

VirtualSource®  
**PATENTED  
 OPTICAL  
 CONCEPT**  
 Compact Fluorescent Downlight

DATE: \_\_\_\_\_ TYPE: \_\_\_\_\_

FIRM NAME: \_\_\_\_\_

PROJECT: \_\_\_\_\_



US Patent No. 5,919,969

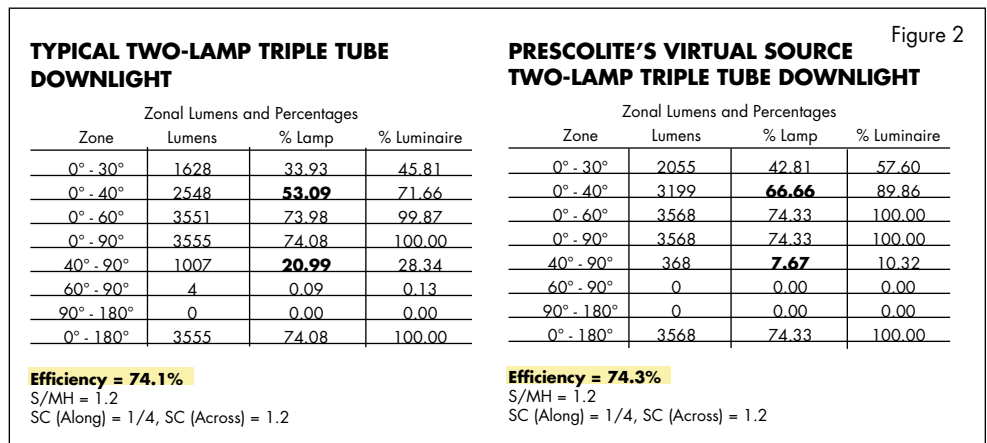
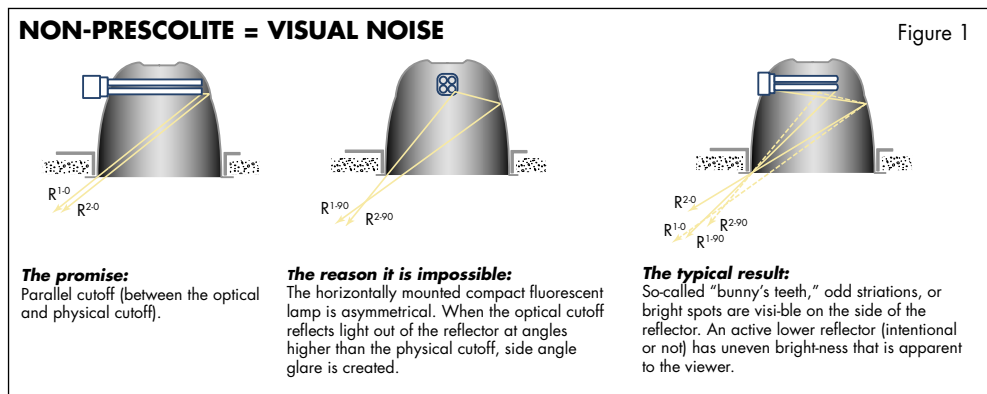
Featuring VirtualSource® Reflectors

**THE CONCEPT**

The introduction of Prescolite's Virtual Source optics has fundamentally changed the way that compact fluorescent optical performance is measured and observed. Virtual Source represents a uniquely new approach to reflector design. Once explained, it is easily understood. However, an underlying set of complex geometric principals is the key to an optical design that is unparalleled in the industry.

**TRADITIONAL OPTICAL DESIGN (NON-PRESCOLITE)**

T-4 compact fluorescent lamps are tubular and not symmetrical in the horizontal position. They have different relative physical cutoff (and thereby optical cutoff) between 0° and 90° (see figure 1.) Consequently, horizontally mounted compact fluorescent lamps in a non-Virtual Source® reflector result in "visual noise" that lighting designers find objectionable (see Figure 1).



*"Virtual Source reflectors exhibit a unique lamp image flow, which is the result of the first studied application of ergonomic design in downlighting. The passive lower reflector always fills logically and smoothly with light, at a rate constant to the viewer's movement. The result is quiet, unobtrusive downlighting by design."*

- Wailam Wilson, Prescolite Optical Designer



In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.  
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**ARCH-CFL-042**

## PRESCOLITE'S VirtualSource® OPTICAL DESIGN

Prescolite's optical designer deviated from the standard design and engineered a "transition line" that separates the upper portion of the reflector from the lower portion (figure 1). As a result, the cutoff is derived from the transition line, not the lamp(s). The active upper reflector section is called the Virtual Source, or "glowy top." The effect emulates a round glowing shape, similar to an R-lamp. The lower section is intentionally designed to be inactive until the viewer is able to distinguish the active top section as a distinct optical element.

### RESULT: SYMMETRICAL CUTOFF

Virtual Source downlights have the same cutoff angle in all lateral planes because the transition line in the reflector defines the cutoff angle. Symmetrical cutoff yields downlights with the same appearance regardless of how the viewer approaches the downlight, whether the lamp is vertically or horizontally mounted.

### EFFICIENCY

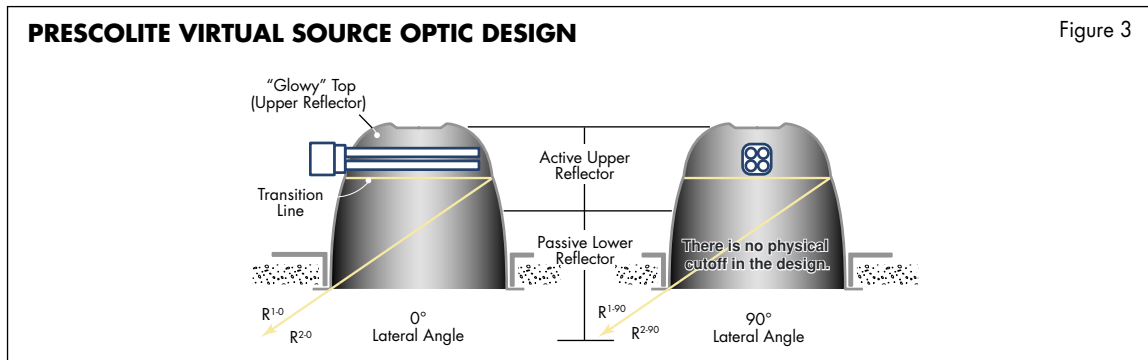
Typical downlights derive a significant amount of their efficiency above the 40° zone, resulting in direct glare. Prescolite Virtual Source optics deliver most of their light in the 0°-40° zone, which results in more illumination on the task where you need it and a downlight that is both efficient and effective (figure 3).

### CONSISTENCY OF APPEARANCE

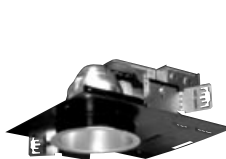
Virtual Source has a consistent appearance among different downlight types. Whether the downlight is a single horizontal quad tube (26W, 32W, or 42W), two-lamp horizontal quad tube, vertical incandescent, or even horizontal metal halide, it will have a consistent optical appearance (regardless of lamp manufacturer) and precise cutoff.

### SHARP CUTOFF, LOW LUMINANCE, AND HIGH VCP

Cutoff consistency results in extremely low brightness in the lower reflector system, yielding a glare-free downlight. Virtual Source downlights exhibit low luminance in the lower (passive) reflector section and high Visual Comfort Probability values.



## The Complete Offering of Luminaires



**Architektür COMPACT FLUORESCENT**  
A comprehensive series of optically superior Compact Fluorescent luminaires.



**TURBOBaffle™ VirtualBaffle**  
Prescolite's expanded baffle offering addresses the issues of aesthetics, performance and product depth.



**Architektür REGRESSED LENS**  
Our regressed lens offering features Virtual Source® optics. Available in Compact Fluorescent, Metal Halide, and Incandescent.



**Architektür METAL HALIDE**  
6" and 8" E-17 Metal Halide Virtual Source® optics.



**Architektür INCANDESCENT**  
6" and 8" A-lamp Virtual Source® optics.



**LiteForms**  
WALL, CEILING & PENDANT CYLINDERS  
8" and 9" Compact Fluorescent Virtual Source® optics.\*



**PENDALUM**  
SERIES  
Virtual Source® triple tube, double quad tube and Metal Halide optics.



**LiteBox**  
TBX - TRIPLE TUBE CFL  
Premium optical performance in an economical package.



**LiteDeco™**  
DECORATIVE TRIMS  
Attractive and affordable Virtual Source® Decorative Trim series compatible with 6" LiteBox housings.



**SIGNOS™**  
ARCHITECTURAL TRIMS  
A beautiful custom series available with 6" & 8" CFL, Incandescent and Metal Halide Virtual Source® luminaires.



**FireTight™**  
FIRE RESISTANT DOWNLIGHTING  
Prescolite's line of fire resistant downlighting with Virtual Source® and LiteDeco™ options.

\* Select Models Only.



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