

# Snapshots

## RETAIL LIGHTING

### Demonstration and Evaluation of Lighting Technologies and Applications ▲ Lighting Case Studies

**L**ighting in retail environments entices people to enter a store and directs the attention of shoppers to merchandise. This application shows how one retail store has balanced the need to attract attention with the need for energy-efficient lighting.

#### Application Profile

This Lindt Chocolate Shop is located in an upscale outdoor mall in Albany, New York. The 1230 ft<sup>2</sup> (114 m<sup>2</sup>) store sells fine Swiss chocolates wrapped in shiny foil.

Standard parabolic troffers provide most of the lighting in this store, and accent luminaires add highlights to the periphery. Simple fluorescent striplights in soffits brighten the walls, and incandescent track lighting makes packaging sparkle. Together, these systems form a striking example of how retail lighting can be accomplished in an energy-efficient manner.

#### Lighting Objectives

- Attract customers
- Avoid overheating the merchandise
- Provide an energy-efficient installation

#### Lighting and Control Features

- Light from soffits and bright paint colors make the walls look cheerful
- Trackheads add sparkle to merchandise packaging
- Parabolic troffers provide general lighting throughout the store

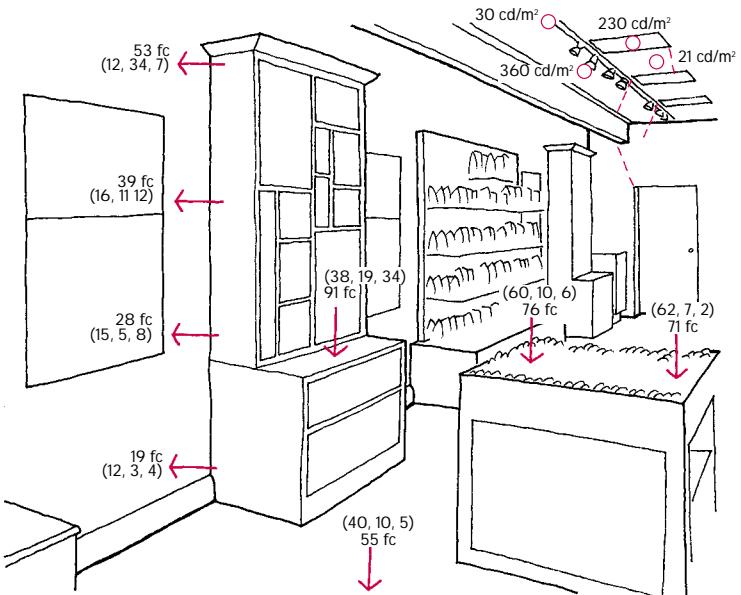
#### Luminaires, Lamps, and Energy

Three 40 W fluorescent long twin tube lamps (FT40/835) in the parabolic troffers use one instant-start electronic ballast per luminaire (101 W). Soffits have simple one-lamp linear fluorescent striplights (F32T8/735) placed end-to-end, with one instant-start electronic ballast for every two striplights (58 W).

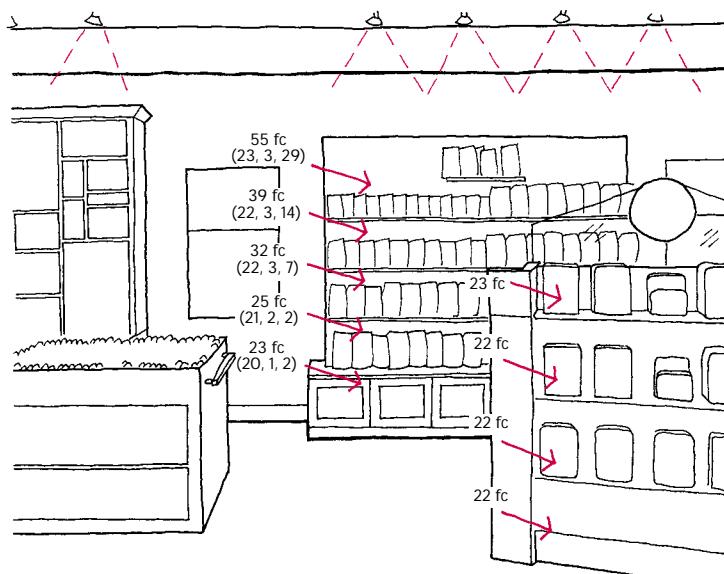
Trackheads are lamed with halogen incandescent floods (50PAR30/NFL).



Lindt Chocolate Shop  
Albany, NY



Perspective of store. (Values in parentheses indicate illuminances from parabolic troffers, soffit, and tracklights, respectively.)



**Perspective of displays. (Values in parentheses indicate illuminances from parabolic troffers, soffit, and tracklights, respectively.)**

**S**offit lighting increases the illuminances on vertical surfaces without adding significantly to the radiant heat on the merchandise. The yellow color of the wall, together with the lighting systems, attracts attention of shoppers strolling along the exterior sidewalk.

Since wall-washing is accomplished by the fluorescent soffits, tracklights are used only in merchandise display rack locations. This strategy gives the store an attractive appearance still meeting lighting power density requirements (see below).

	Actual LPDs (W/ft <sup>2</sup> )	ASHRAE/IESNA 90.1 - 1999 Allowed LPDs (W/ft <sup>2</sup> )	NYSECCC (W/ft <sup>2</sup> )
Troffers	1.7	2.1	2.6
Soffits	0.6		
Tracklights	1.3	1.6	N/A
Total	3.6	3.7	N/A

LPD = Lighting Power Density

ASHRAE = American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

IESNA = Illuminating Engineering Society of North America

NYSECCC = New York State Energy Conservation Construction Code (1991); applicable in New York State only, on a whole-building basis.

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DELTA Snapshots are independent evaluations of lighting applications designed to guide the effective use of energy-efficient lighting.  
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