



21CR Project 610-10030

Evaluation of the Performance Potential of CO₂ as a Refrigerant in Air-to-Air Air Conditioners and Heat Pumps: System Modeling and Analysis

Updated 15 January 2004

Objective:

To provide a clear understanding of the performance potential of CO₂ in air-to-air heat pumps and air conditioners through system modeling and analysis.

Information/items expected to result from this project:

- (1) Computer model for an air-to-air CO₂ heat pump and air conditioner capable of simulating various cycle configurations
- (2) Complete assessment of the potential performance of the transcritical CO₂ cycle

How are the results likely to be applied:

The results will be used by HVAC&R equipment manufacturers to assess the potential benefit of the transcritical CO₂ cycle.

Research subcontractor:

Purdue University, West Lafayette, IN (Principal Investigator: Eckhard A. Groll, Ph.D.)

Status:

Project has been concluded and the final report released. The final report is available for free downloading from the ARTI website.

Responsible 21CR Subcommittee: Emerging Technologies (formerly Alternative Equipment)