



Grass Valley Controls

Introducing the **GREEN Dimmer**

(patent pending)

**a new and unique, low cost,
easy to use, office/home
fluorescent light dimming solution**

See and Order online at www.gvcontrols.com

*With a simple flick of a switch, the **GREEN Dimmer** creates a user-friendly and productive work environment. You and your employees will find it easy on the eyes, while you save energy AND MONEY.*

Introduction

Did you know that dimming the bright, fluorescent lights in your office was possible? For a modest cost, you can improve your work environment with lighting suited to the tasks at hand while saving energy and costs. GV Controls has patented a solution for everyone that is low cost and solves the dimming problem in an easy to use and straightforward way.

Why is Dimming Important?

Dimming of your office lighting gives you and your employees an improved workplace atmosphere where they control their choice of the best lighting for the work at hand.

Reasons for personal dimming control of your overhead fluorescent lights are the use of computers, compensation for daylight, reading printed text and creating the best atmosphere for work. All of these factors can make the amount of light you require vary.

Some people report eye strain and related symptoms due to too much, uncontrollable, bright light. In addition to saving energy, productivity improves when you have a choice of how much light you actually want and need. A typical office with two fluorescent fixtures can save up to 600 kilowatt hours of electrical power per year for a total dollar saving of approximately \$100 per year while contributing to a clean environment.

The Lighting Research Center at Rensselaer Polytechnic Institute concluded, "Employees ... prefer manual lighting control to automatic controls because the manual controls allow them to tailor the lighting to their needs."

The Problem

Dimming fluorescent lights requires two components

- a dimming ballast in the overhead fixtures and
- a method by which to control or specify the desired light level.

Whereas dimming ballasts have been available for some time and are being reduced in cost significantly every year, the control problem has been the stumbling block in the incorporation of this vital process in the home and office. The lighting industry has been providing elaborate solutions featuring daylight sensors, automated control scenarios, standardized control wiring and message protocols. These solutions, when seen from an installation and maintenance point of view, rival the intricacies of the PC networks you have in most offices today. So while elaborate, they prove to be quite costly. They need to be applied to a whole office suite to justify the architectural design expense. Plus, they require placement of additional wiring infrastructure. This normally disrupts the work place during the installation and has a high likelihood of causing a significant customer maintenance concern at the finish of installation. In addition, the automated system may easily require manual override capabilities. The sophistication and complexity of these systems also require significant education for each employee.

Due to the cost and complexity issues, the addition of lighting systems is less than 1% in new buildings and virtually 0% for existing or older buildings. The **GREEN Dimmer** from GV Controls eliminates the excessive cost, complexity and maintenance issues while giving the user most if not all of the benefits.

Why no solution until now?

Present day systems for dimming of an office may most certainly be achieved by lighting designers and architects, but the issues therein may require a full fledged project resulting in significant investment in money, time and employee training for your company.

Daylighting is one example of complexity where roof top or window based sensors are installed that measure the outside light intensity and communicate to the installed control system. This, in turn, automatically adjusts the office lighting to a predetermined specified level to save or consume energy. Building occupancy sensors are another popular input to the lighting control system that requires commissioning rules to be established.

A central computer or each employee's personal computer may be used to control a lighting zone. This requires installation and configuration of a PC

resident application on each employee PC. These lighting browsers are yet another complication and as the seating arrangements for employees change the applications have to be reconfigured.

These elaborate solutions and the costly and cumbersome sheetrock based changes to the walls of your structure while rewiring is done significantly increasing the time and cost required for installation. This issue has restricted these lighting systems for the most part to new building construction.

While a professionally designed, or redesign of a building's lighting control system is the top end choice, the total cost of incorporating such systems is prohibitive for most companies. The **GREEN Dimmer** from GV Controls does not require a designer nor any new wiring or sheetrock modification. Its operating instructions are described in the 1"x 1" instructional sticker placed on the wall light switch. In about 15 minutes of install time for a fixture, you and your employees will have complete dimming control of your overhead lighting.

The GREEN Dimmer Solution

Ideally, you want a lighting system that is easy to use, saves energy, does not disrupt employees during installation and is low cost. You want one that involves no training for employees and presents no maintenance problems as your office configuration changes. GV Controls' patent pending **GREEN Dimmer** office dimming solution is your answer.

A typical office with two fluorescent fixtures can save up to 600 kilowatt hours of electrical power per year for a total dollar saving of approximately \$100 per year while contributing to a clean environment.

For less than \$100 per fluorescent fixture, you or your electrician can install the **GREEN Dimmer** in about 15 minutes. Controlling the dimming is easily done by flicking the existing light wall switch off and on. One flick dims the light and two flicks increases the light level. After adjusting the light level to your preferred setting, the **GREEN Dimmer** remembers the setting for the next time you turn on the lights.

Since the **GREEN Dimmer** applies to individual fixtures controlled by a common light switch, you can install the dimmers in individual offices, conference rooms and open space areas as needed.

During installation, only the fixtures are modified by replacing their existing ballasts with the **GREEN Dimmer** and a dimming ballast. See Figure 1. Any energy wasting T12 tubes will be replaced by much more efficient and commonly available T8 tubes. No wiring changes in the walls are required. Thus, both new

and older buildings can both be equally upgraded with the same set of simple steps.

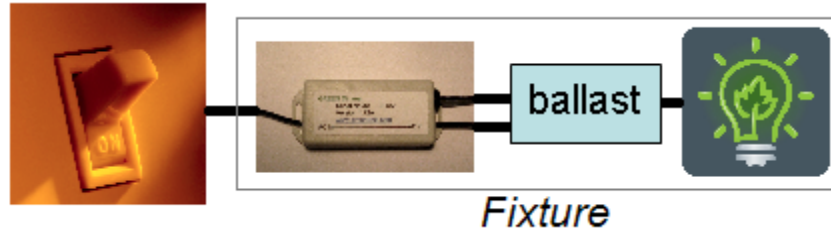


Figure 1 - simple wiring diagram

Visit GVControls www.gvcontrols.com website to see a demonstration of the **GREEN Dimmer** and to use the Savings Calculator to determine the energy savings you can realize for your individual office.

Comparison of Alternatives

	Lighting System	Wall switch mounted Phase Cut	GREEN Dimmer
Design	Yes	No	No
Cost	Very High	Medium	Low
Installation	Extensive	Light Switch/Wall Modifications	15 minutes Fixture only
Maintenance	Yes	Utility issue	No

