

LOAD CALCULATIONS FOR "PANEL CP"

BASED ON THE 2008 NEC

NEC 220.61(A)

	L2	L3	NEUTRAL
CALCULATED LOAD ( NEC 215.5 )	7,775 VA	8,802 VA	8,802 VA
CALCULATED LOAD WITH DEMAND FACTORS ( NEC 215.5 )			
GENERAL LOAD	2,275 VA	2,152 VA	2,152 VA
RECEPTACLE LOAD (NEC TABLE 220.44)			
1ST 10,000W	1,300 VA	1,450 VA	1,450 VA
CONTINUOUS LOAD (NEC 215.2)	3,000 VA	2,500 VA	2,500 VA
PLUS 25%	750 VA	625 VA	
0% (NEUTRAL) NEC 215.2(A) EX NO. 2			0 VA
MOTOR LOAD (NEC 430.24)	1,200 VA	1,200 VA	1,200 VA
PLUS 25% OF LARGEST MOTOR	300 VA	300 VA	300 VA
KITCHEN LOADS (NEC 220.56)			
L1 ( 0 VA X 1 ) =	0 VA		
L2 ( 1,500 VA X 1 ) =		1,500 VA	1,500 VA
TOTAL BALANCED LOAD (1-PHASE)	8,825 VA	8,825 VA	
TOTAL UNBALANCED LOAD (1-PHASE)	0 VA	902 VA	
NEUTRAL LOAD			9,102 VA
LINE AMPS BALANCED (1-PHASE)	84.9 A	84.9 A	
LINE AMPS UNBALANCED (1-PHASE)	0.0 A	7.5 A	
TOTALS	84.9 A	92.4 A	75.9 A
ADJUSTMENT FACTOR	0.0 A	0.0 A	0.0 A
TOTAL DESIGN LOAD	84.9 A	92.4 A	75.9 A

VOLTAGE DROP CALCULATIONS

Single Phase  $( 2 \times 50' L \times 0.2450 R \times 92.4 A \div 1,000 ) = 2.3 \text{ VD}$   
 Voltage Drop %  $( 2.3 \text{ VD} \div 208 \text{ V} \times 100 ) = 1.1 \% \text{ VD}$

FAULT CURRENT CALCULATIONS

Available Fault Current at Starting Point  $(( 24,156 \text{ AFC} \times 1.00 \text{ UA} ) + 68 \text{ MC} ) = 24,224 \text{ AFC}$   
 Conductor Factor CF - Formula  $( 2 \times 50 \text{ L} \times 24,224 \text{ AFC} ) \div ( 4,774 \text{ C} \times 1 \text{ N} \times 208 \text{ V} ) = 2.439 \text{ CF}$   
 Conductor Multiplier CM - Formula  $( 1 ) \div ( 1 + 2.439 \text{ CF} ) = 0.291 \text{ CM}$   
 Conductor Let-Through Current CLC - Formula  $( 24,224 \text{ AFC} \times 0.291 \text{ CM} ) = 7,049 \text{ CLC}$

- A - Amps
- AFC - Available Fault Current
- C - Conductor Constant
- CF - Conductor Factor
- CLC - Conductor Let-Through Current
- CM - Conductor Multiplier
- L - Length of Conductor
- MC - Motor Contribution
- N - Number of Conductors Per Phase
- R - Resistance
- UA - Utility Adjustment 1.1
- V - Voltage
- VA - Volt Amps
- VD - Voltage Drop