

# Appendix 2:

Panelboard Worksheets

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->		ELP-G1	Panel Location:		Elec G10							
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	Lower level Itg	3	lower level	3000	w	1.00	3000	3000			
2	A	stairs Itg	3	lg,gp,g10	500	w	1.00	500	500			
3	B	EDMP-G1	3	DIM	1455	w	1.00	1455	1455			
4	B	EDMP-MP	3	DIM	417	w	1.00	417	417			
5	C	EDMP-G1	3	DIM	1455	w	1.00	1455	1455			
6	C	EDMP-MP	3	DIM	417	w	1.00	417	417			
7	A	EDMP-G1	3	DIM	1455	w	1.00	1455	1455			
8	A	EDMP-MP	3	DIM	417	w	1.00	417	417			
9	B	EDMP-LOBBY	3	DIM	284	w	1.00	284	284			
10	B	XFRMR AUD2	8	EDMP AUD	100	w	1.00	100	100			
11	C	EDMP-LOBBY	3	DIM	284	w	1.00	284	284			
12	C	XFRMR AUD2	8	EDMP AUD	100	w	1.00	100	100			
13	A	EDMP-LOBBY	3	DIM	284	w	1.00	284	284			
14	A	XFRMR AUD2	8	EDMP AUD	100	w	1.00	100	100			
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			
<b>PANEL TOTAL</b>								10.3	10.3	Amps=	12.4	
<b>PHASE LOADING</b>									kW	kVA	%	Amps
<b>PHASE TOTAL</b>		A						5.8	5.8	56%	20.8	
<b>PHASE TOTAL</b>		B						2.3	2.3	22%	8.1	
<b>PHASE TOTAL</b>		C						2.3	2.3	22%	8.1	
<b>LOAD CATAGORIES</b>			<b>Connected</b>			<b>Demand</b>					Ver. 1.01	
			kW	kVA	DF	kW	kVA	PF				
1		receptacles	0.0	0.0	0.70	0.0	0.0					
2		computers	0.0	0.0	0.90	0.0	0.0					
3		fluorescent lighting	10.0	10.0	1.00	10.0	10.0	1.00				
4		HID lighting	0.0	0.0	1.00	0.0	0.0					
5		incandescent lighting	0.0	0.0	1.00	0.0	0.0					
6		HVAC fans	0.0	0.0	0.80	0.0	0.0					
7		heating	0.0	0.0	1.25	0.0	0.0					
8		OTHER	0.3	0.3	1.00	0.3	0.3	1.00				
<b>Total Demand Loads</b>						10.3	10.3					
<b>Spare Capacity</b>			25%			2.6	2.6					
<b>Total Design Loads</b>						12.8	12.8	1.00	Amps=	15.4		

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->		LP-G1	Panel Location:		Elec G10						
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	Lower level ltg	3	L03-10	2200	w	1.00	2200	2200		
2	A	Lower level ltg	3	L01-02	2000	w	1.00	2000	2000		
3	B	Ground fl ltg	3	G07-G12	1000	w	1.00	1000	1000		
4	B	Ground fl ltg	3	18A-D,G19-2	1100	w	1.00	1100	1100		
5	C	DMP-G1	3	DIM	8830	w	1.00	8830	8830		
6	C	DMP-MP	3	DIM	2110	w	1.00	2110	2110		
7	A	DMP-G1	3	DIM	8830	w	1.00	8830	8830		
8	A	DMP-MP	3	DIM	2110	w	1.00	2110	2110		
9	B	DMP-G1	3	DIM	8830	w	1.00	8830	8830		
10	B	DMP-MP	3	DIM	2110	w	1.00	2110	2110		
11	C	DMP-LOBBY	3	DIM	1170	w	1.00	1170	1170		
12	C	XFRMR AUD1	8	DMP AUD	4223	w	1.00	4223	4223		
13	A	DMP-LOBBY	3	DIM	1170	w	1.00	1170	1170		
14	A	XFRMR AUD1	8	DMP AUD	4223	w	1.00	4223	4223		
15	B	DMP-LOBBY	3	DIM	1170	w	1.00	1170	1170		
16	B	XFRMR AUD1	8	DMP AUD	4223	w	1.00	4223	4223		
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		
<b>PANEL TOTAL</b>								55.3	55.3	Amps=	66.5
<b>PHASE LOADING</b>											
PHASE TOTAL		A						kW	kVA	%	Amps
PHASE TOTAL		B						20.5	20.5	37%	74.1
PHASE TOTAL		C						18.4	18.4	33%	66.5
PHASE TOTAL								16.3	16.3	30%	59.0
<b>LOAD CATAGORIES</b>			<b>Connected</b>			<b>Demand</b>					
			kW	kVA	DF	kW	kVA	PF			
1	receptacles		0.0	0.0	0.70	0.0	0.0				
2	computers		0.0	0.0	0.90	0.0	0.0				
3	fluorescent lighting		42.6	42.6	1.00	42.6	42.6	1.00			
4	HID lighting		0.0	0.0	1.00	0.0	0.0				
5	incandescent lighting		0.0	0.0	1.00	0.0	0.0				
6	HVAC fans		0.0	0.0	0.80	0.0	0.0				
7	heating		0.0	0.0	1.25	0.0	0.0				
8	OTHER		12.7	12.7	1.00	12.7	12.7	1.00			
Total Demand Loads						55.3	55.3				
Spare Capacity			25%			13.8	13.8				
Total Design Loads						69.1	69.1	1.00	Amps=	83.2	

Ver. 1.01

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->					LP-L1	Panel Location:			ELEC 123		
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	Cubicle lighting	3	Open office	3060	w	1.00	3060	3060		
2	A	Perimeter lighting	3	Open office	1180	w	1.00	1180	1180		
3	B	Office lighting	3	rm106-119	2010	w	1.00	2010	2010		
4	B	Office Lighting	3	rm 118	700	w	1.00	700	700		
5	C	automated shades	6	Open office	980	w	0.90	980	1089		
6	C				0	w		0	0		
7	A				0	w		0	0		
8	A				0	w		0	0		
9	B				0	w		0	0		
10	B				0	w		0	0		
11	C				0	w		0	0		
12	C				0	w		0	0		
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		
<b>PANEL TOTAL</b>								7.9	8.0	Amps= 9.7	
<b>PHASE LOADING</b>								kW	kVA	%	Amps
PHASE TOTAL			A				4.2	4.2	53%	15.3	
PHASE TOTAL			B				2.7	2.7	34%	9.8	
PHASE TOTAL			C				1.0	1.1	14%	3.9	
<b>LOAD CATAGORIES</b>			Connected			Demand			Ver. 1.01		
					kW	kVA	DF	kW	kVA	PF	
1		receptacles			0.0	0.0	0.70	0.0	0.0		
2		computers			0.0	0.0	0.90	0.0	0.0		
3		fluorescent lighting			7.0	7.0	1.00	7.0	7.0	1.00	
4		HID lighting			0.0	0.0	1.00	0.0	0.0		
5		incandescent lighting			0.0	0.0	1.00	0.0	0.0		
6		HVAC fans/motor			1.0	1.1	0.80	0.8	0.9	0.90	
7		heating			0.0	0.0	1.25	0.0	0.0		
8		kitchen equipment			0.0	0.0	0.80	0.0	0.0		
Total Demand Loads								7.7	7.8		
Spare Capacity					25%			1.9	2.0		
Total Design Loads								9.7	9.8	0.99 Amps= 11.8	

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->		ELP-L1		Panel Location:		ELEC 123					
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	office lighting	3	open office	540	w	1.00	540	540		
2	A	stair lighting	3	st L1	350	w	1.00	350	350		
3	B					w	1.00	0	0		
4	B					w	1.00	0	0		
5	C				0	w		0	0		
6	C				0	w		0	0		
7	A				0	w		0	0		
8	A				0	w		0	0		
9	B				0	w		0	0		
10	B				0	w		0	0		
11	C				0	w		0	0		
12	C				0	w		0	0		
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		
<b>PANEL TOTAL</b>								0.9	0.9	Amps=	1.1
<b>PHASE LOADING</b>											
<b>PHASE TOTAL</b>		A						kW	kVA	%	Amps
PHASE TOTAL		B						0.9	0.9	100%	3.2
PHASE TOTAL		C						0.0	0.0		0.0
<b>LOAD CATAGORIES</b>		<b>Connected</b>			<b>Demand</b>						Ver. 1.01
					kW	kVA	DF	kW	kVA	PF	
1		receptacles			0.0	0.0	0.70	0.0	0.0		
2		computers			0.0	0.0	0.90	0.0	0.0		
3		fluorescent lighting			0.9	0.9	1.00	0.9	0.9	1.00	
4		HID lighting			0.0	0.0	1.00	0.0	0.0		
5		incandescent lighting			0.0	0.0	1.00	0.0	0.0		
6		HVAC fans			0.0	0.0	0.80	0.0	0.0		
7		heating			0.0	0.0	1.25	0.0	0.0		
8		kitchen equipment			0.0	0.0	0.80	0.0	0.0		
<b>Total Demand Loads</b>								0.9	0.9		
<b>Spare Capacity</b>			25%					0.2	0.2		
<b>Total Design Loads</b>								1.1	1.1	1.00	Amps= 1.3

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->		LP-L2	Panel Location:		ELEC 219							
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	cubicle lighting	3	open office	2700	w	1.00	2700	2700			
2	A	perimeter lighting	3	open office	1430	w	1.00	1430	1430			
3	B	office lighting	3	02-19,222,22	2580	w	1.00	2580	2580			
4	B	office lighting	3	rm 225	440	w	1.00	440	440			
5	C	automated shades	6	open office	980	w	0.90	980	1089			
6	C	DMP-L2	3	DIM	734	w	1.00	734	734			
7	A				0	w		0	0			
8	A	DMP-L2	3	DIM	734	w	1.00	734	734			
9	B				0	w		0	0			
10	B	DMP-L2	3	DIM	734	w	1.00	734	734			
11	C				0	w		0	0			
12	C				0	w		0	0			
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			
<b>PANEL TOTAL</b>								10.3	10.4	Amps=	12.6	
<b>PHASE LOADING</b>									kW	kVA	%	Amps
PHASE TOTAL		A						4.9	4.9	47%	17.6	
PHASE TOTAL		B						3.8	3.8	36%	13.6	
PHASE TOTAL		C						1.7	1.8	17%	6.6	
<b>LOAD CATAGORIES</b>			<b>Connected</b>			<b>Demand</b>					Ver. 1.01	
			kW	kVA	DF	kW	kVA	PF				
1		receptacles	0.0	0.0	0.70	0.0	0.0					
2		computers	0.0	0.0	0.90	0.0	0.0					
3		fluorescent lighting	9.4	9.4	1.00	9.4	9.4	1.00				
4		HID lighting	0.0	0.0	1.00	0.0	0.0					
5		incandescent lighting	0.0	0.0	1.00	0.0	0.0					
6		HVAC fans/motor	1.0	1.1	0.80	0.8	0.9	0.90				
7		heating	0.0	0.0	1.25	0.0	0.0					
8		kitchen equipment	0.0	0.0	0.80	0.0	0.0					
Total Demand Loads						10.1	10.2					
Spare Capacity			25%			2.5	2.6					
Total Design Loads						12.7	12.8	0.99	Amps=	15.4		

## LIGHTING AND APPLIANCE PANELBOARD SIZING WORKSHEET

Panel Tag----->		ELP-L2	Panel Location:		ELEC 219						
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	Office lighting	3	open office	600	w	1.00	600	600		
2	A	stair lighting	3	st-2	350	w	1.00	350	350		
3	B	EDMP-L2	3	DIM	100	w	1.00	100	100		
4	B					w	1.00	0	0		
5	C	EDMP-L2	3	DIM	100	w	1.00	100	100		
6	C				0	w		0	0		
7	A	EDMP-L2	3	DIM	100	w	1.00	100	100		
8	A				0	w		0	0		
9	B				0	w		0	0		
10	B				0	w		0	0		
11	C				0	w		0	0		
12	C				0	w		0	0		
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		
<b>PANEL TOTAL</b>								1.3	1.3	Amps=	1.5
<b>PHASE LOADING</b>								kW	kVA	%	Amps
PHASE TOTAL		A						1.1	1.1	84%	3.8
PHASE TOTAL		B						0.1	0.1	8%	0.4
PHASE TOTAL		C						0.1	0.1	8%	0.4
<b>LOAD CATAGORIES</b>			<b>Connected</b>			<b>Demand</b>					Ver. 1.01
			kW	kVA	DF	kW	kVA	PF			
1	receptacles		0.0	0.0	0.70	0.0	0.0				
2	computers		0.0	0.0	0.90	0.0	0.0				
3	fluorescent lighting		1.3	1.3	1.00	1.3	1.3	1.00			
4	HID lighting		0.0	0.0	1.00	0.0	0.0				
5	incandescent lighting		0.0	0.0	1.00	0.0	0.0				
6	HVAC fans		0.0	0.0	0.80	0.0	0.0				
7	heating		0.0	0.0	1.25	0.0	0.0				
8	kitchen equipment		0.0	0.0	0.80	0.0	0.0				
Total Demand Loads						1.3	1.3				
Spare Capacity			25%			0.3	0.3				
Total Design Loads						1.6	1.6	1.00	Amps=	1.9	