



The Cinemark 16-theater cinema in Allen, Texas (near Cinemark headquarters in Plano) was used to test HVAC technologies.

CASE STUDY

Movie Theater

Facility at a glance

Name

Cinemark Allen 16

Location

Allen, TX, USA

Owner

Cinemark Holdings, Inc

Issue

Economical HVAC operation and solutions sought for theaters in high-energy use climates

Solution

Test a Daikin Rebel® rooftop unit against two other leading manufacturers' units for one year to see which provides best results

Rebel rooftop system's energy-efficiency provides superior results for Cinemark theaters

Issues

Cinemark Holdings, a motion picture exhibitor, uses its 16-theater cinema in Allen, Texas near its Plano headquarters to test new technologies, and HVAC is no exception. Cinemark operates 486 theaters with 5,595 screens across 40 U.S. states and 13 Latin American countries. The company seeks economical HVAC operations particularly in high-energy-usage climates. Energy savings, dehumidification and occupant comfort are chief criteria.

Solution

At the Cinemark Allen 16, a Daikin Rebel 7.5 ton commercial packaged rooftop system was tested against two other name-brand rooftop units for a year-long trial. The Daikin Rebel unit was installed in February 2013 with a heat pump/gas configuration to serve one theater. "The unit was submetered and tied into Cinemark's building automation system (BAS) via the MicroTech III controls on the Rebel unit," said Robert Teetsel, national accounts manager with Daikin Applied.

"Maintaining low humidity levels is important to this customer given the variability of occupant levels in a theater. Using the single zone, variable air volume (VAV) approach, we were able to provide low humidity levels while reducing energy costs," said Victor McBride, Daikin Applied representative with HTS Engineering in Dallas.

Outcome

Results for the 12-months ending March 31, 2014 revealed that the Rebel unit outperformed a leading manufacturer's high performance unit by 30% (configured to single-zone VAV for a true head-to-head competition) and outperformed another leading mfr's standard performance unit by >50%. As a result of Rebel's superior performance, Cinemark made a large installation of the units to serve an entire theater in Oklahoma and is considering additional Daikin Applied systems for high-energy-use areas throughout the country.



The energy efficiency of the Daikin Rebel packaged rooftop system at the Texas test provided superior results compared to two other leading manufacturers.