APPENDIX H | Electrical Product Specifications

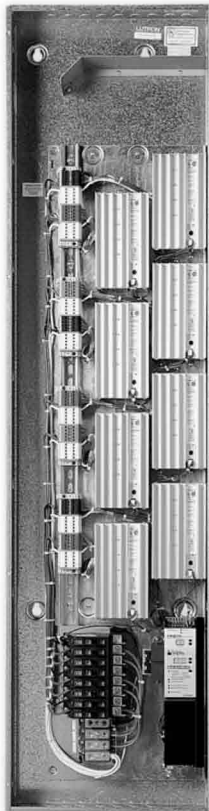## Control Equipment: August Wilson Center Redesign

CONTROL TYPE	CONTROL LOCATION	CONTROL AREA	PRODUCT	ZONES	SPECIFICATION	TAG
DIMMER RACK	Closet, Room 202		LP Dimming Panel	16	Lutron LP4/16-1204ML-20	DR202/207
DIMMER RACK	Aud. Dimmer Room		LP Dimming Panel	32	Lutron LP8/32-1204ML-20	DR101/201
WALL CONTROL - Primary	Room 207	Meeting Room	GRAFIK Eye 4000	6	GRX-4506	C207
WALL CONTROL - Primary	Room 202	Education Room	GRAFIK Eye 4000	6	GRX-4506	C202-1
WALL CONTROL - Accessory	Room 202	Education Room	GRAFIK Eye 4000	-	NTGRX-2B-SL	C202-2
WALL CONTROL - Primary	Room 102	Lobbies	GRAFIK Eye 4000	16	GRX-4516	C102
WALL CONTROL - Accessory	Room 103	Gift Shop	GRAFIK Eye 4000	2	GRX-4502	C103
WALL CONTROL - Primary	Room 102	Exterior	GRAFIK Eye 4000	4	GRX-4504	C102-2
WALL CONTROL - Primary	Roof Terrace	Roof Terrace	GRAFIK Eye 4000	4	GRX-4504	C301

Power Panels | LP Dimming Panels

LP Dimming Panel

Mini LP Dimming Panel

Commercial Dimming Panel for numerous small loads

- Lutron's patented filter circuit, **RTISS**™ (Real Time Illumination Stability System), compensates for incoming line-voltage variations and maintains constant light levels with no visible flicker under conditions with a ±2% change in RMS voltage per cycle and a ±2Hz change in frequency per second; for more information, see Application Notes pg. 179
- Standard Panel ships in 3-5 business days
- Preassembled panels, field wiring is similar to wiring lighting distribution panel
- Four independently dimmed switch legs per module; up to eight modules (32 dimmers) per panel

Sources Controlled Directly

- Incandescent
- Magnetic Low-Voltage
- Neon/Cold Cathode
- Lutron® Tu-Wire® Fluorescent Dimming Ballast

Sources Requiring an Interface

- Electronic Low-Voltage pg. 30
- Lutron 3-Wire Fluorescent pg. 30

DESIGN OPTIONS

- Input feed – main lugs, main breakers, isolator switch
- Branch breakers – 13A, 15A, 16A, or 20A
- Panel voltage – 120V, 220V-240V, 230V (CE)
- Operates on 50 or 60 Hz power
- Panel feed – single phase, split phase, or three phase
- Number of switch legs: 4-32
- 2Link™ option – provides a second control link that automatically detects the presence of a DMX512 stage console

SPECIFICATIONS

- All voltages indicated are phase-to-neutral
- Each dimming module has four independently dimmed switch legs, which share a common air-gap switch
- Common neutrals are not permitted; run separate neutrals for each control load
- Panels may be in the middle of a control link; control link must be daisy-chained
- System can include a combination of GP, LP, XP, DCI and Custom Combination Panels
- Power Panel installation instructions are available in multiple languages; contact Lutron or visit the Lutron website for more information

SYSTEMS

GRAFIK Eye® 4000 Series pg. 32

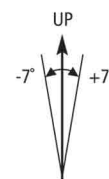**Centralized Lighting Control System pg. 88**

STANDARDS

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

MOUNTING

- Indoor use only; NEMA Type 1 enclosure, IP-20 protection
- Panel generates heat; mount only where ambient temperature will be 0-40°C (32-104°F) with a non-condensing relative humidity < 90%
- Flush mount between 16" studs or surface mount
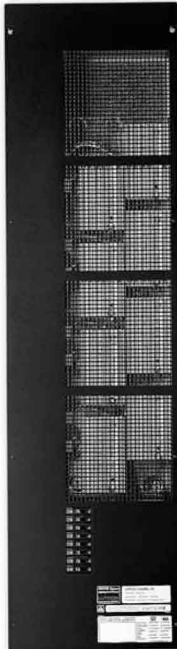- Panels must mount within 7° of true vertical

UP -7° +7° Mount Panel Vertically

Power Panels — LP Dimming Panels

- **120V/230V(CE)/ 240V(non CE)**
- **4, 5, 6 DIMMING MODULES**

Column headers (diagonal):
Type/Source | Model No. Prefix | No. of Dimming Modules | No. of Switch Legs | Voltage | Feed Type[1] | Main Lugs (ML) Main Breaker (M) Isolator Switch (IS) | Branch Circuit Breaker Capacity (A)[2] | Maximum Feed (A) | Maximum Dimmed Hot Load (W/VA)

LP4

Available model numbers (Model No. Example: LP4/16-1204M-15)

120V

Type	Prefix	Modules	Switch	Voltage	Feed	Lugs	Branch	Max Feed	Max Load
LP	4/	16-	120	4	ML-		15	175	1500
LP	4/	16-	120	4	ML-		20	175	2000

230V (CE)

| LP | 4/ | 16- | 230 | 4 | IS- | | 13 | 125 | 3000 |

240V (non CE)

| LP | 4/ | 16- | 240 | 4 | IS- | | 16 | 125 | 3840 |

LP5

120V

| LP | 5/ | 20- | 120 | 4 | ML- | | 15 | 175 | 1500 |
| LP | 5/ | 20- | 120 | 4 | ML- | | 20 | 175 | 2000 |

230V (CE)

| LP | 5/ | 20- | 230 | 4 | IS- | | 13 | 125 | 3000 |

240V (non CE)

| LP | 5/ | 20- | 240 | 4 | IS- | | 16 | 125 | 3840 |

LP6

120V

| LP | 6/ | 24- | 120 | 4 | ML- | | 15 | 175 | 1500 |
| LP | 6/ | 24- | 120 | 4 | ML- | | 20 | 175 | 2000 |

230V (CE)

| LP | 6/ | 24- | 230 | 4 | IS- | | 13 | 125 | 3000 |

240V (non CE)

| LP | 6/ | 24- | 240 | 4 | IS- | | 16 | 125 | 3840 |

Dimensions – LP4, 5, 6

W: 15.88" (404mm)
H: 59.50" (1514mm)
D: 4.25" (108mm)

wt: 80 lbs (37kg)
Ship wt: 90 lbs (41kg)

LP4
Max. BTUs/hr: 330

LP5
Max. BTUs/hr: 410

LP6
Max. BTUs/hr: 490

Footnotes, pg. 160

1. Feed types – phase-to-neutral only. 2= 1Ø,2W; 3= 1Ø,3W; 4= 3Ø,4W.
2. 20/16A, 15/12A continuous load rating.

Note: Panels listed above are Lutron standard panels. Consult Lutron for additional capabilities, such as job-specific circuit requirements, 0-10V, **2Link**™, Delta Power, etc.

Power Panels — LP Dimming Panels

Power Panels

LP Dimming Panels

- **120V/230V(CE)/240V(non CE)**
- **7, 8 DIMMING MODULES**

Dimensions – LP7, 8

W: 15.88" (404mm)
H: 59.50" (1514mm)
D: 4.25" (108mm)

wt: 80 lbs (37kg)
Ship wt: 90 lbs (41kg)

LP7
Max. BTUs/hr: 570

LP8
Max. BTUs/hr: 650

Type/Source	Model No. Prefix	No. of Dimming Modules	No. of Switch Legs	Voltage	Feed Type[1]	Main Lugs (ML) / Main Breaker (M) / Isolator Switch (IS)	Branch Circuit Breaker Capacity (A)[2]	Maximum Feed (A)	Maximum Dimmed Hot Load (W/VA)
LP7									
Available model numbers (Model No. Example: LP7/28-1204ML-15)									
120V									
	LP	7/	28-	120	4	ML-	15	175	1500
	LP	7/	28-	120	4	ML-	20	175	2000
230V (CE)									
	LP	7/	28-	230	4	IS-	13	125	3000
240V (non CE)									
	LP	7/	28-	240	4	IS-	16	125	3840
LP8									
120V									
	LP	8/	32-	120	4	ML-	15	175	1500
	LP	8/	32-	120	4	ML-	20	175	2000
230V (CE)									
	LP	8/	32-	230	4	IS-	13	125	3000
240V (non CE)									
	LP	8/	32-	240	4	IS-	16	125	3840

Footnotes, pg. 161

1   Feed types – phase-to-neutral only. 2= 1Ø,2W; 3= 1Ø,3W; 4= 3Ø,4W.
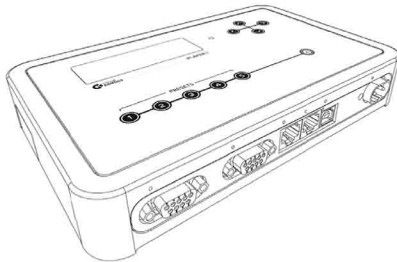2   20/16A, 15/12A continuous load rating.
Note: Panels listed above are Lutron standard panels. Consult Lutron for additional capabilities, such as job-specific circuit requirements, 0-10V, **2Link**™, Delta Power, etc.

Power Panels
LP Dimming Panels

⊛**LUTRON**® Technical Support: 1.800.523.9466…24 hours/7 days (US/CAN) **To Order: 1.888.LUTRON1**…8 a.m.–8 p.m./M-F ET (US/CAN)   161

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Royer | AE Senior Thesis - August Wilson Center

COLOR KINETICS™   iPLAYER 3   PHILIPS

The iPlayer® 3 is a powerful, compact, DMX lighting controller that stores and plays back custom lighting shows. It can control two full DMX universes, allows on-board real-time editing, and provides a standard Secure Digital (SD) card drive for interchangeable show storage. The iPlayer3 package includes a copy of Color Kinetics' ColorPlay 3 light show authoring software. Together, they create a powerful and flexible, yet simple and effective, way to control multiple lighting fixtures from show concept to delivery.

iPlayer 3 Specifications

Dimensions	8.2" (20.9 cm) x 5.4" (13.7 cm) x 1.3" (3.3 cm)
Weight	1.2 lbs. (.54 kg)
Power Input	100 - 240 VAC (auto ranging), 50-60Hz, 5 W
Environment	For indoor use in a dry environment.
Ambient Operating Temp	14°F to 104°F (-10°C to 40°C)
Housing	Polycarbonate.
Computer Interface	USB 2.0
External / Auxiliary Interfaces	Two DMX512 RJ-45 ports. Two RS-232 9-pin serial ports.
Data Storage	Removable Secure Digital Card drive. (256 Mb Card included.)
Classification	Class 2 LED device
Listings	UL/cUL, CE

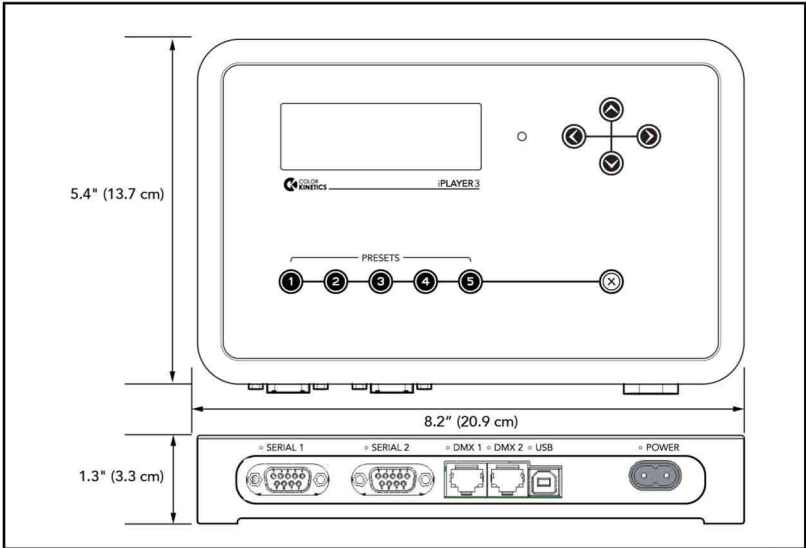Specifications are subject to change without notice.

iPlayer® 3 Key Features

- Two DMX ports control up to 340 light addresses
- Works as a stand-alone or computer-driven controller
- Secure Digital (SD) card drive for flexible show storage
- Bright LCD screen for status and configuration display
- USB 2.0 interface for downloading shows and configuring from attached PC or Mac
- Two 9-pin RS-232 serial ports support external controllers
- Simple installation and wiring
- Flexible, adaptable mounting
- Fully supports ColorPlay® 3 light show authoring software
- Direct line voltage power supports 100 — 240 VAC
- Capacitive sense touch buttons on face plate

CE   cULus LISTED

☀ DRY

iPlayer 3 And Accessory Ordering Information

The iPlayer 3 controller is the centerpiece of a set of related light show creation and control products:

Item Description	Item Number
The iPlayer 3 is the base controller. It is packaged with ColorPlay 3 light show creation software, a mounting bracket, and assorted cables.	103-000019-00
The AuxBox is an expansion chassis for the iPlayer 3 that connects up to eight dry contact switches to an iPlayer 3 serial port.	103-000021-00
The Serial Keypad is a wired remote light show selection device that connects to an iPlayer 3 serial port.	103-000020-00

Philips Solid-State Lighting Solutions • 3 Burlington Woods Drive • Burlington, MA 01803 • USA
Tel: 617.423.9999 • Tel: 888 FULL RGB (385.5742) • FAX: 617.423.9998 • www.colorkinetics.com

GRAFIK Eye®	4 0 0 0 S E R I E S	ARCHITECTURAL LIGHTING SYSTEMS

Models 4100 & 4500 combine with GRAFIK Eye Dimming Panels for higher performance architectural control applications.
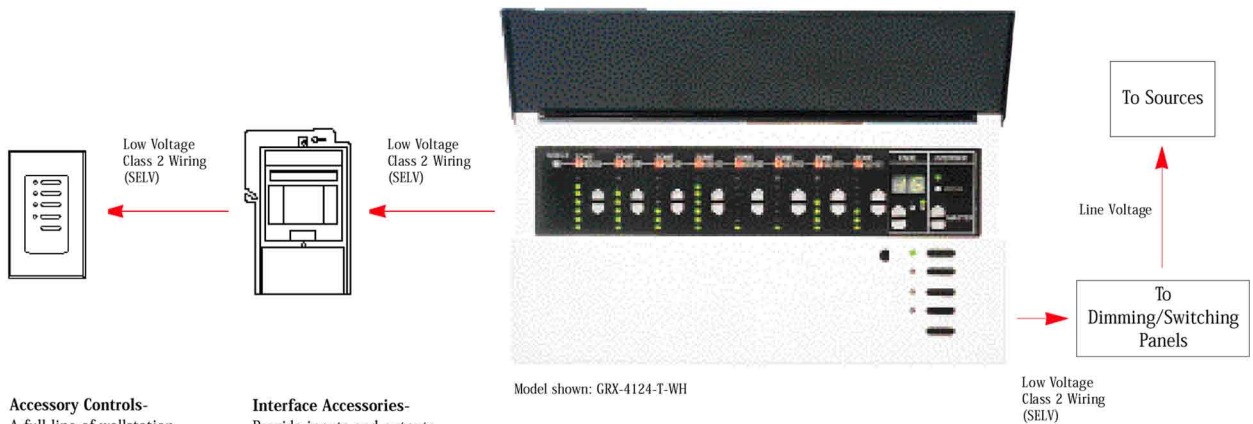
4000 Series—Specification Grade
4 Scenes and 2, 3, 4, 6, 8, 16 or 24 Zones: expandable to 16 scenes and 64 zones.

• Can link up to 8 GRAFIK Eye Control Units (8 addresses) for up to 64 zones

• Use with GRAFIK Eye Dimming or Switching Panels (32 panels, 768 circuits maximum)

• Up to 16 Accessory Controls for total of 24 control points

• Built-in Infrared Receiver/Optional Infrared Wireless Remote Control

System Wiring:
Low Voltage Class 2 (SELV) 4-wire daisy chain of two No. 12 (4.0mm^2) wires and one No. 18 (1.0mm^2) twisted shielded pair (Beldon 9461, Alpha 2211) 2000 ft. (610 m) maximum. Available in one cable (Liberty LUCOM 12/22-RBL). For complete system wiring information, see 4000 Series Installer's Guide, P/N 032-036.

Note: For CE Wiring, consult factory.

Low Voltage Class 2 Wiring (SELV)

Low Voltage Class 2 Wiring (SELV)

To Sources

Line Voltage

To Dimming/Switching Panels

Low Voltage Class 2 Wiring (SELV)

Model shown: GRX-4124-T-WH

Accessory Controls-
A full line of wallstation controls (up to 16 per system) available to expand system capabilities (For more detailed information, see page 12.)

Interface Accessories-
Provide inputs and outputs for seamless integration with additional equipment (For more detailed information, see page 13.)

GRAFIK Eye Models 4100 & 4500 Control Unit Specifications	GRAFIK EYE MODEL NO.	NO. OF ZONES	WALLBOX SIZE*
	GRX-4102- GRX-4502-	2	2 GANG (2) SB-1G
	GRX-4103- GRX-4503-	3	3 GANG (3) SB-1G
	GRX-4104- GRX-4504-	4	4 GANG (1) SB-4G
	GRX-4106- GRX-4506-	6	4 GANG (1) SB-4G
	GRX-4108- GRX-4508-	8	4 GANG (1) SB-4G
	GRX-4116-† GRX-4516-	16	4 GANG (1) SB-4G
	GRX-4124-†† GRX-4524-	24	4 GANG (1) SB-4G

* Mount in standard multiple gang wallbox, 2.75" deep minimum, 3.5" deep recommended.
* Available from Lutron as Part No. listed.
† 4116/4516 requires 2 addresses.
†† 4124/4524 requires 3 addresses.

Note: To build a complete Model No., see page 18.

www.lutron.com

GRAFIK Eye®	ACCESSORY CONTROLS	Handheld wireless and wallstation Accessory Controls expand GRAFIK Eye 3000 and 4000 Series system capabilities.

Use of more than 3 Accessory Controls and Low Voltage Interface Accessories per GRAFIK Eye 3000 Series Control Unit requires addition of Part No. GRX-12VDC Class 2 transformer (120V AC: 12 VDC). Consult factory for 220-240V applications.

Class 2 (SELV) Low Voltage Accessory Controls (for GRAFIK Eye 3000 and 4000 Series)

	DESCRIPTION	FUNCTIONS	REF. P/N†
	GRX-IT, GRX-8IT Handheld Infrared Wireless Remote Control Transmitters	Controls 4 (or 8) scenes plus master raise/lower and off. Recalls scenes or fine tunes light levels. Turns lighting on or off. **Note: Not included in 16 accessory maximum.**	362-592
	NTGRX-2B-SL Two-Button Entrance Control	Turns lighting (scene 1) on or off. Selects 2 scenes (either 1/off, 9/10 or 13/14), partition opened/closed, panic station, sequencing, raise/lower.	362-933, 362-593
	NTGRX-4S, NTGRX-4B Scene Selection Control Four-Button Control	Activates scenes 1-4; master raise/lower and off. Recalls or fine tunes light levels. Activates scenes 1-4, 5-8, 9-12, or 13-16; operates one or more GRAFIK Eye units.	362-596 362-934
	GRX-4S-DW Architrave™ Door Jamb Control	Activates scenes 1-4; master raise/lower and off. Recalls or fine tunes light levels. Ideal for door jambs. Operates one or more GRAFIK Eye units.	362-597
	NTGRX-4M Master Control	Activates scene 1 or off for up to eight GRAFIK Eye units, and all on or all off.	362-598
	NTGRX-4PS Partition Control	Provides 4 buttons to operate selected GRAFIK Eye units independently, or in combination to reflect partition status.	362-599
	NTGRX-4S-IR Infrared Receiver/Scene Selection Control	Activates scenes 1-4 and off by touch-buttons or infrared transmitters (above). Recalls or fine tunes light levels. Activates scenes 1-4, 5-8, 9-12, or 13-16; operates one or more GRAFIK Eye units.	362-602
	NTGRX-SI4S-IR Infrared Receiver/Scene Control/Switch Interface	Provides access to scenes 1-4 or 5-8 based on external contact closure (example: to control partitioned spaces).	362-782

† GRAFIK Eye Specification Submittal Sheets are available for downloading/printing on Lutron's website, www.lutron.com.