



RS-232 Interface

Control Interface Features

- Coordinate **GRAFIK Eye 3000 Series** control units with other systems:
 - Contact Closures
 - Serial Links
 - Infrared
- Automate lighting control with the astronomical timeclock
- Provide energy savings by using a daylight control and photosensor or by connecting an occupancy sensor to the system
- Programming tools simplify system installation
- Coordinate lighting and controllable window treatments
- Simple on/off entrance controls use standard 2-way wiring



Contact Closures
pg.58



Infrared Partition Sensor
pg.60



Theatrical Controls
pg.61



Daylighting Sensor
pg.62



Occupancy Sensors
pg.63



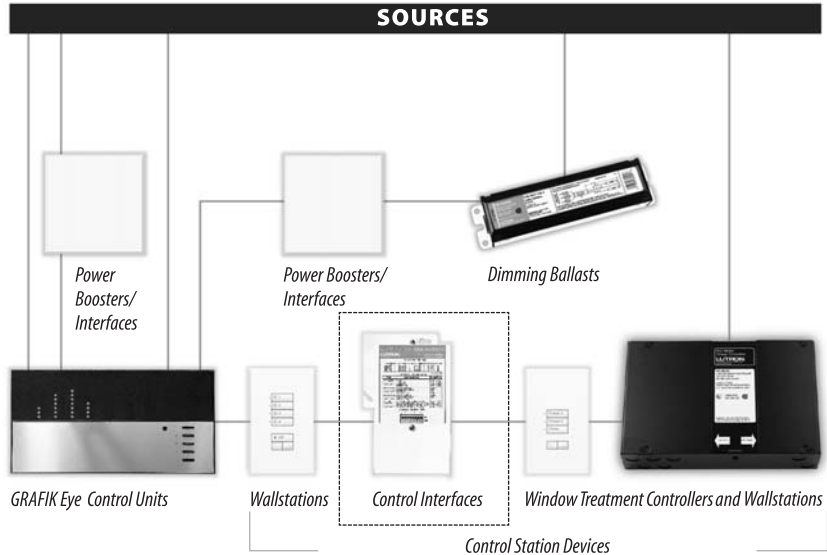
Accessories
pg.64



Interfacing with RadioRA
pg.65

GRAFIK Eye 3000 SYSTEM MAP (SHOWN)

- Use the map at right to identify system component being reviewed in each section
- For overall wiring information, see pg. 24 and 34








SPECIFICATIONS

- Wallstation and Control Interface Maximums:
 - Per System: 16 (Class 2/PELV) (includes Window Treatment Wallstations)
 - Three from each **GRAFIK Eye 3000** Control Unit without external power supply; for Lutron Power Supply, GRX-12VDC, see pg. 64 (Does not apply to **GRAFIK Eye 4000**)
- Wiring Specification & Maximums:
 - **GRAFIK Eye 3000**: (2) twisted pair #18 AWG (1.0mm²)
 - **GRAFIK Eye 4000**: (2) #12 AWG, (2.5mm²), (1) twisted, shielded pair #18 AWG (1.0mm²) plus (1) #18 AWG (1.0mm²)
 - Distance: 2,000' (610m); for other cable distances, see **GRAFIK Eye** Application Notes available at www.lutron.com
 - Installation: Daisy chain (no home-run wiring)
- Power: 12VDC (From **GRAFIK Eye 3000 Series** Control Unit or GRX-12VDC); 24VAC (From Power Panels for **GRAFIK Eye 4000 Series**)
- Configuration:
 - Integral DIP switches determine function and can be configured in the field

Standards listed below apply to one or more products in the **GRAFIK Eye** product line. Consult factory for specific information.



Features/Functions	Contact Closures		Serial Links		Infrared
	 GRX-AV pg.58	 GRX-CCO-8 pg.58	 GRX-RS232 pg.59	 GRX-PRG pg.59	 GRX-IRI pg.59
Preset Scene Control					
Select Scene	yes		yes	yes	yes
Scene Status Feedback	yes	yes	yes	yes	
Security/Life Safety <i>Initiate "Panic-on" mode –</i> Selects Scene 16 and locks control unit to prevent manual changes and returns to previous scene when closure is removed	yes				
Occupant Response Inputs turn selected control units on to Scene 1 or off based on occupancy	yes				
Sequencing Initiate a sequence loop	yes		yes	yes	
Lockout					
<i>Zone Lock – Prevent intensity changes on selected control unit(s)</i>	yes		yes	yes	
<i>Scene Lock – Disables scene buttons on selected control unit(s) preventing any manual scene changes</i>	yes		yes	yes	
Partition Status	yes				
Scheduling					
<i>Astronomical Timedclock – Four schedules with 60 events per schedule</i>				yes	
<i>External Timedclock – Scene selection through contact closure inputs</i>	yes				
Zone Control					
Independent zone raise/lower			yes	yes	yes
Zone on/off status		yes		yes	
Button Feedback					
			yes	yes	
Window Treatments					
Open/Close		yes		yes	
Open/Close/Stop		yes		yes	
Programming Utilities					
Liaison™ – Windows®-based programming tool for GRAFIK Eye 3500 Series				yes	

CONTACT CLOSURES

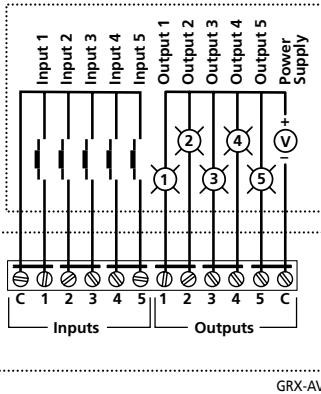


Dimensions

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

Mounts on a
4.00"-square utility box

Customer Supplied Equipment



Product

Model

CONTACT CLOSURE INTERFACE

GRX-AV²

- Provides two-way interface between GRAFIK Eye control units and contact closure devices
- Product functions (selected in the field)
 - Recall four scenes (1-4, 5-8, 9-12, or 13-16) plus off
 - Enable/disable panic, scene lockout or zone lockout modes
 - Turn lights on (Scene 1) or off based on occupancy (control up to five individual rooms), see occupancy sensors, pg. 63
 - Initiate scene (1-4 or 5-16) sequence loop
 - Inputs determine which GRAFIK Eye control unit(s) operate independently or in combination to reflect partition status for up to five moveable walls (six rooms)
- Five inputs and five outputs
- Inputs and outputs can be momentary or maintained
- Output requires external relay and power supply (30VDC maximum) by others for contact closure
- Inputs specification:
 - Input must be dry contact closure or open collector (NPN) with:
 - On-state saturation voltage less than 2.0VDC
 - Off-state leakage current less than 10 µA
 - Open circuit voltage 36V maximum
 - Short circuit current 4.0 mA maximum
- Outputs specification:
 - 38V maximum
 - 200 mA maximum
 - Open collector (NPN) output
 - On-state saturation voltage 1.0V maximum
 - Off-state leakage current 0.1 µA maximum

Ordering Example

GRX-AV
Ships in 48 hrs.



Dimensions

W: 5.75" (146mm)
H: 10.75" (273mm)
D: 2.00" (50mm)

Mounts on a
4.00"-square utility box

CONTACT CLOSURE OUTPUT

GRX-CCO-8²

- Provides eight dry contact closure outputs
- For integration to 3rd party controllable window treatments or A/V equipment
- May be set to normally open (NO) or normally closed (NC)
- May be set to momentary or maintained contacts
- Depending on configuration the outputs indicate:
 - Current scene (1-8, 9-16)
 - Zone on/off for eight zones
 - Open/close window treatments (4 shades)
 - Open/close/stop window treatments (2 shades)
- If the GRX-CCO-8 is to control window treatments, use GRAFIK Eye CPN 1623 models
- Output ratings: 0-30V, 10A and 30-42V, 0.5A

Footnotes, pg. 58

- 1 Class 2/PELV control wiring.
- 2 Counts as one of 16 maximum Control Station Devices.

RS-232/INFRARED



Dimensions

W: 5.00" (127mm)
H: 7.75" (197mm)
D: 2.50" (64mm)
Mounts on a
4.00"-square utility box



Dimensions

W: 5.00" (127mm)
H: 7.75" (197mm)
D: 2.50" (64mm)
Mounts on a
4.00"-square utility box



Product

Model

RS-232 INTERFACE

GRX-RS232¹

Ordering Example

GRX-RS232
Ships in 48 hrs.

- Integrates GRAFIK Eye control units with user-supplied PC or A/V equipment (touchscreen) using RS-232 serial communication
- Enables control of scene selection, scene lock, sequencing, zone lock, zone raise/lower
- Can provide status monitoring through button feedback and scene-status updates
- Must be located within 50' (15m) of RS-232 source

ASTRONOMICAL TIMECLOCK AND PROGRAMMER INTERFACE

GRX-PRG¹

- Includes all features of GRX-RS232
- Built-in astronomical timeclock features four schedules with 60 events per schedule
- Programmed via PC (not included) using Lutron Liaison™ software (included, see below)
- Provides access to advanced user-programmable features when used with GRX-3500 control units such as programming scenes and system communications
- Must be located within 50' (15m) of RS-232 source
- Only one GRX-PRG per system

Liaison™ Software (included with GRX-PRG) Windows®-based programming tool

- Timeclock Events (3100 and 3500)
 - Create/edit real time and astronomical event schedule
- Super Sequence (3100 and 3500)
 - Automated, synchronized dynamic scene sequence throughout the system
- System Set-up (3500 only)
 - Program main units, accessories and power panels
 - Integrate the system for information about all connected units
 - Archive system configuration, including timeclock schedules
 - Copy system configuration to similar rooms

Dimensions

W: 1.75" (45mm)
H: 4.10" (105mm)
D: 0.90" (23mm)



INFRARED INTERFACE

GRX-IRI¹

- Integrates GRAFIK Eye control unit(s) with user-supplied infrared transmitter
- Enables control of scene selection and zone raise/lower
- Recalls preset light levels from Wireless Remote Control (GRX-IT-WH or GRX -8IT-WH, ordered separately, see pg. 55)

Footnote, pg. 59

1 Counts as one of 16 maximum Control Station Devices.

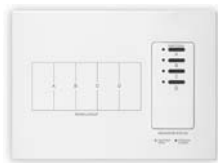
PARTITIONING



Dimensions

W: 6.32" (161mm)
H: 4.56" (116mm)
D: 1.06" (27mm)¹

Wallbox Size: single-gang



Dimensions

W: 6.32" (161mm)
H: 4.56" (116mm)
D: 1.13" (29mm)²

Wallbox Size: single-gang

Product

INFRARED PARTITION SENSOR

- Infrared sensor provides contact closure based on status of sensor
- Can be used with GRX-AV (GRAFIK Eye 3000/4000 Series), pg. 58 or OMX-AV (Centralized Lighting Control System), pg. 124 for partitioning; GRX-AV or OMX-AV ordered separately
- Includes transmitter and receiver; (2 units as shown)
- Requires GRX-12VDC for power, pg. 64
- Transmitter and receiver are white
- Fits in standard single gang backbox, mounted front side down, on either side of partition wall, near ceiling surface
- Consult factory for additional details when being used with Switch Input Control P/N—NTGRX-SI4S-IR, pg. 48

Model

GRX-IRPS-WH

Color

Ordering Example

SG-4PS-CF-WH

For choices see:
www.lutron.com/seeTouch
add color/finish suffix to model #

Infrared Partition Sensor

Ships in 1 week.

Partition Status Wallstations

Ships in 4-6 weeks.
• *seeTouch* color offering, pg. 43.
• Architectural color offering, pg. 48.

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.

Locking Covers

• See pg. 64 for more information.

PARTITION STATUS WALLSTATIONS

seeTouch..

SG-4PS-CF-^{3,4}

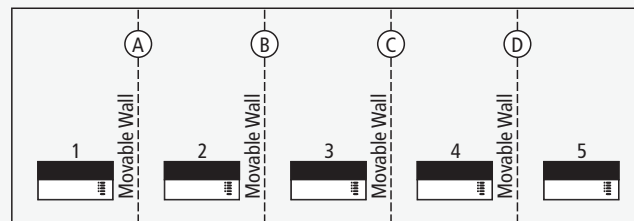
Architectural-style

NTGRX-4PS-CF-⁴

- Provides four buttons to determine which GRAFIK Eye Control Unit(s) operate independently or in combination to reflect partition status for up to four movable walls
- Wallplate custom-engraved to match your floorplan
- Partition status wallstations are available with control for 2-12 movable walls, contact Lutron customer service for more information

For Example:

This button...	Toggles the status of...	To combine Control Units:
Button 1	Wall A	1 and 2
Button 2	Wall B	2 and 3
Button 3	Wall C	3 and 4
Button 4	Wall D	4 and 5



Footnotes, pg. 60

- 1 Depth includes wallplate and backbox. Wallplate depth is 0.31" (8mm).
- 2 Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).
- 3 Insert version available for multigang installations. For insert version use I in place of last N in model number. See pg. 136 for more information.
- 4 Counts as one of 16 maximum Control Station Devices.

THEATRICAL



Dimensions

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

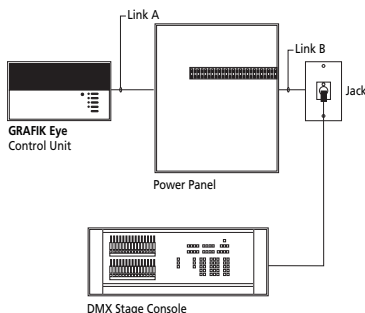


**Dimensions-
12 Channel**

W: 15.41" (391mm)
H: 2.87" (73mm)
D: 10.13" (257mm)

**Dimensions-
24 Channel**

W: 25.38" (644mm)
H: 2.87" (73mm)
D: 10.13" (257mm)



Stageboard Receptacle shown

Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 2.00" (51mm)

Wallbox size: single-gang

Product

Model

DMX512 INTERFACE

LUT-DMX²

- Converts GRAFIK Eye Control Unit intensities to DMX512 Output
- Use to control:
 - Fiber optic lighting
 - LED-based lamps
 - Strobe lights
 - Fog machines
 - Moving fixtures
 - Animated characters
- DMX-send (output DMX intensities) only

MULTI-CHANNEL THEATRICAL CONSOLE

12 Channel

LTC-12

24 Channel

LTC-24

- Two-scene preset mode with 12 or 24 channels
- Dipless crossfade between manual scenes
- Preset scenes may be "piled on" in any combination
- Preview mode allows cues to be checked
- Preset memories: 48 or 96
- DMX Output: 5 Pin XLR
- Analog Output: (2 each) 8 Pin CJ Male or (1 each) 27 Pin CJ Male
- Other models available, contact Lutron

2Link™ POWER PANEL OPTION

- The 2Link Power Panel option provides two distinct control links inside each Power Panel.
- Each link — Link A and Link B — is capable of operating on any one of these systems – Lutron's GRAFIK Eye® 4000, Lutron's Centralized Lighting Control System, or USITT DMX512 protocol.
- Each system or protocol is unique, but the Power Panel is designed to automatically detect which one is present and operate accordingly.
- When ordering the appropriate panel, ask for the 2Link option.

THEATRICAL RECEPTACLES²

- Receptacle provides standard pinout for DMX512 theatrical protocol
- Class 2/PELV device; barriers must be provided when line-voltage and Class 2 controls are ganged together in the same wallbox
- DMX cable available from Lutron P/N GRX-CBL-DMX
- See pg. 130 for colors/finishes

Stageboard Receptacle

NT-DMXJ-IN-WH

- Five-pin XLR-style male jack for connection to a theatrical stage board

Fixture Equipment Receptacle

NT-DMXJ-OUT-WH

- Five-pin XLR-style female jack for connecting LUT-DMX to a theatrical fixture equipment

Footnotes, pg. 61

- 1 Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).
- 2 Class 2/PELV control wiring.

DAYLIGHTING



Dimensions

W: 8.94" (227mm)
H: 4.56" (116mm)
D: 2.25" (57mm)

Wallbox Size: four-gang,
3.50" (89mm) deep
Depth includes wallplate and backbox,
wallplate depth is 0.35" (9mm)



Dimensions

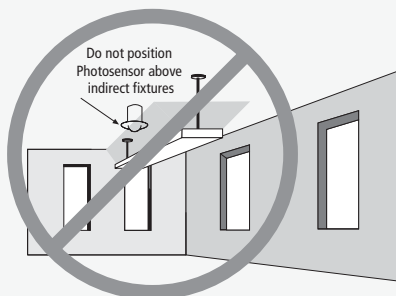
Diameter: 2.59" (66mm)
D: 2.16" (55mm)

Ceiling mounted; 2" (50mm) diameter
hole for bracket (Lutron-supplied)

Photosensors:

- The notch on the Photosensor defines the viewing direction
- Place Photosensor so its viewing area does not extend out of the window
- Do not position the Photosensor in the well of a skylight or above indirect fixtures
- Ensure the view of the Photosensor is not obstructed

MOUNTING CONSIDERATION



Product

DAYLIGHTING CONTROL

Model

GRX-DACPI-

Color

Suffix

Ordering Example

GRX-DACPI-T-WH
add cover option
and color/finish suffix
to model #

COVER OPTIONS

Opaque A
Cover and base will match
Translucent Black T
Black translucent cover with
base color from below

BASE COLORS

Matte Finishes

Standard, ships in 48 hrs.
• *Matte Cover Options: A or T*
• See pg. 10 for complete
color offering and suffixes.

Gloss (NEMA) Finishes

Ships in 4-6 weeks.
• *Gloss Cover Option: A only*
• See pg. 10 for complete
color offering and suffixes.

Metal Finishes

Ships in 4-6 weeks.
• *Metal Cover Option: T only*
• See pg. 10 for complete
color offering and suffixes.

Satin Finishes

Ships in 4-6 weeks.
• *Satin Cover Option: A or T*
• See pg. 10 for complete
color offering and suffixes.

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.

Locking Covers

• See pg. 64 for
more information.

SOURCES



GRX-3104 shown



GRX-DACPI-

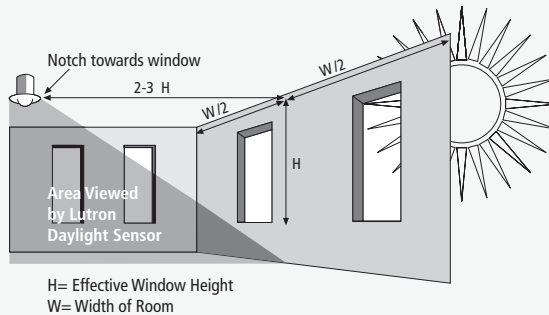
MW-PS-WH

microPS™ CEILING-MOUNTED PHOTENSOR

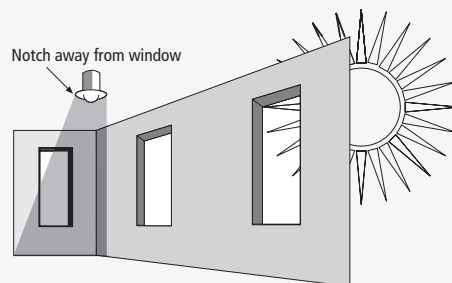
MW-PS-WH

- Responds to daylight and automatically lowers/adjusts light levels
- Linear response from 0 to 500 footcandles
- Easily calibrated at GRX-DACPI
- Available in white (WH) only
- Does not count as one of Wallstations/Control Interfaces

PHOTOSENSOR LOCATION FOR AVERAGE SIZE AREA



PHOTOSENSOR LOCATION FOR NARROW AREAS



OCCUPANCY



Dimensions

W: 6.12" (156mm)
H: 1.62" (41mm)
D: 2.31" (59mm)
Ceiling mounted;
3/4" (19mm) diameter
hole for mounting
post (Lutron-supplied)

Product

Model

microOS™ OCCUPANT SENSORS

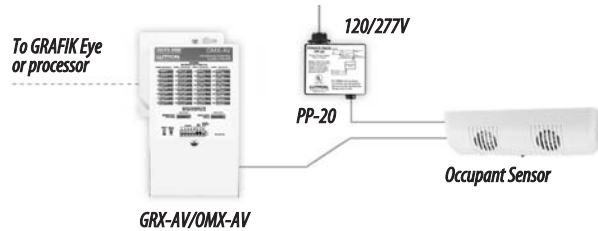
One-way

MOS-CM-15-WH

Two-way

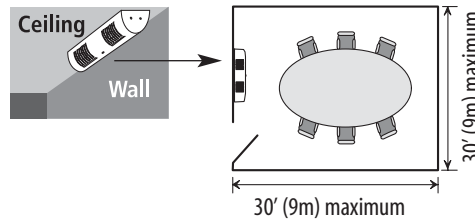
MOS-CM2W-15-WH

- Connects to GRX-AV/OMX-AV to automatically select Scene 1 when space becomes occupied and turns off lights when space is unoccupied
- Requires Lutron Power Pack (PP-20) to provide power to sensor; up to five sensors can be powered from one power pack
- Detects motion ultrasonically
- Time delay is user-adjustable through software
- Up to five sensors can be powered from one power pack
- Mounting Considerations:
 - The Occupant Sensor must have an unobstructed view of the room.
 - Do not mount behind or near tall cabinets, shelves, indirect hanging light fixtures, etc.
 - Keep the Occupant Sensor away from air flow from ventilation outlets, windows, fans, etc.
 - Partitions higher than 48" (1.2m) reduce the coverage area of the sensor. Partitionable spaces with partitions higher than 71" (1.8m) should be treated as individual rooms. Contact Lutron for more details
 - The sensor can detect major motion (such as a person taking a half step) at a greater distance than it can detect minor motion (such as writing or typing at a desk)
 - Decrease total coverage area by 15% for "soft" rooms (e.g., heavy draperies or heavy carpeting)



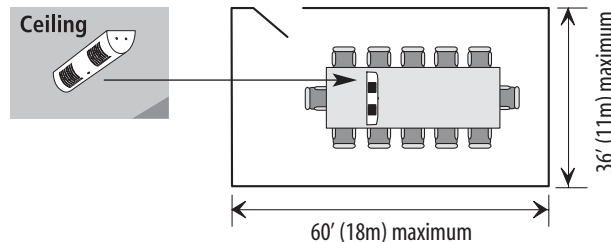
ONE-WAY MOUNTING CONSIDERATIONS

- Detects motion in one direction
- Sensor should mount on ceiling against wall where doorway is located and not face openings into hallways
- Maximum coverage area 900 sq. ft. (84 sq.m)



TWO-WAY MOUNTING CONSIDERATIONS

- Detects motion in two directions
- Sensor should mount in the center of space and not face openings into hallways
- Maximum coverage area 2160 sq. ft. (200 sq.m)



LUTRON POWER PACK

PP-20

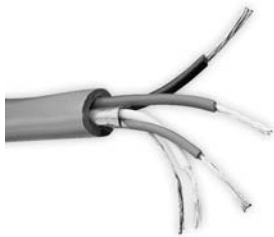
- Powers up to 5 microOS Occupant Sensors





Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 1.13" (29mm)¹
Wallbox Size:
single-gang



Product **Model**

LOCKABLE COVERS

Single-gang	GRX-1GLC
Two-gang	GRX-2GLC
Three-gang	GRX-3GLC
Four-gang	GRX-4GLC

- Prevents tampering with GRAFIK Eye® Control Units or Wallstations
- Permits infrared operation
- Translucent smoked gray
- Cover slides left or right

REPLACEMENT COVERS

Two-gang	GRX-2-GRC-
Three-gang	GRX-3-GRC-
Four-gang	GRX-4-GRC-

- See pg. 27 or 37 for cover options and base colors.
- For 230V applications, all GRAFIK Eye® 3000 Series Control Units are four-gang

120V ENTRANCE CONTROL **NTGRX-1S-**

- Requires 120V line-voltage
- Toggles between Scene 1 and off
- Use for existing 3- and 4-way retrofits; up to 10 can be wired in parallel to one control unit
- Not for use with two-zone GRAFIK Eye control units
- Does not count toward wallstations/control interface maximums
- Vareo® style wallstation gangs with other Vareo controls
- See pg. 46 for color/finishes.

120VDC PLUG-IN TRANSFORMER **GRX-12VDC**

- Input: 120V, 60Hz; Output: regulated 12VDC
- Cord length is 6'
- Used with GRAFIK Eye 3000 systems when connecting more than three wallstations/control interfaces to a single control unit
- Capable of supplying power to a maximum of 16 Control Station Devices

LOW-VOLTAGE CABLE¹

GRAFIK Eye 3000 500' spool	GRX-CBL-346S-500 (non-plenum) GRX-PCBL-346S-500 (plenum)
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- Four conductors:
#18 AWG (1.0mm²) for power wires; #22 AWG (1.00mm²) for control wires

GRAFIK Eye 4000, Centralized Lighting Control System, and Digital MicroWATT™ 250' spool	GRX-CBL-46L-250 (non-plenum) GRX-PCBL-46L-250 (plenum)
500' spool	GRX-CBL-46L-500 (non-plenum) GRX-PCBL-46L-500 (plenum)

- Five conductors:
#12 AWG (2.5mm²) for power wires; #22 AWG (1.00mm²) for control wires

Footnotes, pg. 64

- 1 Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).
- 2 For information on cable size and distance, see "Application Note W14" on the Lutron website.



Dimensions

W: 2.75" (70mm)
H: 4.56" (116mm)
D: 1.67" (42mm)¹

Wallbox Size:
single-gang

Product

RadioRA®/GRAFIK Eye INTERFACE

Model

RA-GRXI-WH

Color

Ordering Example

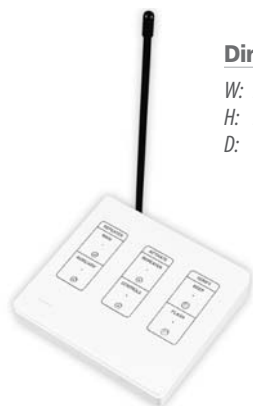
RALB-2W-SD-WH

Ships in 48 hrs.
• Contact Customer Service about Colors/Finishes and customization.

RadioRA RF SIGNAL REPEATER

RA-REP-WH

- Required for system communication
- For more information, contact Lutron



Dimensions

W: 3.57" (91mm)
H: 3.23" (82mm)
D: 0.96" (25mm)

RadioRA MASTER CONTROLS

Wall-Mounted Large-Button

RALB-2W-SD-
RALB-5W-AO-
RALB-5W-RL-

Wall-Mounted Slim-Button

RAMC-5W-
RAMC-5W-RL-
RAMC-10W-
RAMC-10W-RL-
RAMC-15W-
RAMC-15W-RL-

Tabletop

RAMC-5T-
RAMC-5T-RL-
RAMC-10T-
RAMC-10T-RL-
RAMC-15T-
RAMC-15T-RL-

Cordless Tabletop

RAMC-10C-
RAMC-10C-RL-



Dimensions

W: 2.94" (75mm)
H: 4.69" (119mm)
D: 1.67" (42mm)²

Wallbox Size:
single-gang

Dimensions

W: 2.94" (75mm)
H: 4.69" (119mm)
D: 1.67" (42mm)²

Wallbox Size:
single-gang



Dimensions

W: 3.57" (91mm)
H: 3.23" (82mm)
D: 0.96" (25mm)

Footnote, pg. 65

- 1 Depth includes wallplate and backbox. Wallplate depth is 0.31" (8mm).
- 2 Depth includes wallplate and backbox. Wallplate depth is 0.35" (9mm).