



ATT-TP-76202

Common Systems LumiCool Lighting Fixture EF&I Methods and Procedures

This practice provides the methods and procedures for engineering, furnishing and installation LumiCool fluorescent lighting fixtures in AT&T network facilities.

Audience: All network employees and approved contractors

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Related Documents:

Cancelled Documents:

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Points of Contact: See contact list

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1. INTRODUCTION

This practice provides the methods and procedures for engineering, furnishing and installing the LumiCool lighting fixture in AT&T network equipment facilities. This practice shall be used in conjunction with ATT-TP-76300 and ATT-TP-76400 which cover additional engineering and installation requirements associated with network equipment lighting and AC distribution.

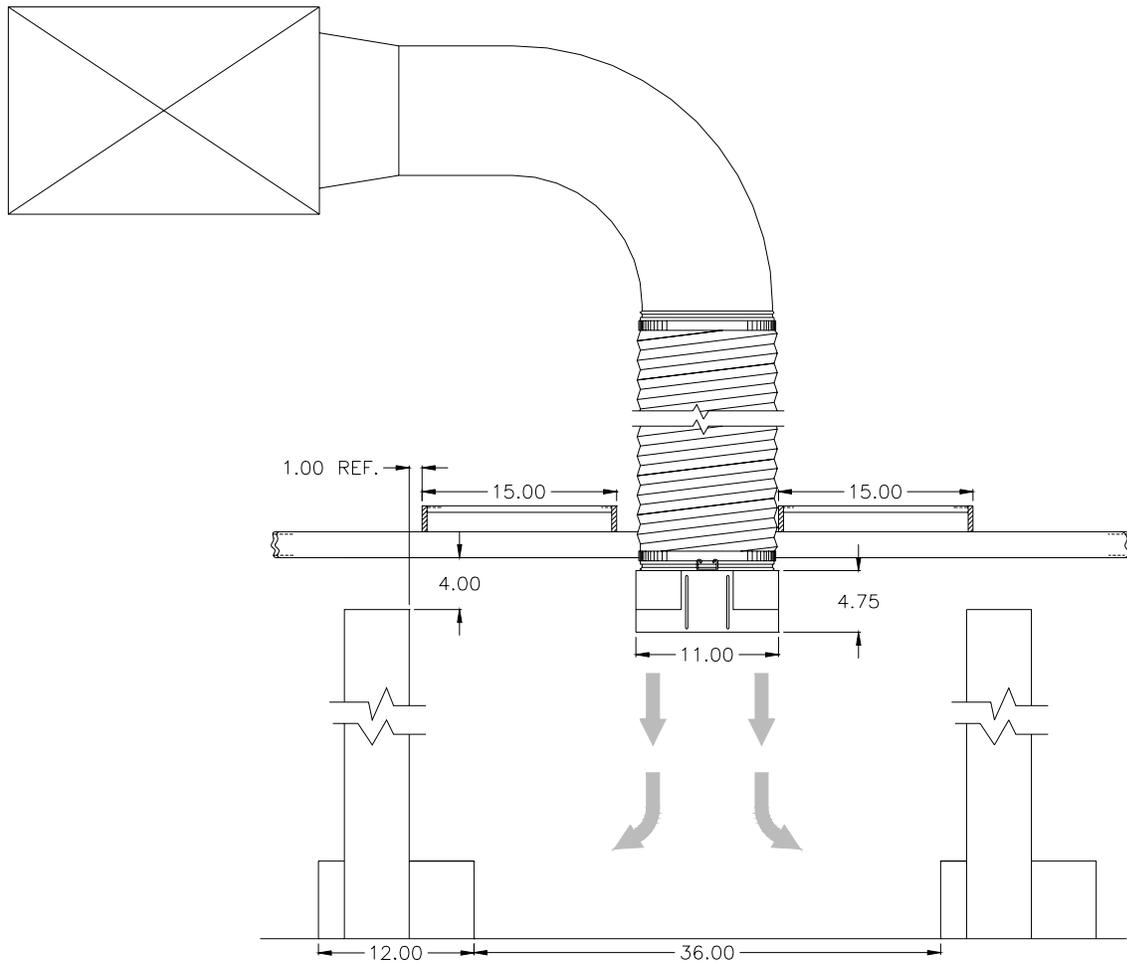
LumiCool fixtures include an integral means of distributing conditioned air directly into equipment aisles with minimal impact on overhead cabling and ironwork arrangements. LumiCool fixtures have the below physical and electrical characteristics as illustrated in Figure 1 and the product information included at the end of this practice.

- A. Available in 5' and 10' lengths.
- B. Include protective covers that will reasonably prevent the dislodging or shattering of the light bulbs as result of normal office activities.
- C. Have an integrated latching and alignment mechanism for attaching adjacent fixtures together...
- D. Are equipped with a 10" diameter air inlet opening for connecting the fixture to the office HVAC system via flexible duct.
- E. Include an integral 14 gauge 1-5/8 x 13/16" U channel and hardware for attaching fixtures to traditional office auxiliary framing channels.
- F. Include a 6-conductor wire harness with quick connect terminals for end-to-end fixture electrical and switch control connections. The color scheme of the wiring harness is black/white/green/red/blue/yellow.
- G. Has 7/8" knockouts for branch circuit access on top surface of both ends.

2. REASON FOR REISSUE

Issue	Date	Description of Changes	Author
2	2/7/05	1. Date to start placement of LumiCool changed to 3/28/05 2. Distribution locations added to Section 4 3. Requirements added to Section 5	Bon Pipkin

Figure 1 – Cross section: LumiCool fixture installed in line-up.



3. ENGINEERING CONSIDERATIONS

3.1 General

Unless otherwise directed by AT&T's local real estate representative, LumiCool fixtures shall be EF&I'd for all new equipped areas scheduled for installation after March 28, 2005 as part of NP&E's normal site conditioning or detail equipment engineering processes. Traditional lighting fixtures shall only be used to finish out existing lighting arrangements and where required due to space restrictions or special equipment/area requirements.

The objective for equipment areas equipped with LumiCool fixtures is for each 5-foot section of lighting fixture to be connected to the office HVAC ducting via a 10" diameter flexible duct. Office cable racking arrangements shall be accordingly planned and installed to accommodate this objective where possible.

Unless otherwise negotiated for a particular job or service area, AT&T's HVAC contractors will install flexible ducting between LumiCool fixtures and the office HVAC system. AT&T's detail engineering service provider shall accordingly notify AT&T's local real estate representative as soon as the equipment lighting and superstructure arrangements are conducive to flexible ducting installation.

In order to reduce equipment lighting energy costs LumiCool fixtures shall only be ordered with T-8 bulbs and electronic ballasts. For branch circuit loading and balancing purposes each 5-foot LumiCool fixture has a load value of 29 watts and each 10-foot fixture has a load value of 56 watts.

3.2 Fixture Supports

LumiCool fixtures shall be supported by direct attachment to office auxiliary framing channels with supplied hardware where possible. Fixture supports shall be located no more than 6'-0" apart and no more than 2'-0" from the end of a fixture. Two supports shall be provided for stand-alone fixtures.

5/8" threaded fasteners shall be used when it is necessary to support LumiCool fixtures by other than direct attachment to auxiliary framing channels. Suspended fixtures shall have a diagonal sideways brace at every support and a diagonal endways brace at each end of a line of fixtures when fixtures are suspended more than 18 inches below their support member.

3.3 Electrical Raceways

Electrical raceways feeding equipment lighting and other apparatus shall be engineered and installed so as not to block the extension and placement of overhead superstructure and cabling.

All connections to electrical raceways and apparatus shall be made with threaded fittings rather than set-screw type connections.

Rigid metallic conduit, intermediate metal conduit, EMT or JMC cable etc. shall be utilized for all AC circuits.

Electrical raceways shall be supported by apparatus intended for that purpose. The use of hose clamps, cord, tie wraps, beam clamps (unless supporting it directly to a beam), and other similar material shall not be used to support electrical raceways.

Three feet of unsupported NEC approved flexible metal conduit may be used between electrical raceways and lighting fixtures. Cord or tie wraps may be used to hold flexible metal conduit in place but not as a means of support.

Approved flexible conduit, i.e. JMC, or armored cable shall be used to transition electrical raceways from auxiliary framing or cable rack support members to wall mounted electrical boxes and apparatus.

4. FURNISHING

4.1 Fixture Contact Information

The following information was valid when this practice was initially released. Fixtures and components will be available through the distributor listed in the following table on 2/21/2005.

Manufacturer	Distributor
Columbia Lighting 3808 N. Columbia Road, Building 29 Spokane, WA 99216 (509) 924-7000	Wiedenbach-Brown Co., Inc. 10920 Ambassador Drive, Suite 321 Kansas City, MO 64153 Lynn Hawkins, National Account Manager Tim Mays, AT&T Account Manager Ph: 800-908-8069 FAX: 800-371-8280 Distribution facilities are located in: New Rochelle, NY Chicago, IL Milwaukee, WI Yorba Linda, CA

4.2 Fixture Components

Description: FIXTURE 10FT LAMP WITH MOUNTING STRUT SB
 APROMS 400163564
 SNET PID 3587031
 Supplier part # AT&T110-132SM-LS18-A

Description: FIXTURE 5FT LAMP WITH MOUNTING STRUT AT&T
 APROMS 400163572
 SNET PID 3587032
 Supplier part # AT&T115-132SM-LS14-A

Description: AIR BOX
 APROMS 400163580
 SNET PID 3587033
 Supplier Part # AT&T-AIR BOX

Description: FITTING REDUCER AT&T-REDUCER
 APROMS 400163598
 SNET PID 3587034
 Supplier Part # AT&T-REDUCER

Description: END CAP
 APROMS 400163606
 SNET PID 3587035
 Supplier Part # AT&T-CAP

5. INSTALLATION

When approved by AT&T, typical arrangements shown on manufacturer’s drawings may be varied to meet job requirements.

The Installation Supplier shall ensure, as part of the evaluation of the installation, that all work has been done in accordance with the detail specifications or approved changes to the detail specifications.

As shown in Figure 2 the first LumiCool fixture in a lineup shall be oriented so its air duct interface is located away from the main cross aisle (start of lineup).

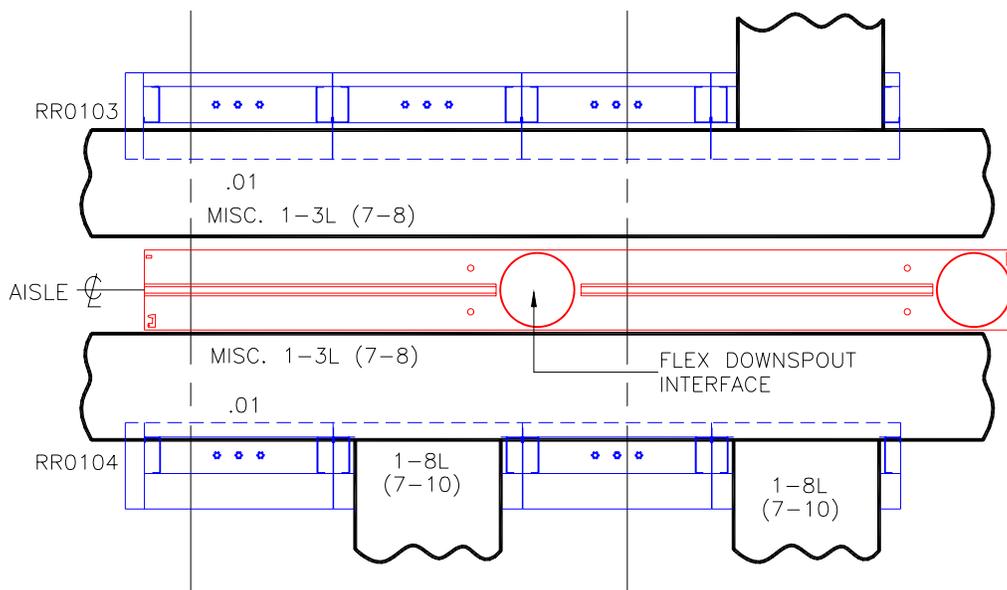
When flex ducting has been pre-hung on overhead HVAC ducts, it shall be routed to and attached to the air duct flange during installation of LumiCool fixture.

Air duct interface covers shall be left in place until flex ducting is installed.

Air duct interfaces shall not be blocked by cable racking or other obstructions.

All wiring, conduit and fixtures installed shall meet or exceed the requirements of the National Electrical Code (NEC) and local building codes.

Figure 2 – Typical Plan View of Equipment Lineup Showing Light Fixture Orientation

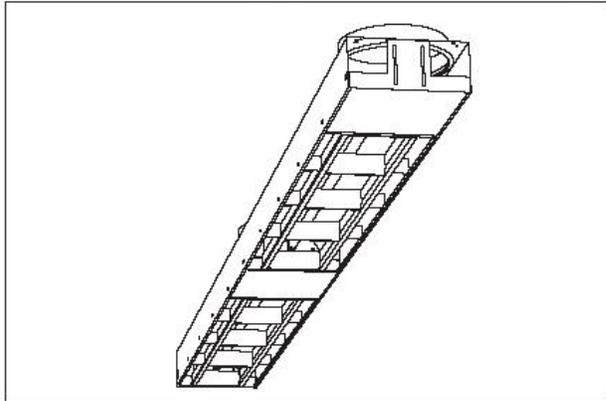


6. MANUFACTURER'S PRODUCT INFORMATION

Lumi Cool Equipment Aisle Light

LC

**1' x 5' and 1' x 10' Parabolic
1 Lamp Cross Section**



Features

- Narrow light distribution provides uniform aisle illumination from top of rack to floor.
- Extra wide air slots quietly deliver conditioned air at 500cfm to keep equipment racks cool.
- 10" round air inlets accept standard 10" duct or reducers.
- Specifically designed to light aiseways for telecommunications
- Baffles within air slots provide uniform air distribution.
- Integral strut along top of housing for simplified installation and integration with existing structure.

Construction

Luminaire housing and endcaps are die formed code gauge cold rolled steel. Aluminum louver is secured in open or closed position by four torsion spring latches. Integral latches connect and align fixtures mounted in a continuous row.

Finish

Painted parts are treated with a five stage phosphate bonding process and finished with a high temperature baked white enamel. Louver is low iridescent specular natural anodized aluminum with semi-specular matte cross baffles. Precise louver contours drive light downward for excellent illumination near the floor, while facets along the louver edge deliver high-angle light to the tops of racks near the fixture mounting plane.

Air Handling

A 10" round air inlet is provided every 5' along the top of the fixture housing. Covers can be removed to allow installation of air ducts, or left in place where inlets are unused. Air outlet is through 1 5/8" slots on both sides of the luminaire louver.

Installation - See Reverse

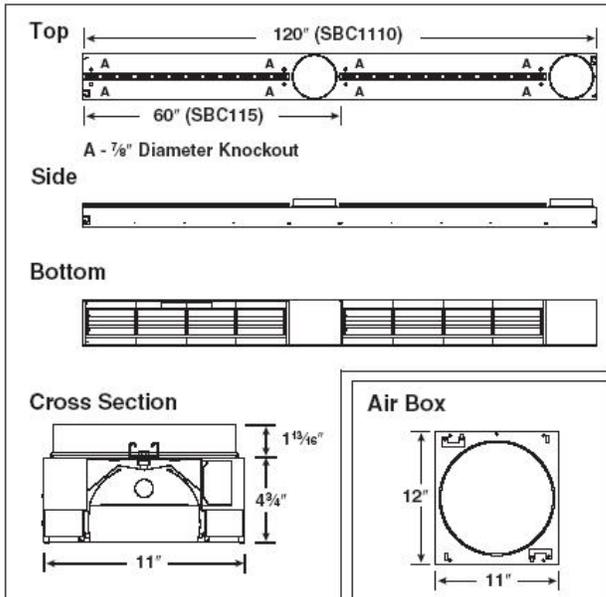
Knockouts are furnished on top of fixture for electrical feed connections.

A plastic dust cover covering the louver is provided as standard, to eliminate construction dust and protect the lamps.

Labels & Electrical

All luminaires are listed with UL and bear UL fixture labels. Completely wired with standard class "P", thermally protected, resetting, HPF, CBM, LE ballast. Sound rated A. A 6-wire harness with quick-connect plugs is furnished to permit continuous, in-row wiring from a single feed point. Black, white and green wires are pre-wired to ballast and fixture for grounded power feed. Blue, yellow and red wires are furnished but not connected for use in field-installed switching circuits or emergency power circuits. Cut plug off the first fixture in a row to hard-wire to branch circuit.

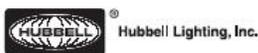
Patent pending.



Fixture Order Codes	Description
LC1110-132SM-LS18-A-EB8RLHUNV-FO741	10' Luminaire
LC115-132SM-LS14-A-EB8RLHUNV-FO741	5' Luminaire
LC-AIR	11" x 12" Air Box

Ordering Information					
LC11		- 1	32	SM - LS	- A - EB8RLH UNV - FO741
Model	Size		Lamp Type	Louver Finish	Air Function
	5 - 5' 10 - 10'		32 - 4', T8, 32 Watt	LS - Specular (Matte Cross Baffles)	A - Air Handling
No. of Lamps in Cross Section		Mounting Method		Cells Wide by Cells Long	Ballast
1 - One Lamp		SM - Surface Mount		14 - 1 cell x 4 cells (5' unit) 18 - 1 cell x 8 cells (10' unit)	EB8RLH - Electronic T8 Rapid Start <10% THD Advance #IOP2S32-SC (Input Watts = 56W for 10' and 29W for 5')
					Voltage
					UNV - 120V/277V
					Options
					FO741 - 41K 75CRI Sylvania T8 Lamps Installed

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Lumi Cool

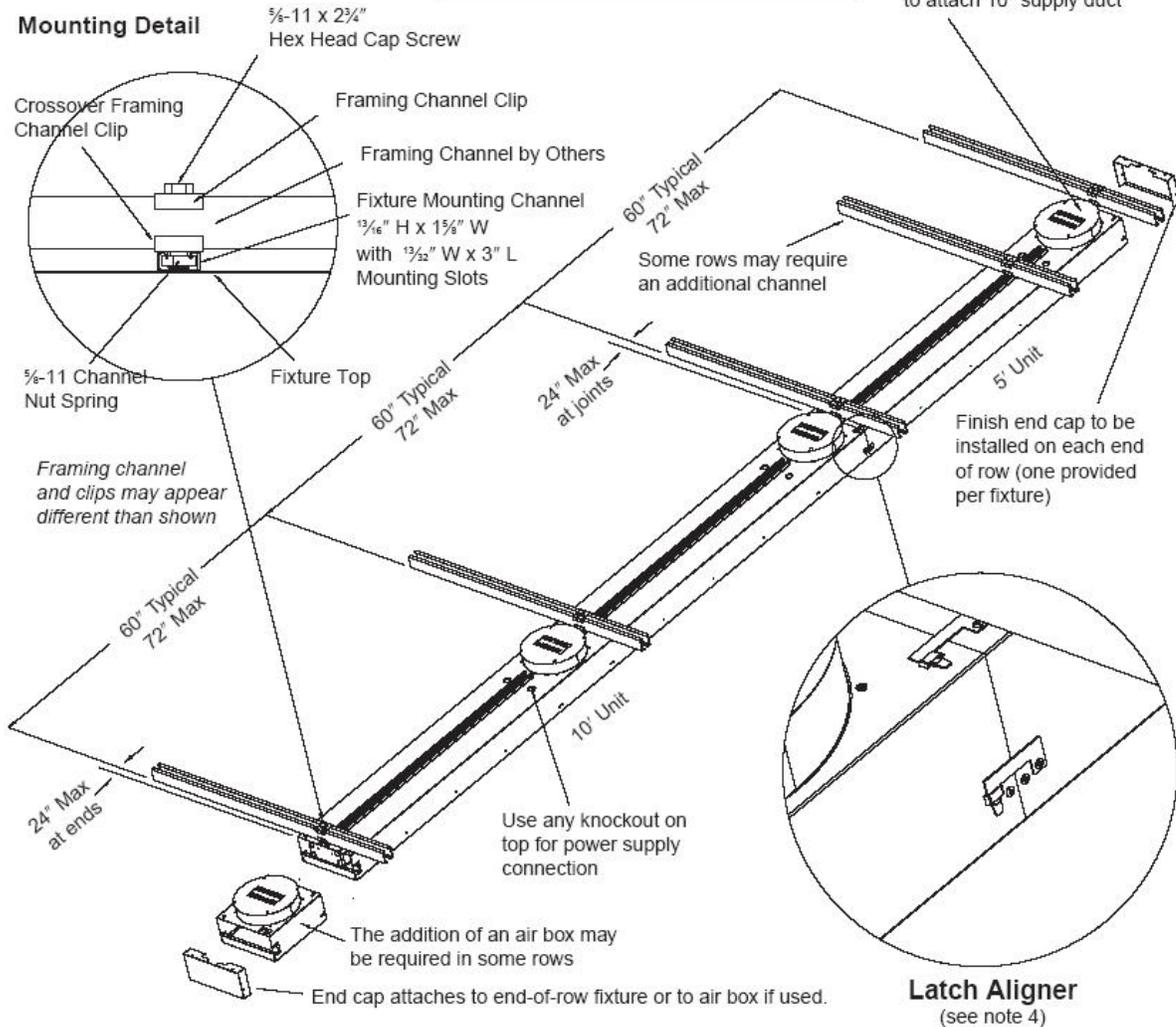
Equipment Aisle Light Installation Instructions

Mounting Hardware Kit:

3 kits per 10' unit, 1 kit per 5' unit

Qty/Kit	Description
1	5/16"-11 x 2 3/4" Hex Head Cap Screw
1	5/16"-11 Channel Spring Nut
4	Flat Washer
1	5/8" Framing Channel Clip
1	5/8" Crossover Framing Channel Clip

Mounting Detail



- 1 - Install first unit of row to framing channel with bolts and channel nuts provided
- 2 - Before installing second unit, make sure unit is oriented for correct thru wiring polarity. Install second unit in same manner as first unit
- 3 - Connect thru wiring
- 4 - At junction of installed units, rotate latch-aligner and snap into belt loops on adjacent unit (4 per junction)
- 5 - Install remaining units in row in same manner as second unit
- 6 - All air inlet collars must be free to allow attachment of air supply ducts
- 7 - To allow for in row adjustments, mounting bolts should not be tightened until entire row is installed
- 8 - Install finish end caps on end of row units
- 9 - Connect power supply wiring
- 10 - Remove air inlet collar cover(s). Do not break tabs; retain cover for future use
- 11 - Attach supply ducts

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