centralized lighting control system | 5000/6000/7000 series

Step 1

Determine number of zones, circuits, and select Power Panels

A zone is a group of lights or shades that are always controlled together. **GRAFIK Eye** Controls have the ability to dim most popular sources and to control several zones at one time from one button press. Important factors to consider when creating zones are flexibility of control and aesthetics.
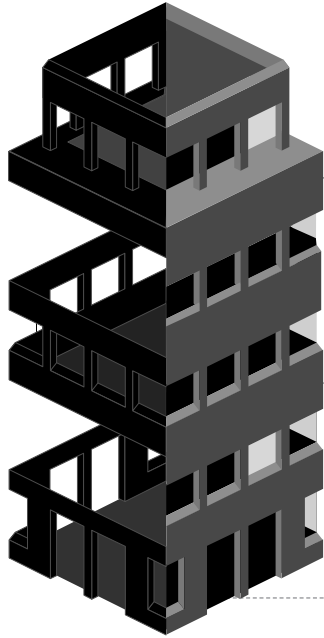
If the project requires up to 128 zones, a **GRAFIK 5000**™ system should be selected; up to 512 zones, a **GRAFIK 6000**® is appropriate; and a **GRAFIK 7000**™ may be used for applications containing 64 to over 16,000 zones. For example, the second floor requires 90 zones and the first floor requires 120 zones. A **GRAFIK 6000** should be used to accommodate the total number of zones, 210, for this project.

GRAFIK 7000™ may be used for any application requiring graphical control, data logging, multiple processors, or control from multiple computers.

According to the summary of circuits in this example, the second floor has 63 dimming circuits, requiring two 24 circuit Dimming Panels plus one 20 circuit Dimming Panel. With 47 switched circuits, two 24 circuit Softswitch™ Panels will accommodate the number of switched circuits for that floor.

	Room (Area)	Description	No. of Zones	No. of Circuits Dimmed	No. of Circuits Switched
2nd Floor	Room 1	Board Room	4	4	1
	Room 2	Open Office	9	7	2
	(through)				
	Room 31	Open Office	8	6	3
	Room 32	Executive Office	4	2	2
			Floor total = 90	**Floor total = 63**	**Floor total = 47**
1st Floor	Room 1	Lobby	6	3	2
	Room 2	Cafeteria	8	7	1
	Room 3	Employee Lounge	6	6	2
	(through)				
	Room 31	Office	4	2	2
			Floor total = 120	**Floor total = 109**	**Floor total = 70**

Design Tips

☐ **GP Dimming Panels are available with Main Lugs, Main Breakers, or Dual-Tap Main Lugs.**

☐ **A separate Power Panel is required for each voltage type (120V, 220-240V, 277V, 230V, 100V) and feed type (Normal or Emergency).**

☐ **Multiple circuits can be controlled per zone.**

☐ **Dimming ballasts are required to dim fluorescent sources. For more information on Lutron Fluorescent Dimming Ballasts, see pg. 236.**

☐ **Power Panels can be distributed throughout the building to reduce wire runs.**

☐ **More than 512 zones requires a multiple processor GRAFIK 7000 System. GRAFIK 7000 should also be selected if graphical control is required.**

Step 2

Select Design Elements

Identify additional control schemes for the project (e.g. DMX integration, Time Scheduling, Wireless Control) and add appropriate Control Station Devices to achieve strategies.

For Design Elements available, see pgs. 6-9.

For example, use Wallstations in the Board Room and Cafeteria for local lighting control.

Use occupancy sensors in the Employee Lounge for energy-saving control.

Use Photosensors in the Lobby for daylight compensation and energy-savings.

Use Graphical Control Software to monitor, control, and navigate through the building and control the lighting system from one location.

Step 3

Add Local Controls and Control Interfaces to Implement Design Elements.

For this example, a Four-button Wallstation with Off and Raise/Lower, SO-4SN (see pg. 106), is chosen for the Cafeteria to recall preset light levels.

A Slider Wallstation, OMXSL-4-3G (see pg. 121), is placed in the Boardroom as a local control.

A Contact Closure Interface, OMX-AV (see pg. 124), is required to interface the dry contact closure from the occupancy sensor to the system in the Employee Lounge.

A Daylight Control, OMX-DACPI-A-WH (see pg. 126), is used to integrate Photosensors in the lobby for daylight compensation and energy savings.
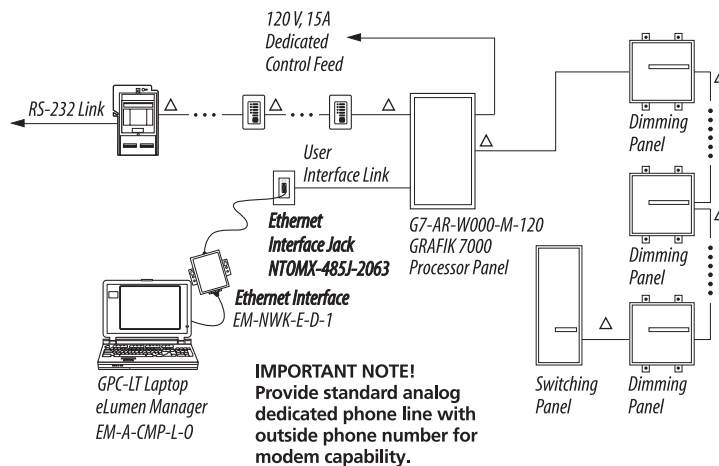
PictureIT™ Software, pg. 97, is used to manage the entire building's lighting system from the Facility Manager's office.

Design Tips

☐ **GRAFIK 5000**™ **can accommodate up to 32 Control Station Devices.**

☐ **GRAFIK 6000**® **can accommodate up to 96 Control Station Devices.**

☐ **GRAFIK 7000**™ **can accommodate up to 192 Control Station Devices on a single Processor. Up to 32 Processors can be linked to control over 6,000 Control Station Devices.**

☐ **Control Station Device functions are configured through software to perform a variety of functions. Make selection of wallstations based on style.**

☐ **Consider using non-dim circuits to control PerSONNA® fixtures for personal worklight control in office areas. Timeclock control over these circuits can still be maintained through the Centralized Lighting Control System Processor for total building lighting management.**

☐ **The eLumen manager should be located in a securable area for setup and operation/monitoring of the system.**

☐ **A Hand-Held Programmer can be used to set preset light levels within a space. Install Programming Jacks throughout the project in areas where real-time programming is required. In a GRAFIK 7000 System, the Hand-Held Programmer only affects the processor to which it is currently connected.**

Step 4

Support the design through one-line diagrams and written product specifications.

120 V, 15A Dedicated Control Feed

RS-232 Link

User Interface Link

Ethernet Interface Jack NTOMX-485J-2063

Ethernet Interface EM-NWK-E-D-1

GPC-LT Laptop eLumen Manager EM-A-CMP-L-0

G7-AR-W000-M-120 GRAFIK 7000 Processor Panel

Dimming Panel

Dimming Panel

Switching Panel

Dimming Panel

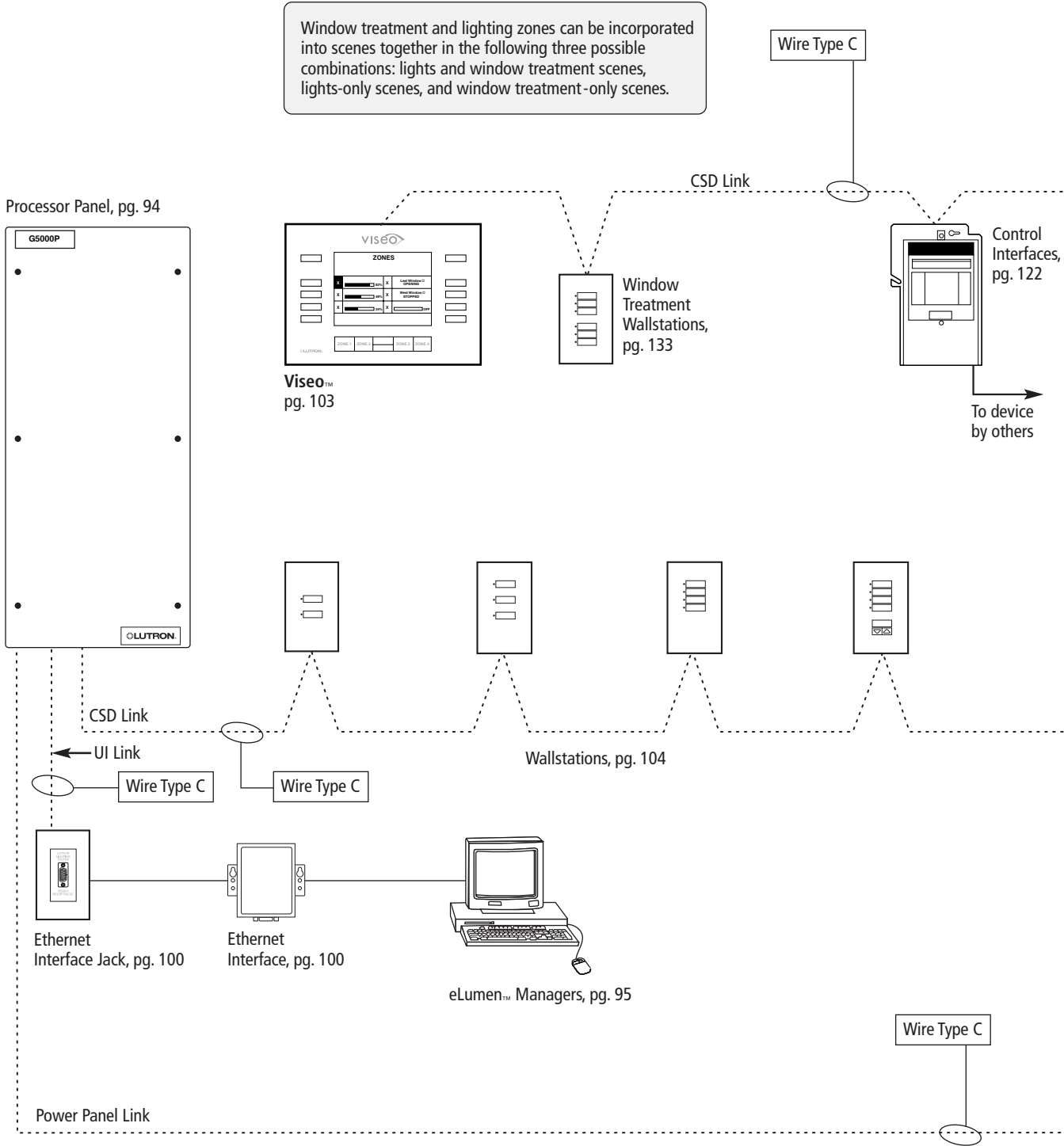**IMPORTANT NOTE! Provide standard analog dedicated phone line with outside phone number for modem capability.**

△ Control Station Device (CSD) and User Interface (UI) links require Lutron all-in-one Cable GRX-CBL-46L-500 (5-Conductor) or two #12 (Class 2) plus one Belden #9461 or Alpha #2211 cable.

Design Tip

☐ **Complete product specifications are available at www.lutron.com.**

Window treatment and lighting zones can be incorporated into scenes together in the following three possible combinations: lights and window treatment scenes, lights-only scenes, and window treatment-only scenes.
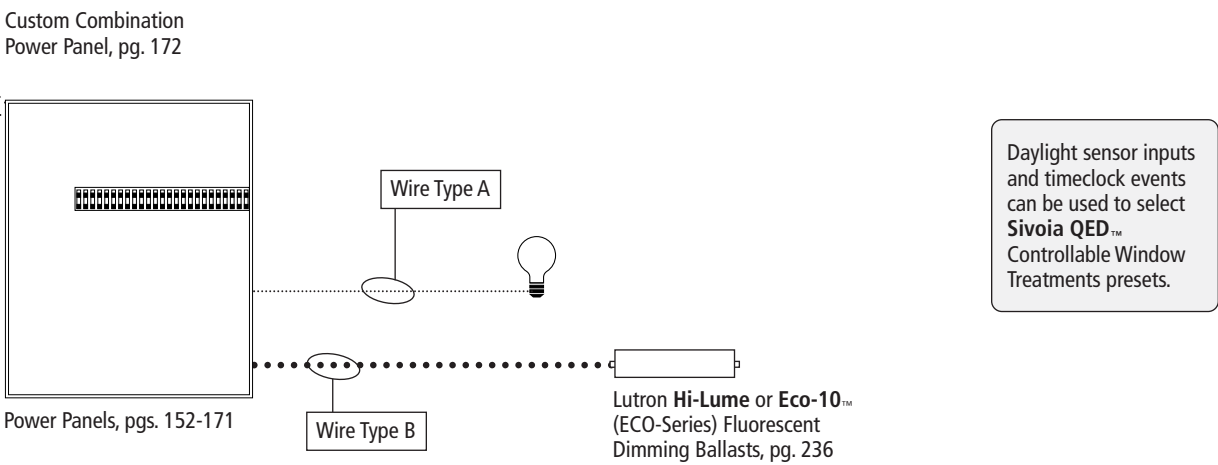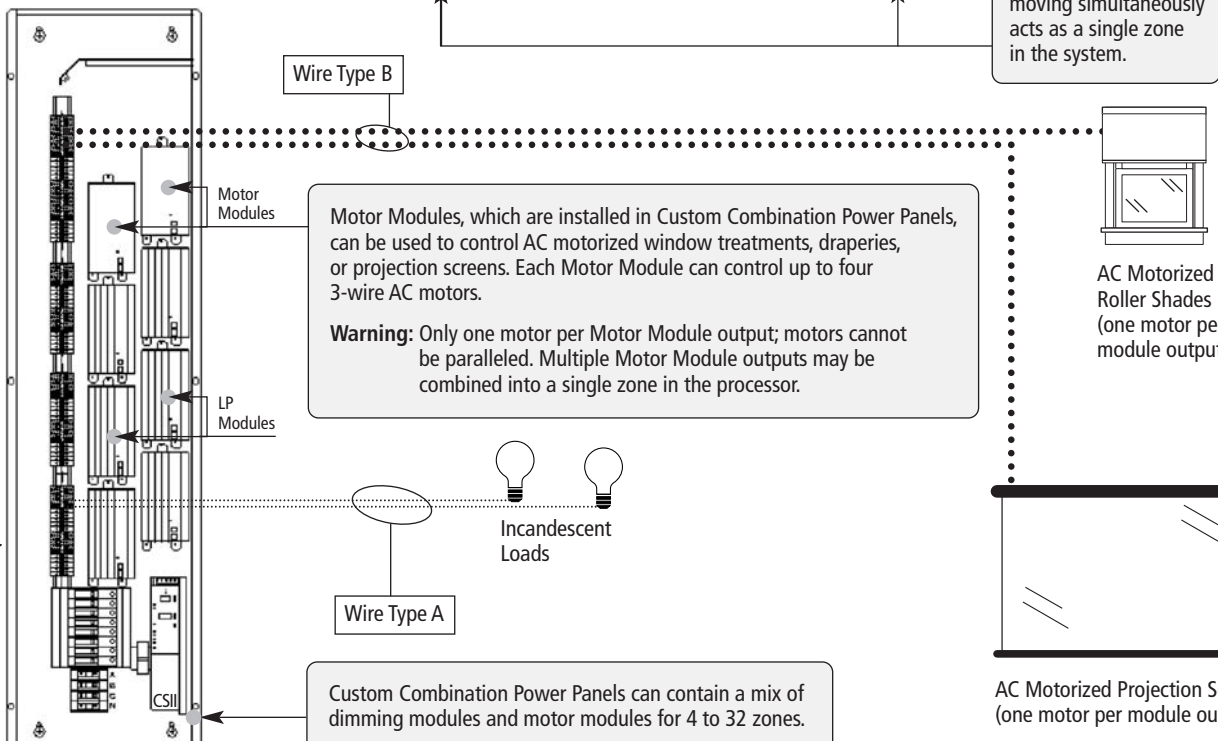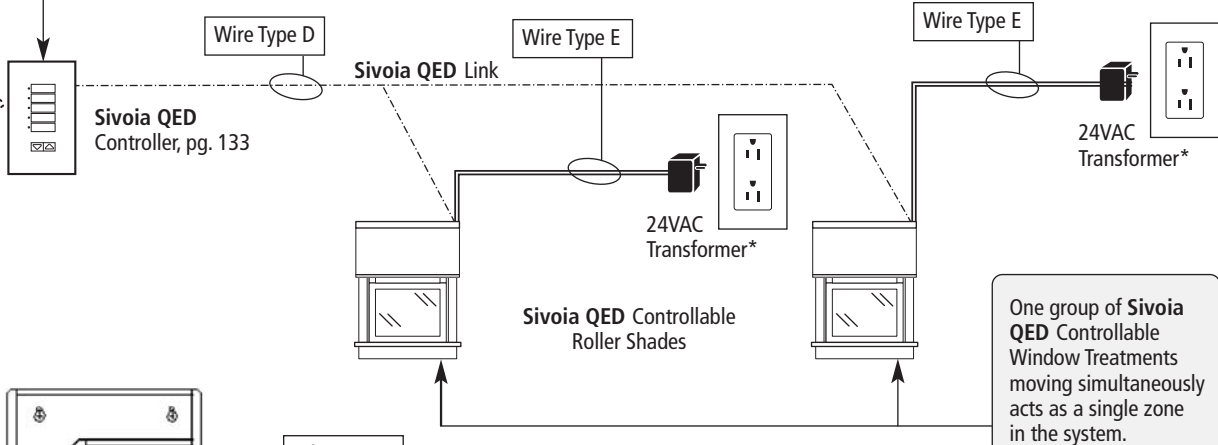
Wire Type C

CSD Link

Processor Panel, pg. 94

G5000P

Viseo™
pg. 103

ZONES

Window Treatment Wallstations, pg. 133

Control Interfaces, pg. 122

To device by others

CSD Link

UI Link

Wire Type C

Wire Type C

Wallstations, pg. 104

Ethernet Interface Jack, pg. 100

Ethernet Interface, pg. 100

eLumen™ Managers, pg. 95

Wire Type C

Power Panel Link

Wiring Type Key

....	Type A	(2) #12 AWG wires (120V/277V)
• • • • • • •	Type B	(3) #12 AWG wires (120V/277V)
- - - - - - -	Type C	(2) #12 AWG Class 2 wires + (1) twisted, shielded pair #18 AWG Class 2 wires (or Lutron Model #: GRX-CBL-46L)
—·—·—·—	Type D	(3) #16-20 AWG wires (24VAC, plus earth ground) + (4) twisted, shielded #18 AWG (Available from Lutron Model #: SVQ-CBL-250)
————	Type E	(3) #18-22 AWG wires (24VAC, plus earth ground)

* Note: Wire to a **Sivoia QED**™ plug-in transformer (shown), **or** junction box mount transformer, **or** a **Sivoia QED** power panel. One **Sivoia QED** transformer can power only one EDU regardless of window treatment size up to 200' (61m) away.

The **Sivoia QED**™ Controller, which connects to both the **Sivoia QED** communication link and the **Control Station Device** link, is used for programming and operating the group of window treatments wired to the control. Each **Sivoia QED** Controller occupies one address on the wallstation link.

Wire Type D

Wire Type E

Wire Type E

Sivoia QED Link

Sivoia QED
Controller, pg. 133

24VAC
Transformer*

24VAC
Transformer*

Sivoia QED Controllable
Roller Shades

One group of **Sivoia QED** Controllable Window Treatments moving simultaneously acts as a single zone in the system.

Wire Type B

Motor
Modules

Motor Modules, which are installed in Custom Combination Power Panels, can be used to control AC motorized window treatments, draperies, or projection screens. Each Motor Module can control up to four 3-wire AC motors.

Warning: Only one motor per Motor Module output; motors cannot be paralleled. Multiple Motor Module outputs may be combined into a single zone in the processor.

AC Motorized
Roller Shades
(one motor per
module output)

LP
Modules

Incandescent
Loads

Wire Type A

CSII

Custom Combination Power Panels can contain a mix of dimming modules and motor modules for 4 to 32 zones.

AC Motorized Projection Screen
(one motor per module output)

Custom Combination
Power Panel, pg. 172

Daylight sensor inputs and timeclock events can be used to select **Sivoia QED**™ Controllable Window Treatments presets.

Wire Type A

Power Panels, pgs. 152-171

Lutron **Hi-Lume** or **Eco-10**™ (ECO-Series) Fluorescent Dimming Ballasts, pg. 236

Wire Type B

Architectural Grade Lighting Control Systems

- Designed to manage all lighting in a building
- Easily interfaces with audio/visual equipment, stage, security and building management systems
- eLumen Managers include easy-to-understand, Windows®-based DesignIT™ for system design and setup
- Built-in astronomical timeclock— allows scheduling of events up to a year in advance
- Built-in modem and RS-232 Interface — simplifies remote access and system integration
- Automatic sequencing
- Partitioned space control — combines/separates lighting scene control to reflect the partition status of movable walls
- Conditional Logic
- Button by button programming
- Groups and Modes simplify programming of complex spaces
- Optional real-time, web-based, ControlIT™ and PictureIT™ control software
- SecureIT™ allows the administrator to set user access rights

eLumen™ Manager

GRAFIK 7000 Processor Panel

Compatible Lutron Products

Viseo™
Wallstation pg. 102

Wallstations
pg. 104

Control
Interfaces pg. 122

Power Panels
pg. 146

Fluorescent Ballasts
pg. 236

Digital microWATT™ pg. 192
Consult Lutron for details

SPECIFICATIONS

- Load types:
  - Controlled through Power Panels, see pg. 146
  - For more information on neon/cold cathode and 2-circuit track, see Application Notes, pgs. 178-183
  - For control of **Sivoia QED™** Window Treatments, use SO-SVCN **Sivoia QED** Controller, see pg. 133
  - For control of AC Motorized Window Treatments, use Power Panels with Motor Modules, see pg. 173
- Power and wattage maximums:
  - Through Power Panels, see pg. 146
- System features:
  - Use a PC to control the system from anywhere (PC must have eLumen™ software)
- Control Station Device (CSD) links:
  - Up to 32: Wallstations, Control Interfaces, Window Treatment Controllers, and **Sivoia QED** Controllers

Standards listed below apply to one or more products in the Lutron product line. Consult factory for specific information.
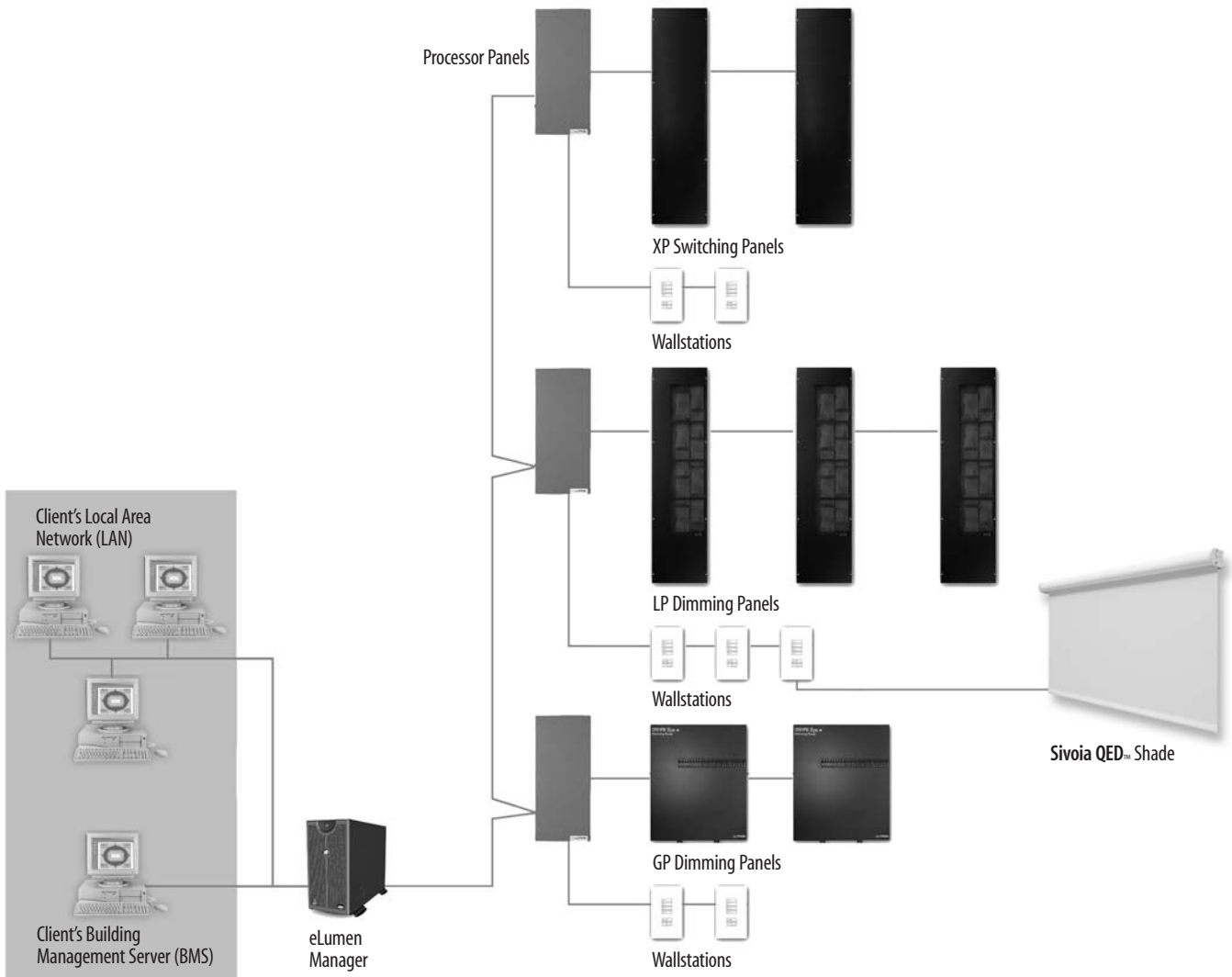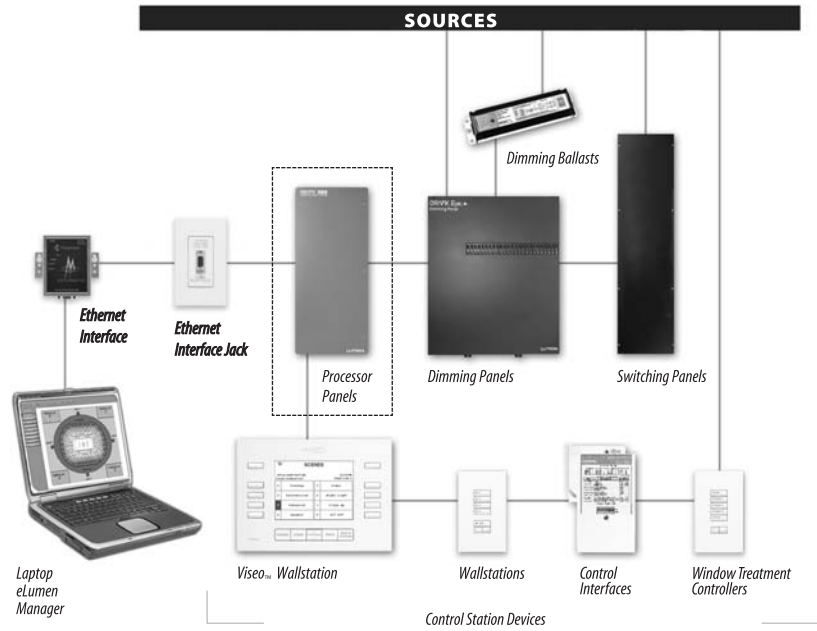
LUTRON
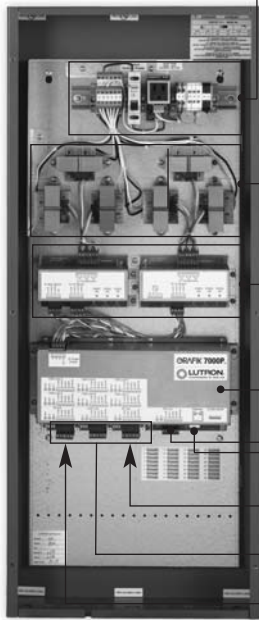Quality Systems
registered
to ISO 9001

CENTRALIZED LIGHTING CONTROL SYSTEM MAP

• Use the map at right to identify system component being reviewed in each section

• For overall wiring information, see pg. 90

SOURCES

Dimming Ballasts

Ethernet Interface

Ethernet Interface Jack

Processor Panels

Dimming Panels

Switching Panels

Laptop eLumen Manager

Viseo™ Wallstation

Wallstations

Control Interfaces

Window Treatment Controllers

Control Station Devices

Processor Panels

XP Switching Panels

Wallstations

Client's Local Area Network (LAN)

LP Dimming Panels

Wallstations

Sivoia QED™ Shade

Client's Building Management Server (BMS)

eLumen Manager

GP Dimming Panels

Wallstations

Product	Model

CENTRALIZED LIGHTING CONTROL SYSTEM

• Dedicated 120V/230V power feed to the system

• System power is distributed from these power supplies

• System processor stores system information including:
  - scenes,
  - spaces
  - zones
  - timeclocks
  - power panel levels
  - Control Station Device functions
  - Special functions

• Power panel link connects power panels to the system

• 10/100 BaseT ethernet link:
  - setup and download via eLumen Manager
  - over ethernet, connect multiple processor panels (7000 only)

• Interprocessor link connects multiple processor panels (located under CSD link-7000 only)

• CSD links connect the control station devices to the system

• User interface link allows setup and download with a lighting manager via RS-485 (located under CSD link)

Dimensions

W: 14.38" (365mm)
H: 34.75" (883mm)
D: 3.88" (99mm)

GRAFIK 5000 SYSTEM   G5-A-SYS-1

• Each **GRAFIK 5000** System is comprised of the following:
  - Processor Panel
    * 128 zones per Processor Panel
    * One Processor Panel per system
  - Power Panels:
    * Up to 64 Power Panels per Processor Panel
  - Control Station Devices:
    * Up to 32 (one link)
  - DesignIT™ and ControlIT™ software

GRAFIK 6000 SYSTEM   G6-A-SYS-1

• Each **GRAFIK 6000** System is comprised of the following:
  - Processor Panel:
    * 512 zones per Processor Panel
    * One Processor Panel per system
  - Power Panels:
    * Up to 125 Power Panels per Processor Panel
  - Control Station Devices:
    * Up to 96 per Processor Panel (three links)
  - DesignIT and ControlIT software

GRAFIK 7000 PROCESSOR   G7-AR-__-_-__

• Each **GRAFIK 7000** System is comprised of the following:
  - Processor Panels:
    * Up to 512 zones per Processor Panel   * Includes 64 zones
    * Up to 32 Processor Panels per system   * Expandable as needed up to 512 zones
      (up to 16,384 zones per system)   with zone licenses, pg. 97
  - Power Panels:
    * Up to 125 Power Panels per processor
      (up to 4,000 Power Panels per system)
  - Control Station Devices:
    * Up to 192 Control Station Devices per Processor (six links)
      (up to 6,144 Control Station Devices per system)
  - Connect Processors with RS-485 or 10/100 BaseT Ethernet

Dimensions

W: 14.38" (365mm)
H: 34.75" (883mm)
D: 3.88" (99mm)

Product	Model

DESKTOP eLumen MANAGER — EM-A-CMP-D-0

- Use for setup, monitoring, and real-time operation of the **Centralized Lighting Control System**
- Complete with monitor, internal modem, and pre-loaded Windows®-based Lutron® DesignIT™ and ScheduleIT™ software, pg. 97 Setup and Quick Event scheduler software
- Software is multi-lingual

LAPTOP eLumen MANAGER — EM-A-CMP-L-0

- Use for setup, monitoring, and real-time operation of the **Centralized Lighting Control System**
- Complete with monitor, internal modem, and pre-loaded Windows®-based Lutron® DesignIT and ScheduleIT software, pg. 97
- Software is multi-lingual

FULL-TIME eLumen MANAGER

- This full-time eLumen Manager is used with a **GRAFIK 7000** Lighting Control system to allow the following:
  - Centralized, real-time control
  - Data logging
  - Energy profiling
  - Connection to a LAN from its RJ45 network jack and to the rest of the system through one of its network connections
  - Web-based control
  - Interfacing to remote clients
- Full-time lighting manager must run at all times for proper operation of the system
- Complete with monitor, UPS, internal modem, and pre-loaded Windows®-based Lutron® DesignIT ,ScheduleIT, and SecureIT™ software
- Software is multi-lingual
- Network compatible via LAN (Local Area Network) or dial-up networking
  - Connects to LAN from one of its RJ45 network jacks and to the **GRAFIK 7000** System through the other RJ45 network jack
  - Network connection provides dual speed capability at 10Mbit/sec or 100Mbit/sec
- Telephone Interface Option
  - Input from up to four simultaneous, independent analog phone lines. Each line must support Caller ID.
  - Voice-prompted remote touch tone operation via modes:
    * Select intensity
    * Select scenes
    * Enable/disable control station devices
    * Enable/disable timeclocks
    * Select the state of system variables
    * Select the state of movable walls
  - Access restrictions by:
    * User ID
    * Passcode
    * Caller ID
- RAID Option
  - Uses an array of three or more hard drives to achieve transparent data redundancy. Drives are hot swapable and easily removable in the event of a single drive failure

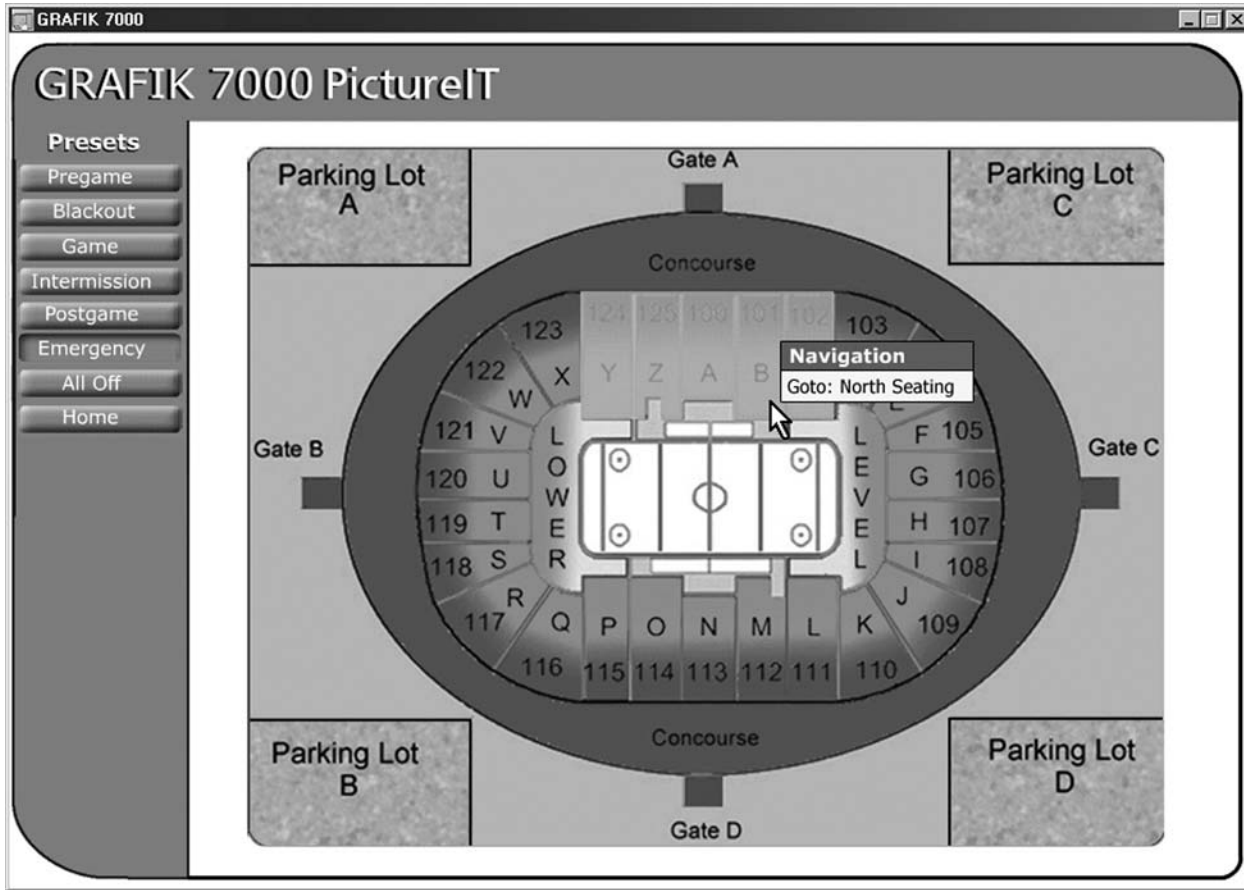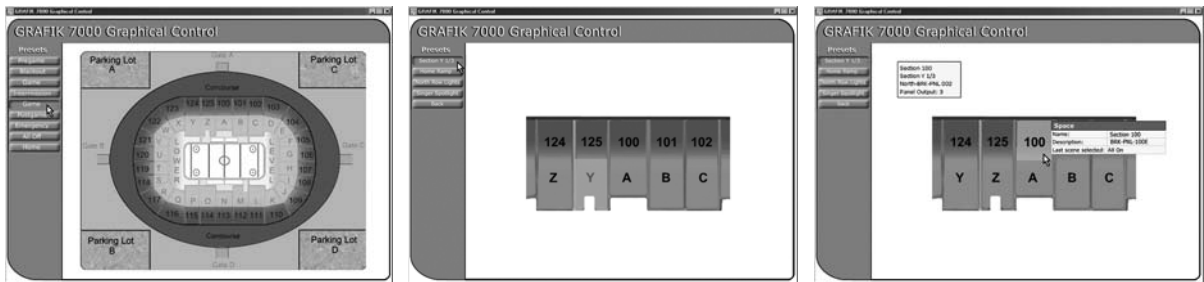| Product	Model
eLumen Manager	EM-A-CMP-S-0
eLumen Manager with Telephone Interface	EM-A-CMP-S-T
eLumen Manager with RAID	EM-A-CMP-R-0
eLumen Manager with Telephone Interface and RAID	EM-A-CMP-R-T

SOFTWARE BENEFITS

Features

- eLumen™ software suite is a web-based, real-time lighting control tool that is easy to learn and operate
- Customers can choose any software combination to suit their needs
- Software capacity grows with system
- Secure, remote access (monitoring, control and diagnostics) from anywhere at anytime via Internet/Ethernet or from a telephone
- Personalized access and control in language of choice for all software

Product	Model
DesignIT™ _SOFTWARE LICENSE_	**EL-SFT-DES**

- Used to create, modify and update the equipment in the facility.
  Also used for creating zones, scenes, programming, timeclocks, groups and modes.
- Included with Lutron-provided computers and servers.
  Comes standard with **GRAFIK 5000** and **6000** Systems
- Required on all systems to make database changes

ScheduleIT™ _SOFTWARE LICENSE_	**EL-SFT-SCH**

- Allows you to schedule and implement temporary
  schedule for special lighting events, without affecting
  the existing schedules in the system
- Included with Lutron provided computers and servers.
  Comes standard with **GRAFIK 5000** and **6000** Systems
- PC must be connected and powered for
  the temporary event to occur

ControlIT™ _SOFTWARE LICENSE_	**EL-SFT-CON**

- Control and receive real-time feedback from lights, shades
  and other **GRAFIK 7000** compatible Building Management System
- Included with **GRAFIK 5000** and **6000** Systems

PictureIT™ _SOFTWARE LICENSE_	**EL-SFT-PIC**

- Allows control and feedback from **GRAFIK 7000** system,
  through intuitive and interactive graphics
- Included with Graphic Design Service

ZONE LICENSE	**EL-SFT-ZLIC-64**

- Block of 64 additional zones for a **GRAFIK 7000** processor
- Add Zone licenses to the 64 zones that ship standard
  with the **GRAFIK 7000** processor,
  up to the processor maximum of 512 Zones

CLIENT LICENSE	**EL-SFT-CLIC-5**

- Additional 5 client access points for web-based,
  real-time control of the **GRAFIK 7000** system

SecureIT™ _SOFTWARE LICENSE_	**EL-SFT-SEC**

- 1 Administration Access Point license
- Provides the ability to define user access rights to the GRAFIK 7000 software tools
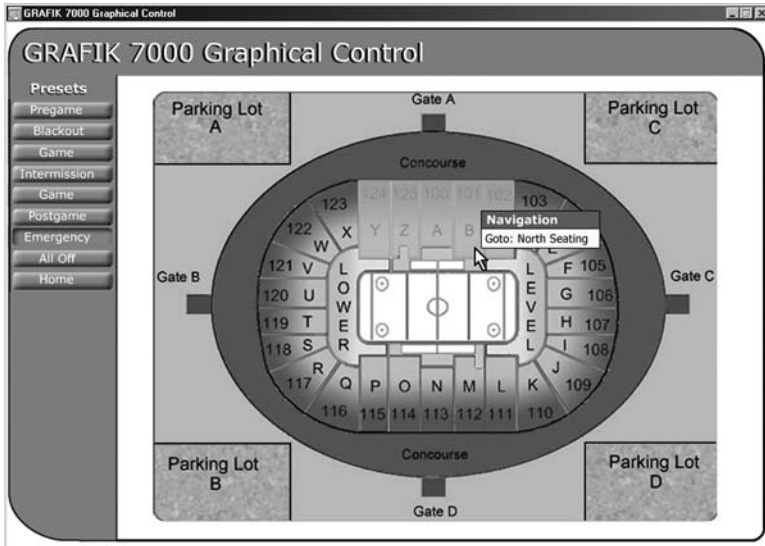
Customized Software Graphics for easy navigation and control
There are three options for graphical user interfaces that Lutron can design for you

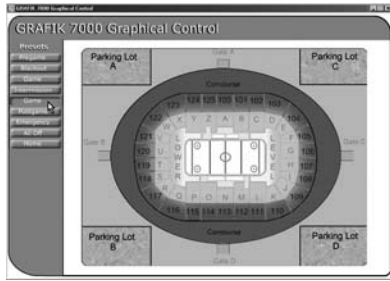|	Sidebar provides navigation and control	Graphic navigation	Graphic control and monitoring
LEVEL 1	✔		
LEVEL 2	✔	✔	
LEVEL 3	✔	✔	✔

Product	Model

LEVEL ONE GRAPHICS

Simple buttons for you to control the lights in an area.
• Graphics are static
• 8 operational buttons per page

Starter Pack   **EL-GRPH-L1-S**
• Includes:
   - 8 custom-designed graphics pages
   - PictureIT™ Software License, EL-SFT-PIC

Each Additional Page   **EL-GRPH-L1-P**
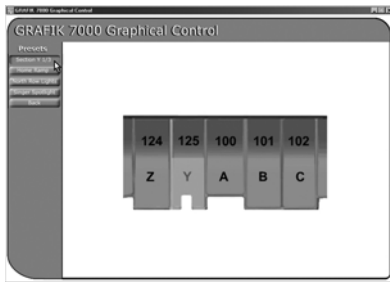
LEVEL TWO GRAPHICS

Simple buttons for you to control the lights in an area.
You can click on the selected area and control a new set of scenes via buttons.
• 8 operational buttons per page
• 8 navigation points per page

Starter Pack   **EL-GRPH-L2-S**
• Includes:
   - 8 custom-designed graphics pages
   - PictureIT Software License, EL-SFT-PIC

Each Additional Page   **EL-GRPH-L2-P**
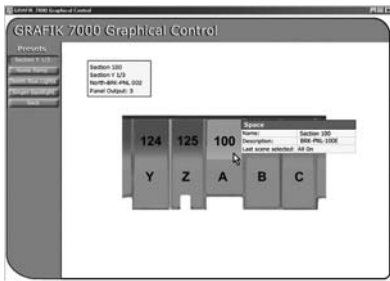
LEVEL THREE GRAPHICS

In addition to Level One and Level Two graphics, you can view the lighting control feedback
of the selected area. You can also control lights/shades and select scenes via a virtual
wallstation at this level.
• 8 operational buttons per page
• 8 monitor points per page
• 8 control/navigation points per page

Starter Pack   **EL-GRPH-L3-S**
• Includes:
   - 8 custom-designed graphics pages
   - PictureIT Software License, EL-SFT-PIC

Each Additional Page   **EL-GRPH-L3-P**

Product	Model	Color	Suffix

Dimensions

W: 5.38" (137mm)
H: 7.31" (186mm)
D: 2.13" (54mm)

HAND-HELD PROGRAMMER   GR6-HHP

- Set scenes and make adjustments
  without the use of a PC
- Programs scenes on the processor
  to which it is connected
- Plug into Hand-Held Programmer Jack (NTOMX-HHPJ-)
  to set scenes or control lights locally
- Cord length is 25'

Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 1.13" (29mm) [1]

Wallbox Size:
single-gang

HAND-HELD PROGRAMMER JACK   NTOMX-HHPJ-

- Connects the Hand-Held Programmer to a
  Centralized Lighting Control System Processor Panel

- Connects on the CSD link, does not count as one
  of 32 Control Station devices

Dimensions

1-Port Ethernet
W: 2.875" (73mm)
H: 3.625" (92mm)
D: 0.75" (22mm)

4-Port Ethernet
W: 10.75" (273mm)
H: 6.312" (160mm)
D: 1.50" (38mm)

8-Port Ethernet
W: 10.75" (273mm)
H: 6.312" (160mm)
D: 1.812" (46mm)

ETHERNET INTERFACE

- Connects Ethernet to
  Centralized Lighting Control System

1-Port Ethernet   EM-NWK-E-D-1

4-Port Ethernet   EM-NWK-E-D-4

8-Port Ethernet   EM-NWK-E-D-8

Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 1.13" (29mm) [1]

Wallbox Size:
single-gang

ETHERNET INTERFACE JACK   NTOMX-485J-

- Connects the Ethernet Interface to
  a **Centralized Lighting Control System**
  Processor Panel User Interface (UI) Link

Footnote, pg. 100
1   Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).

Ordering Example

NTOMX-HHPJ-WH
add color/finish suffix
to model #

Matte Finishes

Standard, ships in 48 hrs.
White	*WH*
Ivory	*IV*
Beige	*BE*
Gray	*GR*
Brown	*BR*
Black	*BL*

Metal Finishes

Ships in 4-6 weeks.
Bright Brass	*BB*
Bright Chrome	*BC*
Bright Nickel	*BN*
Satin Brass	*SB*
Satin Chrome	*SC*
Satin Nickel	*SN*
Antique Brass	*QB*
Antique Bronze	*QZ*
Anodized Aluminum	
* Clear*	*CLA*
* Black*	*BLA*
* Brass*	*BRA*

Customization

Ships in 4-6 weeks.
- *See pg. 12 for multigang
  wallplates, color matching,
  engraving/silk screening,
  and custom controls.*
- *See pg. 143 for
  engraving schedules.*

Product	Model	Color	Suffix

POWER AND DATA REPEATER

Dimensions

W: 5.00" (127mm)
H: 7.75" (197mm)
D: 2.50" (64mm)

Mounts on 4.00"-square utility box

120V, 50/60Hz — **MX-RPTR**

240V, 50/60Hz — **MX-RPTR-CE**

- Use every 2,000' (610m) to boost power and data signals
- Increase number of system Power Panels to 64
- Expand Power Panel or Control Station Devices (CSD) link up to 8,000' (2400m) using up to three power and data repeaters

BACNET INTERFACE 120V

1000 BACnet points — **EM-NWK-B-F-1-1**

2000 BACnet points — **EM-NWK-B-F-2-1**

- Allows BACnet devices to read, control, and monitor **Centralized Lighting Control System** Processors either as a collection of up to 512 zones or as a collection of up to 128 spaces (The number of controlled spaces or zones must be specified before the unit is shipped)
- Allows zone intensity assignment and monitoring or space scene assignment and monitoring. Only one of the two is possible in a system. (Contact Lutron if your application requires other customized functionality)
- Supports BACnet IP
- One BACnet Interface per processor
- Requires RS-232 adapter to connect to processor

RS-232 ADAPTER — PJ62-ADPT-1

Dimensions

W: 1.50" (38mm)
H: 5.69" (145mm)
D: 0.88" (22mm)

- Connects BACnet, interface or external RS-232 device to **Centralized Lighting Control System**

RS-232 ADAPTER JACK — NTOMX-62J-

Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 1.13" (29mm)[1]

Wallbox Size: single-gang

- Connects the RS-232 adapter to a **Centralized Lighting Control System** Processor Panel

Footnote, pg. 101
1 Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).

Ordering Example

NTOMX-62J-WH
add color/finish suffix to model #

Matte Finishes

Standard, ships in 48 hrs.

White	*WH*
Ivory	*IV*
Beige	*BE*
Gray	*GR*
Brown	*BR*
Black	*BL*

Metal Finishes

Ships in 4-6 weeks.

Bright Brass	*BB*
Bright Chrome	*BC*
Bright Nickel	*BN*
Satin Brass	*SB*
Satin Chrome	*SC*
Satin Nickel	*SN*
Antique Brass	*QB*
Antique Bronze	*QZ*
Anodized Aluminum	
Clear	*CLA*
Black	*BLA*
Brass	*BRA*

Customization

Ships in 4-6 weeks.
- *See pg. 12 for multigang wallplates, color matching, engraving/silk screening, and custom controls.*
- *See pg. 143 for engraving schedules.*

Centralized Lighting Control System
System Interfaces