Section 3: Energy Efficiency Programs

- A) Our energy efficiency program involves (choose whichever applies):
 - Early replacement of fully functioning equipment with new equipment. (Provide the date on which you replaced your fully functioning equipment, and the date on which you would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how you determined this future replacement date (or, if not known, please explain why this is not known). **See Exhibit 1 and Exhibit 2**
 - Installation of new equipment to replace equipment that needed to be replaced. We installed our new equipment on the following date(s):

Installation of new equipment for new construction or facility expansion. We installed our new equipment on the following date(s):

- B) Energy savings achieved/to be achieved by your energy efficiency program:
 - a) If you checked the box indicating that your 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: <u>21,875</u>kWh

b) If you checked the box indicating that you 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 the less efficient new equipment that you rejected in favor of the more efficient new equipment.

The University of Toledo- Medical Center

c) If you checked the box indicating that your 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 you rejected in favor of the more efficient new equipment.

Section 4: Demand Reduction/Demand Response Programs

- A) Our program involves (choose which applies):
 - Coincident peak-demand savings from our energy efficiency program.

Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction).

Potential peak-demand reduction (choose which applies):

- > Choose one or more of the following that applies:
 - Our 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.
 - Our 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) What is the date your peak demand reduction program was initiated? See Exhibit 2
- C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

<u>25.3</u> 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 60day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) We are applying for:

Option 1: A cash rebate reasonable arrangement.

OR

- Option 2: An exemption from the cost recovery mechanism implemented by the electric utility.
- B) The value of the option that we are seeking is:
 - Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):
 - \square A cash rebate of \$ **<u>\$10,482</u>** (Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined).

OR

- A cash rebate valued at no more than 50% of the total project cost, which is equal to \$ _____ (Attach documentation 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).

The University of Toledo- Medical Center

(Attach calculations showing how this time period 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 an ongoing efficiency program that practiced organization. is by our (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization 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 (capacity and energy) by the sum of our program costs and our electric utility's administrative costs to implement the program.

Our avoided supply costs were _____.

Our program costs were _____.

The utility's administrative 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 <u>See Exhibit 3</u>.

The utility's administrative costs were See Exhibit 3.

The utility's incentive costs/rebate costs were <u>See Exhibit 3</u>.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

- Narrative description of your 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 your program 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 you and the electric utility with regard to peak demand reduction;
 - 4) permission by you 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 you 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.

Customer Legal Entity Name: The university of Toledo

Site Address: UT Medical Center Campus Principal Address: 3000 Arlington Ave.

What date would you have replaced your

Proje No.	t 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	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	New air handling unit with VFD	This project includes a new air ahndling unit with a variable frequency drive installed on the fan motor	Motor and VFD Specifications were gathered from Attachments B, C, and D. Incentive was calculated on attachment A.	Within the next 5 years. The systems have a typcial lifespan of twenty years, and had been in the building about 15 years.	N/A

Docket No. 11-2128

Site: 3000 Arlington Ave.

Exhibit 1

Customer Legal Entity Name: The university of Toledo

Site Address: UT Medical Center Campus

Principal Address: 3000 Arlington Ave.

		Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (c) Note 1					
	2010 2009	55,090,943 55,493,971	55,090,943 55,493,971	55,112,818 55,515,846	5				
	Average	55,292,457	55,292,457	55,314,332	-				
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) \$ Note 2
1	New air handling unit with VFD	06/30/2006	\$853,000	\$426,500	21,875	21,875	2	\$1,750	\$1,313
					-	-	-		
						-	-		
					-	-	-		
							-		
					-	-	-		
					-	-			
		Total	\$853,000		21,875	21,875	2	\$1,750	\$1,313

Docket No. 11-2128 Site: 3000 Arlington Ave.

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 Av Cos \$/MV (B)	voided st Vh	Utility C	Avoided Cost \$ (C)	U	Itility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	22	\$	308	\$	6,744	\$	3,546	\$1,313	\$219	\$ 5,077	1.3
Total	22	\$	308		6,744		3,546	\$1,313	\$219	5,077	1.3

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)

The university of Toledo ~ UT Medical Center Campus Docket No. 11-2128

Site: 3000 Arlington Ave.



Project Name:	University of Toledo
Site Name:	Medical Campus Outpatient Surgery Center
Completed by (Name):	
Date completed:	

Ohio Edison • The Illuminating Company • Toledo Edison

Variable Frequency Drive Rebate Form

				VFD and C	ontrolled M	otor Nameplate	DATA				
Motor Application	VFD Manufacturer	VFD Model Number	Unique Motor ID(s)	Motor Location	Enclosure type: TEFC or ODP	Annual Hours of Operation ²	Load Factor (LF) ³	Motor Model Number	Motor HP	Motor Nominal Efficiency	Total Motor Incentive ¹ \$
AHU Fan	ABB	ACH550	AH-4	Air Handler 4 far	TEFC	8760	0.8	365THFS9086	50	93.60%	1,750
		1	1	1	1			Incen	tive through 10/1	1/2011 @ \$35/hp	1,750

(1) VFD incentives (through 10/11/2011) are calculated at a flat rate of \$35 per horsepower controlled, up to a maximum of 500 hp controlled per VFD.

When a single VFD is used to control two motors in a lead/lag (standby, redundant) configuration, use only the horsepower rating of one motor to figure controlled horsepower. For instance, if a single VFD controls two 30hp motors with only one operating at a time, the incentive calculation should be based on 30 hp: $30hp \times \frac{35}{hp} = \900 .

(2) For VAV fan motors, enter 2790 annual hours of operation. For HVAC pump motors, enter 5520 annual hours of operation. For all other motor usage, please estimate your annual hours of operation and attach an explanation of how you determined this value.

(3) For all motor and VFD applications, use the Load Factor (LF) default value of 0.80, unless data is available to support the use of a motor-specific LF other than 0.80. Please attach an explanation, including your analysis and/or data used, to support motor-specific LF value.

CERTIFICATION DATA SHEET

Model#:	365TTFS6586 CT	WINDING#:	T365666 NONE 1
CONN. DIAGRAM:	A-EE7300	ASSEMBLY:	F1/F2 CAPABLE
OUTLINE:	B-SS508590-1450		

TYPICAL MOTOR PERFORMANCE DATA

HP		ĸw	ı	SYN	C. RP	РМ	F.L	RPM	FRAM	1E	EN	CLOSU	RE	ĸv	A COD	E	DESIGN
50		37		1	200		1	180	365	Г		TEFC			G		В
			ı——														
PH	ŀ	lz	vo	LTS	FL	AMPS	ST	ART TYPE	DUTY		INSL		S.	F	A	MB	ELEVATION
3	e	50	46	60		61.5	L	INE OR	CONTINU	ου	F1		1.1	15		40	3300
							IN	VERTER	S								
												ı ——					
FULL LOAD E	EFF: 93.	.6 3/	4 LOAD	EFF: 94	l.1	1/2 LO	AD E	FF: 93.6	GTI	D. EF	F	1	ELEC.	TYPE		NO	LOAD AMPS
FULL LOAD	PF: 81	3	/4 LOAD) PF: 77.	.5	1/2 L	OAD	PF: 69		93		SQ C	AGE I	NV RAT	ED		23
			,														
F.L. TO	DRQUE		LOC	KED RC	TOR	AMPS		L.R. TO	DRQUE		в	.D. TOF	QUE			F.L	. RISE
222 L	B-FT			36	60			400 LB-	-FT 180		55	50 LB-F	T 248				75
								ı ———					. <u> </u>				
SOUND PRES	SURE	SOUN	ID POW	ER	ROT	OR WK	2	MAX.	WK^2	SAF	E STALL	TIME		STAR	rs	AP	PROX. MOTOR
@ 3 FT.														/HOU	R		WGT
58 dBA	Ţ	6	8 dBA		16	LB-FT^2		850 LE	-FT^2		25 SEC	. –		2			975 LBS.

*** SUPPLEMENTAL INFORMATION ***

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
STANDARD	STANDARD	RIGID	HORIZONTAL	PREMIUM SEVERE DUTY	DIVISION 2 T2B	FALSE	NONE	STANDARD

BEAR	RINGS	GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT	FRAME
DE	OPE					MATERIAL	MATERIAL
BALL	BALL	STANDARD	т	NONE	NONE	STANDARD	CAST IRON
6314	6312						

	THERMO-PF	ROTECTORS		THERMISTORS	CONTROL	SPACE /n HEATERS
THERMOSTATS	PROTECTORS	WDG RTDs	BRG RTDs			
NONE	NOT	NONE	NONE	NONE	FALSE	NONE VOLTS

* N II	NVERTE NV. HP	ER TORQUE SPEED RAN	: CONST IGE: 1.5)	ANT 2:1 K BASE SPE	ĒD
0 E		R: NONE			
Т	NONE	NONE			
E	IONE	NONE PPR			
S					
* B	BRAKE:	NONE	NONE		
N	NONE	P/N NO	NE		
Ν	NONE	NONE			
	- FT-LB	NON	ΕV	NONE Hz	

DATE: 07/25/2011 09:50:21 AM FORM 3531 REV.3 02/07/99 ** Subject to change without notice.

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							FAN			radiation tradeside					
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Duty	Qty Mt	fr.	Model	Size	Dia	Rot./L	Dis. Cl.	Arr.	ACFM	TSP IN WG	ESP IN WG	Fan BHP	RPM	MRPM	OV FPM
Supply	1 Twin	City	EPFN	402	40.25		2	4	30,000	6.00	3.70				
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ABB drives for HVAC applications ACH550, 1 to 500 Hp

Drive^{iT} Low Voltage AC Drive







SEBMITTAL SCHEDULE DETAILS

ITEM	CATALOG NUMBER	PRODUCT RATINGS & INCLUDED OPTIONS
-4 -4	ACH550-805-072A-4	Input Voltage: 580 – 480 VAC Rated Output Current: 72 A Construction: Wall Mounted Enclosure: UL Type 1, NEMA 1 Nominal Horsepower: 50 Input Disconnect: Disconnect Switch Bypass: HVAC Enhanced E-Bypass Input Impedance: 5% Communication Protocols: Stemens FLN Johnson Controls N2, Modhus RTC

	FUSE R	TINGS		
Taput Disce	annect Switch	Drive Input		
Fuse	Ratings	Fuse Raungs		
Amps	Bussmann	Amps	Busamann	
(600 V7	Type	(600 V)	Type	
E B	N/A	100	115-100	

	WIRE SIZE CAPACITIES OF POWER TERMINALS						
Circuit	Disconnect	Terminal	Qverload	Ground			
Breakor	Switch	Block	Relay	Lug			
#2/0	#2/0	#2/0	878	#2			
120 in/35s	120 in/lbs	(20 m/ibs		5() in (This			

DIMENSIONS AND WEIGHTS						
Height	Widah in I mm 1	Depth .n	Weight Uss Rel	Dimension Drawing		
9.6T 13/5-71	.521 120.51	-365 [14:40	62.5 (138)	3AUA000095585 Sheet 1		

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Power	Losses	Auflows		
Waffs	BTU/Ha	CEM	CM/Hr	
1120	3820	165	280	

	REFERENCE DRAWINGS.	
Power Wiring	Connection Diagram	Dimension Detail
3.MU334V19B125 FW Sheet 5	SAUA (SED2P5TOC Sheet A	MALLADODODD5305 Slicet I

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December 12, 2005.

ACH550 SPECIFICATIONS

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December 12, 2005

ACH550 SPECIFICATIONS (CONTINUED)

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sponfications are without to thange without notice. Please consult the factory when specifications are enseal.

Engineering Data and Ratings Tables

FUSES

Drive input fiscal are provided to disconnect the drive from power in the event that a component fails in the drive's power circuity. Since fast acting fiscal are provided, the branch encur protections will not clear when the crive input fuscal blow. If the drive input fuscal blow, the moticities witched to a Bypasa without replacing fuscal or resetting a circuit breaker. The drive's electronic protection circuity is designed to clear drive output short circuits and ground faults without blowing the drive input fuscal Drive input fuscal protections are layed in the *Submitted Schedule Drive* and in the *Fase Rating* Table. The ACM350 is UL approved without the need for input fusca. Fusc rating information is provided for customer telerance.

		FUSE RA	TINOS		
TERM	CATMOG NUMBER	Input Disconnect Switch Fuse Ratings		Drive Input Fuse Ratings	
		Xmps (500 V)	Binsemann Type	Amps (600/35)	Bussmann Type
- 01	A0465048D4072A-4	-877.A	NºIA.	100	[1S-1390

CABLE ENTRIES

ACH550-UH drives are configured for wining access from the bottom only on wall mounted onits and from the top only on floor mounted units. At least three separate metallic conduits are required, one for input power, one for output power to the motor and one for control signals.

Terminal Sizes

Power and motor cable terminal sizes are shown in the Submittel Schedule Details and in the Wire Sizy Capazities of Some Toronaux Table. Maximum recommended wire size capacity of the control terminals is #16, torque to 4 in /lbs. The information provided below is for connections to an input circuit breaker or disconnect switch, a motor terminal block, overload relay and ground lags. The table also lists forque that should be applied when rightening the terminals.

MANIMUSI WIRE SIZE CAPACITIES OF POWER TERMINALS							
STEM	CATALOG NUMBER	Circuit Breaker	Disconnect Switch	Teominal Block	Overload Relay	Ground	
OL .,	ACH650-BD-072A-4	#2/0 (120 th/Ro	#2/0 1/20 mt/1bz	#2 10 120 m/36a	-87A	#2 50 in/lbs	

FIEAT DISSIPATION REQUIREMENTS

ACMESSO deves are self-cooled. The cooling air entering the drive must be clean and free from corrosive materials. The *Submittal Schulus Details* and the *Heat Distintation Requirements* table below give the heat disapated into the hot air exhausted from the drives 17 the drives are installed in a confined space, the heat must be removed from the area by ventilation or air conditioning equipments.

HEAT DISSUMITION & ADDITION RECORDENTS							
CAUSAIRS SUMMER		Power Losses		Airflow			
		WATE	DTL Ht	S.F24	SM/Hr		
- 04	ACH550-BD-072A-4	1120	3820	185	280		

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Section 3: Energy Efficiency Programs

- A) Our energy efficiency program involves (choose whichever applies):
 - Early replacement of fully functioning equipment with new equipment. (Provide the date on which you replaced your fully functioning equipment, and the date on which you would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how you determined this future replacement date (or, if not known, please explain why this is not known). **See Exhibit 1 and Exhibit 2**
 - Installation of new equipment to replace equipment that needed to be replaced. We installed our new equipment on the following date(s):

Installation of new equipment for new construction or facility expansion. We installed our new equipment on the following date(s):

- B) Energy savings achieved/to be achieved by your energy efficiency program:
 - a) If you checked the box indicating that your 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: <u>20991.5</u>kWh

b) If you checked the box indicating that you 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 the less efficient new equipment that you rejected in favor of the more efficient new equipment.

The University of Toledo- Dowd Nash White Halls

c) If you checked the box indicating that your 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 you rejected in favor of the more efficient new equipment.

Section 4: Demand Reduction/Demand Response Programs

- A) Our program involves (choose which applies):
 - Coincident peak-demand savings from our energy efficiency program.

Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction).

Potential peak-demand reduction (choose which applies):

- > Choose one or more of the following that applies:
 - Our 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.
 - Our 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) What is the date your peak demand reduction program was initiated? See Exhibit 2
- C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

<u>3.74</u> kW See Exhibit 2

Revised October 28th, 2010

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 60day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) We are applying for:

Option 1: A cash rebate reasonable arrangement.

OR

- Option 2: An exemption from the cost recovery mechanism implemented by the electric utility.
- B) The value of the option that we are seeking is:
 - Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):
 - \square A cash rebate of \$ <u>\$2,245</u> (Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined).

OR

- A cash rebate valued at no more than 50% of the total project cost, which is equal to \$ _____ (Attach documentation 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).

The University of Toledo- Dowd Nash White Halls

(Attach calculations showing how this time period 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 an ongoing efficiency program that practiced organization. is by our (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization 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 (capacity and energy) by the sum of our program costs and our electric utility's administrative costs to implement the program.

Our avoided supply costs were _____.

Our program costs were _____.

The utility's administrative 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 <u>See Exhibit 3</u>.

The utility's administrative costs were **<u>See Exhibit 3</u>**.

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 your 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 your program 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 you and the electric utility with regard to peak demand reduction;
 - 4) permission by you 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 you 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.

Customer Legal Entity Name: The University of Toledo

Site Address: Dowd Nash White Halls

Principal Address: 2801 West Bancroft Street

What date would you have replaced your

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	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	Down Nash White Halls Lighting Upgrade	This program was a lighting project to upgrade the T12 fixtures and incandescent bulbs to T8 fixtures and compact fluorescent . The spec. sheets for these items are included. The fluorescent fixtures were 2 lamp, 3 lamp, and 4 lamp. See the attached First Energy lighting worksheet for more info on the pre and post fixtures.	The number and type of light fixtures/occupancy sensors were obtained from the as built drawings and input into the First Energy Lighting form. The kWh and Rebate amount were obtained from the same lighting form. Spec sheets and as-builts are attached.	This has been determined because these ballasts have an average life of 50,000 hours. Running at 5010 hours per year they would last about 10 years.	N/A

Docket No. 11-2128

Site: 2801 West Bancroft Street

Customer Legal Entity Name: The University of Toledo Site Address: Dowd Nash White Halls

Principal Address: 2801 West Bancroft Street

		Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (c) Note 1					
	2010 2009	75,334,512 84,645,244	75,334,512 84,645,244	75,355,504 84,666,236					
	Average	79,989,878	79,989,878	80,010,870	=				
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) \$ Note 2
1	Down Nash White Halls Lighting Upgrade	06/26/2007	\$27,201	\$13,601	20,992	20,992	4	\$2,993	\$2,245
					-	-	-		
						-	-		
							-		
						-	-		
					-	-	-		
							-		
		Total	\$27,201		20,992	20,992	4	\$2,993	\$2,245

Docket No. 11-2128 Site: 2801 West Bancroft Street

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 Avoide Cost \$/MWh (B)	ed U	Jtility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UСТ (Н)
1	21	\$ 30	8\$	6,472	\$ 3,546	\$2,245	\$210	\$ 6,001	1.1
Total	21	\$ 30	8	6,472	3,546	\$2,245	\$210	6,001	1.1

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)

The University of Toledo ~ Dowd Nash White Halls Docket No. 11-2128

Site: 2801 West Bancroft Street

Lighting Inventory Form

Applicant Name: Facility Name: Date:

University Of Toledo DOWD NASH WHITE 6/21/2011

technicitors: Please use one line for each stature type in a nom or area. For exempting or proposed control, divose OC for Docupany Sternor, DNVLTG for photoamour, or NONE for none. Controls must save energy to quality. The total of Carlom 5, the qualities of CPL and earl sign is Column X, and the qualities of animos in Column X, will be used to calculate your incentive on the NonStandard Lighting form.

				PROJECT B	ASIC INFORMATION			PRE-IN	STALLATION						POST-INSTAL	LATION						Energy Calculations									
Line	Building Address	Floor	Area Description	Interior or Exterior	Predominant Space Type	Area Cooling	Pre Fixture	Pre Fixture Code	Pre Watts /	Pre kW /	Existing	Existing	Post	Post Fixture Code	Post Watts/	Post kW7	Proposed	Proposed	Interior Change	Exterior	Change in	Applicant	Coincidence	Interactive	Interactive	Pre Controls	Post	Demand	Applicant	Prescribed	Annual Interio
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7/25/2011

Project Estimate Savings Sum	d Annual Imary	
Estimated Annual kWh Savings	20,991.50	
Total Change in Connected Load	3.74	
Annual Estimated Cost Savings	\$2,099.15	
Annual Operating Hours	5,010	
\$0.80/W (excluding CFLs, sensors, or LED exit signs)	\$2,992.80	
Exterior Lighting incentive @ \$0.50/W (excluding CFLs, sensors, or LED exit signs)	\$0.00	
Total CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all CFLs, both interior and exterior)	\$0.00	
Total 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	\$2,992.80	
		1
LED Exit Sign	138	
Total Lamp Quantity for Screw-In CFLs	0	
Total Lamp Quantity for Hard-Wired CFLs	0	
Total Fixture Quantity for LED Exit Signs	0	
Total Quantity for Occupancy Sensors	0	
Total Quantity for Daylight Sensors	0	



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	duallite or equal	DUALLITE LX SERIES DUALLITE LZ SERIES	DUALLITE LX SERIES	duallite LX series	duallite LX series		LITHONIA II890RE OR EQUAL	LITHONIA FMLR 54 OR EQUAL	Lithonia Fmlrig T2 Or Equal	LITHONIA LF6 I/26-42TRT F60I 120 GEBIO	LITHONIA SPXG432FWAI2I20GEB	MFR. CAI. NO. LITHONIA AVSM 2 32 MDM DLS MVOLT GEBIOIS ASR OR EQUAL	
CORRIDOR LIGHTING PLANS, SCHEDULES, & NOTES CORRIDOR LIGHTING PLANS, SCHEDULES, & NOTES NEW RENOVATION FOR: NASH, DOWD, & WHITE HALLS 2801 W. BANCROFT ST. TOLEDO, OHIO	AI	rchitectur by Design	re , Ltd.			5622 Syl	(419) Maybe Ivania,) 824– erry Sq Oh. 4	-3311 juare 3560				

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FEATURES & SPECIFICATIONS

INTENDED USE

For general area lighting or task-specific illumination in both new construction and remodeling applications. Especially suited for conference rooms, reception areas, health care institutions, educational facilities and offices. **Certain airborne contaminants can diminish integrity of acrylic.** <u>Click here for Acrylic Envi-</u> <u>ronmental Compatibility table for suitable uses.</u>

CONSTRUCTION

Rugged universal 4' steel channel provides platform for reflector/diffuser module. A tandem unit is an 8' channel with two 4' reflector/diffuser modules. Joiners and finished ends are injection molded from tough ABS/PC blend with integral Avante white color.

All diffusers snap into place by pivoting on joiner/light trap for easy lamp access. Injection molded joiners at each end allow fixtures to be field joined or completed as individual units with snap-on finished ends.

OPTICAL SYSTEM

Down light, solid (DLS) reflector finished in high reflectance matte-white polyester powder paint provides uniform light distribution. DLS is available with aluminum stepped reflector (ASR).

Up light, round hole perforated band (ULR) reflector finished in high reflectance matte white polyester powder paint has uniform light distribution with up light accent provided by 1-3/8" wide perforated band just above lamps.

All diffusers shield lamps from direct view.

Metal diffuser staggered round holes (MDR) 52% open perforated metal with .075" diameter holes backed with white acrylic diffuser.

Metal diffuser aligned mini slots (MDM) 46% open perforated metal backed with white acrylic diffuser.

Straight blade louver (SBL) sides of perforated metal with staggered round holes and solid blade louvered center. Sides and louver backed with white acrylic diffuser.

ELECTRICAL SYSTEM

All ballasts supplied are class P, thermally protected, resetting, HPF, non-PCB, UL Listed, CSA Certified. Energy saving and electronic ballasts are sound rated A. Standard combinations conform to UL 935.

INSTALLATION

AVSM can be directly mounted to most ceiling surfaces. Clips provided with fixture for surface mounting on tee bar in grid tiled ceilings. With mounting accessories, fixtures can be close to ceiling stem mounted or cable mounted up to 144". Refer to the accessories tab for information on mounting configurations and limitations. Consult National Electrical Codes specifications for through wiring limitations.

LISTING

UL Listed to US and Canadian safety standards (see Options). NYC approved (see Options).

ORDERING INFORMATION



Fluorescent

Number		
	Туре	A

Surface/Suspended Mount Lighting

Linear Fluorescent

T8

1 or 2 lamp

AVSM 1' x 4



Avante

Catalog

Notes

W H

Example: AVSM 2 32 MDR DLS 120 GEB

All dimensions are inches (millimeters).

Specifications

Length: 48" (1219)

Depth: 4-3/8" (111)

Diffuser Width: 5-1/2" (140)

Width: 12" (305)

Specifications are subject to change without notice.

Avante is covered by one or more of the following patents: 5,988,829; 399,586; 411,641; 413,402; 2,212,513; 87,513.

AVSM 1x4 Linear Fluorescent T8

18<u>0°</u>

AVSM 2 32 MDR DLS, (2) 32W T8 lamps, 2850 lumens per lamp, s/m 1.2 (along) 1.4 (across), test no. LTL 9446



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		0°	90	٥																	

AVSM 2 32 SBL DLS ASR, (2) 32W T8 lamps, 2850 lumens per lamps, s/m 1.1 (along) 1.6 (across), test no. LTL 9576 **Coefficients of Utilization** 180°

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30	HTV.	$X \times >$	< 60°	25°	565	719	3	46	39	34	38	33	29	35	31	28	0° - 90°	2809	49.3	87.6
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50	ott).	\times \checkmark		55°	233	683	۳6	35	27	22	26	21	18	25	20	17	90° - 150°	397	7.0	12.4
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80	0.	<u>-\</u> 20°		90	3	461	10	27	19	14	18	14	11	17	13	11	Et	ticienc	y: 56.2°	%

0° 🗕 **MOUNTING DATA**

For unit or row installation, surface or stem mounting.

90°

Unit installation — Minimum of two hangers required.

Row installation — One hanger per channel plus one per row required.

Hanging devices illustrated below.



LITHONIA LIGHTING®

Sheet #: AVSM 1X4 T8 ©2001-2010 Acuity Brands Lighting, Inc. All rights reserved. Rev. 5/28/10

Lithonia Lighting Fluorescent

One Lithonia Way, Conyers, GA 30012 Phone: 800-858-7763 Fax: 770-929-8789 www.lithonia.com

KEY: A = 5/8" Knockout B = 7/8" Knockout

C = 2'' Double Knockout



FEATURES & SPECIFICATIONS

INTENDED USE

Specification premium, high performance static T8 luminaires provide general illumination for recessed applications; ideal for schools, hospitals and other applications where fixture depth is a requirement.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Smooth hemmed fixture sides and ends for easy handling. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized.

Steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Door frame assemblies hinge or latch from either side of fixture. Powder-painted steel latches provide easy, secure door closure. Spring-loaded cam latch es standard.

No asbestos is used in this product.

FINISH

Five-stage iron-phosphate pre-treatment ensures superior paint adhesion. Painted parts finished with high-gloss, baked white enamel.

OPTICAL

Broad range of lens options available to meet specific performance requirements. **ELECTRICAL SYSTEM**

Thermally-protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast is standard. Energy-saving and electronic ballasts sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

22

LISTING

UL Listed (standard). Optional: Canada CSA or C-UL. Mexico NOM.

WARRANTY

2**CD**

Guaranteed for one year against mechanical defects in manufacture. NOTE: Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**. Example: 2SP G 3 32 RW A12125 MVOLT 1/3 GEB10IS

201		02					
Series	Number	Lamp type	D	oor frame	Voltage ¹		Options
2SP 2' wide	of lamps	32 32W T8	(blank) Flu	ish steel, white	120	1/4	One 4-lamp ballast
	2	(48'')	FN Flu	sh aluminum,	277	1/3	One 3-lamp ballast
	3		na	tural	347	2/3	Two 3-lamp ballasts ³
Trim type	4 6		FM Flu bla	sh aluminum, matte ck	MVOLT Others	GEB10IS	Electronic ballast, ≤10% THD, Instant Start
G Grid F Overlapping	Not included.		FW Flu wi	ish aluminum, iite	available.	GEB10RS	Electronic ballast, <u><</u> 10% THD, Rapid Start
flanged MT Modular fit-in			RN Re na	gressed aluminum, tural		EL	Emergency battery pack (nominal 300 lumens)
			RM Re ma	gressed aluminum, tte black		EL14	Emergency battery pack (nominal 1400 lumes)
			RW Re	gressed alumi-		GLR	Internal fast-blow fuse ²
			nu	m, white		GMF	Internal slow-blow fuse ²
						LST	Tandem-wired fixture pairs (shared ballasts)
				Diffuser type		PWS1836	6' prewire, 3/8" dia., 18- gauge, 1 circuit
						LP735	Lamped; 700-series, 3500K
			A12 A12125	#12 pattern acrylic #12 pattern acrylic, 0.1	25" thick	LP	Lamped, specify lamp type and color
			A19 A15	#19 pattern acrylic, 0.1 #15 pattern acrylic, 0.200	56" thick)" thick	PAF	Painted after fabrication (white enamel)
			PC1S	1/2" x 1/2" x 1/2" plastic c	ube silver louver	LASC	LA school safety cable
NUIES:	r 1201/ and 2771/	polications for-	PC2S	1-1/2" x 1-1/2" x 1" plastic	cube silver louver	JP	Job pack without individual
options require vol	tage specified.	pplications. Some	PC3S	3/4" x 3/4" x 1/2" plastic c	ube silver louver	00-	cartons, G trim only
2 Must specify voltag	le.					CSA	USA Certified
3 Six-lamp configurat	ion only.					NOM	NOM Certified

Weight: 23 lbs.

All dimensions are inches (millimeters).





2, 3 or 4 Lamps



MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).







NOTES

1 Recommended rough-in dimensions for F trim fixtures 24" x 48" (Tolerance is +1/4", -0"). Swing-gate range 1-5/8" to 3-3/4". Swing-gate span 23-3/8" to 26-11/16".

DIMENSIONS

All dimensions are inches (millimeters). Specifications subject to change without notice.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

30%

50% 30% 10%

91 87 87 87

76 78 76 74

64 69 66 63

55 62 57 54

47 55 51 47

41 50 45 41

37 45 40 36

33 42 36 32

29 38 33 29

26 35 30 26

24 33 28 24

100.0

0.0

100.0

25	6P 3 3	32 A1	2125							2S	P 3 3	2 A1	2				
Re	eport	LTL	1340	8						Re	port:	LTI	1341	0			
LL	JMEN	IS PE	R LA	MP:2	850					LU	MEN	IS PE	R LA	MP:2	850		
Lu	imina	ire Ef	ficien	cy:81	.5%					Lu	mina	ire Ef	fficien	cy:81	.9%		
		Co	oeffici	ients	of U	tilizat	ion					Co	oeffici	ients	of Ut	ilizat	ion
pf				:	20%					pf				:	20%		
рс		80%			50%			30%		рс		80%			50%		
pw	70%	50%	30%	50%	30%	10%	50%	30%	10%	pw	70%	50%	30%	50%	30%	10%	50%
0	97	97	97	91	91	91	87	87	87	0	98	98	98	91	91	91	87
1	89	86	83	80	78	76	77	75	74	1	90	86	83	81	78	76	78
2	82	76	71	71	67	64	69	65	63	2	82	76	71	72	68	64	69
3	75	67	61	64	59	55	61	57	54	3	76	67	61	64	59	55	62
~ 4	69	60	53	57	52	47	55	50	47	~ 4	70	60	53	57	52	47	55
55	64	54	47	51	46	41	50	45	41	05	64	54	47	52	46	41	50
⁶	59	49	42	47	41	37	45	40	36	ش 6	59	49	42	47	41	37	45
7	55	45	38	43	37	33	42	36	32	7	55	45	38	43	37	33	42
8	51	41	34	39	33	29	38	33	29	8	52	41	34	39	33	29	38
9	48	37	31	36	30	26	35	30	26	9	48	38	31	36	30	26	35
10	45	35	28	33	28	24	33	28	24	10	45	35	28	33	28	24	33
	Z	onall	Lume	n Su	mma	ry					Zo	nal	Lume	n Su	nma	ry	
Zor	ne	Lu	mens	% L	amp	% Fix	cture			Zon	е	Lu	mens	% L	amp	% Fix	kture
0° -	30°	2	217	25	5.9	31	.8			0°-	30°	2	219	25	5.9	31	.7
0° -	40°	3	626	42	2.4	52	.0			0° -	40°	3	621	42	2.3	51	.7
0° -	- 60° 5947 69.6 85.4									0° -	60°	5	944	69	9.5	84	.9

2SP 3 32 A19 Report: LTL13472 LUMENS PER LAMP:2850 Luminaire Efficiency: 76.9%

		Co	oeffici	ients	of Ut	ilizat	ion		
pf				2	20%				
рс		80%			50%			30%	
pw	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	92	92	92	85	85	85	82	82	82
1	85	82	79	77	75	73	74	73	71
2	79	73	69	69	66	63	67	64	62
3	73	66	61	63	58	55	60	57	54
m 4	67	59	54	57	52	48	55	51	47
Ö25	63	54	48	51	46	43	50	46	42
6 ۳	58	49	43	47	42	38	46	41	38
7	54	45	39	43	38	34	42	37	34
8	51	41	35	40	34	31	39	34	31
9	47	38	32	37	32	28	36	31	28
10	45	35	29	34	29	26	33	29	25

Zonal Lumen Summary										
Zone	Lumens	% Lamp	% Fixture							
0° - 30°	2413	28.2	36.7							
0° - 40°	3949	46.2	60.0							
0° - 60°	5947	69.6	90.4							
0° - 90°	6578	76.9	100.0							
90° - 180°	0	0.0	0.0							
0° - 180°	6578	76.9	100.0							



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0° - 90°

90° - 180°

0° - 180°

6968

0

6968

81.5

0.0

81.5

100.0

0.0

100.0

0° - 90°

90° - 180°

0° - 180°

7005

0

7005

81.9

0.0

81.9

Lithonia Lighting

Fluorescent One Lithonia Way, Conyers, GA 30012 Phone: 800-858-7763 www.lithonia.com



FEATURES & SPECIFICATIONS

INTENDED USE

Ideal for a wide variety of low- to medium-height ceiling applications including commercial, retail and hospitality spaces where a baffled fix-ture is required.

CONSTRUCTION

Heavy gauge die formed galvanized steel mounting frame. Attached to frame are vertically adjustable mounting brackets for use with C channels, $\frac{1}{2}$ " steel conduit or 16 gauge flat bar hangers included, standard. Frames equipped with galvanized junction box UL Listed for through wire applications. Junction boxes equipped with (2) $\frac{3}{4}$ " and (4) $\frac{1}{2}$ " conduit knockouts with pryout slots and removable access doors.

Maximum 1-1/2" ceiling thickness.

OPTICS

Aluminum full reflectors are optically designed to maximize lumen output and to provide superior glare control. The black or white baffled reflectors have a semi-specular upper finish with white painted flange standard.

ELECTRICAL

Electronic ballast with end of lamp life protection standard. Class P thermally protected ballast protects against improper contact with insulation. Minimum starting temperature is $0^{\circ}F/-18^{\circ}C$.

Rated for #12 AWG conductor thru-branch wiring. Minimum 90° supply wire. Ground wire provided.

Lamp Socket Base:

TRT 4-pin lamps - 26W (GX24Q-3); 32W (GX24Q-3); 42W (GX24Q-4)

LISTING

LF6N

Fixtures are UL Listed for thru-branch wiring, Non-IC recessed mounting, damp location, and to U.S. and Canadian Safety Standards.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**. Example: LF6N 1/26-42TRT F6B5 MVOLT

									-			
5	Series	Wattage/lamp	Refle	ector/co	olor ²] [Volta	age	Γ		Optio	ons
	LF6N	1/18DT/TRT 1/26-42TRT ¹ 1/26TBT	F6B5 F6B5W	Black White	baffle baffle	J [MV0 12	0 7	L	ADEZ	Advance Mark 10™ el or 277V. Musts be volt dimming level 5%	lectronic dimming ballast, 120V tage specific. Minimum
		1/32TRT 1/42TRT					347	7 ⁴		DMHL	Lutron Compact SE™ 120V or 277V. Must be Minimum dimming leve	electronic dimming ballast, e wattage and voltage specific. el 5%
										EL	Emergency PSDL3 DI test switch. ⁵	L battery pack with integral
										ELR	Emergency PSDL3 D test switch ⁵	L battery pack with remote
										ELHL	lota I-420-R High lumer pack. Internal test swit lumen output is 1300 (42	n output emergency battery tch provided. Maximum average 2W) ⁶
										ELRHL	lota I-420-EM-B High battery pack. Remote Maximum average lum	lumen output emergency test switch provided. nen output is 1300 (42W) ⁶
										GMF	Single slow-blow fuse	, must specify voltage
NO	TEO									BDP	Ballast disconnect plu in-fixture disconnect) ⁽	ig (meets codes that require
1	Not available	with DMUL or M/LP			Ac	cesso	ries			RIF1	Radio interference filt	ter
י ז	White painte	d flange standard			Order as se	parate ca	italog nu	imber		LBH	Less barhangers	
3	 White painted hange standard. Electronic multi-volt ballast capable of operating any line voltage from 120-277V, 50 or 60Hz. 			SCA6	Sloped ceili slope must k 25D, 30D) Ex	iling adaptor. Degree of be specified (10D, 15D, 20D, Sy: SCA6 10D),	WLP	35K lamp (shipped se	parately)	
4	Not available	with EL or ELR.		CTE6 (Ceiling thick	kness ex	ktender	is used				
5	Add 3" (7.6) t	o width and 4-1/2" (11.4) to	o length.	١	when ceilin	g thickn	ess is	greater than	in			
6	Not recomme	ended for field installation		1	1-1/2 (3.8). N	/laximum	n thickn	ess 2 (5.1).				

Catalog Number
Notes
Type
C

Compact Fluorescent Downlighting



Horizontal 1-Lamp, Triple Tube (TRT)

6-3/8

(16.2)

6 (15.2)

7-1/2 (19.1)





6" LF6N Horizontal 1-Lamp, Triple Tube (TRT), Baffle

LF6N 1/32TRT F6B5 MVOLT, (1) 32W TRT lamp, 2400 rated lumens, .92 s/mh, test no. LTL 18338

_ 90°	Intensity Distribution		Zonal Lumen Summary			Coefficients of Utilization						
80°	Ho	rizontal Angle	Zone Lumens % Lamp		pf			20%	6			
200 70°	Vertical Angle	0°	0° - 30°	1003.4	20.9	рс	80	%	70	%	50	%
400 11 160°	0°	1384	0° - 40°	1548.0	32.3	pw	50%	30%	50%	30%	50%	30%
600 + + >>>	5°	1398	0° - 60°	2493.1	51.9	0	65	65	63	63	60	60
50°	15°	1431	0° - 90°	2566.2	53.5	1	59	57	57	56	55	54
800 H X	25°	978	90° - 180°	47.5	1.0	2	53	50	52	49	50	48
1000 40°	35°	766	0° - 180°	2613.6	*54.5	3	48	44	47	44	45	42
1200	45°	954	*Tot	al Efficier	ICV	~ ⁴	43	39	43	39	41	38
1400 10 20 30	55°	333			,	Ö 5	39	35	39	35	37	34
0 10 20 00	65°	51				۲ 6	36	32	35	31	34	31
	75°	18				7	33	29	32	28	31	28
	85°	2				8	30	26	30	26	29	25
	90°	0				9	28	24	27	24	27	23
						10	26	22	25	22	25	21

LF6N 1/32TRT F6B5 MVOLT, (1) 32W TRT lamp, 2400 rated lumens, .92 s/mh, test no. LTL 18338

90°	Intensity Distrib	oution	Zonal Lu	umen Sui	mmary		Co	efficier	nts of L	Itilizati	on	
80°	Horiz	zontal Angle	Zone	Lumens	% Lamp	pf			20%	6		
100 70°	Vertical Angle	0°	0° - 30°	506.6	21.1	рс	80	%	70	%	50	1%
200 11 1 100	0°	687	0° - 40°	789.3	32.9	pw	50%	30%	50%	30%	50%	30%
300 + + \ \	5°	700	0° - 60°	1265.5	52.7	0	69	69	68	68	64	64
500 + + X × 50°	15°	691	0° - 90°	1375.2	57.3	1	62	60	61	59	58	57
400 + X	25°	529	90° - 180°	26.0	1.1	2	56	52	55	51	52	50
500 40°	35°	415	0° - 180°	1401.2	*58.4	3	50	46	49	45	47	44
600	45°	463	*Tota	al Efficien	ICV	~ ⁴	45	41	44	40	43	39
700° 10° 20° 30°	55°	191			,	ີບູ 5	41	36	40	36	39	35
0 10 20 00	65°	65				۲ 6	37	32	37	32	35	32
	75°	37				7	34	29	33	29	32	29
	85°	11				8	31	27	31	26	30	26
	90°	2				9	29	24	28	24	28	24
	2.0	-				10	27	22	26	22	26	22



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Sheet #: LF6N-BAFFLE-1-TRT

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Lithonia Lighting Recessed Downlighting and Track One Lithonia Way, Conyers, GA 30012 Phone: 800-315-4935 Fax: 770-918-1209 www.lithonia.com



FEATURES & SPECIFICATIONS

INTENDED USE

Provides general illumination in residential and light commercial applications. Ideal for use in foyers, hallways, bedrooms, offices, utility work areas, stairways and many other rooms in the house.

ATTRIBUTES

The beauty of simplicity in low profile styled, round, stay-white, acrylic diffuser, available in four sizes: 11", 14", 19" or 24". These fixtures provide an attractive low-cost lighting solution for every room in the home. Hidden cam-latches provide easy diffuser removal for installation and maintenance.

Fixtures available with lamps and without lamps. Fixtures without lamps are available in either compact double twin tube (DTT) 4-pin or circline T9 fluorescent lamp(s) configurations. Fixtures with lamps include circline T9 4100K fluorescent lamp(s) for energy efficiency, superior color rendering long life.

Standard with electronic ballast (120 volt, 60Hz) ensures no flickering and quiet operation without interfering with other home electronics. For use with non-dimmable switches only.

All mounting hardware included.

LISTING

CUL listed to US and Canadian safety standards and suitable for damp locations. Fixtures with lamps are ENERGY STAR® certified.

WARRANTY

Guaranteed for two years against mechanical defects in manufacture. (excludes lamps)

DIMENSIONS

Nominal Size	Lamp Configuration	Model Number	Number of Lamps	(A) Width inches (cm)	(B) Extension* inches (cm)				
11" dia		FM22 ACLR LP	(1) 22W circline T9	11" (27.9)	3-1/4" (8.3)				
		FMLR22	(1) 22W circline T9	11" (27.9)	3-1/4" (8.3)				
	(III)	FMLR11 2 13DTT	(2) 13W compact DTT	11" (27.9)	3-1/4" (8.3)				
14" dia		FM54 ACLR LP	(1) 22W & (1) 32W circline T9	13-3/4" (34.8)	3-1/2" (8.9)				
		FMLR54	(1) 22W & (1) 32W circline T9	13-3/4" (34.8)	3-1/2" (8.9)				
	(III)	FMLR14 2 18DTT	(2) 18W compact DTT	13-3/4" (34.8)	3-1/2" (8.9)				
19" dia		FM72 ACLR LP	(1) 32W & (1) 40W circline T9	19-1/4" (47)	3-5/8" (9.2)				
		FMLR72	(1) 32W & (1) 40W circline T9	19-1/4" (47)	3-5/8" (9.2)				
		FMLR19 3 26DTT	(3) 26W DTT	19-1/4" (47)	3-5/8" (9.2)				
24" dia.		FMXLR 72	(1) 32W & (1) 40W circline T9	24" (61)	4-3/4" (12)				
* Extensio	* Extension from ceiling All dimensions are in inches (centimeters)								



ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories and replacement parts as separate catalog numbers.

Model Number¹ 11" diameter (1) 22W circline T9 lamp Included² FM22 ACLB LF FMLR 22 (1) 22W circline T9 lamp Required³
(2) 13W compact (DTT) lamp(s) Required FMLR11 2 13 DTT 14" diameter (1) 22W & (1) 32W circline T9 lamp(s) Included **FM54 ACLR LF** FMLR 54 (1) 22W & (1) 32W circline T9 lamp Required³ FMLR14 2 18 DTT (2) 18W compact (DTT) lamp(s) required Required³ 19" diameter FM72 ACLR LP (1) 32W & (1) 40W circline T9 lamp(s) Included² **FMLR 72** (1) 32W & (1) 40W circline T9 lamp Required³ FMLR19 3 26 DTT (3) 26W compact (DTT) lamp(s) required Required³ 24" diameter (1) 32W & (1) 40W circline T9 lamps Included² FMLXR

Options (Consult factory)

> Notes: 1. Use with non-dimmable switches only. 2. *INCLUDES* - circline T9 4100K fluorescent lamp(s) 3. Lamp(s) not inluded. Not ENERGY STAR qualified.

Light Concepts Indoor Decorative - Flush

Catalog Number

Notes

Type D&E

Indoor Decorative

Low Profile Round Flush Mount

Circline T9 or Compact DTT Fluorescent



Example: FM22 ACLR LP

PHOTOMETRICS

Full photometric data report available within 2 weeks from request. Consult factory.



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Rev.8/10 LORF.pmd

Consumer Products One Lithonia Way, Conyers, GA 30012 Phone: 800-748-5070 Fax: 770-860-3903 In Canada: 160 Avenue Labrosse, Point-Claire, P.Q., H9R 1A1 www.lightahome.com

Sheet #: LORF



FEATURES & SPECIFICATIONS

INTENDED USE

Provides general illumination for residential and commercial applications. Ideal for use as lighting in bathroom/lavatories, over hospital beds, hallways/ corridors stairways and utility areas.

ATTRIBUTES

A distinctive contoured design complements a variety of decors. Durable milk-white acrylic diffuser provides a widespread uniform illumination. Suitable for vertical or horizontal mounting. Available in 2', 3' and 4' lengths.

Utilizes linear T8 fluorescent lamps for energy efficiency, superior color rendering and long life (not included).

Standard with electronic ballast (120 volt, 60Hz) ensures no flickering and quiet operation without interfering with other electronics. Also available in other ballast configurations.

For use with non-dimmable switches only.

LISTING

CUL listed to US and Canadian safety standard on Residential Electronic (RE) ballast fixtures and suitable for damp locations. ENERGY STAR[®] qualified. ADA compliant. For Non-RE bllast, UL and CSA (standard) for NOM Certified see options.

WARRANTY

Guaranteed for two years against mechanical defects in manufacture.

DIMENSION

Nominal Size	Lamp Configuration	Model Number	Number of Lamps	(A) Width inches (cm)	(B) Length inches (cm)	(C) Extension* inches (cm)	
2'		11890	(2) 17W linear T8	5" (12.7)	27" (68.6)	4" (10.2)	
3'		11891	(2) 25W linear T8	5" (12.7)	39" (99.1)	4" (10.2)	
4'		11892	(2) 32W linearT8	5" (12.7)	51" (129.5)	4" (10.2)	
* Extensio	on from wall		All dimensions are in inches (centimeters)				

ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories and replacement parts as separate catalog numbers.

Model Number ^{1,2}		Re	Residential Ballast ³		Ballast/Voltage ⁴		Options			
11890 2' - (2) 17V 11891 3' - (2) 25V 11892 4' - (2) 32V	V T8 fluorescent lamps required V T8 fluorescent lamps required V T8 fluorescent lamps required	RE (blank)	120 volt residential electronic ballast (standard) Other voltage and ballast types available (see ballast/voltage)	(blank) MVOLT 120 277 347	 (blank) RE ballast fixtures only MVOLT Multi-volt 120 volt 277 volt 347 volt 		Electronic ballast, <20%THD T8 electronic ballast, <10% THD, instant start T8 electronic ballast, 10% THD, rapid start NOM Certified			
Accessorie	es/Replacement parts			Other ballas factor	s voltage and t types (consult	(C ot	consult factory for her options)			
DVANPUFF 24 DVANPUFF 36 DVANPUFF 48	24" white acrylic diffuser 36" white acrylic diffuse 48" white acrylic diffuser			lactor	 y Notes. 1. Lamps 2. Use v 3. Residu design 4. No de 	s not included. vith non-dimmal ential electronic nation. signation for la	ble switches only. ballast standard and requires RE mp type is required on RE ballast fixtures.			

Light Concepts Indoor Decorative - Vanity

Catalog Number

Notes

Type

Indoor Decorative



Linear T8 Fluorescent



(A) (B) (C) (C)

Example: 11892RE

PHOTOMETRICS

Full photometric data report available within 2 weeks from request. Consult factory.



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Sheet #: PUFV

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Rev. 3/10

PUFV.pmd

Consumer Products One Lithonia Way, Conyers, GA 30012 Phone: 800-748-5070 Fax: 770-860-3903 In Canada: 160 Avenue Labrosse, Point-Claire, P.Q., H9R 1A1 www.lightahome.com

Section 3: Energy Efficiency Programs

- A) Our energy efficiency program involves (choose whichever applies):
 - Early replacement of fully functioning equipment with new equipment. (Provide the date on which you replaced your fully functioning equipment, and the date on which you would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how you determined this future replacement date (or, if not known, please explain why this is not known).
 - Installation of new equipment to replace equipment that needed to be replaced. We installed our new equipment on the following date(s):
 - Installation of new equipment for new construction or facility expansion. We installed our new equipment on the following date(s): **See Exhibit 2**
- B) Energy savings achieved/to be achieved by your energy efficiency program:
 - a) If you checked the box indicating that your 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: _____kWh

b) If you checked the box indicating that you 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 the less efficient new equipment that you rejected in favor of the more efficient new equipment.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/25/2011 5:26:19 PM

in

Case No(s). 11-3966-EL-EEC

Summary: Application Application of The Toledo Edison Company and the University of Toledo to Commit Energy Efficiency/Peak Demand Reduction Programs (part 3a of 3) electronically filed by Mr. Kevin P. Shannon on behalf of The Toledo Edison Company