

Appendix A

Lighting Fixture Schedule

Duke School of Nursing

Type	Mfr/Catalog #	Lamping	Notes
A	 Lightolier 8021-CCLW Description: 6" recessed compact fluorescent downlight with 1-CFTR26W lamp. Optics: anodized aluminum parabolic reflector.	- CFTR26W lamp	
B	 Elliptipar F306-A128-S-00-2-000 Description: Cove Lighting	1 - GE F32/T8/SPX30/ECO	Location: Auditorium Cove Lighting
C	 Cooper Ltg - Portfolio M6043S-74*-10002P* Description: 10" recessed ceramic metal halide downlight with 1-100W ED17 lamp. Optics: step baffle , tempered glass prismatic lens , anodized aluminum parabolic reflector.	1 - Osram Sylvania MCP100/C/U/MED/830 PB 100W ED17 lamp	
D	 Elliptipar F305-T354-S-00-2-000 Description: Ceiling uplight	1 - General Electric F54W/T5/830	Location: Cafe Ceiling Uplight
F	 Elliptipar M204-0175-T-02-B Description: Wallwasher	1 - 175W CMH	Location: Cafe Wallwashers
G	 Custom Custom Description:	1 - General Electric (2) F26TBX/SPX30A/4P	Location: Lobby and Cafe
H	 Lightolier WMRL143277PS Description: 1x4" recessed fluorescent wallwasher with 1-F32T8 (48in) lamp. Optics: steel reflector , single.	- F32T8 (48in) lamp	Location: Auditorium Whiteboards
J	 Lightolier 8021WWCCLW/6132BU 26W Description: 6" recessed compact fluorescent wallwasher with 1-CFTR26W lamp. Optics: painted or anodized aluminum parabolic reflector , single.	- CFTR26W lamp	Location: Auditorium Curved Wall
K	 Erco 33670 Description:	1 - HIT-TC-CE 20W	Location: Along Courtyard Retaining Walls
BAL-A	Advance VEZ-1T42-M2-BS Description:		

BAL-B	Advance ICN1P32LWSC Description:
BAL-C	Advance 71A5337J Description:
BAL-D	Advance ICN4S5490C2LSG_277 Description:
BAL-F	Advance 71A5543T Description:
BAL-G	Advance VEZ-2Q26-M2-LD Description:
BAL-H	Advance ICN1P32LWSC Description:
BAL-J	Advance VEZ-1T42-M2-BS Description:

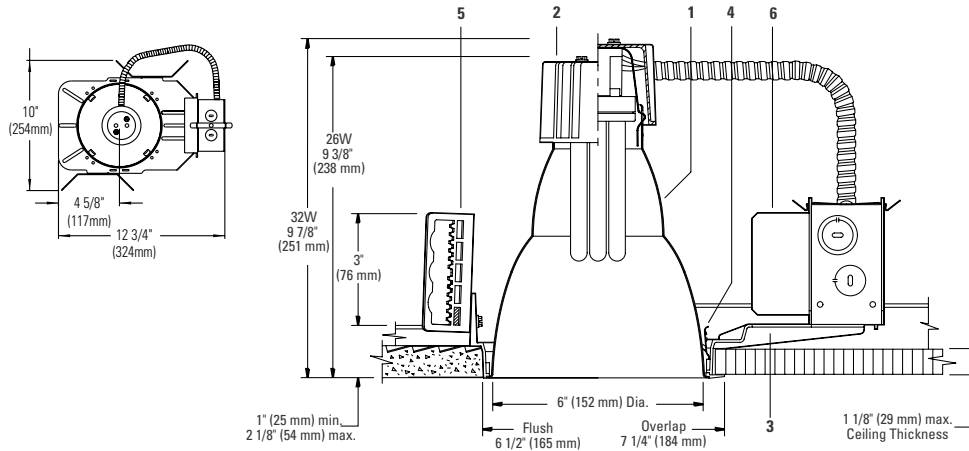
Architectural Engineering Senior Thesis



Calculite® Compact Fluorescent Open Downlighting **8021**

Page 1 of 2

6" Aperture Triple Tube Vertical Lamp



Ceiling Cutout: 6 9/16" (167 mm) Dia.

Reflector Trim	Frame-In Kit	Lamp
8021 CCLW Comfort Clear™, White Flange	S6132BU Electronic 120V - 277V	26 or 32W Triple Tube
8021 CCLP Comfort Clear™, Polished Flange	S6132BCU3 Universal Dimming 120V - 277V	4-Pin (Amalgam)
8021 CCL Comfort Clear™, Molded Trim Ring	S6132BJUM7 Advance Mark7 120V - 277V	
8021 <input type="checkbox"/> Add suffix. See options for other finishes.		
	Remodeler Frame-In Kit	Lamp
	6132BURM Electronic 120V - 277V	26 or 32W Triple Tube
		4-Pin (Amalgam)

Features

- Reflector:** 16 ga. Alzak® aluminum, 50° visual cutoff to lamp and lamp image, medium distribution. Comfort Clear™ low iridescence finish. Self-flanged or flangeless with molded white trim ring (field paintable).
- Socket Cup:** Effectively dissipates heat and positions lamp holder. Snaps onto reflector neck to assure consistently correct optical alignment without tools.
- Mounting Frame:** Galvanized steel for dry or plaster ceilings. Accepts other 6" Triple Tube reflectors (see S6132BU Spec Sheet).
- Retaining Springs:** Precision-tooled steel friction springs secure reflector to mounting frame for quick, tool-less installation.
- Mounting Brackets:** 16 ga. steel. Adjust from inside of fixture. Use 3/4" or 1 1/2" lathing channel, 1/2" EMT, or optional mounting bars.
- Ballast/J-Box:** Electronic 120V-277V. UL listed for through branch circuit wiring with max of (8) No. 12 AWG, 90°c supply conductors. Outboard mounted to reduce heat transfer and maintain lamp efficacy and life. Service from below without tools.

Electrical

Note: For ballast electrical data and latest lamp/ballast compatibility refer to "Ballast" specification sheet for complete electrical data.
S6132BU, S6132BCU: UL listed for through branch circuit wiring with max of (8) No. 12 AWG, 90° C supply conductors.
6132BURM: UL listed for No. 12 AWG, 90° C supply conductors.

Options and Accessories

Comfort Clear™ Finishes*		Other Finishes
Diffuse	CCD	White WH
Champagne Bronze	CCZ	
Multigroove	MG	

*Specify desired flange. **W** White, **P** Polished, Blank - Molded Ring

Other Dimming:

S6132B-J1MX Advance MarkX, 120V	S6132B-J1LD3 Lutron Hi-Lume®, 120V
S6132B-J2MX Advance MarkX, 227V	S6132B-J2LD3 Lutron Hi-Lume®, 227V

Options and Accessories (continued)

- Emergency Ltg. Kit **FA EM3E***
- FA EM4***
- Fuse (Slow Blow) Add suffix **F**
- Existing/Thk. Ceiling **FA EC6***
- Emergency Add suffix **EM***
- Chicago Plenum Use **6132BULC**
- *See Spec. Sheets: FAEM, FAEC
- Mounting Bars & Accessories; see Specification Sheet MBA.
- Sloped Ceiling Adapters; see Specification Sheet SCA.
- IC Frame available; see **C6CFL32** Specification Sheet.

Labels

UL Listed for damp locations.

Alzak® is a registered trademark of ALCOA.
US Patent Pending.

Job Information	Type:
Job Name:	
Cat. No.:	
Lamp(s):	
Notes:	

Lightolier a Genlyte company www.lightolier.com
 631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
 We reserve the right to change details of design, materials and finish.
 © 2007 Genlyte Group LLC • F0707

LIGHTOLIER®

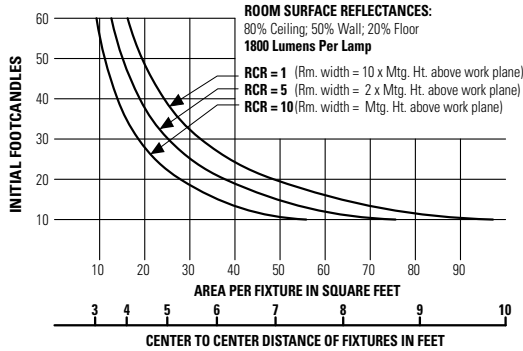


Calculite® Compact Fluorescent Open Downlighting **8021**

Page 2 of 2

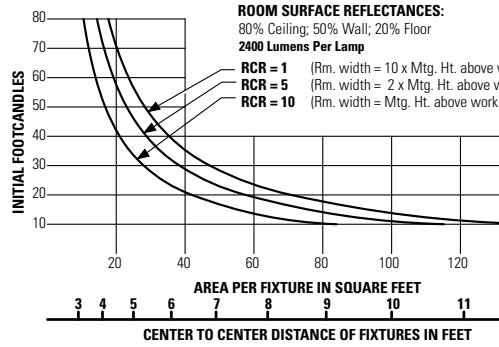
6" Aperture Triple Tube Vertical Lamp

26W Quick Calculator



This quick calculator chart determines the number and spacing of 1 ft.- 26W TTT units with Comfort Clear™ reflector, for any level of illumination.

32W Quick Calculator

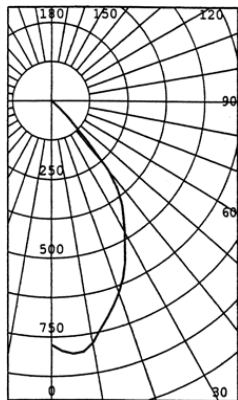


This quick calculator chart determines the number and spacing of 1 ft.- 32W TTT unit with Comfort Clear™ reflector, for any level of illumination

Spacing Ratio = 1.0

REPORT NO: LSI 14025
LIGHTOLIER RECESSED FLUORESCENT LUMINAIRE,
WITH COMFORT CLEAR™ REFLECTOR
ONE 26 WATT CPFL GE LAMP,
CAT# F26TBX/SPX35-835.
LUMEN RATING = 1800 LMS.

0	775	
5	806	77
10	780	
15	708	199
20	646	
25	566	258
30	478	
35	402	245
40	285	
45	78	81
50	13	
55	4	4
60	2	
65	1	2
70	1	
75	1	1
80	0	
85	0	0



EFFICIENCY=48.1%
DATE: 4-23-99
CIE TYPE DIRECT
LUMINOUS DIAMETER: 6.000
THIS REPORT BASED ON LM-1 AND
OTHER PERTINENT IES PROCEDURES.

0-30	533	29.66	61.66
0-40	778	43.25	89.92
0-60	863	47.98	99.75
0-90	865	48.10	100.00
40-90	87	4.85	10.08
60-90	2	.12	.25
90-180	0	.00	.00
0-180	865	48.10	100.00

Coefficients of Utilization

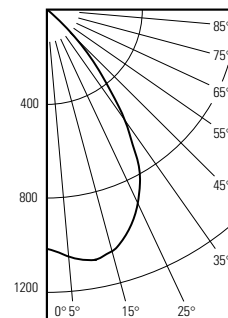
EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

ROOM CAVITY RATIO	WALL OF REFLECTANCE										
	80		70		50		30		10		
	50	30	10	50	30	10	50	30	10	0	
1	.54	.53	.52	.53	.52	.51	.51	.50	.49	.48	.46
2	.50	.49	.47	.50	.48	.47	.48	.47	.46	.45	.43
3	.47	.45	.44	.47	.45	.43	.46	.44	.43	.44	.42
4	.45	.42	.40	.44	.42	.40	.43	.41	.40	.42	.41
5	.42	.39	.37	.42	.39	.37	.41	.39	.37	.39	.38
6	.40	.37	.35	.39	.37	.35	.39	.36	.35	.38	.36
7	.37	.34	.33	.37	.34	.32	.36	.34	.32	.35	.33
8	.35	.32	.30	.34	.32	.30	.34	.31	.30	.33	.31
9	.33	.30	.28	.32	.30	.28	.32	.29	.28	.31	.29
10	.31	.28	.26	.30	.28	.26	.30	.27	.26	.29	.27

Spacing Ratio = 1.1

REPORT PREPARED FOR: LIGHTOLIER 04-27-1999
REPORT NO: LRL 499-9G
LAMPS: 1 PLT-32 LUMENS: 2400
DESCRIP: 6" DIA X 10" HT RECESSED DOWNLIGHT
WITH COMFORT CLEAR™ REFLECTOR. VERTICAL
LAMP.

180	0	
175	0	0
165	0	0
155	0	0
145	0	0
135	0	0
125	0	0
115	0	0
105	0	0
95	0	0
90	0	0
85	1	1
75	1	1
65	3	3
55	9	8
45	99	77
35	563	354
25	904	418
15	1063	301
5	1066	102
0	1035	



EFFICIENCY=52.7%

DATE: 4-27-99
CIE TYPE DIRECT
LUMINOUS DIAMETER: 6.000
THIS REPORT BASED ON LM-1 AND
OTHER PERTINENT IES PROCEDURES.

0-30	821	34.2	64.9
0-40	1175	49.0	92.9
0-60	1260	52.5	99.6
0-90	1265	52.7	100.0
40-90	90	3.8	7.1
60-90	5	0.2	0.4
90-120	0	0.0	0.0
90-150	0	0.0	0.0
90-180	0	0.0	0.0
0-180	1265	52.7	100.0

Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

ROOM CAVITY RATIO	WALL OF REFLECTANCE											
	80		70		50		30		10			
	50	30	10	50	30	10	50	30	10	0		
1	.59	.58	.57	.58	.57	.56	.55	.54	.53	.52	.51	.50
2	.56	.54	.53	.55	.54	.52	.54	.52	.51	.52	.51	.50
3	.53	.51	.50	.53	.51	.49	.51	.50	.49	.50	.49	.48
4	.51	.48	.47	.50	.48	.46	.49	.47	.46	.48	.46	.45
5	.48	.46	.44	.48	.45	.44	.47	.45	.43	.46	.44	.43
6	.46	.43	.42	.46	.43	.41	.45	.43	.41	.44	.42	.41
7	.44	.41	.39	.43	.41	.39	.43	.41	.39	.42	.40	.39
8	.41	.39	.37	.41	.39	.37	.41	.38	.37	.40	.38	.36
9	.39	.36	.35	.39	.36	.35	.38	.36	.35	.38	.36	.34
10	.35	.32	.31	.35	.32	.31	.35	.32	.30	.34	.32	.30

Job Information Type:

Lightolier a Genlyte company www.lightolier.com
631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
We reserve the right to change details of design, materials and finish.
© 2007 Genlyte Group LLC • F0707

LIGHTOLIER®

Finish: - extruded high purity aluminum with clear anodized Reflector finish. Sidesarms and ballast/wireway compartment - mill finish aluminum. All luminaire hardware - stainless steel.

Mounting: Lay-in installation requires only one fastener per joint (by others). Sidesarms with mounting tabs can be base or wall mounted. Luminaires can be mounted individually or joined together to form a continuous row.

Reflector aiming is adjustable and is fixed in position by rotation locking screws at each sidesarm. When mounted in a continuous row, joiner screws lock reflectors together allowing all in the row to be aimed together.

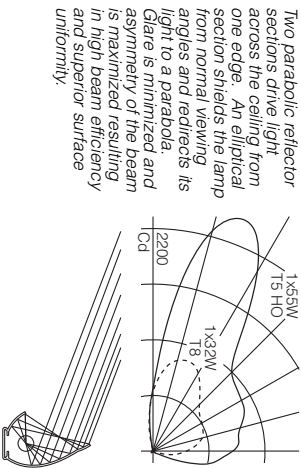
Standard: UL listed or CSA certified for damp locations. (Style 124 UL listed or CSA certified for damp locations.)

Electrical: Use 90°C wire for supply connections. Integral electronic HPF thermally protected class P ballast (with end-of-life protection for T5 lamps). Ballast/wireway compartment includes one conduit entry at each end. Channel cover removes for access to ballast and wiring. Luminaires may be butted end-to-end (connectors by others) through wiring with quick connectors. Master/satellite combination is available (Configuration 3, see ordering information). Master supplied with 2-lamp ballast (Wiring, conduit and connectors between master and satellite units by others.)

Optional electronic dimming ballast; compatible dimmer switch required (by others). Consult sales representative for compatibility and specifications.

Optional integral emergency battery operates one lamp. Separate unswitched supply is required.

For complete ballast specifications, see Accessories Section.



For complete photometrics, visit www.elliptipar.com

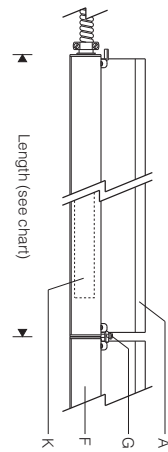
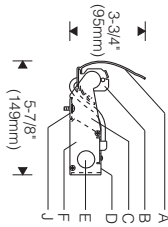
elliptipar

Lighting the Ceiling Small concealed, integral

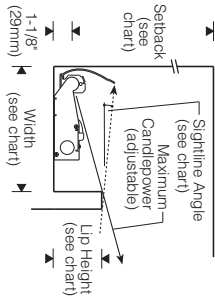


Style 306

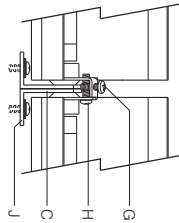
Style 306 1:8 Scale



Cove 1:10 Scale



Joint 1:4 Scale (Ballast compartment not shown for clarity.)



Nominal Lamp Length	Luminaire Length	
	T5	T8
1 x 2'	23-1/16" (586mm)	24-3/4" (622mm)
1 x 3'	34-7/8" (886mm)	36-3/4" (932mm)
1 x 4'	46-1/16" (1186mm)	48-3/4" (1237mm)
1 x 5'	58-1/2" (1486mm)	60-1/2" (1537mm)
2 x 3'	69-1/2" (1765mm)	73-3/16" (1859mm)
2 x 4'	93-1/8" (2365mm)	97-3/16" (2468mm)
2 x 5'	116-5/8" (2963mm)	120-7/8" (3069mm)

Cove Dimensions (Max. candlepower aimed 15° above horiz.)

Sightline cutoff	0°/horiz.	5°	10°
Width (inside)	10-5/8" (270mm)	8-1/4" (210mm)	6-3/4" (171mm)
Lip (inside)	3-3/4" (95mm)	3"	2-5/8" (67mm)
Setback (varies)	Recommended minimum: 12" T5 & T8, 18" T5HO		

Note: Finish interior of cove matte white for best results.

Specifications

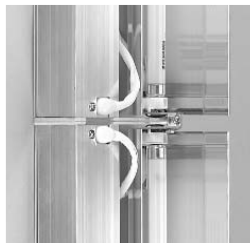
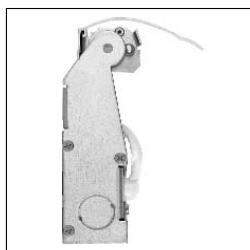
- A** Specular extruded aluminum reflector
- B** Stainless steel lamp-holder/support brackets
- C** Aluminum sidesarm with mounting tab
- D** Extruded aluminum ballast/wireway channel cover
- E** Conduit entry (one each end, conduit and connector by others)
- F** Extruded aluminum ballast/wireway compartment
- G** Rotation locking screw
- H** Joiner/alignment screw
- J** Mounting tab (fastener by others)
- K** Integral electronic ballast

Features

- Choose T5 for precise optical control or widely utilized T8
- Compact and flexible - effective indirect cove lighting for malls, offices, lobbies, conference rooms and corridors
- Adjustable - all reflectors in a row join and aim together; rotation locking screws secure position*
- Integral electronic ballast thru wiring for easy installation

Performance

Two parabolic reflector sections drive light across the ceiling from one edge. An elliptical section shields the lamp from normal viewing angles and redirects its light to a parabola. Glare is minimized and asymmetry of the beam is maximized, resulting in high beam efficiency and superior surface uniformity.



To Order

To form a Catalog Number

F 3 0 6 | - S - 0 0 - 1 - 1 - 0E0

1 Source

F = Linear fluorescent

2 Style

306 = Small concealed, integral ballast

3 Lamp

Note: To order by overall row length, enter ROW CODE in place of Lamp Code below (see Row Charts on page C-20.2 for T8 or C-20.4 for T5). Row Code specifies a row complete with all necessary reflectors and ballasts.

_____ = Lamp Code

Lamp Wattage (see chart below)

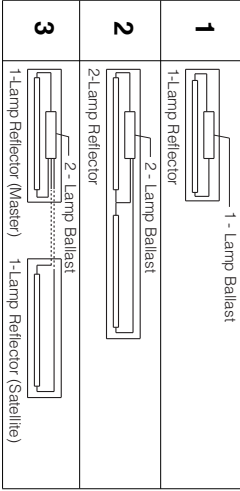
Reflector Configuration, specify 1, 2 or 3 (see chart below)

A = T8 Fluorescent
T = T5 Fluorescent

Example: A225 = Two nominal 3' reflectors, each for use with one 25W T8 lamp; one 2-lamp ballast



Reflector Configuration



Lamp Wattage

Lamp Length (nominal)	Lamp Wattage (Lamp Number)		
	T8	T5	T5 HO
2'	17 (F1718)	14 (F1415)	24 (F24T5/HO)
3'	25 (F25T8)	21 (F21T5)	39 (F39T5/HO)
4'	32 (F32T8)	28 (F28T5)	55 (F54T5/HO)
5'	40 (F40T8)	35 (F35T5)	80 (F80T5/HO)

For complete lamp and ballast information, see Accessories Section. Standard T5 lamp color is 3000K / 80+ CRI. T8 lamps by others.

REV 7/07



Style 306

Project: _____

Type: _____

4 Mounting

S = Sidearms with mounting tabs

5 Finish

00 = Bright anodized reflector with mill finish ballast compartment

6 Voltage/Ballast

Electronic Dimming*
1 = 120V T = 120V
2 = 277V V = 277V
3 = 347V (Canada)

* Consult sales representative for dimming 5' lamps (lamp codes AX40, TX35, TX60) and for Reflector Configuration 3. Availability for wattages and voltages varies with ballast manufacturer and control type - see www.elliptipar.com for additional dimming specifications and limitations.

7 Option (See Accessories Section for specifications)

- 00 = No options
- 0E = Integral emergency battery pack with indicator lamp and test button. Operates one lamp. Available in nominal 4', 6' and 8' units only (lamp codes A132, A225, A232, A332, T128, T221, T228, T328, T155, T239, T235 and T355).
- 0K = Rewired modular #12 AWG through wiring with quick connectors
- EK = Combination of emergency battery pack and rewired modular through wiring as described above
- XX = For modification not listed, include detailed description. Consult factory prior to specification.

8 Standard

- 0 = UL, Underwriters Laboratories
- J = CSA, Canadian Standards Association

Example

F306 - A240 - S - 00 - 1 - 1 - 0E0

Small concealed fluorescent consisting of one nominal 10' luminaire, for use with two 40W T8 lamps. Integral 120V electronic 2-lamp ballast. Sidearm with mounting tabs. Supplied with integral emergency battery pack. UL.

elliptipar

114 Boston Post Road, West Haven, Connecticut 06516, USA
Voice 203.931.4455 • Fax 203.931.4464 • www.elliptipar.com

The external shapes of the asymmetric reflectors are trademarks of elliptipar. Certain products illustrated may be covered by applicable patents and patents pending. For a list of patents, see Contents pages. These specifications supersede all prior publications and are subject to change without notice. © 2007 elliptipar.

Lighting the Ceiling

Small concealed, integral

T8 Fluorescent

Style 306

To order by Row Code - T8 lamps

When the Style 306 small concealed fluorescent is run continuously in **straight** covers, **elliptipar** offers the option of specifying and ordering the entire row as one catalog number. Ordering by row eliminates the need to calculate length, type and quantity of reflectors.

Steps to specify Row Code:

1. Determine clear inside length of cover.
2. Round up to nearest foot and find the nominal row length in chart.
3. Determine what lengths/wattages of lamps will be used and select the corresponding lamp combination codes.

Example: If only 3' and 4' lamps are to be used on the project, specify row codes ending with **A**, **B** and/or **D** only.

4. If for a given nominal row length a preferred lamp combination is not listed, select the next shorter row that is available in the desired lamp combination.
5. Once the nominal row length and lamp combination has been found in the chart, note the actual overall row length (last column).
6. Consider the unlighted length at each end of the row. (Subtract the overall row length from the clear inside length, and divide the remainder by two.) It is generally recommended that the unlighted length at each end be between 6" and 12".
7. Enter the four character Row Code in place of the Lamp Code described on page C-20.1. The remainder of the catalog number is formed as shown on page C-20.1.

Features

- Time saving - simplifies specification and ordering
- One catalog number - includes all necessary reflectors to install row
- Assured fit - all you need is the clear inside length of the cover

3 Row Code

Note: Enter row code in place of Lamp Code described on page C-20.1.

R | | | = Row Code

Lamp Combination*

- A = All nominal 3' lamps
- B = All nominal 4' lamps
- C = All nominal 5' lamps
- D = Nominal 3' and 4' lamps
- F = Nominal 3' and 5' lamps
- G = Nominal 4' and 5' lamps

Nominal Row Length in feet, between 3' and 50' **

* Not all lamp combinations are available for each nominal row length (see chart)
 ** Nominal row lengths over 50' can be formed by combining shorter row lengths. (Example: a nominal 60' row can be ordered as two nominal 30' rows.)

Example

F306 - R16C - S - 00 - 2 - 000

Nominal 16' long row of Style 306 small concealed T8 fluorescent using only nominal 5' (40W) lamps. Row includes one nominal 10' reflector for use with two 5' lamps, one nominal 5' reflector for use with one 5' lamp and integral 277V electronic ballasts. Overall row length is 15' 1-3/8".

Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
4	A	1						3'-0-3/4"
5	B		1					4'-0-3/4"
6	C			1				5'-0-1/2"
7	A				1			6'-1-3/16"
8	D	1	1					7'-1-1/2"
9	B					1		8'-1-3/16"
9	F	1		1				8'-1-1/4"
10	A	1			1			9'-1-15/16"
10	G	1	1					9'-1-1/4"
11	C						1	10'-0-7/8"
11	D		1					10'-1-15/16"
12	D	1				1		11'-1-15/16"
12	F			1				11'-1-1/16"
13	A				2			12'-2-3/8"
13	B	1				1		12'-1-15/16"
14	D	1	1					13'-2-1/16"
14	F	1					1	13'-1-5/8"
14	G			1				13'-1-1/16"
15	D			1	1			14'-2-3/8"
15	F	1		1				14'-2-7/16"
15	G			1			1	14'-1-5/8"
16	C			1				15'-1-3/8"
16	D	1	1				1	15'-2-11/16"
17	B				2			16'-2-3/8"
17	F					1		16'-2-1/16"
18	D	1				1		17'-3-1/8"
18	F			1	2			17'-2-7/8"
18	G		1	1				17'-2-7/16"
19	A				3			18'-3-9/16"
19	D		1			1		18'-3-1/8"
19	F	1		1				18'-2-1/8"
19	G					1		18'-2-1/16"
20	D	1					2	19'-3-1/8"
20	F	1				1		19'-2-13/16"
20	G	1	1	1			1	19'-2-1/8"

For complete photometrics, visit www.elliptipar.com



Lighting the Ceiling

Small concealed

18 Fluorescent

Style 306

Project:

Type:

21	B		1				2	20'-3 1/8"
21	C							20'-1-3/4"
22	A	1			3			21'-4 5/16"
22	F		1		1			21'-2-9/16"
22	G			1		2		21'-2-7/8"
23	D			1		2		22'-3-9/16"
23	F				2			22'-3-1/4"
23	G					1		22'-2-13/16"
24	D	1				2		23'-3-7/8"
24	F	1					2	23'-2-1/2"
24	G			1			1	23'-2-9/16"
25	B					3		24'-3-9/16"
25	G		1				2	24'-2-1/2"
26	C			1			2	25'-2-1/4"
26	D	1			1		2	25'-4 5/16"
26	G	1		1		2		25'-3-5/8"
27	D		1				2	26'-4 5/16"
27	F			1			2	26'-2-15/16"
27	G				1		2	26'-3-1/4"
28	A	1			4			27'-5-1/2"
28	D	1				3		27'-4 5/16"
28	G	1		1			1	27'-3-5/16"
29	B		1				3	28'-4 5/16"
29	F	1					2	28'-3"
29	G			1			2	28'-2-15/16"
30	D	1		1		2		29'-5-1/16"
30	F	1		1		2		29'-3-11/16"
30	G		1			2		29'-3"
31	A				5			30'-5-15/16"
31	C					3		30'-2-5/8"
31	D			1		3		30'-4-3/4"
31	G		1			2	1	30'-4"
32	D	1					3	31'-5-1/16"
32	F		1				2	31'-3-7/16"
32	G			1			1	31'-3-3/4"

REV 3/02



33	B					4		32'-4 3/4"
33	F		1			2	2	32'-4-1/8"
33	G					1	2	32'-3-1/16"
34	A	1			5			33'-6-1/16"
34	F					3		33'-3-3/8"
34	G	1				1	2	33'-3-7/16"
35	D		1		1	3		34'-5-1/2"
35	F	1		1		2	2	34'-4-3/16"
35	G		1			3	3	34'-3-3/8"
36	C			1			3	35'-3-1/8"
36	D	1				4		35'-5-1/2"
37	A				6			36'-7-1/8"
37	B		1			4		36'-5-1/2"
37	F			1		3	3	36'-3-13/16"
37	G					2	2	36'-4-1/8"
38	D	1		1		3		37'-6-1/4"
38	F			1	2		2	37'-4-5/8"
38	G					4		37'-5-1/4"
39	D			1		4		38'-5-15/16"
39	F	1		1		3	3	38'-3-7/8"
39	G					1	3	38'-3-13/16"
40	A	1			6			39'-7-7/8"
40	D	1	1			4		39'-6-1/4"
40	G			1		3		39'-3-7/8"
41	B					5		40'-5-15/16"
41	C					4		40'-3-1/2"
41	D	1			2	3		40'-6-1/16"
42	D	1			1	4		41'-6-1/16"
42	F			1		3		41'-4 5/16"
42	G				1	4		41'-6"
43	A		1		7			42'-8-5/16"
43	D		1		1	4		42'-6-1/16"
43	F				2	3		42'-5"
43	G					4	1	42'-5-5/8"

elliptipar
114 Boston Post Road, West Haven, Connecticut 06516, USA
Voice 203.931.4455 • Fax 203.931.4464 • www.elliptipar.com

44	D	1					5	43'-6 11/16"
44	F	1					4	43'-4-1/4"
44	G			1			3	43'-4-5/16"
45	B		1				5	44'-6-11/16"
45	F	1		1			3	44'-5-1/16"
45	G					4		44'-4-1/4"
46	A	1			7			45'-9-1/16"
46	C		1			4		45'-4"
46	G			1		5		45'-6-7/16"
47	D			1		5		46'-7-1/8"
47	F				1	4		46'-4-11/16"
47	G					3		46'-5"
48	D	1		1		5		47'-7-7/16"
48	F			1	2		3	47'-5-1/2"
48	G		1			1	3	47'-5-1/16"
49	A				8			48'-9-1/2"
49	B					6		48'-7-1/8"
49	F	1		1		4		48'-4-3/4"
49	G					1	4	48'-4-11/16"
50	D	1			1	5		49'-7-7/8"
50	F	1				4		49'-5-7/16"
50	G			1		4		49'-4-3/4"

The external shapes of the asymmetric reflectors are trademarks of elliptipar.
Certain products illustrated may be covered by applicable patents and patents pending.
For a list of patents, see Comments pages. These specifications supersede all prior
publications and are subject to change without notice. © 2007 elliptipar.

Lighting the Ceiling Small concealed, Integral

To order by Row Code - T5 lamps

When the Style 306 small concealed fluorescent is run continuously in **straight** covers, **elliptipar** offers the option of specifying and ordering the entire row as one catalog number. Ordering by row eliminates the need to calculate length, type and quantity of reflectors.

Steps to specify Row Code:

1. Determine clear inside length of cover.
2. Round up to nearest foot and find the nominal row length in chart.
3. Determine what lengths/wattages of lamps will be used and select the corresponding lamp combination codes.
Example: If only 3' and 4' lamps are to be used on the project, specify row codes ending with **A**, **B** and/or **D** only. If for a given nominal row length a preferred lamp combination is not listed, select the next shorter row that is available in the desired lamp combination.
5. Once the nominal row length and lamp combination has been found in the chart, note the actual overall row length (last column).
6. Consider the unlighted length at each end of the row. (Subtract the overall row length from the clear inside length, and divide the remainder by two.) It is generally recommended that the unlighted length at each end be between 6" and 12".
7. Enter the four character Row Code in place of the Lamp Code described on page C-20.1. The remainder of the catalog number is formed as shown on page C-20.1.

Features

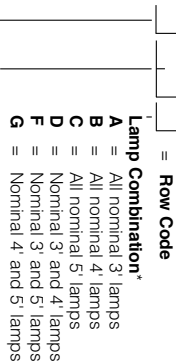
- Time saving - simplifies specification and ordering
- One catalog number - includes all necessary reflectors to install row
- Assured fit - all you need is the clear inside length of the cover

T5 Fluorescent

Style 306

3 Row Code

Note: Enter row code in place of Lamp Code described on page C-20.1.



Nominal Row Length in feet, between 3' and 50' **

S = T5 fluorescent
V = T5 HO fluorescent

* Not all lamp combinations are available for each nominal row length (see chart)

** Nominal row lengths over 50' can be formed by combining shorter row lengths. (Example: a nominal 60' row can be ordered as two nominal 30' rows.)

Example

F306 - S18G - S - 00 - 2 - 000

Nominal 18' long row of Style 306 small concealed T5 fluorescent using only nominal 4' (28W) and 5' (35W) lamps. Row includes one nominal 10' reflector for use with two 5' lamps, one nominal 8' reflector for use with two 4' lamps and integral 277V electronic ballasts. Overall row length is 17' 5 3/4".

Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
3	A	1						2' 10-7/8"
4	B		1					3' 10-11/16"
5	C			1				4' 10-1/2"
6	D				1			5' 9-1/2"
7	D	1	1					6' 9-9/16"
8	B					1		7' 9-1/8"
8	F	1						7' 9-3/8"
9	A	1			1			8' 8-3/8"
9	G		1	1				8' 9-3/16"
10	C						1	9' 8-5/8"
10	D		1					9' 8-3/16"
11	D	1				1		10' 8"
11	F						1	10' 8"
12	A				2			11' 7"
12	B		1			1		11' 7-13/16"
13	D	1	1			1		12' 7-1/16"
13	F	1					1	12' 7-1/2"
13	G			1				12' 7-5/8"
14	D					1	1	13' 6-5/8"
14	F	1						13' 6-7/8"
14	G		1				1	13' 7-5/16"
15	A	1			2			14' 5-7/8"
15	C			1				14' 7-1/8"
15	D	1	1					14' 6-11/16"
16	B					2		15' 6-1/4"
16	F				1		1	15' 6-1/8"
17	D	1			1	1		16' 5-1/2"
17	F			1	2			16' 5-1/2"
17	G	1	1			1		16' 6-5/16"
18	A				3			17' 4-1/2"
18	D		1			1		17' 5-5/16"
18	F	1					1	17' 6"
18	G						1	17' 5-3/4"
19	D	1					2	18' 5-1/8"
19	F	1				1		18' 5"
19	G		1				1	18' 5-13/16"



Lighting the Ceiling

Small concealed

T5 Fluorescent

Style 306

Project: _____

Type: _____

20	20	Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
20	B	1						2	2	19' 4-15/16"
21	A	1								19' 5-1/4"
21	D	1						3	2	20' 3-3/8"
21	F	1								20' 4-3/16"
21	G	1						1	1	20' 4-5/8"
22	D	1								20' 4-3/4"
22	F	1						2	2	21' 3-3/16"
22	G	1								21' 3-5/8"
23	D	1								21' 4-7/16"
23	F	1						2	2	22' 3-13/16"
23	G	1								22' 4-1/4"
24	A	1								23' 2"
24	B	1						4	3	23' 3-3/8"
24	F	1								23' 3-1/2"
24	G	1						1	2	23' 3-15/16"
25	C	1								24' 3-3/4"
25	D	1						2	2	24' 2-5/8"
26	D	1								25' 2-7/16"
26	F	1						2	2	25' 2-3/4"
26	G	1								25' 2-7/8"
27	A	1						4	2	26' 0-7/8"
27	D	1								26' 2-1/4"
27	F	1						3	1	26' 2-1/8"
27	G	1						2	1	26' 2-15/16"
28	B	1								27' 2-1/16"
28	F	1						3	2	27' 2-5/8"
28	G	1								27' 2-3/8"
29	D	1						2	2	28' 1-5/16"
29	F	1								28' 1-5/8"
29	G	1						2	2	28' 2-7/16"
30	A								5	28' 11-1/2"
30	C								3	29' 1-7/8"
30	D							1	3	29' 0-7/8"

31	31	Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
31	D	1								30' 0-15/16"
31	F	1						3	2	30' 1-1/4"
31	G	1							2	30' 1-3/8"
32	A	1						5	1	31' 10-3/8"
32	B	1								31' 0-1/2"
32	D	1						4	3	31' 11-3/4"
32	F	1							2	31' 0-1/4"
32	G	1						2	2	31' 1-1/16"
33	D	1						3	3	32' 11-9/16"
33	F	1								32' 0-3/4"
33	G	1						1	2	32' 0-7/8"
34	D	1							4	33' 11-3/8"
34	F	1							2	33' 0-1/8"
34	G	1						3	1	33' 0"
35	A	1							6	34' 9"
35	B	1							4	34' 11-3/16"
35	C	1							3	34' 0-3/8"
36	D	1						3	3	35' 10-7/16"
36	G	1							4	35' 11"
37	D	1						1	4	36' 10"
37	F	1							2	36' 9-3/4"
37	G	1						3	3	36' 11"
38	A	1								37' 7-7/8"
38	D	1						6		37' 10-1/16"
38	G	1							4	37' 11-1/16"
39	B	1							3	38' 9-5/8"
39	C	1							5	38' 10-1/2"
40	D	1							4	39' 8-7/8"
40	F	1						1	3	39' 9-7/8"
40	G	1							2	39' 10"
41	A								7	40' 6-1/2"
41	D								1	40' 8-11/16"
41	F								2	40' 8-7/8"
41	G								3	40' 9-11/16"

42	42	Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
42	D	1							5	41' 8-1/2"
42	F	1							4	41' 9-3/8"
42	G	1							3	41' 9-3/16"
43	B	1							5	42' 8-5/16"
43	F	1							4	42' 7-1/4"
43	G	1							2	42' 9-3/16"
44	A	1						7		43' 5-3/8"
44	C	1							4	43' 9"
44	D	1						4	4	43' 7-9/16"
45	D	1							1	44' 7-1/8"
45	F	1							5	44' 7-1/8"
45	G	1							4	44' 8"
46	D	1							2	44' 8-1/8"
46	F	1						5	3	45' 7-3/16"
46	G	1							2	45' 7-3/8"
47	A	1							3	45' 8-3/16"
47	B	1							8	46' 4"
47	F	1							6	46' 6-3/4"
47	G	1							4	46' 7-7/8"
48	D	1						1	4	46' 7-5/8"
48	F	1							1	47' 6"
48	G	1						1	4	47' 6-7/8"
49	C	1							4	47' 7-11/16"
49	D	1						4	5	48' 7-1/8"
49	F	1							4	48' 5"
50	A	1							8	49' 2-7/8"
50	D	1							6	49' 5-5/8"
50	F	1							4	49' 6-1/2"
50	G	1							3	49' 6-5/8"



REV 3/02

elliptipar
114 Boston Post Road, West Haven, Connecticut 06516, USA
Voice 203.931.4455 • Fax 203.931.4464 • www.elliptipar.com

The external shapes of the asymmetric reflectors are trademarks of elliptipar.
Certain products illustrated may be covered by applicable patents and patents pending.
For a list of patents, see Contents pages. These specifications supersede all prior publications and are subject to change without notice. © 2007 elliptipar.

elliptipar

TYPE:

CATALOG#:

DESCRIPTION

A low brightness shallow plenum downlight for use with 50 to 100W HID lamps. Fresnel lens provides focused, controlled light distribution. Prismatic lens provides a wider, more diffuse light pattern. Highly efficient reflector designs allow maximum utilization of HID light sources and shallow mounting.

SPECIFICATION FEATURES

A... Reflector

Specular clear reflector with a spun parabolic contour. Positive reflector mounting via keyed holes and screws.

B... Trim Ring

Painted die-cast aluminum

SPECIFICATION FEATURES

with choice of white or black baffle.

C... Housing/Mounting Frame

Precision die-cast aluminum 1 1/2" deep collar accommodates varying dimensions of ceiling materials. .060 stamped steel mounting frame.

D... Mounting

Pre-installed telescoping mounting bars are suitable for T-bar ceilings or wood joists.

E... Conduit Fittings

Die-cast screw tight connectors.

F... Socket

4KV pulse rated medium base screw shell socket.

G... Junction Box

U.L. listed for four in, four out

#12 at 90°C pull through branch wiring. Positioned to allow straight conduit runs. Five 1/2" and two 3/4" knockouts are provided. Access to junction box through removal of reflector.

H... Ballast

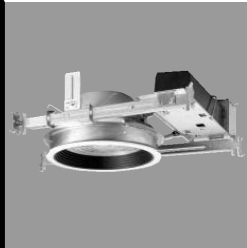
Quick mount plug-in thermally protected ballast with dual tap for 120/277V. Ballast secures to mounting frame with spring lock.

I... Insulation Detector

Self resetting insulation detector opens circuit if insulation is improperly installed.

Labels

U.L. listed, C.S.A. certified, standard damp label, IBEW union made.



**M6043S-10002P
-10012P**

**1 0 0 W H P S
1 0 0 W M H
9 1 / 2 " L E N S**

ENERGY DATA

Ballast 720 Lamp 50W MH
Input Watts: 72W
Operating/Starting /Open Circuit Current:
120V= 0.65A / 0.80A/1.15A
277V= 0.30A / 0.35A/0.50A
Power Factor: 90% Sound Rating B
Min. Starting Temperature: -20°F (-30°C)

Ballast 730 Lamp 70W MH
Input Watts: 94W
Operating/Starting /Open Circuit Current:
120V= 0.85A / 0.53A/1.59A
277V= 0.37A / 0.27A/0.72A
Power Factor: 90% Sound Rating B
Min. Starting Temperature: -20°F (-30°C)

Ballast 731E Lamp 70W MH
Input Watts: 82W
Max Current: 120V: 0.83A
Power Factor: 90%
T.H.D.: <30%; Sound Rating: A
Min Starting Temperature: -20°F (-30°C)

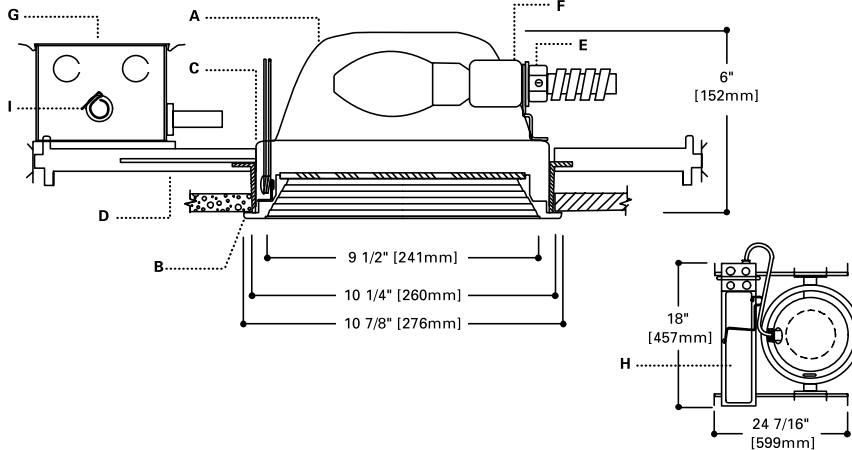
Ballast 741E Lamp 100W MH
Input Watts: 116W
Max Current: 120V: 1.30A
Power Factor: 90%
T.H.D.: <30%; Sound Rating: A
Min Starting Temperature: -20°F (-30°C)

Ballast 740 Lamp 100W MH
Input Watts: 125W
Operating/Starting /Open Circuit Current:
120V= 1.10A / 2.20A/2.40A
277V= 0.48A / 0.95A/1.05A
Power Factor: 90% Sound Rating B
Min. Starting Temperature: -20°F (-30°C)

Ballast 620 50W HPS
Input Watts: 65
Operating/Starting Current:
120V= 0.65 / 0.70
277V= 0.30 / 0.35
Power Factor: 90%

Ballast 630 70W HPS
Input Watts: 90
Operating/Starting Current:
120V= 0.82 / 1.00
277V= 0.36 / 0.50
Power Factor: 90%

Ballast 640 100W HPS
Input Watts: 125
Operating/Starting Current:
120V= 1.10 / 1.45
277V= .50 / .65
Power Factor: 90%



ORDERING INFORMATION

SAMPLE NUMBER: M6043S-630-10002P

Complete unit consists of housing, ballast and trim.

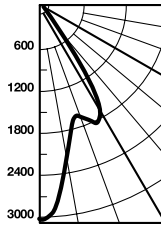
Housing	Options	Ballast	Trims	Accessories
M6043S				
M6043S=Shallow Plenum Lensed Downlight	F=Fuse Q=Quartz X=Quartz (Socket Only)	620=50W HPS 120/277V 630=70W HPS 120/277V 640=100W HPS 120/277V 720=50W MH 120/277V 730=70W MH 120/277V 731E=70W MH 120V Electronic 740=100W MH 120/277V 741E=100W MH 120V Electronic	Regressed Fresnel Lens 10002P=White Trim Ring, Black Baffle 10002PWH=White Trim Ring, White Baffle Regressed Prismatic Lens 10012P=White Trim Ring, Black Baffle 10012PWH=White Trim Ring, White Baffle	Field Installable Fuse Kit FK3=3 Amp (300V Max.) FK5=5 Amp (300V Max.) FK10=10 Amp (125V Max.) 1 1/2" C-Channel Bar Hangers HB26=26" Long HB50=50" Long Slope Adapter HSA-10-XX=Specify Slope

NOTES: Accessories should be ordered separately. For additional options please consult your Cooper Lighting Representative. Alzak is a registered trademark of Aluminum Company of America.

M 6 0 4 3 T - 6 3 0 - 1 0 0 0 2 P

PHOTOMETRICS

Candlepower Distribution



Test No. H30017
M6043S -10002P
 Lamp=LU100/D/MED
 Lumens=9500
 Spacing Criteria=0.9
 Efficiency=62.9%

Candlepower

Deg.	CD
0	3647
5	3703
15	4037
25	2475
35	2383
45	1131
55	660
65	315
75	107
85	1
90	0

Average Luminance

Deg.	CD/SQ M
45	34961
55	25151
65	16292
75	9036
85	251

Cone of Light

Distance to Illuminated Plane	Initial Nadir Footcandles	Beam Diameter
4'6"	180	4'0"
5'6"	121	5'0"
6'6"	86	6'0"
8'0"	57	7'6"
10'0"	36	9'5"
12'0"	25	11'6"

Beam diameter is to 50% of maximum footcandles, rounded to the nearest half-foot. Footcandle values are initial, apply appropriate light loss factors where necessary.

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Luminaire
0-30	2648	27.9	44.3
0-40	4044	42.6	67.6
0-60	5535	58.3	92.6
0-90	5980	62.9	100.0
90-180	0	0.0	0.0
0-180	5980	62.9	100.0

Coefficient of Utilization

rc rw	80%				70%				50%				30%				10%				0%			
	70	50	30	10	50	30	10	0	50	10	50	10	50	10	50	10	50	10	50	10	50	10	50	10
RCR 0	75	75	75	75	73	73	73	70	70	67	67	64	64	63	63	63	63	63	63	63	63	63	63	
1	70	68	66	64	67	65	63	64	61	62	59	59	58	56	56	56	56	56	56	56	56	56	56	
2	65	61	58	55	60	57	55	58	53	56	52	54	51	50	50	50	50	50	50	50	50	50	50	
3	61	56	52	48	55	51	48	53	47	51	46	50	46	44	44	44	44	44	44	44	44	44	44	
4	57	51	46	43	50	46	42	48	42	47	41	46	41	40	40	40	40	40	40	40	40	40	40	
5	53	46	42	38	46	41	38	44	38	43	37	42	37	36	36	36	36	36	36	36	36	36	36	
6	49	42	38	34	42	37	34	41	34	40	34	39	33	32	32	32	32	32	32	32	32	32	32	
7	46	39	34	31	39	34	31	38	31	36	30	36	30	29	29	29	29	29	29	29	29	29	29	
8	44	36	32	28	36	31	28	35	28	34	28	34	28	27	27	27	27	27	27	27	27	27	27	
9	41	34	29	26	33	29	26	33	26	32	26	31	26	25	25	25	25	25	25	25	25	25	25	
10	39	31	27	24	31	27	24	31	24	30	24	29	24	23	23	23	23	23	23	23	23	23	23	

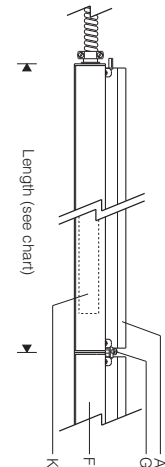
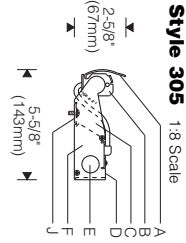
rc=Ceiling reflectance, rw=Wall reflectance, RCR=Room cavity ratio CU Data Based on 20% Effective Floor Cavity Reflectance.

Lighting the Ceiling

Xtra small concealed, integral

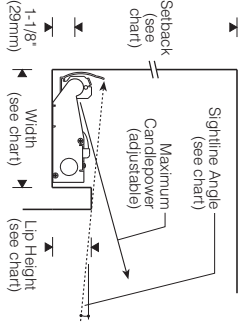
T5 Fluorescent

Style 305



Lamp Length	Luminaire Length
1 x 2	23-1/16" (586mm)
1 x 3	34-7/8" (886mm)
1 x 4	46-11/16" (1186mm)
1 x 5	58-1/2" (1486mm)
2 x 3	69-1/2" (1765mm)
2 x 4	93-1/8" (2365mm)
2 x 5	116-5/8" (2963mm)

Cove

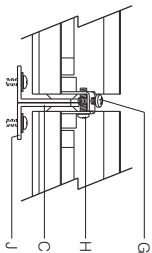


Cove Dimensions
(Max. candiepower aimed 15° above horiz.)

Sight-line cut-off	0°(horiz.)	5°	10°
Width (inside)	6-1/2" (155mm)	5-7/8" (150mm)	5-7/8" (150mm)
Lip	2-5/8" (67mm)	2-1/8" (54mm)	1-5/8" (41mm)
Setback (varies)	Recommended minimum: 12" T5, 18" T5HO		

Note: Finish interior of cove matte white for best results.

Joint 1:4 Scale
(Ballast compartment not shown for clarity.)



Specifications

- A** Specular extruded aluminum reflector
- B** Stainless steel lamp-holder/support brackets
- C** Aluminum sidearm with mounting tab
- D** Extruded aluminum ballast/wireway channel cover
- E** Conduit entry (one each end, conduit and connector by others)
- F** Extruded aluminum ballast/wireway compartment
- G** Rotation locking screw
- H** Joiner/alignment screw
- J** Mounting tab (fastener by others)
- K** Integral electronic ballast

Finish:

Reflector - extruded high purity aluminum with clear anodized specular finish. Sidearms and ballast/wireway compartment - mill finish aluminum. All luminaire hardware - stainless steel.

Mounting:

Lay-in installation requires only one fastener per joint (by others). Sidearms with mounting tabs can be base or wall mounted. Luminaires can be mounted individually or joined together to form a continuous row.

Reflector aiming is adjustable and is fixed in position by rotation locking screws at each sidearm. When mounted in a continuous row, joiner screws lock reflectors together allowing all in the row to be aimed together.

Standard:

UL listed or CSA certified for damp locations. (Style 124 painted model with lens recommended for damp locations.)

Electrical:

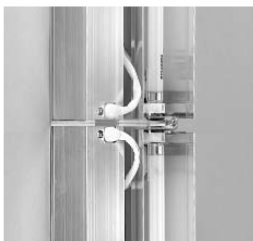
Use 90°C wire for supply connections.

Integral electronic HPF thermally protected class P ballast with end-of-life protection. Ballast/wireway compartment includes one conduit entry at each end. Channel cover removes for access to ballast and wiring. Luminaires may be butted end-to-end (connectors by others) for through wiring. Optional #12 AWG prewired modular through wiring with quick connectors. Master/satellite combination is available (Configuration 3, see ordering information). Master supplied with 2-lamp ballast. Wiring, conduit and connectors between master and satellite units by others.)

Optional electronic dimming ballast; compatible dimmer switch required (by others). Consult sales representative for compatibility and specifications.

Optional integral emergency battery operates one lamp. Separate unswitched supply is required.

For complete ballast specifications, see Accessories Section.

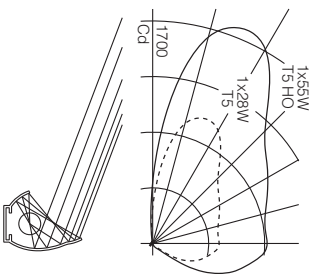


Features

- T5 fluorescent - precise optical control for unequaled projection of light from perimeter covers
- Adjustable - all reflectors in a row join and aim together; rotation locking screws secure position*
- Only 2-5/8" high - fits in low profile covers
- Integral electronic ballast; thru wiring for easy installation

Performance

Two parabolic reflector sections drive light across the ceiling from one edge. An elliptical section shields the lamp from normal viewing angles and redirects its light to a parabola. Glare is minimized and asymmetry of the beam is maximized resulting in high beam efficiency and superior surface uniformity.



For complete photometrics, visit www.elliptipar.com

elliptipar



To Order

To form a Catalog Number

F 3 0 5 | T | S 0 0 | | | | | | | | | |

1 Source

F = Linear fluorescent

2 Style

305 = Xtra small concealed, Integral ballast

3 Lamp

Note: To order by overall row length, enter **ROW CODE** in place of Lamp Code below (see Row Charts on page C-19-2). Row Code specifies a row complete with all necessary reflectors and ballasts.

T | | | | = Lamp Code (to specify individual units)

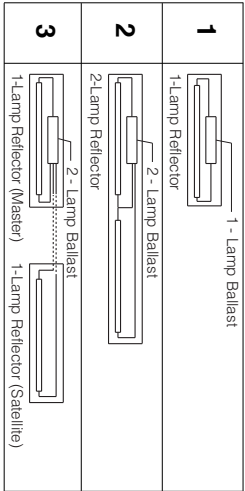
Lamp Wattage (see chart below)

Reflector Configuration, specify 1, 2 or 3

(see chart below)

Example: T228 = two 28W T5 lamps in nominal 8' reflector; one 2-lamp ballast

Reflector Configuration



Lamp Wattage	Lamp Length	Lamp Number
--------------	-------------	-------------

14	2'	F-14T5
21	3'	F-21T5
28	4'	F-28T5
35	5'	F-35T5
T5 HO Fluorescent *		
24	2'	F24T5/HO
39	3'	F39T5/HO
54	4'	F54T5/HO
80	5'	F80T5/HO

For complete lamp and ballast information, see Accessories Section. Standard T5 and T5HO lamp color is 3000K / 80+ CRI.

REV 7/07

elliptipar

Style 305

Project: _____

Type: _____

4 Mounting

S = Sidearms with mounting tabs

5 Finish

00 = Bright anodized reflector with mill finish ballast compartment

6 Voltage/Ballast

Electronic	Dimming*
1 = 120V	T = 120V
2 = 277V	V = 277V
3 = 347V (Canada)	

* Consult sales representative for dimming 5' lamps (lamp codes T335, TX80) and for Reflector Configuration 3. Availability for wattages and voltages varies with ballast manufacturer and control type - see www.elliptipar.com for additional dimming specifications and limitations.

7 Option (See Accessories Section for specifications)

- 00 = No options
- 0E = Integral emergency battery pack with indicator lamp and test button. Operates one lamp. Available in nominal 4', 6' and 8' units only (lamp codes T128, T221, T228, T328, T155, T239, T255 and T355).
- 0K = Rewired modular #12 AWG through wiring with quick connectors
- EK = Combination of emergency battery pack and rewired modular through wiring as described above
- XX = For modification not listed, include detailed description. Consult factory prior to specification.

8 Standard

- 0 = UL, Underwriters Laboratories
- J = CSA, Canadian Standards Association

Example

F305 - T221 - S - 00 - 1 - 000

Xtra small concealed fluorescent unit consisting of one nominal 6' reflector with two 21W T5 lamps. Integral 120V electronic 2-lamp ballast. Sidearms with mounting tabs. UL.

elliptipar
114 Boston Post Road, West Haven, Connecticut 06516, USA
Voice 203.931.4455 • Fax 203.931.4464 • www.elliptipar.com

The external shapes of the asymmetric reflectors are trademarks of **elliptipar**.
Certain products illustrated may be covered by applicable patents and patents pending.
For a list of patents, see Contents pages. These specifications supersede all prior publications and are subject to change without notice. © 2007 **elliptipar**.

To order by Row Code - T5 lamps

When the Style 305 Xtra small concealed T5 fluorescent is run continuously in **straight** covers, **elliptipar** offers the option of specifying and ordering the entire row as one catalog number. Ordering by row eliminates the need to calculate length, type and quantity of reflectors.

Steps to specify Row Code:

1. Determine clear inside length of cove.
2. Round up to nearest foot and find the nominal row length in chart.
3. Determine what lengths/wattages of lamps will be used and select the corresponding lamp combination codes.

Example: If only 3' and 4' lamps are to be used on the project, specify row codes ending with **A**, **B** and/or **D** only. If for a given nominal row length a preferred lamp combination is not listed, select the next shorter row that is available in the desired lamp combination.

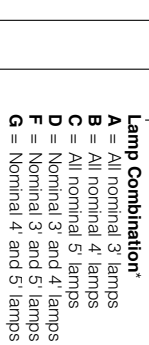
4. Once the nominal row length and lamp combination has been found in the chart, note the actual overall row length (last column).
6. Consider the unlighted length at each end of the row. (Subtract the overall row length from the clear inside length, and divide the remainder by two.) It is generally recommended that the unlighted length at each end be between 6" and 12".
7. Enter the four character Row Code in place of the Lamp Code described on page C-19.1. The remainder of the catalog number is formed as shown on page C-19.1.

Features

- Time saving - simplifies specification and ordering
- One catalog number - includes all necessary reflectors to install row
- Assured fit - all you need is the clear inside length of the cove

3 Row Code

Note: Enter row code in place of Lamp Code described on page C-19.1.



Nominal Row Length in feet, between 3' and 50' **

S = T5 fluorescent
V = T5/HO fluorescent

* Not all lamp combinations are available for each nominal row length (see chart)

** Nominal row lengths over 50' can be formed by combining shorter row lengths. (Example: a nominal 60' row can be ordered as two nominal 30' rows.)

Example

F305 - S15A - S - 00 - 2 - 000

Nominal 15' long row of Style 305 Xtra small concealed T5 fluorescent using only nominal 3' (21W) lamps. Row includes two nominal 6' luminaires for use with two 3' lamps each, one nominal 3' luminaire for use with one 3' lamp and integral 277V electronic ballasts. Overall row length is 14' 5-7/8".

Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length
3	A	1						2' 10-7/8"
4	B		1					3' 10-11/16"
5	C			1				4' 10-1/2"
6	A				1			5' 9-1/2"
7	D	1	1					6' 9-9/16"
8	B					1		7' 9-1/8"
8	F			1				7' 9-3/8"
9	A	1			1			8' 8-3/8"
9	G			1				8' 9-3/16"
10	C		1				1	9' 8-5/8"
10	D				1			9' 8-3/16"
11	D	1				1		10' 8"
11	F				1			10' 8"
12	A				2			11' 7"
12	B		1			1		11' 7-13/16"
13	D	1	1			1		12' 7-1/16"
13	F						1	12' 7-1/2"
13	G			1				12' 7-5/8"
14	D				1		1	13' 6-5/8"
14	F	1			1			13' 6-7/8"
14	G		1				1	13' 7-5/16"
15	A	1				2		14' 5-7/8"
15	C			1				14' 7-1/8"
15	D	1	1				1	14' 6-11/16"
16	B					2		15' 6-1/4"
16	F				1		1	15' 6-1/8"
17	D	1			1			16' 5-1/2"
17	F			1	2			16' 5-1/2"
17	G			1		1		16' 6-5/16"
18	A				3			17' 4-1/2"
18	D	1			1		1	17' 5-5/16"
18	F	1		1				17' 6"
18	G					1	1	17' 5-3/4"
19	D	1					2	18' 5-1/8"
19	F	1				1		18' 5"
19	G		1	1			1	18' 5-13/16"



Project: _____

Type: _____

20	21	21	21	21	21	22	22	22	23	23	24	24	24	24	25	25	26	26	27	27	27	28	28	29	29	30	30	30														
Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length	19' 4-15/16"	19' 5-1/4"	20' 3-3/8"	20' 4-3/16"	20' 4-5/8"	20' 4-3/4"	21' 3-3/16"	21' 3-5/8"	21' 4-7/16"	22' 3-13/16"	22' 4-1/8"	22' 4-1/4"	23' 2"	23' 3-3/8"	23' 3-1/2"	23' 3-15/16"	24' 3-3/4"	24' 2-5/8"	25' 2-7/16"	25' 2-3/4"	25' 2-7/8"	26' 0-7/8"	26' 2-1/4"	26' 2-1/8"	26' 2-15/16"	27' 2-1/16"	27' 2-5/8"	27' 2-3/8"	28' 1-5/16"	28' 1-5/8"	28' 2-7/16"	28' 11-1/2"	29' 1-7/8"	29' 0-7/8"



31	31	31	31	31	31	32	32	32	32	33	33	34	34	34	35	35	35	36	36	37	37	37	38	38	38	39	39	40	40	41	41	41	41	41	41																
Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length	30' 0-15/16"	30' 1-1/4"	30' 1-3/8"	31' 10-3/8"	31' 0-1/2"	31' 11-3/4"	31' 0-1/4"	32' 11-9/16"	32' 11-9/16"	32' 11-9/16"	32' 11-9/16"	32' 11-9/16"	32' 11-9/16"	33' 0-3/4"	33' 0-3/4"	33' 1-3/8"	33' 0-1/8"	33' 0-1/8"	33' 0-1/8"	33' 0-1/8"	34' 9"	34' 9"	34' 11-3/16"	34' 0-3/8"	34' 0-3/8"	35' 10-7/16"	35' 11"	36' 10"	36' 10"	36' 9-3/4"	36' 11"	37' 7-7/8"	37' 10-1/16"	37' 11-1/16"	38' 9-5/8"	38' 10-1/2"	39' 8-7/8"	39' 9-7/8"	39' 10"	40' 6-1/2"	40' 8-11/16"	40' 8-7/8"	40' 9-11/16"

42	42	42	42	42	43	43	43	44	44	44	45	45	45	46	46	47	47	47	48	48	48	49	49	50	50	50	50	50								
Nominal Row Length (feet)	Lamp Combination	Nominal 3' Luminaire (1 x nominal 3' lamp)	Nominal 4' Luminaire (1 x nominal 4' lamp)	Nominal 5' Luminaire (1 x nominal 5' lamp)	Nominal 6' Luminaire (2 x nominal 3' lamps)	Nominal 8' Luminaire (2 x nominal 4' lamps)	Nominal 10' Luminaire (2 x nominal 5' lamps)	Overall Row Length	41' 8-1/2"	41' 9-3/8"	41' 9-3/16"	42' 8-5/16"	42' 7-1/4"	42' 9-3/16"	43' 5-3/8"	43' 9"	43' 7-9/16"	44' 7-1/8"	44' 8"	44' 8-1/8"	45' 7-3/16"	45' 7-3/8"	45' 8-3/16"	46' 4"	46' 6-3/4"	46' 7-7/8"	47' 6"	47' 6"	47' 6-7/8"	47' 7-1/16"	48' 5"	49' 2-7/8"	49' 5-5/8"	49' 6-1/2"	49' 6-5/8"	49' 6-5/8"

REV. 6/04
elliptipar

elliptipar
114 Boston Post Road, West Haven, Connecticut 06516, USA
Voice 203.931.4455 • Fax 203.931.4464 • www.elliptipar.com

The external shapes of the asymmetric reflectors are trademarks of **elliptipar**.
Certain products illustrated may be covered by applicable patents and patents pending.
For a list of patents, see Contents pages. These specifications supersede all prior publications and are subject to change without notice. © 2007 **elliptipar**.

Lighting the Wall Large semi-recessed adjustable



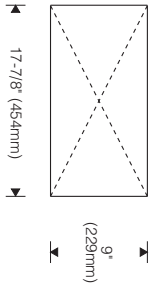
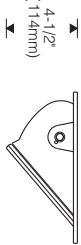
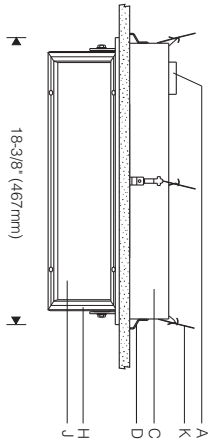
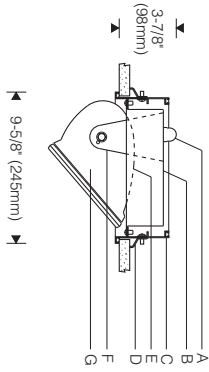
Metal Halide



Tungsten Halogen

Style 204

Style 204 1:10 Scale



Ceiling Cutout



Specifications

- A** Conduit connector
- B** Aluminum back box
- C** Extruded aluminum mounting/trim frame
- D** Spring clips (4 provided)
- E** Specular extruded aluminum reflector
- F** Aluminum yoke arms

- G** Die-cast aluminum end plates
- H** Milred extruded aluminum door frame with silicone gasket
- J** Micro-prismatic tempered glass lens
- K** Supplemental support wires (by others)

Finish:

Semi-gloss white reflector, door frame, end plates, yoke arms and trim frame. Black back box.

Painted surfaces - 6 stage pretreatment and electrostatically applied thermoset powder coat for stable, long lasting and corrosion resistant finish.

Reflector and internal end plates - extruded high purity aluminum with clear anodized specular finish. All luminaire hardware - stainless steel. All mounting hardware - zinc or cadmium plated.

Mounting:

Mounting/trim frame installs from below finished ceiling. Retrofit into existing non-accessible ceilings.

Spring clips provided for rigid ceilings (drywall, plaster) up to 1-3/4" (44mm) thick.

Supplemental support wires, bar hangers, etc. (by others) required for accessible ceilings. Where wire suspension is prohibited, order accessory universal mounting brackets for use with 1/2" EMT, 1-1/2" lathing or C channel (by others).

REV. 6/04

Electrical:

Use 90°C wire for supply connections.

5' (1.5m) wire leads exit back box for connection to accessible junction box (by others) or remote ballast (installation prior to finished ceiling recommended).

Tungsten halogen - recessed single contact (RSC) lampholders in patented clamping supports for maximum heat dissipation.

Metal halide - remote encapsulated constant wattage autotransformer (CWA) ballast. Mogul lampholder is position oriented for use with either PONA horizontal or universal position lamp. Rotating bracket allows horizontal lamp to be locked in proper position after aiming. 175W supplied with medium base lampholder. End-of-lamp aligner ensures consistent optical performance.

For complete ballast specifications, see Accessories Section.

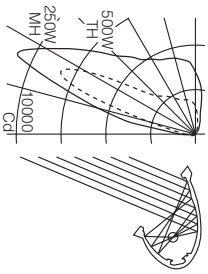
Standard: UL listed or CSA certified for damp locations.

Features

- Adjustable - tailor performance to wall height and setback
- Precured silicone gaskets - keep dirt and moisture out, maintain performance, prevent light leaks
- Optimum metal halide performance - position oriented mogul lampholder, end-of-lamp aligner, CWA ballast
- Shallow recessed depth - fits under ducts at core walls

Performance

Two parabolic reflector sections drive light to the bottom of the wall. An elliptical section shields the lamp from normal viewing angles and redirects its light to a parabola. Glare is minimized and asymmetry of the beam is maximized resulting in high beam efficiency and superior surface uniformity.



For complete photometrics, see www.elliptipar.com.

elliptipar



To Order

To form a Catalog Number

2 0 4 - T - 0 2 -

1 Source

M = Metal halide
T = Tungsten halogen

2 Style

204 = Large semi-recessed adjustable, remote ballast

3 Lamp

Lamp Code	Watt- age	Lamp Number	Volt- age(s)	Ballast	Dia- lance
Metal Halide *					
0175	175	MH175U/MED	A, B, H	CWA	105 (32m)
0250	250	MH250/HOR	A, B, H	CWA	75 (23m)
0400	400	MH400/HOR	A, B, H	CWA	50 (15m)
Tungsten Halogen					
0300	300	Q300T3	A		
0350+	350	Q350T3/CL/HR+	A		
0500	500	Q500T3	A		



* For complete lamp and ballast information, see Accessories Section. Use clear metal halide horizontal or universal position lamp with compact envelope, 250 and 400W lamps are horizontal position oriented mogul base (FOMB) that yield higher light output than universal position lamps. Standard lamp colors are 4000K for 175W and 3200K for 250 and 400W.
NEW 150W - 400W compact envelope Pulse Start and Ceramic Metal Halide lamps are available - see www.elliptipar.com or consult factory for specifications.
+ 350W IFR coated halogen yields approximately the same light output as a conventional 500W halogen lamp.

4 Mounting

T = Overlapping trim

5 Finish

02 = Semi-gloss white

6 Voltage

A = 120V
B = 277V
H = 347V (Canada)

REV: 8/07

elliptipar

Style 204

Project: _____

7 Option (See Accessories Section for specifications)

00 = No options
0C = Modified to comply with Chicago plenum code.
Note: remote ballast must be located outside ceiling plenum. For ballast within plenum, consult factory.
0Y = Modified to comply with New York City code
XX = For modification not listed, include detailed description. Consult factory prior to specification.

8 Standard

0 = UL, Underwriters Laboratories
J = CSA, Canadian Standards Association

Example

M204 - 0250 - T - 02 - B - 0C0

Large semi-recessed model for use with 250W metal halide lamp. Overlapping ceiling trim. Semi-gloss white reflector, door frame, end plates, yoke arms and trim frame, with black back box. Remote 277V ballast. Modified to comply with Chicago plenum code. UL.

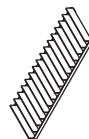
Type: _____

Accessories

Order separately. See Accessories Section for specifications.

AEDV 000 = External vertical blade baffle, black (Not for use with 500W TH units.)

2 = 25° shielding
4 = 45° shielding



ASRBKT00 = Universal mounting brackets (set of two), accepts 1/2" EMT, 1-1/2" latting, C channel or bar hangers (by others)

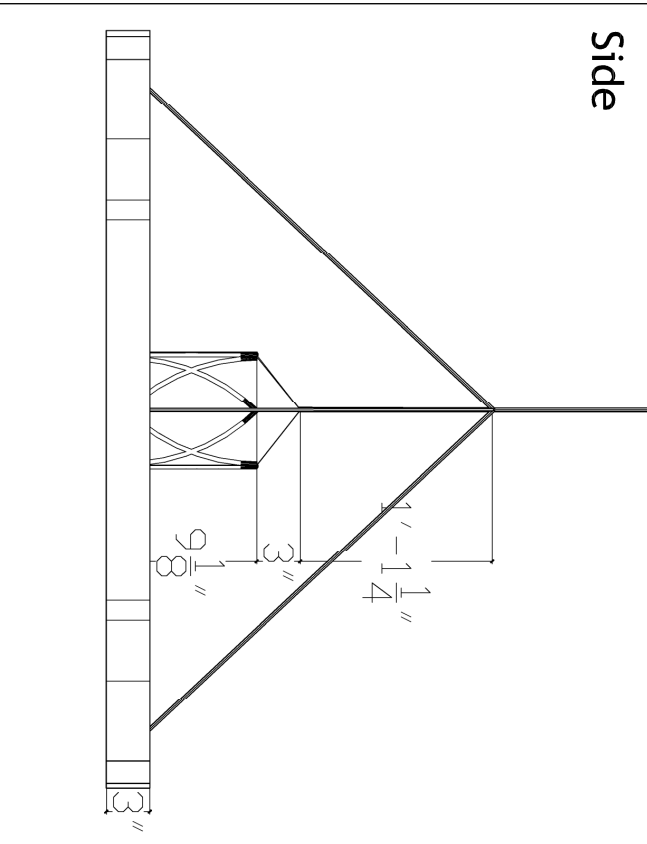
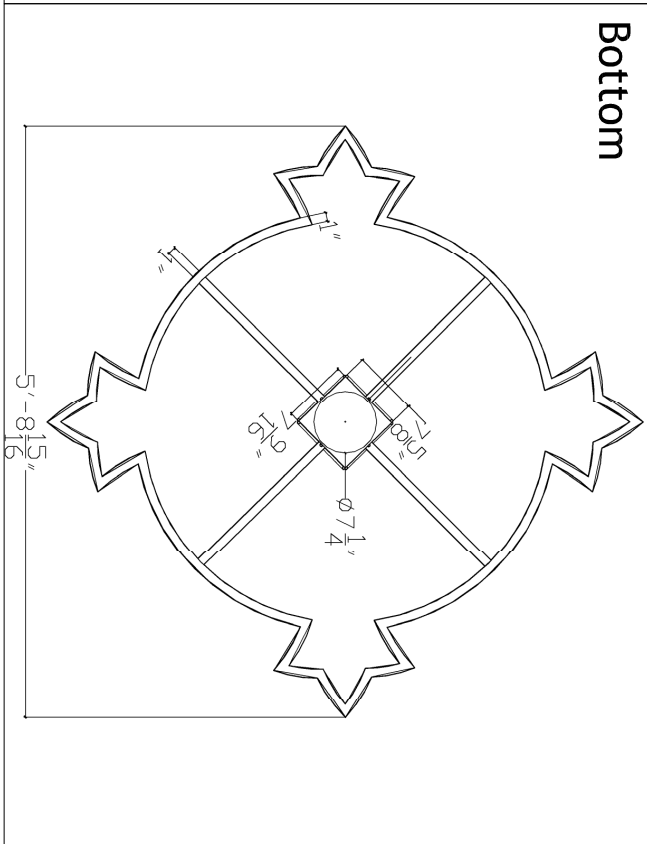
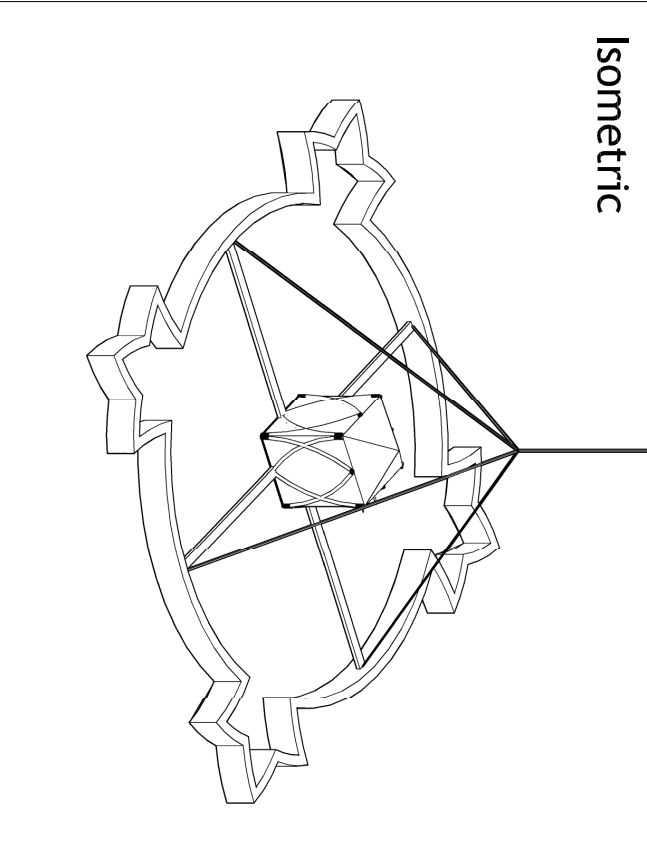
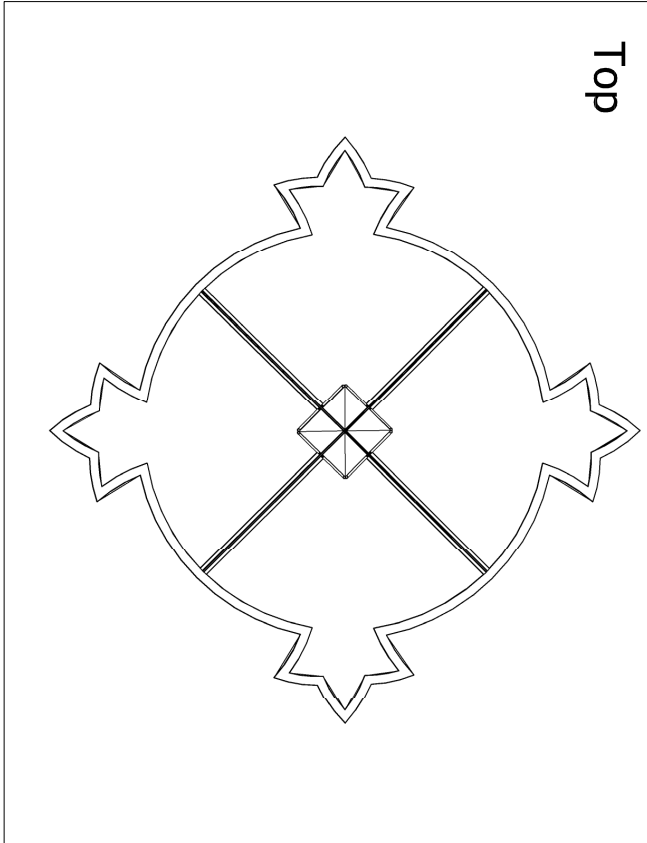


AFK000X = Ballast fuse kit

0 = UL
J = CSA



The external shapes of the asymmetric reflectors are trademarks of elliptipar. Certain products illustrated may be covered by applicable patents and patents pending. For a list of patents, see Contents pages. These specifications supersede all prior publications and are subject to change without notice. © 2007 elliptipar.



Walmaster WMRL143120SO

Page 1 of 2

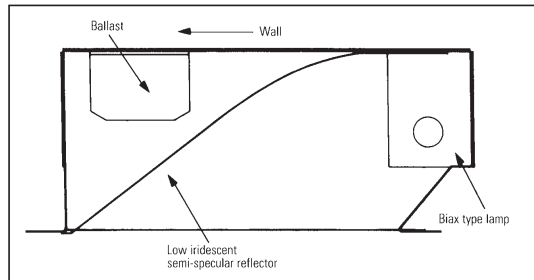
High Performance, 4', Recessed Wallwasher/Accent Light
One T8 Lamp

Features

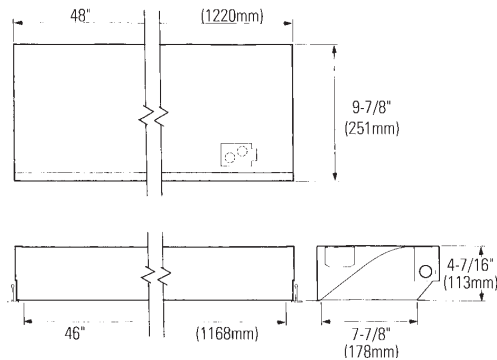
- Low iridescent semi- specular reflective system for precise controlled light output.
- Evenly lights vertical surfaces or displays (no scallops).
- Less than 3:1 maximum to minimum wall illumination when installed 6 feet on center.
- 20,000 hours lamp life.
- Energy saving T8 lamp.
- No edges protrude below ceiling line.
- Can be installed only 2 feet from wall to farthest edge of fixture (3 feet maximum).
- Fits all standard and narrow grid ceiling systems.
- One-piece body and integral hanger for easy, quick installation.
- Sides of fixture can support tile or sit on T-bar.
- UL-Listed access plate.
- Meets NYC Code requirements.



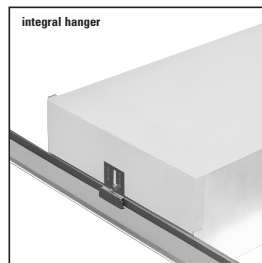
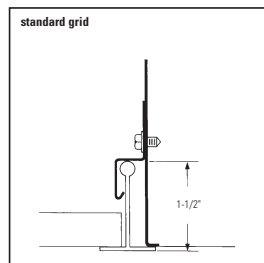
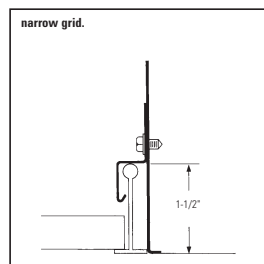
Features



Dimensions



Mounting Methods



Job Information	Type:
Job Name:	
Cat. No.:	
Lamp(s):	
Volts/Ballast:	

Lightolier a Genlyte Company www.lightolier.com
 Technical Information: (978) 657-7600 • Fax (978) 658-0595
 631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
 We reserve the right to change details of design, materials and finish.
 © 2005 a Genlyte company **Section 5/Folio K10-17 Rev. A**

LIGHTOLIER®



Walmaster WMRL143120SO

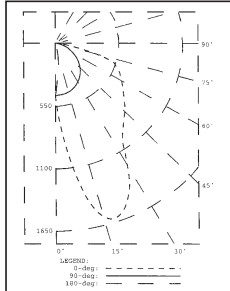
Page 2 of 2

High Performance, 4', Recessed Wallwasher/Accent Light
One T8 Lamp

Photometry

Model No. WMRL143120SO

LER = FP - 53.6 IW - 31.5 BF - 0.85
Comparative yearly lighting energy cost per 1000 lumens = \$4.46



coefficients of utilization — zonal cavity method

	RF	20			30			40		
	RC	80	50	30	50	30	10	50	30	10
room cavity ratio	1	76	73	69	68	66	64	65	63	62
	2	69	63	58	59	55	52	57	54	51
	3	63	55	49	52	47	44	50	46	43
	4	57	49	43	46	41	37	45	40	37
	5	53	44	37	41	36	32	40	35	32
	6	49	39	33	37	32	28	36	31	28
	7	45	36	29	34	29	25	33	28	25
	8	42	33	27	31	26	22	30	25	22
	9	39	30	24	29	24	20	28	23	20
	10	37	28	22	26	22	18	26	21	18

FOOTCANDLES ON WALL Fixtures 3 feet from wall to outside trim on lamp side of fixture

Ceiling	INDIVIDUAL WALMASTER								MULTIPLE UNITS							
	0'	1'	2'	3'	4'	5'	6'	7'	6'							
8'	49	38	21	12	8	5	4	3	58	46	32	28	32	46	58	
7'	49	22	29	18	12	8	6	4	59	54	44	40	44	54	59	
6'	36	33	25	18	12	8	6	5	48	45	41	39	41	45	48	
5'	27	25	21	16	12	9	7	5	39	38	37	36	37	39	39	
4'	21	20	17	14	11	8	7	5	33	32	32	31	32	32	33	
3'	16	16	14	12	9	8	6	5	28	28	28	28	28	28	28	
2'	13	13	12	10	9	7	6	5	25	24	24	24	24	24	25	
1'	11	10	10	9	8	6	6	5	21	21	21	21	21	21	21	
Floor																

Ceiling	MULTIPLE UNITS								CONTINUOUS ROW									
	8'								0'	1'	2'	3'	4'	5'	6'	7'	8'	
8'	53	41	26	18	16	18	26	41	53	50	59	68	59	51	59	68	59	50
7'	52	46	34	26	23	26	34	46	52	67	71	76	72	69	72	76	71	67
6'	41	38	32	26	24	26	32	38	41	60	63	65	64	63	64	65	63	52
5'	32	30	27	25	24	25	27	30	32	52	54	55	55	55	55	55	53	52
4'	25	25	24	22	21	22	24	25	25	46	46	47	47	48	47	46	46	46
3'	21	21	20	20	19	20	20	21	21	38	39	40	40	41	40	40	39	38
2'	18	18	18	17	17	18	18	18	18	33	34	35	35	35	35	35	34	33
1'	15	15	15	15	15	15	15	15	15	28	29	30	30	30	30	30	29	28
Floor																		

Ordering Information

Explanation of Catalog Number. Example: WMRL143120S0GLR

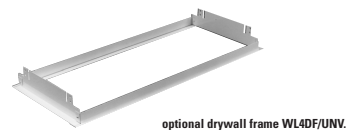
WM Walmaster: Low iridescent semi-specular wallwash	R Recessed	L Reflector: L = Low iridescent semi-specular aluminum	1 Lamp	4 Length: 4-46"	3 Watts: 3-32 Watts	120 or 277 Voltage: UNV=120-277	Options: Add appropriate suffix to catalog no. ie: (GLR)
--	----------------------	---	------------------	------------------------------	----------------------------------	--	--

Options/Accessories

- Fusing:** Internal fast-blow fusing. Suffix: **GLR**.
Internal slow-blow fusing. Suffix: **GMF**.
- Radio Interference Filter:** To order one RIF per fixture, Suffix: **R**.
To order one RIF per ballast, Suffix: **B**.
- Electrical/Wiring Options:** Consult factory.
- Fluorescent Emergency Lighting System:** Factory-installed emergency power battery pack with charger and inverter. Suffix: **EM**.
- Drywall Frame:** Catalog Number: **WL4DF/UNV**.

Specifications

Materials: Chassis parts are die-formed 20 gauge cold rolled steel with integral adjustable hanger clamp. **Reflectors**—low iridescent semi-specular aluminum are standard.
Finish: Chassis exterior—phosphate undercoating, baked white acrylic enamel. **Reflector**—low iridescent semi-specular IS standard.
Electrical: Rapid start HPF, thermally protected class "P" ballast (Biax type). If K.O. is within 3" of ballast, use wire suitable for at least 90°.
Labels: I.B.E.W./UL and ULc Listed.



Job Information Type:

Lightolier a Genlyte Company www.lightolier.com
Technical Information: (978) 657-7600 • Fax (978) 658-0595
631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
We reserve the right to change details of design, materials and finish.
© 2005 a Genlyte company **Section5/Folio K10-17 Rev. A**

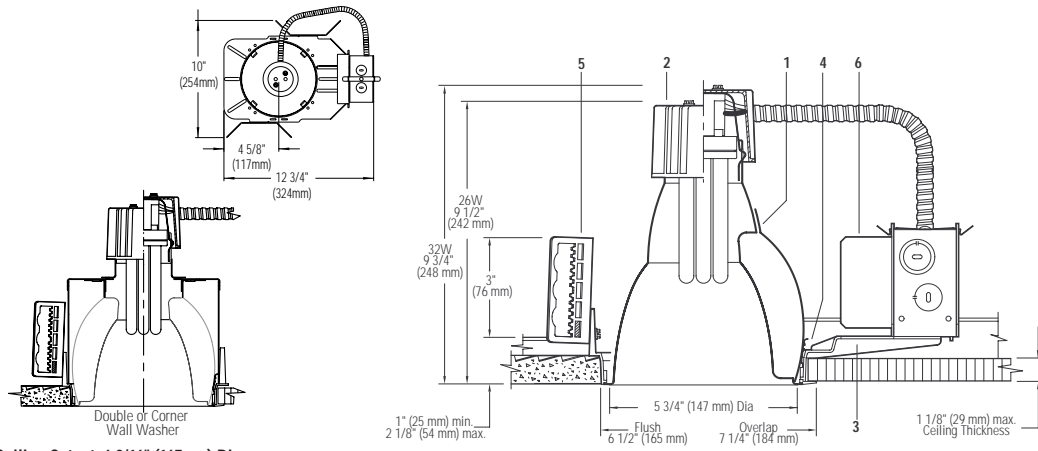
LIGHTOLIER®



Calculite® Compact Fluorescent Open Wall Washer **8021WW**

Page 1 of 2

6" Aperture Triple Tube Vertical Lamp



Ceiling Cutout: 6 9/16" (167mm) Dia.

Reflector Trim			Frame-In Kit		Lamp
Single Wall Washer	Double Wall Washer	Corner Wall Washer	S6132BU	Electronic, 120V - 277V	26 or 32W Triple Tube
8021WW CCLW Comfort Clear™, White Flange	8021DW CCLW	8021CW CCLW	S6132BCU	Universal Dimming, 120V - 277V	4-Pin (Amalgam)
8021WW CCLP Comfort Clear™, Polished Flange	8021DW CCLP	8021CW CCLP	S6132BUM7	Advance Mark7, 120V - 277V	
8021WW CCL Comfort Clear™, Molded Trim Ring	8021DW CCL	8021CW CCL			
8021WW <input type="checkbox"/>					

Add suffix. See options for other finishes.

Features

- Downlight/Wall Washer Reflector:** 16 ga. Alzak® aluminum. 50° lamp cutoff and lamp image. Provides vertical surface wall wash and downlighting. Comfort Clear™ low iridescence finish. Self-flanged or flangeless with molded white trim ring (field paintable).
- Socket Cup:** Effectively dissipates heat and positions lamp holder. Snaps onto reflector neck to assure consistently correct optical alignment without tools.
- Mounting Frame:** Galvanized steel for dry or plaster ceilings. Accepts other 6" Triple Tube reflectors (see S6132BU Spec Sheet).
- Retaining Springs:** Precision-tooled steel friction springs secure reflector to mounting frame for quick, tool-less installation.
- Mounting Brackets:** 16 ga. steel. Adjust from inside of fixture. Use 3/4" or 1 1/2" lathing channel, 1/2" EMT, or optional mounting bars.
- Ballast/J-Box:** Electronic 120V-277V. UL listed for through branch circuit wiring with max of (8) No. 12AWG, 90°C supply conductors. Outboard mounted to reduce heat transfer and maintain lamp efficacy and life. Service from below without tools. Provides vertical surface wall wash and downlighting.

Electrical

Note: For ballast electrical data and latest lamp/ballast compatibility refer to "Ballast" specification sheet for complete electrical data.

Options and Accessories

Comfort Clear™ Finishes ¹	Other Finishes		
Diffuse	CCD	White	WH
Champagne Bronze	CCZ		
Pewter	CPW		

¹Specify desired flange. **W** White, **P** Polished, **B** Blank - Molded Ring

Other Dimming:

S6132BJ1MX Advance MarkX, 120V S6132BJ1LD3 Lutron Hi-lume®, 120V
S6132BJ2MX Advance MarkX, 227V S6132BJ2LD3 Lutron Hi-lume®, 227V

Options and Accessories (continued)

Emergency	Add suffix EM*
Chicago Plenum	Use 6132BULC
Fuse (Slow Blow)	Add Suffix F
Emergency Ltg. Kit	FA EM3E*
	FA EM4E*

*See Spec. Sheet: FAEM

Mounting Bars & Accessories; see Specification Sheet MBA.

Sloped Ceiling Adapters; see Specification Sheet SCA.

IC Frame available; see **C6CFL32** specification sheet.

Labels

UL Listed for damp locations.

Alzak® is a registered trademark of ALCOA.

US Patent Pending.

Job Information	Type:
Job Name:	
Cat. No.:	
Lamp(s):	
Notes:	

Lightolier a Genlyte Thomas Company www.lightolier.com
631 Airport Road, Fall River, MA 02720 • (508) 679-8131 • Fax (508) 674-4710
We reserve the right to change details of design, materials and finish.
© 2002 Genlyte Thomas Group LLC (Lightolier Division) • C0104

LIGHTOLIER®



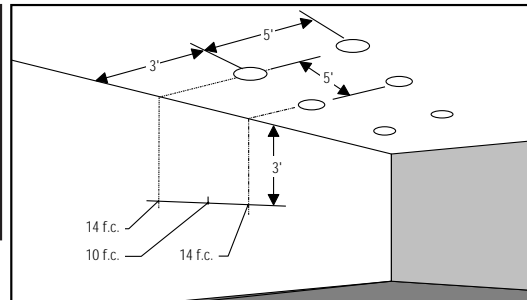
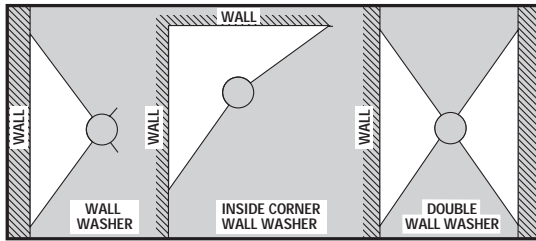
Calculite® Compact Fluorescent Open Wall Washer **8021WW**

Page 2 of 2

6" Aperture Triple Tube Vertical Lamp

Lighting Data

Footcandles On Wall: Multiple 32W Triple Tube Units



2' From Wall-2' On Center

2' On Center			
1	35	34	35
2	44	44	44
3	47	41	47
4	38	35	38
5	29	27	29
6	22	22	22
7	17	17	17
8	13	13	13
9	11	11	11

2' From Wall-3' On Center

3' On Center			
1	28	18	28
2	32	27	32
3	30	30	30
4	26	24	26
5	19	20	19
6	15	15	15
7	12	12	12
8	10	10	10
9	8	8	8

2' From Wall-4' On Center

4' On Center			
1	26	18	26
2	29	16	29
3	25	22	25
4	20	19	20
5	15	15	15
6	11	12	11
7	9	10	9
8	7	8	7
9	6	7	6

Example: With multiple clear reflector units located 3' from wall and spaced 5' on center (matching downlights 5' on center), the illumination on the wall 3' down from ceiling will be 14 f.c. beneath units and 10 f.c. between units.
Footcandle values are averaged and rounded off and are based on a minimum of five units.
Conversion Factor 26WTTT: (Clear), f.c. x 0.8.

3' From Wall-3' On Center

3' On Center			
1	11	11	11
2	18	18	18
3	20	20	20
4	22	19	21
5	20	18	20
6	17	16	17
7	15	13	14
8	12	11	12
9	11	10	10

3' From Wall-4' On Center

4' On Center			
1	9	8	9
2	14	13	14
3	16	15	16
4	16	16	16
5	15	14	15
6	13	12	13
7	11	11	11
8	10	9	10
9	8	8	8

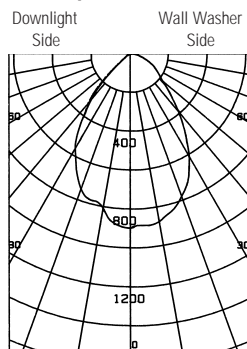
3' From Wall-5' On Center

5' On Center			
1	9	5	9
2	13	9	13
3	14	10	14
4	13	13	13
5	12	12	12
6	11	10	11
7	9	9	9
8	8	8	8
9	7	7	7

3' From Wall-6' On Center

6' On Center			
1	9	3	9
2	13	6	13
3	13	7	13
4	13	9	13
5	11	10	11
6	9	9	9
7	8	7	8
8	7	7	7
9	5	6	5

Candlepower Distribution Downlight Spacing Ratio 1.1



Coefficients of Utilization

Room Cavity Ratio	% Effective Ceiling Cavity Reflectance																	
	80			70			50			30			10			0		
	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
1	.58	.56	.55	.57	.55	.54	.54	.53	.53	.52	.52	.51	.51	.50	.49	.49	.49	.49
2	.53	.51	.49	.53	.50	.49	.51	.49	.48	.49	.48	.47	.48	.47	.46	.46	.45	.45
3	.49	.47	.45	.49	.46	.44	.47	.45	.44	.46	.44	.43	.45	.43	.43	.42	.42	.41
4	.46	.43	.41	.46	.43	.40	.44	.42	.40	.43	.41	.40	.42	.41	.39	.38	.38	.38
5	.43	.40	.37	.42	.39	.37	.41	.39	.37	.40	.38	.36	.40	.38	.36	.35	.35	.35
6	.40	.37	.34	.40	.36	.34	.39	.36	.34	.38	.36	.34	.37	.35	.33	.33	.33	.33
7	.37	.34	.31	.37	.34	.31	.36	.33	.31	.35	.33	.31	.35	.32	.31	.30	.30	.30
8	.34	.31	.29	.34	.31	.29	.34	.31	.29	.33	.30	.28	.32	.30	.28	.28	.28	.28
9	.32	.29	.26	.32	.29	.26	.31	.28	.26	.31	.28	.26	.30	.28	.26	.25	.25	.25
10	.30	.27	.24	.30	.27	.24	.29	.26	.24	.29	.26	.24	.28	.26	.24	.23	.23	.23

20% Floor Cavity Reflectance

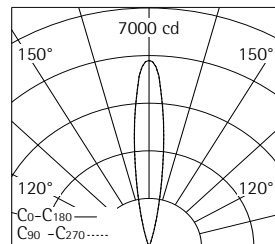
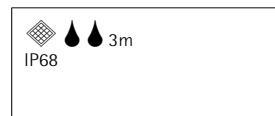
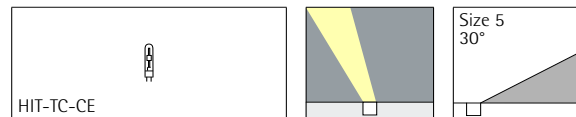
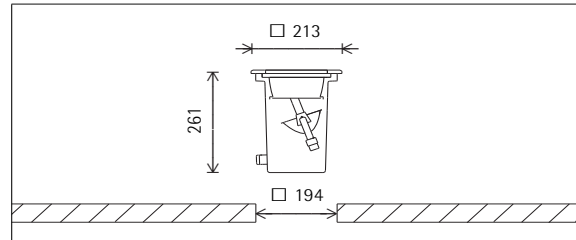
Job Information Type:

LIGHTOLIER®

ERCO

Tesis In-ground luminaire

Directional luminaire for metal halide lamps



HIT-TC-CE 20W G8.5 1700lm

h(m)	E(lx)	D(m)	
		C0	C90
5	218	1.41	1.41
4	341	1.12	1.12
3	606	0.84	0.84
2	1364	0.56	0.56
1	5455	0.28	0.28

33670.000 Reflector silver
HIT-TC-CE 20W G8.5 1700lm
ECG

Product description

Housing: corrosion-resistant cast aluminium, No-Rinse surface treatment. Black double powder-coated. Lampholder carrier, 0°-20° tilt, 180° rotation. Mounting by means of a swing bolt. Clamp extension 11-46mm.
Electronic control gear. Cable 3x1.5mm², L 1m.
Spot reflector: aluminium, silver anodised. Bracket with anti-dazzle cap.
Darklight reflector: aluminium, silver anodised. Cut-off angle 30°. Screw-fastened cover frame with flush safety glass: corrosion resistant stainless steel. Safety glass: 15mm, clear.
Can be driven over by vehicles with pneumatic tyres. Load: 45kN.
Installation with separate junction box.
Protection mode IP68 3m: protection against dust ingress, and continuous immersion up to 3m deep.
On site protection must be provided using a residual current circuit breaker, FI≤30mA.
Weight 4.80kg

ERCO

Tesis In-ground luminaire

Planning data

Cleaning (a)	1				2				3			
	P	C	N	D	P	C	N	D	P	C	N	D
Ambient conditions												
LMF	0.96	0.94	0.90	0.86	0.93	0.91	0.86	0.81	0.92	0.90	0.84	0.79
RSMF	0.91	0.83	0.68	0.51	0.90	0.81	0.67	0.50	0.90	0.81	0.67	0.50
Hours of operation (h)	1000	2000	4000	6000	8000	9000						
LLMF	0.94	0.86	0.82	0.75	0.69	0.66						
LSF	1	1	1	1	1	1						
MF	LMFxRSMFxLLMFxLSF											
MF	Maintainance Factor											
LMF	Lumiaire Maintenance Factor											
RSMF	Room Surface Maintenance Factor											
LLMF	Lamp Lumens Maintenance Factor											
LSF	Lamp Survival Factor											
P	Room pure											
C	Room clean											
N	Room normal											
D	Room dirty											

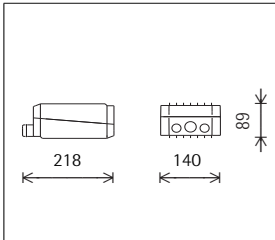
ERCO

Tesis In-ground luminaire

Accessories



33699.000
Junction box
Cast aluminium, powder-coated black.
2 screwed cable glands for cable diameters of 5-14mm.
Protection mode IP68 3m: protection against dust ingress, and continuous immersion up to 3m deep.
Weight 1.20kg
◆▲▲3m
IP68



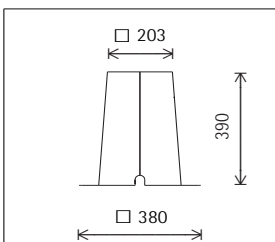
33958.000
Coupling sleeve
for max. 16mm cable diameter.
Plastic conduit, two-part PUR-cast resin.
ø 26mm, L 180mm.



33959.000
Branching sleeve
for 8-23mm cable diameter.
Plastic shell, two-part PUR cast resin.
L 150mm, B 70mm, H 46mm.



33696.000
Housing for recessed mounting
Corrosion-resistant aluminium, No-Rinse surface treatment. Black double powder-coated. 2 cable entries.
Weight 4.80kg



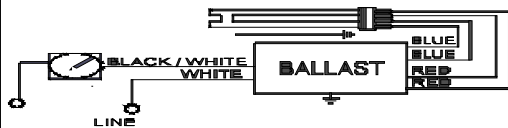


Electrical Specifications

VEZ-1T42-M2-BS	
Brand Name	MARK 10 POWERLINE
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (Watts) (min/max)	Ballast Factor (min/max)	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	50/10	0.11	08/31	0.05/1.05	10	0.98	1.6	3.39
* CFTR26W/GX24Q	1	26	50/10	0.11	08/31	0.05/1.05	10	0.98	1.6	3.39
CFTR32W/GX24Q	1	32	50/10	0.14	09/38	0.05/1.05	10	0.98	1.6	2.76
CFTR42W/GX24Q	1	42	50/10	0.18	10/49	0.05/1.05	10	0.99	1.6	2.14

Wiring Diagram

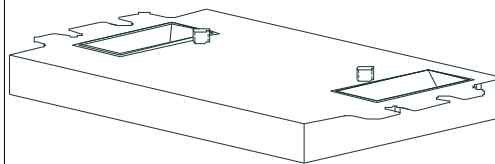


Diag. 134

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

Standard Lead Length (inches)

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	3.00 "	1.29 "	2.00 "
4 49/50	3	1 29/100	2
12.6 cm	7.6 cm	3.3 cm	5.1 cm

Revised 09/10/2002



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. All specifications are nominal unless otherwise noted.

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

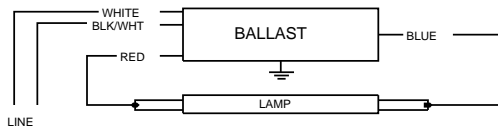


ICN1P32LWSC@277V	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.06	16	0.80	15	0.99	1.5	5.00
F25T8	1	25	0/-18	0.08	22	0.80	15	0.99	1.5	3.64
* F32T8	1	32	0/-18	0.10	27	0.77	10	0.99	1.5	2.85
F32T8/ES (25W)	1	25	60/16	0.80	22	0.77	15	0.99	1.5	3.50
F32T8/ES (28W)	1	28	60/16	0.09	23	0.77	10	0.99	1.5	3.35
F32T8/ES (30W)	1	30	60/16	0.09	25	0.77	10	0.99	1.5	3.08

Wiring Diagram



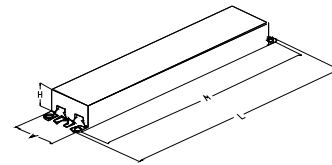
Diag. 63

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

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black		0	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	31	78.7	Brown		0
Red	37	94	Orange		0
Yellow		0	Orange/Black		0
Gray		0	Black/White	25	63.5
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2005



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. All specifications are nominal unless otherwise noted.

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



ICN1P32LWSC @277V	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

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

Section II - Performance Requirements

- 2.1 Ballast shall be _____ (Instant, Rapid or Programmed) Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power (except T8/HO and FT5 ballasts).
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast. IntelliVolt models shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz ("GCN" models between 20kHz and 30kHz) to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of _____ [-18C (0F) for standard T8 and Long Twin Tube lamps, 10C (50F) for standard T12 lamps, 0C (32F) for Slimline T8 lamps and "GCN" models, -29C (-20F) for T8/HO lamps.] for primary lamp application. Ballast shall have a minimum starting temperature of 60F (16C) for energy-saving T8 and T12 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable. Models with -HAZ suffix meet UL 935 Type HL (hazardous location) requirements.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

NOTE: The use of Optanium (IOP) models is recommended to reduce striation in energy-saving T8 lamps (25W, 28W or 30W). Remote or


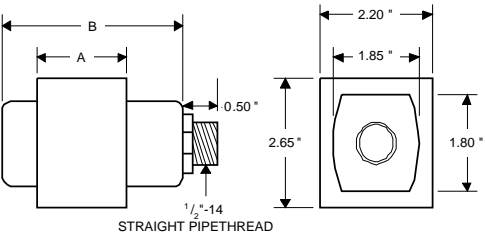
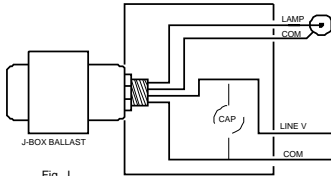
tandem wiring of energy-saving T8 lamps (25W, 28W or 30W) is only recommended for Optanium (IOP) models.

Revised 03/01/2005



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. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER - 10275 WEST HIGGINS ROAD
ROSEMONT, ILLINOIS 60018
TELEPHONE: (847) 390-5000 FAX: (847) 390-5109

	<p align="center">Metal Halide Lamp Ballast</p>	<p align="center">Catalog Number 71A5337J For 100W M90/M140 60 Hz R-NPF Status: Active</p>																																																																																																																																																																																																																								
<p>DIMENSIONS AND DATA</p>																																																																																																																																																																																																																										
 <p align="center">Fig. 11 J-Box Ballast</p>	<table border="1"> <tr> <td>INPUT VOLTS</td> <td></td> <td>277</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CIRCUIT TYPE</td> <td>R-NPF</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>POWER FACTOR (min)</td> <td>39%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>REGULATION</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Line Volts</td> <td>±5%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lamp Watts</td> <td>±10%</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>LINE CURRENT (Amps)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Operating.....</td> <td>1.10</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Open Circuit.....</td> <td>0.00</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Starting.....</td> <td>1.25</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>UL TEMPERATURE RATINGS</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Insulation Class</td> <td>H(180°C)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Coil Temperature Code</td> <td>1029</td> <td>C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>MIN. AMBIENT STARTING TEMP.</td> <td>-20°F or -30°C</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOM. OPEN CIRCUIT VOLTAGE</td> <td>277</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>INPUT VOLTAGE AT LAMP DROPOUT.....</td> <td>190</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>INPUT WATTS</td> <td>118</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>RECOMMENDED FUSE (Amps).....</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CORE and COIL</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dimension (A)</td> <td>1.80</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Dimension (B)</td> <td>3.90</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Weight (lbs.)</td> <td>3.3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Lead Lengths</td> <td>12"</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CAPACITOR REQUIREMENT</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Microfarads</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Volts (min.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Fault Current Withstand (amps)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>High Potential Test (Volts)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1 minute</td> <td>2000</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 seconds</td> <td>2500</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Open Circuit Voltage Test (Volts)</td> <td>260-290</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Short-Circuit Current Test (Amps)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Secondary Current</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Input Current.....</td> <td>1.05-1.55</td> <td>1.05</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td></td> <td></td> <td>1.55</td> <td></td> <td></td> <td></td> </tr> </table>	INPUT VOLTS		277				CIRCUIT TYPE	R-NPF					POWER FACTOR (min)	39%					REGULATION						Line Volts	±5%					Lamp Watts	±10%					LINE CURRENT (Amps)						Operating.....	1.10					Open Circuit.....	0.00					Starting.....	1.25					UL TEMPERATURE RATINGS						Insulation Class	H(180°C)					Coil Temperature Code	1029	C				MIN. AMBIENT STARTING TEMP.	-20°F or -30°C					NOM. OPEN CIRCUIT VOLTAGE	277					INPUT VOLTAGE AT LAMP DROPOUT.....	190					INPUT WATTS	118					RECOMMENDED FUSE (Amps).....	3					CORE and COIL						Dimension (A)	1.80					Dimension (B)	3.90					Weight (lbs.)	3.3					Lead Lengths	12"					CAPACITOR REQUIREMENT						Microfarads						Volts (min.)						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)	260-290					Short-Circuit Current Test (Amps)						Secondary Current						Input Current.....	1.05-1.55	1.05	-	-	-			1.55				<p>Capacitor:</p> <p align="center">This ballast does not require the use of a capacitor.</p> <p align="center">Wiring Diagram:</p>  <p align="center">Fig. J</p> <p align="center">U.L. RECOGNIZED</p>
INPUT VOLTS		277																																																																																																																																																																																																																								
CIRCUIT TYPE	R-NPF																																																																																																																																																																																																																									
POWER FACTOR (min)	39%																																																																																																																																																																																																																									
REGULATION																																																																																																																																																																																																																										
Line Volts	±5%																																																																																																																																																																																																																									
Lamp Watts	±10%																																																																																																																																																																																																																									
LINE CURRENT (Amps)																																																																																																																																																																																																																										
Operating.....	1.10																																																																																																																																																																																																																									
Open Circuit.....	0.00																																																																																																																																																																																																																									
Starting.....	1.25																																																																																																																																																																																																																									
UL TEMPERATURE RATINGS																																																																																																																																																																																																																										
Insulation Class	H(180°C)																																																																																																																																																																																																																									
Coil Temperature Code	1029	C																																																																																																																																																																																																																								
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C																																																																																																																																																																																																																									
NOM. OPEN CIRCUIT VOLTAGE	277																																																																																																																																																																																																																									
INPUT VOLTAGE AT LAMP DROPOUT.....	190																																																																																																																																																																																																																									
INPUT WATTS	118																																																																																																																																																																																																																									
RECOMMENDED FUSE (Amps).....	3																																																																																																																																																																																																																									
CORE and COIL																																																																																																																																																																																																																										
Dimension (A)	1.80																																																																																																																																																																																																																									
Dimension (B)	3.90																																																																																																																																																																																																																									
Weight (lbs.)	3.3																																																																																																																																																																																																																									
Lead Lengths	12"																																																																																																																																																																																																																									
CAPACITOR REQUIREMENT																																																																																																																																																																																																																										
Microfarads																																																																																																																																																																																																																										
Volts (min.)																																																																																																																																																																																																																										
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)	260-290																																																																																																																																																																																																																									
Short-Circuit Current Test (Amps)																																																																																																																																																																																																																										
Secondary Current																																																																																																																																																																																																																										
Input Current.....	1.05-1.55	1.05	-	-	-																																																																																																																																																																																																																					
		1.55																																																																																																																																																																																																																								
<p>Ignitor: INTEGRAL</p> <p align="center">An ignitor integral to the core and coil assembly is used to start the lamp.</p> <p>Ballast to Lamp Distance (BTL) = 2 feet Temp Rating: 125°C</p>	<p align="center">Typical Ordering Information (please call Advance for suffix availability)</p> <table border="1"> <thead> <tr> <th>Order Suffix</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>600B</td> <td>Ballast and Integral Igniter, No Capacitor</td> </tr> </tbody> </table>		Order Suffix	Description	600B	Ballast and Integral Igniter, No Capacitor																																																																																																																																																																																																																				
Order Suffix	Description																																																																																																																																																																																																																									
600B	Ballast and Integral Igniter, No Capacitor																																																																																																																																																																																																																									
<p align="center">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.</p>																																																																																																																																																																																																																										

ADVANCE

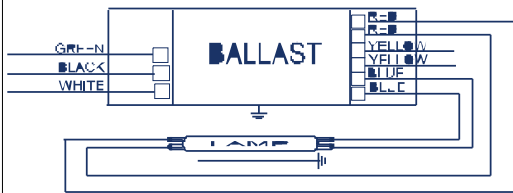


Electrical Specifications

ICN4S5490C2LSG @120	
Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

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

Wiring Diagram



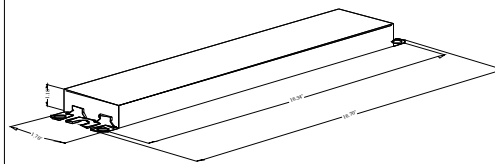
For 1 lamp operation, do not use yellow leads

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

Standard Lead Length (inches)

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

Enclosure



Enclosure Dimensions

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

Revised 01/31/2007



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. All specifications are nominal unless otherwise noted.

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



ICN4S5490C2LSG@120	
Brand Name	CENTIUM T5
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

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

Section II - Performance Requirements

- 2.1 Ballast shall be Programmed Start.
- 2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.
- 2.3 Ballast shall operate from 50/60 Hz input source of _____ (120V through 277V or 347V through 480V) with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.4 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with infrared devices and eliminate visible flicker.
- 2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.6 Ballast shall have a minimum ballast factor of 1.00 for primary lamp application.
- 2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.9 Ballast shall have a Class A sound rating.
- 2.10 Ballast shall have a minimum starting temperature of _____ {-18C (0F) or -28C (-20F)} for primary lamp. Consult lamp manufacturer for temperature versus light output characteristics.
- 2.11 Ballast shall provide Lamp EOL Protection Circuit.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.
- 2.13 Ballast shall have a hi-low switching option when operating (4) F54T5/HO lamps to allow switching from 4-2 lamps, 3-2 lamps or 3-1 lamp.
- 2.14 Four-lamp ballast shall have semi-independent lamp operation.

Section III - Regulatory Requirements

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

Section IV - Other


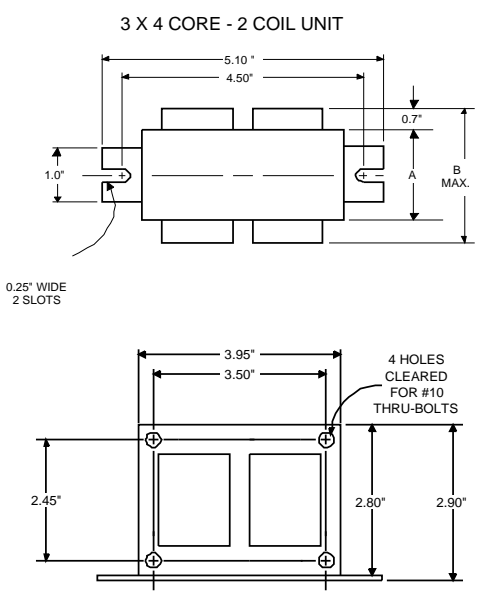

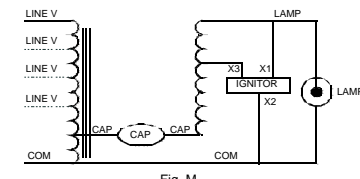

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C. Ballasts with a "90C" designation in their catalog number shall also carry a three-year warranty at a maximum case temperature of 90C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

Revised 01/31/2007



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. All specifications are nominal unless otherwise noted.

ADVANCE TRANSFORMER CO.
 O'HARE INTERNATIONAL CENTER - 10275 WEST HIGGINS ROAD
 ROSEMONT, ILLINOIS 60018
 TELEPHONE: (847) 390-5000 FAX: (847) 390-5109

	Metal Halide Lamp Ballast	Catalog Number 71A5543T For 175W M137/M152 PS 60 Hz SUPER-CWA Status: Active																																																																																																																																																																																				
DIMENSIONS AND DATA																																																																																																																																																																																						
<p style="text-align: center;">3 X 4 CORE - 2 COIL UNIT</p> 	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>INPUT VOLTS</td> <td style="text-align: right;">480</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CIRCUIT TYPE</td> <td style="text-align: right;">SUPER-CWA</td> <td></td> <td></td> <td></td> </tr> <tr> <td>POWER FACTOR (min)</td> <td style="text-align: right;">90%</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REGULATION</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Line Volts</td> <td style="text-align: right;">±10%</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Lamp Watts</td> <td style="text-align: right;">±10%</td> <td></td> <td></td> <td></td> </tr> <tr> <td>LINE CURRENT (Amps)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Operating.....</td> <td style="text-align: right;">0.45</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Open Circuit.....</td> <td style="text-align: right;">0.50</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Starting.....</td> <td style="text-align: right;">0.17</td> <td></td> <td></td> <td></td> </tr> <tr> <td>UL TEMPERATURE RATINGS</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Insulation Class</td> <td style="text-align: right;">H(180°C)</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Coil Temperature Code</td> <td style="text-align: right;">1029</td> <td style="text-align: center;">C</td> <td></td> <td></td> </tr> <tr> <td>MIN. AMBIENT STARTING TEMP.</td> <td style="text-align: right;">-20°F or -30°C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>NOM. OPEN CIRCUIT VOLTAGE</td> <td style="text-align: right;">275</td> <td></td> <td></td> <td></td> </tr> <tr> <td>INPUT VOLTAGE AT LAMP DROPOUT.....</td> <td style="text-align: right;">212</td> <td></td> <td></td> <td></td> </tr> <tr> <td>INPUT WATTS</td> <td style="text-align: right;">206</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RECOMMENDED FUSE (Amps).....</td> <td style="text-align: right;">2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CORE and COIL</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Dimension (A)</td> <td style="text-align: right;">2.24</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Dimension (B)</td> <td style="text-align: right;">3.50</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Weight (lbs.)</td> <td style="text-align: right;">7</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Lead Lengths</td> <td style="text-align: right;">12"</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CAPACITOR REQUIREMENT</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Microfarads</td> <td style="text-align: right;">11.0</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Volts (min.)</td> <td style="text-align: right;">370</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Fault Current Withstand (amps)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> High Potential Test (Volts)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> 1 minute</td> <td style="text-align: right;">2000</td> <td></td> <td></td> <td></td> </tr> <tr> <td> 2 seconds</td> <td style="text-align: right;">2500</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Open Circuit Voltage Test (Volts)</td> <td style="text-align: right;">250-300</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Short-Circuit Current Test (Amps)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Secondary Current</td> <td style="text-align: right;">1.60-1.95</td> <td></td> <td></td> <td></td> </tr> <tr> <td> Input Current.....</td> <td style="text-align: right;">0.09</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: right;">0.16</td> <td></td> <td></td> <td></td> </tr> </table>		INPUT VOLTS	480				CIRCUIT TYPE	SUPER-CWA				POWER FACTOR (min)	90%				REGULATION					Line Volts	±10%				Lamp Watts	±10%				LINE CURRENT (Amps)					Operating.....	0.45				Open Circuit.....	0.50				Starting.....	0.17				UL TEMPERATURE RATINGS					Insulation Class	H(180°C)				Coil Temperature Code	1029	C			MIN. AMBIENT STARTING TEMP.	-20°F or -30°C				NOM. OPEN CIRCUIT VOLTAGE	275				INPUT VOLTAGE AT LAMP DROPOUT.....	212				INPUT WATTS	206				RECOMMENDED FUSE (Amps).....	2				CORE and COIL					Dimension (A)	2.24				Dimension (B)	3.50				Weight (lbs.)	7				Lead Lengths	12"				CAPACITOR REQUIREMENT					Microfarads	11.0				Volts (min.)	370				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)	250-300				Short-Circuit Current Test (Amps)					Secondary Current	1.60-1.95				Input Current.....	0.09					0.16			
INPUT VOLTS	480																																																																																																																																																																																					
CIRCUIT TYPE	SUPER-CWA																																																																																																																																																																																					
POWER FACTOR (min)	90%																																																																																																																																																																																					
REGULATION																																																																																																																																																																																						
Line Volts	±10%																																																																																																																																																																																					
Lamp Watts	±10%																																																																																																																																																																																					
LINE CURRENT (Amps)																																																																																																																																																																																						
Operating.....	0.45																																																																																																																																																																																					
Open Circuit.....	0.50																																																																																																																																																																																					
Starting.....	0.17																																																																																																																																																																																					
UL TEMPERATURE RATINGS																																																																																																																																																																																						
Insulation Class	H(180°C)																																																																																																																																																																																					
Coil Temperature Code	1029	C																																																																																																																																																																																				
MIN. AMBIENT STARTING TEMP.	-20°F or -30°C																																																																																																																																																																																					
NOM. OPEN CIRCUIT VOLTAGE	275																																																																																																																																																																																					
INPUT VOLTAGE AT LAMP DROPOUT.....	212																																																																																																																																																																																					
INPUT WATTS	206																																																																																																																																																																																					
RECOMMENDED FUSE (Amps).....	2																																																																																																																																																																																					
CORE and COIL																																																																																																																																																																																						
Dimension (A)	2.24																																																																																																																																																																																					
Dimension (B)	3.50																																																																																																																																																																																					
Weight (lbs.)	7																																																																																																																																																																																					
Lead Lengths	12"																																																																																																																																																																																					
CAPACITOR REQUIREMENT																																																																																																																																																																																						
Microfarads	11.0																																																																																																																																																																																					
Volts (min.)	370																																																																																																																																																																																					
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)	250-300																																																																																																																																																																																					
Short-Circuit Current Test (Amps)																																																																																																																																																																																						
Secondary Current	1.60-1.95																																																																																																																																																																																					
Input Current.....	0.09																																																																																																																																																																																					
	0.16																																																																																																																																																																																					
<p>Capacitor: 7C110M40</p>  <p>Capacitance: 11 Dia/Oval Dim: 1.5 Height: 3.75 Temp Rating: 105°C</p>	<p style="text-align: center;">Wiring Diagram:</p>  <p style="text-align: center;">Fig. M</p>																																																																																																																																																																																					
<p>Ignitor: LI533-H4</p> 	<p style="text-align: center;">Typical Ordering Information</p> <p style="text-align: center;">(please call Advance for suffix availability)</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Order Suffix</th> <th style="width:50%;">Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>		Order Suffix	Description																																																																																																																																																																																		
Order Suffix	Description																																																																																																																																																																																					
Ballast to Lamp Distance (BTL) = 2 feet Temp Rating: 105°C																																																																																																																																																																																						
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.																																																																																																																																																																																						

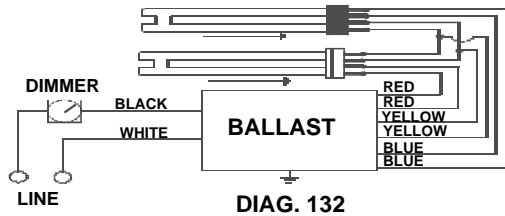


VEZ-2Q26-M2-LD	
Brand Name	MARK 10 POWERLINE
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (*F/C)	Input Current (Amps)	Input Power (Watts) (min/max)	Ballast Factor (min/max)	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	2	26	50/10	0.21	16/58	0.05/1.00	10	0.98	1.6	1.72
* CFTR26W/GX24Q	2	26	50/10	0.21	16/58	0.05/1.00	10	0.98	1.6	1.72

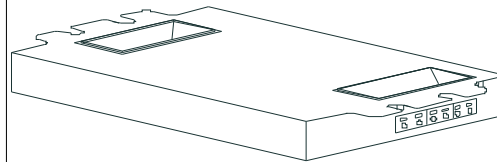
Wiring Diagram



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

Standard Lead Length (inches)

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	3.00 "	1.29 "	4.60 "
4 49/50	3	1 29/100	4 3/5
12.6 cm	7.6 cm	3.3 cm	11.7 cm

Revised 08/17/2006



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. All specifications are nominal unless otherwise noted.

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

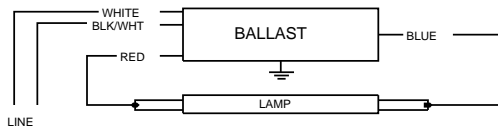


ICN1P32LWSC@277V	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	1	17	0/-18	0.06	16	0.80	15	0.99	1.5	5.00
F25T8	1	25	0/-18	0.08	22	0.80	15	0.99	1.5	3.64
* F32T8	1	32	0/-18	0.10	27	0.77	10	0.99	1.5	2.85
F32T8/ES (25W)	1	25	60/16	0.80	22	0.77	15	0.99	1.5	3.50
F32T8/ES (28W)	1	28	60/16	0.09	23	0.77	10	0.99	1.5	3.35
F32T8/ES (30W)	1	30	60/16	0.09	25	0.77	10	0.99	1.5	3.08

Wiring Diagram



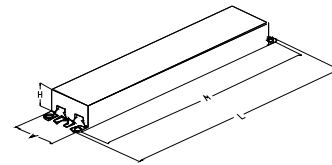
Diag. 63

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

Standard Lead Length (inches)

	in.	cm.		in.	cm.
Black		0	Yellow/Blue		0
White	25	63.5	Blue/White		0
Blue	31	78.7	Brown		0
Red	37	94	Orange		0
Yellow		0	Orange/Black		0
Gray		0	Black/White	25	63.5
Violet		0	Red/White		0

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2005



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. All specifications are nominal unless otherwise noted.

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



ICN1P32LWSC@277V	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	120-277
Input Frequency	50/60 HZ
Status	Active

Electrical Specifications

Notes:

Section I - Physical Characteristics

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

Section II - Performance Requirements

- 2.1 Ballast shall be _____ (Instant, Rapid or Programmed) Start.
- 2.2 Ballast shall provide Independent Lamp Operation (ILO) for Instant Start ballasts allowing remaining lamp(s) to maintain full light output when one or more lamps fail.
- 2.3 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power (except T8/HO and FT5 ballasts).
- 2.4 Ballast shall operate from 60 Hz input source of 120V, 277V or 347V as applicable with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast. IntelliVolt models shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/- 10% (voltage and frequency) with no damage to the ballast.
- 2.5 Ballast shall be high frequency electronic type and operate lamps at a frequency above 42 kHz ("GCN" models between 20kHz and 30kHz) to avoid interference with infrared devices and eliminate visible flicker.
- 2.6 Ballast shall have a Power Factor greater than 0.98 for primary lamp.
- 2.7 Ballast shall have a minimum ballast factor for primary lamp application as follows: 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.
- 2.8 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.
- 2.9 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.
- 2.10 Ballast shall have a Class A sound rating for all 4-foot lamps and smaller.
- 2.11 Ballast shall have a minimum starting temperature of _____ [-18C (0F) for standard T8 and Long Twin Tube lamps, 10C (50F) for standard T12 lamps, 0C (32F) for Slimline T8 lamps and "GCN" models, -29C (-20F) for T8/HO lamps.] for primary lamp application. Ballast shall have a minimum starting temperature of 60F (16C) for energy-saving T8 and T12 lamps.
- 2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

- 3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).
- 3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P and Type 1 Outdoor; and Canadian Standards Association (CSA) certified where applicable. Models with -HAZ suffix meet UL 935 Type HL (hazardous location) requirements.
- 3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.
- 3.4 Ballast shall comply with ANSI C82.11 where applicable.
- 3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

- 4.1 Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
- 4.2 Ballast shall carry a five-year warranty from date of manufacture against defects in material or workmanship, including replacement, for operation at a maximum case temperature of 70C.
- 4.3 Manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

NOTE: The use of Optanium (IOP) models is recommended to reduce striation in energy-saving T8 lamps (25W, 28W or 30W). Remote or

tandem wiring of energy-saving T8 lamps (25W, 28W or 30W) is only recommended for Optanium (IOP) models.

Revised 03/01/2005



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. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER - 10275 WEST HIGGINS ROAD
ROSEMONT, ILLINOIS 60018
TELEPHONE: (847) 390-5000 FAX: (847) 390-5109

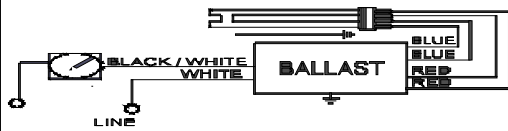


Electrical Specifications

VEZ-1T42-M2-BS	
Brand Name	MARK 10 POWERLINE
Ballast Type	Electronic Dimming
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (Watts) (min/max)	Ballast Factor (min/max)	MAX THD %	Power Factor	Lamp Current Crest Factor	B.E.F.
CFQ26W/G24Q	1	26	50/10	0.11	08/31	0.05/1.05	10	0.98	1.6	3.39
* CFTR26W/GX24Q	1	26	50/10	0.11	08/31	0.05/1.05	10	0.98	1.6	3.39
CFTR32W/GX24Q	1	32	50/10	0.14	09/38	0.05/1.05	10	0.98	1.6	2.76
CFTR42W/GX24Q	1	42	50/10	0.18	10/49	0.05/1.05	10	0.99	1.6	2.14

Wiring Diagram

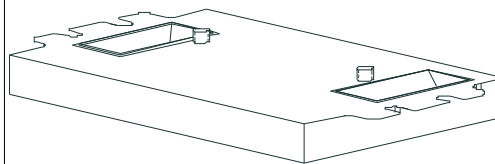


Diag. 134

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

Standard Lead Length (inches)

Enclosure



Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
4.98 "	3.00 "	1.29 "	2.00 "
4 49/50	3	1 29/100	2
12.6 cm	7.6 cm	3.3 cm	5.1 cm

Revised 09/10/2002



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. All specifications are nominal unless otherwise noted.

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



MSC-100 Astronomic Time Clock



PROJECT
LOCATION/TYPE

Product Overview

Description

Watt Stopper/Legrand's MSC-100 Astronomic Time Clock is a five-channel clock used with Watt Stopper's wireless RF lighting control systems. It offers simple programming yet advanced control features for fully automating a wireless RF lighting control system.

Operation

The MSC-100 provides ON/OFF control signals based on time of day, day of week, holiday, and calculated sunrise/sunset (astronomic) time. Control signals are transmitted via hardwire connection to relay channels, giving the clock the ability to work in a range of applications from simple to complex. Clock schedules are programmed events that command channels on or off. Each schedule is assigned a number, type, time of day, channel, day, and may include other information for specific clock event operation. Schedules can be assigned to operate any combination of days or holiday types.

Features

- Single date, perpetual date, perpetual day of week and perpetual Easter holidays
- 32 holidays, each up to 120 days with three holiday schedule types
- Temporary schedules that execute once then self-delete
- Repeating schedule 5 minutes to 10 hours
- 120 schedules assignable to one or more weekday or holiday

Programming

Programming the MSC-100 is easy. Users simply complete fill-in-the-blank prompts on the device keypad and can follow along on the LCD screen. Each clock channel can be programmed independently. All programming is securely stored in non-volatile memory.

Applications

The clock is typically used in conjunction with Watt Stopper/Legrand Miro RF lighting controls. One MSC-100 will support connection to up to two Scene Interface modules, depending on the number of scenes required. Unused channels can be used to control third-party devices such as fountains or sprinklers.

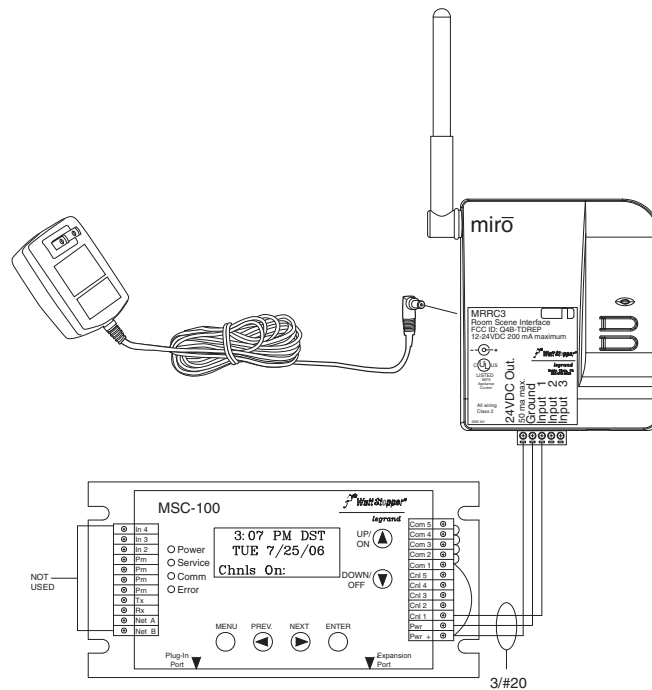
- Duration time scheduling from 1 second to 18 hours
- Continually self-adjusting astronomic control based on sunrise and sunset times
- Astronomic offset +/- 120 minutes
- Manual ON/OFF override from keypad
- Selectable 12- or 24-hour format
- Adjustable channel stagger from 1-60 seconds

Specifications

- Five normally open isolated relays rated 1 amp 24 VAC/VDC, assigned to channels 1-5
- Battery backed clock operation for up to 8 years
- Non-volatile program memory storage
- Power-up sequence, executes missed schedules following power outage
- Input power of 24 VAC or 24 VDC
- Dimensions: 3.6"L x 6.7"W x 1.3"D (91.4mm x 177.8mm x 33mm)
- FCC compliant; CE certified
- One-year warranty

**System Layout
& Wiring**

MSC-100 Controls & Wiring



The MSC-100 Timeclock interfaces to the Miro wireless network through a Miro Room or House Scene Interface. Wiring shown is typical for one channel.

**Ordering
Information**

Catalog No.	Product Description	
<input type="checkbox"/> MSC-100	5-channel astronomic time clock	
Works in conjunction with:		
Product group	Catalog No.	Description
Miro	<input type="checkbox"/> MRRH3	House Scene Interface
Miro	<input type="checkbox"/> MRRC3	Room Scene Interface

Lutron® | occupancy sensors

ceiling mount occupancy sensors



LOS-CDT-2000-WH
actual diameter: 4.5" (114 mm)

LOS-C Series

The LOS-C series ceiling mount sensors offer a wide range of technologies and can either integrate into Lutron systems (no power pack needed) or function as stand-alone controls using a Lutron power pack. The ultrasonic sensors provide excellent detection of minor motion, such as typing at a keyboard. The passive infrared sensors provide false tripping immunity, and are better suited for major motion such as walking. The dual-technology versions combine both features to provide optimal power savings and occupancy detection.









The LOS-C sensors all have self-adaptive technology that eliminates the need for manual adjustments. After correct mounting, the sensors automatically adjust sensitivity and timing to prevent false-off and false-on conditions. To control other building systems such as HVAC or security systems use the 'R' models, which provides an additional dry contact closure.

Key features:

- Coverage from 450 sq. ft. to 2000 sq. ft. mounted on an 8 ft. to 12 ft. ceiling
- Passive infrared (PIR), ultrasonic (US) or dual technology (DT)
- Self-adaptive sensors automatically adjust sensitivity and timing
- 20-24 VDC, Class 2 (PELV) low-voltage wiring
- Non-volatile memory (saved changes are stored during loss of power)
- Model with additional output (dry contact closure) available
- 8-second test mode to easily confirm proper operation

For more technical information such as submittal sheets, CSI specifications, wiring diagrams, and installation notes, please visit www.lutron.com/occsensors

www.lutron.com/occsensors
to order: 1.888.LUTRON1 ... 8 am – 8 pm/M-F ET (US/CAN)
technical support: 1.800.523.9466 ... 24 hours/7 days (US/CAN)

	Model Number	Technology	Coverage	Color	Field of View
	LOS-CDT-2000R-WH ¹	Dual Technology self-adaptive	2000 sq. ft	White	360°
	LOS-CDT-2000-WH	Dual Technology self-adaptive	2000 sq. ft	White	360°
	LOS-CDT-1000R-WH ¹	Dual Technology self-adaptive	1000 sq. ft	White	180°
	LOS-CDT-1000-WH	Dual Technology self-adaptive	1000 sq. ft	White	180°
	LOS-CDT-500R-WH ¹	Dual Technology self-adaptive	500 sq. ft	White	180°
	LOS-CDT-500-WH	Dual Technology self-adaptive	500 sq. ft	White	180°
	LOS-CUS-2000-WH	Ultrasonic self-adaptive	2000 sq. ft	White	360°
	LOS-CUS-1000-WH	Ultrasonic self-adaptive	1000 sq. ft	White	180°
	LOS-CUS-500-WH	Ultrasonic self-adaptive	500 sq. ft	White	180°
	LOS-CIR-1500-WH	Passive Infrared self-adaptive	1500 sq. ft	White	360°
	LOS-CIR-450-WH	Passive Infrared self-adaptive	450 sq. ft	White	360°

¹ Model contains an additional contact closure output to connect to other building systems such as HVAC.

Lutron® | occupancy sensors

power packs



PP-120H

actual size:

W: 3.69" (94 mm)

H: 2.33" (59 mm)

D: 1.36" (35 mm)

PP Series

A Lutron power pack is required for wall and ceiling mount occupancy sensors used as a stand-alone lighting control. The power pack provides 24 VDC to the occupancy sensor, and accepts control input from the occupancy sensor, which it uses to switch the lighting load. This series includes a full line of voltages.






The PP-SH is an auxiliary relay that allows for control of multiple lighting circuits or load types. The PP-SH draws power from another power pack and takes its control signal from the occupancy sensor. It counts as one of the three occupancy sensors connected to a power pack.

Key features:

- 120, 277, 347 VAC power input @ 60 Hz
- 230 VAC power input @ 50/60 Hz
- 24 VDC, 100 mA power output
- Plenum rated – complies with requirements for use in a compartment handling conditioned air
- Switch rating:
 - 20 A: 120/230/277 V ballast
 - 15 A: 347 V ballast
 - 15 A: 120 V incandescent
- Supports up to 3 Lutron occupancy sensors

For more technical information such as submittal sheets, CSI specifications, wiring diagrams, and installation notes, please visit www.lutron.com/occsensors

www.lutron.com/occsensors
to order: 1.888.LUTRON1 ... 8 am – 8 pm/M-F ET (US/CAN)
technical support: 1.800.523.9466 ... 24 hours/7 days (US/CAN)

Model Number	Color	Voltage
 PP-120H	Black	120 VAC
 PP-230H	Black	230 VAC
 PP-277H	Black	277 VAC
 PP-347H	Black	347 VAC
 PP-SH	Black	—

Lutron occupancy sensor power supply options with a Lutron lighting control system

Lutron Lighting Control System	No Power Pack Required	Power Pack Required
Digital microWATT™	•	
EcoSystem™	•	
GRAFIK 5000 – 7000	•+	
GRAFIK Eye® 3000/4000		•
HomeWorks®		•
LCP128™	•+	
microWATT™	•	
RadioRA®		•
RadioTouch™	•	
Softswitch128™	•+	

+ No Power Pack required when using seeTouch™ wallstations with occupancy sensor connections.
 See www.lutron.com/occsensors/seetouch_connection for more information.

GRAFIK Eye®	3 0 0 0 S E R I E S	MULTI-SCENE PRESET DIMMING CONTROLS
--------------------	------------------------------	--

Models 3100 & 3500 for residential and smaller commercial applications have integral power dimmers with line voltage outputs.

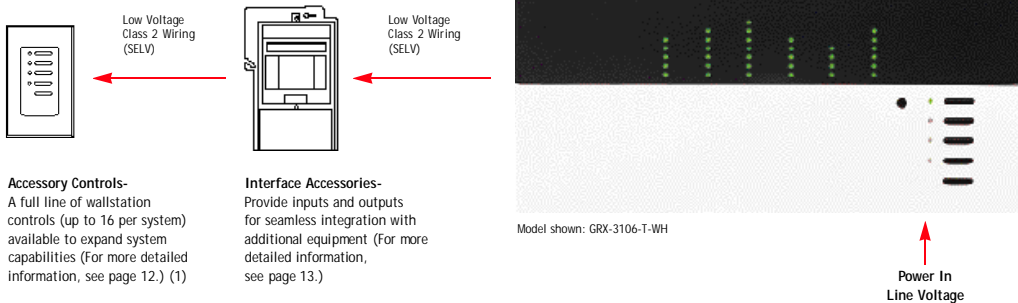
3000 Series—Specification Grade

4 Scenes and 2, 3, 4, or 6 Zones, expandable to 16 scenes and 48 zones.

- Can link up to 8 GRAFIK Eye Control Units (8 addresses) for up to 48 zones
- Up to 16 Accessory Controls for total of 24 control points
- Built-in Infrared Receiver/Optional Infrared Wireless Remote Control
- Can increase individual zone capacities to 30,000 W/VA at 120V/277V (For detailed information, see page 13.)

- Power Interfaces are necessary for Fluorescent (GRX-FDBI) and Electronic Low Voltage (GRX-ELVI). Power Interfaces are not required with HP 2•4•6 Dimming Module. (For detailed Power Interface information, see page 13.)
- ▲ GRX-TVI— Provides a 0-10V output that conforms to BSI 929. Can be used to switch all lighting loads, including metal halide and electronic ballasts. If switching other non-lighting loads, use a relay by others.

Note: System requires interface at 230V.



(1) Use of more than 3 Accessory Controls and Low Voltage Interface Accessories per GRAFIK Eye 3000 Series Control Unit requires addition of Part No. GRX-12VDC Class 2 transformer (120V AC: 12 VDC). Consult factory for 220-240V applications.

GRAFIK Eye Models 3100 & 3500 Control Unit Specifications	GRAFIK EYE MODEL NO.	NO. OF ZONES	WALLBOX SIZE*	TOTAL WATTS/VA			
				120V	100V (-JA)	220-240V (-AU)	230V CE (-CE)
	GRX-3102- GRX-3502-	2	2 Gang ^{††} (2) SB-1G	1200	1000	1600	1600 [†]
	GRX-3103- GRX-3503-	3	3 Gang ^{††} (3) SB-1G	1500	1250	2400	2300 [†]
	GRX-3104- GRX-3504-	4	4 Gang (1) SB-4G	2000	1600	3000	2300
	GRX-3106- GRX-3506-	6	4 Gang (1) SB-4G	2000	1600	3000	2300

* Mount in standard multiple gang wallbox, 2.75" deep minimum, 3.5" deep recommended.
[†] Available from Lutron as Part No. 11 listed.
^{††} (1) No. SB-4G required.
 †† CE requires SB-4G (4 gang) wallbox.

Note: To build a complete Model No., see page 18.

Global Product Offerings

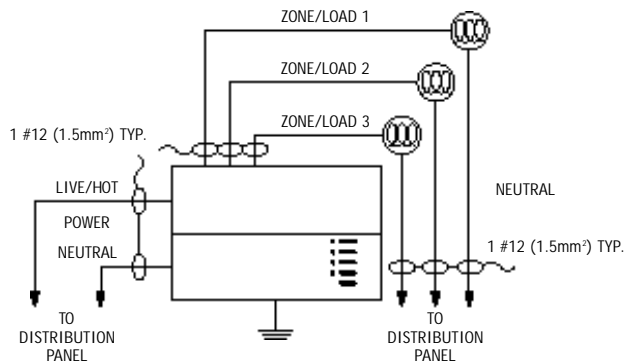
Volts	Zone Capacity
120V	6.7A/800WA
100V	6.0A/600W/VA
220-240V	5.0A/1200W/VA
230V	3.4A/800W/VA

Note: GRAFIK Eye Control Units have both a maximum capacity limit per zone and a maximum capacity limit per unit. Each **zone** cannot exceed the total Watts/VA in the chart at left, and each **unit** cannot exceed the total Watts/VA outlined in the chart on page 4. However, the maximum unit capacity can be allocated among each individual zone in the unit. For example, on a 3-zone unit at 120V with a maximum zone capacity of 800W and a maximum unit capacity of 1500W, some zones will not reach the individual zone maximum because the total unit maximum cannot exceed 1500W. Check total unit maximums before ordering Model Nos.

SYSTEM WIRING

Diagram at right illustrates basic system wiring for GRAFIK Eye 3000 Series Control Units.

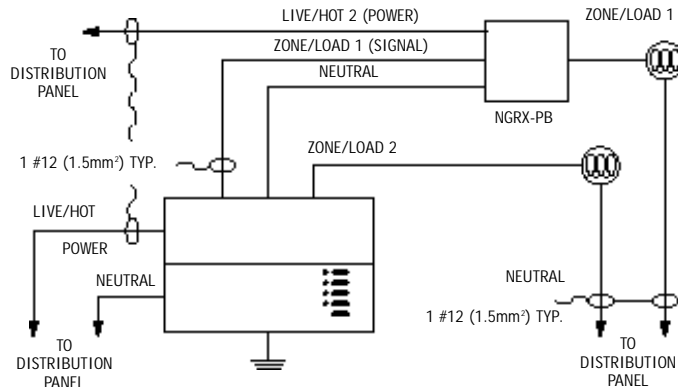
Note: For wiring multiple Control Units, Interfaces, and Accessory Controls, system wiring should be: Low Voltage Class 2 (SELV) 4-wire daisy chain of two No. 18 (1.0mm²) twisted pairs (4 wires); two Belden 9740, or one Liberty LU02PSH18EX-GRN. For complete system wiring information, see 3000 Series Installer's Guide, P/N 032-042.



For CE Wiring, consult factory.

POWER BOOSTER AND INTERFACE WIRING

For GRAFIK Eye 3000 Series controls only, Lutron Power Boosters can be added to increase zone capacities. Consult factory for other load types (e.g. HID). (For 120V, Power Interfaces are not required with HP 2-4-6 Dimming Module.)











For other Interface Wiring information, consult installation information shipped with product.

	A C C E S S O R Y C O N T R O L S	Handheld wireless and wallstation Accessory Controls expand GRAFIK Eye 3000 and 4000 Series system capabilities.
---	--	--



Use of more than 3 Accessory Controls and Low Voltage Interface Accessories per GRAFIK Eye 3000 Series Control Unit requires addition of Part No. GRX-12VDC Class 2 transformer (120V AC: 12 VDC). Consult factory for 220-240V applications.

Class 2 (SELV) Low Voltage Accessory Controls (for GRAFIK Eye 3000 and 4000 Series)




	DESCRIPTION	FUNCTIONS	REF. P/N [†]
	GRX-IT, GRX-8IT Handheld Infrared Wireless Remote Control Transmitters	Controls 4 (or 8) scenes plus master raise/lower and off. Recalls scenes or fine tunes light levels. Turns lighting on or off. Note: Not included in 16 accessory maximum.	362-592
	NTGRX-2B-SL Two-Button Entrance Control	Turns lighting (scene 1) on or off. Selects 2 scenes (either 1/off, 9/10 or 13/14), partition opened/closed, panic station, sequencing, raise/lower.	362-933, 362-593
	NTGRX-4S, NTGRX-4B Scene Selection Control Four-Button Control	Activates scenes 1-4; master raise/lower and off. Recalls or fine tunes light levels. Activates scenes 1-4, 5-8, 9-12, or 13-16; operates one or more GRAFIK Eye units.	362-596 362-934
	GRX-4S-DW Architrave™ Door Jamb Control	Activates scenes 1-4; master raise/lower and off. Recalls or fine tunes light levels. Ideal for door jambs. Operates one or more GRAFIK Eye units.	362-597
	NTGRX-4M Master Control	Activates scene 1 or off for up to eight GRAFIK Eye units, and all on or all off.	362-598
	NTGRX-4PS Partition Control	Provides 4 buttons to operate selected GRAFIK Eye units independently, or in combination to reflect partition status.	362-599
	NTGRX-4S-IR Infrared Receiver/Scene Selection Control	Activates scenes 1-4 and off by touch-buttons or infrared transmitters (above). Recalls or fine tunes light levels. Activates scenes 1-4, 5-8, 9-12, or 13-16; operates one or more GRAFIK Eye units.	362-602
	NTGRX-SI4S-IR Infrared Receiver/Scene Control/Switch Interface	Provides access to scenes 1-4 or 5-8 based on external contact closure (example: to control partitioned spaces).	362-782

[†] GRAFIK Eye Specification Submittal Sheets are available for downloading/printing on Lutron's website, www.lutron.com.


Low Voltage Interface Accessories (for GRAFIK Eye 3000 and 4000 Series)

	DESCRIPTION	FUNCTION	REF. P/N
	GRX-AV Contact Closure Interface	Two-way interface between GRAFIK Eye controls and contact-closure devices (A/V systems, timeclocks, security systems, occupant sensors, etc.).	362-600
	GRX-RS232 RS232 Interface	Integrates GRAFIK Eye controls with user-supplied PC or digital A/V equipment.	362-756
	GRX-ATC RS232/Timeclock Interface	Integrates GRAFIK Eye controls with user-supplied PC or digital A/V equipment. Features built-in astronomic timeclock—4 schedules/60 events per schedule.	362-812
	GRX-PRG 3500/4500 Programmer Interface	For use with GRX-3500/4500. Integrates GRAFIK Eye controls with user-supplied PC or digital A/V equipment. Features built-in astronomic timeclock (same as above). Provides access to advanced user-programmable features.	366-579
	GRX-CIR Ceiling Mounted Infrared Receiver	Provides remote infrared wireless control to GRAFIK Eye units. Functions with handheld transmitters. Activates scenes 1-4, 5-8, 9-12, or 13-16 via handheld transmitter. Operates one or more GRAFIK Eye units.	362-601

Line/Mains Voltage Power Boosters and Interface Accessories (for GRAFIK Eye 3000 Series only)

	NGRX-PB Power Booster	Increases single zone load capacity for incandescent, magnetic low voltage, neon/cold-cathode sources. 1920W per zone @120V; 2400W @240V; 1200W flush mount (with face plate), 1840W surface mount (without face plate) @ 240V for CE.	362-603
	GRX-FDBI Fluorescent Power Interface	Single zone interface to dim or switch Lutron electronic dimming ballasts. 16A per zone @ 120V, 10A @ 240V.	362-622
	GRX-ELVI Electronic Low Voltage Power Interface	Single zone interface to dim electronic transformer supplied low voltage lighting. 1000W @ 120V, 1200W @ 240V, 1000W @ 230V for CE.	362-635
	GRX-TV1 Phase Control to 0-10V Ballast Interface	Provides 0-10V control (BSI 929) and ballast switching capabilities in one; allows 120V fluorescent controls the ability to control 0-10V ballasts that reside in an industrial power grid (for example, 277V); provides switching relays that can handle the in-rush current of a circuit of ballasts.	366-551
	HP 2•4•6 Dimming Module	Increases single zone load capacity to 2000 W/VA (HP-2), 4000 W/VA (HP), 6000 w/VA (HP-6), all @120V. For incandescent, magnetic and electronic low voltage, neon and fluorescent sources. Up to 5 modules can be daisy chained for greater capacity (30,000 W/VA @120V, also 240A @277V for fluorescent). Note: Not for 100, 220-240V.	362-604

Other Accessories

	NTGRX-1S On/Off Doorway Control	Line/main voltage control. Switches lighting (scene 1) on or off from a remote wall location. (Functions as three-way switch.)	360-178
---	---	--	---------

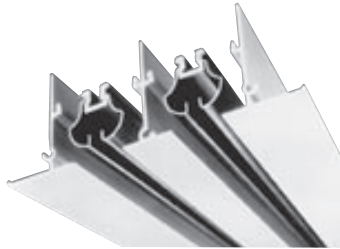
Note: Also available: A Lockable Cover which prevents tampering with GRAFIK Eye controls and accessories and permits infrared operation—translucent black—Model No. GRX-___-GLC (Insert 1, 2, 3, or 4 in Model No. for wallbox gang size); and Matching Receptacles, 15A and 20A 120V conventional and GFCI, with matching telephone and cable TV jacks.

F8

Diffusers • Linear Slot • Description

Linear Slot Ceiling Diffusers

Modulinear • Aluminum



F

ML-37, -38, -39 Slotted • Supply

MLR-37, -38, -39 Slotted • Return

Supply Models:

- ML-37 • 1/2" Slot
- ML-38 • 3/4" Slot
- ML-39 • 1" Slot

Return Models:

- MLR-37 • 1/2" Slot
- MLR-38 • 3/4" Slot
- MLR-39 • 1" Slot

These Products Include:

- Standard Finish: #26 White border. Black pattern controllers.
- Optional Finishes: Anodized finishes available.

• TITUS modulinear diffusers are designed for variable air volume systems. They project a uniform blanket of air that adheres to the ceiling even at low flow rates.

• Both the direction and volume of the discharge air can be adjusted gradually by moving the pattern controllers (see diagrams below).

• Full 180° pattern controller adjustment means there are no "lefts" or "rights." Specifying, ordering, and installing are simplified.

• Model MLR returns are the same as the Model ML supply diffusers except that the pattern controllers are omitted.

• Choice of borders and mounting frames for various types of installations (diagrams below and on next page).

• Available with one to eight slots.

• Ideal for continuous length applications. Multiple sections are shipped with required alignment strips or pins for field installation.

• Maximum one piece section is 6 feet. Lengths greater than 6 feet are furnished in multiple sections.

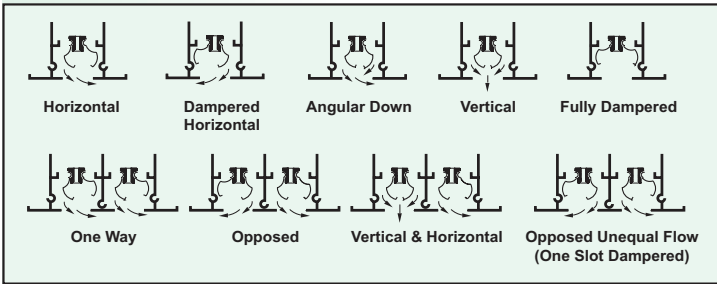
• Optional Model MLF and MLRF diffusers are designed for field cutting to length and are furnished in 6-foot sections.

• Maximum pattern controller length is 3 feet. Pattern controllers are furnished in multiple sections for a diffuser longer than 3 feet.

• Mounting frames are cut to length and assembled in the field.

• Material is extruded aluminum with steel pattern controllers.

• Optional curving to a 6-foot minimum radius available for architectural enhancement (fixed blades only).



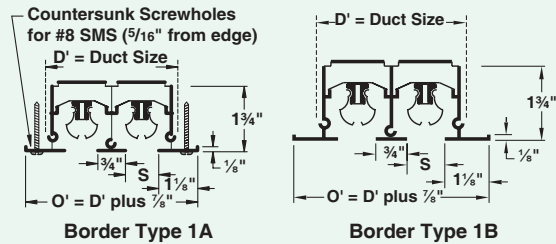
Frame and Border Types

Note: See page F10 for Duct Dimensions.

All dimensions are in inches.

Border Types 1A, 1B both with

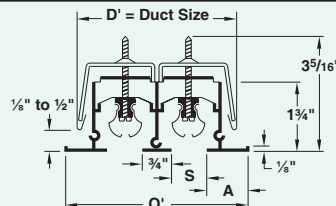
- Flange Border
- (1A) Screw Mounting
- (1B) Duct Mounting, No Screw Holes



Border Types 2A, 2B both with

- Flange Border
- Concealed Mounting

Type	A	O'
2A	1 1/8"	D' + 3/4"
2B	7/8"	D' + 1/4"



ML(R)-37, -38, -39

F36

Diffusers • Linear Bar • Description

Linear Bar Diffusers



CT-480

Fixed Bars • Aluminum

CT-480, -481 • 1/4" Spacing • 1/8" Bars • 0°/15° Deflection



CT-540

CT-580, -581 • 1/2" Spacing • 1/8" Bars • 0°/15° Deflection

CT-540, -541 • 1/2" Spacing • 1/4" Bars • 0°/15° Deflection

Models:

- 1/4" Spacing
 - CT-480 • 1/8" Bars • 0° Deflection
 - CT-481 • 1/8" Bars • 15° Deflection
- 1/2" Spacing
 - CT-580 • 1/8" Bars • 0° Deflection
 - CT-581 • 1/8" Bars • 15° Deflection
 - CT-540 • 1/4" Bars • 15° Deflection
 - CT-541 • 1/4" Bars • 15° Deflection

- When both appearance and performance are of prime importance in an air distribution system, TITUS linear bar diffusers are a logical choice.
- Ideal for continuous length applications. Multiple sections are shipped with required alignment strips or pins for field installation.
- Maximum one piece section is 6 feet. Lengths greater than 6 feet are furnished in multiple sections.
- Sections can be joined together end-to-end for continuous appearance, using standard alignment strips or alignment wires.
- All deflection bars are fixed and parallel to the long dimension.
- Fixed bars and support bars are extruded aluminum.
- Optional curving to a 6 feet minimum radius on most models, available for architectural enhancement.
- Designed for both heating and cooling applications, supply as well as return.
- Available in eight different core styles plus a wide selection of frames and borders.
- Can be selected for ceiling, side wall, or sill installations. Heavy duty models (Frames 5, 6 and 15) are designed especially for typical floor installations.
- Accessories such as directional blades, dampers, blank-offs, access doors and mitered corners make these diffusers even more versatile.

Fixed Bars • Pencil Proof • Aluminum

CT-PP-0 • 7/16" Spacing • 7/32" Bars • 0° Deflection

CT-PP-3 • 7/16" Spacing • 7/32" Bars • 30° Deflection

Models:

- 7/16" Spacing
 - CT-PP-0 • 7/32" Bars • 0° Deflection
 - CT-PP-3 • 7/32" Bars • 30° Deflection

These Products Include:

- Standard Finish: #26 White
- Optional Finishes: #01 Aluminum #34 Clear Anodized

CT-480, 481, 580, 581, 540, 541, CT-PP-0, -3

Appendix B

Appendix C

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE	
MOUNTING	PAD	H3A							C/B MIN AIC	18,000	
Bus Rating	1200A	LOCATION						PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	THIRD FLOOR ELEC ROOM						REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
AHU-1	30678	200	1	*			2	125	21450	AHU-2	
	30678		3		*		4		21450		
	30678		5			*	6		21450		
CHILLER	91667	600	7	*			8	175	42151	AHU-5	
	91667		9		*		10		42151		
	91667		11			*	12		42151		
XFMR T3A	41394	175	13	*			14	15	3000	P-DWH-3	
	41394		15		*		16		3000		
	41394		17			*	18		3000		
EF-3	249	15	19	*			20	15	1243	F-VENT-4	
	249		21		*		22		1243		
	249		23			*	24		1243		
PNL L3	4785	60	25	*			26	15	124	EF-4	
	4785		27		*		28		124		
	4785		29			*	30		124		
SPARE	--	--	31	*			32	--	--	SPARE	
	--		33		*		34		--		
	--		35			*	36		--		
SUB-TOTAL	A PHASE	231831	B PHASE				231831	C PHASE	231831		
TOTAL CONNECTED LOAD (WATTS)		695493						DEMAND LOAD	625944		

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	H2A							C/B MIN AIC	18,000		
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	SECOND FLOOR ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
XFMR T2A	42261	175	1	*			2	60	3330	PNL L2B (PHASE 2 PNL)		
	42261		3		*		4		3330			
	42261		5			*	6		3330			
PNL L2A	3480	60	7	*			8	30	6000	P-DWH-1		
	3480		9		*		10		6000			
	3480		11			*	12		6000			
SPARE	--	--	13	*			14	15	3000	P-DWH-3		
SPARE	--	--	15		*		16		3000			
SPARE	--	--	17			*	18		3000			
SPACE	--	--	19	*			20	--	--	SPACE		
SPACE	--	--	21		*		22	--	--	SPACE		
SPACE	--	--	23			*	24	--	--	SPACE		
SPACE	--	--	25	*			26	--	--	SPACE		
SPACE	--	--	27		*		28	--	--	SPACE		
SPACE	--	--	29			*	30	--	--	SPACE		
SUB-TOTAL	A PHASE	58071	B PHASE						58071	C PHASE	58071	
TOTAL CONNECTED LOAD (WATTS)	174213								DEMAND LOAD	156792		

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	H1A							C/B MIN AIC	18,000		
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	FIRST FLOOR ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
DIM PNL D1A	2343	60	1	*			2	175	46792	XFMR T1A		
	2343		3		*		4		46792			
	2343		5			*	6		46792			
PNL L1	4350	80	7	*			8	30	6000	P-DWH-1		
	4350		9		*		10		6000			
	4350		11			*	12		6000			
SPARE		20	13	*			14	--	--	SPACE		
SPARE		20	15		*		16	--	--	SPACE		
SPARE		20	17			*	18	--	--	SPACE		
SPACE	--	20	19	*			20	--	--	SPACE		
SPACE	--	20	21		*		22	--	--	SPACE		
SPACE	--	20	23			*	24	--	--	SPACE		
SUB-TOTAL	A PHASE	59485	B PHASE				59485	C PHASE		59485		
TOTAL CONNECTED LOAD (WATTS)		178455							DEMAND LOAD	160610		

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	HGA							C/B MIN AIC	25,000		
Bus Rating	100A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYP MAINS	MLO	BASEMENT ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
XFMR TGA	8558	50	1	*			2	20	--	SPARE		
	8558		3		*		4	20	--	SPARE		
	8558		5			*	6	20	--	SPARE		
SPACE	--	--	7	*			8	20	--	SPARE		
SPACE	--	--	9		*		10	20	--	SPARE		
SPACE	--	--	11			*	12	20	--	SPARE		
SPACE	--	--	13	*			14	--	--	SPACE		
SPACE	--	--	15		*		16	--	--	SPACE		
SPACE	--	--	17			*	18	--	--	SPACE		
SPACE	--	--	19	*			20	--	--	SPACE		
SPACE	--	--	21		*		22	--	--	SPACE		
SPACE	--	--	23			*	24	--	--	SPACE		
SPACE	--	--	25	*			26	--	--	SPACE		
SPACE	--	--	27		*		28	--	--	SPACE		
SPACE	--	--	29			*	30	--	--	SPACE		
SUB-TOTAL		A PHASE	8558	B PHASE				8558	C PHASE		8558	
TOTAL CONNECTED LOAD (WATTS)		25674						DEMAND LOAD		23107		

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG				TYPE PANEL	NEMA 1 ENCLOSURE				
MOUNTING	SURFACE	RGA			C/B MIN AIC			25,000			
Bus Rating	100A	LOCATION			PHASES:	3	WIRES:	4			
SIZE/TYPE MAINS	3P100A MCB	Basement Elec Room			REMARKS						
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
UNIT HEATERS	15	20	1	*			2	20	1260	RECPT- MECH ROOM	
ELEVATOR SUMP P-ELEV-1	372	20	3		*		4	20	1260	RECPT- MECH ROOM	
ELEVATOR SUMP	372	20	5			*	6	20	1260	RECPT- ELEV	
VENT FAN F-VENT-3	37.3	15	7	*			8	20	1260	RECPT- ELEC ROOM	
ACU-4, ACU-5, ACU-6	681	20	9		*		10	20	500	ELEV PIT LTG	
ELEV #1 CAB LTG, HVAC	100	20	11			*	12	20	2067	ACCU-4	
ELEV #2 CAB LTG, HVAC	100	20	13	*			14	20	2067		
AHU-4 LTG, RECEPTS	1260	20	15		*		16	20	2067		
EF-6	186.4	15	17			*	18		2067	ACCU-5	
PARKING LOT GATE	372.0	20	19	*			20		2067	ACCU-6	
PARKING LOT GATE	372.0	20	21		*		22		2067		
REFRIGERATED AIR DRYER	1864.4	20	23			*	24		--	SPARE	
GEN BATTERY CHARGER	1000.0	20	25	*			26		--	SPARE	
GEN BLOCK HEATER	1000.0	20	27		*		28		--	SPARE	
SPARE	--	20	29			*	30		--	SPARE	
			31	*			32				
			33		*		34				
			35			*	36				
			37	*			38				
			39		*		40				
			41			*	42				
SUB-TOTAL	A PHASE	8178	B PHASE						9579	C PHASE	7917
TOTAL CONNECTED LOAD (WATTS)		25674							DEMAND LOAD		23107

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG	TYPE PANEL	NEMA 1 ENCLOSURE							
MOUNTING	SURFACE	R1A	C/B MIN AIC	10,000							
Bus Rating	400A	LOCATION	PHASES:	3							
SIZE/TYPE MAINS	3P400A MCB	FIRST FLOOR ELEC ROOM	WIRES:	4							
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
PNL R1C	10537	125	1	*			2	20	9831	PNL R1B (PHASE 2 PNL)	
	10537		3		*		4	20	9831		
	10537		5			*	6	20	9831		
PNL R1D	7848	60	7	*			8	20	1260	SEATING- AUDITORIUM	
	7848		9		*		10	20	1260	SEATING- AUDITORIUM	
	7848		11			*	12	20	1260	SEATING- AUDITORIUM	
RECP- TELECOM RM	1260	20	13	*			14	20	1260	SEATING- AUDITORIUM	
BLACKOUT SHADES	1000	20	15		*		16	20	1260	SEATING- AUDITORIUM	
BLACKOUT SHADES	1000	20	17			*	18	20	1260	SEATING- AUDITORIUM	
PROJECTOR- AUDITORIUM	1000	20	19	*			20	20	1260	SEATING- AUDITORIUM	
PROJECTOR- AUDITORIUM	1000	20	21		*		22	20	1260	SEATING- AUDITORIUM	
RECP- LOUNGE	1260	20	23			*	24	20	1260	SEATING- AUDITORIUM	
RECP- LOUNGE	1260	20	25	*			26	20	1260	SEATING- AUDITORIUM	
SEATING- AUDITORIUM	1260	20	27		*		28	20	1260	SEATING- AUDITORIUM	
SEATING- AUDITORIUM	1260	20	29			*	30	20	1260	SEATING- AUDITORIUM	
RECP- AV CLOSET	1260.0	20	31	*			32	20	1260	SEATING- AUDITORIUM	
SPARE	--	20	33		*		34	20	1260	SEATING- AUDITORIUM	
SPARE	--	20	35			*	36	20		SPARE	
RECP-TELECOM RM	1260	20	37	*			38	20	1260	RECP- VENDING	
	1260	20	39		*		40	20	1260	RECP- VENDING	
RECP- TELECOM RM PACK	1260	20	41			*	42	20	1260	RECP- VENDING	
RECP-TELECOM RM	1260	20	43	*			44	20	1260	RECP- VENDING	
RECP- AUDITORIUM	1260	20	45		*		46	20	1260	RECP- VENDING	
POWER DOOR	1000	20	47			*	48	20	1260	RECP- VENDING	
FLOORBOX- AUDITORIUM	1260	20	49	*			50	20	1260	RECP- VENDING	
RECP- AUDITORIUM	1260	20	51		*		52	20	1260	RECP- CATERING	
RECP- SERVICE COUNTER	1260	20	53			*	54	20	1260	RECP-CORRIDOR & EXTERIOR	
RECP- SERVICE COUNTER	1260	20	55	*			56	20	1260	RECP- CATERING	
RECP- SERVICE COUNTER	1260	20	57		*		58	20	1260	RECP- CATERING	
RECP- SERVICE COUNTER	1261	20	59			*	60	20	1260	RECP- CATERING	
RECP- TELECOM RM	1260	20	61	*			62	20	1260	RECP- CATERING	
RECP- CORRIDOR & EXTERIOR	1262	20	63		*		64	20	1260	RECP- CATERING	
POWER DOORS	1000	20	65			*	66	20	1260	RECPT- WATER COOLER	
CUH-2, CUH-4	50	20	67	*			68	20	--	SPARE	
CUH-1 - LOUNGE	124.2	20	69		*		70	20	--	SPARE	
SMOKE DAMPERS	500	20	71			*	72	20	--	SPARE	
CUH-8- LOUNGE	37.3	20	73	*			74	20	--	SPARE	
CUH-10	124.3	20	75		*		76	20	--	SPARE	
ACU-1	227	15	77			*	78	20	--	SPARE	
RECP- TELECOM RM	1260	20	79	*			80	--	--	SPACE	
RECP- ELEC RM	1260	20	81		*		82	--	--	SPACE	
LIGHTING CONTROL SYSTEM	1260	20	83			*	84	--	--	SPACE	
SUB-TOTAL	A PHASE	53243	B PHASE						51886	C PHASE	50844
TOTAL CONNECTED LOAD (WATTS)	155973								DEMAND LOAD	140376	

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE			
MOUNTING	SURFACE	R1C							C/B MIN AIC	10,000			
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4	
SIZE/TYPE MAINS	MLO	FIRST FLOOR EAST STORAGE							REMARKS				
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION			
RECP- CONF ROOM	1260	20	1	*			2	20	1260	RECP-ADMIN			
RECP- CONF ROOM	1260	20	3		*		4	20	1260	RECP-OFFICE			
PROJECTOR	1000	20	5			*	6	20	1260	RECP-WAITING			
RECP- CLASSRM COUNTER	1260	20	7	*			8	20	1260	RECP-STORAGE			
RECP- CLASSRM COUNTER	1260	20	9		*		10	20	1260	RECP-OFFICE			
PROJECTOR	1000	20	11			*	12	20	1260	RECP-OFFICE			
POWER DOOR	1000	20	13	*			14	20	1260	RECP-OFFICE			
POWER DOOR	1000	20	15		*		16	20	1260	RECP-CLASSRM			
PROJECTOR	1000	20	17			*	18	20	1260	FLOORBOX-CLASSRM			
CUH-3, CUH-5	50	20	19	*			20	20	1260	RECP-CLASSRM			
CUH-9, CUH-11	112	20	21		*		22	20	1260	RECP-CONF ROOM			
PROJECTOR	1000	20	23			*	24	20	1260	FLOORBOX-CLASSRM			
P-DWH-2	1500	20	25	*			26	20	1260	RECP- WATER COOLER			
RECP- CORRIDOR	1260	20	27		*		28	20	1260	RECP- LOBBY EXTERIOR			
PROJECTOR	1000	20	29			*	30	20	1260	RECP- AV CLOSET			
SPARE	--	20	31	*			32	20	--	SPARE			
SPARE	--	20	33		*		34	20	--	SPARE			
SPARE	--	20	35			*	36	20	1260	RECP- AV CLOSET			
SPARE	--	20	37	*			38	20	--	SPARE			
SPARE	--	20	39		*		40	20	--	SPARE			
SPARE	--	20	41			*	42	20	--	SPARE			
SUB-TOTAL	A PHASE	11370			B PHASE				11192			C PHASE	12560
TOTAL CONNECTED LOAD (WATTS)		35122										DEMAND LOAD	31610

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	R1B							C/B MIN AIC	10,000		
Bus Rating	100A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	FIRST FLOOR PHASE 2 STORAGE							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
PROJECTION SCREEN	1000	20	1	*			2	20	1260	RECP-COMP LAB		
PROJECTION SCREEN	1000	20	3		*		4	20	1260	RECP-COMP LAB		
RECP-AV CLOSET	1260	20	5			*	6	20	1260	RECP-COMP LAB		
BLACKOUT SHADES	1000	20	7	*			8	20	1260	RECP-COMP LAB		
SPARE	--	20	9		*		10	20	1260	RECP-COMP LAB		
RECP- AV CLOSET	1260	20	11			*	12	20	1260	RECP-COMP LAB		
SPARE	--	20	13	*			14	20	1260	SEATING- CASE STUDY		
SPARE	--	20	15		*		16	20	1260	SEATING- CASE STUDY		
FLOORBOX- CASE STUDY	1260	20	17			*	18	20	1260	SEATING- CASE STUDY		
RECP- CASE STUDY	1260	20	19	*			20	20	1260	SEATING- CASE STUDY		
RECP- CORRIDOR & STAIR	1260	20	21		*		22	20	1260	SEATING- CASE STUDY		
FLOORBOX- CLASSRM	1260	20	23			*	24	20	1260	SEATING- CASE STUDY		
RECP-CLASSRM	1260	20	25	*			26	20	1260	SEATING- CASE STUDY		
RECP-CLASSRM	1260	20	27		*		28	20	1260	SEATING- CASE STUDY		
PROJECTOR-CLASSRM	1000	20	29			*	30	20	1000	PROJECTOR- CASE STUDY		
CUH-6, CUH-7	50.0	20	31	*			32	20	--	SPARE		
SPARE	--	20	33		*		34	20	--	SPARE		
SPARE	--	20	35			*	36	20	--	SPARE		
SPARE	--	20	37	*			38	20	--	SPARE		
SPARE	--	20	39		*		40	20	--	SPARE		
SPARE	--	20	41			*	42	20	--	SPARE		
SUB-TOTAL	A PHASE	10870		B PHASE				9820		C PHASE		12080
TOTAL CONNECTED LOAD (WATTS)		32770								DEMAND LOAD		29493

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE	
MOUNTING	SURFACE	R1D						C/B MIN AIC	10,000		
Bus Rating	100A	LOCATION						PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	FIRST FLOOR AV ROOM						REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
RECP- AV ROOM	1260	20	1	*			2	20	1260	SEATING- CASE STUDY	
RECP- CORRIDOR & STAIR	1260	20	3		*		4	20	1260	SEATING- CASE STUDY	
RECP- SEMINAR	1260	20	5			*	6	20	1260	SEATING- CASE STUDY	
RECP- AV ROOM	1000	20	7	*			8	20	1260	SEATING- CASE STUDY	
RECP- CONF	1260	20	9		*		10	20	1260	SEATING- CASE STUDY	
BLACKOUT SHADES	1000	20	11			*	12	20	1260	SEATING- CASE STUDY	
PROJECTOR-CASE STUDY	1000	20	13	*			14	20	1000	PROJECTOR-CONF	
RECP-SEMINAR	1260	20	15		*		16	20	1000	PROJECTOR-CONF	
RECP-SEMINAR	1260	20	17			*	18	20	1260	RECP- CASE STUDY	
RECP- AV CLOSET	1260	20	19	*			20	20	1260	FLOORBOX	
PROJECTION SCREEN	1000	20	21		*		22	20	--	SPACE	
RECP-SEMINAR	1260	20	23			*	24	20	--	SPACE	
SUB-TOTAL	A PHASE 9300		B PHASE 8300						C PHASE 8560		
TOTAL CONNECTED LOAD (WATTS)	26160								DEMAND LOAD	23544	

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE	
MOUNTING	SURFACE	R2A						C/B MIN AIC		10,000	
Bus Rating	400A	LOCATION						PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	3P400A MCB	SECOND FLOOR ELEC ROOM						REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
PNL R2C	10537		1	*			2		9831	PNL R2B (PHASE 2 PNL)	
	10537		3		*		4		9831		
	10537	150	5			*	6	100	9831		
RECP- WATER COOLER	1260	20	7	*			8	20	1260		HEADWALL
RECP- RESTROOMS	1260	20	9		*		10	20	1260	HEADWALL	
CAMERA- SKILLS LAB	1260	20	11			*	12	20	1260	HEADWALL	
RECP- WATER COOLER	1260	20	13	*			14	20	1260	HEADWALL	
RECP- ELEC RM	1260	20	15		*		16	20	1260	HEADWALL	
CAMERA- SKILLS LAB	1260	20	17			*	18	20	1260	HEADWALL	
PROJECTOR- SKILLS LAB	1000	20	19	*			20	20	1260	HEADWALL	
FLOORBOX	1260	20	21		*		22	20	1260	HEADWALL	
CAMERA- SKILLS LAB	1260	20	23			*	24	20	1260	HEADWALL	
PROJECTOR- PA LAB	1000	20	25	*			26	20	1260	HEADWALL	
FLOORBOX- PA LAB	1260	20	27		*		28	20	1260	RECP- COMP LABS	
PROJECTOR- SKILLS LAB	1000	20	29			*	30	20	1260	RECP- COMP LABS	
PROJECTOR- SEMINAR	1000	20	31	*			32	20	1260	RECP- COMP LABS	
BLACKOUT SHADES	1000	20	33		*		34	20	1260	RECP- COMP LABS	
PROJECTOR- PA LAB	1000	20	35			*	36	20	1260	RECP- COMP LABS	
BLACKOUT SHADES	1000	20	37	*			38	20	1260	RECP- COMP LABS	
BLACKOUT SHADES	1000	20	39		*		40	20	1260	RECP- COMP LABS	
PROJECTOR- SEMINAR	1000	20	41			*	42	20	1260	RECP- OFFICE	
ACU-2, ACU-7	454	20	43	*			44	20	1260	RECP- OFFICE	
RECP- CORRIDOR	1260	20	45		*		46	20	1260	RECP- OFFICE	
RECP- AV ROOM	1260	20	47			*	48	20	1260	RECP- OFFICE	
RECP- CORRIDOR & STAIR 3	1260	20	49	*			50	20	1260	RECP- OFFICE	
RECP- UNDERCOUNTER, RESTROOM	1260	20	51		*		52	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- AV ROOM	1260	20	53			*	54	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- SKILLS LAB COUNTER	1260	20	55	*			56	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- JANITOR	1260	20	57		*		58	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- AV RM RACK	1260	20	59			*	60	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- AV RM RACK	630		61	*			62	20	1260	RECP- PHYSICAL ASSESMENT LAB	
RECP- AV RM RACK	630	20	63		*		64	20	1260	RECP- OR	
RECP- AV RM RACK	630		65			*	66	20	1260	RECP- OR	
RECP- AV RM RACK	630	20	67	*			68	20	1260	RECP- SEMINAR RM	
SMOKE DAMPERS	124.2	20	69		*		70	20	1260	RECP- SEMINAR RM	
RECP- CONTROL RM	500	20	71			*	72	20	1260	RECP- TELECOM RM	
RECP- PA LAB COUNTER	37.3	20	73	*			74	20	--	SPARE	
RECP- STORAGE	124.3	20	75		*		76	20	--	SPARE	
RECP- TELECOM RM	227	20	77			*	78	20	1260	RECP- SEMINAR AV CLOSET	
RECP- AV RM RACK	630		79	*			80	--	--	SPACE	
RECP- AV RM RACK	630	20	81		*		82	--	--	SPACE	
RECP- TELECOM RM	1260	20	83			*	84	--	--	SPACE	
SUB-TOTAL	A PHASE	45649	B PHASE						46556	C PHASE	48665
TOTAL CONNECTED LOAD (WATTS)		140870							DEMAND LOAD	126783	

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	R2C							C/B MIN AIC	10,000		
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	SECOND FLOOR EAST STORAGE							REMARKS	TOP FED FROM PNL R2A		
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
RECP- OFFICE	1260	20	1	*			2	20	1260	RECP- MAIL RM		
RECP- OFFICE	1260	20	3		*		4	20	1260	RECP- MAIL RM		
RECP- OFFICE	1260	20	5			*	6	20	1260	RECP- MAIL RM		
RECP- OFFICE	1260	20	7	*			8	20	1260	RECP- WATER COOLER		
RECP- OFFICE	1260	20	9		*		10	20	1260	RECP- WATER COOLER		
RECP- OFFICE	1260	20	11			*	12	20	1260	RECP- SHOWER RM		
RECP- OFFICE	1260	20	13	*			14	20	1260	RECP- STORAGE		
RECP- OFFICE	1260	20	15		*		16	20	1260	RECP- STORAGE		
RECP- OFFICE	1260	20	17			*	18	20	1260	RECP- COPY RM		
RECP- OFFICE	1260	20	19	*			20	20	1260	RECP- COPY RM		
RECP- OFFICE	1260	20	21		*		22	20	1260	RECP- COPY RM		
RECP- OFFICE	1260	20	23			*	24	20	1000	PROJECTOR- CONF		
RECP- OFFICE	1260	20	25	*			26	20	1260	RECP- CONF		
RECP- OFFICE	1260	20	27		*		28	20	1260	RECP- CORRIDOR & STAIR 1		
RECP- OFFICE	1260	20	29			*	30	20	--	SPARE		
MODULAR FURNITURE- OPEN OFFICE	1260	20	31	*			32	20	--	SPARE		
MODULAR FURNITURE- OPEN OFFICE	1260	20	33		*		34	20	--	SPARE		
RECP- COUNTER- LOUNGE	1260	20	35			*	36	20	--	SPARE		
RECP- REFRIGERATOR- LOUNGE	1260	20	37	*			38	--	--	SPACE		
RECP- LOUNGE	1260	20	39		*		40	--	--	SPACE		
RECP- TABLE- MAIL RM	1260	20	41			*	42	--	--	SPACE		
SUB-TOTAL	A PHASE	15120		B PHASE				15120		C PHASE		13600
TOTAL CONNECTED LOAD (WATTS)	43840									DEMAND LOAD		39456

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG				TYPE PANEL			NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	R2B			C/B MIN AIC			10,000			
Bus Rating	100A	LOCATION			PHASES:	3	WIRES:	4			
SIZE/TYPE MAINS	MLO	SECOND FLOOR PHASE 2 ELEC CLOSET			REMARKS						
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
RECP- COPY RM	1260	20	1	*			2	20	1260	RECP- CORRIDOR & STAIR	
RECP- COPY RM	1260	20	3		*		4	20	1260	RECP- CORRIDOR	
RECP- COPY RM	1260	20	5			*	6	20	1260	RECP- STUDIO	
RECP- OFFICE	1260	20	7	*			8	20	1260	RECP- STUDIO	
RECP- OFFICE	1260	20	9		*		10	20	1260	PROJECTOR	
RECP- OFFICE	1260	20	11			*	12	20	1260	RECP- RECORDING BOOTH	
RECP- OFFICE	1260	20	13	*			14	20	1260	RECP- RECORDING BOOTH	
RECP- OFFICE	1260	20	15		*		16	20	1260	RECP- RECORDING BOOTH	
RECP- OPEN OFFICE	1260	20	17			*	18	20	1260	RECP- RECORDING BOOTH	
RECP- OPEN OFFICE	1260	20	19	*			20	20	1260	RECP- CONTROL BOOTH	
RECP- OPEN OFFICE	1260	20	21		*		22	20	1260	RECP- SERVICE ROOM PACK	
RECP- OPEN OFFICE	1260	20	23			*	24	20	1000		
RECP- CONTROL BOOTH	1260	20	25	*			26	20	1260	RECP- SERVICE ROOM PACK	
RECP- CONTROL BOOTH	1260	20	27		*		28	20	1260		
RECP- MIXING	1260	20	29			*	30	20	1260	RECP- SERVICE ROOM	
SPARE	--	20	31	*			32	20	227	ACU-8	
SPARE	--	20	33		*		34	20	--	SPARE	
SPARE	--	20	35			*	36	20	1260	RECP- SERVICE ROOM	
SPARE	--	20	37	*			38	--	--	SPACE	
SPARE	--	20	39		*		40	--	--	SPACE	
SPARE	--	20	41			*	42	--	--	SPACE	
SUB-TOTAL	A PHASE	12827		B PHASE			12600			C PHASE 13600	
TOTAL CONNECTED LOAD (WATTS)		39027								DEMAND LOAD	35124

EXISTING PANEL SCHEDULE

VOLTAGE		208Y/120		TAG				TYPE PANEL			NEMA 1 ENCLOSURE		
MOUNTING		SURFACE		R3A				C/B MIN AIC			10,000		
Bus Rating		400A		LOCATION				PHASES:		3	WIRES:		4
SIZE/TYPE MAINS		3P400A MCB		SECOND FLOOR ELEC ROOM				REMARKS					
LOAD DESCRIPTION		LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
PNL R3C		14580		1	*			2		8119	PNL R3B (PHASE 2 PNL)		
		14580		3	*			4		8119			
		14580	150	5			*	6	80	8119			
RECP- WATER COOLER		1260	20	7	*			8		2067			
RECP- RESTROOMS		1260	20	9		*		10	20	2067	ACCU-1		
RECP- OFFICE		1260	20	11			*	12		1548	ACCU-2		
RECP- OFFICE		1260	20	13	*			14	15	1548			
RECP- OFFICE		1260	20	15		*		16		1548	ACCU-3		
SPARE		--	20	17			*	18	15	1548			
RECP- WATER COOLER		1260	20	19	*			20		2067	ACCU-7		
RECP- OFFICE		1260	20	21		*		22	20	2067			
RECP- OFFICE		1260	20	23			*	24	20	--	SPARE		
RECP- OFFICE		1260	20	25	*			26	20	1260	CHILLER- 120V CKT		
RECP- OFFICE		1260	20	27		*		28	30	1260	AHU-1 LTG, RECP		
RECP- OFFICE		1260	20	29			*	30	20	1260	RECP- ROOF		
RECP- OFFICE		1260	20	31	*			32	15	249	EF-1		
RECP- OFFICE		1260	20	33		*		34	15	249	EF-2		
RECP- OFFICE		1260	20	35			*	36	20	--	SPARE		
RECP- OFFICE		1260	20	37	*			38	20	--	SPARE		
RECP- OFFICE		1260	20	39		*		40	20	227	ACU-3		
RECP- OFFICE		1260	20	41			*	42		630	TELECOM ROOM PACK		
SPARE		--	20	43	*			44	20	630			
SPARE		--	20	45		*		46	15	37			
SPARE		--	20	47			*	48	20	1260	RECP- TELECOM RM		
SPARE		--	20	49	*			50	20	1260	RECP- CORRIDOR		
SPARE		--	20	51		*		52	20	1260	RECP- OFFICE		
RECP- WORK RM		1260	20	53			*	54	20	--	SPARE		
RECP- OPEN OFFICE		1260	20	55	*			56	20	1260	RECP- CORRIDOR & EXTERIOR		
RECP- OPEN OFFICE		1260	20	57		*		58	20	1260	RECP- AV CLOSET		
PROJECTOR		1000	20	59			*	60	20	1260	RECP- TELECOM RM		
PROJECTOR		1000		61	*			62	20	1260	RECP- CORRIDOR & STAIR 3		
RECP- BOARD RM		1260	20	63		*		64	20	1260	SMOKE DAMPERS		
PROJECTOR		1000		65			*	66	20	1260	ROOFTOP HEAT TRACE		
RECP- CONF RM		1260	20	67	*			68	20	1260	ROOFTOP HEAT TRACE		
RECP- OFFICE		1260	20	69		*		70	20	--	SPARE		
RECP- OFFICE		1260	20	71			*	72	20	--	SPARE		
SPARE		--	20	73	*			74	--	--	SPACE		
RECP- OFFICE		1260	20	75		*		76	--	--	SPACE		
RECP- TELECOM RM		1260	20	77			*	78	--	--	SPACE		
RECP- KITCHEN, CORR		1260		79	*			80	--	--	SPACE		
SPARE		--	20	81		*		82	--	--	SPACE		
SPARE		--	20	83			*	84	--	--	SPACE		
SUB-TOTAL		A PHASE 47900		B PHASE				46535			C PHASE 43545		
TOTAL CONNECTED LOAD (WATTS)		137980									DEMAND LOAD 124182		

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG					TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	R3B				C/B MIN AIC		10,000		
Bus Rating	100A	LOCATION				PHASES:	3	WIRES:	4	
SIZE/TYPE MAINS	MLO	THIRD FLOOR PHASE 2 ELEC CLOSET				REMARKS				
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION
RECP- OFFICE	1260	20	1	*			2		2067	
RECP- OFFICE	1260	20	3		*		4	20	2067	ACCU-8
RECP- OFFICE	1260	20	5			*	6	15	249	EF-5
RECP- OFFICE	1260	20	7	*			8	20	1260	AHU-5 LTG, RECP
RECP- OFFICE	1260	20	9		*		10	20	1260	RECP- ROOF
RECP- OFFICE	1260	20	11			*	12	20	1260	RECP- COORIDOR & STAIR
RECP- OPEN OFFICE	1260	20	13	*			14	20	--	SPARE
RECP- OPEN OFFICE	1260	20	15		*		16	20	--	SPARE
RECP- OPEN OFFICE	1260	20	17			*	18	20	--	SPARE
RECP- OPEN OFFICE	1260	20	19	*			20	20	--	SPARE
RECP- OPEN OFFICE	1260	20	21		*		22	20	--	SPARE
RECP- OPEN OFFICE	1260	20	23			*	24	20	--	SPARE
RECP- OPEN OFFICE	1260	20	25	*			26	--	--	SPACE
RECP- OPEN OFFICE	1260	20	27		*		28	--	--	SPACE
RECP- OPEN OFFICE	1260	20	29			*	30	--	--	SPACE
SUB-TOTAL	A PHASE	9627	B PHASE				9627	C PHASE		7809
TOTAL CONNECTED LOAD (WATTS)	27063								DEMAND LOAD	24357

EXISTING PANEL SCHEDULE

VOLTAGE	208Y/120	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	R3C						C/B MIN AIC		10,000		
Bus Rating	225A	LOCATION						PHASES:	3	WIRES:	4	
SIZE/TYPE MAINS	MLO	THIRD FLOOR EAST STORAGE						REMARKS				
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
P-DWH-2- KITCHEN	1500	20	1	*			2	30	1260	AHU-2 LTG, RECP		
RECP- CORRIDOR S & N, CORRIDOR 3000X	1260	20	3		*		4	20	1260	RECP- ROOF		
RECP- OFFICE	1260	20	5			*	6	20	1000	PROJECTOR		
RECP- OFFICE	1260	20	7	*			8	20	1260	FLOORBOX		
RECP- OFFICE	1260	20	9		*		10	20	1260	RECP- KITCHENETTE		
RECP- OFFICE	1260	20	11			*	12	20	1260	RECP- COUNTER		
RECP- OFFICE	1260	20	13	*			14	20	1260	RECP- KITCHENETTE		
RECP- OFFICE	1260	20	15		*		16	20	1260	RECP- KITCHENETTE		
RECP- OFFICE	1260	20	17			*	18	20	1260	RECP- KITCHENETTE		
RECP- OFFICE	1260	20	19	*			20	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	21		*		22	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	23			*	24	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	25	*			26	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	27		*		28	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	29			*	30	20	1260	RECP- OFFICE		
RECP- OFFICE	1260	20	31	*			32	20	1260	RECP- STORAGE		
RECP- OFFICE	1260	20	33		*		34	20	1000	BLACKOUT SHADES		
RECP- OFFICE	1260	20	35			*	36	20	1000	BLACKOUT SHADES		
SPARE	--	20	37	*			38	20	1260	RECP- DEAN'S CONF		
SPARE	--	20	39		*		40	20	1260	RECP- DEAN'S CONF		
SPARE	--	20	41			*	42	20	1260	PROJECTOR DEAN'S CONF		
SUB-TOTAL	A PHASE	16620			B PHASE			16120			C PHASE	15860
TOTAL CONNECTED LOAD (WATTS)		48600									DEMAND LOAD	43740

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG								TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	L1								C/B MIN AIC	14,000		
Bus Rating	60A	LOCATION								PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	FIRST FLOOR ELECTRICAL ROOM								REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION			
Flourescent Ltg.	West Corridor	1500	20	1	*		2	20	400	West Corridor & Auditorium Sconces	Flourescent Ltg.		
Flourescent Ltg.	East Corridor	400	20	3		*	4	20	400	East Corridor Sconces, Portrait Lights	Flourescent Ltg.		
Flourescent Ltg.	Classroom 1011	700	20	5		*	6	20	700	Classroom 1009	Flourescent Ltg.		
Flourescent Ltg.	Auditorium & Case Study Sconces	500	20	7	*		8	20	2000	Auditorium- Board Lights	Flourescent Ltg.		
Flourescent Ltg.	East Seminar Rooms, Offices	1400	20	9		*	10	20	1000	Restrooms, Seminar, AV Room	Flourescent Ltg.		
Flourescent Ltg.	Basement Mech/ Elec Rooms	500	20	11		*	12	20	2500	Exterior- Roadway	Flourescent Ltg.		
Flourescent Ltg.	Exterior- Roadway	2500	20	13	*		14	20	--	--	Spare		
Spare	--	--	20	15		*	16	20	--	--	Spare		
				17			18						
				19	*		20						
				21		*	22						
				23			24						
				25	*		26						
				27		*	28						
				29			30						
				31	*		32						
				33		*	34						
				35			36						
				37	*		38						
				39		*	40						
				41			42						
SUB-TOTAL	A PHASE	6900	B PHASE				3200	C PHASE		4400			
TOTAL CONNECTED LOAD (WATTS)	14500									DEMAND LOAD	13050		

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG								TYPE PANEL	NEMA 1 ENCLOSURE	
MOUNTING	SURFACE	D1A							C/B MIN AIC		14,000	
Bus Rating	60A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	First Floor Electrical Room							REMARKS			
LOAD DESCRIPTION	LOCATION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOCATION	LOAD DESCRIPTION
Dimmed Fluorescent Ltg.	Auditorium-Linear Pendants	680	20	1	*			2	20	680	Auditorium-Linear Pendants	Dimmed Fluorescent Ltg.
Dimmed Fluorescent Ltg.	Case Study-Linear Pendants	680	20	3		*		4	20	680	Case Study- Linear Pendants	Dimmed Fluorescent Ltg.
Flourescent Ltg.	Seating	600	20	5			*	6	20	200	Case Study-	Flourescent Ltg.
Dimmed Fluorescent Ltg.	Café Pendants	1440	20	7	*			8	20	600	Café Uplights	Dimmed Fluorescent Ltg.
Dimmed Fluorescent Ltg.	Case Study 1104 (Phase 2)	500	20	9		*		10	20	500	Case Study 1104 (Phase 2)	Dimmed Fluorescent Ltg.
Dimmed Fluorescent Ltg.	Auditorium- Rear Downlights	450	20	11			*	12	20	800	Seminar 2062-Perimeter	Dimmed Fluorescent Ltg.
Spare	--	--	20	13	*			14	20	--	--	Spare
Spare	--	--	20	15		*		16	20	--	--	Spare
				17			*	18				
				19	*			20				
				21		*		22				
				23			*	24				
				25	*			26				
				27		*		28				
				29			*	30				
				31	*			32				
				33		*		34				
				35			*	36				
				37	*			38				
				39		*		40				
				41			*	42				
SUB-TOTAL	A PHASE	3400	B PHASE				2360	C PHASE				2050
TOTAL CONNECTED LOAD (WATTS)	7810									DEMAND LOAD	7029	

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG								TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	L2A								C/B MIN AIC	14,000		
Bus Rating	60A	LOCATION								PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	Second Floor Electrical Room								REMARKS			
LOAD DESCRIPTION	LOCATION	LOAD WATTS	C/B	POS	A	B	C	POS	C/B	LOAD WATTS	LOCATION	LOAD DESCRIPTION	
			SIZE	NO	PH	PH	PH	NO	SIZE				
Flourescent Ltg.	West Corridor	1500	20	1	*			2	20	400	Corridor Sconces	Flourescent Ltg.	
Flourescent Ltg.	East Corridor	400	20	3		*		4	20	300	Lobby 1001	Flourescent Ltg.	
Flourescent Ltg.	Stair 2	1000	20	5			*	6	20	1400	Offices, Workrooms	Flourescent Ltg.	
Flourescent Ltg.	Skills Lab 2064	2000	20	7	*			8	20	2000	Physical Assesment Lab 2070	Flourescent Ltg.	
Flourescent Ltg.	Restrooms, Work Space	1400	20	9		*		10	20	1200	Offices	Flourescent Ltg.	
Spare	--	--	20	11			*	12	20	--	--	Spare	
Spare	--	--	20	13	*			14	20	--	--	Spare	
Spare	--	--	20	15		*		16	20	--	--	Spare	
				17			*	18					
				19	*			20					
				21		*		22					
				23			*	24					
				25	*			26					
				27		*		28					
				29			*	30					
				31	*			32					
				33		*		34					
				35			*	36					
				37	*			38					
				39		*		40					
				41			*	42					
SUB-TOTAL	A PHASE	5900	B PHASE				3300	C PHASE		2400			
TOTAL CONNECTED LOAD (WATTS)	11600									DEMAND LOAD	10440		

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG								TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	L2B								C/B MIN AIC	14,000		
Bus Rating	60A	LOCATION								PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	Second Floor PHASE 2 Electrical Room							REMARKS				
LOAD DESCRIPTION	LOCATION	LOAD WATTS	C/B	POS	A	B	C	POS	C/B	LOAD WATTS	LOCATION	LOAD DESCRIPTION	
			SIZE	NO	PH	PH	PH	NO	SIZE				
Flourescent Ltg.	--	200	20	1	*			2	20	500	--	Flourescent Ltg.	
Flourescent Ltg.	--	1000	20	3		*		4	20	1400	--	Flourescent Ltg.	
Flourescent Ltg.	--	3200	20	5			*	6	20	700	--	Flourescent Ltg.	
Flourescent Ltg.	--	3000	20	7	*			8	20	1100	--	Flourescent Ltg.	
Spare	--	--	20	9		*		10	20	--	--	Spare	
Spare	--	--	20	11			*	12	20	--	--	Spare	
SUB-TOTAL	A PHASE	4800	B PHASE				2400	C PHASE			3900		
TOTAL CONNECTED LOAD (WATTS)	11100											DEMAND LOAD	9990

EXISTING PANEL SCHEDULE

VOLTAGE	480Y/277	TAG								TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	L3							C/B MIN AIC		14,000		
Bus Rating	60A	LOCATION							PHASES:	3	WIRES:	4	
SIZE/TYPE MAINS	MLO	THIRD Floor Electrical Room							REMARKS				
LOAD DESCRIPTION	LOCATION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOCATION	LOAD DESCRIPTION	
Flourescent Ltg.	--	1500	20	1	*			2	20	400	--	Flourescent Ltg.	
Flourescent Ltg.	--	400	20	3		*		4	20	2000	--	Flourescent Ltg.	
Flourescent Ltg.	--	2000	20	5			*	6	20	2000	--	Flourescent Ltg.	
Flourescent Ltg.	--	2000	20	7	*			8	20	2000	--	Flourescent Ltg.	
HID	--	250	20	9		*		10	20	2000	--	HID	
DIM PNL D3	--	1400	20	11			*	12	20	--	--	Spare	
SUB-TOTAL	A PHASE	5900	B PHASE				4650	C PHASE		5400			
TOTAL CONNECTED LOAD (WATTS)	15950								DEMAND LOAD		14355		

NEW PANEL SCHEDULE

VOLTAGE		208Y/120		TAG					TYPE PANEL		NEMA 1 ENCLOSURE		
MOUNTING		SURFACE		DP1					C/B MIN AIC		25,000		
Bus Rating		1200A		LOCATION					PHASES:	3	WIRES:	4	
SIZE/TYPE MAINS		MLO		BASEMENT ELEC ROOM					REMARKS				
LOAD DESCRIPTION		LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
PNL RGA		7702	100A	1	*			2	400A	42261	PNL R2A		
		7702		3		*		4		42261			
		7702		5			*	6		42261			
PNL R1A		46792	400A	7	*			8	400A	41394	PNL R3A		
		46792		9		*		10		41394			
		46792		11			*	12		41394			
				13	*			14					
				15		*		16					
				17			*	18					
				19	*			20					
				21		*		22					
				23			*	24					
				25	*			26					
				27		*		28					
				29			*	30					
				31	*			32					
				33		*		34					
				35			*	36					
				37	*			38					
				39		*		40					
				41			*	42					
SUB-TOTAL		A PHASE 138149		B PHASE 138149					C PHASE 138149				
TOTAL CONNECTED LOAD (WATTS)		414448							DEMAND LOAD		373003		

MODIFIED PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	HGA (NOT NEEDED)							C/B MIN AIC	25,000		
Bus Rating	100A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	BASEMENT ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
	--	50	1	*			2	20	--	SPARE		
	--		3		*		4	20	--	SPARE		
SPACE	--		5			*	6	20	--	SPARE		
SPACE	--	--	7	*			8	20	--	SPARE		
SPACE	--	--	9		*		10	20	--	SPARE		
SPACE	--	--	11			*	12	20	--	SPARE		
SPACE	--	--	13	*			14	--	--	SPACE		
SPACE	--	--	15		*		16	--	--	SPACE		
SPACE	--	--	17			*	18	--	--	SPACE		
SPACE	--	--	19	*			20	--	--	SPACE		
SPACE	--	--	21		*		22	--	--	SPACE		
SPACE	--	--	23			*	24	--	--	SPACE		
SPACE	--	--	25	*			26	--	--	SPACE		
SPACE	--	--	27		*		28	--	--	SPACE		
SPACE	--	--	29			*	30	--	--	SPACE		
SUB-TOTAL		A PHASE			B PHASE			C PHASE				
		0			0			0				
TOTAL CONNECTED LOAD (WATTS)		0						DEMAND LOAD				
		0						0				

MODIFIED PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	H1A							C/B MIN AIC	18,000		
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	FIRST FLOOR ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
DIM PNL D1A	2343	60	1	*			2	175	--	SPARE		
	2343		3		*		4		--			
	2343		5			*	6		--			
PNL L1	4350	80	7	*			8	30	6000	P-DWH-1		
	4350		9		*		10		6000			
	4350		11			*	12		6000			
SPARE		20	13	*			14	--	--	SPACE		
SPARE		20	15		*		16	--	--	SPACE		
SPARE		20	17			*	18	--	--	SPACE		
SPACE	--	20	19	*			20	--	--	SPACE		
SPACE	--	20	21		*		22	--	--	SPACE		
SPACE	--	20	23			*	24	--	--	SPACE		
SUB-TOTAL	A PHASE	12693	B PHASE				12693	C PHASE		12693		
TOTAL CONNECTED LOAD (WATTS)		38079							DEMAND LOAD	34271		

MODIFIED PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE		
MOUNTING	SURFACE	H2A							C/B MIN AIC	18,000		
Bus Rating	225A	LOCATION							PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	SECOND FLOOR ELEC ROOM							REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION		
SPARE	--	175	1	*			2	60	3330	PNL L2B (PHASE 2 PNL)		
SPARE	--		3		*		4		3330			
SPARE	--		5			*	6		3330			
PNL L2A	3480	60	7	*			8	30	6000	P-DWH-1		
SPARE	3480		9		*		10		6000			
SPARE	3480		11			*	12		6000			
SPARE	--	--	13	*			14	15	3000	P-DWH-3		
SPARE	--	--	15		*		16		3000			
SPARE	--	--	17			*	18		3000			
SPACE	--	--	19	*			20	--	--	SPACE		
SPACE	--	--	21		*		22	--	--	SPACE		
SPACE	--	--	23			*	24	--	--	SPACE		
SPACE	--	--	25	*			26	--	--	SPACE		
SPACE	--	--	27		*		28	--	--	SPACE		
SPACE	--	--	29			*	30	--	--	SPACE		
SUB-TOTAL	A PHASE	15810	B PHASE				15810	C PHASE		15810		
TOTAL CONNECTED LOAD (WATTS)	47430								DEMAND LOAD	42687		

MODIFIED PANEL SCHEDULE

VOLTAGE	480Y/277	TAG							TYPE PANEL	NEMA 1 ENCLOSURE	
MOUNTING	PAD	H3A							C/B MIN AIC	18,000	
Bus Rating	1200A	LOCATION						PHASES:	3	WIRES:	4
SIZE/TYPE MAINS	MLO	THIRD FLOOR ELEC ROOM						REMARKS			
LOAD DESCRIPTION	LOAD WATTS	C/B SIZE	POS NO	A PH	B PH	C PH	POS NO	C/B SIZE	LOAD WATTS	LOAD DESCRIPTION	
AHU-1	30678	200	1	*			2	125	21450	AHU-2	
	30678		3		*		4		21450		
	30678		5			*	6		21450		
CHILLER	91667	600	7	*			8	175	42151	AHU-5	
	91667		9		*		10		42151		
	91667		11			*	12		42151		
SPARE	--	175	13	*			14	15	3000	P-DWH-3	
	--		15		*		16		3000		
	--		17			*	18		3000		
EF-3	249	15	19	*			20	15	1243	F-VENT-4	
	249		21		*		22		1243		
	249		23			*	24		1243		
PNL L3	4785	60	25	*			26	15	124	EF-4	
	4785		27		*		28		124		
	4785		29			*	30		124		
SPARE	--	--	31	*			32	--	--	SPARE	
	--		33		*		34		--		
	--		35			*	36		--		
SUB-TOTAL	A PHASE	190437	B PHASE				190437	C PHASE	190437		
TOTAL CONNECTED LOAD (WATTS)		571311						DEMAND LOAD	514180		

PANELBOARD SIZING WORKSHEET														
Panel Tag----->					DP1	Panel Location:			BASEMENT ELEC RM					
Nominal Phase to Neutral Voltage----->					120	Phase:			3					
Nominal Phase to Phase Voltage----->					208	Wires:			4					
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks				
1	A	PNL RGA			7702	w	0.95	7702	8108					
2	A	PNL R2A			42261	w	0.85	42261	49719					
3	B	PNL RGA			7702	w	0.95	7702	8108					
4	B	PNL R2A			42261	w	0.85	42261	49719					
5	C	PNL RGA			7702	w	0.95	7702	8108					
6	C	PNL R2A			42261	w	0.85	42261	49719					
7	A	PNL R1A			46792	w	0.85	46792	55049					
8	A	PNL R3A			41394	w	0.85	41394	48699					
9	B	PNL R1A			46792	w	0.85	46792	55049					
10	B	PNL R3A			41394	w	0.85	41394	48699					
11	C	PNL R1A			46792	w	0.85	46792	55049					
12	C	PNL R3A			41394	w	0.85	41394	48699					
13	A				0	w		0	0					
14	A				0	w		0	0					
15	B				0	w		0	0					
16	B				0	w		0	0					
17	C				0	w		0	0					
18	C				0	w		0	0					
19	A				0	w		0	0					
20	A				0	w		0	0					
21	B				0	w		0	0					
22	B				0	w		0	0					
23	C				0	w		0	0					
24	C				0	w		0	0					
25	A				0	w		0	0					
26	A				0	w		0	0					
27	B				0	w		0	0					
28	B				0	w		0	0					
29	C				0	w		0	0					
30	C				0	w		0	0					
31	A				0	w		0	0					
32	A				0	w		0	0					
33	B				0	w		0	0					
34	B				0	w		0	0					
35	C				0	w		0	0					
36	C				0	w		0	0					
37	A				0	w		0	0					
38	A				0	w		0	0					
39	B				0	w		0	0					
40	B				0	w		0	0					
41	C				0	w		0	0					
42	C				0	w		0	0					
PANEL TOTAL								414.4	484.7	Amps= 1346.5				
PHASE LOADING														
PHASE TOTAL								A						
PHASE TOTAL								B						
PHASE TOTAL								C						
LOAD CATAGORIES								Connected		Demand				
								kW	kVA	DF	kW	kVA	PF	
1	receptacles							0.0	0.0		0.0	0.0		
2	computers							0.0	0.0		0.0	0.0		
3	fluorescent lighting							0.0	0.0		0.0	0.0		
4	HID lighting							0.0	0.0		0.0	0.0		
5	incandescent lighting							0.0	0.0		0.0	0.0		
6	HVAC fans							0.0	0.0		0.0	0.0		
7	heating							0.0	0.0		0.0	0.0		
8	kitchen equipment							0.0	0.0		0.0	0.0		
9	unassigned							414.4	484.7	0.90	373.0	436.3	0.86	
Total Demand Loads											373.0	436.3		
Spare Capacity								20%			74.6	87.3		
Total Design Loads											447.6	523.5	0.86	Amps= 1454.2

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					H1A	Panel Location:			FIRST FLR ELEC RM		
Nominal Phase to Neutral Voltage----->					277	Phase:			3		
Nominal Phase to Phase Voltage----->					480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	DIM PNL D1A	3		3400	w	0.98	3400	3469		
2	A	SPARE			0	w		0	0		
3	B	DIM PNL D1A	3		2360	w	0.98	2360	2408		
4	B	SPARE			0	w		0	0		
5	C	DIM PNL D1A	3		2050	w	0.98	2050	2092		
6	C	SPARE			0	w		0	0		
7	A	PNL L1	3		6900	w	0.85	6900	8118		
8	A	P-DWH-1			6000	w	1.00	6000	6000		
9	B	PNL L1	3		3200	w	0.85	3200	3765		
10	B	P-DWH-1			6000	w	1.00	6000	6000		
11	C	PNL L1	3		4400	w	0.85	4400	5176		
12	C	P-DWH-1			6000	w	1.00	6000	6000		
13	A				0	w		0	0		
14	A				0	w		0	0		
15	B				0	w		0	0		
16	B				0	w		0	0		
17	C				0	w		0	0		
18	C				0	w		0	0		
19	A				0	w		0	0		
20	A				0	w		0	0		
21	B				0	w		0	0		
22	B				0	w		0	0		
23	C				0	w		0	0		
24	C				0	w		0	0		
25	A				0	w		0	0		
26	A				0	w		0	0		
27	B				0	w		0	0		
28	B				0	w		0	0		
29	C				0	w		0	0		
30	C				0	w		0	0		
31	A				0	w		0	0		
32	A				0	w		0	0		
33	B				0	w		0	0		
34	B				0	w		0	0		
35	C				0	w		0	0		
36	C				0	w		0	0		
37	A				0	w		0	0		
38	A				0	w		0	0		
39	B				0	w		0	0		
40	B				0	w		0	0		
41	C				0	w		0	0		
42	C				0	w		0	0		
PANEL TOTAL								40.3	43.0	Amps= 51.8	
PHASE LOADING											
PHASE TOTAL			A					kW	kVA	%	Amps
PHASE TOTAL			B					16.3	17.6	41%	63.5
PHASE TOTAL			C					11.6	12.2	28%	43.9
PHASE TOTAL								12.5	13.3	31%	47.9
LOAD CATAGORIES				Connected			Demand			Ver. 1.02	
				kW	kVA	DF	kW	kVA	PF		
1		receptacles		0.0	0.0		0.0	0.0			
2		computers		0.0	0.0		0.0	0.0			
3		fluorescent lighting		22.3	25.0	0.90	20.1	22.5	0.89		
4		HID lighting		0.0	0.0		0.0	0.0			
5		incandescent lighting		0.0	0.0		0.0	0.0			
6		HVAC fans		0.0	0.0		0.0	0.0			
7		heating		0.0	0.0		0.0	0.0			
8		kitchen equipment		0.0	0.0		0.0	0.0			
9		unassigned		18.0	18.0	0.95	17.1	17.1	1.00		
Total Demand Loads							37.2	39.6			
Spare Capacity				20%			7.4	7.9			
Total Design Loads							44.6	47.6	0.94	Amps= 57.2	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->				H2A	Panel Location:			SECOND FLR ELEC RM			
Nominal Phase to Neutral Voltage----->				277	Phase:			3			
Nominal Phase to Phase Voltage----->				480	Wires:			4			
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	SPARE			0	w		0	0		
2	A	PNL L2B	3		4800	w	0.85	4800	5647		
3	B	SPARE			0	w		0	0		
4	B	PNL L2B	3		2400	w	0.85	2400	2824		
5	C	SPARE			0	w		0	0		
6	C	PNL L2B	3		3900	w	0.85	3900	4588		
7	A	PNL L2A	3		5900	w	0.85	5900	6941		
8	A	P-DWH-1	7		6000	w	1.00	6000	6000		
9	B	PNL L2A	3		3300	w	0.85	3300	3882		
10	B	P-DWH-1	7		6000	w	1.00	6000	6000		
11	C	PNL L2A	3		2400	w	0.85	2400	2824		
12	C	P-DWH-1	7		6000	w	1.00	6000	6000		
13	A	SPARE			0	w		0	0		
14	A	P-DWH-3	7		3000	w	1.00	3000	3000		
15	B	SPARE			0	w		0	0		
16	B	P-DWH-3	7		3000	w	1.00	3000	3000		
17	C	SPARE			0	w		0	0		
18	C	P-DWH-3	7		3000	w	1.00	3000	3000		
19	A				0	w		0	0		
20	A				0	w		0	0		
21	B				0	w		0	0		
22	B				0	w		0	0		
23	C				0	w		0	0		
24	C				0	w		0	0		
25	A				0	w		0	0		
26	A				0	w		0	0		
27	B				0	w		0	0		
28	B				0	w		0	0		
29	C				0	w		0	0		
30	C				0	w		0	0		
31	A				0	w		0	0		
32	A				0	w		0	0		
33	B				0	w		0	0		
34	B				0	w		0	0		
35	C				0	w		0	0		
36	C				0	w		0	0		
37	A				0	w		0	0		
38	A				0	w		0	0		
39	B				0	w		0	0		
40	B				0	w		0	0		
41	C				0	w		0	0		
42	C				0	w		0	0		
PANEL TOTAL								49.7	53.7	Amps= 64.6	
PHASE LOADING											
PHASE TOTAL			A					kW	kVA	%	Amps
PHASE TOTAL			B					19.7	21.6	40%	77.9
PHASE TOTAL			C					14.7	15.7	29%	56.7
PHASE TOTAL								15.3	16.4	31%	59.2
LOAD CATEGORIES				Connected			Demand			Ver. 1.02	
				kW	kVA	DF	kW	kVA	PF		
1		receptacles		0.0	0.0		0.0	0.0			
2		computers		0.0	0.0		0.0	0.0			
3		fluorescent lighting		22.7	26.7	0.90	20.4	24.0	0.85		
4		HID lighting		0.0	0.0		0.0	0.0			
5		incandescent lighting		0.0	0.0		0.0	0.0			
6		HVAC fans		0.0	0.0		0.0	0.0			
7		heating		27.0	27.0	0.95	25.7	25.7	1.00		
8		kitchen equipment		0.0	0.0		0.0	0.0			
9		unassigned		0.0	0.0		0.0	0.0			
Total Demand Loads							46.1	49.7			
Spare Capacity				20%			9.2	9.9			
Total Design Loads							55.3	59.6	0.93	Amps= 71.7	

PANELBOARD SIZING WORKSHEET										
Panel Tag----->				H3A	Panel Location:			THIRD FLR ELEC RM		
Nominal Phase to Neutral Voltage----->				277	Phase:			3		
Nominal Phase to Phase Voltage----->				480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks
1	A	AHU-1	6		30678	w	0.95	30678	32293	
2	A	AHU-2	6		21450	w	0.95	21450	22579	
3	B	AHU-1	6		30678	w	0.95	30678	32293	
4	B	AHU-2	6		21450	w	0.95	21450	22579	
5	C	AHU-1	6		30678	w	0.95	30678	32293	
6	C	AHU-2	6		21450	w	0.95	21450	22579	
7	A	CHILLER	7		91667	w	0.95	91667	96491	
8	A	AHU-5	6		42151	w	0.95	42151	44370	
9	B	CHILLER	7		91667	w	0.95	91667	96491	
10	B	AHU-5	6		42151	w	0.95	42151	44370	
11	C	CHILLER	7		91667	w	0.95	91667	96491	
12	C	AHU-5	6		42151	w	0.95	42151	44370	
13	A	SPARE			0	w		0	0	
14	A	P-DWH-3	7		3000	w	1.00	3000	3000	
15	B	SPARE			0	w		0	0	
16	B	P-DWH-3	7		3000	w	1.00	3000	3000	
17	C	SPARE			0	w		0	0	
18	C	P-DWH-3	7		3000	w	1.00	3000	3000	
19	A	EF-3	6		249	w	0.95	249	262	
20	A	F-VENT-4	6		1243	w	0.95	1243	1308	
21	B	EF-3	6		249	w	0.95	249	262	
22	B	F-VENT-4	6		1243	w	0.95	1243	1308	
23	C	EF-3	6		249	w	0.95	249	262	
24	C	F-VENT-4	6		1243	w	0.95	1243	1308	
25	A	PNL L3	3		5900	w	0.90	5900	6556	
26	A	EF-4	6		124	w	0.95	124	131	
27	B	PNL L3	3		4650	w	0.90	4650	5167	
28	B	EF-4	6		124	w	0.95	124	131	
29	C	PNL L3	3		5400	w	0.90	5400	6000	
30	C	EF-4	6		124	w	0.95	124	131	
31	A				0	w		0	0	
32	A				0	w		0	0	
33	B				0	w		0	0	
34	B				0	w		0	0	
35	C				0	w		0	0	
36	C				0	w		0	0	
37	A				0	w		0	0	
38	A				0	w		0	0	
39	B				0	w		0	0	
40	B				0	w		0	0	
41	C				0	w		0	0	
42	C				0	w		0	0	
PANEL TOTAL								587.6	619.0	Amps= 744.9
PHASE LOADING										
PHASE TOTAL								A		
								kW	kVA	%
PHASE TOTAL									196.5	207.0
								33%	747.3	Amps
PHASE TOTAL								B		
								195.2	205.6	33%
								742.2		
PHASE TOTAL								C		
								196.0	206.4	33%
								745.2		
LOAD CATEGORIES				Connected		Demand			Ver. 1.02	
				kW	kVA	DF	kW	kVA	PF	
1		receptacles		0.0	0.0		0.0	0.0		
2		computers		0.0	0.0		0.0	0.0		
3		fluorescent lighting		16.0	17.7	0.90	14.4	16.0	0.90	
4		HID lighting		0.0	0.0		0.0	0.0		
5		incandescent lighting		0.0	0.0		0.0	0.0		
6		HVAC fans		287.7	302.8	0.95	273.3	287.7	0.95	
7		heating		284.0	298.5	0.95	269.8	283.6	0.95	
8		kitchen equipment		0.0	0.0		0.0	0.0		
9		unassigned		0.0	0.0		0.0	0.0		
Total Demand Loads								557.5	587.2	
Spare Capacity								20%	111.5	117.4
Total Design Loads								668.9	704.6	0.95
								Amps=	847.9	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					RGA	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL RGA			8178	w	0.90	8178	9087		
2	A				0	w	1.00	0	0		
3	B	PNL RGA			9579	w	0.90	9579	10643		
4	B				0	w	1.00	0	0		
5	C	PNL RGA			7917	w	0.90	7917	8797		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								25.7	28.5	Amps= 79.2	
PHASE LOADING											
PHASE TOTAL			A					kW	kVA	%	Amps
PHASE TOTAL			B					8.2	9.1	32%	75.7
PHASE TOTAL			C					9.6	10.6	37%	88.7
PHASE TOTAL								7.9	8.8	31%	73.3
LOAD CATAGORIES											
				Connected			Demand			Ver. 1.02	
				kW	kVA	DF	kW	kVA	PF		
1	receptacles			0.0	0.0		0.0	0.0			
2	computers			0.0	0.0		0.0	0.0			
3	fluorescent lighting			0.0	0.0		0.0	0.0			
4	HID lighting			0.0	0.0		0.0	0.0			
5	incandescent lighting			0.0	0.0		0.0	0.0			
6	HVAC fans			0.0	0.0		0.0	0.0			
7	heating			0.0	0.0		0.0	0.0			
8	kitchen equipment			0.0	0.0		0.0	0.0			
9	unassigned			25.7	28.5	0.80	20.5	22.8	0.90		
Total Demand Loads							20.5	22.8			
Spare Capacity				20%			4.1	4.6			
Total Design Loads							24.6	27.4	0.90	Amps= 76.1	

PANELBOARD SIZING WORKSHEET												
Panel Tag----->				R1A	Panel Location:			FIRST FLOOR ELEC ROOM				
Nominal Phase to Neutral Voltage----->				120	Phase:			3				
Nominal Phase to Phase Voltage----->				208	Wires:			4				
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks		
1	A		1		56567	w	1.00	56567	56567			
2	A				0	w	1.00	0	0			
3	B		1		52482	w	1.00	52482	52482			
4	B				0	w	1.00	0	0			
5	C		1		55828	w	1.00	55828	55828			
6	C				0	w	1.00	0	0			
7	A				0	w	1.00	0	0			
8	A				0	w	1.00	0	0			
9	B				0	w	1.00	0	0			
10	B				0	w	1.00	0	0			
11	C				0	w	1.00	0	0			
12	C				0	w	1.00	0	0			
13	A				0	w	1.00	0	0			
14	A				0	w	1.00	0	0			
15	B				0	w	1.00	0	0			
16	B				0	w	1.00	0	0			
17	C				0	w	1.00	0	0			
18	C				0	w	1.00	0	0			
19	A				0	w	1.00	0	0			
20	A				0	w	1.00	0	0			
21	B				0	w	1.00	0	0			
22	B				0	w	1.00	0	0			
23	C				0	w	1.00	0	0			
24	C				0	w	1.00	0	0			
25	A				0	w	1.00	0	0			
26	A				0	w	1.00	0	0			
27	B				0	w	1.00	0	0			
28	B				0	w	1.00	0	0			
29	C				0	w	1.00	0	0			
30	C				0	w	1.00	0	0			
31	A				0	w	1.00	0	0			
32	A				0	w	1.00	0	0			
33	B				0	w	1.00	0	0			
34	B				0	w	1.00	0	0			
35	C				0	w	1.00	0	0			
36	C				0	w	1.00	0	0			
37	A				0	w	1.00	0	0			
38	A				0	w	1.00	0	0			
39	B				0	w	1.00	0	0			
40	B				0	w	1.00	0	0			
41	C				0	w	1.00	0	0			
42	C				0	w	1.00	0	0			
PANEL TOTAL								164.9	164.9	Amps=	458.0	
PHASE LOADING												
PHASE TOTAL			A					kW	kVA	%	Amps	
PHASE TOTAL			B					56.6	56.6	34%	471.4	
PHASE TOTAL			C					52.5	52.5	32%	437.4	
PHASE TOTAL								55.8	55.8	34%	465.2	
LOAD CATEGORIES								Connected		Demand		Ver. 1.02
					kW	kVA	DF	kW	kVA	PF		
1		receptacles			164.9	164.9	0.70	115.4	115.4	1.00		
2		computers			0.0	0.0		0.0	0.0			
3		fluorescent lighting			0.0	0.0		0.0	0.0			
4		HID lighting			0.0	0.0		0.0	0.0			
5		incandescent lighting			0.0	0.0		0.0	0.0			
6		HVAC fans			0.0	0.0		0.0	0.0			
7		heating			0.0	0.0		0.0	0.0			
8		kitchen equipment			0.0	0.0		0.0	0.0			
9		unassigned			0.0	0.0		0.0	0.0			
Total Demand Loads								115.4	115.4			
Spare Capacity								20%	23.1	23.1		
Total Design Loads								138.5	138.5	1.00	Amps= 384.7	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R2A	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R2A			53228	w	1.00	53228	53228		
2	A				0	w	1.00	0	0		
3	B	PNL R2A			53909	w	1.00	53909	53909		
4	B				0	w	1.00	0	0		
5	C	PNL R2A			55497	w	1.00	55497	55497		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								162.6	162.6	Amps= 451.8	
PHASE LOADING											
PHASE TOTAL			A					kW	kVA	%	Amps
PHASE TOTAL			B					53.2	53.2	33%	443.6
PHASE TOTAL			C					53.9	53.9	33%	449.2
PHASE TOTAL								55.5	55.5	34%	462.5
LOAD CATAGORIES											
		Connected			Demand					Ver. 1.02	
		kW	kVA	DF	kW	kVA	PF				
1	receptacles	0.0	0.0		0.0	0.0					
2	computers	0.0	0.0		0.0	0.0					
3	fluorescent lighting	0.0	0.0		0.0	0.0					
4	HID lighting	0.0	0.0		0.0	0.0					
5	incandescent lighting	0.0	0.0		0.0	0.0					
6	HVAC fans	0.0	0.0		0.0	0.0					
7	heating	0.0	0.0		0.0	0.0					
8	kitchen equipment	0.0	0.0		0.0	0.0					
9	unassigned	162.6	162.6	0.70	113.8	113.8	1.00				
Total Demand Loads					113.8	113.8					
Spare Capacity		20%			22.8	22.8					
Total Design Loads					136.6	136.6	1.00	Amps=	379.5		

PANELBOARD SIZING WORKSHEET										
Panel Tag----->				R3A	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->				120	Phase:			3		
Nominal Phase to Phase Voltage----->				208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks
1	A	PNL R3A			51448	w	0.90	51448	57164	
2	A				0	w	1.00	0	0	
3	B	PNL R3A			49583	w	0.90	49583	55092	
4	B				0	w	1.00	0	0	
5	C	PNL R3A			44515	w	0.90	44515	49461	
6	C				0	w	1.00	0	0	
7	A				0	w	1.00	0	0	
8	A				0	w	1.00	0	0	
9	B				0	w	1.00	0	0	
10	B				0	w	1.00	0	0	
11	C				0	w	1.00	0	0	
12	C				0	w	1.00	0	0	
13	A				0	w	1.00	0	0	
14	A				0	w	1.00	0	0	
15	B				0	w	1.00	0	0	
16	B				0	w	1.00	0	0	
17	C				0	w	1.00	0	0	
18	C				0	w	1.00	0	0	
19	A				0	w	1.00	0	0	
20	A				0	w	1.00	0	0	
21	B				0	w	1.00	0	0	
22	B				0	w	1.00	0	0	
23	C				0	w	1.00	0	0	
24	C				0	w	1.00	0	0	
25	A				0	w	1.00	0	0	
26	A				0	w	1.00	0	0	
27	B				0	w	1.00	0	0	
28	B				0	w	1.00	0	0	
29	C				0	w	1.00	0	0	
30	C				0	w	1.00	0	0	
31	A				0	w	1.00	0	0	
32	A				0	w	1.00	0	0	
33	B				0	w	1.00	0	0	
34	B				0	w	1.00	0	0	
35	C				0	w	1.00	0	0	
36	C				0	w	1.00	0	0	
37	A				0	w	1.00	0	0	
38	A				0	w	1.00	0	0	
39	B				0	w	1.00	0	0	
40	B				0	w	1.00	0	0	
41	C				0	w	1.00	0	0	
42	C				0	w	1.00	0	0	
PANEL TOTAL								145.5	161.7	Amps= 449.2
PHASE LOADING										
PHASE TOTAL				A				kW	kVA	% Amps
PHASE TOTAL				B				51.4	57.2	35% 476.4
PHASE TOTAL				C				49.6	55.1	34% 459.1
PHASE TOTAL								44.5	49.5	31% 412.2
LOAD CATAGORIES				Connected			Demand			Ver. 1.02
				kW	kVA	DF	kW	kVA	PF	
1		receptacles		0.0	0.0		0.0	0.0		
2		computers		0.0	0.0		0.0	0.0		
3		fluorescent lighting		0.0	0.0		0.0	0.0		
4		HID lighting		0.0	0.0		0.0	0.0		
5		incandescent lighting		0.0	0.0		0.0	0.0		
6		HVAC fans		0.0	0.0		0.0	0.0		
7		heating		0.0	0.0		0.0	0.0		
8		kitchen equipment		0.0	0.0		0.0	0.0		
9		unassigned		145.5	161.7	0.73	106.2	118.1	0.90	
Total Demand Loads							106.2	118.1		
Spare Capacity				20%			21.2	23.6		
Total Design Loads							127.5	141.7	0.90	Amps= 393.5

PANELBOARD SIZING WORKSHEET											
Panel Tag----->				R1B	Panel Location:			FIRST FLOOR ELEC ROOM			
Nominal Phase to Neutral Voltage----->				120	Phase:			3			
Nominal Phase to Phase Voltage----->				208	Wires:			4			
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R1B			10870	w	0.90	10870	12078		
2	A				0	w	1.00	0	0		
3	B	PNL R1B			9820	w	0.90	9820	10911		
4	B				0	w	1.00	0	0		
5	C	PNL R1B			12080	w	0.90	12080	13422		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								32.8	36.4	Amps= 101.1	
PHASE LOADING								kW	kVA	%	Amps
PHASE TOTAL			A				10.9	12.1	33%	100.6	
PHASE TOTAL			B				9.8	10.9	30%	90.9	
PHASE TOTAL			C				12.1	13.4	37%	111.9	
LOAD CATAGORIES			Connected			Demand				Ver. 1.02	
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	32.8	36.4	0.85	27.9	30.9	0.90			
Total Demand Loads						27.9	30.9				
Spare Capacity			20%			5.6	6.2				
Total Design Loads						33.4	37.1	0.90	Amps=	103.2	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R1C	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R1C			11370	w	0.90	11370	12633		
2	A				0	w	1.00	0	0		
3	B	PNL R1C			10692	w	0.90	10692	11880		
4	B				0	w	1.00	0	0		
5	C	PNL R1C			12560	w	0.90	12560	13956		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								34.6	38.5	Amps= 106.9	
PHASE LOADING											
PHASE TOTAL					A			kW	kVA	%	Amps
PHASE TOTAL					B			11.4	12.6	33%	105.3
PHASE TOTAL					C			10.7	11.9	31%	99.0
PHASE TOTAL								12.6	14.0	36%	116.3
LOAD CATAGORIES			Connected		Demand			Ver. 1.02			
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	34.6	38.5	0.85	29.4	32.7	0.90			
Total Demand Loads						29.4	32.7				
Spare Capacity			20%			5.9	6.5				
Total Design Loads						35.3	39.2	0.90	Amps=	109.0	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R1D	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R1D			9300	w	0.95	9300	9789		
2	A				0	w	1.00	0	0		
3	B	PNL R1D			8300	w	0.95	8300	8737		
4	B				0	w	1.00	0	0		
5	C	PNL R1D			8560	w	0.95	8560	9011		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								26.2	27.5	Amps= 76.5	
PHASE LOADING								kW	kVA	%	Amps
PHASE TOTAL			A				9.3	9.8	36%	81.6	
PHASE TOTAL			B				8.3	8.7	32%	72.8	
PHASE TOTAL			C				8.6	9.0	33%	75.1	
LOAD CATAGORIES			Connected			Demand				Ver. 1.02	
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	26.2	27.5	0.85	22.2	23.4	0.95			
Total Demand Loads						22.2	23.4				
Spare Capacity			20%			4.4	4.7				
Total Design Loads						26.7	28.1	0.95	Amps=	78.0	

PANELBOARD SIZING WORKSHEET												
Panel Tag----->					R2B	Panel Location:			FIRST FLOOR ELEC ROOM			
Nominal Phase to Neutral Voltage----->					120	Phase:			3			
Nominal Phase to Phase Voltage----->					208	Wires:			4			
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks		
1	A	PNL R2B			12827	w	0.90	12827	14252			
2	A				0	w	1.00	0	0			
3	B	PNL R2B			12600	w	0.90	12600	14000			
4	B				0	w	1.00	0	0			
5	C	PNL R2B			13600	w	0.90	13600	15111			
6	C				0	w	1.00	0	0			
7	A				0	w	1.00	0	0			
8	A				0	w	1.00	0	0			
9	B				0	w	1.00	0	0			
10	B				0	w	1.00	0	0			
11	C				0	w	1.00	0	0			
12	C				0	w	1.00	0	0			
13	A				0	w	1.00	0	0			
14	A				0	w	1.00	0	0			
15	B				0	w	1.00	0	0			
16	B				0	w	1.00	0	0			
17	C				0	w	1.00	0	0			
18	C				0	w	1.00	0	0			
19	A				0	w	1.00	0	0			
20	A				0	w	1.00	0	0			
21	B				0	w	1.00	0	0			
22	B				0	w	1.00	0	0			
23	C				0	w	1.00	0	0			
24	C				0	w	1.00	0	0			
25	A				0	w	1.00	0	0			
26	A				0	w	1.00	0	0			
27	B				0	w	1.00	0	0			
28	B				0	w	1.00	0	0			
29	C				0	w	1.00	0	0			
30	C				0	w	1.00	0	0			
31	A				0	w	1.00	0	0			
32	A				0	w	1.00	0	0			
33	B				0	w	1.00	0	0			
34	B				0	w	1.00	0	0			
35	C				0	w	1.00	0	0			
36	C				0	w	1.00	0	0			
37	A				0	w	1.00	0	0			
38	A				0	w	1.00	0	0			
39	B				0	w	1.00	0	0			
40	B				0	w	1.00	0	0			
41	C				0	w	1.00	0	0			
42	C				0	w	1.00	0	0			
PANEL TOTAL								39.0	43.4	Amps=	120.5	
PHASE LOADING												
PHASE TOTAL					A				kW	kVA	%	Amps
PHASE TOTAL					B				12.8	14.3	33%	118.8
PHASE TOTAL					C				12.6	14.0	32%	116.7
PHASE TOTAL									13.6	15.1	35%	125.9
LOAD CATEGORIES			Connected				Demand				Ver. 1.02	
					kW	kVA	DF	kW	kVA	PF		
1		receptacles			0.0	0.0		0.0	0.0			
2		computers			0.0	0.0		0.0	0.0			
3		fluorescent lighting			0.0	0.0		0.0	0.0			
4		HID lighting			0.0	0.0		0.0	0.0			
5		incandescent lighting			0.0	0.0		0.0	0.0			
6		HVAC fans			0.0	0.0		0.0	0.0			
7		heating			0.0	0.0		0.0	0.0			
8		kitchen equipment			0.0	0.0		0.0	0.0			
9		unassigned			39.0	43.4	0.80	31.2	34.7	0.90		
Total Demand Loads								31.2	34.7			
Spare Capacity					20%			6.2	6.9			
Total Design Loads								37.5	41.6	0.90	Amps=	115.6

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R2C	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R2C			15120	w	0.90	15120	16800		
2	A				0	w	1.00	0	0		
3	B	PNL R2C			15120	w	0.90	15120	16800		
4	B				0	w	1.00	0	0		
5	C	PNL R2C			13600	w	0.90	13600	15111		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								43.8	48.7	Amps= 135.3	
PHASE LOADING								kW	kVA	%	Amps
PHASE TOTAL			A				15.1	16.8	34%	140.0	
PHASE TOTAL			B				15.1	16.8	34%	140.0	
PHASE TOTAL			C				13.6	15.1	31%	125.9	
LOAD CATAGORIES			Connected			Demand				Ver. 1.02	
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	43.8	48.7	0.85	37.3	41.4	0.90			
Total Demand Loads						37.3	41.4				
Spare Capacity			20%			7.5	8.3				
Total Design Loads						44.7	49.7	0.90	Amps=	138.0	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R3B	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R3B			9627	w	0.90	9627	10697		
2	A				0	w	1.00	0	0		
3	B	PNL R3B			9627	w	0.90	9627	10697		
4	B				0	w	1.00	0	0		
5	C	PNL R3B			7809	w	0.90	7809	8677		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								27.1	30.1	Amps= 83.5	
PHASE LOADING								kW	kVA	%	Amps
PHASE TOTAL			A				9.6	10.7	36%	89.1	
PHASE TOTAL			B				9.6	10.7	36%	89.1	
PHASE TOTAL			C				7.8	8.7	29%	72.3	
LOAD CATAGORIES			Connected			Demand				Ver. 1.02	
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	27.1	30.1	0.85	23.0	25.6	0.90			
Total Demand Loads						23.0	25.6				
Spare Capacity			20%			4.6	5.1				
Total Design Loads						27.6	30.7	0.90	Amps=	85.2	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					R3C	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					120	Phase:			3		
Nominal Phase to Phase Voltage----->					208	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL R3C			16620	w	0.90	16620	18467		
2	A				0	w	1.00	0	0		
3	B	PNL R3C			16120	w	0.90	16120	17911		
4	B				0	w	1.00	0	0		
5	C	PNL R3C			15860	w	0.90	15860	17622		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								48.6	54.0	Amps= 150.0	
PHASE LOADING											
PHASE TOTAL					A			kW	kVA	%	Amps
PHASE TOTAL					B			16.6	18.5	34%	153.9
PHASE TOTAL					C			16.1	17.9	33%	149.3
PHASE TOTAL								15.9	17.6	33%	146.9
LOAD CATAGORIES			Connected		Demand			Ver. 1.02			
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	48.6	54.0	0.80	38.9	43.2	0.90			
Total Demand Loads						38.9	43.2				
Spare Capacity			20%			7.8	8.6				
Total Design Loads						46.7	51.8	0.90	Amps=	144.0	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					L1	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					277	Phase:			3		
Nominal Phase to Phase Voltage----->					480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL L1			5670	w	0.85	5670	6671		
2	A				0	w	1.00	0	0		
3	B	PNL L1			5708	w	0.85	5708	6715		
4	B				0	w	1.00	0	0		
5	C	PNL L1			5548	w	0.85	5548	6527		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								16.9	19.9	Amps= 24.0	
PHASE LOADING											
PHASE TOTAL					A			kW	kVA	%	Amps
PHASE TOTAL					B			5.7	6.7	33%	24.1
PHASE TOTAL					C			5.7	6.7	34%	24.2
PHASE TOTAL								5.5	6.5	33%	23.6
LOAD CATAGORIES			Connected		Demand			Ver. 1.02			
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	16.9	19.9	0.90	15.2	17.9	0.85			
Total Demand Loads						15.2	17.9				
Spare Capacity			20%			3.0	3.6				
Total Design Loads						18.3	21.5	0.85	Amps=	25.9	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					D1A	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					277	Phase:			3		
Nominal Phase to Phase Voltage----->					480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL D1A			2921	w	0.80	2921	3651		
2	A				0	w	1.00	0	0		
3	B	PNL D1A			2835	w	0.80	2835	3544		
4	B				0	w	1.00	0	0		
5	C	PNL D1A			2800	w	0.80	2800	3500		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								8.6	10.7	Amps= 12.9	
PHASE LOADING											
PHASE TOTAL					A			kW	kVA	%	Amps
PHASE TOTAL					B			2.9	3.7	34%	13.2
PHASE TOTAL					C			2.8	3.5	33%	12.8
PHASE TOTAL								2.8	3.5	33%	12.6
LOAD CATAGORIES			Connected		Demand			Ver. 1.02			
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	8.6	10.7	0.95	8.1	10.2	0.80			
Total Demand Loads						8.1	10.2				
Spare Capacity			20%			1.6	2.0				
Total Design Loads						9.8	12.2	0.80	Amps=	14.7	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->				L2A	Panel Location:			FIRST FLOOR ELEC ROOM			
Nominal Phase to Neutral Voltage----->				277	Phase:			3			
Nominal Phase to Phase Voltage----->				480	Wires:			4			
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL L2A			5900	w	0.80	5900	7375		
2	A				0	w	1.00	0	0		
3	B	PNL L2A			3182	w	0.80	3182	3978		
4	B				0	w	1.00	0	0		
5	C	PNL L2A			2400	w	0.80	2400	3000		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								11.5	14.4	Amps= 17.3	
PHASE LOADING								kW	kVA	%	Amps
PHASE TOTAL			A				5.9	7.4	51%	26.6	
PHASE TOTAL			B				3.2	4.0	28%	14.4	
PHASE TOTAL			C				2.4	3.0	21%	10.8	
LOAD CATEGORIES			Connected			Demand				Ver. 1.02	
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	11.5	14.4	0.95	10.9	13.6	0.80			
Total Demand Loads						10.9	13.6				
Spare Capacity			20%			2.2	2.7				
Total Design Loads						13.1	16.4	0.80	Amps=	19.7	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					L2B	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					277	Phase:			3		
Nominal Phase to Phase Voltage----->					480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL L2B			4800	w	0.80	4800	6000		
2	A				0	w	1.00	0	0		
3	B	PNL L2B			2400	w	0.80	2400	3000		
4	B				0	w	1.00	0	0		
5	C	PNL L2B			3900	w	0.80	3900	4875		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								11.1	13.9	Amps= 16.7	
PHASE LOADING											
PHASE TOTAL					A			kW	kVA	%	Amps
PHASE TOTAL					B			4.8	6.0	43%	21.7
PHASE TOTAL					C			2.4	3.0	22%	10.8
PHASE TOTAL								3.9	4.9	35%	17.6
LOAD CATEGORIES			Connected		Demand			Ver. 1.02			
			kW	kVA	DF	kW	kVA	PF			
1		receptacles	0.0	0.0		0.0	0.0				
2		computers	0.0	0.0		0.0	0.0				
3		fluorescent lighting	0.0	0.0		0.0	0.0				
4		HID lighting	0.0	0.0		0.0	0.0				
5		incandescent lighting	0.0	0.0		0.0	0.0				
6		HVAC fans	0.0	0.0		0.0	0.0				
7		heating	0.0	0.0		0.0	0.0				
8		kitchen equipment	0.0	0.0		0.0	0.0				
9		unassigned	11.1	13.9	0.95	10.5	13.2	0.80			
Total Demand Loads						10.5	13.2				
Spare Capacity			20%			2.1	2.6				
Total Design Loads						12.7	15.8	0.80	Amps=	19.0	

PANELBOARD SIZING WORKSHEET											
Panel Tag----->					L3	Panel Location:			FIRST FLOOR ELEC ROOM		
Nominal Phase to Neutral Voltage----->					277	Phase:			3		
Nominal Phase to Phase Voltage----->					480	Wires:			4		
Pos	Ph.	Load Type	Cat.	Location	Load	Units	I. PF	Watts	VA	Remarks	
1	A	PNL L3			5900	w	0.80	5900	7375		
2	A				0	w	1.00	0	0		
3	B	PNL L3			4650	w	0.80	4650	5813		
4	B				0	w	1.00	0	0		
5	C	PNL L3			5400	w	0.80	5400	6750		
6	C				0	w	1.00	0	0		
7	A				0	w	1.00	0	0		
8	A				0	w	1.00	0	0		
9	B				0	w	1.00	0	0		
10	B				0	w	1.00	0	0		
11	C				0	w	1.00	0	0		
12	C				0	w	1.00	0	0		
13	A				0	w	1.00	0	0		
14	A				0	w	1.00	0	0		
15	B				0	w	1.00	0	0		
16	B				0	w	1.00	0	0		
17	C				0	w	1.00	0	0		
18	C				0	w	1.00	0	0		
19	A				0	w	1.00	0	0		
20	A				0	w	1.00	0	0		
21	B				0	w	1.00	0	0		
22	B				0	w	1.00	0	0		
23	C				0	w	1.00	0	0		
24	C				0	w	1.00	0	0		
25	A				0	w	1.00	0	0		
26	A				0	w	1.00	0	0		
27	B				0	w	1.00	0	0		
28	B				0	w	1.00	0	0		
29	C				0	w	1.00	0	0		
30	C				0	w	1.00	0	0		
31	A				0	w	1.00	0	0		
32	A				0	w	1.00	0	0		
33	B				0	w	1.00	0	0		
34	B				0	w	1.00	0	0		
35	C				0	w	1.00	0	0		
36	C				0	w	1.00	0	0		
37	A				0	w	1.00	0	0		
38	A				0	w	1.00	0	0		
39	B				0	w	1.00	0	0		
40	B				0	w	1.00	0	0		
41	C				0	w	1.00	0	0		
42	C				0	w	1.00	0	0		
PANEL TOTAL								16.0	19.9	Amps= 24.0	
PHASE LOADING											
PHASE TOTAL			A					kW	kVA	%	Amps
PHASE TOTAL			B					5.9	7.4	37%	26.6
PHASE TOTAL			C					4.7	5.8	29%	21.0
PHASE TOTAL								5.4	6.8	34%	24.4
LOAD CATEGORIES				Connected		Demand				Ver. 1.02	
				kW	kVA	DF	kW	kVA	PF		
1		receptacles		0.0	0.0		0.0	0.0			
2		computers		0.0	0.0		0.0	0.0			
3		fluorescent lighting		0.0	0.0		0.0	0.0			
4		HID lighting		0.0	0.0		0.0	0.0			
5		incandescent lighting		0.0	0.0		0.0	0.0			
6		HVAC fans		0.0	0.0		0.0	0.0			
7		heating		0.0	0.0		0.0	0.0			
8		kitchen equipment		0.0	0.0		0.0	0.0			
9		unassigned		16.0	19.9	0.95	15.2	18.9	0.80		
Total Demand Loads							15.2	18.9			
Spare Capacity				20%			3.0	3.8			
Total Design Loads							18.2	22.7	0.80	Amps= 27.4	