

SINGLE-FAMILY DWELLING SERVICE-ENTRANCE CALCULATIONS

JOB _____

Note: See back of page for line item instructions.

1. General Lighting Load _____ ft² @ 3 VA per ft² = _____ VA

2. Minimum Number of 15-Ampere Lighting Branch Circuits.

$$\frac{\text{Line 1}}{120} = \frac{\quad}{120} = \text{amperes, then } \frac{\text{amperes}}{15} = \frac{\quad}{15} = 15 \text{ ampere lighting branch circuits}$$

3. Small-Appliance Load _____ branch circuits @ 1,500 VA each = _____ VA

4. Laundry Branch Circuit _____ branch circuit(s) @ 1,500 VA each = _____ VA

5. Total General Lighting, Small-Appliance, and Laundry Load.
Lines 1 + 3 + 4 = _____ VA

6. General Lighting, Small-Appliance, Laundry.

a. First 3000 VA @ 100% = _____ VA

b. Line 5 _____ - 3000 = _____ @ 35% = _____ VA

Total a + b = _____ VA

7. Electric Range, Ovens, Counter-Mounted Cooking Units = _____ VA

8. Electric Clothes Dryer = _____ VA

9. Electric Furnace, Air Conditioner, Heat Pump (Enter largest) = _____ VA

10. Add Lines 6 + 7 + 8 + 9 = _____ VA

11. List "Fastened-in-Place" Appliances *in addition* to Electric Ranges, Electric Clothes Dryers, Electric Space Heating, and Air-Conditioning Equipment.

Appliance	VA Load
Water heater:	= _____ VA
Dishwasher:	= _____ VA
Garage door opener:	= _____ VA
Food waste disposer:	= _____ VA
Water pump:	= _____ VA
Gas-fired furnace:	= _____ VA
Sump pump:	= _____ VA
Other: _____	= _____ VA
_____	= _____ VA
_____	= _____ VA
Total	= _____ VA

12. Apply 75% Demand Factor (220.53) if Four or More "Fastened-in-Place" Appliances. If Less Than Four, Figure @ 100%.

$$\text{Line 11 Total: } \quad \times 0.75 = \quad \text{VA}$$

13. Total Calculated Load (Lighting, Small-Appliance, Ranges, Dryer, HVAC, "Fastened-in-Place" Appliances).

$$\text{Line 10 } \quad + \text{ Line 12 } \quad = \quad \text{VA}$$

14. Add 25% of Largest Motor (220.50 and 430.24).

$$\quad \times 0.25 = \quad \text{VA}$$

15. Grand Total Line 13 + Line 14. _____ = _____ VA

16. Minimum Ampacity for Ungrounded Service-Entrance Conductors.

$$\text{Amperes} = \frac{\text{Line 15}}{240} = \frac{\text{_____}}{120} = \text{_____ amperes}$$

17. Ungrounded Conductor Size (copper). _____ AWG

18. Minimum Ampacity for Neutral Service-Entrance Conductor

a. Line 6 total: _____ = _____ VA

b. Line 7: _____ @ 0.70 _____ = _____ VA

c. Line 8: _____ @ 0.70 _____ = _____ VA

d. Line 11: (Include only 120-volt loads.)

_____ VA _____ VA

_____ VA _____ VA

Total VA _____ VA

e. Line d total @ 75% demand factor if four or more per 220.53; otherwise use 100%.

_____ $\times$ 0.75 = _____ VA

f. Add 25% of largest 120-volt motor. _____ $\times$ 0.25 = _____ VA

g. Total a + b + c + e + f Total = _____ VA

19. Neutral Conductor Size (copper) _____ AWG

20. Grounding Electrode Conductor Size (copper) _____ AWG

21. Raceway Size. _____ Trade Size (inch)