

LOAD CALCULATIONS FOR "PANEL P1"
BASED ON THE 2026 NEC

NEC 220.61(A)

	L1	L2	L3	NEUTRAL
CALCULATED LOAD (NEC 215.5)	6,980 VA	5,680 VA	4,140 VA	6,980 VA
CALCULATED LOAD WITH DEMAND FACTORS (NEC 215.5)				
GENERAL LOAD	0 VA	0 VA	0 VA	0 VA
RECEPTACLE LOAD (NEC TABLE 220.44)				
1ST 10,000W	2,880 VA	2,880 VA	1,440 VA	2,880 VA
CONTINUOUS LOAD (NEC 215.2)	2,800 VA	2,800 VA	1,400 VA	2,800 VA
PLUS 25%	700 VA	700 VA	350 VA	
0% (NEUTRAL) NEC 215.2(A) EX NO. 2				0 VA
MOTOR LOAD (NEC 430.24)	1,300 VA	0 VA	1,300 VA	1,300 VA
PLUS 25% OF LARGEST MOTOR	325 VA	0 VA	325 VA	325 VA
KITCHEN LOADS (NEC 220.56)				
L1 (0 X 1) =	0 VA			0 VA
L2 (0 X 1) =		0 VA		
L3 (0 X 1) =			0 VA	
TOTAL BALANCED LOAD (3-PHASE)	4,815 VA	4,815 VA	4,815 VA	
TOTAL BALANCED LOAD (1-PHASE)	1,565 VA	1,565 VA	0 VA	
TOTAL UNBALANCED LOAD (1-PHASE)	1,625 VA	0 VA	0 VA	
NEUTRAL LOAD				7,305 VA
LINE AMPS BALANCED (3-PHASE)	40.1 A	40.1 A	40.1 A	
LINE AMPS BALANCED (1-PHASE)	15.0 A	15.0 A	0.0 A	
LINE AMPS UNBALANCED (1-PHASE)	13.5 A	0.0 A	0.0 A	
TOTALS	68.6 A	55.1 A	40.1 A	60.9 A
ADJUSTMENT FACTOR	0.0 A	0.0 A	0.0 A	0.0 A
TOTAL DESIGN LOAD	68.6 A	55.1 A	40.1 A	60.9 A

VOLTAGE DROP CALCULATIONS

Three Phase $(2 \times 25' L \times 0.2450 R \times 68.6 A + 1,000 \times 0.866) = 0.7 \text{ VD}$
Voltage Drop % $(0.7 \text{ VD} \div 208 \text{ V} \times 100) = 0.3 \% \text{ VD}$

HARMONIC CURRENT CALCULATION (NEC 310.15 (B) 4 (C) & NEC TABLE 310.15 B (2) A)

(Harmonic Load 0 VA ÷ Connected Load 16,800 VA) X 100 = 0 %
Harmonic Load Does Not Exceed 50%

FAULT CURRENT CALCULATIONS

Available Fault Current at Starting Point $((35,000 \text{ AFC} \times 1.10 \text{ UA}) + 44 \text{ MC}) = 38,544 \text{ AFC}$
Conductor Factor CF - Formula $(1.732 \times 25 \text{ L} \times 38,544 \text{ AFC}) \div (4,774 \text{ C} \times 1 \text{ N} \times 208 \text{ V}) = 1.681 \text{ CF}$
Conductor Multiplier CM - Formula $(1) \div (1 + 1.681 \text{ CF}) = 0.373 \text{ CM}$
Conductor Let-Through Current CLC - Formula $(38,544 \text{ AFC} \times 0.373 \text{ CM}) = 14,377 \text{ CLC}$

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