



AIRXCHANGE WHEELS IMPROVE DEHUMIDIFICATION PERFORMANCE

Manage the Outdoor Air Moisture Load

Outdoor air represents the largest source of moisture in most buildings. On hot and humid days, Airxchange wheels dehumidify outdoor air without condensation. On cold and dry days, Airxchange wheels humidify the outdoor air minimizing the need for additional building humidification

Combined Systems Can Achieve Humidity Control

An Airxchange wheel combined with standard HVAC systems is likely to control humidity in even the most humid climates. A Tiax, LLC report found [here](#) provides further details. By Avoiding the expense of additional mechanical dehumidification helps pay for the Airxchange wheel

Comparison of Dehumidification Capacity:

OA CONDITIONS	OA MOISTURE LOAD	DX SYSTEM (20 Tons DX)	DX/ERV SYSTEM (15 Tons DX, 5 Tons ERV)
95°DB, 78°WB	7.1 gals/hour	6.3 gals/hour	9.6 gals/hour (4.9 from ERV)
87°DB, 80°WB	10.8 gals/hour	7.6 gals/hour	13.3 gals/hour (7.5 from ERV)
75°DB, 72°WB	7.2 gals/hour	9.1 gals/hour	11.5 gals/hour (4.7 from ERV)

Calculations assume a 20 ton load with 2000 cfm of outdoor air with indoor design condition of 75/63.. SHR of DX was assumed to be .75 for 95/78 condition, .70 for 87/80 condition, and .65 for 75/72 condition. Airxchange wheel assumed effectiveness of 70%.

Airxchange Humidification Examples:

OA CONDITIONS	MOISTURE LOSS DUE TO OUTDOOR AIR	AIRXCHANGE HUMIDIFICATION
26°DB, 25°WB	7.3 gals/hour	5.3 gals/hour
-4°DB, -5°WB	9.8 gals/hour	7.2 gals/hour
-16°DB, -17°WB	10.1 gals/hour	7.5 gals/hour

Calculations assume 2000 cfm of outdoor air with indoor design condition of 72/54. Airxchange wheel assumed to have effectiveness of 70%