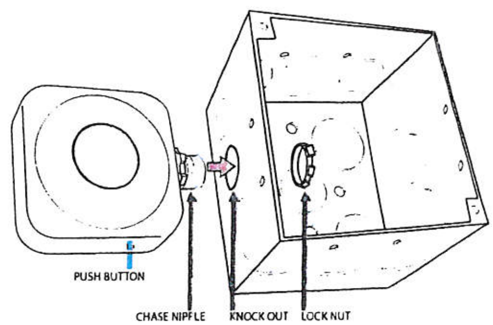
Note: If the sensor loses power, the internal relay will latch to on.

DIMMING OPTION (D)

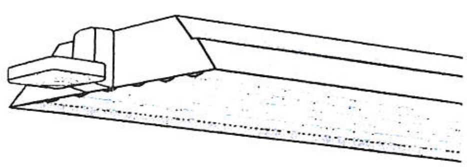
VIOLET - Connect to Violet control wire from 0-10 VDC dimmable ballast
GRAY - Connect to Gray common wire from ballast

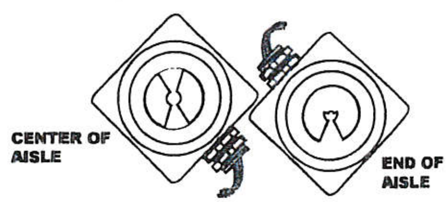
INSTALLATION

- Sensor mounts through a 1/2" knockout hole to a fixture or junction box.
- A label kit is included to mask off half of the sensor's coverage pattern for end of aisle, or trim the side viewing to create a rectangular pattern for center of aisle.
- If the sensor's field-of-view is partially blocked by the fixture housing, the FB3 Fixture Bracket (not included) can be used to lower the sensor down to a level where its view is not impaired.



FB3





PROGRAMMING

Refer to instruction card IC7.001 for default settings and directions on programming the sensor via the push-button.

sensorswitch

An Acuity Brands Company

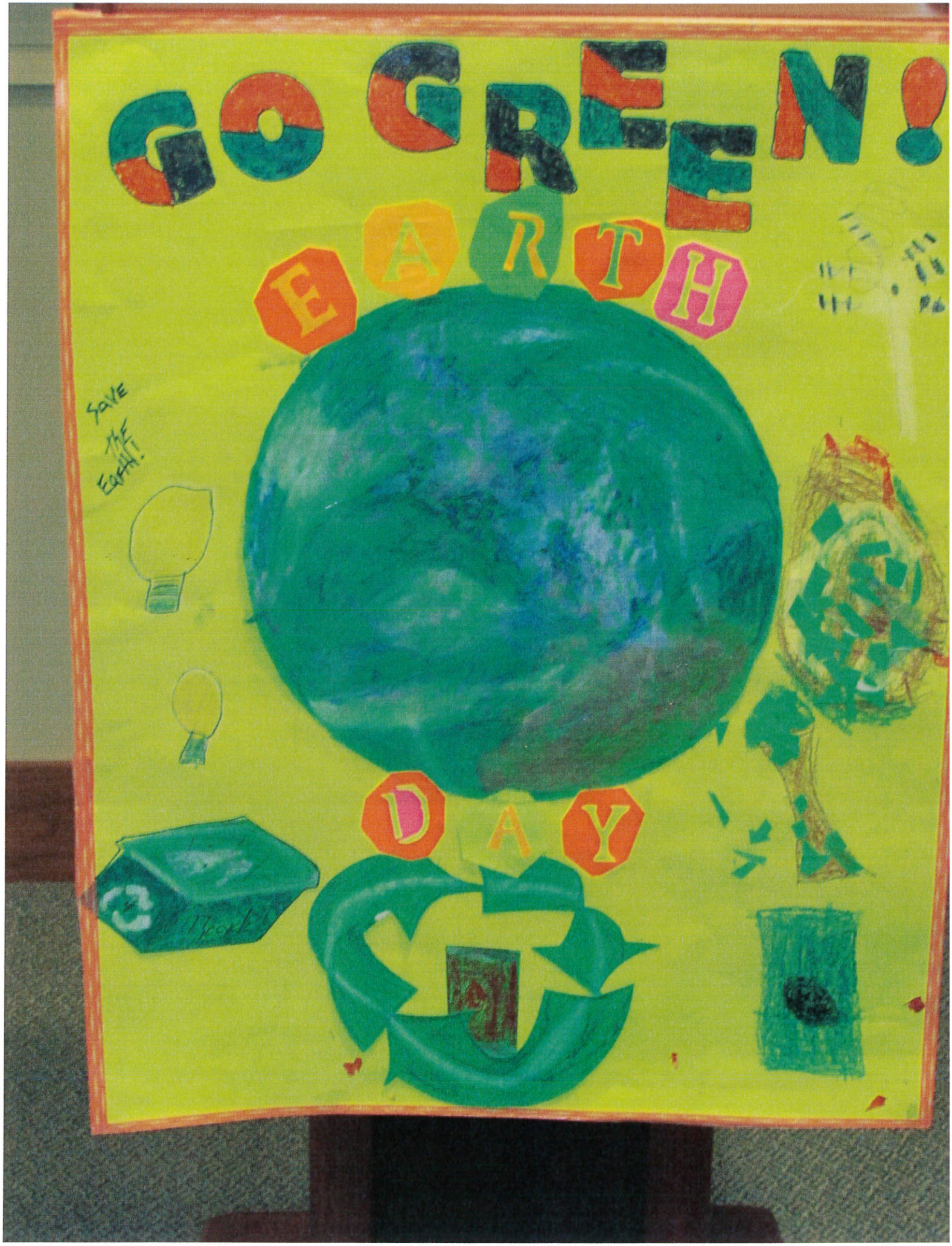
SCHEDULE H

JESSE SMITH LIBRAY PARTNERSHIP


EMERGENCY
EXIT ONLY
STAIR 2
AMERICAN
EAGLE


EMERGENCY
EXIT ONLY
STAIR 2
FIRE
AMERICAN
EAGLE


EMERGENCY
EXIT ONLY
STAIR 2
AMERICAN
EAGLE
First Place
Olivia Lace
Second Place
Cody Cook
Third Place


GO GREEN!
EARTH
DAY
SAVE THE EARTH!

Second Place

Third Place

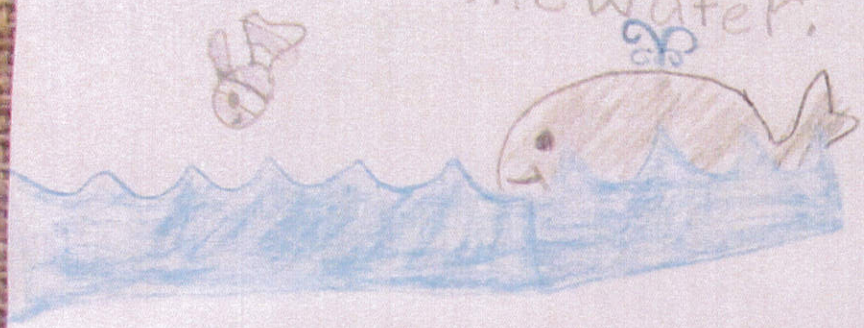
Calendar Selections


Plastic
Go Green!
So Easy
Reduce
Recycle
Reuse
3R's


Go Green!
Reduce
Reuse
Recycle
Keep the Earth Clean!
Bottle
used Paper
Environment!


Go Green
It's easy to be green
Reuse → Recycle
Reduce →
turn off lights
turn water off when in use
Drive less walk more
Don't litter

Never pollute the water.



Turn off the lights when leaving a room.

Always recycle.

Plant a tree.


Recycle!
You can Recycle!
Help the world!


get light from the sun.
Room Made
thermostat
numbers
I've a skill book!
CRock
Pot


Do whats
Right
Recycle!!!
Always Recycle
Please

Family Fair


PASCOAG
UTILITY DISTRICT
DAKOTA
RAFFLES
RAFFLES
RAFFLES


PASCOAG PUBLIC LIBRARY
Jesus Said
Love one another
in the same way
I loved you
John 13:34
DISNEY DESTINATIONS

8th Annual Green Festival


FENCING
RECREATION
AND
OF PUBLIC WORKS


PASCOAG


Pascoag Utility District
Customer Raffle!
TICKET
PASCOAG
UTILITY DISTRICT
Register


Are you
RECYCLING
these items?
All plastic containers
5 gallons or less!
These items are
NOT
recyclable
in your YELLOW lid cart!
HAZARDS
OTHER PLASTICS
TEXTILES
CONTAMINATED
HYBRIDS
HOT & COLD
Trash Pizza
35R 000007

Celebrate Burrillville


PRODUCE
PUBLIC WORKS


Rustic Goat Soaps
Whole Body Soaps
asoag Electric
Utility District Company


PASCOAG

Schedule I

PASCOAG
UTILITY DISTRICT

253 Pascoag Main Street
P.O. Box 107
Pascoag, R.I. 02859
Phone: (401) 568-6222
Fax: (401) 568-0066

Pascoag Utility District Residential Incentives 2014

Product:	Rebate:
ENERGY STAR refrigerator/freezers/ clothes washer:	10% of the cost, $75 maximum
ENERGY STAR dishwasher / air purifier:	10% of the cost, $50 maximum
ENERGY STAR air conditioner:	10% of the cost, $25 maximum
ENERGY STAR dehumidifier:	10% of the cost, $20 maximum
ENERGY STAR compliant window, up to 10 windows:	$15 per window, 10 windows max.
ENERGY STAR compliant door, up to 1 door:	$40 per door, 2 door maximum
ENERGY STAR heating system replacement:	10% of the cost, $250 maximum
ENERGY STAR lighting fixtures/ ceiling & ventilation fans:	50% of the cost, $50 maximum
ENERGY STAR electronics and office equipment:	15% of total cost, $50 maximum
ENERGY STAR central air conditioners:	10% of total cost, $200-300 maximum
Free Home Energy Audits with incentives:	10% of cost, up to $100
New Construction Rebates:	$520 maximum
ENERGY STAR Light bulbs CFLs or LEDs:	50% of the cost, $50 maximum
ENERGY STAR Geothermal System	5% of the cost, $300 maximum
Electric Heat Conversion:	Please call the District for more details.
Energy Star Qualified Electric Hot Water Heaters:	10% of the cost, $150 maximum
Smart Power Strips:	25% of cost, $25 maximum
Refrigerator and Freezer buy back:	$50 & removal fee up to $18
"NEW" Energy Star Qualified Pool Pumps	10% of the cost, $150 maximum

Pascoag Utility District has purchased several Kill A Watt® measuring devises which can be loaned out by the residence of Burrillville. They are available at the Jesse M. Smith Memorial Library in Harrisville, the Pascoag Ladies Library in Pascoag, and at the Pascoag Utility District's office. The Kill A Watt® meters allow you to find out what your appliances are costing you, and if they are worth keeping plugged in. It also allows you to calculate your electrical expenses by the day, week, month, or even an entire year.

***All rebates are subject to funds availability ***
Please see the rebate forms for criteria

All rebates will be applied to your active electric account. You can down load the applications from our website @ www.pud-ri.org or you can come into the office to pick them up. Please bring in proof that the products are ENERGY STAR compliant and the sales receipts.

Pascoag Utility District Commercial Incentives 2014

Product:	Rebate:
ENERGY STAR office equipment:	25%, up to a maximum $50
ENERGY STAR Standard Appliances:	
ENERGY STAR refrigerator/freezers/ clothes washer:	10% of the cost, $75 maximum
ENERGY STAR dishwasher / air purifier:	10% of the cost, $50 maximum
ENERGY STAR air conditioner:	10% of the cost, $25 maximum
ENERGY STAR dehumidifier:	10% of the cost, $20 maximum
ENERGY STAR compliant window, up to 10 windows:	$15 per window, 10 windows max.
ENERGY STAR Commercial Appliances: (Commercial Dishwashers, Commercial Fryers, Commercial Ice machines, Commercial Hot Food Holders, Commercial Griddles, Commercial Ovens, Commercial Steam Cookers, Commercial Clothes Washers, Vending Machines).	10% of cost, up to a max rebate $350.

Lighting and Lighting control rebates are available on commercial and industrial accounts – please call the District office for approval and to check on the availability of funds before starting a lighting project. The rebates are 60% on a retrofit lighting project and 40% on a new lighting project.

The District also offers Incentives on the following:

- HVAC Systems
- High Efficiency Motors
- Compressed Air
- Variable Speed Drives

***All rebates are subject to funds availability. Please contact the District office before starting a project. All rebates will be applied to your active electric account.

Schedule J

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

PASCOAG UTILITY DISTRICT

Harrisville Fire District

Financial Summary

Total Project Cost	$	9,730
Estimated Pacoag Utility District Incentive	$	(4,438)
Customer Net Cost	$	5,292
Estimated Energy Cost Savings Annually	$	3,450
Estimated Maintenance Savings	$	720
Return on Investment (ROI)		79%
Simple Payback in Years		1.3

Energy Savings

kW Reduction	kWh Reduction
3.33	18,157

Pollution Savings

CO2 Reduction (lbs)	NOx Reduction (lbs)	SO2 Reduction (lbs)
17,431	4.5	0.6

Prepared: 8/12/2014

RISE ENGINEERING

ECM: Lighting & Sensors

Facility Name: Harrisville Fire
Facility Address: 201 Callahan School St.
City, State, Zip: Harrisville, RI 02830
Contact: Nathan St. Pierre

LOCATION				EXISTING CONDITIONS						PROPOSED CONDITIONS								SENSOR DETAIL		ENERGY SAVINGS	
Line Item	Building	Room Name	Fixture Type	Existing Device Code	ExistingFixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Device Code	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	Load	kW	kWh	Sensor Model #	Sensor Qty	kW Saved	kWh Saved
1		APARATUS ROOM	A1	2F96SEM	2F96T12 8' IND.	8	3,900	123	0.98	3,838	4F28EEL	KIT 4F28T8 8' IND	8	3,900	83	664	0.66	2,590			0.32	1,248
2		APARATUS ROOM	B1	2F32SSE	2F32T8 4' IND	4	3,900	60	0.24	936	2F28EEL	RL/RB 2F28T8 4' IND	4	3,900	42	168	0.17	655			0.07	281
3		LOCKER ROOM	C1	3F32SSE	3F32T8 2x4 REC PRISM	5	8,760	88	0.44	3,854	2F28EEL	RL/RB 2F28T8 2x4	5	5,684	42	210	0.21	1,196	DT205	4	0.23	2,659
4		LOCKER ROOM	C1	3F32SSE	3F32T8 2x4 REC PRISM	5	8,760	88	0.44	3,854	2F28EEL	RL/RB 2F28T8 2x4	5	5,684	42	210	0.21	1,196			0.23	2,659
5		BATHROOM	C1	3F32SSE	3F32T8 2x4 REC PRISM	1	3,120	88	0.09	275	2F28EEL	RL/RB 2F28T8 2x4	1	3,120	42	42	0.04	131			0.05	144
6		BATHROOM	I1	1I0060	60W INC S/I	1	3,120	60	0.06	187	1L011	11W A19 LED SCREW IN	1	3,120	11	11	0.01	34			0.05	153
7		FRONT LOBBY	C1	3F32SSE	3F32T8 2x4 REC PRISM	4	3,120	88	0.35	1,098	2F28EEL	RL/RB 2F28T8 2x4	4	3,120	42	168	0.17	524			0.18	574
8		FRONT LOBBY	E1	1I0040	2/20W INC EXIT SIGN	1	8,760	40	0.04	350	1E0015	1.5W LED EXIT SIGN	1	8,760	1.5	2	0.00	13			0.04	337
9		CHIEF'S OFFICE	C1	3F32SSE	3F32T8 2x4 REC PRISM	6	2,000	88	0.53	1,056	2F28EEL	RL/RB 2F28T8 2x4	6	1,300	42	252	0.25	328	CX105	1	0.28	728
10		DEPUTY CHIEFS OFFICE	C2	3F32SSE	3F32T8 2X4 REC 18 CELL	4	3,900	88	0.35	1,373	2F28EEL	RL/RB 2F28T8 2x4 18 CELL	4	2,535	42	168	0.17	426	WS250	1	0.18	947
11		COMMUNICATION ROOM	C2	3F32SSE	3F32T8 2X4 REC 18 CELL	2	3,900	88	0.18	686	2F28EEL	RL/RB 2F28T8 2x4 18 CELL	2	2,535	42	84	0.08	213	WS250	1	0.09	473
12		HALLWAY	C1	3F32SSE	3F32T8 2x4 REC PRISM	4	3,900	88	0.35	1,373	2F28EEL	RL/RB 2F28T8 2x4	4	2,535	42	168	0.17	426	WS250	1	0.18	947
13		KITCHEN	C1	3F32SSE	3F32T8 2x4 REC PRISM	1	3,120	88	0.09	275	2F28EEL	RL/RB 2F28T8 2x4	1	3,120	42	42	0.04	131			0.05	144
14		TV ROOM	A2	4F32SSE	4F32T8 8' WRAP	6	5,824	112	0.67	3,914	2F28EEL	RL/RB 4F28T8 8' WRAP	6	5,824	42	252	0.25	1,468			0.42	2,446
15		TV ROOM	B1	2F32SSE	2F32T8 4' IND	2	5,824	60	0.12	699	2F28EEL	RL/RB 2F28T8 4' IND	2	5,824	42	84	0.08	489			0.04	210
16		TV ROOM	E1	1I0040	2/20W INC EXIT SIGN	1	8,760	40	0.04	350	1E0015	1.5W LED EXIT SIGN	1	8,760	1.5	2	0.00	13			0.04	337
17		MEN'S ROOM	I2	1C0022S	22W CFL REC HIGH HAT	4	3,900	24	0.10	374	1L012	NF 11W LED REC HIGH HAT	4	3,900	12	48	0.05	187			0.05	187
18		WOMEN'S ROOM	I2	1C0022S	22W CFL REC HIGH HAT	2	3,900	24	0.05	187	1L012	NF 11W LED REC HIGH HAT	2	3,900	12	24	0.02	94			0.02	94
19		OLD RADIO ROOM	B1	2F32SSE	2F32T8 4' IND	1	8,760	60	0.06	526	2F28EEL	RL/RB 2F28T8 4' IND	1	8,760	42	42	0.04	368			0.02	158
20		OLD EQUIPMENT ROOM	B1	2F32SSE	2F32T8 4' IND	1	2,000	60	0.06	120	2F28EEL	RL/RB 2F28T8 4' IND	1	1,300	42	42	0.04	55	WS250	1	0.02	65
21		STORAGE ROOM	B1	2F32SSE	2F32T8 4' IND	1	2,000	60	0.06	120	2F28EEL	RL/RB 2F28T8 4' IND	1	1,300	42	42	0.04	55	WS250	1	0.02	65
22		AIR TANK ROOM	B1	2F32SSE	2F32T8 4' IND	1	2,000	60	0.06	120	2F28EEL	RL/RB 2F28T8 4' IND	1	1,300	42	42	0.04	55	WS250	1	0.02	65
23		MAIN ENTRY	H1	1H0070S	70W HPD FLOOD	2	4,368	90	0.18	786	1L010	10W LED WALL PACK	2	4,368	10	20	0.02	87			0.16	699
24		FORESTRY 2	H1	1H0070S	70W HPD FLOOD	1	4,368	90	0.09	393	1L010	10W LED WALL PACK	1	4,368	10	10	0.01	44			0.08	349
25		FRONT FLOODS	H2	1I0090	90W INC FLOOD	2	4,368	90	0.18	786	1L018	18W LED PAR 38 SCREW IN	2	4,368	18	36	0.04	157			0.14	629
26		FLAG	H3	1T0300	300W HALOGEN FLOOD	1	4,368	300	0.30	1,310	1L045	45W LED FLOOD	1	4,368	45	45	0.05	197			0.26	1,114
27		SIGN	H4	1I0120	120W INC FLOOD	1	4,368	120	0.12	524	1L018	18W LED PAR 38 SCREW IN	1	4,368	18	18	0.02	79			0.10	446
		TOTALS				72			6.23	29,366			72			2,895	2.90	11,208		11	3.33	18,157

Prepared 8/12/2014

RISE ENGINEERING
Division of Thielsch Engineering, Inc
1341 Elmwood Avenue
Cranston, Rhode Island 02910

PASCOAG UTILITY DISTRICT

Lockheed Window Corp.

Financial Summary

Total Project Cost	$	49,925
Estimated Pascoag Utility Incentive	$	(19,970)
Customer Net Cost	$	29,955
Estimated Energy Cost Savings Annually	$	7,386
Estimated Maintenance Savings	$	2,000
Return on Investment (ROI)		31%
Simple Payback in Years		3.2

Energy Savings

kW Reduction	kWh Reduction
22.64	50,940

Pollution Savings

CO2 Reduction (lbs)	NOx Reduction (lbs)	SO2 Reduction (lbs)
48,902	12.7	1.6

Prepared: 8/5/2014

RISE ENGINEERING

ECM: Lighting & Sensors

Facility Name	Lockheed Window Corp.
Facility Address	Rt. 100
City, State, Zip	Pascoag RI 02859
Contact	Shawn St. Laurent

LOCATION					EXISTING CONDITIONS						PROPOSED CONDITIONS						ENERGY SAVINGS	
Line Item	Building	Floor	Room Name	Fixture Type	Existing Device Code	Existing Fixture Type	Fixt. Qty	Existing Hours	Watts	kW	kWh	Proposed Device Code	Proposed Fixture Type	Fixt Qty	Proposed Hours	Watts	kW	kWh	kW Saved	kWh Saved
1	Main	1st	Production Area	H1	1M0400S	400W METAL HALIDE LOW BAY	80	2,250	455	36.40	81,900	1L172	NF 172W LED HI-BAY	80	2,250	172	13.76	30,960	22.64	50,940
			TOTALS				80			36.40	81,900			80			13.76	30960	22.64	50,940

Prepared: 6/5/2014

Led Street Light Grant Proposal

PASCOAG
UTILITY DISTRICT

Pascoag Electric • Pascoag Water

253 Pascoag Main Street
P.O. Box 107
Pascoag, RI 02859
Phone: 401-568-6222
Fax: 401-568-0066
www.pud-ri.org

October 7, 2014

Marion S Gold, Commissioner
Rhode Island Department of Administration
Office of Energy Resources
One Capitol Hill
Providence, RI 02908

Dear Commissioner Gold;

On behalf of Pascoag Utility District ("PUD"), I would like to submit the Districts' detailed proposal on how we intend to utilize the $62,500 from the Regional Greenhouse Gas Initiative (RGGI) grant. The District will use the fund to purchase and install cost-effective energy efficiency LED Street Lights.

- **Overview of Proposal:**

The District will use the allocated RGGI funds, in conjunction with a portion of PUD's Demand Side Management LED Street Light Incentive, and a contribution from its capital reserve funds to pay for this project. Based on the estimates the District has received for the LED street lights, street light arms, miscellaneous materials, and use of the Districts' internal labor and transportation to implement the project, the total estimated cost is $86,571.00.

The Goal of the project is to replace approximately 250 high pressure sodium (HPS) public street lights with the new LED street lighting technology. This change will allow the District to provide the public with energy efficient street light fixtures that maximize energy savings and greatly reduce its maintenance and operational cost. Consumption for street lights is not metered but is billed at a flat rate. PUD's Tariff for the LED 25 & 50 watt LED Street lights are on file with RIPUC and are much lower than the flat rates for the existing high-pressure sodium fixtures. This will result in a substantial reduction in cost to the public. The project will also improve the public safety though enhanced lighting quality.

- **Detailed Project Work:**

To maximize the kWh energy saving, the District will replace the higher wattage HPS fixtures with new LED street lights as follows:

  - 4- 400 watt HPS flood light with 4- 220 watt LED flood lights

- 7- 250 watt HPS flood lights with 7- 120 watt LED flood lights
- 26- 150 watt HPS street lights with 26- 49 watt LED street lights
- 6- 100 watt HPS street lights with 6-49 watt LED street lights
- 195- 70 watt HPS street lights with 195- 24 watt LED street lights
- 12- 50 watt HPS street lights with 12- 24 watt LED street lights

In the village of Pascoag, the District will install a total of 223 LED fixtures consisting of 194 -24 watt LED SL , 26- 50 watt LED SL, 3- 120 watt LED flood lights. In the village of Harrisville, the District will install a total of 27 LED fixtures consisting of 4- 220 watt LED food lights, 4- 120 watt LED floods, 6- 49 watt LED SL , and 13- 24 LED SL.

The fixtures that we have selected are from American Electric Lighting (AEL) and are listed below:

- Autobahn Series AMEL ATBS-B-MVOLT-R3-PCL1 LED ROADWAY 2400 LUMEN TYPE III 120-277V with photo cell, 24 WATTS.
- Autobahn Series AMEL ATBS-F-MVOLT-R3-PCL1 LED ROADWAY 4500 LUMENS TYPE III 120-277V with photo cell, 49 WATTS.
- American Compact LED Floodlights
  Series ACP1LED 310A MVOLT 65 4k YK GY 0663 PCL1
  11,639 Lumens, 120 watts
- American Compact LED Floodlights
  Series ACP1LED 610A MVOLT 65 4k YK GY 0663 PCL1
  22,620 Lumens, 240 watts

The District will utilize its internal labor and transportation to install the 11 LED flood lights and 239 LED street lights. This will allow us to oversee and complete the project in a timely manner. The estimated completion date for the project is one year. Upon the approval of the project the District will place the order for the streetlights. The estimated lead time for the street lights is 30-45 days. The District will begin installation in December of 2014 and anticipates a completion date of the project no later than December 31, 2015.

- **Project Budget**

  - The itemized project budget is estimated at $52,145 for materials, $24,245 for labor and $10,000 for transportation charge for a total of $86, 571.00 and is broken out as follows:

LED STREET LIGHT/FLOOD TYPE	QTY	PRICE EACH	TOTAL
ATBS B MVOLT R3 PCL1 24 WATT LED SL	205	$ 143.50	$ 29,417.50
GET 2 FREE	2	$ 0.00	$ 0.00
ATBS F MVOLT R3 PCL1 49 WATT LED SL	30	$ 168.00	$ 5,040.00
GET 2 FREE	2	$ 0.00	$ 0.00
ACP1LED 310A MVOLT 65 4K GY 0663 PCL1	5	$ 693.50	$ 3,467.50

GET 2 FREE		2	$ 0.00	$ 0.00
ACP1LED 610A MOLT 65 4K GY 0663 PCL1		2	$ 850.50	$ 1,701.00
GET 2 FREE		2	$ 0.00	$ 0.00
LED SL/ Flood Lt Total	**250**			**$ 39,626.00**

Bracket and Street Light Arm	**QTY**	**PRICE EACH**	**TOTAL**
CURLEY FL200309G-HDWR FLD LT	11	$ 51.00	$ 561.00
Curley W1257228 ST LT Arm	239	$ 40.10	$ 9,583.90
Brackets and Arms Total	**250**		**$10,144.90**

Miscellaneous Materials	QTY	Price Each	Total
Misc. Materials	250	$ 9.50	$ 2,375.00
Misc. Materials Total	**250**		**$ 2,375.00**

Labor/Transportation	**QTY**	**PRICE**	**TOTAL**
Transportation charge per Street Light	250	$ 40.00	$10,000.00
Labor/ Transportation per street light	250	$ 97.70	$24,425.00
Labor/Transportation Total			**$34,425.00**

- To finance this project the District will use the $62,500.00 of the RGGI grant money, along with a rebate incentive of $17,068 from the Demand Side Management LED Street Light Incentive Program and $7,003 from the District's capital reserve funds.

- **Projected Project Benefits**

  - The project is estimated to have the following savings:
    - 5.4 year payback
    - Annual kWh savings of 81,245
    - Annual Energy Cost Savings of $7,448
    - Annual Maintenance/ Material savings of $8,586
    - Annual GHG Savings of (tCO_2e) is 45 tonnes/Yr
    - Monthly reduction in rates of $628.33
    - Yearly Reduction in rates of $7,540

  - The projected benefits to the utility and the community are numerous. The installation of the new LED street lights/ flood lights will greatly improve the lighting through a greater CCT of 4,000 Kelvin which produces a bright white to bluish-white light, and a CRI of 70 allowing for better color rendering which

allows the colors to seem more natural and are more comfortable to the human eye. This will help improve the security needs of the public, police and fire departments. The improved lighting will also help with traffic safetly to signal the location of intersections of major public roads, higher-traffic streets, and dangerous and blind curves on our back roads.

- The second advantage to the new Autobahn Series ATBS LED Luminaries from AEL is the IP66 rated borosilicate glass optics which improves visibility, endures longevity of greater than 100,000 hours, and minimizes dirt depreciation. The unique IP66 rated light engine provides 0% uplight and restricts backlight to within sidewalk depth. The expected energy savings is 40-60% over comparable HID luminaries. The ACP1LED series compact LED Flood lights have a multi die LED chip with a class I driver rated for 100,000 hour life.
- The third improvement is the start up speed of the street light which will be reduced from 10 minutes for the HPS to 2 seconds with the LEDs.
- The District will realize a energy savings of 70% by replacing a large portion of the 70 watt HPS with 24 watt LED Streetlights mainly due to the fact that we can use lower wattage LED streetlights without compromising safety.
- The Pascoag Utility District (PUD) was incorporated by a special act of the Rhode Island General Assembly. A quasi-municipal utility, Pascoag provides Electricity on a "not for profit" basis. Pascoag Electric is regulated by the Rhode Island Public Utilities Commission. Currently we provide Electric service to approximately 5,000 customers in Pascoag and Harrisville RI. PUD is committed to energy efficiency and conservation measures that help reduce our energy consumption and carbon foot print while reducing the cost to our customers. The District looks forward to working with the RGGI staff in securing the allocation of $62,500 from the RGGI funds for energy efficiency, renewable energy, or similar cost-effective clean energy investments. This is a wonderful opportunity for the District to greatly increase the saturation of the LED street light program in our community.

- **Community Outreach**

  - Pascoag Utility District will reach out to its customers with bill messages, bill inserts, and Facebook posts to make the community aware of the RGGI grant and to receive comments from the District's customers as the project progresses.

- **Funding**
    - The District is a not-for-profit Utility and does not have cash reserve sufficient to fund such a large project. The District respectfully requests that the Office of Energy Resources consider awarding the grant money to the District as follows:
        - The exact amount of the purchase upon submission of the invoices for the LED street lights, street light arms, brackets, and miscellaneous material related to the project.
        - The balance of the funds upon completion of the project.

Included with this filing are spreadsheets and street light/flood spec sheets to support the proposal.

If you have any questions please do not hesitate to contact me.

Very truly yours,

Harle J. Round

Harle J. Round
DSM Coordinator/ Customer Service Supervisor

Attachments:
Autobahn Series ATBS Spec Sheet
American Compact LED Floodlight Spec Sheets
DLL Elite LED Photo controls
LED Street Light Grant Money Spreadsheet
Maintenance and Materials Spreadsheet
LED Street Light Bill Impact
Retrofit-financial-analysis-tool_v1.1.01 grant money

LED STREET LIGHT GRANT MONEY

Grant Money		
Pascoag Utility District Capital Funds Balance for 2014	$ 62,500.00	
2014 DSM Rebate Funds for LED Street Lights	$ 7,003.00	
	$ 17,068.00	
	$ 86,571.00	$ 86,571.00

Phase 1 ordered of the following with one time promotion of buy 2 get 2 free.

	QTY	Price Each	Total	
ATBS B MVOLT R PCL1 (Equivalent to 50 Watt HPS) with photo eye	205	$ 143.50	$ 29,417.50	
ATBS B MVOLT R PCL1 Buy 2 get Free)	2	$ -	$ -	
ATBS F MVOLT R PCL1 (Equivalent 70 - 100 Watt HPS) with photo eye	30	$ 168.00	$ 5,040.00	
ATBS F MVOLT R PCL1 (Buy 2 get 2 Free)	2	$ -	$ -	
ACP1LED 310A MVOLT 65 4K YK GY 0663 PCL1(Equivalent to a 250 Watt HPS Flood) with Photo eye	5	$ 693.50	$ 3,467.50	
ACP1LED 310A MVOLT 65 4K YK GY 0663 PCL1(Buy 2 Get 2 Free)	2	$ -	$ -	
ACP1LED 610A MVOLT 65 4K YK GY 0663 PCLI (Equivalent to a 400 Watt HPS Flood) with Photo eye	2	$ 850.50	$ 1,701.00	
ACP1LED 610A MVOLT 65 4K YK GY 0663 PCLI (Buy 2 get 2 free)	2	$ -	$ -	
	250		$ 39,626.00	
Curlee FL200309G-HDWR 30 Bracket (Bracket for Flood lights)	11	$ 51.00	$ 561.00	
Curley W1257228 1-1/4x6 Alum Arm (Street Light Arms for LED's)	239	$ 40.10	$ 9,583.90	
Miscellaneous material	250	$ 9.50	$ 2,375.00	
Labor and Transportation to install	250	$ 137.70	$ 34,425.00	
			$ 86,570.90	$ 86,570.90

Maintenance Material Saving

Type of Street Light	Cost
50 & 70 Watt HPS Fixture 10 year life $80 x2	$ 160.00
50 & 70 Watt HPS Bulbs $8.50 x 4 in 20 years	$ 34.00
Misc Materials $9.50 x2	$ 19.00
Photo Eyes $7.50 X 2 in 20 years	$15
Brackets	40.1
	$ 268.10

250 & 400 Watt Mercury Flood 4- 5 year life $242 x 4	$ 968.00
250 & 400 Watt Mercury bulb $9.50 x 4 in 20 yrs	$ 38.00
Photo eyes $7.50 x2 in 20 Yrs	$ 15.00
Misc Materials $9.50 x 4	$ 38.00
Brackets	$ 51.00
	$ 1,110.00

Led Street Lights	Cost
24 watt LED	$ 143.50
misc materials	$ 9.50
included with fixture	$ -
Bracket	$ 40.10
	$ 193.10

120 Watt LED Flood	$693.50
20 + year life (No Lamps)	$ -
Photo Eye included with fixture	$ -
Misc Materials	$ 9.50
Bracket	$ 51.00
	$754.00

49 Watt LED	$ 168.00
misc materials	$ 9.50
included with fixture	$ -
Bracket	$ 40.10
	$ 217.60

240 Watt LED Flood	$ 850.50
20 + year life (no Lamp	0
Photo Eye included witl	0
Misc materials	9.5
Bracket	51
	$ 911.00

Material Savings realized over 20 years is :	Savings	Number of fixtures	Total Savings
50 & 70 HPS vs. 24 W LED per fixture savings	$ 75.00	207	$ 15,525.00
100 & 150 HPS vs. 49 W LED per fixture saving	$ 50.50	32	$ 1,616.00
250 Watt Flood vs. 120 Watt LED per Fixture	$ 356.00	7	$ 2,492.00
400 Watt Flood vs. 202 Watt LED Flood per Fixture	$ 199.00	4	$ 796.00
Material Savings		**250**	**$ 20,429.00**

Lamp Replacement Labor is $137.70 (1 hour 2 Men at $48.85 hour/ & $40 Truck Charge)
HPS Fixtures will be revisited 5 times in a 20 year period on average

Labor and Transportation 20 Years		Times the of Number of fixtures	Total Maintenance Savings over 20 years
HPS Street Light Fixtures replace bulbs 4 times and replace fixture after 10 years	$ 688.50		
LED Street light washing Maintenance @ YR 7 & 14	83.35		
Maintenance Savings per fixture x number of fixtures over a 20 Years period	**$ 605.15**	**250**	**$ 151,287.50**

Maintenance savings Over 20 Years

Material Saving over 20 years	$ 151,287.50
	$ 20,429.00
	$ 171,716.50

Avoided maintenance cost per year

$ 8,585.83 Maintenance/ Material savings per year

LED Street Light Bill Impact

Street Light Pricing Reconciled after COS					Proposed Changes						
Size	Quantity	Street Light Rate	Total		Size	Quantity	Street Light Rate	Total			
400 Watt Sodium	4	$ 15.74	$ 62.96		240 Watt LED Flood	4	$ 13.67	$ 54.68	*		
250Watt Sodium	7	$ 10.96	$ 76.72		120 Watt LED Flood	7	$ 8.90	$ 62.30	*		
150 Watt Sodium	26	$ 8.13	$ 211.38		49 Watt LED	26	$ 3.71	$ 96.46			
100 Watt Sodium	6	$ 6.37	$ 38.22		49 Watt LED	6	$ 3.71	$ 22.26			
70 Watt Sodium	195	$ 5.20	$ 1,014.00		24 WATT LED	195	$ 2.87	$ 559.65			
50 Watt Sodium	12	$ 4.58	$ 54.96		24 WATT LED	12	$ 2.87	$ 34.44			
	250		$ 1,458.24			250		$ 829.79		$ 628.45	Per month
										$ 7,541.40	Per Year

* A tariff needs to be established with the RIPUC ; needs final pricing of fixtures

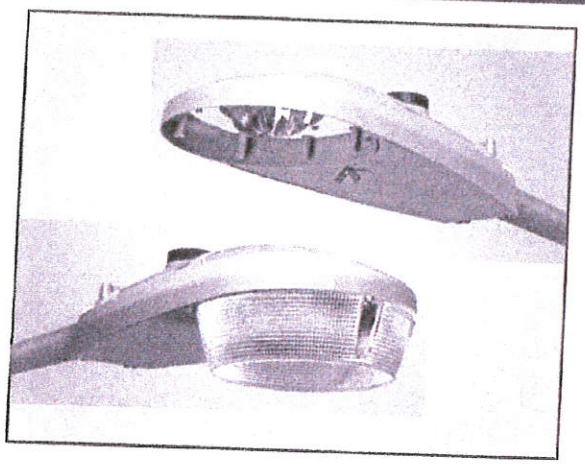
NIGHTTIME FRIENDLY

Consistent with LEED® goals & Green Globes™ criteria for light pollution reduction

Autobahn Series ATBS

Roadway & Security Lighting

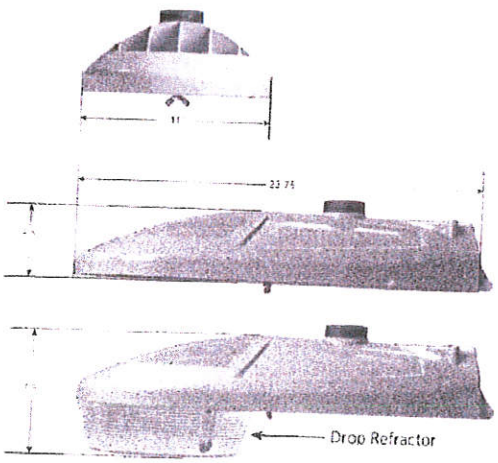
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
General security lighting

DIMENSIONS



Effective Projected Area (EPA) The EPA for the ATBS is 0.6 sq. ft.,
Approx. Wt. = 12 lbs. (5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 50W – 150W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, and V roadway distributions. When used with the optional acrylic refractor the unit provides approximately 10% uplight and increased vertical foot-candles

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt clamping mechanism provides 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life)

Multi-level dimming available to provide scheduled dimming as specified by the customer

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

WARRANTY & STANDARDS

5 year limited warranty. Full warranty terms located at http://www.acuitybrands.com/Libraries/Terms_and_Conds/ABL_LED_Commerical_Outdoor.sflb.ashx
Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14, C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

AEL American Electric Lighting

Autobahn Series ATBS
Roadway & Security Lighting

ORDERING INFORMATION

Example: ATBS A MVOLT R2

Series

ATBS Autobahn LED Roadway & Security

Performance Packages

A 1,800 lumens
B 2,400 lumens
E 4,000 lumens
F 4,600 lumens
G 5,600 lumens
H 6,300 lumens

Voltage

MVOLT Multi-volt, 120-277V

Optics

R2 Roadway Type II
R3 Roadway Type III
R5 Roadway Type V
D5 Type V, Drop Refractor included

Options

Color Temperature (CCT)
(Blank) 4000K CCT, 70 CRI Min. (standard)
5K 5000K CCT, 70 CRI Min.

Paint
Blank Gray (Standard)
BK Black
WH White
BZ Bronze

Surge Protection
Blank Acuity SPD-10kV/5kA with inductive filter (Standard)
MP MOV Pack
IL SPD with Indicator Light

Misc.
HSS House Side Shield
NL NEMA Label
XL Not CSA Certified

Controls
(Blank) 3 Pin NEMA Photocontrol Receptacle
NR No Photocontrol Receptacle
DM 0V-10V Dimmable Driver
P5 5 Pin Photocontrol Receptacle
P7 7 Pin Photocontrol Receptacle
PCSS DTL DSS Photocontrol
PCL1 DTL DLL Photocontrol 120-277V
ML Multi-Level Dimming
AO Field Adjustable Output
SH Shorting Cap

Accessories
ATBSREF Drop Refractor for field installation
ATBSHSS House Side Shield for field installation
ATBSLTS Light Trespass Shield for field installation

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

American Electric Lighting
Acuity Brands Lighting, Inc.
3825 Columbus Rd, S.w., Granville, OH 43023
Phone: 800-537-5710 Fax: 740-587-6114
www.americanelectriclighting.com

PERFORMANCE PACKAGE

Performance Package	Distribution	Lumens	LPW	Input Watts
A	R2	1,761	98	18
	R3	1,755	98	
	R5	1,838	102	
	D5	1,767	98	
50 watt HPS (Quote) B	R2	2,302	96	24
	R3	2,309	96	
	R5	2,411	100	
	D5	2,318	97	
E	R2	3,962	102	39
	R3	3,979	102	
	R5	4,246	109	
	D5	4,089	105	
HPS 100 Watt (Quote) F	R2	4,563	93	49 *
	R3	4,477	91	
	R5	4,795	98	
	D5	4,612	94	
G	R2	5,629	88	64
	R3	5,416	85	
	R5	5,837	91	
	D5	5,590	87	
150 watt H	R2	6,249	87	72
	R3	6,321	88	
	R5	6,739	94	
	D5	6,436	89	

Note: Information shown above is based on nominal system data. Individual fixture performance may vary. Specifications subject to change without notice.

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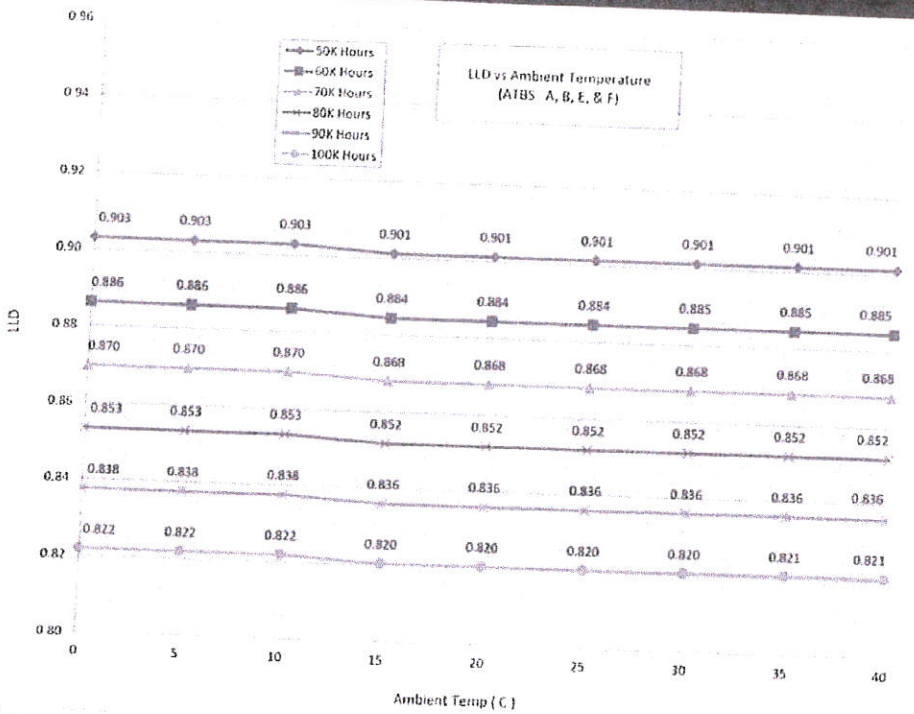
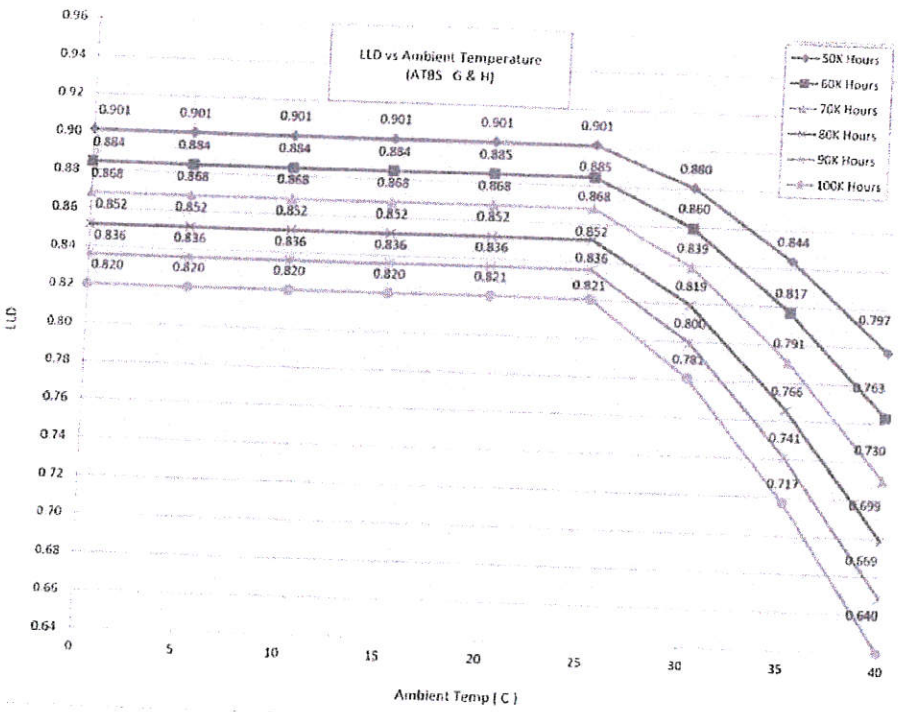
PERFORMANCE PACKAGE



* LLD vs. temperature charts are based on LM-80 chip data and in-situ thermal test testing per IES TM-21



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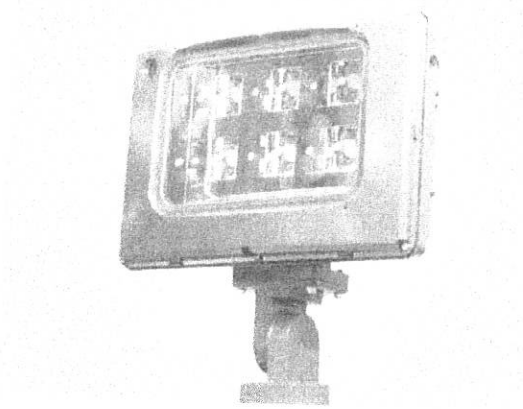
ACP1LED Series
American Compact LED Floodlight

PRODUCT OVERVIEW



Applications:

- Auto dealerships
- Schools
- Churches
- Industrial sites
- Shopping centers
- Parking lots
- Substations
- Building facades

Features:

Mechanical
Low copper content die cast aluminum A360 alloy castings. Die cast aluminum housing has integral heat sink fins to optimize thermal managment through conductive and convective cooling. Bolted or stainless steel latch option disengages top electrical cover for easy access to LED drivers, surge module, and terminal block. Vibration rated to 2G applications per ANSI C136.31-2001. IP 66 rated luminaire per IEC60068-2-3. Superdurable TGIC thermoset powder coat over standard pretreat yields a finish that achieves a scribe creepage of 9 after 2,500 hours exposure to salt fog chamber. External fasteners shall be stainless steel. Yoke shall be painted steel or galvanized. Knuckle shall be adjustable to fit 2.375 inch to 2.875 tenon.

Eletrical
Class I drivers rated for 100,000 hours life.
Quick disconnect connectors for ease of installation and maintenance.
Surge protection meets 10KV/5KA per ANSI/IEEEC62.41.
Three pin locking style photocontrol receptacle is standard and is ROAM compatible.
Driver power factor is 90% minimum.
Driver meets maximum total harmonic distortion (THD) of 20% and are ROHS compliant.

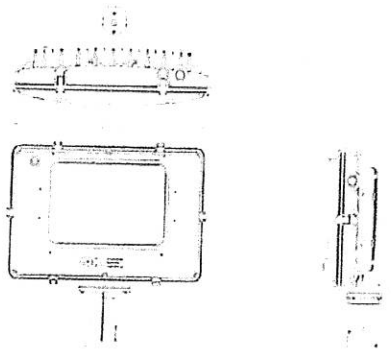
Optical
Multi die LED chip on board available with 4000K (70CRI), 5000K both are 70 CRI color temperatures.

Segmented Miro 4™ internal reflectors are designed for superior field to beam ratios, uniformity, and spacing.
NEMA pattern choice of 5x5, 6x5, 6x6
Optional shielding available to control light trespass and uplight.
Optical enclosure shall be glass lens.

Controls
NEMA photocontrol receptacle is standard
Dimming version (avialable with DE and VE option) uses Acuity Brands components to enable continuous 0-10V dimming down to 10% outputvia the ROAM smart controls system (sold seperately)
Photocontrol for solid-state lighting (available with PCSS option) meets ANSI C136.10 criteria

Warranty & Standards
Five year warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms-and-conditions.aspx
UL/CUL Listed 25C

DIMENSIONS

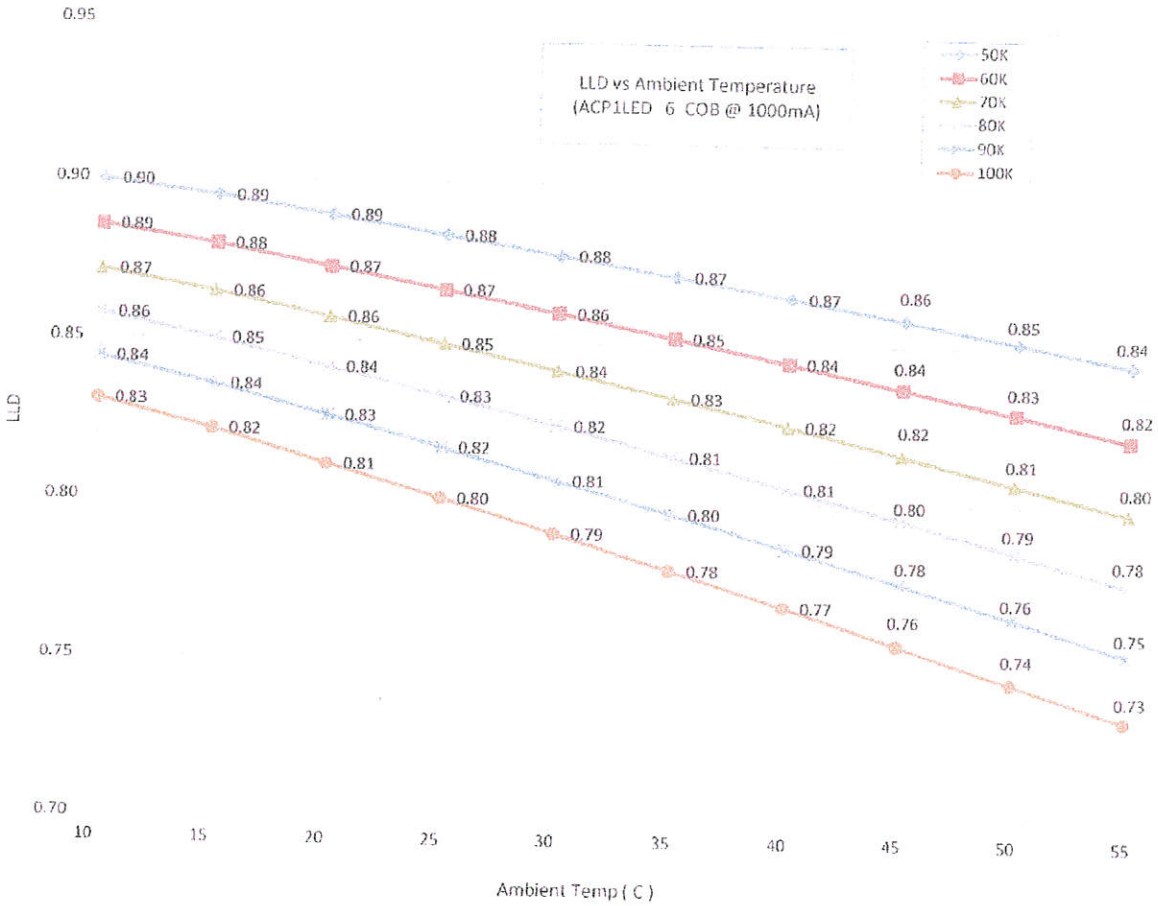


Effective Projected Area (EPA)
The EPA for the LED Flood ™ Series ACP1LED
Knuckle mounting Max EPA 2.9 sq. ft.,
Approx. 40 lbs (Mvolt), 347-480 volt add 4 lbs

Yoke mounting is Max EPA 3.1 sq. ft.,
Approx. 47 lbs (Mvolt), 347-480 volt add 4 lbs.

ACP1LED Series
American Compact LED Floodlight

DESIGN DATA



ACP1LED Series
American Compact LED Floodlight

Performance Packages

LED Count	Drive Current (mA)	Input Watts	Optic	4000K CCT		5000K CCT	
				Delivered Lumens	Efficacy (LPW)	Delivered Lumens	Efficacy (LPW)
6 COB	700	159	5x5	16,046	101	16,367	103
	1050	240		22,330	93	22,777	95
	700	159	6x6	16,060	101	16,381	103
	1050	240		22,350	93	22,797	95
	700	159	6x5	16,254	102	16,579	104
*	1050	240		22,620	94	23,072	96
5 COB	700	134	5x5	13,497	101	13,767	103
	1050	202		18,783	93	19,159	95
	700	134	6x6	13,509	101	13,779	103
	1050	202		18,800	93	19,176	95
	700	134	6x5	13,672	102	13,946	104
	1050	202		19,027	94	19,408	96
4 COB	700	109	5x5	10,848	100	11,065	102
	1050	164		15,096	92	15,398	94
	700	109	6x6	10,858	100	11,075	102
	1050	164		15,110	92	15,412	94
	700	109	6x5	10,989	101	11,209	103
	1050	164		15,293	93	15,598	95
3 COB	700	80	5x5	8,256	103	8,421	105
	1050	120		11,490	96	11,720	98
	700	80	6x6	8,264	103	8,429	105
	1050	120		11,500	96	11,730	98
	700	80	6x5	8,363	105	8,531	107
*	1050	120		11,639	97	11,872	99
2 COB	700	55	5x5	5,462	99	5,571	101
	1050	82		7,601	93	7,753	95
	700	55	6x6	5,467	99	5,576	101
	1050	82		7,608	93	7,760	95
	700	55	6x5	5,533	101	5,644	103
	1050	82		7,700	94	7,854	96

ACP1LED Series

American Compact LED Floodlight

ORDERING INFORMATION

Example: ACP1LED 310A 120 55 4K TM

Series

ACP1LED Flood

Performance Package

207A 2 Modules, 700mA driver
210A 2 Modules, 1050mA driver
307A 3 Modules, 700mA drvier
310A 3 Modules, 1050mA driver
407A 4 Modules, 700mA driver
410A 4 Modules, 1050mA driver
507A 5 Modules, 700mA driver
510A 5 Modules, 1050mA driver
607A 6 Modules, 700mA driver
610A 6 Modules, 1050mA driver

Voltage

120 120V
347 347V
480 480V
MVOLT Mulit-volt (120 277)

Nema Pattern

55 5 X 5
65 6 X 5
66 6 X 6

Color Temperature (CCT)

4K 4000K
5K 5000K

Mounting

TM Tenon Slipfitter - Knuckle
YK[1] Yoke Painted
YG[1] Yoke Galvanized

Paint[2]

BZ Bronze
BK Black
GY Gray
WH White
GI Graphite

Cord Length[16] **Cord Type**[16]

04 4'
05 5'
06 6'
08 8'
10 10'
12 12'
15 15'
20 20'
25 25'
30 30'

63 16-3
43 14-3
23 12 3

Misc

TL Tool Less Entry
NL Nema Label

Options

Controls

(blank)[3] 3-Pin Photocontrol Receptacle (standard)
P5[3] 5-Pin Photocontrol Receptacle
NR[5] No Photocontrol Receptacle
PCSS Solid State Lighting Photocontrol (120-277V)
PCL1[3] Solid State Long Life Photocontrol (120-277V)
PCL3[3] Solid State Long Life Photocontrol (347V)
PCL4[3] Solid State Long Life Photocontrol (480V)
SH[3] Shorting Cap
DE[3,4] ROAM CONCIERGE Dimming Control
VE[3,4] ROAMVIEW Dimming Control
DM[3,5] 0-10V Dimming Control (controls provided by others)

Accessories (Shipped Seperately)

ACP1LEDFV-__[7,8] Full Visor
ACP1LEDUBV-__[7,9] Upper/Bottom Visor
ACP1LEDVG[10] Vandal Guard
ACP1LEDWG[11] Wire Guard

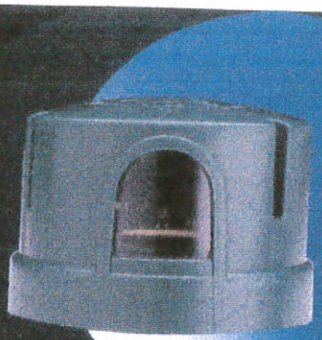
Notes:

1. Requires cord length and cord type
2. Not available with DM, NR, PCL1, PCL3, PCL4, PCSS, SH, or VE
3. Not available with DE, VE options
4. Specifies a ROAM dimming enabled fixture with a dimming control module factory installed. NEMA photocontrol receptacle required. Additional hardware and services required ROAM deployment must be purchased seperately
5. Not available with NR
6. Not available with TM mounting. Must be combined with a cord type. EX: 0463
7. Paint designator needed.
8. Not compatible with WG, VG, or UBV
9. Not compatible with WG, VG, or FV
10. Not compatible with WG, FV, or UBV
11. Not compatible with FV, UBV or VG

American Electric Lighting
An Acuity Brands Company

American Electric Lighting
Acuity Brands Lighting, Inc.
3825 Columbus Rd. S.W., Granville, OH 43023
Phone: 800-537-5710 Fax: 740-587-6114
www.americanelectriclighting.com

DTL
DARK TO LIGHT



DLL Elite™
LED Photocontrol

20 year

Protect Your Outdoor LED Investment

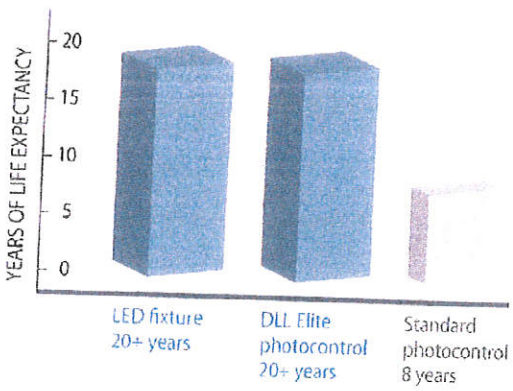
Choose a photocontrol truly intended for use with LEDs. The DLL Elite photocontrol by DTL has been designed to support the extended life and low maintenance benefits associated with LED fixtures.

The DLL Elite:

- Significantly reduces day-burning fixtures and ensures LEDs burn only during the coolest times of the day, maximizing efficiency
- Prevents repair trips due to premature or end-of-life photocontrol failure

The DLL Elite Difference:

- Life expectancy of 20+ years
- Superior inrush current protection to minimize welded relay failures that cause day-burning fixtures
- Unparalleled surge protection, offering twice the protection of competitive long-life controls



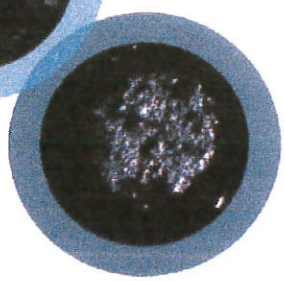
Do Not Rely On Standard Photocontrols:

- Not designed to withstand the extreme inrush current conditions of LED fixtures
- The life expectancy of a standard photocontrol is 8 years, well below the life expectancy of the LED fixture
- Fail-off photocontrols will not prevent day-burning conditions caused by welded relay failure

Do Not Rely On Just Any "Long-Life" Control

The DLL Elite and a competitor's long-life photocontrol were tested to determine the effects of extreme current levels on the relay.

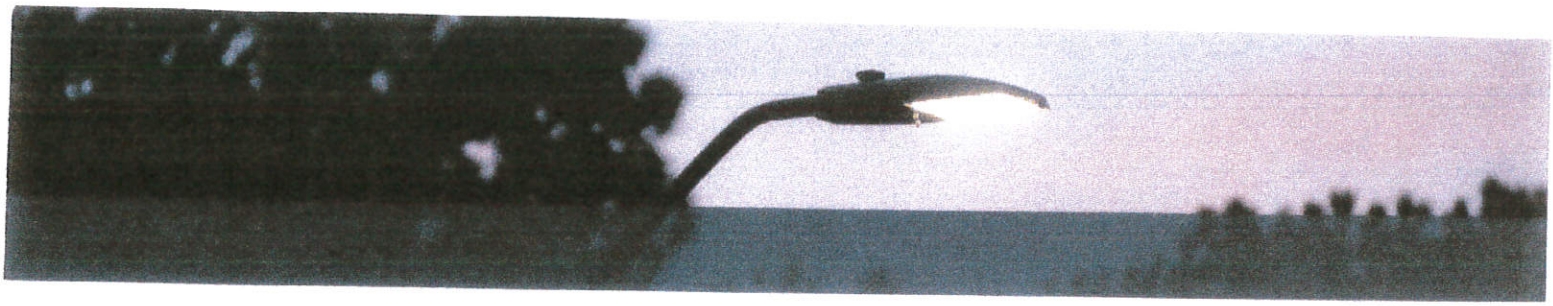
DLL Elite LED relay contacts at 100,000 cycles



Competitor's LED long-life relay contacts at 1,000 cycles

After only 1,000 cycles, the competitor's photocontrol showed evidence of severely melted contacts. This type of damage typically leads to day-burning conditions, resulting in extreme temperatures that reduce life expectancy of your LED lighting system.

The DLL Elite's contacts showed no signs of damage even after 100,000 cycles! These results show how the DLL Elite provides superior protection and works to maximize the efficiency of your LED lighting system.



THE DARK TO LIGHT DIFFERENCE

FEATURES AND BENEFITS

- Designed to last as long as your LED lighting system, 20+ years
- Superior MOV surge protection, giving twice the Joule rating of competitive long-life controls
- Electronically controlled, triac-assisted relay for maximum inrush current protection
- Double thick enclosure and lens tested to 140°C
- Conformal coating protects circuitry in the harshest environments
- Long-life capacitors

DLL ELITE PHOTOCONTROL SPECIFICATIONS	
Nominal Voltage 50/60Hz	Multi-Volt (120V-277V), 347V, 480V
Switching Circuit	Relay with inrush protection circuitry
Fail Mode	Fail-on & Fail-off models available
Load Rating	1000W / 1800VA Ballast
Operating Temp	-40°C to + 70°C
IR Filtered	Available
Surge Protection	40kA surge, 1280J & 2120J* models available
Power Consumption	<0.5W @ 120V
Turn-On Delay	Instant on
Turn-Off Delay	2-5 seconds
Compliance	ANSI C136.10, RoHS
Regulatory	UL listed to U.S. and Canadian safety standards*

*Available April 2013

There *Is* A Difference In Outdoor Photocontrols...

The Dark To Light Difference!

DTL
DARK TO LIGHT

Acuity Brands offers a comprehensive portfolio of intelligent outdoor lighting solutions. By integrating LED sources with digital controls, the company's offerings maximize light quality and minimize total ownership costs. For more information visit www.acuitybrandsled.com.

ılts Summary

Pre-Finance Results Summary

# of Fixtures Installed		**250**
Implementation Period (years)		**1**
Analysis Period		**15**
Simple Payback (years)		**5.0**
15-Year Unlevered IRR		**23.95%**
15-Year Unlevered NPV ($)	**$**	**174,777**
15-Year Capital Expenditure ($)	**$**	**86,570**
15-Year Cap. Ex. $/kWh Saved	**$**	**0.0710**
15-Year Cap. Ex. $/ton CO2e Saved	**$**	**128.7819**
Annual kWh Savings		**81,245**
Annual Energy Cost Savings ($)	**$**	**7,448**
Annual GHG Savings (tCO_2e)		**45**
Old Baseline Annual kWh Use		117,281
Old Baseline Annual Energy Cost ($)	$	10,751
Old Baseline Annual GHGs (tCO_2e)		65
New Baseline Annual kWh Use		36,037
New Baseline Annual Energy Cost ($)	$	3,303
New Baseline Annual GHGs (tCO_2e)		20
First-Year Avg. Capital Expend. per Unit ($)	$	346
First-Year Avg. Material Cost per Unit ($)	$	209
First-Year Avg. Labor Cost per Unit ($)	$	98
First-Year Avg. Vehicle Cost per Unit ($)	$	40
First-Year Avg. Disposal Cost per Unit ($)	$	-
First-Year Avg. Overhead Cost per Unit ($)	$	-

Simple Cashflows							
Year	Annual Capital Expenditure	Rebate	Annual O&M Savings (incl. energy)	Annual Non-energy O&M Savings	Annual CO_2e Penalty Savings	Annual Cashflow	Cumulative Cashflow
1	$ 86,570	$ -	$ 17,423	$ 9,975	$ -	$ (69,147)	$ (69,147)
2	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ (51,723)
3	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ (34,300)
4	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ (16,877)
5	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 546
6	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 17,969
7	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 35,392
8	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 52,815
9	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 70,238
10	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 87,661
11	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 105,084
12	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 122,507
13	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 139,930
14	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 157,354
15	$ -	$ -	$ 17,423	$ 9,975	$ -	$ 17,423	$ 174,777

Environmental Savings Summary			
	Annual Energy Savings ($)	Annual Energy Savings (kWh)	Annual CO_2e Avoided (Tonnes/Yr)
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45
$	7,448	81,245	45

Selected Pre- and Post-Project Data

Old Annual O&M ($)	Old Annual Non-energy O&M ($)	Old Annual Energy Costs ($)	Old Annual Energy Consumption (kWh)	New Annual O&M ($)	New Annual Non-energy O&M ($)	New Annual Energy Costs ($)	New Annual Energy Consumption (kWh)
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037
$ 21,191	$ 10,440	$ 10,751	117,281	$ 3,768	$ 465	$ 3,303	36,037

Capital Expenditure Components					
Material	Labor	Vehicle	Disposal	Overhead	
$ 52,145	$ 24,425	$ 10,000	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
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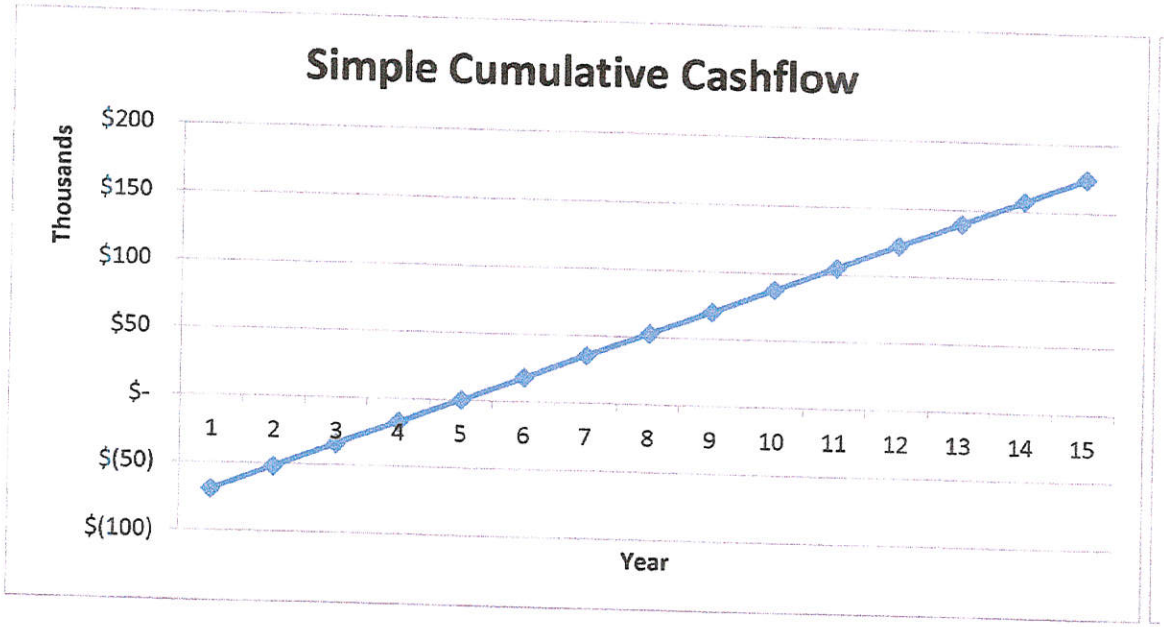
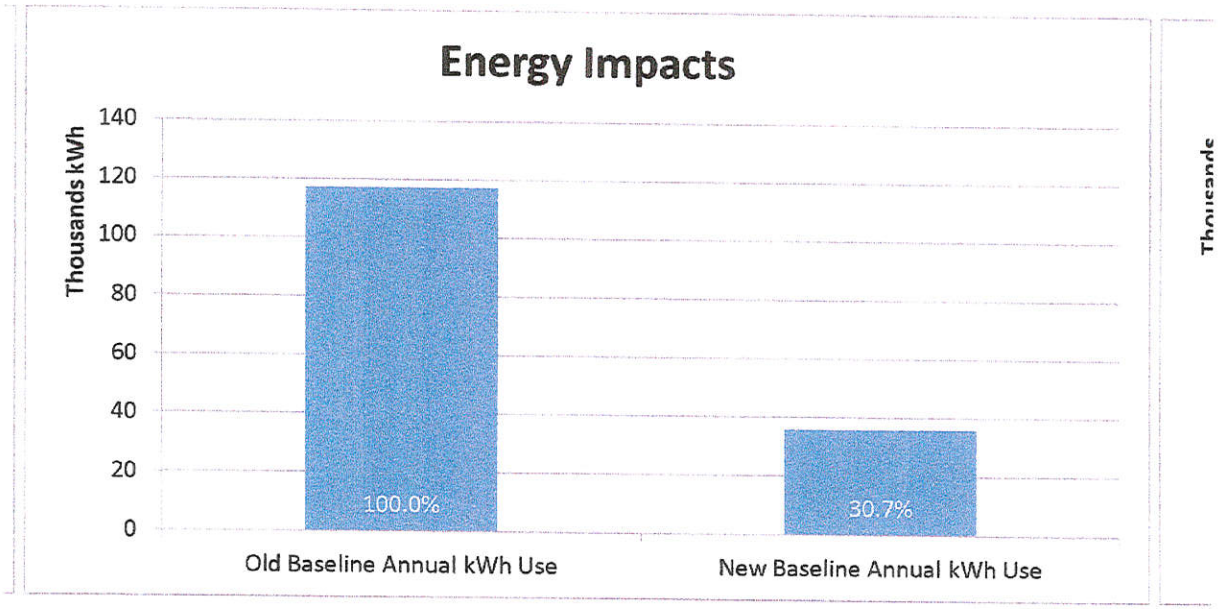
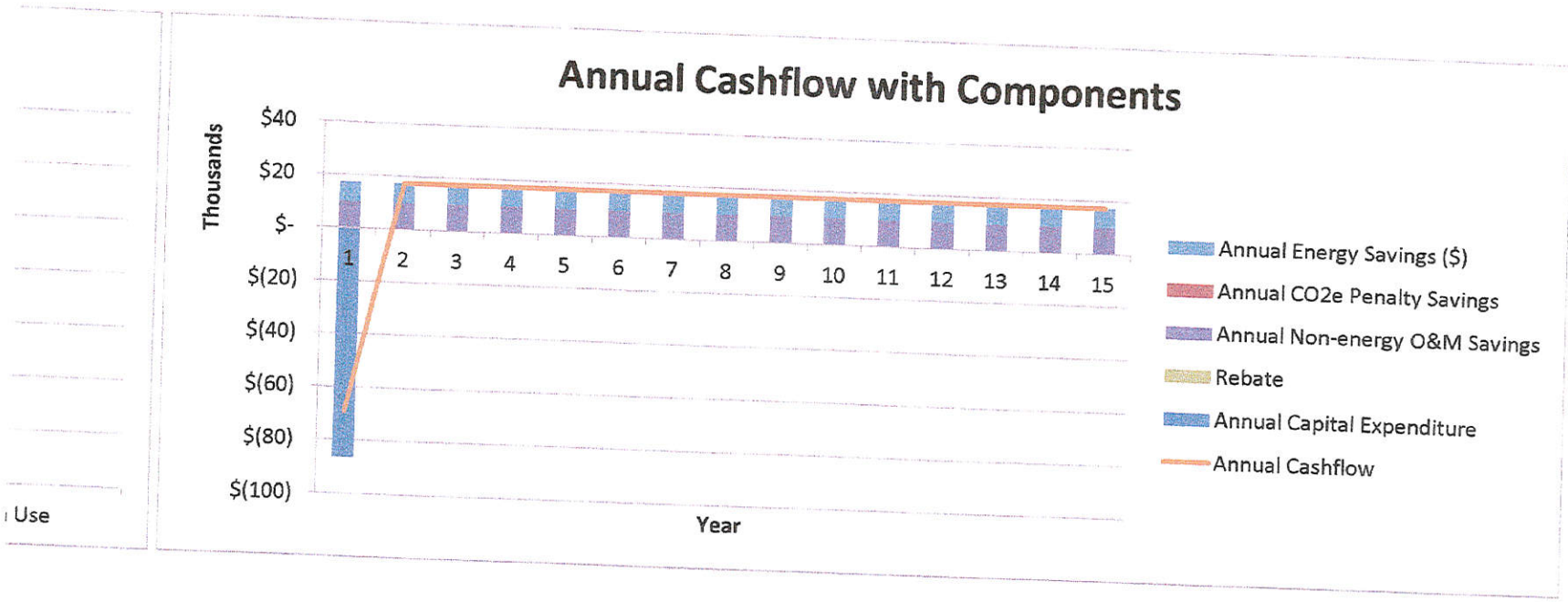
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	
$ -	$ -	$ -	$ -	$ -	


Simple Cumulative Cashflow
Thousands
$200
$150
$100
$50
$-
$(50)
$(100)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Year


Energy Impacts
Thousands kWh
140
120
100
80
60
40
20
0
100.0%
30.7%
Old Baseline Annual kWh Use
New Baseline Annual kWh Use


Annual Cashflow with Components
Thousands
$40
$20
$-
$(20)
$(40)
$(60)
$(80)
$(100)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
Year
Annual Energy Savings ($)
Annual CO2e Penalty Savings
Annual Non-energy O&M Savings
Rebate
Annual Capital Expenditure
Annual Cashflow

Input Page

Key

White Cell, Bold Text: Value Title	Orange Cell: Input Value
	White Cell: Calculation or Constant
	Dark Grey Cell: Disabled Feature

Advanced Options: Disabled

Project Inputs

Scenario Description (optional)		Describe scenario characteristics.

Tax, Electricity, and Labor Costs

Sales Tax (%)	0.00%	Set the tax rate applied to equipment purchased for new installation.
Electricity Rate ($/kWh)	0.092	Set the local cost of electricity per kilowatt-hour for lighting system.
Annual Change in Electricity Cost (%)		Set the annual rate of change for local Electricity Cost. For assistance, see link: Energy Escalation Rate Calculator
Installation Vehicle Rate ($/hr)	40.00	Set the total hourly cost of all vehicles used for installation of new lighting equipment.
Annual Change in Vehicle Rate (%)	0.0%	Set the annual rate of change for Vehicle Rate. For assistance, see link: CBO Consumer Price Index forecast
Installation Labor Rate ($/hr)	97.70	Set the total hourly cost of all labor used for installation of new lighting equipment.
Annual Change in Labor Rate (%)	3.0%	Set the annual rate of change for Installation Labor Rate. For assistance, see link: CBO Employment Cost Index forecast
Finance Nominal Discount Rate (%)	0.0%	Set the nominal rate at which future cash flows are discounted to the Present Value. This should reflect the cost of capital.

Greenhouse Gas Emissions

Emissions Factor (kg CO_2e/kWh)	0.552	Set the local emissions factor for electricity. For assistance, see link: EPA eGRID Power Profiler

Project Overhead and Implementation

Project Overhead Labor (persons)	0.0	Set the number of staff needed to plan and manage a lighting retrofit project.
Project Overhead Labor Rate ($/hr)	0.00	Set the average hourly cost of labor for Project Overhead Labor.
Project Overhead Work Year (hrs/person/yr)	10	Set the average number of hours per staff member that Project Overhead Labor will work on the project during each project year.
First Year of Implementation	1	Indicates the first year in which new equipment is installed (currently fixed at 1).
Last Year of Implementation	1	Indicate the last year in which new equipment is installed (enter integer value from 1 to 30).

Technology Types

Technology Types	List the names of all technologies (up to 9 in total), old and new, to be evaluated.
49 W LED SL	
25 W LED SL	
70 W HPS SL	
100 W HPS SL	
150 W HPS SL	
250 W HPS Flood Lt	
400 W HPS Flood light	
120 W Led Flood light	
240 W LED Flood Light	

Technology-Specific Inputs

In section one, enter data for all fixtures/technologies, both old/existing and new.
In section two, further below, enter data for impacted fixtures only.

Section One

			Power Demand & Dimming							Installation
Specific Technology Names	Technology Names	Additional Description (optional)	Lamp Watts (per unit)	System Watts (per unit)		Dimmed Output Level (% of Full Output)	Annual Operating Hours - 100% Output (hrs)	Annual Operating Hours - Dimmed Output (hrs)	Net Annual Operating Hours - 100% Output (hrs)	Current Fixture Cost ($/unit)
25 W LED SL: 24W	25 W LED SL		24	24		0.0%	4,323		4,323	192.72
49 W LED SL: 50W	49 W LED SL		50	49		0.0%	4,323		4,323	207.10
50 W HPS SL: 50W	50 W HPS SL		50	66		0.0%	4,323		4,323	104.90
70 W HPS SL: 70W	70 W HPS SL		70	88		0.0%	4,323		4,323	104.90
100 W HPS SL: 100W	100 W HPS SL		100	130		0.0%	4,323		4,323	104.90
150 W HPS SL: 150W	150 W HPS SL		150	193		0.0%	4,323		4,323	104.90
250 W Flood Lt: 250W	250 W Flood Lt		250	230		0.0%	4,323		4,323	302.50
400 W Flood light: 400W	400 W Flood light		400	445		0.0%	4,323		4,323	302.50
120 W Led Flood light: 120W	120 W Led Flood light		120	120		0.0%	4,323		4,323	485.80
240 W LED Flood Light: 240W	240 W LED Flood Light		240	240		0.0%	4,323		4,323	555.95
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CBO Consumer Price Index fore

				Operation & Maintenance				
Annual Change in Fixture Cost (%)	Install Time (min/unit)	Disposal Cost ($/unit)	Rebate Value ($/unit)	Electricity Cost ($/unit/mo)	Maint. Cost - User-entered or from Maintenance Page? (choose from drop-down)	User-entered Maint. Cost ($/unit/mo)	Maint. Cost ($/unit/mo)	Annual Change in Maint. Cost (%)
0.0%	60			0.79	Maintenance Page	0.00	0.16	
0.0%	60			1.62	Maintenance Page	0.00	0.17	
	60			2.18	Maintenance Page		3.64	
	60			2.91	Maintenance Page		3.64	
	60			4.29	Maintenance Page		3.64	
	60			6.36	Maintenance Page		3.64	
	60			7.60	User-entered		0.00	
	60			14.70	User-entered		0.00	
	60			3.96	User-entered	0.00	0.00	
	60			7.93	User-entered	0.00	0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
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				0.00	User-entered		0.00	
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				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	
				0.00	User-entered		0.00	

Old Technologies Removed	New Technologies Installed	# Of Fixtures Removed	# Of Fixtures Installed	# of Old Technology Fixtures Removed Each Year						
				1	2	3	4	5	6	7
50 W HPS SL: 50W	25 W LED SL: 24W	12	12	12	0	0	0	0	0	0
100 W HPS SL: 100W	25 W LED SL: 24W	0	0	0	0	0	0	0	0	0
50 W HPS SL: 50W	49 W LED SL: 50W	0	0	0	0	0	0	0	0	0
100 W HPS SL: 100W	49 W LED SL: 50W	6	6	6	0	0	0	0	0	0
150 W HPS SL: 150W	49 W LED SL: 50W	0	0	0	0	0	0	0	0	0
150 W HPS SL: 150W	49 W LED SL: 50W	26	26	26	0	0	0	0	0	0
70 W HPS SL: 70W	25 W LED SL: 24W	195	195	195	0	0	0	0	0	0
250 W Flood Lt: 250W	120 W Led Flood light: 120W	7	7	7	0	0	0	0	0	0
400 W Flood light: 400W	240 W LED Flood Light: 240W	4	4	4	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
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			0	0	0	0	0	0	0	0
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			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0

Sales Tax (%)	0.00%	*The tax rate applied to equipment purchased for maintenance work.*
Maint. Vehicle Rate ($/hr)	40.00	*The total hourly cost of all vehicles used for maintaining lighting equipme*
Maint. Labor Rate ($/hr)	97.70	*The total hourly cost of all labor used for maintaining lighting equipment.*

Technology Names	Lamp Watts (per unit)	System Watts (per unit)	Annual Operating Hours	Annual Maint. Cost ($/unit/year)	Maint. Cost ($/unit/mo)	Maint. Vehicle Use (min/unit/ year)
25 W LED SL	24	24	4,323	1.93	0.16	0
49 W LED SL	50	49	4,323	2.07	0.17	0
50 W HPS SL	50	66	4,323	43.68	3.64	17
70 W HPS SL	70	88	4,323	43.68	3.64	17
100 W HPS SL	100	130	4,323	43.68	3.64	17
150 W HPS SL	150	193	4,323	43.68	3.64	17
250 W Flood Lt	250	230	4,323	36.32	3.03	15
400 W Flood light	400	445	4,323	36.32	3.03	15
120 W Led Flood light	120	120	4,323	4.86	0.40	0
240 W LED Flood Light	240	240	4,323	5.56	0.46	0

Lamp						
Lamp Rated Life (hrs)	Annual Lamp Replacement Rate (%)	Lamp Unit Cost ($/unit)	Lamp Disposal Cost ($/unit)	Lamp Replacement Time (min/unit)	Lamp Replacement Labor and Vehicle Cost ($/unit)	**Annual Lamp Cost ($/unit)**
	0.0%	0.00			0.00	0.00
	0.0%				0.00	0.00
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	9.50		60	137.70	36.32
17,520	24.7%	9.50		60	137.70	36.32

Scheduled Maintenance

Lamp

Lamp Rated Life (hrs)	Annual Lamp Replacement Rate (%)	Lamp Unit Cost ($/unit)	Lamp Disposal Cost ($/unit)	Lamp Replacement Time (min/unit)	Lamp Replacement Labor and Vehicle Cost ($/unit)	**Annual Lamp Cost ($/unit)**
	0.0%	0.00			0.00	0.00
	0.0%				0.00	0.00
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	8.50		60	137.70	36.07
17,520	24.7%	9.50		60	137.70	36.32
17,520	24.7%	9.50		60	137.70	36.32
	0.0%			60	137.70	0.00

Controls - e.g. photocell, timer or segment controller

Control 1 (if present)

Control Description	Control Rated Life (hrs)	Annual Control Replacement Rate (%)	Control Unit Cost ($/unit)	Control Disposal Cost ($/unit)	Control Replacement Time (min/unit)	Control Replacement Labor and Vehicle Cost ($/unit)	**Annual Control Cost ($/unit)**
		0.0%				0.00	0.00
		0.0%				0.00	0.00
photo cell	17,300	25.0%	7.50		10	22.95	7.61
photo cell	17,300	25.0%	7.50		10	22.95	7.61
photo cell	17,300	25.0%	7.50		10	22.95	7.61
photo cell	17,300	25.0%	7.50		10	22.95	7.61
		0.0%				0.00	0.00
		0.0%				0.00	0.00
		0.0%				0.00	0.00

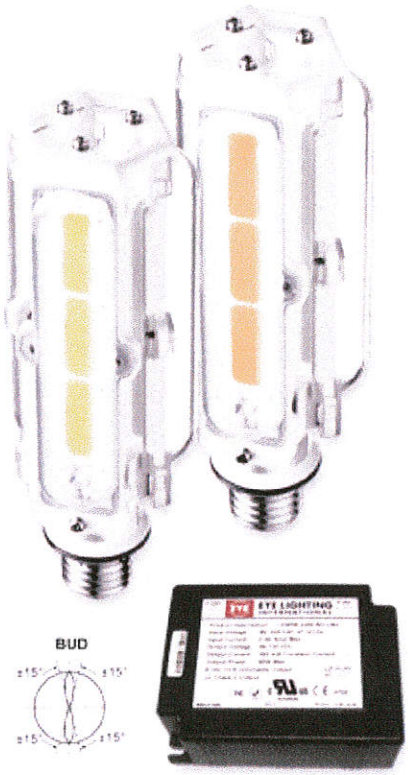
Fixture						
Fixture Rated Life (hrs)	Annual Fixture Replacement Rate (%)	Fixture Unit Cost ($/unit)	Fixture Disposal Cost ($/unit)	Fixture Replacement Time (min/unit)	Fixture Replacement Labor and Vehicle Cost ($/unit)	**Annual Fixture Cost ($/unit)**
	0.0%	192.72			0.00	0.00
	0.0%	207.10			0.00	0.00
	0.0%	104.90			0.00	0.00
	0.0%	104.90			0.00	0.00
	0.0%	104.90			0.00	0.00
	0.0%	104.90			0.00	0.00
	0.0%	302.50			0.00	0.00
	0.0%	302.50			0.00	0.00
	0.0%	485.80			0.00	0.00
	0.0%	555.95			0.00	0.00

Cleaning				Total
Annual Cleaning Rate (%)	Cleaning Time (min/unit)	Cleaning Labor and Vehicle Cost ($/unit)	**Annual Cleaning Cost ($/unit)**	**Total Annual Scheduled Maintenance Cost ($/unit)**
0.0%	2	4.08	0.00	0.00
	2	4.08	0.00	0.00
		0.00	0.00	43.68
		0.00	0.00	43.68
		0.00	0.00	43.68
		0.00	0.00	43.68
		0.00	0.00	36.32
		0.00	0.00	36.32
	2	4.08	0.00	0.00
	2	4.08	0.00	0.00

LEDioc™ LED Retofit Solution

Schedule J

LEDioc™ LED Retrofit Solution



Upgrade with Energy-Saving LEDioc™LED Retrofit Solution

The Perfect Choice for Retrofitting post top & pendant mount decorative luminaires

- Long life, efficient LED Technology
- Provides upgrade to new LED Technology while preserving the existing system and achieving sustainability goals
- Upgrade system includes the lamp, driver and engineered mechanical package
- Maintainable lamp and driver components
- Medium & mogul Base
- 3000K, 4000K and 5000K
- Energy Saving
- Dimmable
- Vertical, Base Up or Base Down operating position
- Designed for use in existing HID Post Top and Pendant Mount decorative luminaires
- Patent Pending

EYE LIGHTING INTERNATIONAL

Type ..... Date .....

Model # ..... Prepared by .....

Project .....

Comments .....

LEDioc

Lamp Upgrade Engineered Solution

Applications include: Street/Area, Historic Districts, City Parks & Recreation, Campuses, Glass Lens Post Tops, Plastic Lens Post Tops, Teardrop Pendants

RECOGNIZED COMPONENT

Intertek

Check the latest update at www.DesignLights.org for listed product catalog numbers.
*Hardwired versions are listed.
Contact company for solution availability.

Specification Features

Construction
The LED retrofit kit includes a separate LED light source, LED driver and transient immunity device. All three components are individually replaceable. The LED retrofit kit is capable of adjusting the light center length of the LED light source to match the photometric light center length of the original design.

Mounting
LED lampholder is hardwire mounted on a double clamp assembly and can be field adjustable. Medium and Mogul base designs are optional.

Optics
Designed for use in the specific existing HID post top and pendant mount luminaire. House-Friendly™ versions available with reduced house side lumens.

Electrical
Constant Current Driver is 120-277V input, 300mA output and has 0-10V dimming capability, operating temperature is -30° to +60° C. Electrical components are mounted separately to allow for easy serviceability. Transient Immunity device or surge protector supplied per system requirements.

Reliability
Cast aluminum passive thermal management which allows air circulation around each LED module to ensure performance and long life.

Warranty
See the EYE Lighting full Warranty and Terms and Conditions of Sale at www.eyelighting.com.

Order Guide

FAMILY		LAMP TYPE		CRI / KELVIN		MOUNT OPTIONS
--	—	--	—	--	—	--
LEW = LEDioc Engineered Hardwired*		**25WH-323** = 25W, House-Friendly™ Version; 3 Sided, 2 Modules, 3 Chips		**830** = 80-89 CRI; 3000K		**HWD** = Hardwired*
LES = LEDioc Engineered Solution		**37W-333** = 37W; 3 Sided, 3 Modules, 3 Chips		**840** = 80-89 CRI; 4000K		**MED** = Medium Base
LEH = LEDioc Engineered House-Friendly™ *For use with MED and MOG base options*		**37WH-433** = 37W, House-Friendly™ Version; 4 Sided, 3 Modules, 3 Chips		**750** = 70-79 CRI; 5000K		**MOG** = Mogul Base

EYE LIGHTING INTERNATIONAL

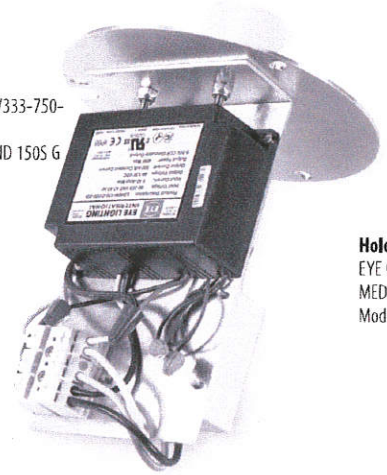
LEDioc

Lamp Upgrade Engineered Solution

The complete LEDioc engineered solution includes: the exclusive patent pending EYE LEDioc lamp, driver, surge protector, and mounting bracket for the specific luminaire. Installation is easy, thermal/mechanical compatibility is assured, and lamp LCL is maintained, preserving the optics and photometric performance of the existing luminaire. Each solution includes luminaire-specific installation instructions for the installer. Other solutions available, contact the factory or visit eyelighting.com for other solutions

GE Town and Country
EYE Cat # LES-37W333-750-MED-GE02-UNV
Model# T10C10S1A1AMSSBL

Sternberg
EYE Cat # LES-37W333-750-MED-ST02-UNV
Model # MS805A/3/x/100HPS120/RE3/x/PA/PG

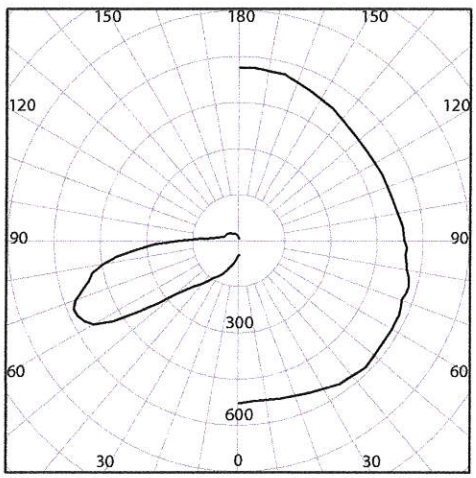


Hadco
EYE Cat # LES-37W333-750-MED-HA01-UNV
Model # V25 J B5 ND 150S G

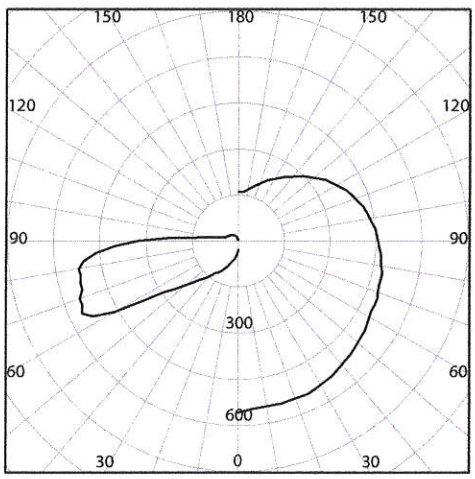
Holophane Granville
EYE Cat # LES-37W333-750-MED-HO03-UNV
Model# GV15DHP12LB3

Photometrics

STANDARD



HOUSE-FRIENDLY™



* Photometric distribution is based on Lexalite Lindy 424 per DLC specifications in a Type V distribution.

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Mentor, Ohio 44060

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www.eyelighting.com

EQS-N-52-86-00031 r0714

Brochure:

Spec Sheet:

DLC QPL: