



Case No.: 13-0368-EL-EEC

Mercantile Customer: Forest City Residential Management, Inc.

Electric Utility: The Cleveland Electric Illuminating Company

Program Title or
Description: Project 1 - Exterior Lighting Upgrades

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 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: Independence Place Apartments

Principal address: 50 Public Square, Suite 1060 Cleveland, Ohio 44113

Address of facility for which this energy efficiency program applies: 9231 Independence Blvd., Parma Heights, OH 44130

Name and telephone number for responses to questions: Mitali Shah 216-622-6210

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: 18,222 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?

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

_____ 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 \$579.00. (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.: 13-0368 -EL-EEC

State of Ohio :

Goran M. Cvijovic, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

Forest City Residential Management, 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.


Signature of Affiant & Title

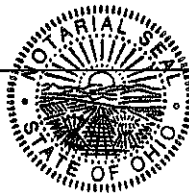


Sworn and subscribed before me this 28th day of February, 2013 Month/Year

Michaelene S. Pilch
Signature of official administering oath

Print Name and Title

My commission expires on _____



MICHAELENE S. PILCH, Notary Public
STATE OF OHIO
My Commission Expires Sept. 27, 2015
(Recorded in Cuyahoga County)

Customer Legal Entity Name: Forest City Commercial Management Inc.
Site Address: Independence Place Apartments
Principal Address: 9231 Independence Blvd.

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	Exterior Lighting Upgrades	The lighting on the exterior of the building consisted of 250 watt mercury vapor, 150 and 250 watt high -pressure sodium fixtures. The 250 watt mercury vapor fixtures were replaced with new 84 watt CFL fixtures. The 150 and 250 watt high pressure sodium fixtures were retrofitted with new ballasts and 70 and 205 watt pulse-start lamps, respectively. The new lighting system is more efficient and produces additional light and uses less energy than the previous equipment.	Please see the attached lighting calculator "FC Independence_Enhanced NonStandard_Lighting_Calculator.xls".	1-2 years. The decision to upgrade the exterior lighting was made to reduce energy and increase the amount of light provided by the fixtures.	N/A

Exhibit 2

Customer Legal Entity Name: Forest City Commercial Management Inc.

Site Address: Independence Place Apartments

Principal Address: 9231 Independence Blvd.

	Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (c) <i>Note 1</i>
2011	1,753,953	1,753,953	1,753,953
Average	1,753,953	1,753,953	1,753,953

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>
1	Exterior Lighting Upgrades	10/30/2012	\$10,689	\$5,345	18,222	18,222	-	\$772	\$579
					-	-	-		
					-	-	-		
					-	-	-		
					-	-	-		
					-	-	-		
		Total	\$10,689		18,222	18,222	0	\$772	\$579

Docket No. 13-0368

Site: 9231 Independence Blvd.

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.

Commitment
Payment
\$

\$0

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	18	\$ 308	\$ 5,617	\$ 4,050	\$579	\$182	\$ 4,811	1.2
Total	18	\$ 308	5,617	4,050	\$579	\$182	4,811	1.2

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)

Forest City Commercial Management Inc. ~ Independence Place Apartments
Docket No. 13-0368

Site: 9231 Independence Blvd.

Lighting Inventory Form

Applicant Name:	Forest City Commercial Management, Inc.
Facility Name:	Independence Plaza Apartments
Date:	3/5/2013
Lighting Zone Identifier (color)	Lighting Zone 3

Instructions: Please use one line for each fixture type in a room or area.
For existing or proposed control, choose OCC for Occupancy Sensor, DAYLITG 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]

Project Estimated Annual Savings Summary

Lighting

Estimated Annual kWh Savings	18,222
Total Change in Connected Load	4.75

Annual Estimated Cost Savings	\$1,822.20
Annual Operating Hours	3,833

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$291.70
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$480.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/occupancy sensor and \$25/daylight sensor (includes all Lighting Controls, both interior and exterior)	\$0.00

Total Calculated Incentive	\$771.70
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Total Fixture Quantity excluding retrofit CFLs and LED Exit Signs	19
Total Lamp Quantity for retrofit Screw-In CFLs	0

Total Lamp Quantity for retrofit Hard-Wired CFLs	32
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)	0.00
--	------

WP2F84

Mid sized wallpack. All aluminum precision die cast construction with tempered glass refractor. Lamp supplied.

Color: Bronze

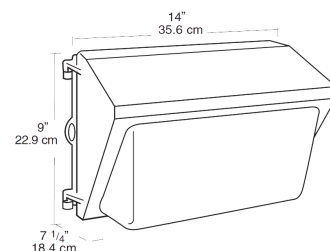
Weight: 10.9 lbs

Lamp Info

Type: **2-42W Triple**
 Watts: 84W
 Shape/Size: N/A
 Base: N/A
 ANSI: N/A
 Hours: 12,000
 Lamp Lumens: 6,400
 Efficacy: 69 LPW

Ballast Info

Type: Elec HPF QT
 120V: 0.78
 208V: 0.5
 240V: 0.5
 277V: 0.33
Input Watts: 93W
 Efficiency: 90%



Technical Specifications

UL Listing:

Suitable for wet locations. HID fixtures can be wired with 90° C supply wiring if supply wires are routed 3" away from ballast.

Housing:

Die cast aluminum, 1/2" NPS tapped holes top, both sides and back for conduit or photocontrol. Hinged refractor frame. Continuous silicone rubber gasket.

Reflector:

Specular anodized aluminum, removable for installation. Symmetrical light pattern maximizes distance between fixtures.

Cutoff Lens:

Tempered glass.

Refractor:

Prismatic optics designed to minimize glare and throw light down and out. Heat resistant borosilicate glass.

Finish:

Chip and fade resistant polyester powder coating.

Patents:

RAB sensor and fixture designs are protected under U.S. and International Intellectual Property laws

Ballast Minimum Starting Temperature:

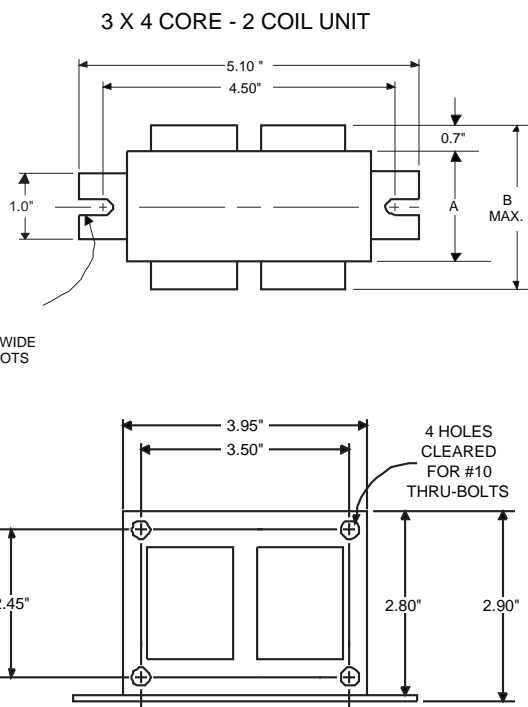
0° F

PHILIPS
ADVANCE

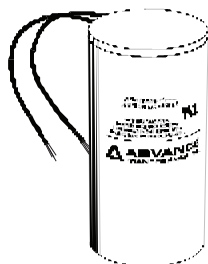
**Metal
Halide
Lamp Ballast**

Catalog Number 71A5692
For 200W M136 (Pulse Start)
60 Hz SUPER-CWA
Status: Active

DIMENSIONS AND DATA



Capacitor: 7C150M33



Capacitance: 15
Dia/Oval Dim: 1.50
Height: 3.75
Temp Rating: 105°C

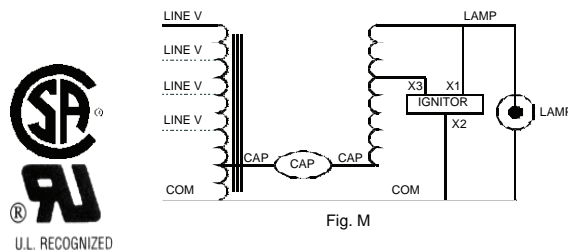
Ignitor: LI533-H4



Ballast to Lamp Distance
(BTL) = 2 feet
Temp Rating: 105°C

INPUT VOLTS		120	208	240	277
CIRCUIT TYPE	SUPER-CWA				
POWER FACTOR (min)	90%				
REGULATION					
Line Volts	±10%				
Lamp Watts	±10%				
LINE CURRENT (Amps)					
Operating.....		2.00	1.20	1.00	0.85
Open Circuit.....		2.00	1.20	1.00	0.85
Starting.....		0.75	0.40	0.35	0.30
UL TEMPERATURE RATINGS					
Insulation Class	H(180°C)				
Coil Temperature Code	1029				
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C				
NOM. OPEN CIRCUIT VOLTAGE	240				
INPUT VOLTAGE AT LAMP DROPOUT.....		60	104	120	138
INPUT WATTS	232				
RECOMMENDED FUSE (Amps).....		6	4	3	3
CORE and COIL					
Dimension (A)	2.45				
Dimension (B)	3.60				
Weight (lbs.)	8				
Lead Lengths	12"				
CAPACITOR REQUIREMENT					
Microfarads	15.0				
Volts (min.)	330				
Fault Current Withstand (amps)					
60 Hz TEST PROCEDURES (Refer to Philips Lighting Electronics N.A. TEST Procedure for HID Ballasts - Form High Potential Test (Volts)					
1 minute	2000				
2 seconds	2500				
Open Circuit Voltage Test (Volts)	215-265				
Short-Circuit Current Test (Amps)					
Secondary Current	1.90-2.30				
Input Current.....		0.45	0.25	0.22	0.20
		0.70	0.40	0.35	0.30

Wiring Diagram:



Typical Ordering Information

(please call Philips Lighting Electronics N.A. for suffix availability)

Order Suffix	Description
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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.

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

Revised: 06/09/99



205W ED28 CL Allstart ISL

Product family description

Philips Energy Advantage CDM lamps with AllStart Technology is a high-efficiency protected “O” rated CDM lighting solution that provides energy savings without compromising light quality.

Features

- Direct retrofit lamp to both probe and pulse start magnetic ballasts.
- A true universal operation that does not affect lamp life.
- Reduced maintenance and recycling costs.
- Energy savings up to 18%*
- Long life $\geq 20,000$ hrs rated average life.
- Available in 205 and 330 watt clear and coated bulb finishes .
- * 330W CDM lamp with AllStart™ Technology compared to 400W quartz Metal Halide lamp.

Benefits

- Crisp white light.
- Excellent color rendering of CRI ≥ 85 .
- Energy saving solution - without changing a ballast (for both Probe and Pulse Start ballasts).

Application

- Ideal for high-ceiling industrial, retail and distribution centers as well as outdoor applications.

Product data	
Product Number	232561
Full product name	205W ED28 CL Allstart ISL
Ordering Code	CDM205/U/O/4K EA 12/I
Pack type	1 Sleeve Open End
Pieces per Sku	1
Skus/Case	12
Pack UPC	046677232566
EAN2US	
Case Bar Code	50046677232561
Successor Product number	

PHILIPS

Product data	
Base	Exclusionary Mogul Screw [Exclusionary Mogul Screw]
Bulb	ED28
Bulb Finish	Clear
Operating Position	Universal [Any or Universal (U)]
Packing Type	ISL [I Sleeve Open End]
Packing Configuration	12
Feature	Allstart
Ordering Code	CDM205/U/O/4K EA 12/I
Pack UPC	046677232566
Case Bar Code	50046677232561
ANSI Code HID	C184/O
Watts	205W
Lamp Voltage	125 V
Mercury (Hg) Content	45 mg
Picogram per Lumen Hour	131.1 p/LuHr
Color Code	841 [CCT of 4100K]
Color Rendering Index	85 Ra8
Color Designation	4100 Kelvin
Color Description	841 Cool White
Color Temperature	4100 K
Initial Lumens	19500 Lm
Design Mean Lumens	15600 Lm
Diameter D	88.9 mm
Maximum Overall Length [inch]	8.313 in
Light Center Length L	5 in
Diameter D	3.5 in
Product Number	232561



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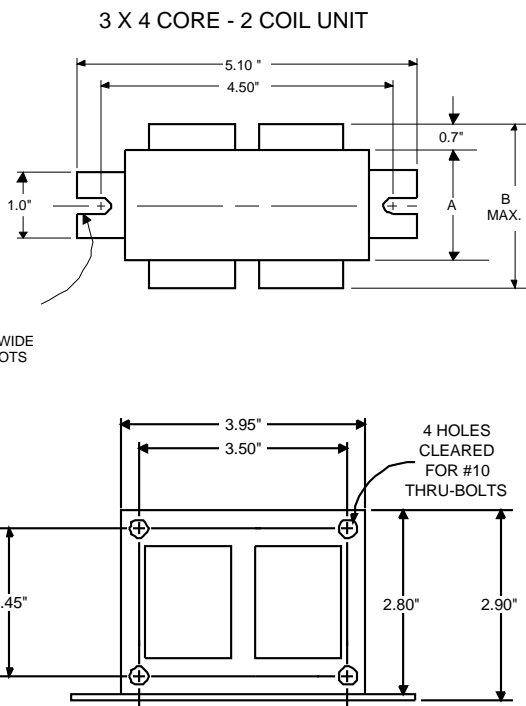
Document order number : 0000 000 00000



**Metal
Halide
Lamp Ballast**

Catalog Number 71A5292
For 70W M98/M143
60 Hz HX-HPF
Status: Active

DIMENSIONS AND DATA



Capacitor: 7C080L33-R



Capacitance: 8
Dia/Oval Dim: 1.25
Height: 2.9
Temp Rating: 105°C

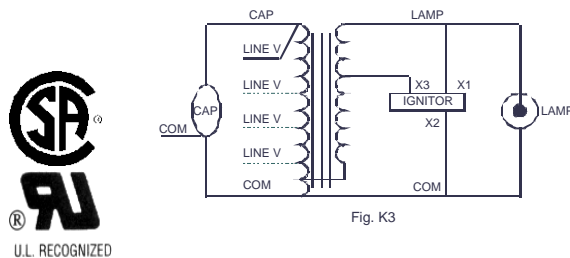
Ignitor: LI533-H4



Ballast to Lamp Distance
(BTL) = 15 feet
Temp Rating: 105°C

INPUT VOLTS		120	208	240	277
CIRCUIT TYPE	HX-HPF				
POWER FACTOR (min)	90%				
REGULATION					
Line Volts	±5%				
Lamp Watts	±7%				
LINE CURRENT (Amps)					
Operating.....		0.80	0.46	0.40	0.35
Open Circuit.....		1.90	1.00	0.90	0.80
Starting.....		0.55	0.30	0.25	0.25
UL TEMPERATURE RATINGS					
Insulation Class	H(180°C)				
Coil Temperature Code	1029	A	A	A	A
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C				
NOM. OPEN CIRCUIT VOLTAGE	255				
INPUT VOLTAGE AT LAMP DROPOUT.....		90	156	180	208
INPUT WATTS	88				
RECOMMENDED FUSE (Amps).....		4	3	2	2
CORE and COIL					
Dimension (A)	1.45				
Dimension (B)	2.75				
Weight (lbs.)	5				
Lead Lengths	12"				
CAPACITOR REQUIREMENT					
Microfarads	8.0				
Volts (min.)	280				
Fault Current Withstand (amps)					
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)					
High Potential Test (Volts)					
1 minute	2000				
2 seconds	2500				
Open Circuit Voltage Test (Volts)	230-280				
Short-Circuit Current Test (Amps)					
Secondary Current	0.95-1.25				
Input Current.....		0.55	0.35	0.30	0.25
		0.80	0.50	0.50	0.45

Wiring Diagram:



Typical Ordering Information

(please call Advance for suffix availability)

Order Suffix	Description
500D.	Ballast With Ignitor and Dry Film Capacitor
510D.	Ballast w/Welded Bracket, Ignitor, & Dry Film Capacitor
600.	Ballast and Ignitor, No Capacitor
610.	Ballast with Welded Bracket and Ignitor, No Capacitor

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

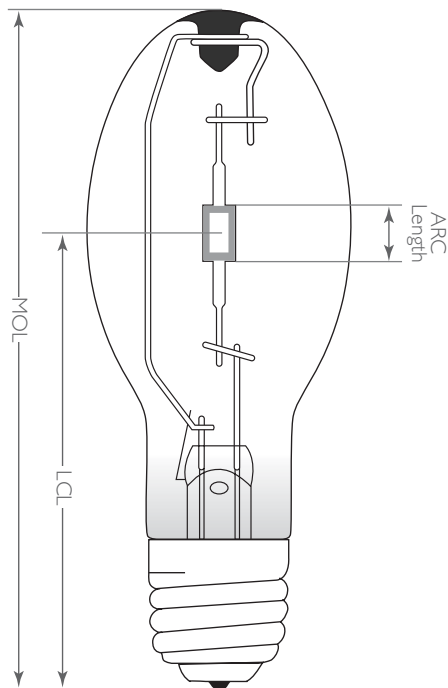
ADVANCE

O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2086

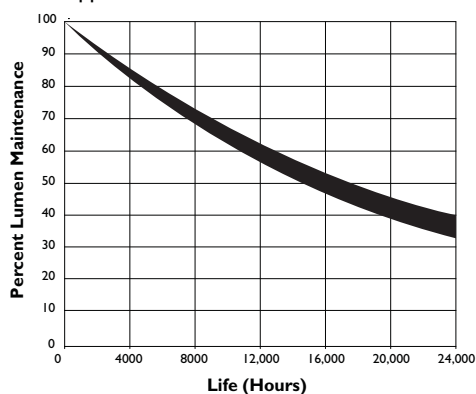
12/08/00

MasterColor® CDM Ceramic Metal Halide 70 Watt Pulse Start for Enclosed Fixtures

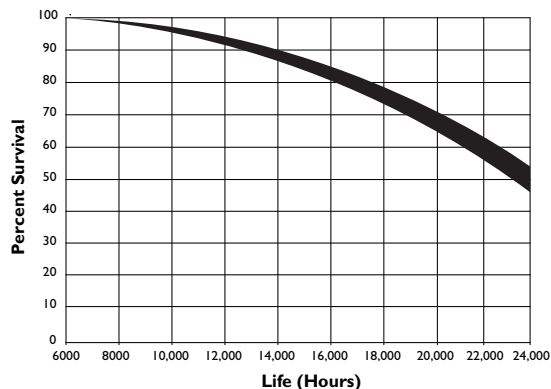
featuring ALTO® Lamp Technology



Approximate Lumen Maintenance Curve



Approximate Survival Curve



Ordering Information

Ordering Code	CDM70/U/PS/4K ALTO
ANSI Designation	M143/M98/E
Product Number	I5492-2
Description	Ceramic Metal Halide Pulse Start TCLP Compliant
Package Quantity	12

Physical Characteristics

Bulb Size	ED-23.5
Bulb Finish	Clear
Base	Mogul
Max. Overall Length (MOL)	7.75" (195mm)
Light Center Length (LCL)	5.00" (127mm)
Arc Length	.25" (6mm)
Arc Tube Material	Ceramic (PCA)
Maximum Permissible Bulb Temperature	400°C ANSI
Maximum Permissible Base Temperature	190°C ANSI
Maximum Bulb to Base Eccentricity	3°
Maximum Arc Tube to Base Eccentricity	3°

Operating Characteristics (Photometric)

Approximate Initial Lumens ¹	5900
Approximate Mean Lumen ²	4150
Efficacy (LPW)	84
Approximate Lumen Maintenance @ 10% Rated Life	85% Vertical 85% Horizontal
Approximate Lumen Maintenance @ 40% Rated Life	70%
Rated Average Life, Hours ³	24,000
Correlated Color Temperature (CCT)	4100 K Vertical 4300 K Horizontal
CIE Chromaticity Approximate	x-.380, y-.375
Color Rendering Index (CRI)	85

Operating Position

Universal—For enclosed fixtures only

TCLP Characteristics

Toxicity Characteristic Leaching Procedure (Federal TCLP) Results			
	Hg (mg/l)	Hg (mg/lamp)	Pb (mg/l)
Federal Limit Max (Mercury & Lead)	0.200	n/a	5.00
CDM70/U/PS/4K ALTO (Average)	0.097	9.5	0.00

PHILIPS

MasterColor® CDM Ceramic Metal Halide 70 Watt Pulse Start for Enclosed Fixtures

featuring ALTO® Lamp Technology

Electrical Data (Subject to change without notice)

Lamp Watts (Nominal).....	70
Lamp Operating Voltage (rms) (Nominal).....	100V
Initial Lamp Voltage Range (rms).....	80-115V
Lamp Operating Current (Amps) (rms) (Nominal).....	0.9
Maximum Lamp Starting Current (Amps)(rms).....	1.5
Lamp Current Crest Factor (Maximum).....	1.8
Warm-up Time to 95% Minimum Lamp Operating Voltage...	2 Minutes
Re-strike Time for Hot Lamp.....	10 Minutes
Ballast Type.....	ANSI M143/M98/E
Ignition Pulse.....	3000V min.; 4000V max
Pulse Width @ 2700 Volts.....	1.9µ (micro sec.)
Pulse Repetition Rate (Minimum).....	1 pulse per half cycle
Starting Ballast Open Circuit Voltage (Minimum):	
@ 10°C for 10 seconds – 98% of "0" hr lamps start.....	235 Vrms
@ -30°C for 120 seconds – 90% of 100 hr lamps start ...	235 Vrms
Minimum Operating Temperature.....	-30°C
Reference Ballast Impedance.....	97Ω (ohms)
Maximum Lamp Watts.....	84 Watts
Rated Input Voltage.....	220 volts
Maximum Voltage Increase by Fixture.....	5V rms

1) Measured at 100 hours of life in vertical and horizontal positions.

2) Approximate mean lumen output at 40% of lamp rated average life. Measured in vertical and horizontal operating positions.

3) Rated average life is the life obtained, on the average, from large representative groups of lamps in laboratory tests under controlled conditions at 10 or more operating hours per start. It is based on survival of at least 50% of the lamps and allows for individual lamps or groups of lamps to vary considerably from the average.

Notes: Pulse Start Metal Halide lamps are designed for operation on only approved ballasts with metal halide pulse ignitors.

WARNINGS, CAUTIONS AND OPERATING INSTRUCTIONS

R “**WARNING:** These lamps can cause serious skin burn and eye inflammation from short wave 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. Certain lamps that will automatically extinguish when the outer envelope is broken or punctured are commercially available.” This lamp complies with FDA radiation performance standard 21 CFR subchapter J. (USA:21CFR 1040.30 Canada:SOR/DORS/80-381)

If the outer bulb is broken or punctured, turn off at once and replace the lamp to avoid possible injury from hazardous short wave ultraviolet radiation. Do not scratch the outer bulb or subject it to pressure as this could cause the outer bulb to crack or shatter. A partial vacuum in the outer bulb could cause glass to fly if the envelope is struck.

WARNING: The arc-tube of metal halide lamps are designed to operate under high pressure and at temperatures up to 1000° C and can unexpectedly rupture due to internal or external factors such as a ballast failure or misapplication. If the arc-tube ruptures for any reason, the outer bulb may break and pieces of extremely hot glass might be discharged into the surrounding environment. If such a rupture were to happen, **THERE IS A RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE.**

This lamp contains an arc tube with a filling gas containing not less than 25nC1 of Kr-85 and is distributed by Philips Lighting Company, a division of Philips Electronics North America Corporation, Somerset, New Jersey, 08875

RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE.

Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.

CAUTION: TO REDUCE THE RISK OF PERSONAL INJURY, PROPERTY DAMAGE, BURNS AND FIRE RESULTING FROM AN ARC TUBE RUPTURE, THE FOLLOWING LAMP OPERATING INSTRUCTIONS MUST BE FOLLOWED.

LAMP OPERATING INSTRUCTIONS:

1. RELAMP FIXTURES AT OR BEFORE THE END OF RATED LIFE. Allowing lamps to operate until they fail is not advised and may increase the possibility of inner arc tube rupture.
2. Before lamp installation/replacement, shut power off and allow lamp and fixture to cool to avoid electrical shock and potential burn hazards.
3. Use only in an enclosed fixture capable of withstanding particles of glass having temperatures up to 1000°C, unless otherwise noted.
4. Use only auxiliary equipment meeting Philips and/or ANSI standards.
Use within voltage limits recommended by ballast manufacturer.
 - A. Operate lamp only within specified limits of operation.
 - B. For total supply load refer to ballast manufacturers electrical data.
 - C. All Pulse Start lamps require a socket rated to withstand a 4000 Volt pulse.
5. Periodically inspect the outer envelope. Replace any lamps that show scratches, cracks or damage.
6. If a lamp bulb support is used, be sure to insulate the support electrically to avoid possible decomposition of the bulb glass.
7. Protect lamp base, socket and wiring against moisture, corrosive atmospheres and excessive heat.
8. Time should be allowed for lamps to stabilize in color when turned on for the first time. This may require several hours of operation, with more than one start. Lamp color is also subject to change under conditions of excess vibration or shock, and color appearance may vary between individual lamps.
9. Lamps may require 10 to 15 minutes to re-light if there is a power interruption.
10. Take care in handling and disposing of lamps. If an arc tube is broken, avoid skin contact with any of the contents or fragments.
11. Use this lamp only in a fixture that contains a Pulse Start metal halide ballast and is specifically designed for use with Pulse Start metal halide lamps.



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 Forest City Residential Management, Inc., Taxpayer ID No. 31-1517513 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:

Forest City Commercial Management, Inc.
50 Public Square, Suite 1060
Cleveland, OH 44113
Attn: Mitali Shah
Telephone: 216-622-6210
Fax:
Email: mitalishah@forestcity.net

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: John C. Lanza

Title: V.P. Of Energy Efficiency

Date: 3-18-13

Forest City Residential Management, Inc._
(Customer)

By: [Signature]

Title: Assistant Manager

Date: 2/24/13

Affidavit of Forest City Residential Management, Inc. – Exhibit A

STATE OF OHIO)

COUNTY OF)

SS:

I, Garret M Cipriani, being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Co President COO RES Mgmt of Forest City Residential Management, 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 28th day of Feb, 2013

Michaelene S. Pilch
Notary



MICHAELENE S. PILCH, Notary Public
STATE OF OHIO
My Commission Expires Sept. 27, 2015
(Recorded In Cuyahoga County)

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/27/2013 4:24:35 PM

in

Case No(s). 13-0368-EL-EEC

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