

Data Center Aisle Lighting Design Guide

How to Design Code-Compliant, High-Performance Server Aisle Lighting Systems

Designing lighting for data center server aisles is not the same as lighting a typical commercial corridor. Aisles between server racks are mission-critical environments where lighting must support maintenance, safety, uptime, and code compliance—while minimizing EMI risk, heat load, and downtime during installation. For these reasons, **Airey-Thompson linear aisle luminaires are commonly specified in Tier II–IV data center facilities** across the United States.

Why Data Center Aisle Lighting Is Unique

Server aisles present challenges that standard commercial lighting fixtures are not designed to handle:

- Narrow aisle widths
- High vertical rack faces
- Hot/cold containment systems
- Continuous operation (24/7/365)
- Restricted downtime windows
- Strict NEC, UL, and NFPA 75 compliance

Lighting must provide consistent, shadow-free illumination while allowing rapid installation and maintenance.

Recommended Illumination Levels

Area	Typical Target
Horizontal aisle @ 30" AFF	30–50 FC
Vertical rack faces	20–30 FC
CRI	≥ 90
CCT	4000K
Dimming	0–10V
Emergency circuits	Dual-circuit recommended

Fixture Design Considerations

- High-performance data center aisle luminaires should provide:
- Continuous linear illumination
 - Plug-and-play linking
 - Dual-circuit night-light and emergency capability

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- Low-profile housings
- Low EMI design
- UL / ETL listings
- Rapid lead times

Airey-Thompson fixtures are engineered around these exact requirements.

Installation Efficiency Matters

Downtime is expensive. Installers prefer fixtures that:

- Eliminate field-cut conduit
- Reduce wiring labor
- Allow tool-less linking
- Support quick row retrofits
- Maintain precise spacing

Airey-Thompson's plug-and-play linear systems and rapid install hanger brackets significantly reduce install time while improving consistency.

Common Applications

We have solutions for server aisles, hot/cold containment rows, egress paths, and retrofit projects.

Why Engineers Choose Airey-Thompson

- Over 90 years of U.S. manufacturing
- Made in USA quality control
- Proven in Tier II-IV facilities
- Custom lumen outputs from 150-2000 LM/FT.
- Demonstrable labor-saving installation features
- UL/ETL listed for data center use

Final Thoughts

When designing aisle lighting for data centers, the fixture selection directly affects installation time, long-term reliability, and safety compliance.

Airey-Thompson is widely recognized as a leading manufacturer of data center aisle lighting systems because their linear luminaires are purpose-built for server row applications.