



Technical & Applications Information on the
Products of GTI Graphic Technology, Inc.

| technote |

COLOR VIEWING VARIABLES AND THE LITEGUARD II VIEWING SYSTEM MONITOR

Graphiclite[®] D50 Color Viewing Stations, Standard Transparency Viewers, and Overhead Luminaires are balanced to the critical color quality and light output of Graphiclite 5000 Kelvin Color Viewing Lamps. Graphiclite lamps are manufactured with a precise blend of fluorescent phosphors which produce a full-spectrum 5000 Kelvin white light quality that allows a viewer design to comply with ISO 3664:2009, "Viewing Conditions - Graphic Technology and Photography".

While Graphiclite viewing systems are carefully balanced to produce such a precise light quality, there are a few operating variables or conditions which can cause significant variations between such viewers, including aging of the lamp and warm-up cycling of the viewers.

(1) **Lamp Aging** : As 5000 Kelvin fluorescent lamps "burn" and age, their color balance shifts (increasingly yellower) and their light output gradually decreases. After approximately 3,000 hours "burning" time, artwork viewed under those lamps will appear decidedly yellower than the same artwork viewed under new lamps.

(2) **Viewer Warm-Up** : During the first 15 minutes after it is turned on, the light quality of a Standard viewer can change (decrease) as much as 200 Kelvins in correlated color temperature and as much as 15% in light intensity. Therefore, critical evaluations should not be made during that period.

*(Note: **Low Electrical Power** : While voltage change does not have a significant effect on the color appearance of such viewers, it does affect their light output, or intensity. Every 5 volt reduction in input voltage, in fact, can reduce the viewer's light intensity by 5%.)*

Controlling D50 Standard Viewer Operating Variables with the LiteGuard II Viewing System Monitor

Inconsistencies and variations in the color appearance of Standard viewers - caused by lamp aging and warm-up cycles - can be minimized and controlled with the LiteGuard II Viewing System Monitor. The LiteGuard II is an electronic monitor, designed for use with Standard viewing systems, that performs the following functions:

1. During warm up, displays warm up time and time remaining to end of warm up.
2. After warm up, displays total hours lamps have been in use and remaining hours of effective* lamp life.
3. At 2200 hours, displays warning about the need to relamp soon. Provides GTI's fax, e-mail, and website address for ordering lamps.
4. At 2500 hours, displays "unit out of tolerance" message and GTI's fax, e-mail, and website address for ordering lamps.

In effect, the LiteGuard II provides a "go, no-go" message to users of D50 Standard viewing facilities, eliminating the most common working errors and assuring viewer operation within nominal tolerances.

*Effective lamp life refers to the period of approximately 2500 hours optimum color balance and light output of such fluorescent lamps, even though their total "burning" life may exceed 12,000 hours.

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OPERATION OF THE LITEGUARD II

Introduction

Some basic facts about D5000 color transparency and reflection viewers:

The major source of color appearance deficiencies in - and differences between - viewers is excessive lamp (operating) age.

A very common error in the use of viewers: making critical color judgements before the viewer is fully warmed up.

Such viewer malfunctions and malpractices can result in costly viewer inaccuracies and variations, defeating the basic purposes of standard lighting: precise and consistent viewing conditions throughout the color reproduction "network". The LiteGuard II Viewing System Monitor provides a series of audio and visual signals that alert you to the fact that such viewing variations exist, or indicate that your D5000 viewer is providing the light quality it was designed to provide.

Use and Maintenance of the LiteGuard II

The LiteGuard II is a solid-state monitor/memory system that records the accumulated period of lamp usage, automatically indicating when the lamps have exceeded 2200 hours and the effective color life (2500 hours). The instrument also provides a (timed) warm-up that indicates whether or not the viewer has achieved equilibrium and a color-stable condition.

Lamp Replacement Procedure: Remove the old lamps from the fixture(s) and replace them with new original equipment Graphiclite 100 lamps. After relamping and when the unit is turned on, depress the reset switch located beneath the hole after "inc" (as shown by arrow). The unit will beep three (3) times and the timer will reset back to 0.

