HVAC LOAD CALCULATION

Simplified Manual J - Residential Heating & Cooling Load

PROPERTY INFORMATION:

Address: 6714 Grand Boulevard, New Port Richey, FL
Square Footage: 1,800 sq ft
Year Built: 1985
Ceiling Height: 8 ft

' LOAD CALCULATION RESULTS:

Calculated Load: 50,736 BTU/hr
Recommended Tonnage: 4.2 tons
Acceptable Range: 3.8 - 4.9 tons

Equipment Match: 3.5 tons - UNDERSIZED

CALCULATION BREAKDOWN:

Walls (conduction): 2,206 BTU/hr
Windows (conduction + solar): 25,474 BTU/hr
Ceiling/Roof: 2,232 BTU/hr
Doors: 450 BTU/hr
Infiltration (air leakage): 2,851 BTU/hr
Internal Gains (people, appliances, lights): 5,750 BTU/hr
Duct Gain (unconditioned space): 5,454 BTU/hr

+ Latent (humidity) gains:
  Infiltration: 519 BTU/hr
  Occupants: 1,000 BTU/hr
  Appliances: 1,200 BTU/hr

& þ IMPORTANT NOTES:

- Equipment may be undersized (3.5 ton). Unit may struggle during peak heat days.
- High air leakage detected. Air sealing improvements could reduce load by 15-20%.

Ø=Ü¡ RECOMMENDATIONS:

- Attic insulation to R-38 could reduce cooling load by 875 BTU/hr.
- Low-E window upgrades could reduce cooling load by 10-15% and improve comfort.
- Air sealing (weatherstripping, caulking) typical ROI: 1-2 years in Florida.
- Proper duct sealing and insulation saves 20-30% on energy bills.
- Programmable thermostat can reduce runtime by 10-15% with no comfort loss.

Methodology:
ACCA Manual J 8th Edition - Residential Load Calculation
Confidence Level: HIGH