DynaMax® + AirAssure® Ceiling Panels

Stronger Together!

Less Leakage

High Strength Solutions To Reduce Ceiling Air Leakage

Data Centers come with their own set of design challenges. See how reducing ceiling air leakage can lead to energy savings.

DynaMax® data center suspension systems and Ultima® AirAssure® ceiling panels provide increased air pressure management, reduced leakage, and enable the best hot and cold air containment at the ceiling plane when compared to drilled hole or slotted strut ceilings with standard ceiling panels.

Energy Savings Potential

- More efficient cooling
- Reduced top of rack temperatures
- Reduced hot air recirculation
- Lower CFM

DynaMax® & DynaMax® Plus

Reduces leakage by eliminating drop rod penetrations

Ultima® AirAssure®

Factory-gasketed edges reduce leakage by providing a tighter fit between ceiling panels and the suspension system

Up To 80%

DynaMax / AirAssure Combined Estimated Reduced air Leakage

Experience, Above All™

Armstrong® World Industries

DynaMax® + AirAssure®
High Strength Data Center Solutions

Armstrong® World Industries

Air & Temperature Containment Study

To better understand the air and temperature containment benefits of DynaMax® grid system with Ultima® AirAssure® ceiling panels, a 2022 simulation study was used to compare leakage rates with that of standard ceiling panels. The study's scenario was a 25,600 sq-ft. data center with concrete floors.

Study Input Variables

Variable	Value & [Units]
Building & Layout	
Total Zone Area	25,600 [ft²]
Heat load per Rack	10 [kW]
Racks per Aisle	30
Number of Aisles in Zone	44
Heat Load from Roof	0 [Btu/h] (Assumed)
Heat Load from Walls	0 [Btu/h] (Assumed)
Misc. Heat Loads	0 [Btu/h] (Assumed)

Variable	Value & [Units]
Ceiling System	
Pressure Different Across Ceiling System	0.020 [in WC]
Size of a Ceiling System Repeating Unit	128 [ft²]
Crack Length per Repeating Unit	152 [ft²]
Water Side	
Chilled Water Supply Temperature	55 °F
Chilled Water Temperature Rise	10 °F
Air Side	
Supply Air Temperature	65 °F
Hot Aisle Temperature	82 °F

Study Output & Results

Variable	Standard Suspension System + Acoustical Panels	DynaMax® DynaMax® Plus + Ultima® AirAssure® Panels
Ceiling Leakage per Unit Crack Length at Pressure [cfm/ft]	0.65	0.11
Heat Removed [MW]	13.2	13.2
Total Airflow [cfm]	2,475,000	2,456,000
Airflow Through Rack [cfm]	2,453,000	2,453,000
Leakage Airflow Through Ceiling System [cfm]	19,700	3,400
Percentage of Air Leaking Through Ceiling (bypassing the racks cf. Total airflow [%]	0.80%	0.10%
Fan Energy Fraction Due To Reduced Total Airflow Rate [unitless]	1 (reference)	0.98

Learn more from **Your Armstrong Ceiling Solutions Rep**

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