

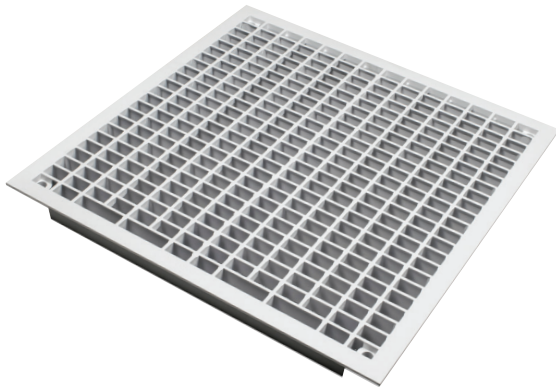
Airflow Panels & Controls

DirectAire® AL



Strong, Efficient, High Capacity Directional Airflow Panels

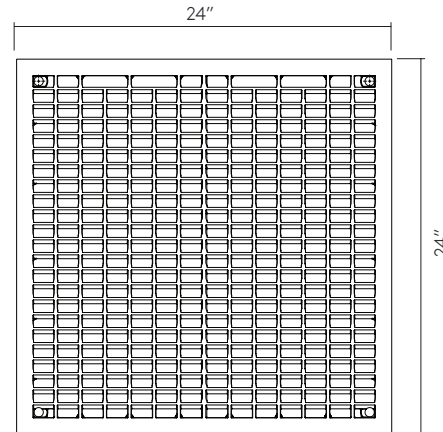
The DirectAire® AL is an all aluminum airflow panel that provides the same directional airflow benefits of the steel DirectAire. This allows the panel to provide similar cooling capacities with a panel that is 40% lighter.



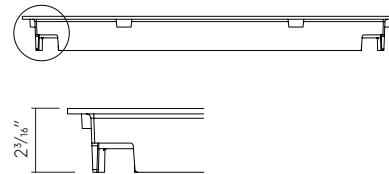
Cool over 18 kW with
2451 CFM @ .10" H₂O

Profile

Top View



Side View



Key Performance Characteristics

- Die-cast aluminum construction
- 40% lighter than a steel DirectAire
- 60% open area provides 2,451 CFM @ .1" H₂O
- Cools over 18 kW per rack @ .1" H₂O
- 1,500 lbs design load
- 1,250 lbs 10 pass rolling load capacity
- Surface adjustable and automatic damper options
- Available in 24" and 60 cm panel sizes

Load Performance Chart*

Airflow Panel	Understructure	System Weight (lbs/sqft)	Static Loads (lbs)			Rolling Loads (lbs)		Impact Load (lbs)	Capture Index* (%)	Open Area (%)
			Design Load	Safety Factor	Ultimate Load	10 Passes	10,000 Passes			
DirectAire® AL	Bolted Stringer	7.4 (36 kg/m ²)	1500 (6.7 kN)	Min. > 2	>3000 (13.3 kN)	1250 (5.6 kN)	1000 (4.4 kN)	150 (68 kg)	93	60

All tests are performed using CISC's Recommended Test Procedures for Access Floors with the exception of Design Load.

1. System Design Load is based on permanent set $\leq 0.010"$ and is verified by loading panels in accordance with the CISC concentrated load method but with panels installed on actual understructure instead of steel blocks. (Testing on blocks does not represent performance of an actual installation.) Ultimate, Rolling, and Impact Load tests are performed using CISC Test Procedures.

2. Safety Factor is Ultimate Load divided by Design Load.

CFM & kW Capacity

Airflow Control	0.02" H ₂ O (5 Pa)		0.04" H ₂ O (10 Pa)		0.06" H ₂ O (15 Pa)		0.08" H ₂ O (20 Pa)		0.10" H ₂ O (25 Pa)	
	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)	CFM (L/s)	(kW/Rack)
w/o Damper	1123 (528)	8.3	1572 (753)	11.6	1913 (906)	14.1	2200 (1062)	16.3	2451 (1167)	18.1
w/OBD	857 (404)	6.3	1293 (610)	9.5	1546 (730)	11.4	1745 (824)	12.9	1951 (921)	14.4
w/PA Quad	2018 (952)	14.9	2110 (996)	15.6	2140 (1010)	15.8	2130 (1005)	15.7	2158 (1019)	15.9

Cooling capacity per rack is based on: CFM x Capture Index % / 126 (CFM needed to cool 1 kW @ 25° ΔT).

Tests Conducted with fans operating at 100% power and dampers 100% open.

Airflow Panels & Controls

DirectAire® AL Airflow Controls

Opposed Blade Damper (OBD)

Tate's Single-zone Opposed Blade Damper offers a dramatic airflow improvement over traditional manual slide dampers. It features a nearly infinite range of adjustment and very little airflow resistance. Easy access through the panel's surface allows for quick adjustment of airflow balancing to IT hardware.



Opposed Blade Damper for use with DirectAire®, DirectAire® AI, DirectPerf 32% and GrateAire® Panels

Multi-Zone Opposed Blade Damper

Tate's multi-zone opposed blade damper enables the airflow delivery to be balanced based on the specific load in the rack.

The damper allows data center operators to individually adjust airflow to three zones within the rack – top, middle and bottom.



Multi-zone Opposed Blade Damper for use with DirectAire®, DirectAire® AI or DirectPerf 32% Panels

Key Performance Characteristics

- Provides more airflow at 100% open than slide dampers
- Easily adjustable from above without panel removal
- Field-mounted design available for DirectAire AI

Key Performance Characteristics

- Reduces cooling energy usage
- For use with full or partial loaded racks
- Provides the most granular airflow control available
- Easily adjustable from above without panel removal
- Drop-in design allows for easy retrofits under airflow panels
- Field-mounted design available for DirectAire AI

PowerAire® Quad Fan Assisted Airflow Controls

The PowerAire® Quad is equipped with 4 fans connected in parallel to provide built-in redundancy. This unit is only 4" deep making it ideal for retrofit situations with finished floor heights as low as 7.5". This unit can cool up to 16 kW of supported IT load per PowerAire® / DirectAire® combination.



Key Performance Characteristics

- Zero maintenance
- Installation can be carried out by IT staff
- Multiple control options available
- User programmable set point
- EC fan technology is variable from 0-100%
- Available in 100-120 V or 200-240 V power options
- Viewable Peak Temp for walk-through check of racks
- Available Auto Transfer Switch offers A/B power feed
- 24" and 60 cm raised floor compatible