TOWN OF TRUCKEE
BUILDING & SAFETY
DIVISION

TOWN OF
TRUCKEE
EST 1863 · INC 1993

2025 California Building Standards Code of Regulations Title 24

RESIDENTIAL ELECTRICAL LOAD
WORKSHEET

Contractor Name_____Project Address_____
Contractor License #_____

Method for determining the electrical load and sizing of the electrical service:
CEC Section: 220.82 "Optional Feeder and Service Load Calculations"

General light, power _____SF x 3 volt-amperes   = _____ volt-amperes
Kitchen appliance circuits (minimum 2 @ 1,500 volt-amperes)   = _____ volt-amperes
Laundry circuits (minimum 1 @ 1,500 volt-amperes)   = _____ volt-amperes
Electric range (NP rating)   = _____ volt-amperes
Wall mounted oven (NP rating)   = _____ volt-amperes
Water heater (NP rating)   = _____ volt-amperes
Dishwasher (NP rating)   = _____ volt-amperes
Disposal (NP rating)   = _____ volt-amperes
Dryer (NP rating)   = _____volt-amperes
Other (examples: Permanently connected motors, appliances
fastened in place, electric vehicle charger)   = _____volt-amperes

                          Sub Total A (Add all loads listed above) = _____volt-amperes
The first 10,000 volt-amperes is calculated at 100%   = 10,000 volt-amperes
The remaining volt-amperes are calculated at 40%   =_____volt-amperes

Total A: Sub Total A_____-10,000=_____x.40=_____+10,000= _____volt-amperes

Heating and Air-Conditioning (The Largest of the following shall be included):

1. Air conditioning and cooling (100% NP rating)   = _____volt-amperes
2. Heat pump without supplemental heating (100% NP rating)   = _____volt-amperes
3. Heat pump with supplemental electric heating (100% NP rating plus 65%)   = _____volt-amperes
4. Electrical space heating < 4 separate units (65% NP rating) = _____volt-amperes Electrical
5. space heating ≥ 4 separate units (40% NP rating) = _____volt-amperes Electrical thermal
6. storage and other (100% NP rating) = _____volt-amperes **Total B**: Largest Heating and Air
   Conditioning Load (From Above) = _____volt-amperes

Calculate Total Service Load:
Total A_____+**Total B**_____÷ 240 volts = _____(amps size for service entrance conductors and panel)

Sample Residential Electrical Load Calculation – Step by Step Example (Optional Method) CEC 220.82

2800 sq. ft. home 12 kW range
3 kW water heater
5 kW clothes dryer
1.5 kW dishwasher
6.96 kW air conditioning

Step 1:

Multiply the sq. ft. area by 3 VA per Sq. ft.
2800 sq. ft. X 3 VA = 8,400 VA (VA = volt-amperes)

Step 2:

Add 1500 VA for each 2-wire, 20-amp small appliance branch circuit and each laundry circuit. 1,500
VA X 3 = 4,500 VA

Step 3:

Add in the appliance loads at nameplate value.

Range	12,000 VA
Water heater	3,000 VA
Clothes dryer	5,000 VA
Dishwasher	1,500 VA
EV Charger:	7,000 VA

Step 4:

Calculate general loads by adding steps 1, 2, and 3:
8,400   VA (Lighting)
4,500   VA (Small appliance/laundry circuits)
12,000 VA (Range)
3,000   VA (Water Heater)
5,000   VA (Dryer)
1,500   VA (Dishwasher)
7,000   VA (EV Charger)
Total= 41,400 VA

Step 5:

Take the first 10 kW at 100%. 10,000 VA
Take the remainder (31,400 VA) at 40%: 31,400 VA X .40 = 12,560 VA

Step 6:

Add the two values from step 5 together to find the general load.
10,000 VA + 12,560VA = 22,560 VA

Step 7:

Identify the single largest load identified from Heating and Air-Conditioning Load.
A/C load = 6.96 kW (From page 1, Total B

Step 8:

Add the general load to the largest of the AC or heating load.
General Load: 22,560 VA (Step 6)
A/C Load: 6,960 VA (Step 7)
Total Service Load= (22,560 + 6,960 = 29,520

Step 9:

Divide the load in VA by the voltage. **29,520 / 240= 123A**

*Nameplate ratings provided in watts can be converted to volt-amperes at a rate of 1:1. (Assumed power factor of 1) Example: A nameplate rating of 1 kW= 1,000