

<b>SUBJECT:</b> Completion and Submission of the Electrical Panel Load Calculator (EPLC) Form	<b>Effective Date:</b> 5/16/16	<b>Procedure Number:</b> FS 2016 FO0007	
	<b>Supersedes:</b>	<b>Page</b> 1	<b>Of</b> 4
	<b>Responsible Authority:</b> Director, Facilities Operations		

## **APPLICABILITY/ACCOUNTABILITY**

This procedure applies to Facilities Operations (FO) Electricians, Licensed Electrical Contractors, FO Supervisors and Superintendents, and Facilities Planning and Construction (FP&C) Project Managers.

## **PROCEDURE STATEMENT**

This procedure provides direction regarding the completion of the Electrical Panel Load Calculator (EPLC) for permitting purposes.

## **DEFINITIONS**

THHN: Heat-resistant, thermoplastic wire that is allowed for use in dry-to-damp locations and is rated for a maximum temperature of 90°C (194°F)

THW: Heat- and moisture-resistant, thermoplastic wire that is allowed for use in both dry and wet locations, but has a lower maximum temperature rating of 75°C (167°F)

## **PROCEDURE**

**NOTE:** When adding a single receptacle or fixture to an existing circuit, begin the procedure at step 2. Add the receptacles to the circuit per the National Electric Code (NEC), and revise the volt amps (VA) Value in the EPLC. Perform steps 3 and 4; then submit the revised EPLC, along with pictures, for permitting.

When adding a new breaker for any piece of equipment, follow all steps below.

1. Fill in the Panel Information on the EPLC:

- a. Panel Name or #
- b. High voltage (HV)
- c. Low voltage (LV)
- d. Phase
- e. Hertz
- f. Neutral Bus Y/N
- g. Ground Bus Y/N
- h. Wire Type: either THHN or THW
- i. Fed From
- j. # of circuits in panel
- k. Min. Amps
- l. Bussing
- m. Isolated Gnd
- n. SYM RMS Amps
- o. Breaker Type
- p. Main Bkr Amps
- q. Feed Top/Bottom
- r. Mounting
- s. Cover Type
- t. Manufacturer and part number
- u. Panel Size in Amps

SAMPLE

PANEL	"A"			AUTO CALCULATIONS
HIGH VOLTAGE	208	SYM RMS AMPS	10,000	LOAD 64,380 W
LOW VOLTAGE	120	BREAKER TYPE	TH0B	"D" DIVERSITY -3,190 W
PHASE	3	MAIN BKR AMPS	NONE	25% "C" LOAD 0 W
HERTZ	60	FEED TOP/BOTTOM	TOP	TOTAL WATTS 61,190 W
NEUTRAL BUS Y/N	Y	MOUNTING	SURFACE	TOTAL KVA 61
GROUND BUS Y/N	N	COVER TYPE	DOOR IN DOOR	CONN AMPS 170
GND WIRE Y/N	Y	MANUFACTURER	GE	FACTOR AMPS 34
WIRE TYPE	THW			TOTAL AMPS 204
FED FROM	MSWBD	PANEL SIZE		DESIGN AMPS 204
# OF CIRCUITS	42	200 AMPS		# OF CONDUITS 1
MIN. AMPS	0			CONDUIT SIZE 2.1/2"
% FACTOR	20			# OF CABLES 4
BUSSING	COPPER			SIZE OF CABLE #4/0

**NOTE: As you fill in the above chart, the auto-calculations will update.**

AUTO CALCULATIONS	
LOAD	64,380 W
"D" DIVERSITY	-3,190 W
25% "C" LOAD	0 W
TOTAL WATTS	61,190 W
TOTAL KVA	61
CONN AMPS	170
FACTOR AMPS	34
TOTAL AMPS	204
DESIGN AMPS	204
# OF CONDUITS	1
CONDUIT SIZE	2.1/2"
# OF CABLES	4
SIZE OF CABLE	#4/0
SIZE OF GND	#4

Note: Inputting the number of circuits does not auto-populate the Panel Size field. The Panel Size field must be entered manually.

2. Continue to the Circuit section.

- a. In Column **B**, enter the number of the circuits from the panel schedule. This does not auto-update when a number is entered into Panel Information box J.
- b. In Column **C**, enter the breakers in the panel. 20A-3P equates to a 20 AMP 3 pole breaker. Adjust the sizes to reflect what is actually in the panel. Enter "SPACE" for an empty location without a breaker present, or if the factory knockout is still present.
- c. In Column **D**, enter the Breaker circuit description. Enter "SPACE" for an empty location without a breaker present or if the factory knockout is still present. Enter "SPARE" if a breaker is still present but not wired.

	B	C	D	F	G	H	I
CIR #	BREAKER		CIRCUIT DESCRIPTION	L1	L2	L3	
1				3,600			
3	30A-3P	FREEZER			3,600		
5						3,600	
7		SPARE					
9	20A-3P	SPARE					
11		SPARE					
13		SPARE					
15	20A-3P	SPARE					
17		SPARE					
19	20A-1P	WAFFLE		2,400			
21	SPACE	SPACE					
23	20A-1P	WAFFLE DISPLAY				2,400	
25	20A-1P	SPARE					
27	20A-1P	RECEPTACLES	0		2,340		
29	SPACE	SPACE					
31	20A-1P	SPARE					
33		SPARE					
35	20A-3P	SPARE					
37		SPARE					
39	SPACE	SPACE					
41	SPACE	SPACE					

Note: An unused breaker with wiring attached is not a spare, and its calculated VA load must be included in the panel calculation. Receptacle loads should have RECEPTACLE included in the description and ROOM # if applicable. Make sure

this is updated, as it will be the new Panel Schedule, with description.

- d. In Column **F**, enter C for continuous loads and D for receptacle loads.
  - e. In Columns **G**, **H**, and **I**, enter the phase loads in VA. Insert the correct VA for the attached equipment loads, per NEC. Use the attached NEC Article 220 for reference. Receptacle loads can either be calculated using NEC 220, where each and every receptacle is known, or fully loaded if this is unknown.
3. Attach and submit photos of all equipment nameplates to verify new VA loads for permitting.

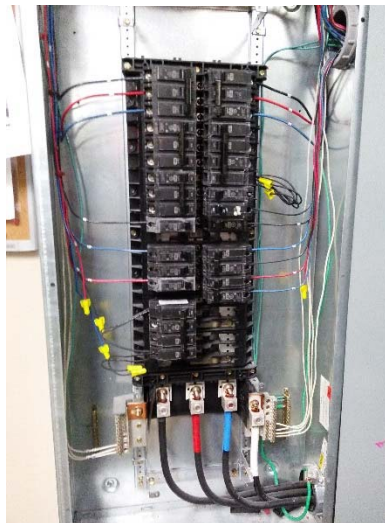
**Sample Nameplate**

1081 DESIGN	ST 1072	
THERMALLY PROTECTED	SKCET53ABN	
MOD. C48K2N117A3	SER 8K00	
VOLTS 115/230	ENCL=DP	HP 3/4
ROT = CCWPE	PH 1	CODE L
RPM 3450	FR 56J	HZ 60
MAX LOAD	AMPS 14.6/7.3	SF 1.5
INSUL CLASS B	AMB 50 °C	TIME RATING CONT.
TYPE UAC	A.O.SMITH CORP. MEXICO	

The above circuit requires a 15A-1P breaker (15 AMP single pole). VA=1679

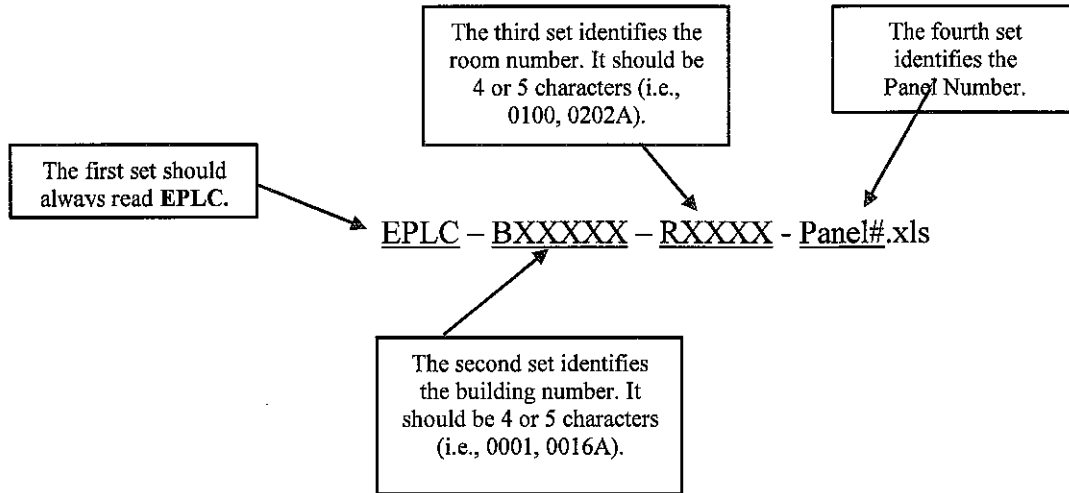
4. Attach and submit a photo of the panel with the cover off.

SAMPLE



- When all fields of the EPLC have been completed, follow the format shown below to name the document.

**Standardized EPLC File Naming**

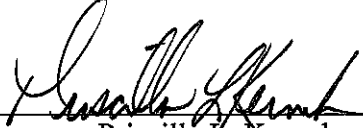
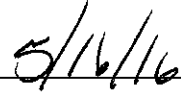


**Example:** EPLC-B0021-R0132-Panel#LB2-2.xls

- Save the spreadsheet on a USB storage device, and submit all documents and photos to the Building Code Office for permitting.

**RELATED INFORMATION AND FORMS**

- National Electric Code 2011
- National Electric Code Article 220
- Electrical Load Panel Calculator Form:  
<http://fp.ucf.edu/sites/default/files/resources/NEW%20LOAD.xls>

Approved By:	Date Approved:
 <hr/> Priscilla L. Kernek Associate Vice President Administration and Finance Facilities and Safety	 <hr/> 5/16/16