

Acme Energy Solutions Approach to Hi Bay Lighting Efficiency and Controls Retrofits

1. Objective.

- We'd like to discuss the variety of the challenges involved in this type of project, and Acme Energy's capabilities as it pertains to these issues, so that you feel that working with Acme Energy is the correct approach.

2. Comprehensive Audits, Specifications, and Project Management

- Investment grade audits and construction grade specifications protect your investment and ensure your maximum return on investment.
- Commodity driven specifications lead to reduced returns on investment, costly installation problems, and system performance issues.

3. System Design.

- One-for-one replacements are the exception.
- Variety of issues to be considered, from operating temperature to fire sprinklers, to egress lighting, to existing system deficiencies. All these and more must be addressed.

4. Fixture Selection.

- Typical project will use three to five fixture types and a dozen different configurations. There is no single fixture that will solve the variety of applications at each site.
- Heat is a major issue in non-conditioned warehouses. Improper fixture selection can result in mass ballast failures early in the product life.
- Leave behind documents: T5 vs. T8 / SP Ratios / Frequently Asked Questions /HB Heat

5. Occupancy Sensors

- Proper controls strategy will maximize savings without creating functional issues, occupant complaints, and safety issues.
- Fully integrated sensors vs. external sensors. Safety and cutoff issues.
- Variety of coverage patterns and reference temperature issues.

6. Acme Energy Approach

- Audit - Site visit to gather field information, inventory all existing lighting systems, and address FDA issues, Fire Sprinkler issues, and any existing system deficiencies.
- Controls - Demonstrate control savings through a complete datalogger test and report.
- Specifications - Create comprehensive specifications, site plans, and photo inventories for each site to ensure you know exactly what is to be delivered.
- Investment Grade Package - Develop accurate financial information, savings calculations, simple paybacks, and internal rates of return.
- Procurement - Secure labor and materials in a competitive environment that leverages our purchasing power, and provide firm fixed turnkey pricing that includes all labor, material, lifts, hazardous material recycling, sales tax, etc.
- Rebates - Investigate and secure maximum rebates due to our experienced utility-tariff review team.
- Management - Provide professional on-site project management, before, during, and after the project.
- Completion - Document results and provide a completion package that includes as-built specifications, before and after photos, warranty information, and a cutsheet library for all products and components.

7. Thank You

- We appreciate the opportunity to be here and look forward to taking the next steps to bringing your lighting energy savings on-line.









Precision Fluorescent

Acme Food Service
Riverside CA

Hi-Bay Lighting Layout

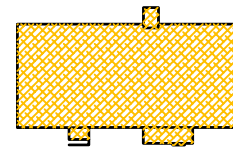
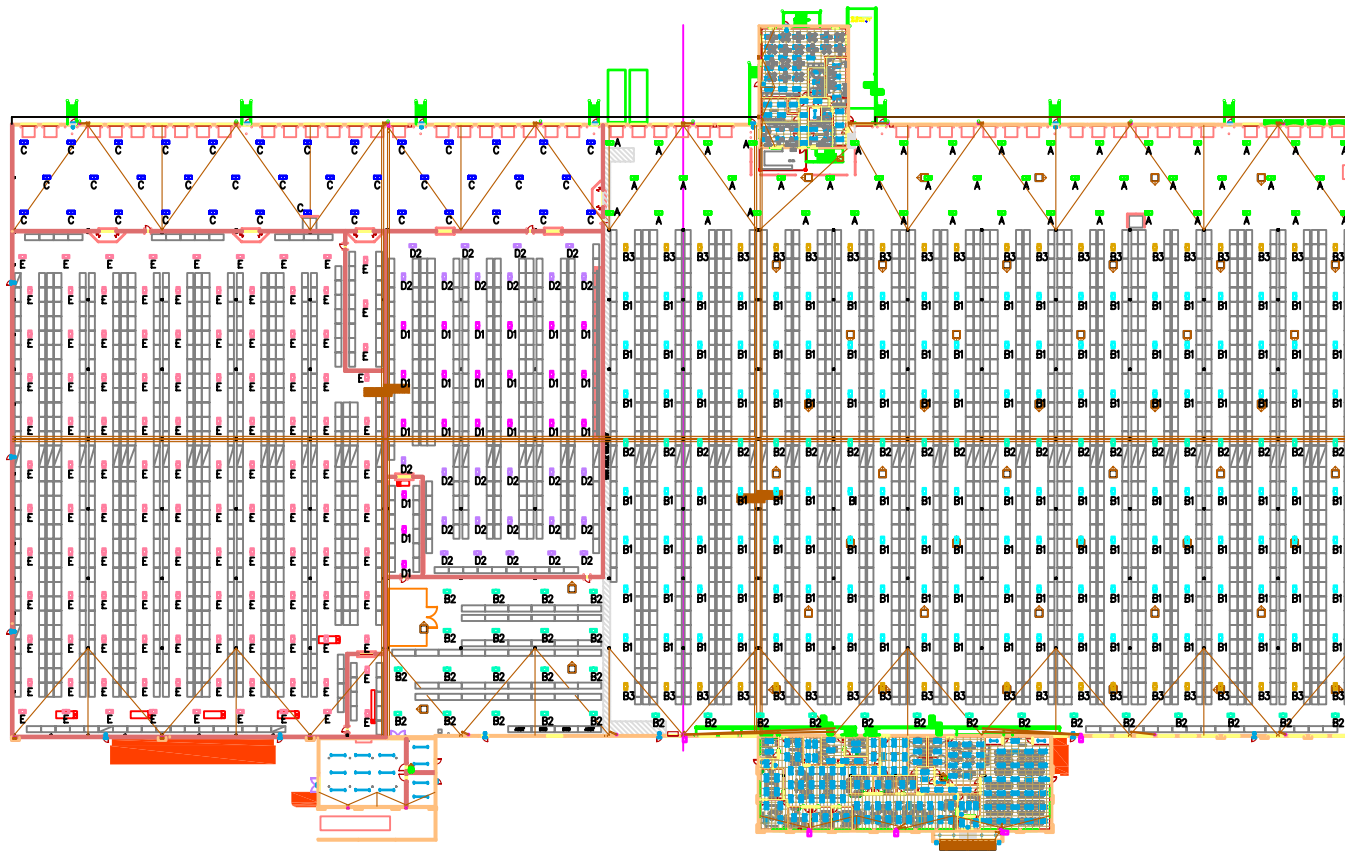
Drawn By: GR/RP
02/10/2005

HI-BAY AND LIGHTING LEGEND -02/10/05

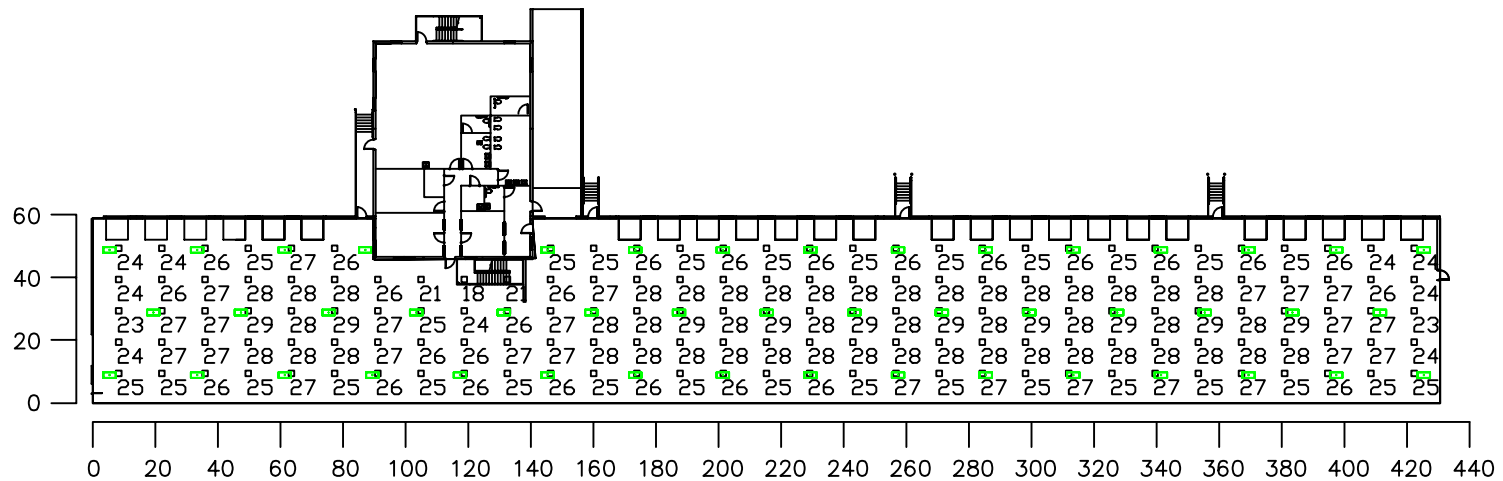
SYMBOL	CODE	DESCRIPTION
	A	PTEE-SQ2-4-2X4-4L54-CL
	B1	PTEE-RT6-6-2X4-6L54-CL
	B2	PTEE-SQ4-6-2X4-6L54-CL
	B3	PTEE-SQ6-6-2X4-6L54-CL
	C	PTEE-SQ2-4-2X4-4L54-CL-NVT
	D1	PTEE-RT4-6-2X4-6L54-CL-NVT
	D2	PTEE-SQ4-6-2X4-6L54-CL-NVT
	E	PZT-6-2X4-6L54-CL

NOTES :

- 1 - THIS LAYOUT ADDRESSES THE HI-BAY AND LO-BAY LIGHTING APPLICATIONS ONLY. IT DOES NOT ADDRESS ANY EMERGENCY LIGHTING, TASK LIGHTING, DOCK DOOR LIGHTING OR INTERNAL PICK MODULE LIGHTING.
- 2 - SEE HI-BAY LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL DETAIL.

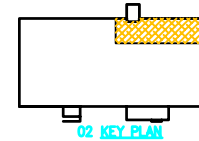
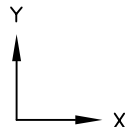


02 KEY PLAN



Numeric Summary - Room @ 36" Work Plane

Room Label	Avg	Max	Min	Avg/Min	Max/Min
Grocery Dock	26.52	29	18	1.47	1.61

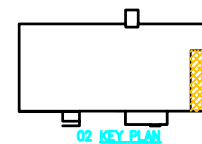
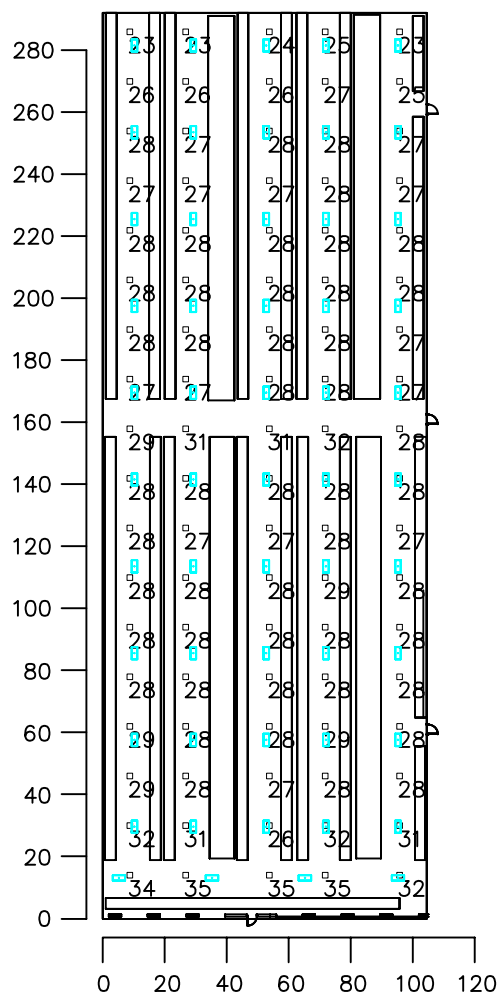


Luminaire Schedule				Assumptions				
Room	Qty	Label	Lamp Type	Initial Lumens	LLD	LDD	BF	LLF
Dock	46	PTEE-4-2X4-4L54-CL	F54T5/841	4500	.95	.97	1	.92
Facility Data								
Ceiling Height = 35'-6"		Ceiling Reflectance = Lt. Gray		Rack Reflectance = Tan				
Mounting Height = 28'		Wall Reflectance = Off White		Fixture Spacing Varies				
Rack Height = 29'		Floor Reflectance = Gray		Scale = N.T.S.				

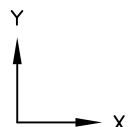
Prepared for: Acme - Riverside 02/09/2005 Dry Grocery Dock

Luminaire data is obtained according to IES procedures under laboratory conditions. Field results may differ from computer model due to many factors, including: ambient temperature, line voltage variations, lamp performance, installation, reflectances, and other site specific conditions.

Precision
Fluorescent



Numeric Summary - Room @ 36" Work Plane					
Room Label	Avg	Max	Min	Avg/Min	Max/Min
Dry Grocery	28.13	35	23	1.22	1.52



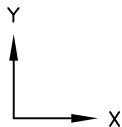
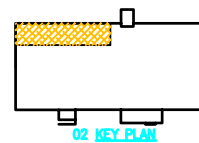
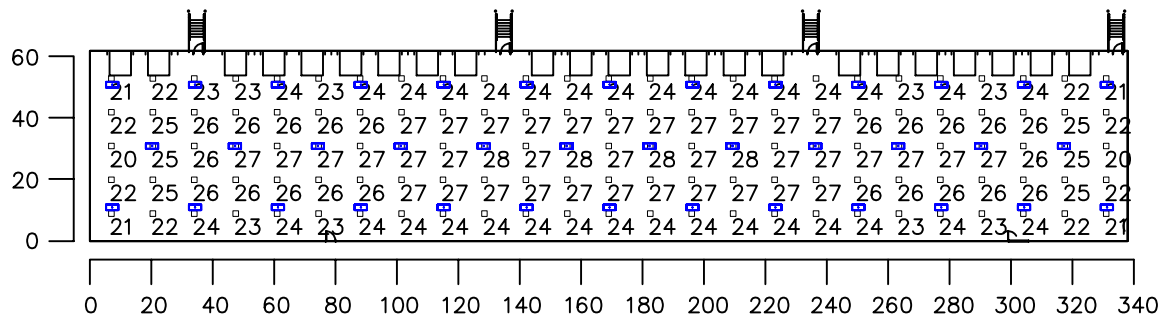
Luminaire Schedule				Assumptions				
Room	Qty	Label	Lamp Type	Initial Lumens	LLD	LDD	BF	LLF
Aisle	54	PTHBS-6-2X4-6L54-CL	F54T5/841	4500	.95	.97	1	.92

Facility Data		
Ceiling Height = 35'-6"	Ceiling Reflectance = Lt. Gray	Rack Reflectance = Tan
Mounting Height = 32'-6"	Wall Reflectance = Off White	Fixture Spacing Varies
Rack Height = 29'	Floor Reflectance = Gray	Scale = N.T.S.

Prepared for: Acme Food Service 02/09/2005 Dry Grocery Aisles

Luminaire data is obtained according to IES procedures under laboratory conditions. Field results may differ from computer model due to many factors, including: ambient temperature, line voltage variations, lamp performance, installation, reflectances, and other site specific conditions.

Precision
Fluorescent



Numeric Summary - Room @ 36" Work Plane					
Room Label	Avg	Max	Min	Avg/Min	Max/Min
Cooler Dock	25.06	28	20	1.25	1.40

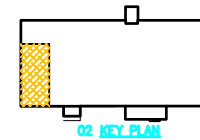
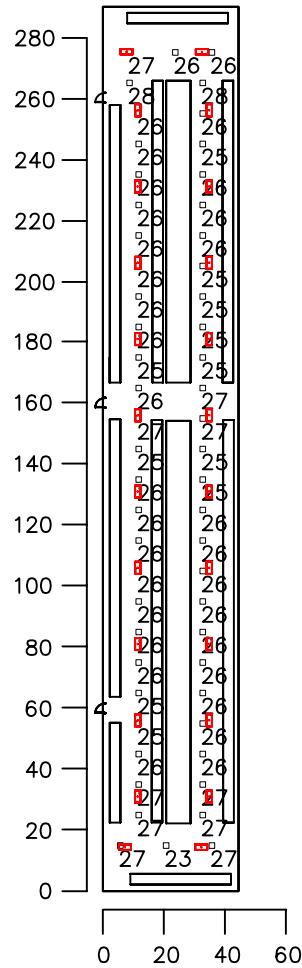
Luminaire Schedule				Initial	Assumptions			
Room	Qty	Label	Lamp Type	Lumens	LLD	LDD	BF	LLF
Dock	38	PTEE-4-2X4-4L54-CL-NVT	F54T5/841	4500	.95	.92	1	.87

Facility Data		
Ceiling Height = 35'-6"	Ceiling Reflectance = Lt. Gray	Rack Reflectance = Tan
Mounting Height = 28'	Wall Reflectance = Off White	Fixture Spacing Varies
Rack Height = 29'	Floor Reflectance = Gray	Scale = N.T.S.

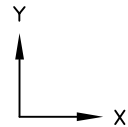
Prepared for: Acme Food Service 02/09/2005 Cooler Dock

Luminaire data is obtained according to IES procedures under laboratory conditions. Field results may differ from computer model due to many factors, including: ambient temperature, line voltage variations, lamp performance, installation, reflectances, and other site specific conditions.

Precision
Fluorescent



Numeric Summary - Room @ 36" Work Plane					
Room Label	Avg	Max	Min	Avg/Min	Max/Min
Freezer Aisle	26.00	28	23	1.13	1.22



Luminaire Schedule				Initial Lumens	Assumptions			
Room	Qty	Label	Lamp Type		LLD	LDD	BF	LLF
Aisle	24	PZT-6-2X4-6L54-CL	F54T5/841	4500	.95	.82	1	.78
Facility Data								
Ceiling Height = 35'-6"		Ceiling Reflectance = Lt. Gray		Rack Reflectance = Tan				
Mounting Height = 32'-6"		Wall Reflectance = Off White		Fixture Spacing Varies				
Rack Height = 29'		Floor Reflectance = Gray		Scale = N.T.S.				

Prepared for: Acme - Riverside 02/09/2005 Freezer Aisles

Luminaire data is obtained according to IES procedures under laboratory conditions. Field results may differ from computer model due to many factors, including: ambient temperature, line voltage variations, lamp performance, installation, reflectances, and other site specific conditions.

Precision
Fluorescent

Hi-Bay Lighting Fixture Schedule

SYM.	MANUFACTURER	CATALOG NUMBER	INPUT WATTAGE	LAMPS	MOUNTING	REMARKS
A	Precision Fluorescent	PTEE-SQ2-4-2X4-4L54-277-CL-CP15-M2-90C	234 Watts 277 Volts	(4) F54T5HO 841K FLUORESCENT	28' AFF. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	4-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. 360 DEGREE VIEW INTEGRAL SENSOR CONTROLS 2 LAMPS. CLEAR LEXAN LENS. 90C BALLAST
B1	Precision Fluorescent	PTEE-RT6-6-2X4-6L54-277-CL-CP15-M2-90C	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. AISLE VIEW INTEGRAL SENSOR CONTROLS 6 LAMPS. CLEAR LEXAN LENS. 90C BALLAST
B2	Precision Fluorescent	PTEE-SQ4-6-2X4-6L54-277-CL-CP15-M2-90C	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. 360 DEGREE VIEW INTEGRAL SENSOR CONTROLS 4 LAMPS. CLEAR LEXAN LENS. 90C BALLAST
B3	Precision Fluorescent	PTEE-SQ6-6-2X4-6L54-277-CL-CP15-M2-90C	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. 360 DEGREE VIEW INTEGRAL SENSOR CONTROLS 6 LAMPS. CLEAR LEXAN LENS. 90C BALLAST
C	Precision Fluorescent	PTEE-SQ2-4-2X4-4L54-277-CL-CP15-M2-70C-NVT	234 Watts 277 Volts	(4) F54T5HO 841K FLUORESCENT	28' AFF. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	4-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. 360 DEGREE VIEW INTEGRAL SENSOR CONTROLS 2 LAMPS. CLEAR LEXAN LENS. 70C BALLAST, NO VENTS TOP
D1	Precision Fluorescent	PTEE-RT4-6-2X4-6L54-277-CL-CP15-M2-70C-NVT	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. AISLE VIEW INTEGRAL SENSOR CONTROLS 4 LAMPS. CLEAR LEXAN LENS. 70C BALLAST, NO VENTS TOP
D2	Precision Fluorescent	PTEE-SQ4-6-2X4-6L54-277-CL-CP15-M2-70C-NVT	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. 360 DEGREE VIEW INTEGRAL SENSOR CONTROLS 4 LAMPS. CLEAR LEXAN LENS. 70C BALLAST, NO VENTS TOP
E	Precision Fluorescent	PZT-6-2X4-6L54-277-CL-CP15-M2-70C	351 Watts 277 Volts	(6) F54T5HO 841K FLUORESCENT	3' BELOW FINISHED DECK. 2-POINT CADDY TDH DECK HANGER AND #10 SINGLE JACK	6-LAMP T5HO HI-BAY WITH DEDICATED HANGING BRACKETS, 15' CORD AND NEMA L715 PLUG. CLEAR LEXAN LENS. 70C BALLAST, SEALED FREEZER FIXTURE