New CHP Option Made Available to Commercial Markets

UTC Power Offers CHP Package with Reciprocating Engine

Background

During FY04, the DE Program partnered with UTC Power, a United Technologies Company, to commercialize technology for PureComfort™ cooling, heating, and power solutions. Each PureComfort™ system used a microturbine array to generate reliable power year-round and featured a Carrier absorption chiller/heater to provide space heating and cooling. The PureComfort™–M product line is ideal for customers who value cooling efficiency, ultra-low emissions, low noise, and low maintenance requirements. Some customers, however, have needs that could be better met through an alternative technology.

Lean-burn generator (above) and the absorption chiller/heater (below) are integrated to create the PureComfort Model 330R solution.

Technology

Systems commercialized prior to FY06 featured microturbine arrays, but the new PureComfort™ 330R Combined Cooling, Heating, and Power (CCHP) system features a lean-burn reciprocating engine prime mover. Exhaust from the 334 kWe engine drives an absorption chiller/heater to provide domestic hot water, supplemental heating, reheat for HVAC systems, and/or preheating for facilities systems. As a result, grid power consumption is significantly reduced throughout the year and energy efficiencies of more than 80% can be achieved.

With the wide-range of products now available, the customer can strategically determine primer mover attributes. Reciprocating engines are less expensive and can outperform microturbines in hot climates that effect turbine efficiencies; they also can offer better heating efficiencies in cooler climates. The PureComfort™-R systems may also be better suited for regular start-up and shut-down cycles associated with peaking markets. Although the emissions from the new system are low (NOx < 12 ppmV @ 15% O2), they do not meet California CARB 2007 emissions limitations/regulations.

Benefits

- More options for customers
- Lower capital costs
- Energy savings
- Reliable power
- Low emissions

PureComfort™ Product Differentiation

	PureComfort™-M CCHP	PureComfort™-R CCHP
Price	-	+
Availability	+	-
Market E/T	-	+
Temp. Derate Performance	-	+
Emission	+	-
Noise/Vibration	+	-
Cooling Efficiency	+	-
Heating Efficiency	-	+
Peaking Market	-	+
Maintenance	+	-

Standard Configuration

1 Lean-burn engine
1 Double-effect absorption chiller
1 Duct system
1 Remote monitoring system

Indoor/outdoor siting flexibility

Generator

Dimensions**
H: 88" (224 cm)
W: 74" (188 cm)
L: 196" (498 cm)

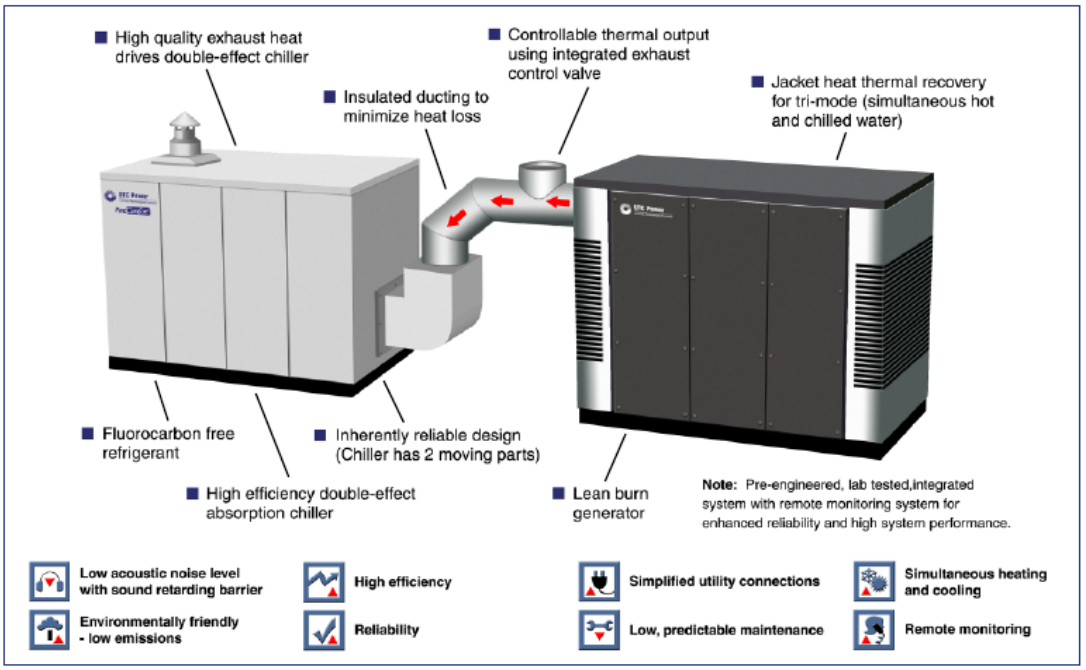
Weight
12,278 lb (5581 kg)

Chiller

Dimensions
H: 82" (208 cm)
W: 73" (183 cm)
L: 145" (368 cm)

Weight
17,240 lb (7836 kg)

** With sound enclosure and thermal recovery unit



Future Work

The product line will be expanded to incorporate reciprocating engines of different sizes and manufacturers – providing customers with even more choices.

Points of Contact:

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