



Public Utilities Commission

Application to Commit Energy Efficiency/Peak Demand Reduction Programs (Mercantile Customers Only)

Case No.: 13-0629-EL-EEC

Mercantile Customer: CardPak, Inc.

Electric Utility: The Cleveland Electric Illuminating Company

**Program Title or
Description:** Lighting Retrofit

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. [10-834-EL-POR](#)

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up to the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at ee-pdr@puc.state.oh.us.

Section 1: Mercantile Customer Information

Name: CardPak, Inc.

Principal address: 29601 Solon Road, Solon Ohio, 44139

Address of facility for which this energy efficiency program applies: 29601 Solon Road, Solon Ohio, 44139

Name and telephone number for responses to questions: Jerry Lamm, 216.276.6544

Electricity use by the customer (check the box(es) that apply):

- ☒ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- ☐ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

Section 2: Application Information

A) The customer is filing this application (choose which applies):

- ☐ Individually, without electric utility participation.
- ☒ Jointly with the electric utility.

B) The electric utility is: The Cleveland Electric Illuminating Company

C) The customer is offering to commit (check any that apply):

- ☐ Energy savings from the customer's energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
- ☐ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
- ☒ Both the energy savings and the capacity savings from the customer's energy efficiency program. (Complete all sections of the Application.)

Section 3: Energy Efficiency Programs

A) The customer's energy efficiency program involves (check those that apply):

- ☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)). **If Checked, Please see Exhibit 1 and Exhibit 2**
- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):
_____.
- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):
_____.
- ☐ Behavioral or operational improvement.

B) Energy savings achieved/to be achieved by the energy efficiency program:

- 1) If you checked the box indicating that the project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) - (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: 70,861 kWh

- 2) If you checked the box indicating that the customer installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) - (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____ kWh

Please describe any less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 3) If you checked the box indicating that the project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) - (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____ kWh

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined.

Section 4: Demand Reduction/Demand Response Programs

A) The customer's program involves (check the one that applies):

- ☒ Coincident peak-demand savings from the customer's energy efficiency program.
- ☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
- ☐ Potential peak-demand reduction (check the one that applies):
 - ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.
 - ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?

1/22/2013

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

11 kW

Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

☒ Option 1: A cash rebate reasonable arrangement.

OR

☐ Option 2: An exemption from the energy efficiency cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

B) The value of the option that the customer is seeking is:

Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):

☒ A cash rebate of \$2657. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.

☐ An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for _____ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

OR

☐ A commitment payment valued at no more than \$_____. (Attach documentation and calculations showing how this payment amount was determined.)

OR

- ☐ Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of the customer's ongoing efficiency program. (Attach documentation that establishes the ongoing nature of the program.) In order to continue the exemption beyond the initial 24 month period, the customer will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: _____(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: **See Exhibit 3** (Skip to Subsection 2.)

Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were **See Exhibit 3**

The utility's program costs were **See Exhibit 3**

The utility's incentive costs/rebate costs were **See Exhibit 3**

Section 7: Additional Information

Please attach the following supporting documentation to this application:

- Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.
- A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:
 - 1) any confidentiality requirements associated with the agreement;
 - 2) a description of any consequences of noncompliance with the terms of the commitment;
 - 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
 - 4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,
 - 5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.
- A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.



Public Utilities Commission

Application to Commit Energy Efficiency/Peak Demand Reduction Programs (Mercantile Customers Only)

Case No.: 13-0629-EL-EEC

State of Ohio :

Jerry Lamm, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

CardPak, Inc.

[insert customer or EDU company name and any applicable name(s) doing business as]

2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.

Jerry Lamm VP/CFO

Signature of Affiant & Title

Sworn and subscribed before me this 17th day of September, 2013 Month/Year

Lisa Biber

Signature of official administering oath

Print Name and Title

My commission expires on 6/12/2018



Lisa Biber
Resident Summit County
Notary Public, State of Ohio
My Commission Expires: 06-12-2018

Customer Legal Entity Name: CardPak Inc.
Site Address: Solon
Principal Address: 29601 Solon Rd

Project No.	Project Name	Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:	Description of methodologies, protocols and practices used in measuring and verifying project results	What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date.	Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.
1	Lighting Retrofit	Replaced 400 watt MH fixtures with new 6 lamp T5 fixtures	Lighting inventory was performed with pre & post ECM fixture consumption and demand utilized in school. Specified retrofits and replacements of the existing fixtures. Electrical Usage (kWh) = (Number of fixtures x watts per fixture x Operating hours). Electrical Demand (kWd) = (Number of fixtures x watts per fixture) ; Electrical Energy Cost = (kWh x \$/kwh) ; Existing kWh - Retrofit kWh = Savings. See CardPak_Solon_Lighting Rebate Calculator for details. Measurement and Verification is based on IPMVP Option A. Calculations based on physical assessment of operational factors and commonly accepted usage assumptions.	N/A	N/A

Exhibit 2

Customer Legal Entity Name: CardPak Inc.

Site Address: Solon

Principal Address: 29601 Solon Rd

	Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (C) <i>Note 1</i>
2011	4,734,000	4,734,000	4,734,000
2010	4,226,700	4,226,700	4,226,700
2009	4,310,780	4,310,780	4,310,780
Average	4,423,827	4,423,827	4,423,827

Project Number	Project Name	In-Service Date	Project Cost \$	50% of Project Cost \$	KWh Saved/Year (D) counting towards utility compliance	KWh Saved/Year (E) eligible for incentive	Utility Peak Demand Reduction Contribution, KW (F)	Prescriptive Rebate Amount (G) \$	Eligible Rebate Amount (H) \$ <i>Note 2</i>	Commitment Payment \$
1	Lighting Retrofit	01/22/2013	\$13,814	\$6,907	70,861	70,861	11	\$3,543	\$2,657	
					-	-	-			
					-	-	-			
					-	-	-			
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					-	-	-			
					-	-	-			
		Total	\$13,814		70,861	70,861	11	\$3,543	\$2,657	\$0

Docket No. 13-0629

Site: 29601 Solon Rd

Notes

(1) Customer's usage is adjusted to account for the effects of the energy efficiency programs included in this application. When applicable, such adjustments are prorated to the in-service date to account for partial year savings.

(2) The eligible rebate amount is based upon 75% of the rebates offered by the FirstEnergy Commercial and Industrial Energy Efficiency programs or 75% of \$0.08/kWh for custom programs for all energy savings eligible for a cash rebate as defined in the PUCO order in Case NO.10-834-EL-EEC dated 9/15/2010, not to exceed the lesser of 50% of the project cost or \$250,000 per project. The rebate also cannot exceed \$500,000 per customer per year, per utility service territory.

Exhibit 3 Utility Cost Test

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost \$/MWh (B)	Utility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	71	\$ 308	\$ 21,845	\$ 4,050	\$2,657	\$709	\$ 7,416	2.9
Total	71	\$ 308	21,845	4,050	\$2,657	\$709	7,416	2.9

Notes

- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration's 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better representation of the energy price that Ohio customers would see, a Cinergy Hub equivalent price was derived by applying a ratio based on three years of historic national average and Cinergy Hub prices. This value is consistent with avoided cost assumptions used in EE&PDR Program Portfolio and Initial Benchmark Report, filed Dec 15, 2009 (See Section 8.1, paragraph a).
- (C) = (A) * (B)
- (D) Represents the utility's costs incurred for self-directed mercantile applications for applications filed and applications in progress. Includes incremental costs of legal fees, fixed administrative expenses, etc.
- (E) This is the amount of the cash rebate paid to the customer for this project.
- (F) Based on approximate Administrator's variable compensation for purposes of calculating the UCT, actual compensation may be less.
- (G) = (D) + (E) + (F)
- (H) = (C) / (G)

CardPak Inc. ~ Solon
Docket No. 13-0629

Site: 29601 Solon Rd

Lighting Inventory Form

<u>Applicant Name:</u>	CardPaik
<u>Facility Name:</u>	CardPaik
<u>Date:</u>	1/22/2013

Instructions: Please use one line for each fixture type in a room or area

For existing or proposed control, choose OCC for Occupancy Sensor, DAYLTG for photosensor, or NONE for none. Controls must save energy to qualify.

The total of Column S, the quantities of CFLs and exit signs in Column M, and the quantities of sensors in Column R, will be used to calculate your incentive on the NonStandard Lighting form.

[illegible]

Lighting Form

Line Item	Building Address	Floor	PROJECT BASIC INFORMATION				PRE-INSTALLATION				POST-INSTALLATION				Energy Calculations																
			Area Description	Interior or Exterior Feature	Predominant Space Type	Area Cooling	Pre Fixture Qty	Pre Fixture Code	Pre Watts / Fixture (W)	Pre MW / Spot (kW)	Existing Sensor Quantity Where applicable	Post Fixtures Qty	Post Fixture Code	Post Watts / Fixture (W)	Post MW / Spot (kW)	Proposed Sensor Quantity Where applicable	Interior Change In Connected Load (MW) excluding CFLs or LED Signs	Exterior Change In Connected Load (MW) excluding CFLs or LED Signs	Change In Connected Load (MW) CFL or LED ext sign	Applicant Certificates Factor (CF) Estimate	Concordance Factor	Interactive Factor (demand)	Interactive Factor (energy)	Pre Controls Factor	Post Controls Factor	Interior Demand Savings (kW) excluding CFLs or Ball Sticks	Exterior Demand Savings (kW) excluding CFLs or Ball Sticks	Demand Savings (kW) CFLs or LED Ext. Signs	Applicant Calculation Full Load Hours (EFLH) Estimate	Prescribed Equivalent Full Load Hours	Annual Interior Fixture kWh Based (excluding CFLs or LED Signs)
139									NONE					NONE																	
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Project Estimated Annual Savings Summary

Estimated Annual kWh Savings	70,861
Total Change in Connected Load	10.70

Annual Estimated Cost Savings	\$7,086.10
Annual Operating Hours	5,913

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$3,543.05
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$0.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/sensor (includes all Lighting Controls, both interior and exterior)	\$0.00

Total Calculated Incentive	\$3,543.05
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Total Fixture Quantity excluding retrofit CFLs and LED Exit Sign	100
Total Lamp Quantity for retrofit Screw-In CFLs	0
Total Lamp Quantity for retrofit Hard-Wired CFLs	0
Total Fixture Quantity for retrofit LED Exit Signs	0
Total Quantity for Occupancy Sensors	0
Total Quantity for Daylight Sensors	0

Please briefly describe how you estimated your coincidence factor (CF) and applicant equivalent full-load hours (EFLH) for facility type "Other" indicated on the Lighting Form tab

Demand Savings (For Internal Use Only)

9.03

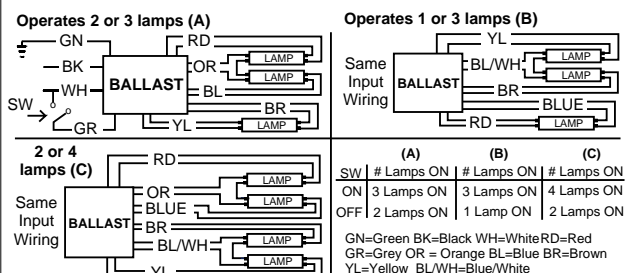
Electrical Specifications

ICN4S5490C2LSG@120

Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F .
F54T5/HO	1	54	-20/-29	0.52	62	0.99	10	0.98	1.7	1.60
F54T5/HO	2	54	-20/-29	0.99	118	0.99	10	0.98	1.7	0.84
* F54T5/HO	3	54	-20/-29	1.52	182	1.00	10	0.98	1.7	0.55
F54T5/HO	4	54	-20/-29	2.00	240	1.00	10	0.98	1.7	0.42

Wiring Diagram

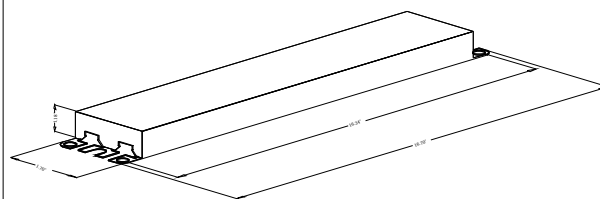


The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black	32	81.3	Yellow/Blue		0
White	32	81.3	Blue/White	42	106.7
Blue	54	137.2	Brown	60	152.4
Red	51	129.5	Orange	42	106.7
Yellow	60	152.4	Orange/Black		0
Gray	32	81.3	Black/White		0
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
16.7 "	1.7 "	1.18 "	16.34 "
16 7/10	1 7/10	1 9/50	16 17/50
42.4 cm	4.3 cm	3 cm	41.5 cm

Revised 04/14/2009



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886

ICN4S5490C2LSG@120

Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

- 1.1 Ballast shall be physically interchangeable with standard electromagnetic or standard electronic ballasts, where applicable.
- 1.2 Ballast shall be provided with integral leads or poke-in wire trap connectors color-coded per ANSI C82.11.

Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of _____ (120V through 277V or 347V through 480V) with sustained variations of +/- 10% (voltage and frequency).
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor of 1.00 for primary lamp application.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of _____ {-18C (0F) or -28C (-20F)} for primary lamp. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions.
- 2.13 Four-lamp ballast shall have (semi-independent or independent) lamp operation.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).
- 3.6 Ballast shall comply with UL Type CC rating.
- 3.7 Ballast shall comply with NEMA 410 for in-rush current limits.

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C. Ballasts with a "90C" designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90C.
- 4.3 Manufacturer shall have a twenty-year history of producing electronic ballasts for the North American market.

Revised 04/14/2009



Data is based upon tests performed by Philips Lighting Electronics N.A. in a controlled environment and is representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

PHILIPS LIGHTING ELECTRONICS N.A.

10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Tel: 800-322-2086 · Fax: 888-423-1882 · www.philips.com/advance

Customer Support/Technical Service: 800-372-3331 · OEM Support: 866-915-5886



Simkar's new **Reflect-a-Bay™** is the perfect complement to our innovative Adjust-a-Bay series of product. Reflect-a-Bay™ incorporates the same attention to quality and detail as its predecessor, offering both T5 and T8 in four, six, and eight lamp configurations. Coupled with a wide array of options and accessories, Reflect-a-Bay™ is the perfect choice for manufacturing, warehouse, retail or institutional applications, be they new installations or retro-fits.



More light. Lower costs. Easier to install.

Housing

Die formed heavy gauge steel housing with high-gloss baked white enamel finish over rust inhibiting phosphate coat. Fixture is shipped fully wired. Ample knockouts provided.

Reflector

The Reflect-A-Bay is available with an 85% specular reflector for narrow to medium distribution, or a white reflector for wide distribution, perfect for low bay applications. Also available is the MIRO 4 reflector with 95% reflectivity.

- Uplighting available on all models
- Save up to 20% in energy when used in place of traditional HID
- Instant-on
- Choose from 7 mounting options, from a chain hanger to a center mount slidebox that's great for HID retrofits
- 4, 6, and 8 lamp versions
- For use with T5 or T8 lamps

Mounting Options

A variety of mounting options are available - please see next page for details.

Electrical

Fully wired for 120-277V, 60 Hz AC operation with ETL-CBM, thermally protected, automatic resetting, Class P, sound rated A, programmed-start, electronic T5 HO or T8 ballast. High ballast factor T8 ballasts are also available. 8 lamp unit contains 2 - (4) lamp ballasts. The 6 lamp unit contains 1-(2) lamp and 1-(4) lamp ballast. The 4 lamp unit contains 1- (4) lamp ballast as standard. UL listed.

Choice of reflectors:

- 85% specular with medium to narrow distribution
- White reflector for wide distribution - great for lowbay applications

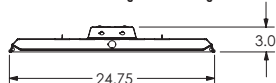
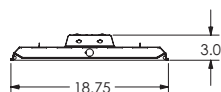
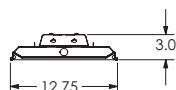
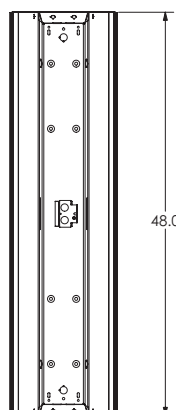
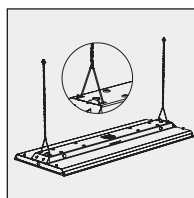


Reflect-A-Bay Series Ordering Information

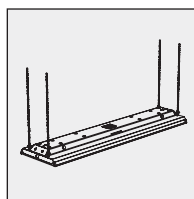
Series	# Lamps	Lamp Type	Aperture	Reflector	Options	Ballast	Switching	Voltage
REF	4 6 8	32 = F32T8 54 = F54T5HO	A = Aperture S = Solid	SR = Specular Aluminum WR = White M4 = MIRO 4 reflector (95% reflectivity)	ELS1 = Emergency Lighting (low lumens) ELS2 = Emergency Lighting (medium lumens) ELS3 = Emergency Lighting (high lumens) NOTE: ELS2 AND ELS3 FOR T8 OPERATE ONE OR TWO LAMPS. ALL OTHERS OPERATE ONE LAMP ONLY.	B11 = T8 B11HP(x) = HPT8* B12 = T5 HO	For 4 lamp units 4L = (1) 4-lamp ballast (standard) 2/2L = (2) 2-lamp ballasts For 6 lamp units Blank = (1) 4-lamp ballast and (1) 2-lamp ballast (standard) 2/3L = (2) 3-lamp ballasts For 8 lamp units Blank = (2) 4-lamp ballasts (standard)	UNV = 120-277V 347 = 347V 480 = 480V

*CEE listed T8; specify (L)ow, (N)ormal, or (H)igh ballast factor. Contact factory for NEMA Premium.

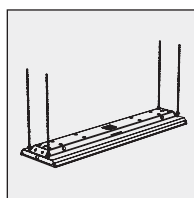
Options	Mounting Accessories (Order Separately)	Accessories (Order Separately)
OS(x) = Occupancy Sensor (specify # of lamps controlled - 2, 4, 6 or 8) OSI(x) = Occupancy Sensor; factory-installed (specify # of lamps controlled - 2, 4, 6 or 8) OSDL(x) = Daylight Sensor (specify # of lamps controlled - 2, 4, 6 or 8) FB = Fast blow fuse SB = Slow blow fuse BP = Bulk Pack 6' Cord and Plug CPT(x) 1 = 120V 2 = 277V 3 = 208V 4 = 240V 5 = 480V CP3 = Cord & Plug - 120V Straight Blade 5-15P	CA24 = Chain Hanger Assembly - (2) 18" chains, (2) "V" hooks, (2) "S" hooks for total drop 24" CS24 = S-hook Chain Hanger Assembly - (2) 18" chains, (2) "V" hooks, (2) "S" hooks for total drop 24" PM(x) = Twin Pendant Mount - 2 white stems - specify length (24", 36", 48", 60", 72") HKSC = Hook & Chain Assembly - Monopoint mount to four point suspension. (Includes hook, chain, and mounting plate) CAB(x)72 = Adjustable Cables - includes 6-foot steel aircraft cables, toolless adjusters and mounting hardware. Specify "2" for 2 cables & Y-hanger or "4" for 4 cables. SBH = Slide Box with hook - Level adjustable for mono-point hook mount. SBP(x) = Slide Box & Single Pendant Mount- Level adjustable for mono-point pendant mount - specify length (24", 36", 48", 60", 72"). Other lengths available.	RWG(x) = Heavy Duty Wire Guard REF(x) = acrylic Lens WREF(x) = acrylic Lens And Heavy Duty Wire Guard Combo For above, please specify # of lamps (4, 6, or 8)


Reflect-A-Bay 8 light

Reflect-A-Bay 6 light

Reflect-A-Bay 4 light

Mountings

Chain Hanger Assembly

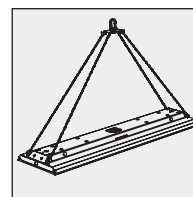
Ordering Code
CA24



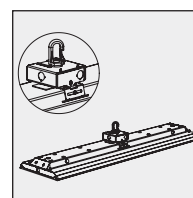
"S" Hook (4)
Chain Hanger Assembly
Ordering Code
CS24



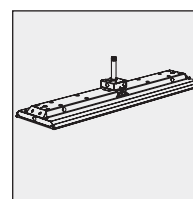
Adjustable Aircraft Cables
Ordering Code
CAB72


Hook & Chain Assembly

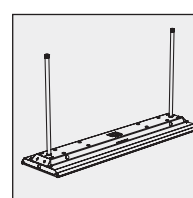
Ordering Code
HKSC


Center Mount Slide Box w/Hook Assembly

Ordering Code
SBH


Center Mount Slide Box w/ Pendant Mount

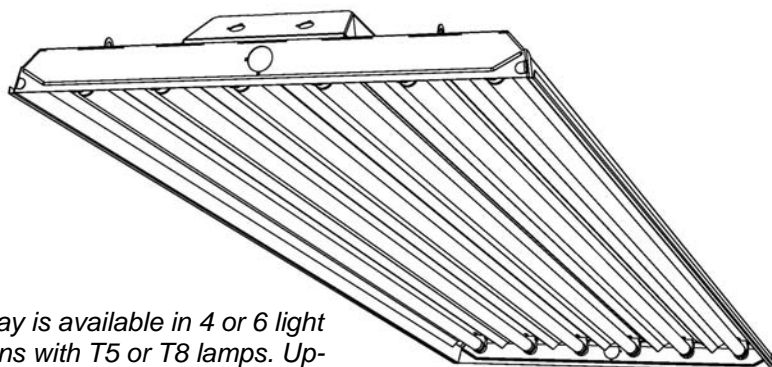
Ordering Code
SBP


Twin Pendant Mount

Ordering Code
PM2

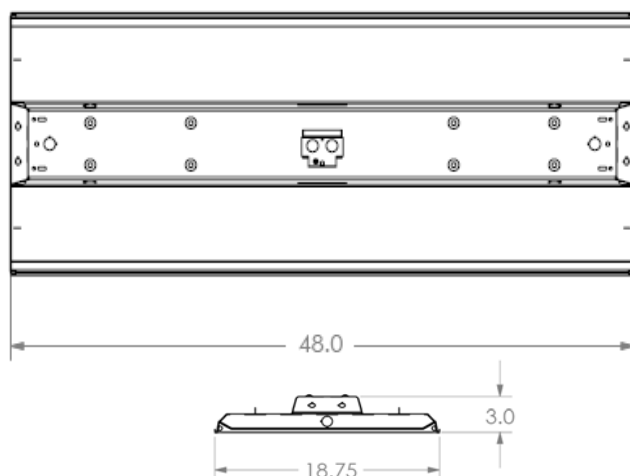
CATALOG NUMBER	TYPE

“Reflect-A-Bay”
T5/T8 Fluorescent REF
 6-Lamp Industrial Bay Lighter
 18.75” x 3.0” x 48.0”



Reflect-A-Bay is available in 4 or 6 light configurations with T5 or T8 lamps. Up-light aperture option available.

DIMENSIONS



Housing: Die formed heavy gauge steel housing with high-gloss baked white enamel finish over rust inhibiting phosphate coat. Fixture is shipped fully wired. Ample knockouts provided.

Electrical: Fully wired for 120-277V, 60 Hz AC operation with ETL-CBM, thermally protected, automatic resetting, Class P, sound rated A, programmed-start, electronic T5 HO or T8 ballast. High ballast factor T8 ballasts are also available. The 6 lamp unit contains 1-(2) lamp and 1-(4) lamp ballast. The 4 lamp unit contains 1- (4) lamp ballast as standard. UL listed.

Reflectors: Computer designed, faceted, highly reflective specular aluminum. Slotting available for cooler operation and up-light.

Operation: T5 and T8 fixtures are suitable for ambient temperature up to 113° F (45° C)

Options: Occupancy sensors and an emergency lighting system are available. Please specify in the order code.

Mounting: Surface, pendant, slide box, and various chain hanger configurations. Order kit separately.

Accessories: Wire guards are available. Please order separately.

Special Applications: SIMKAR strives to offer the most current product designs and value. Please contact Simkar for more information regarding unique application requirements.

ORDERING INFORMATION

Example: REF632SB11UNVSRBP

REF						
SERIES	LAMPS	APERTURE	BALLAST	VOLTAGE	REFLECTOR	OPTIONS
REF – “Reflect-A-Bay”	T8 Lamps: 432 – (4) 32W 632 – (6) 32W	A – Up Light Aperture	B11 B12 B9(x) ²	120V 277V 480V ¹ UNV – 120-277 ⁶	SR – Specular Aluminum Reflectors	ELS – Emergency Lighting System
Fluorescent Industrial Bay Lighter	T5 HO Lamps: 454 – (4) 54W 654 – (6) 54W	S – Solid Reflectors, Down Light Only			WR – Single White Reflector Pan	BP – Bulk Pack L-(x) ³ CP3-(x)-(x) ⁴ OS-(x) ⁵

1 – Consult Factory

2 – Customer Specified Ballast

3 – Specify Color K°, Shipped Not Installed

4 – Specify Voltage/Plug Type: TL (Twist Lock) or SB (Straight Blade) or NEMA # and Cord Length in Feet

5 – Occupancy Sensor (360°) Specify Number of Switched Lamps: 2, 4 or 6 (Default Switched Lamps at Center)

6 – Default Ballast If Not Specified



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
MEMBER
of the
IESNA

905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 10435

DATE: 10-16-2006

PREPARED FOR: SIM-KAR LIGHTING

CATALOG NUMBER: REF654-SSR-B12-UNV

LUMINAIRE: FORMED STEEL HOUSING, FORMED SPECULAR ALUMINUM REFLECTORS,
NO ENCLOSURE.

LAMPS: SIX 54 WATT HIGH OUTPUT T5 LINEAR FLUORESCENT LAMPS RATED AT
4400 LUMENS EACH.

LAMP CATALOG NUMBER: PHILIPS F54T5/841/HO

BALLASTS: ONE ADVANCE ICN-4S54-90C-2LS-G AND ONE ADVANCE ICN-2S54-90C

MOUNTING: PENDANT

LUMEN TO CANDELA RATIO USED = 9.18

TOTAL INPUT WATTS = 345.5 AT 120.0 VOLTS

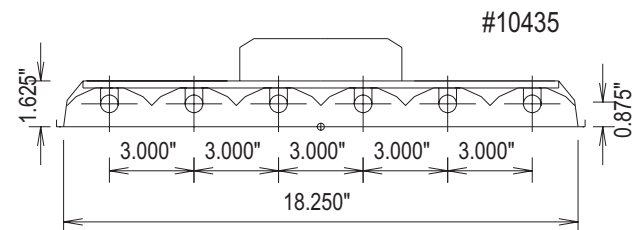
THE 0 DEGREE PLANE IS PARALLEL WITH THE LAMPS.

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	9222	9222	9222	9222	9222
5	9188	9216	9195	9172	9149
15	8837	8848	8728	8491	8381
25	8182	8045	7410	6772	6618
35	7215	6757	5751	5685	5593
45	5942	5104	4676	4539	4569
55	4427	3604	3514	3672	3730
65	2784	2320	2515	2750	2899
75	1315	1302	1760	1913	1960
85	198	458	559	574	579
90	9	20	29	37	39

FLUX

873
2438
3413
3847
3777
3322
2590
1740
549



ZONAL LUMEN SUMMARY

ZONE	LUMENS	%LAMP	%FIXT
0- 30	6724	25.5	29.8
0- 40	10571	40.0	46.9
0- 60	17670	66.9	78.4
0- 90	22549	85.4	100.0
90-180	0	0.0	0.0
0-180	22549	85.4	100.0

TOTAL LUMINAIRE EFFICIENCY:

85.4%

CIE TYPE: DIRECT

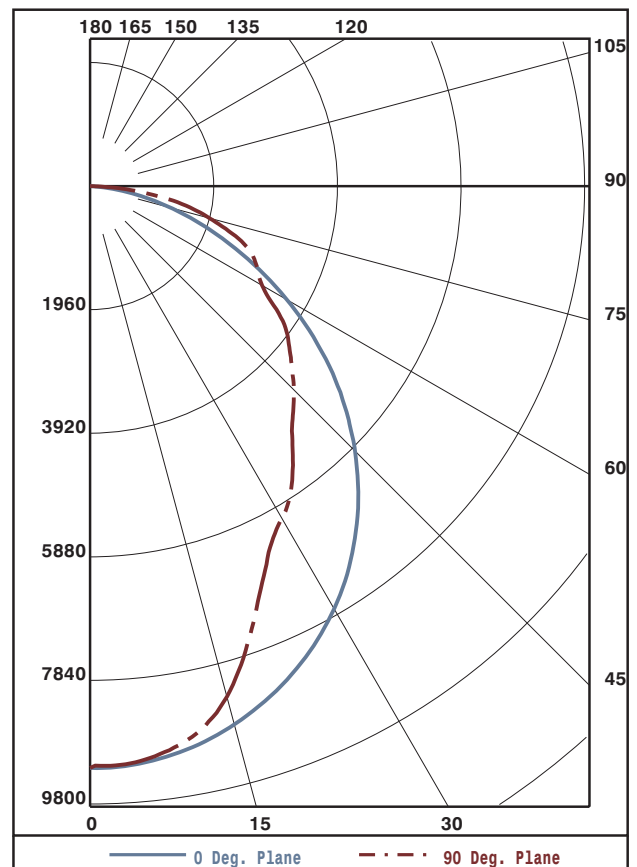
PLANE: 0-DEG 90-DEG

SPACING CRITERIA: 1.2 1.0

LUMINOUS LENGTH: 47.875 18.250

LUMINANCE IN CANDELA PER SQUARE METER

ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 45-DEG	AVERAGE 90-DEG
0	16359.	16359.	16359.
45	14907.	11731.	11462.
55	13691.	10868.	11536.
65	11686.	10556.	12168.
75	9013.	12063.	13433.
85	4030.	11377.	11784.



Approved By: MG

THIS REPORT BASED ON LM-41 AND OTHER PERTINENT IESNA PROCEDURES.



LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING
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of the
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905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 10435

DATE: 10-16-2006

PREPARED FOR: SIM-KAR LIGHTING

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
0	102	102	102	102	99	99	99	99	95	95	95	91	91	91	87	87	87	85	85	85	85
1	93	90	86	83	91	88	84	82	84	81	79	81	79	77	78	76	74	73	73	73	73
2	85	79	73	69	83	77	72	68	74	70	66	71	68	65	69	66	63	61	61	61	61
3	79	70	63	58	76	69	63	58	66	61	57	64	59	56	62	58	55	53	53	53	53
4	72	62	55	50	70	61	55	49	59	53	49	57	52	48	55	51	47	46	46	46	46
5	66	55	48	42	64	54	47	42	53	47	42	51	46	41	49	45	41	39	39	39	39
6	61	50	42	37	59	49	42	37	48	41	37	46	41	36	45	40	36	34	34	34	34
7	56	45	38	33	55	44	37	32	43	37	32	42	36	32	41	36	32	30	30	30	30
8	52	41	33	28	51	40	33	28	39	33	28	38	32	28	37	32	28	26	26	26	26
9	48	37	29	25	47	36	29	25	35	29	25	34	28	24	33	28	24	23	23	23	23
10	45	33	27	22	44	33	26	22	32	26	22	31	26	22	30	25	22	20	20	20	20

CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	9222	9222	9222	9222	9222
5	9188	9216	9195	9172	9149
10	9053	9088	9025	8954	8914
15	8837	8848	8728	8491	8381
20	8544	8501	8210	7675	7481
25	8182	8045	7410	6772	6618
30	7736	7463	6489	6092	6083
35	7215	6757	5751	5685	5593
40	6610	5955	5246	5081	4982
45	5942	5104	4676	4539	4569
50	5214	4289	4026	4101	4146
55	4427	3604	3514	3672	3730
60	3606	3013	3023	3109	3148
65	2784	2320	2515	2750	2899
70	2021	1781	2069	2473	2549
75	1315	1302	1760	1913	1960
80	695	920	1209	1333	1343
85	198	458	559	574	579
90	9	20	29	37	39

ZONAL LUMEN SUMMARY

0- 5	221.
5- 10	652.
10- 15	1052.
15- 20	1386.
20- 25	1629.
25- 30	1784.
30- 35	1900.
35- 40	1948.
40- 45	1926.
45- 50	1851.
50- 55	1735.
55- 60	1587.
60- 65	1392.
65- 70	1198.
70- 75	1001.
75- 80	739.
80- 85	440.
85- 90	109.

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) THIS TEST WAS PERFORMED USING A SPECIFIC BALLAST/LAMP COMBINATION. EXTRAPOLATION OF THESE DATA FOR OTHER BALLAST/LAMP COMBINATIONS MAY PRODUCE ERRONEOUS RESULTS. 2) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 3) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT WHERE THE AMBIENT TEMPERATURE WAS HELD AT 25°C ±1°C. FIELD PERFORMANCE MAY DIFFER PARTICULARLY IN REGARDS TO CHANGE IN LUMINOUS OUTPUT AS A RESULT OF DIFFERENCE IN AMBIENT TEMPERATURE AND METHOD OF MOUNTING THE LUMINAIRE.



ProLume.

< Programmed Start T5

ProLume® Programmed Start T5

Halco
LIGHTING TECHNOLOGIES

Energy Efficient

- Delivers up to 104 LPW with a compact design
- Improved tri-phosphor coating provides superior color rendering - up to 86 CRI
- Excellent lumen maintenance - up to 94%

Technical Data

- Low profile
- Minimum starting temperature -15°F
- Peak operating temperature 95°F
- Uniform surface brightness regardless of length
- Special coating on glass wall prevents glass and phosphor mercury absorption
- 3000, 3500, 4100, and 5000K

Benefits Over Standard T8 or T12 Lamps

- Delivers superior optical control
- All T5 lamps have the same surface brightness for uniform lighting
- Higher peak operating temperatures, 95°F vs. 77°F for T8 and T12 lamps
- 2-Year Guarantee

Applications

- Cove lighting
- Display lighting
- Indirect fixtures
- High-bay fixtures

The Eco-Shield® mark indicates this product is TCLP compliant.



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Bulb Type	Watts	Base	Product #	Product Code	Description	Pkg/ Qty	Color Temp	CRI	Initial Lumens	Mean Lumens	Avg Rated Life	Commercial Life**	Nom Length (in)
PROGRAMMED START ECO-SHIELD®													
T5	14	G5	30117	F14T5/830/ECO/IC	830 Phosphor Eco-Shield®	25	3000	86	1350	1270	24000	30000	22"
T5	14	G5	30118	F14T5/835/ECO/IC	835 Phosphor Eco-Shield®	25	3500	86	1350	1270	24000	30000	22"
T5	14	G5	30119	F14T5/841/ECO/IC	841 Phosphor Eco-Shield®	25	4100	86	1350	1270	24000	30000	22"
T5	21	G5	30125	F21T5/830/ECO/IC	830 Phosphor Eco-Shield®	25	3000	86	2100	1990	24000	30000	34"
T5	21	G5	30126	F21T5/835/ECO/IC	835 Phosphor Eco-Shield®	25	3500	86	2100	1990	24000	30000	34"
T5	21	G5	30127	F21T5/841/ECO/IC	841 Phosphor Eco-Shield®	25	4100	86	2100	1990	24000	30000	34"
T5	24	G5	30134	F24T5/835/HO/ECO/IC	835 Phosphor High Output Eco-Shield®	25	3500	86	2000	1900	24000	30000	22"
T5	24	G5	30135	F24T5/841/HO/ECO/IC	841 Phosphor High Output Eco-Shield®	25	4100	86	2000	1900	24000	30000	22"
T5	35	G5	35049	F35T5/835/ECO/IC	835 Phosphor Eco-Shield®	25	3500	86	3650	3450	24000	30000	58"
T5	35	G5	35050	F35T5/841/ECO/IC	841 Phosphor Eco-Shield®	25	4100	86	3650	3450	24000	30000	58"
T5	37	G5	35060	F39T5/830/HO/ECO/IC	830 Phosphor High Output Eco-Shield®	25	3000	86	3500	3320	24000	30000	34"
T5	37	G5	35061	F39T5/835/HO/ECO/IC	835 Phosphor High Output Eco-Shield®	25	3500	86	3500	3320	24000	30000	34"
T5	37	G5	35062	F39T5/841/HO/ECO/IC	841 Phosphor High Output Eco-Shield®	25	4100	86	3500	3320	24000	30000	34"
T5	28	G5	35041	F28T5/830/ECO/IC	830 Phosphor Eco-Shield®	25	3000	86	2900	2750	24000	30000	46"
T5	28	G5	35042	F28T5/835/ECO/IC	835 Phosphor Eco-Shield®	25	3500	86	2900	2750	24000	30000	46"
T5	28	G5	35043	F28T5/841/ECO/IC	841 Phosphor Eco-Shield®	25	4100	86	2900	2750	24000	30000	46"
T5	28	G5	35044	F28T5/850/ECO/IC	850 Phosphor Eco-Shield®	25	5000	86	2900	2750	24000	30000	46"
☼ T5	49	G5	35085	F49T5/835/HO/ECO	835 Phosphor High Output Eco-Shield®	25	3500	86	4900	4700	24000	30000	46"
☼ T5	49	G5	35088	F49T5/841/HO/ECO	841 Phosphor High Output Eco-Shield®	25	4100	86	4900	4700	24000	30000	46"
☼ T5	49	G5	35089	F49T5/850/HO/ECO	850 Phosphor High Output Eco-Shield®	25	5000	86	4900	4700	24000	30000	46"
T5	54	G5	35081	F54T5/830/HO/ECO/IC	830 Phosphor High Output Eco-Shield®	25	3000	86	5000	4850	24000	30000	46"
T5	54	G5	35082	F54T5/835/HO/ECO/IC	835 Phosphor High Output Eco-Shield®	25	3500	86	5000	4850	24000	30000	46"
T5	54	G5	35083	F54T5/841/HO/ECO/IC	841 Phosphor High Output Eco-Shield®	25	4100	86	5000	4850	24000	30000	46"
T5	54	G5	35084	F54T5/850/HO/ECO/IC	850 Phosphor High Output Eco-Shield®	25	5000	86	5000	4850	24000	30000	46"
☼ T5	54	G5	35086	F54T5/865/HO/ECO/IC	865 Phosphor High Output Eco-Shield®	25	6500	86	5000	4850	24000	30000	46"
☼ T5	80	G5	35087	F80T5/835/HO/ECO	835 Phosphor High Output Eco-Shield®	25	3500	86	7000	6650	24000	30000	57.1"
☼ T5	80	G5	35090	F80T5/841/HO/ECO	841 Phosphor High Output Eco-Shield®	25	4100	86	7000	6650	24000	30000	57.1"
ULTRA EFFICIENT T5 EXTENDED LIFE													
T5	28	G5	35046	F28T5/835/ECO/XL	835 Phosphor Eco-Shield®	25	3500	86	2800	2660	40000	46000	46"
T5	28	G5	35047	F28T5/841/ECO/XL	841 Phosphor Eco-Shield®	25	4100	86	2800	2660	40000	46000	46"
T5 HIGH OUTPUT EXTENDED LIFE													
T5	54	G5	35070	F54T5/835/HO/ECO/XL	835 Phosphor Eco-Shield®	25	3500	86	5000	4790	40000	46000	46"
T5	54	G5	35071	F54T5/841/HO/ECO/XL	841 Phosphor Eco-Shield®	25	4100	86	5000	4790	40000	46000	46"
T5	54	G5	35072	F54T5/850/HO/ECO/XL	850 Phosphor Eco-Shield®	25	5000	86	5000	4790	40000	46000	46"
CIRCLINE PROGRAMMED START 2GX13													
T5	22	2GX13	109080	FC22T5/835	835 Phosphor	20	3500	82	1900	1800	10000	12500	9"
T5	22	2GX13	109082	FC22T5/841	841 Phosphor	20	4100	82	1900	1800	10000	12500	9"
T5	40	2GX13	109084	FC40T5/835	835 Phosphor	20	3500	82	3350	3150	10000	12500	12"
T5	40	2GX13	109086	FC40T5/841	841 Phosphor	20	4100	82	3350	3150	10000	12500	12"

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** Based on commercial standards of 12 hours per start.

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Mercantile Customer Project Commitment Agreement
Cash Rebate Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between The Cleveland Electric Illuminating Company, its successors and assigns (hereinafter called the "Company") and CardPak, Inc., Taxpayer ID No. 34-0971339 its permitted successors and assigns (hereinafter called the "Customer") (collectively the "Parties" or individually the "Party") and is effective on the date last executed by the Parties as indicated below.

WITNESSETH

WHEREAS, the Company is an electric distribution utility and electric light company, as both of these terms are defined in R.C. § 4928.01(A); and

WHEREAS, Customer is a mercantile customer, as that term is defined in R.C. § 4928.01(A)(19), doing business within the Company's certified service territory; and

WHEREAS, R.C. § 4928.66 (the "Statute") requires the Company to meet certain energy efficiency and peak demand reduction ("EE&PDR") benchmarks; and

WHEREAS, when complying with certain EE&PDR benchmarks the Company may include the effects of mercantile customer-sited EE&PDR projects; and

WHEREAS, Customer has certain customer-sited demand reduction, demand response, or energy efficiency project(s) as set forth in attached Exhibit 1 (the "Customer Energy Project(s)") that it desires to commit to the Company for integration into the Company's Energy Efficiency & Peak Demand Reduction Program Portfolio Plan ("Company Plan") that the Company will implement in order to comply with the Statute; and

WHEREAS, the Customer, pursuant to the Public Utilities Commission of Ohio's ("Commission") September 15, 2010 Order in Case No. 10-834-EL-EEC, desires to pursue a cash rebate of some of the costs pertaining to its Customer Energy Project(s) ("Cash Rebate") and is committing the Customer Energy Project(s) as a result of such incentive.

WHEREAS, Customer's decision to commit its Customer Energy Project(s) to the Company for inclusion in the Company Plan has been reasonably encouraged by the possibility of a Cash Rebate.

WHEREAS, in consideration of, and upon receipt of, said cash rebate, Customer will commit the Customer Energy Project(s) to the Company and will comply with all other terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, do hereby agree as follows:

1. **Customer Energy Projects.** Customer hereby commits to the Company and Company accepts for integration into the Company Plan the Customer Energy Project(s) set forth on attached Exhibit 1. Said commitment shall be for the life of the Customer Energy Project(s). Company will incorporate said project(s) into the Company Plan to the extent that such projects qualify. In so committing, and as evidenced by the affidavit attached hereto as Exhibit A, Customer acknowledges that the information provided to the Company about the Customer Energy Project(s) is true and accurate to the best of its knowledge.

- a. By committing the Customer Energy Project(s) to the Company, Customer acknowledges and agrees that the Company shall control the use of the kWh and/or kW reductions resulting from said projects for purposes of complying with the Statute. By committing the Customer Energy Project(s), Customer further acknowledges and agrees that the Company shall take ownership of the energy efficiency capacity rights associated with said Project(s) and shall, at its sole discretion, aggregate said capacity into the PJM market through an auction. Any proceeds from any such bids accepted by PJM will be used to offset the costs charged to the Customer and other of the Company's customers for compliance with state mandated energy efficiency and/or peak demand requirements
 - b. The Company acknowledges that some of Customer's Energy Projects contemplated in this paragraph may have been performed under certain other federal and/or state programs in which certain parameters are required to be maintained in order to retain preferential financing or other government benefits (individually and collectively, as appropriate, "Benefits"). In the event that the use of any such project by the Company in any way affects such Benefits, and upon written request from the Customer, Company will release said Customer's Energy Project(s) to the extent necessary for Customer to meet the prerequisites for such Benefits. Customer acknowledges that such release (i) may affect Customer's cash rebate discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations.
 - c. Any future Customer Energy Project(s) committed by Customer shall be subject to a separate application and, upon approval by the Commission, said projects shall become part of this Agreement.
 - d. Customer will provide Company or Company's agent(s) with reasonable assistance in the preparation of the Commission's standard joint application for approval of this Agreement ("Joint Application") that will be filed with the Commission, with such Joint Application being consistent with then current Commission requirements.
 - e. Upon written request and reasonable advance notice, Customer will grant employees or authorized agents of either the Company or the Commission reasonable, pre-arranged access to the Customer Energy Project(s) for purposes of measuring and verifying energy savings and/or peak demand reductions resulting from the Customer Energy Project(s). It is expressly agreed that consultants of either the Company or the Commission are their respective authorized agents.
2. **Joint Application to the Commission.** The Parties will submit the Joint Application using the Commission's standard "Application to Commit Energy Efficiency/Peak Demand Reduction Programs" ("Joint Application") in which they will seek the Commission's approval of (i) this Agreement; (ii) the commitment of the Customer Energy Project(s) for inclusion in the Company Plan; and (iii) the Customer's Cash Rebate.

The Joint Application shall include all information as set forth in the Commission's standard form which, includes without limitation:

- i. A narrative description of the Customer Energy Project(s), including but not limited to, make, model and year of any installed and/or replaced equipment;
- ii. A copy of this Agreement; and
- iii. A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results.

3. **Customer Cash Rebate.** Upon Commission approval of the Joint Application, Customer shall provide Company with a W-9 tax form, which shall at a minimum include Customer's tax identification number. Within the greater of 90 days of the Commission's approval of the Joint Application or the completion of the Customer Energy Project, the Company will issue to the Customer the Cash Rebate in the amount set forth in the Commission's Finding and Order approving the Joint Application.
- a. Customer acknowledges: i) that the Company will cap the Cash Rebate at the lesser of 50% of Customer Energy Project(s) costs or \$250,000; ii) the maximum rebate that the Customer may receive per year is \$500,000 per Taxpayer Identification Number per utility service territory; and iii) if the Customer Energy Project qualifies for a rebate program approved by the Commission and offered by the Company, Customer may still elect to file such project under the Company's mercantile customer self direct program, however the Cash Rebate that will be paid shall be discounted by 25%; and
 - b. Customer acknowledges that breaches of this Agreement, include, but are not limited to:
 - i. Customer's failure to comply with the terms and conditions set forth in the Agreement, or its equivalent, within a reasonable period of time after receipt of written notice of such non-compliance;
 - ii. Customer knowingly falsifying any documents provided to the Company or the Commission in connection with this Agreement or the Joint Application.
 - c. In the event of a breach of this Agreement by the Customer, Customer agrees and acknowledges that it will repay to the Company, within 90 days of receipt of written notice of said breach, the full amount of the Cash Rebate paid under this Agreement. This remedy is in addition to any and all other remedies available to the Company by law or equity.
4. **Termination of Agreement.** This Agreement shall automatically terminate:
- a. If the Commission fails to approve the Joint Agreement;
 - b. Upon order of the Commission; or
 - c. At the end of the life of the last Customer Energy Project subject to this Agreement.

Customer shall also have an option to terminate this Agreement should the Commission not approve the Customer's Cash Rebate, provided that Customer provides the Company with written notice of such termination within ten days of either the Commission issuing a final appealable order or the Ohio Supreme Court issuing its opinion should the matter be appealed.

5. **Confidentiality.** Each Party shall hold in confidence and not release or disclose to any person any document or information furnished by the other Party in connection with this Agreement that is designated as confidential and proprietary ("Confidential Information"), unless: (i) compelled to disclose such document or information by judicial, regulatory or administrative process or other provisions of law; (ii) such document or information is generally available to the public; or (iii) such document or information was available to the receiving Party on a non-confidential basis at the time of disclosure.
- a. Notwithstanding the above, a Party may disclose to its employees, directors, attorneys, consultants and agents all documents and information furnished by the other Party in connection with this Agreement, provided that such employees, directors, attorneys,

consultants and agents have been advised of the confidential nature of this information and through such disclosure are deemed to be bound by the terms set forth herein.

- b. A Party receiving such Confidential Information shall protect it with the same standard of care as its own confidential or proprietary information.
 - c. A Party receiving notice or otherwise concluding that Confidential Information furnished by the other Party in connection with this Agreement is being sought under any provision of law, to the extent it is permitted to do so under any applicable law, shall endeavor to: (i) promptly notify the other Party; and (ii) use reasonable efforts in cooperation with the other Party to seek confidential treatment of such Confidential Information, including without limitation, the filing of such information under a valid protective order.
 - d. By executing this Agreement, Customer hereby acknowledges and agrees that Company may disclose to the Commission or its Staff any and all Customer information, including Confidential Information, related to a Customer Energy Project, provided that Company uses reasonable efforts to seek confidential treatment of the same.
6. **Taxes.** Customer shall be responsible for all tax consequences (if any) arising from the payment of the Cash Rebate.
7. **Notices.** Unless otherwise stated herein, all notices, demands or requests required or permitted under this Agreement must be in writing and must be delivered or sent by overnight express mail, courier service, electronic mail or facsimile transmission addressed as follows:

If to the Company:

FirstEnergy Service Company
76 South Main Street
Akron, OH 44308
Attn: Victoria Nofziger
Telephone: 330-384-4684
Fax: 330-761-4281
Email: ymnofziger@firstenergycorp.com

If to the Customer:

CardPak, Inc.
29601 Solon Road
Solon, Ohio 44139
Attn: Jerry Lamm
Telephone: 216.276.6544
Fax:
Email: JLamm@cardpak.com

or to such other person at such other address as a Party may designate by like notice to the other Party. Notice received after the close of the business day will be deemed received on the next business day; provided that notice by facsimile transmission will be deemed to have been received by the recipient if the recipient confirms receipt telephonically or in writing.

8. **Authority to Act.** The Parties represent and warrant that they are represented by counsel in connection with this Agreement, have been fully advised in connection with the execution thereof, have taken all legal and corporate steps necessary to enter into this Agreement, and that the undersigned has the authority to enter into this Agreement, to bind the Parties to all provisions herein and to take the actions required to be performed in fulfillment of the undertakings contained herein.
9. **Non-Waiver.** The delay or failure of either party to assert or enforce in any instance strict performance of any of the terms of this Agreement or to exercise any rights hereunder conferred, shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights at any later time or on any future occasion.
10. **Entire Agreement.** This Agreement, along with related exhibits, and the Company's Rider DSE, or its equivalent, as amended from time to time by the Commission, contains the Parties' entire understanding with respect to the matters addressed herein and there are no verbal or collateral representations, undertakings, or agreements not expressly set forth herein. No change in, addition to, or waiver of the terms of this Agreement shall be binding upon any of the Parties unless the same is set forth in writing and signed by an authorized representative of each of the Parties. In the event of any conflict between Rider DSE or its equivalent and this document, the latter shall prevail.
11. **Assignment.** Customer may not assign any of its rights or obligations under this Agreement without obtaining the prior written consent of the Company, which consent will not be unreasonably withheld. No assignment of this Agreement will relieve the assigning Party of any of its obligations under this Agreement until such obligations have been assumed by the assignee and all necessary consents have been obtained.
12. **Severability.** If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remaining portions of this Agreement, and the Parties further agree to substitute for the invalid portion a valid provision that most closely approximates the economic effect and intent of the invalid provision.
13. **Governing Law.** This Agreement shall be governed by the laws and regulations of the State of Ohio, without regard to its conflict of law provisions.
14. **Execution and Counterparts.** This Agreement may be executed in multiple counterparts, which taken together shall constitute an original without the necessity of all parties signing the same page or the same documents, and may be executed by signatures to electronically or telephonically transmitted counterparts in lieu of original printed or photocopied documents. Signatures transmitted by facsimile shall be considered original signatures.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officers or representatives as of the day and year set forth below.

The Cleveland Electric Illuminating Company_
(Company)

By: Gabriel Carpi

Title: V.P. Of Energy Efficiency

Date: 10-8-13

Card Pak, Inc._
(Customer)

By: [Signature]

Title: V.P. CFO

Date: 9/17/13

Affidavit of CardPak, Inc. -- Exhibit A

STATE OF OHIO)

)

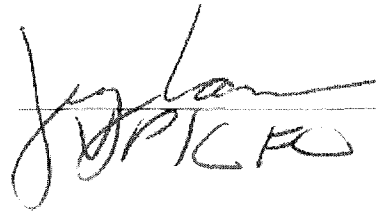
SS:

COUNTY OF Cuyahoga)

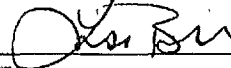
I, Jerry Lamm ,being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Chief Financial Officer of CardPak, Inc. ("Customer") As part of my duties, I oversee energy related matters for the Customer.
2. The Customer has agreed to commit certain energy efficiency projects to The Cleveland Electric Illuminating Company ("Company"), which are the subject of the agreement to which this affidavit is attached ("Project(s)").
3. In exchange for making such a commitment, the Company has agreed to provide Customer with Cash ("Incentive"). This Incentive was a critical factor in the Customer's decision to go forward with the Project(s) and to commit the Project(s) to the Company.
4. All information related to said Project(s) that has been submitted to the Company is true and accurate to the best of my knowledge.

FURTHER AFFIANT SAYETH NAUGHT.



Sworn to before me and subscribed in my presence this 17th day of 09, 2013


Notary



Lisa Biber
Resident Summit County
Notary Public, State of Ohio
My Commission Expires: 06-12-2018

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

11/19/2013 3:00:37 PM

in

Case No(s). 13-0629-EL-EEC

Summary: Application to Commit Energy Efficiency/Peak Demand Reduction Programs of The Cleveland Electric Illuminating Company and CardPak, Inc. electronically filed by Ms. Jennifer M. Sybyl on behalf of The Cleveland Electric Illuminating Company and CardPak, Inc.