LUTRON®

For Your Information ...

Afterhours Mode

Operation

Afterhours mode is used as an "intelligent off" setting for a lighting control system. It allows occupants in a space to continue using that space even after the prescribed "off" time while preventing the lights from being left on needlessly. When the lights are scheduled to turn off, the user is given a visual warning ("blink-warn sequence"), a few minutes before the lights are turned off. If occupants wish to continue using the space, they simply press a button to keep the lights on longer. Otherwise, the lights turn off until either the system is notified that the space is in use again or the system leaves the afterhours mode.

An afterhours sequence is useful when a space may be used after the time when the lights would normally turn off. An example of this is found in most office buildings: If the lights were originally programmed to turn off at 6:00 p.m., anyone staying past that time would be in the dark when the lights turn off. Automatic shutoff can be distracting and potentially dangerous if the occupants in a space are unexpectedly left in the dark. Additionally, lights could be left on all night if the occupants manually turn them back on and then forget to turn them off when they leave.

When the lighting control system has an afterhours mode, the situation is quite different: Wall controls installed throughout the space allow local control of the lights all day. At 6:00 p.m., the system timeclock automatically triggers afterhours mode. The lights perform a blink-warn sequence to tell the occupants that the system is about to turn the lights off, and the off delay timer starts. If the lights are dimmable, they may go to low end to indicate they will turn off soon. If the user operates one of the wall controls to indicate continued presence, the lights will go to the requested level, the warning time will reset, and the sequence will restart. If the off delay expires without a user operating one of the wall controls, the lights turn off. Operating a wall control after the lights turn off will bring the lights back on and restart the warning time. (See the example on the next page.)

For spaces that may have users at unexpected times, using an afterhours mode is often more beneficial than merely turning the lights off. Several considerations need to be made before an afterhours sequence is implemented:
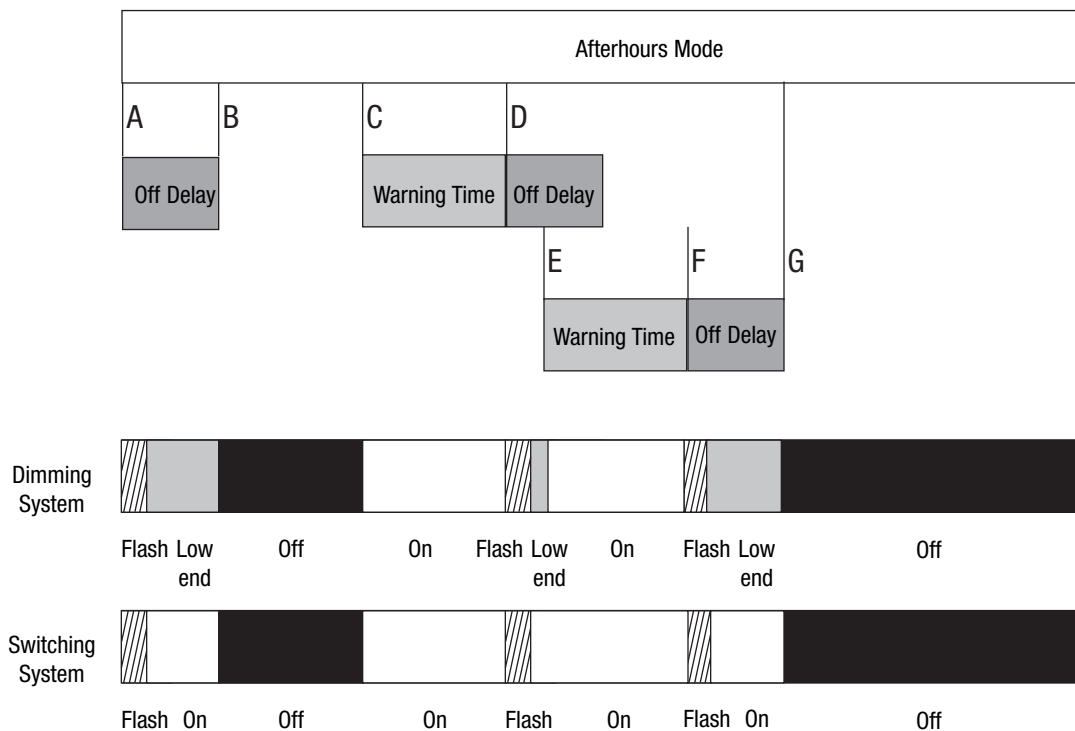
• Afterhours sequences are most frequently used in conjunction with wall controls. This is the best method for the lighting control system to sense whether the space is still occupied, and it requires minimum awareness by the user. In many cases, the wall controls can be disabled when the afterhours sequence is not active to prevent lights from being modified.

• In certain applications, occupant sensors, external contact closures, or even a command from an external software application may be used to trigger and reset an afterhours sequence.

• Some loads, most notably HID (high-intensity discharge), do not tolerate being switched on and off during a short period of time. Such operation would occur during the blink-warn portion of the afterhours sequence. These loads generally require 15 to 30 minutes of "off time" before they can be turned on again. They also take several minutes before reaching full brightness after being turned on. Because of this, these load types and others like them should not be controlled with an afterhours sequence.

**Need additional assistance? Call the Lutron Technical Support Center *1-800-523-9466.*
Please provide exact model number when calling.**

Several different terms are used to describe an afterhours sequence:

- **Warning time:** This is the amount of time the system will wait from the last known time the space was occupied before generating a visual blink-warn to the user that the lights may be turning off.
- **Blink-warn:** This is one method of informing the user that the lights may turn off. In the case of dimmable loads, it involves dimming the lights several times from the lowest level to the highest level over a few seconds. In the case of a non-dimmable load, the lights turn completely on and off.
- **Off delay:** This is the amount of time from the end of the blink-warn sequence until the time the lights turn off. If possible, the lights may be at low end during this time.

Example Scenario for Afterhours Mode:

A. Afterhours mode begins. The circuits that are going to turn off start to flash (blink-warn), and the off delay starts counting down.
B. Lights turn off.
C. Button is pressed to turn lights on, and the warning time starts counting down.
D. The warning time expires, and the lights flash (blink-warn) notifying they will be turning off soon. The off delay starts counting down.
E. Button is pressed to keep lights on, the warning time rests and starts counting down.
F. Lights flash (blink-warn) notifying they will be turning off soon, and the off delay starts counting down.
G. Lights turn off.

Need additional assistance? Call the Lutron Technical Support Center *1-800-523-9466.* Please provide exact model number when calling.

eLumen™ Software with *GRAFIK*™ Power Panels

- Typical application: Interior architectural lighting, such as a conference room, as part of a building-wide centralized lighting control system
- Provides a pre-defined blink-warn sequence that can be used on loads connected to *GRAFIK* power panels
- A more complex custom sequence could be created for customized timing, or to blink only some loads, in case not all the loads tolerate being turned off and on. Contact the Lutron Technical Support Center for assistance with programming complex sequences.
- Supports dimmable and switching-only loads
- Blink-warn sequence can be initiated manually from the software, from a timeclock, button press, contact closure, or RS232 command
- Warning time adjustable from 1 second to 100 minutes
- Number of blinks fixed at 3 in pre-defined sequence
- Off delay fixed at 15 minutes in pre-defined sequence

eLumen Software with Lighting Zone Controllers (LZC)

- Typical application: Open office space containing three-wire fluorescent ballasts and local controls, as part of a building-wide centralized lighting control system
- Provides a programmable afterhours sequence that is run by the LZC unit
- Afterhours sequence can be initiated manually from the software, from a timeclock, button press, contact closure, or RS232 command
- Supports switching-only (using the non-dim setting of the LZC) and dimmable three-wire ballast loads; other load types are supported with interfaces
- Warning time adjustable from 1 minute to 120 minutes
- Number of blinks adjustable from 1 to 3
- Off delay adjustable from 1 minute up to 15 minutes

Digital microWATT™ Software with Lighting Zone Controllers (LZC)

- Typical application: Open office space containing three-wire fluorescent ballasts and local controls, as part of a building-wide distributed energy management system
- Provides a programmable afterhours sequence that is run by the LZC unit
- Afterhours sequence can be initiated manually from the software, from a timeclock event, or with a BACnet® command
- Supports switching-only (using the non-dim setting of the LZC) and dimmable three-wire ballast loads; other load types are supported with interfaces
- Warning time adjustable from 1 minute to 120 minutes
- Number of blinks adjustable from 1 to 3
- Off delay adjustable from 1 minute to 15 minutes

Softswitch128™ (XPS) and *LCP128*™ Systems

- Typical application: Small spaces, such as schools or retail stores, that require a simple switching (XPS) or dimming (LCP) system with minimal integration with other systems
- Provides a programmable afterhours sequence that is run by the controller
- Afterhours sequence can be initiated by a timeclock event
- Supports switching-only (using "OFF No Flash" "OFF" afterhours setting) or dimmable (LCP only) loads
- Warning time adjustable from 1 minute to 180 minutes
- Number of blinks adjustable from 1 to 15
- Off delay adjustable from 1 minute to 180 minutes

microWATT® Lighting Controller

- Typical application: Small spaces, such as schools or retail stores, that require distributed three-wire ballast controllers with minimal integration with other systems
- Provides a pre-defined afterhours sequence which is run by each individual lighting controller
- Afterhours sequence can be initiated by an external contact closure connected between the TIMECLOCK OFF and CIRCUIT COMMON pins. This contact closure is typically generated by a third-party timeclock.
- Supports dimmable three-wire ballast loads; other load types are supported with interfaces
- Warning time fixed at 30 minutes (if triggered by a wall control) or 15 minutes (if triggered by an occupant sensor)
- Number of blinks fixed at 3
- Off delay fixed at 5 minutes

Worldwide Technical and Sales Assistance