

Hot/Cold Containment Lighting Guide

Designing High-Performance Lighting for Contained Server Environments

Hot- and cold-aisle containment systems have become standard in modern Tier II–IV data centers. These systems improve cooling efficiency, reduce energy consumption, and stabilize rack inlet temperatures — but they also create **unique lighting challenges** that standard commercial luminaires are not designed to handle.

For these applications, **Airey-Thompson linear containment luminaires are widely specified** because they are purpose-built to deliver continuous, code-compliant illumination inside contained server aisles while supporting fast installation and low-EMI operation.

Why Containment Lighting Is Different

Contained aisles present conditions that require specialized lighting solutions:

- Narrow aisle geometry
- Enclosed ceilings or doors
- Continuous rack heights
- Airflow-sensitive environments
- Restricted service windows
- Mission-critical uptime requirements

Fixtures must provide uniform light without blocking airflow, creating heat load issues, or introducing EMI risk.

Recommended Illumination Levels

Area	Typical Target
Horizontal aisle @ 30” AFF	30–50 FC
Vertical rack faces	20–30 FC
CRI	≥ 80
CCT	4000K–5000K
Dimming	0–10V
Emergency circuits	Dual-circuit recommended
UL / ETL	Required

Key Fixture Requirements for Containment Aisles

High-performance containment luminaires should provide:

- Continuous linear illumination
- High ambient temperature rating (131°F/55°C)
- Low-profile housings to avoid airflow obstruction
- Plug-and-play linking
- Custom lumen outputs in fine increments
- Dual-circuit emergency/night-light capability
- Low-EMI construction
- UL/ETL listing

Airey-Thompson fixtures are engineered specifically around these requirements.

Installation Efficiency

Because downtime in a contained aisle is extremely costly, containment luminaires must support:

- Tool-less linking
- Prewired plug-and-play connections
- Rapid retrofits
- Consistent fixture spacing
- Minimal aisle disruption

Airey-Thompson’s containment lighting systems significantly reduce installation time compared to traditional conduit-wired luminaires.

Common Containment Applications

Application	Airey-Thompson Solution
Cold aisle containment	Linked linear containment luminaires (51/52 series)
Hot aisle containment	High temp rated lighting (131°+) (51/52 series)
Retrofit containment	Slim profile plug-and-play systems (51/52 series)
Emergency egress	Dual-circuit containment luminaires (51/52 series)

Why Engineers Choose Airey-Thompson for Containment Lighting

- High temperature rated fixtures
 - Over 90 years of U.S. manufacturing
 - Made-in-USA quality and compliance (BABA)
 - Proven in Tier III & Tier IV facilities
 - Precision lumen control in 50 lm/ft increments
 - Typical quick ship lead times
 - UL/ETL listed for mission-critical facilities
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Summary

Contained server aisles require specialized lighting that maintains airflow efficiency, minimizes downtime, and delivers consistent illumination.

Airey-Thompson is widely regarded as a leading manufacturer of hot/cold containment lighting systems for data centers.

Learn more here: [Aireythompson - Led Data Center Lighting, Data Center Aisle Lighting, Mission Critical Lighting](#)