* + 1. **Test Description**

Home Energy Ratings for the following cases, located in Colorado Springs, CO, shall be computed, reporting the values listed above.

* + - 1. Case L100A-01: Using the HERS BESTEST L100 case, create a 3-bedroom Rated Home containing the following equipment:
    1. Heating system – electric HP with HSPF = 6.8
    2. Cooling system – electric A/C with SEER = 10.0
    3. Hot Water – 40 gal electric with EF = 0.88
    4. All the equipment are to be located inside the conditioned space and heating and air conditioning ductwork are to be located in the conditioned space and have zero (0) air leakage.
    5. All appliances are standard electric
       1. Case L100A-02: Identical to Case L100A-01 except for the following:

1. Hot water heater is changed to a tankless natural gas with   
   EF = 0.82
2. Range/oven and clothes dryer are changed to standard natural gas.
   * + 1. Case L100A-03: Identical to Case L100A-01 except for the following:
3. Space heating system is changed to a natural gas furnace with AFUE = 78%
4. Number of bedrooms is changed from 3 to 2
5. Range/oven and clothes dryer are changed to standard natural gas.
   * + 1. Case L100A-04: Identical to Case L100A-01 except for the following:
6. Space heating system is changed to a high efficiency HP with HSPF = 9.85
7. Number of bedrooms is changed from 3 to 4.
   * + 1. Case L100A-05: Identical to Case L100A-01 except for the following:
8. Space heating system is changed to a natural gas furnace with AFUE = 96%
9. Range/oven and clothes dryer are changed to standard natural gas.

***Add the following new cases:***

Case L100A-06: Identical to Case L100A-01 except remove all windows, keeping natural ventilation the same as it would be with 270 ft2 windows

Case L100A-07: Identical to Case L100A-01 except add an air distribution system as follows:

1. 385 ft2 supply ducts in ambient temperature environment with no solar radiation
2. 77 ft2 return ducts in ambient temperature environment with no solar radiation
3. 123 cfm duct leakage with 50% in supply and 50% in return

Case L100A-08: Identical to Case L100A-07 except as follows:

1. Move all ducts to the attic
2. Set duct leakage to 0.0 cfm

Case L100A-09: Identical to Case L100A-01 except add an attic radiant barrier system (RBS)

Case L100A-10: identical to case L100A-08 except add an attic radiant barrier system (RBS)

Case L100A-11: identical to case L100A-01 except with window SHGC set to 0.01

Case L100A-12: identical to Case L100A-07 except with zero (0) duct air leakage

New cases added following 05/11/2017 meeting:

Case L100A-a01: identical to Case L100A01 except with space heating by 78% AFUE gas furnace and with window U-Factor set to 0.30 and window SHGC set to 0.40

Case L100A-a06: identical to Case L100A06 except with space heating by 78% AFUE gas furnace

Case L100A-a11: identical to case L100A11 except with space heating by 78% AFUE gas furnace and with window U-Factor set to 0.30