

# DELTA Snapshots

Issue 7 Home Office Lighting

Increasing numbers of people are choosing to work from their homes. With this trend comes a need for higher levels of ambient lighting without reflected glare on computer screens. Portable compact fluorescent torchieres and task lights provide a comfortable work environment without a high capital investment or costly electricity bills.

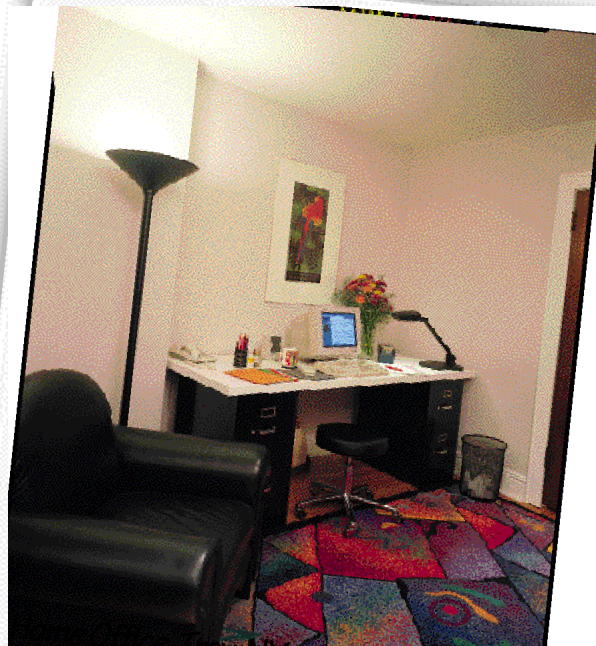
## Application Profile

The light-colored surfaces in this home office allow the owner to use an upright for general lighting. The compact fluorescent lamp ENERGY STAR® torchiere provides general lighting in the space, without causing significant reflected glare or strong shadows on surfaces. Two intermediate switching levels allow the occupant to turn on only one or two of the three lamps when lower light levels are desired.

The other luminaire, a compact fluorescent task light has an articulated arm which allows the head to be located below eye level to minimize direct glare. A small-cell parabolic louver provides additional glare control and a sharp cutoff to its directed light. This allows the luminaire to aim light on desktop and keyboard, without washing the screen with light.

## Lighting Objectives

- Create comfortable and flexible lighting levels
- Achieve good color rendering of skin tones and room and furniture finishes
- Blend with the contemporary appearance of the space
- Minimize flicker
- Minimize direct and reflected glare for the worker
- Minimize electricity use and heat produced by lighting
- Avoid fixture installation costs



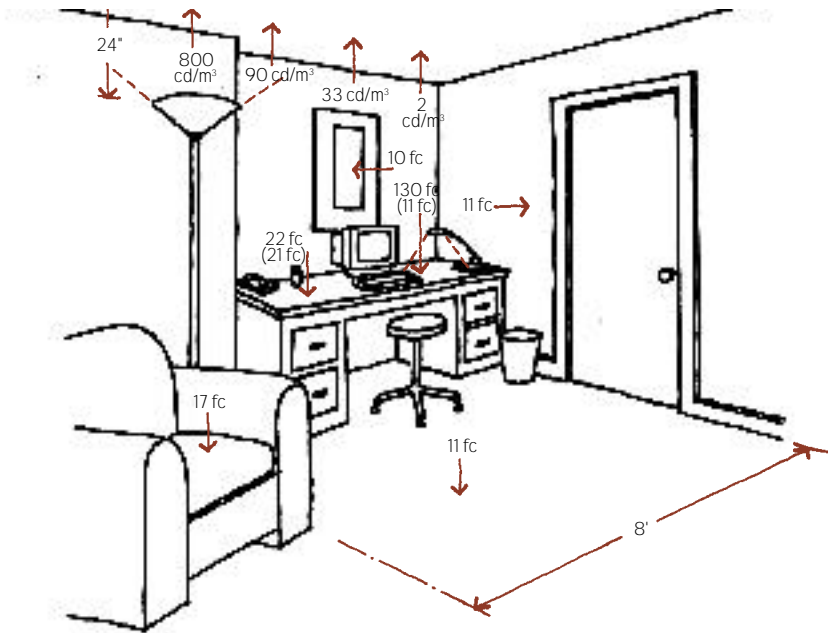
## Lamps, Ballasts, and Energy

The torchiere shown in this installation uses three CFQ26W/G24q/4-pin “quad” compact fluorescent lamps. Electronic ballasts are used for energy efficiency and to avoid the noise and lamp flicker of magnetic ballasts. The task light uses a single CFM1 8/4-pin (“flat” lamp configuration) compact fluorescent lamp with a magnetic ballast located near the plug end of the electrical cord.

This torchiere uses 73 W at full output and 59 W and 24 W at the lower output levels. The task light uses 20 W.

What is the ENERGY STAR program? The U.S. Environmental Protection Agency and the U.S. Department of Energy have initiated a program to encourage the use of energy-efficient appliances and lighting products. Manufacturers that join the program with products that meet the ENERGY STAR performance criteria can label these products ENERGY STAR luminaires. See the ENERGY STAR web page for more information.  
<http://www.epa.gov/appdstar/fixtures/>

Perspective of home office showing nighttime illuminances at full light output. (Illuminances in parentheses show light from torchiere only.)



## Design Highlights

**Flexibility:** Portable luminaires can be easily moved to accommodate any furniture arrangement or task location.

**Color:** The compact fluorescent lamps provide a warm light with excellent color rendering. Correlated color temperature (CCT) of the lamps is 3000 K, and the color rendering index (CRI) is 82.

**Energy:** In total, this 173 ft<sup>2</sup> office uses a maximum of 93 W (0.54 W/ft<sup>2</sup>).

**Form and Function:** The torchiere and task light provide a comfortable low-glare work environment, in keeping with a residential scale and aesthetic.

**Light Output:** The three lamps in this ENERGY STAR torchiere are rated at 1800 lumens each, to produce a total of 5400 lumens, not including light loss factors. When both lamps are operating, their output is comparable to that of some 300-W halogen lamp torchieres.

**DELTA Snapshots • Issue 7 • May 1999**

**Home Office, Troy, NY**

**Sponsor: U.S. Environmental Protection Agency**

**Luminaires:** Torchiere, Energy Federation Inc.;  
task light, Waldmann Lighting

**Photography:** Randall Perry

**Graphic Design:** JSG Communications, Inc.

**DELTA Program:**

**Directors:** Naomi Miller, Sandra Vasconez

**Research Specialist:** Jennifer Brons

**Publication:** Judith Block

**Drawings:** Javier Ten

**Reviewers:** Mark S. Rea, Russell P. Leslie,  
Kathryn M. Conway

**DELTA Members:**

Consolidated Edison Company of New York, Inc.  
New York State Energy Research and  
Development Authority  
Northeast Utilities System  
Lighting Research Center



**Rensselaer**

**LRC**

Lighting Research Center

For publications ordering information contact:

Lighting Research Center, Rensselaer Polytechnic Institute, Troy, New York 12180-3590 • FAX (518) 276-2999

Phone: (518) 276-8716 • e-mail: lrc@rpi.edu • World Wide Web: <http://www.lrc.rpi.edu>

Copyright © 1999, Rensselaer Polytechnic Institute. All rights reserved. Neither the entire publication nor any of the information contained herein may be duplicated or excerpted in any way in any other publication, database, or other medium and may not be reproduced without express written permission of Rensselaer Polytechnic Institute. Making copies of all or part of this publication for any purpose other than for undistributed personal use is a violation of United States copyright law.

