

LOAD CALCULATIONS FOR "PANEL HP1"
BASED ON THE 2008 NEC

BASED ON THE 2008 NEC

	L1	L2	L3
CALCULATED LOAD (NEC 215.5)	8,800 VA	7,700 VA	1,100 VA
CALCULATED LOAD WITH DEMAND FACTORS (NEC 215.5)			
GENERAL LOAD	8,800 VA	7,700 VA	1,100 VA
RECEPTACLE LOAD (NEC 220.14)			
1ST 10,000W	0 VA	0 VA	0 VA
CONTINUOUS LOAD (NEC 215.2)	0 VA	0 VA	0 VA
PLUS 25%	0 VA	0 VA	0 VA
MOTOR LOAD (NEC 430.24)	0 VA	0 VA	0 VA
PLUS 25% OF LARGEST MOTOR	0 VA	0 VA	0 VA
KITCHEN LOAD (NEC 220.56)			
L1 (0 X 1) =	0 VA		
L2 (0 X 1) =		0 VA	
L3 (0 X 1) =			0 VA
TOTAL BALANCED LOAD (3-PHASE)	1,100 VA	1,100 VA	1,100 VA
TOTAL BALANCED LOAD (1-PHASE)	6,600 VA	6,600 VA	0 VA
TOTAL UNBALANCED LOAD (1-PHASE)	1,100 VA	0 VA	0 VA
LINE AMPS BALANCED (3-PHASE)	7.9 A	7.9 A	7.9 A
LINE AMPS BALANCED (1-PHASE)	55.0 A	55.0 A	0.0 A
LINE AMPS UNBALANCED (1-PHASE)	9.2 A	0.0 A	0.0 A
TOTALS	72.1 A	62.9 A	7.9 A
ADJUSTMENT FACTOR	0.0 A	0.0 A	0.0 A
TOTAL DESIGN LOAD	72.1 A	62.9 A	7.9 A

VOLTAGE DROP CALCULATIONS

Three Phase $(2 \times 10' L \times 0.5080 R \times 72.1 A \div 1,000 \times 0.866) = 0.6 \text{ VD}$
Voltage Drop % $(0.6 \text{ VD} \div 240 \text{ V} \times 100) = 0.3 \% \text{ VD}$

HARMONIC CURRENT CALCULATION (NEC 310.15 B (4) C)

(Harmonic Load 0 VA \div Connected Load 17,600 VA) \times 100 = 0 %
Harmonic Load Does Not Exceed 50%

FAULT CURRENT CALCULATIONS

Available Fault Current at Starting Point $((28,875 \text{ AFC} \times 1.00 \text{ UA}) + 0 \text{ MC}) = 28,875 \text{ AFC}$
Conductor Factor CF - Formula $(1.732 \times 10 L \times 28,875 \text{ AFC}) \div (2,346 C \times 1 N \times 240 \text{ V}) = 0.888 \text{ CF}$
Conductor Multiplier CM - Formula $(1) \div (1 + 0.888 \text{ CF}) = 0.530 \text{ CM}$
Conductor Let-Through Current CLC - Formula $(28,875 \text{ AFC} \times 0.530 \text{ CM}) = 15,304 \text{ CLC}$

- 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