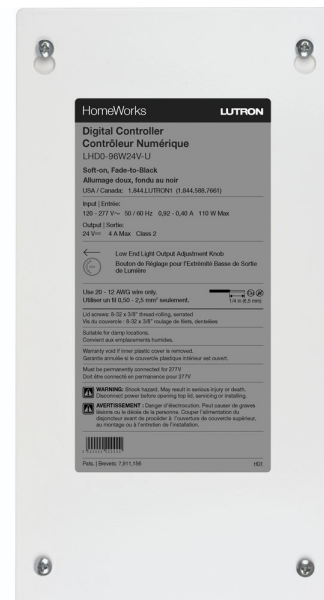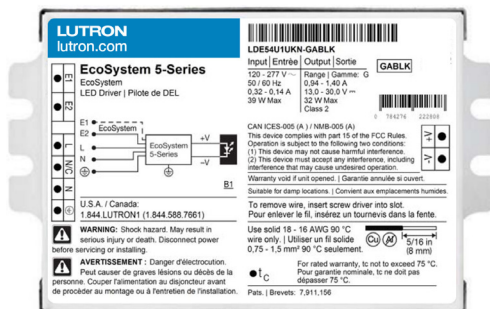# Programming Residential Systems with Lutron LED Drivers

Overview

Lutron LED drivers deliver smooth, flicker-free, continuous, high-performance dimming with outstanding quality and superior reliability, removing the issue of LED compatibility. Available for fixtures from over 300 manufacturers globally, Lutron LED drivers offer the flexibility of zone-control with 2-wire or 3-wire dimmers or individually addressable fixtures with HomeWorks digital control. This application note explains programming best practices when using these LED drivers with Lutron residential systems.
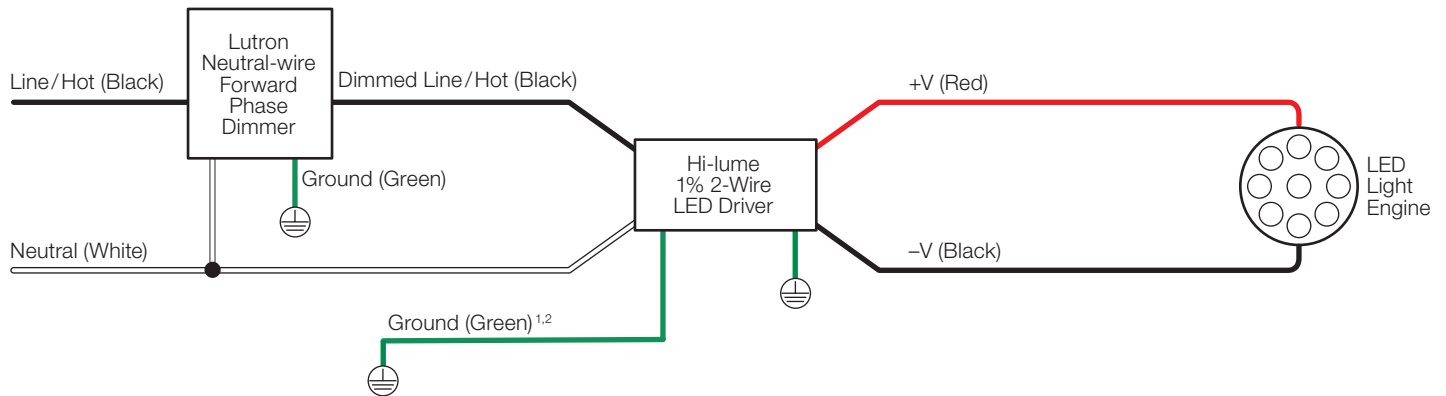
Table of Contents

Wiring Diagram Overview

Different drivers will require different wiring configurations. It is essential to have the correct wires in place to support the selected drivers that are being used, both for power and control. Below are basic diagrams that illustrate the difference between 2-Wire controls, 3-Wire controls, and EcoSystem controls. The diagrams below are only meant to illustrate the differences between control types. Refer to the driver installation guides for comprehensive wiring diagrams.

2-Wire Controls

The 2-wire control is an analog control method that is used to operate Lutron LED drivers. The dimmers set the intensity of the drivers and provide power to the drivers by providing a single line-voltage, phase-control signal from the dimmer to the driver on a dimmed hot wire. All drivers connected to a single dimmed hot wire must be on the same circuit and will be controlled together. The number of drivers that can be connected to a single circuit is limited by the dimmer being used.

Neutral Wire Application

Line / Hot (Black)
Lutron Neutral-wire Forward Phase Dimmer
Dimmed Line / Hot (Black)
+V (Red)
Ground (Green)
Neutral (White)
Hi-lume 1% 2-Wire LED Driver
−V (Black)
LED Light Engine
Ground (Green) [1,2]

Non-Neutral Wire Application

Line / Hot (Black)
Lutron Non-Neutral-wire Forward Phase Dimmer
Dimmed Line / Hot (Black)
+V (Red)
Ground (Green)
Neutral (White)
Hi-lume 1% 2-Wire LED Driver
−V (Black)
LED Light Engine
Ground (Green) [1,2]

[1]   Ground wire connection available on K case models only.
[2]   Fixture and driver case must be grounded in accordance with local and national electrical codes.
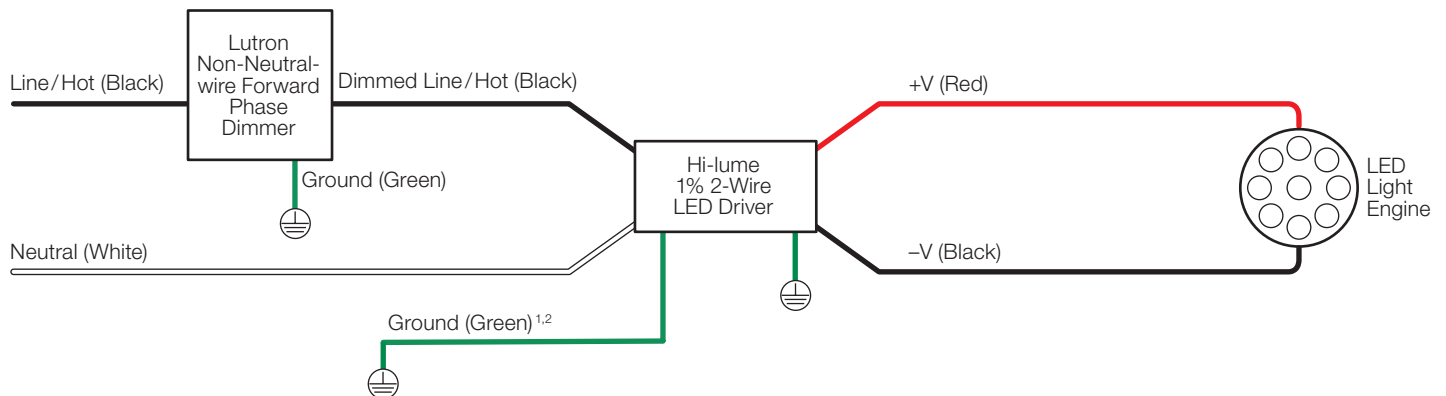
Wiring Diagram Overview *(continued)*

3-Wire Controls

The 3-wire control is an analog control method that is used to operate Lutron LED drivers. It allows dimmers to set the intensity of drivers by providing a phase-control signal from the dimmer to the driver on a dimmed hot wire. The dimmer separately switches the power to the driver over a switched hot wire. The number of drivers that can be connected to a single circuit is limited by the dimmer being used.

Line/Hot (Black)
Lutron 3-wire Dimming Control
Switched Line/Hot (Black)
+V (Red)
Dimmed Line/Hot (Orange)
Hi-lume 1%
LED light engine
Neutral
Ground (Green)
-V (Black)
Neutral (White)
Ground (Green) [1,2]

[1] Ground wire connection available on K case models only.
[2] Fixture and driver case must be grounded in accordance with local and national electrical codes.

EcoSystem Digital Controls (HomeWorks QS only)

EcoSystem technology is a control method for LEDs that provides addressing of individual fixtures and status feedback from the LED drivers. This makes it easy to digitally assign occupancy sensors, daylight sensors, time clocks, manual controls and other controls to one or many fixtures without complicated wiring. This opens an entire suite of energy-saving, system-monitoring and system-control schemes where the design, setup and re-zoning are all done with software, making the electrical and control design simple.

Having each driver digitally addressed makes it possible to send commands to specific drivers or groups of drivers. Commands can be sent to drivers telling them to turn off their output, so the line voltage for the drivers should not be switched.

To Line Voltage
Line/Hot (Black)
+V (Red)
Neutral (White)
Ground (Green) [2,3]
Hi-lume 1%
LED light engine
Ground
-V (Black)
EcoSystem Digital Link
E1 (Purple)
E2 (Purple)

[1] EcoSystem drivers are no longer available to order as of September 1, 2021.
[2] Ground wire connection available on K case models only.
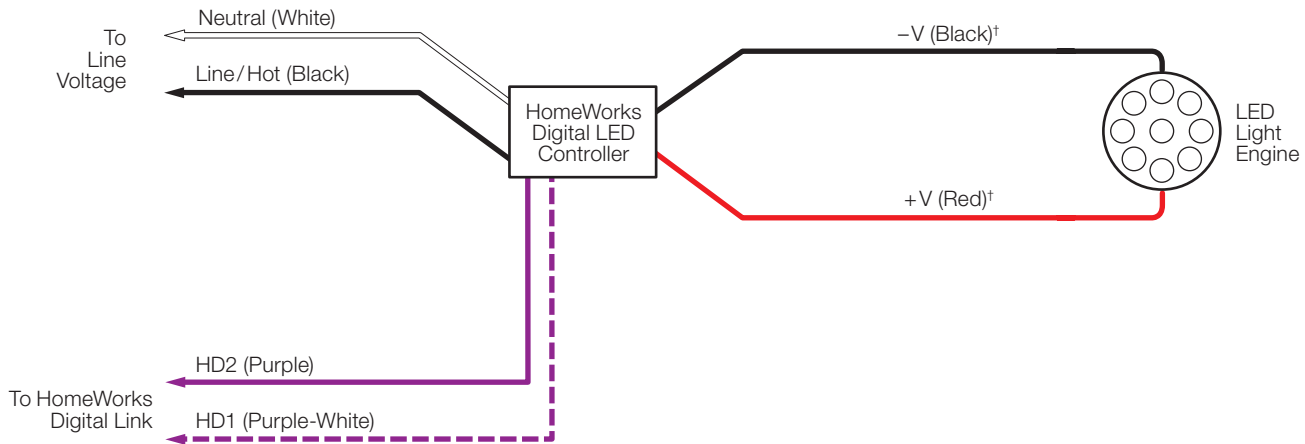[3] Fixture and driver case must be grounded in accordance with local and national electrical codes.

Wiring Diagram Overview *(continued)*

HomeWorks Digital Controls (HomeWorks only)

The HomeWorks digital technology standard allows individual addressability of each fixture to easily reconfigure lighting zones and accommodate changes in a space without rewiring. This feature provides a soft, incandescent-like transition between 0.1% and off.

To Line Voltage
Neutral (White)
Line/Hot (Black)

HomeWorks Digital LED Controller

−V (Black)†

LED Light Engine

+V (Red)†

HD2 (Purple)
To HomeWorks Digital Link
HD1 (Purple-White)

Hi-lume 1% 2-Wire Driver

The Hi-lume 1% 2-Wire LTE LED driver is a high-performance LED driver that provides smooth, continuous, flicker-free, 1% dimming for virtually any LED fixture, whether it requires constant-current or constant-voltage.

UL® Marking and Compatibility

Location of the standards mark on the driver.

 Drivers marked as UL® recognized are ONLY compatible with those controls marked with an asterisk (*) on the following pages.

 Drivers marked as UL® Listed Class P are compatible with all controls referenced on the following pages.

 Drivers marked as UL® 8750 Listed and manufactured before November 20, 2017, are ONLY compatible with those controls marked with an asterisk (*) on the following pages. Date code on the driver is in international date format, DD/MM/YYYY.

Note: If the fixture or driver is not accessible and the standards marking is unknown, use controls marked with an asterisk (*).

Hi-lume 1% 2-Wire Driver *(continued)*

Compatible Controls

The Hi-lume 1% 2-Wire LTE LED driver is compatible with the following HomeWorks and RadioRA 2 controls:

HomeWorks

Product	Part Number	Drivers per Control	Load-Type Setting
HomeWorks wallbox power module*	LQRJ-WPM-6P	2–10 (per output); 26 total per module	Hi-lume 1% 2-Wire LTE LED
GRAFIK Eye QS control unit*	QSGRJ-	2–10 (per output); 26 total per unit	Hi-lume 1% 2-Wire LTE LED
Phase adaptive DIN power module	LQSE-4A-120-D	1–6 (per output); 2 A maximum driver input current	Hi-lume 1% 2-Wire LTE LED
HomeWorks DIN power module*	LQSE-4A1-D	1–6 (per output); 1 A maximum driver input current	Hi-lume 1% 2-Wire LTE LED
HomeWorks LED+ DIN power module	LQSE-4A5-120-D	**Zone 1:** 1–20; 4 A maximum driver input current **Zones 2–4:** 1–13; 3 A maximum driver input current	Hi-lume 1% 2-Wire LTE LED
HomeWorks C•L dimmer	HQRD-6CL	1–6; 250 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks adaptive dimmer*	HQRD-6NA-	1–10; 400 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks 600 W dimmer*	HQRD-6ND-	1–8; 350 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks 1000 W dimmer*	HQRD-10ND-	1–13	Hi-lume 1% 2-Wire LTE LED
HomeWorks LED+ dimmer	HQRD-PRO-	1–20; 400 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks C•L hybrid keypad	HQRD-HNX	1–10; 200 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks GRAFIK T C•L dimmer	HQRT-G25LW	1–10; 400 W max	Hi-lume 1% 2-Wire LTE LED
HomeWorks phase selectable dimmer	HQRT-G5NEW	1–10; 400 W max	Hi-lume 1% 2-Wire LTE LED
GRAFIK T RF C•L hybrid keypad	HQRT-GHXB	1–10; 400 W max	Hi-lume 1% 2-Wire LTE LED

Note: All wattages are in terms of input wattage to the LED driver.

* See note on page 6 for control compatibility.

RadioRA 2

Product	Part Number	Drivers per Control	Low-End Setting/Load-Type Setting
RadioRA2 wallbox power module	LQRJ-WPM-6P	2–10 (per output); 26 total per module	Hi-lume 1% 2-Wire LTE LED
GRAFIK Eye QS control unit*	QSGRJ-	2–10 (per output); 26 total per unit	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 C•L dimmer	RRD-6CL	1–6	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 LED+ dimmer	RRD-PRO-	1–20; 400 W max	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 adaptive dimmer*	RRD-6NA-	1–10; 400 W max	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 600 W dimmer	RRD-6ND-	1–8; 350 W max	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 1000 W dimmer*	RRD-10ND-	1–13	Hi-lume 1% 2-Wire LTE LED
RadioRA 2 C•L hybrid keypad	RRD-HNX	1–10; 200 W max	Hi-lume 1% 2-Wire LTE LED

Note: All wattages are in terms of input wattage to the LED driver.

* See note on page 6 for control compatibility.

Hi-lume 1% 2-Wire Driver *(continued)*

HomeWorks: Load Schedule

Using the Lutron Designer programming software, add the load to the load schedule by going to the **design>loads** tab and selecting the appropriate load type for the driver. For the Hi-lume 1% 2-Wire LED Driver select **Hi-lume 1% 2-Wire LTE LED**.
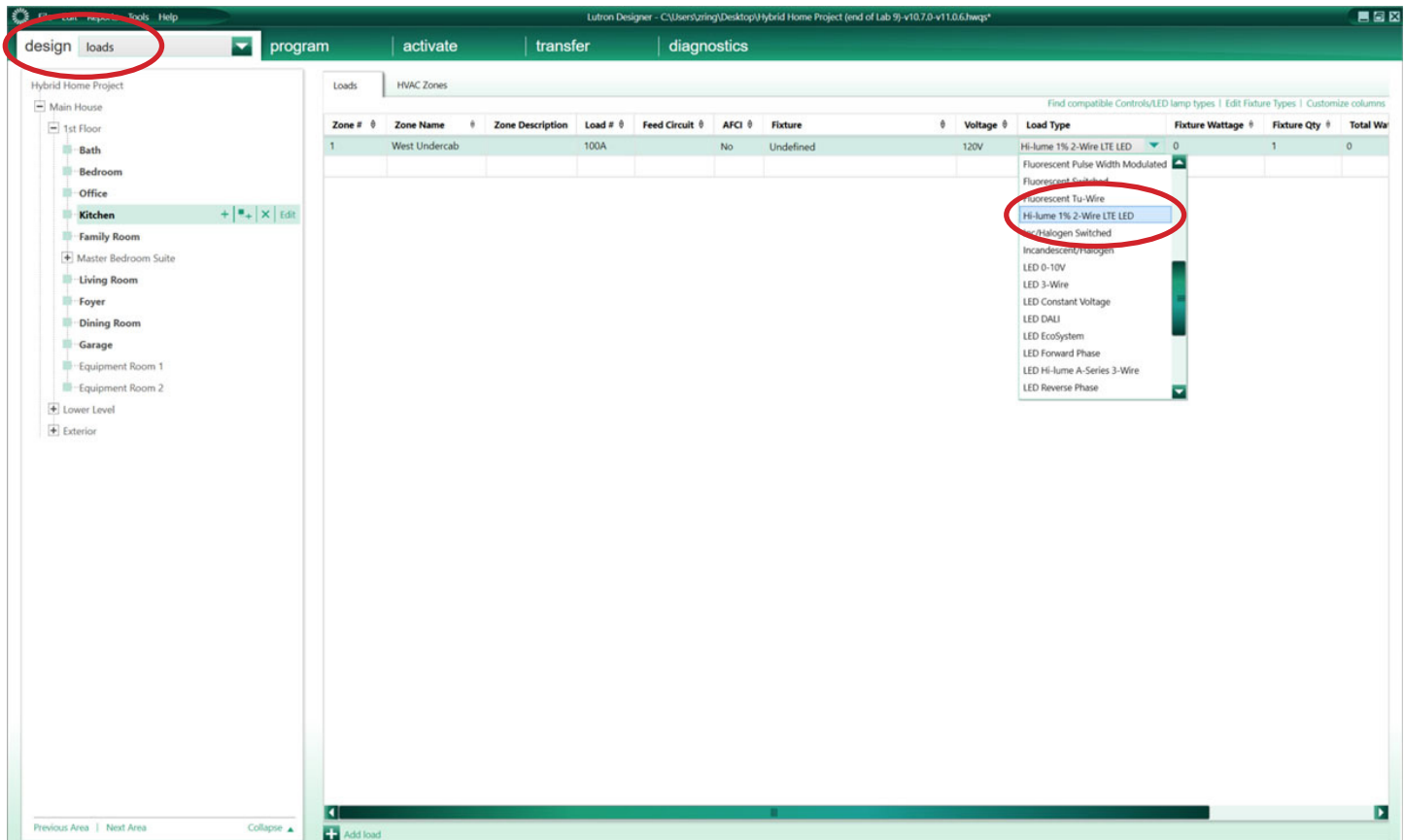
The software automatically populates the **High-End** and the **Low-End** fields with the appropriate values for the selected driver. 78 (High) and 32 (Low) will provide the full dimming range (1-100%).

Note: If the **High-End** and **Low-End** trim columns do not show, **Customize columns** will need to be selected. Next select the High/Low-End by selecting the checkbox. However, these trim values should not be changed.

Hi-lume 1% 2-Wire Driver *(continued)*

HomeWorks: Assign the load to a control

When assigning the load to a wallbox dimmer, GRAFIK Eye QS, or WPM, the assignment will be done in the **design>controls** tab. Use the area tree to navigate to the desired control/output and select **Assign**.
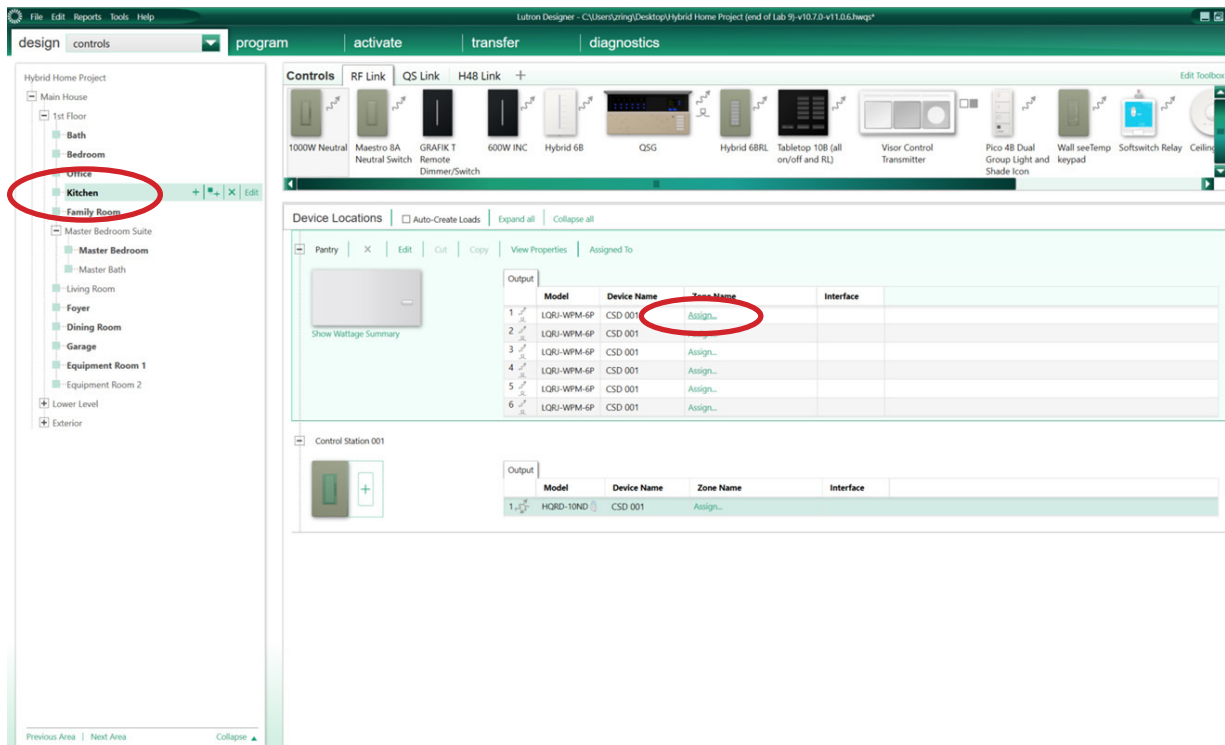
A window will appear on the right side of the screen. Find the load in question and select **Assign**.
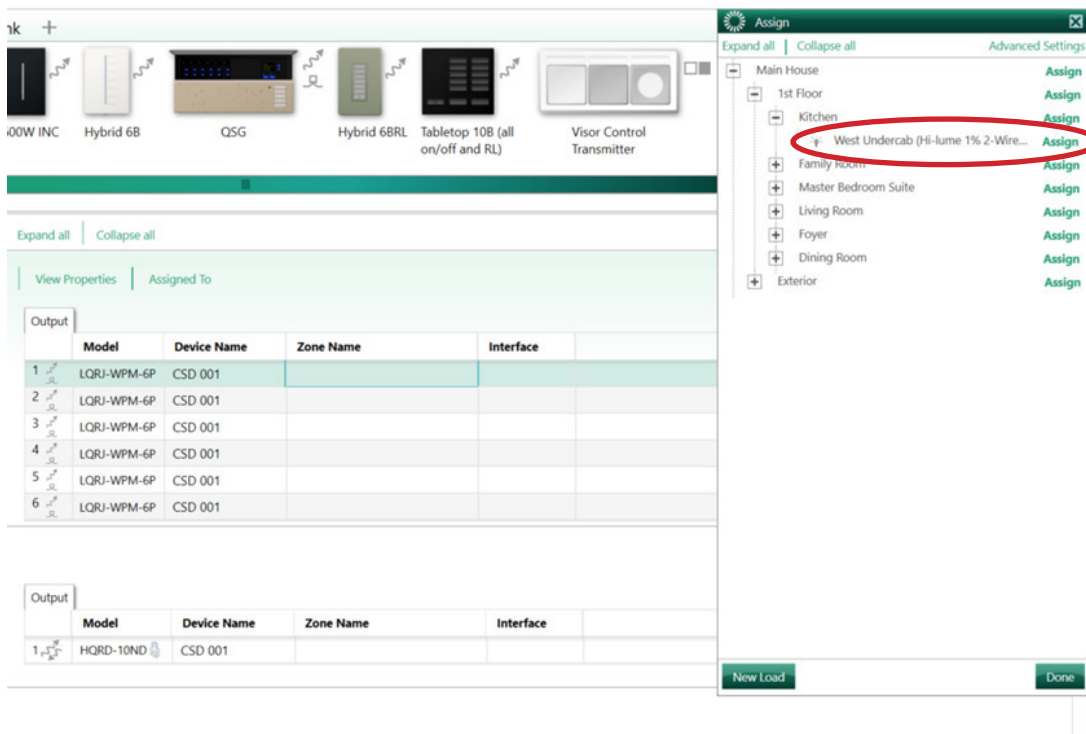
Hi-lume 1% 2-Wire Driver *(continued)*

HomeWorks: Assign the load to a control *(continued)*

When assigning the load to a DIN Rail Power Module (DPM), this will be done in the **design>equipment** tab. Use the area tree to navigate to the desired module/output and select **Assign**.
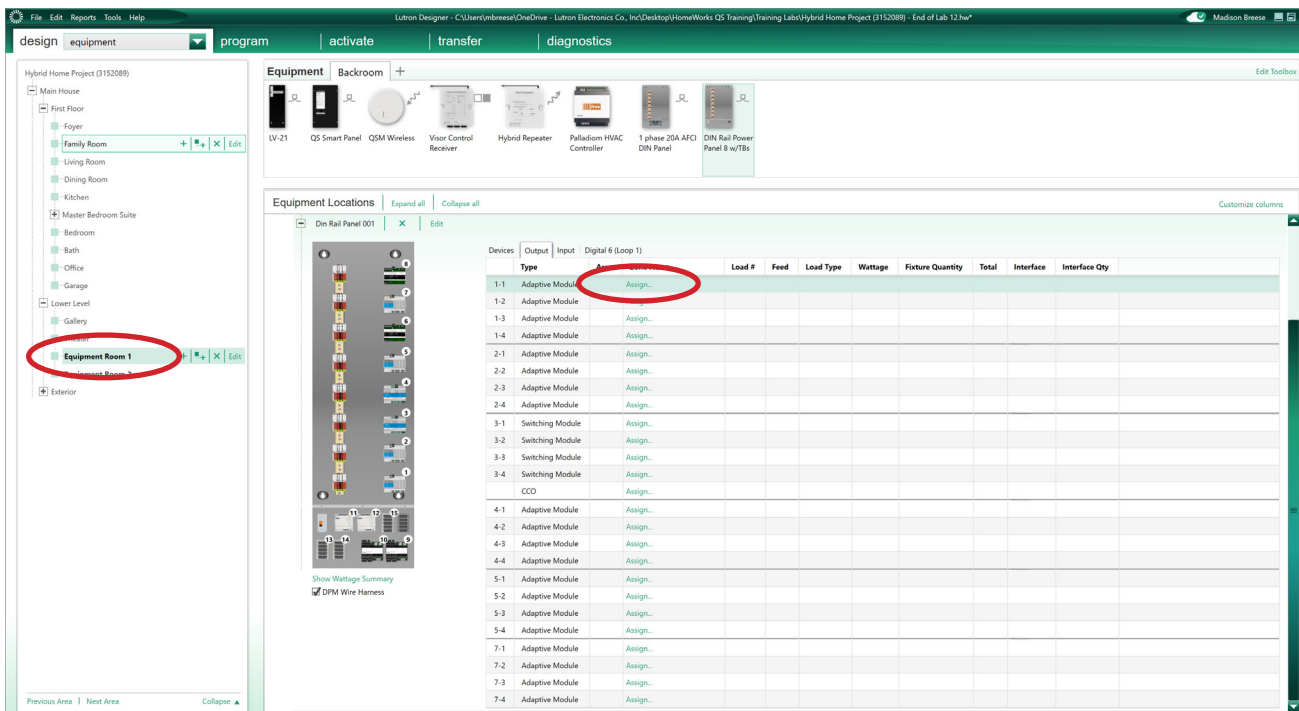
A window will appear on the righthand side of the screen. Find the load in question and select **Assign**.
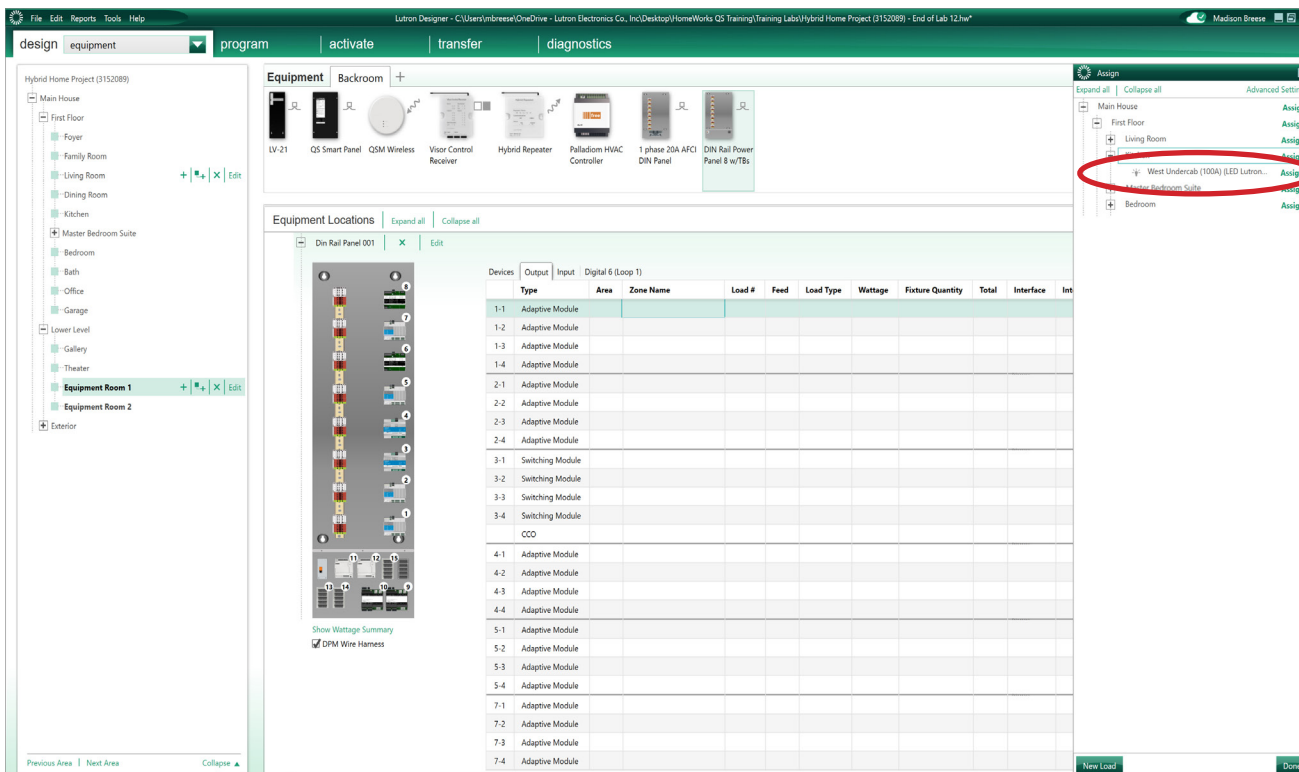
Hi-lume 1% 2-Wire Driver *(continued)*

RadioRA 2: Add the control to the database

Using RadioRA 2 programming software, navigate to the **design** tab of the programming software and select the **+** icon to add a new device location.
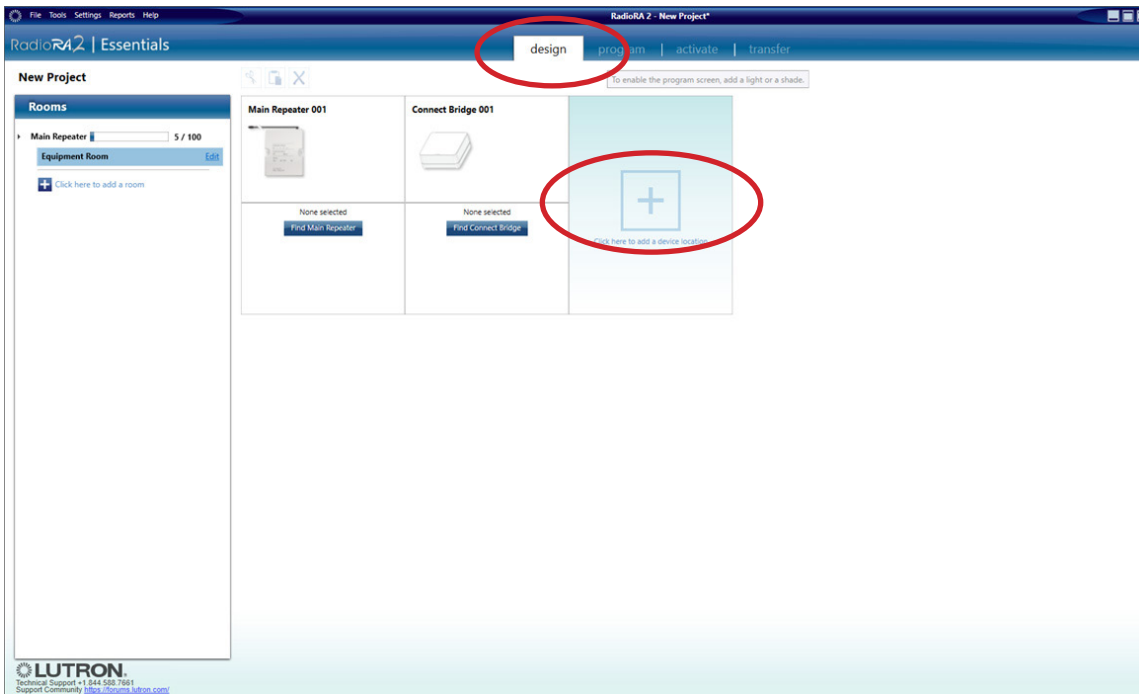
The **Add New Device** window will appear. Select the first dimmer available under **Dimmers & Switches** and select **Hi-lume 1% 2-wire LTE LED** under **Device Type**. This will automatically set the high and low-end trims to the appropriate levels. High = 78%; Low = 32%.

Note: Older versions of software may require the trim values to be adjusted manually. After the dimmer is added, right click on the device and select "Advanced Settings" to adjust the trim values.
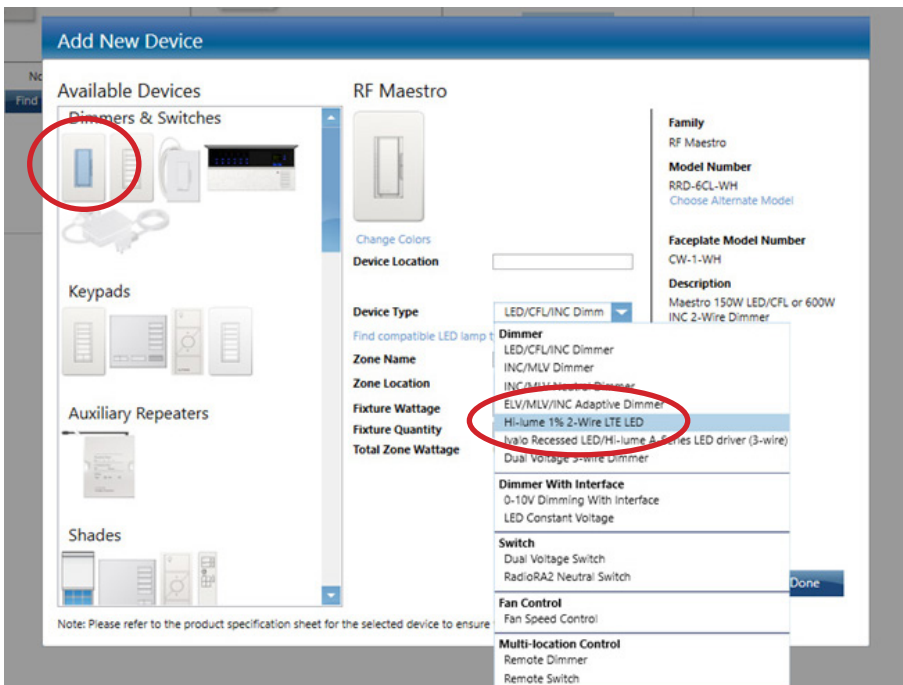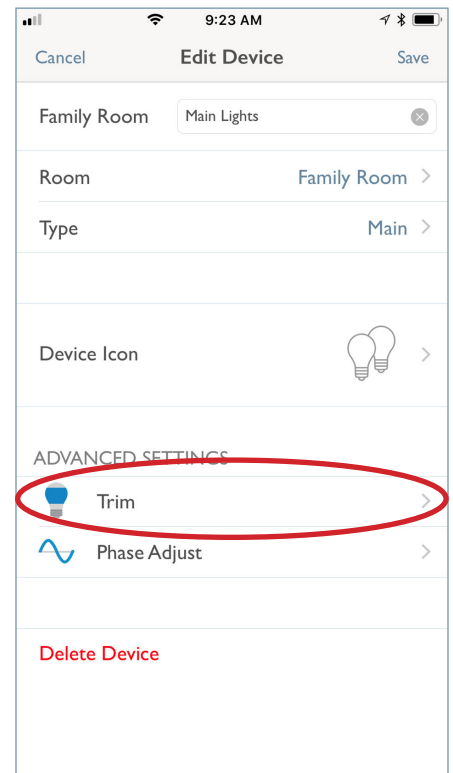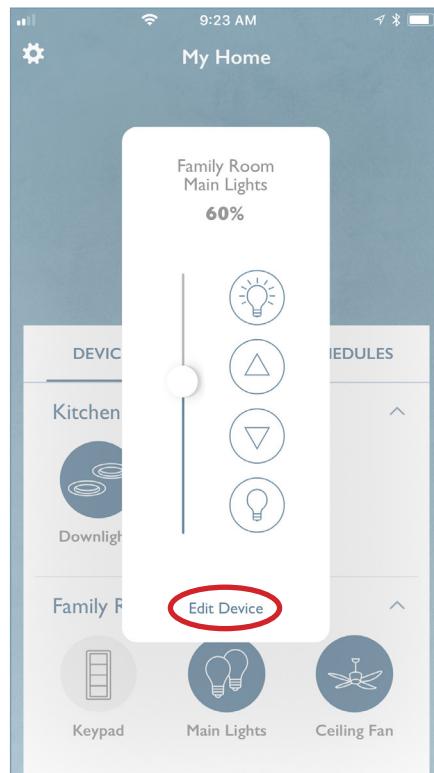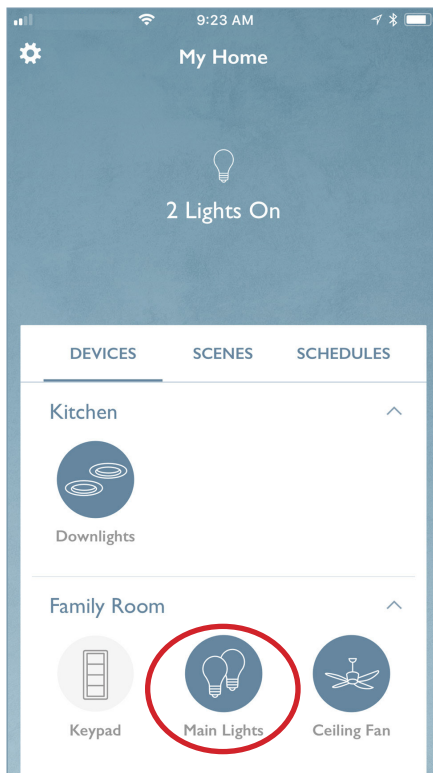
Hi-lume 1% 2-Wire Driver *(continued)*

RA2 Select: Adjusting Trim Settings

To edit a device using the RA2 Select App, select the device from the home screen of the App by pressing on the icon or name of the device. First select **Edit Device** then select **Trim** from the **Advanced Settings** menu.

Set the high-end to 78 and press **Test & Save**. Set the low-end to 32 and press **Test & Save**. Select the back arrow (〈) and select **Save** in the **Edit Device** window.
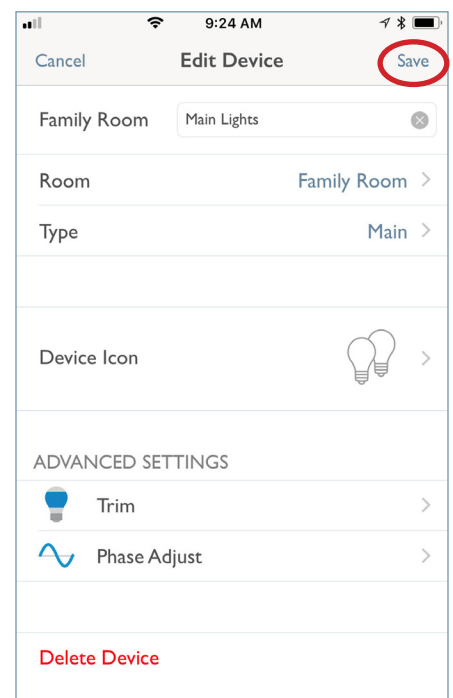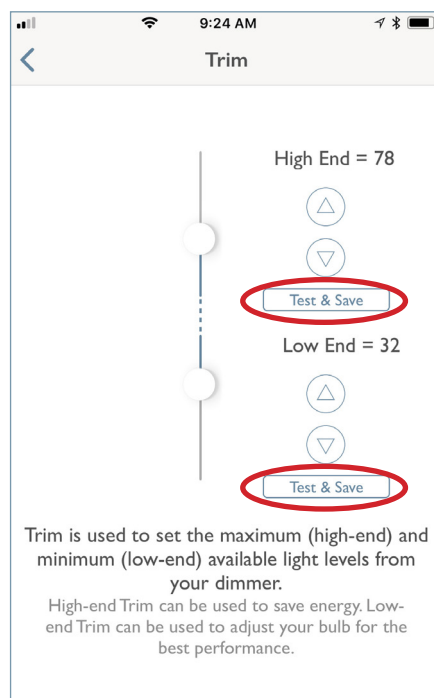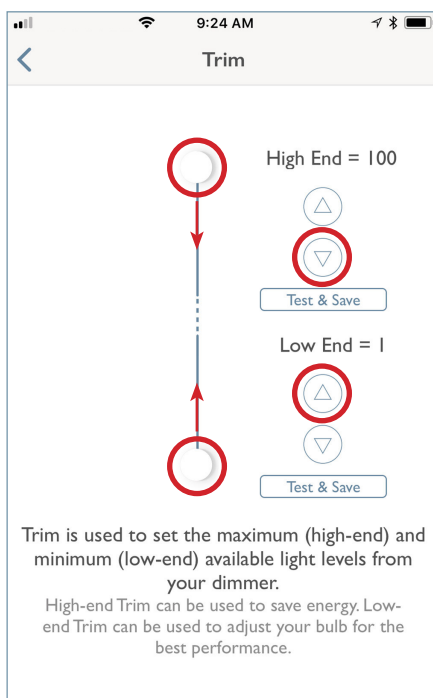
Hi-lume 1% 3-Wire Driver

The Hi-lume 1% 3-Wire driver is a high-performance LED driver that provides smooth, continuous, flicker-free, 1% dimming for virtually any LED fixture, whether it requires constant-current or constant-voltage.

Compatible Controls

The Hi-lume 1% 3-Wire LED driver is compatible with the following controls:

HomeWorks

Product	Part Number	Drivers per Control				Load Type
		40 W Driver		40 W Driver		
		120 V∼	277 V∼	120 V∼	277 V∼	
3-Wire Interface (120 V∼)	PHPM-3F-120	1–41	–	1–31	–	LED Hi-lume A-Series 3-Wire
3-Wire Interface (Dual Voltage)	PHPM-3F-DV	1–41	1–88	1–31	1–72	LED Hi-lume A-Series 3-Wire
HomeWorks 3-Wire fluorescent dimmer	HQRD-F6AN-DV	1–15	1–33	1–11	1–27	LED Hi-lume A-Series 3-Wire

Any of the following controls can be made compatible with the Hi-lume 1% 3-Wire LED driver by adding a PHPM-3F interface:

- LQSE-4A-120-D
- LQSE-4A5-120-D
- Wallbox power module: LQRJ-WPM-6P
- GRAFIK Eye QS control unit: QSGRJ-X
- HomeWorks forward-phase neutral wire dimmers (e.g., - HQRD-PRO, HQRD-10ND, HQRD-6ND, HQRD-6NA)

RadioRA 2

Product	Part Number	Drivers per Control				Load Type
		40 W Driver		40 W Driver		
		120 V∼	277 V∼	120 V∼	277 V∼	
3-Wire Interface (120 V∼)	PHPM-3F-120	1–41	–	1–31	–	LED Hi-lume A-Series 3-Wire
3-Wire Interface (Dual Voltage)	PHPM-3F-DV	1–41	1–88	1–31	1–72	LED Hi-lume A-Series 3-Wire
RadioRA 2 3-Wire fluorescent dimmer	RRD-F6AN-DV	1–15	1–33	1–11	1–27	LED Hi-lume A-Series 3-Wire

Any of the following controls can be made compatible with the addition of a PHPM-3F interface:

- Wallbox power module: LQRJ-WPM-6P
- GRAFIK Eye QS control unit: QSGRJ-X
- RadioRA 2 forward-phase neutral wire dimmers (e.g., - RRD-PRO, RRD-10ND, RRD-6ND)

Hi-lume 1% 3-Wire driver *(continued)*

HomeWorks: Load Schedule

Using the Lutron Designer programming software, add a load to the load schedule by going to the **design>loads** tab and selecting the appropriate load type for the driver. For the Hi-lume 1% 3-Wire LED Driver select **LED Hi-lume A-Series 3-Wire**.
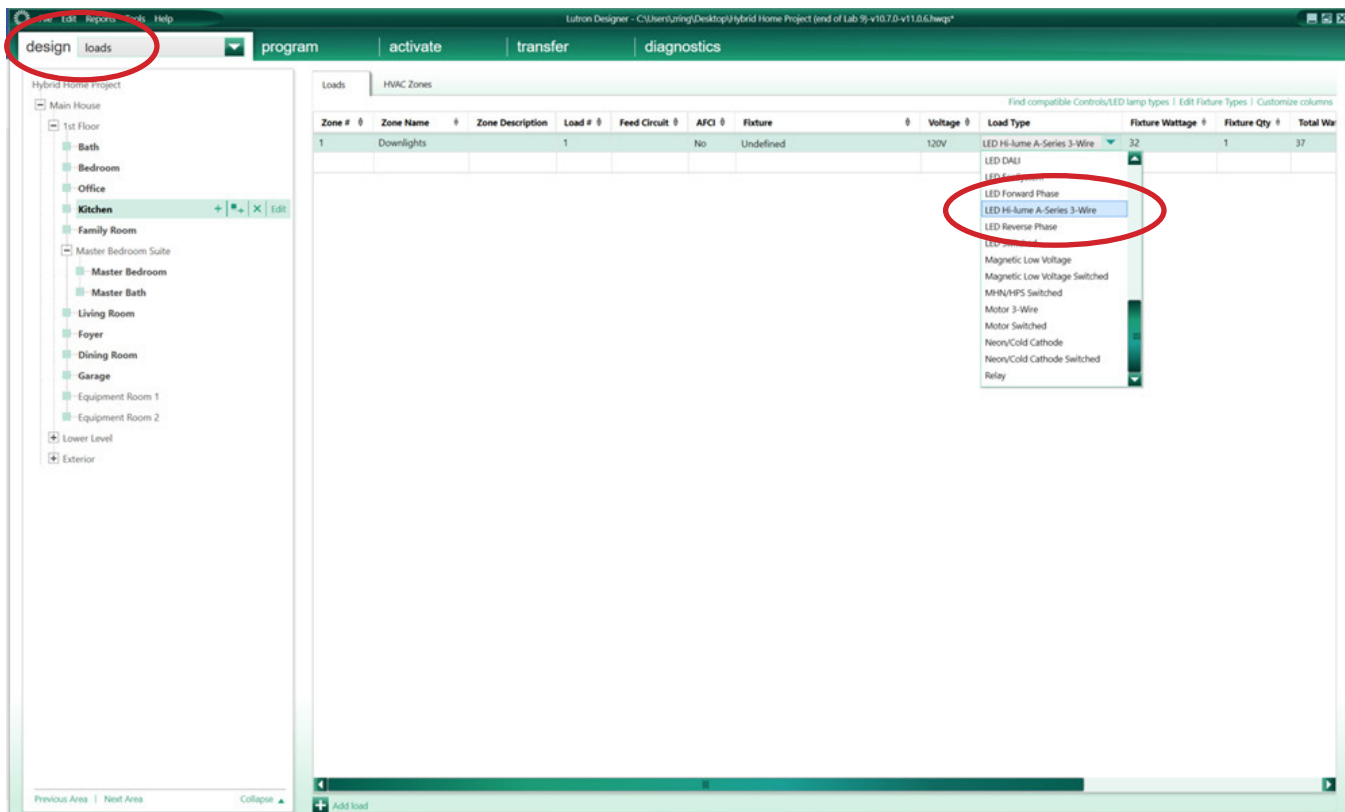
The software automatically populates the **High-End** and the **Low-End** fields with the appropriate values for the selected driver. 78 (high-end) and 32 (low-end) will provide you with full dimming range (1-100%).

Note: If the **High-End** and **Low-End** trim columns do not show, you will need to click **Customize columns** and then select the High / Low-End by selecting the checkbox.

Hi-lume 1% 3-Wire Driver *(continued)*

HomeWorks: Assign the load to a control

If the load is being assigned to to a wallbox dimmer, GRAFIK Eye QS control, or WPM, the assignment will be done in the **design>controls** tab. Use the area tree to navigate to the desired control and select **Assign**.
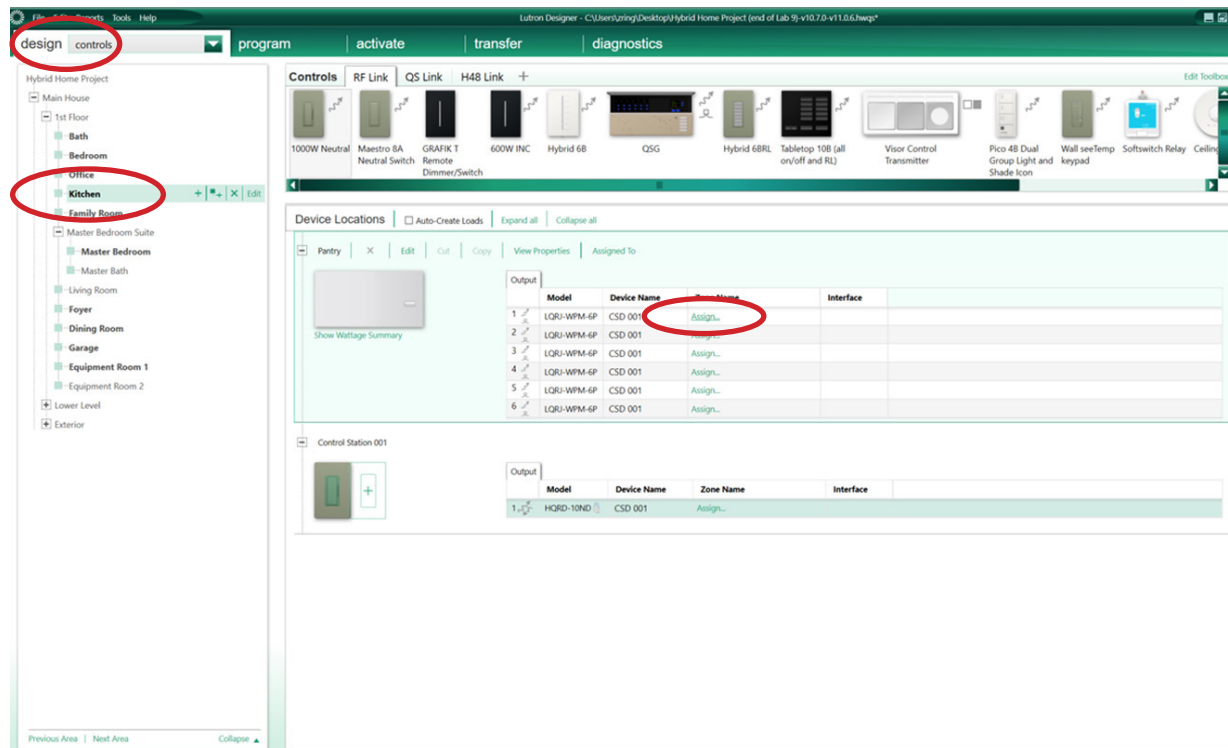
A window will appear on the righthand side of the screen. Find the load in question and select **Assign**.
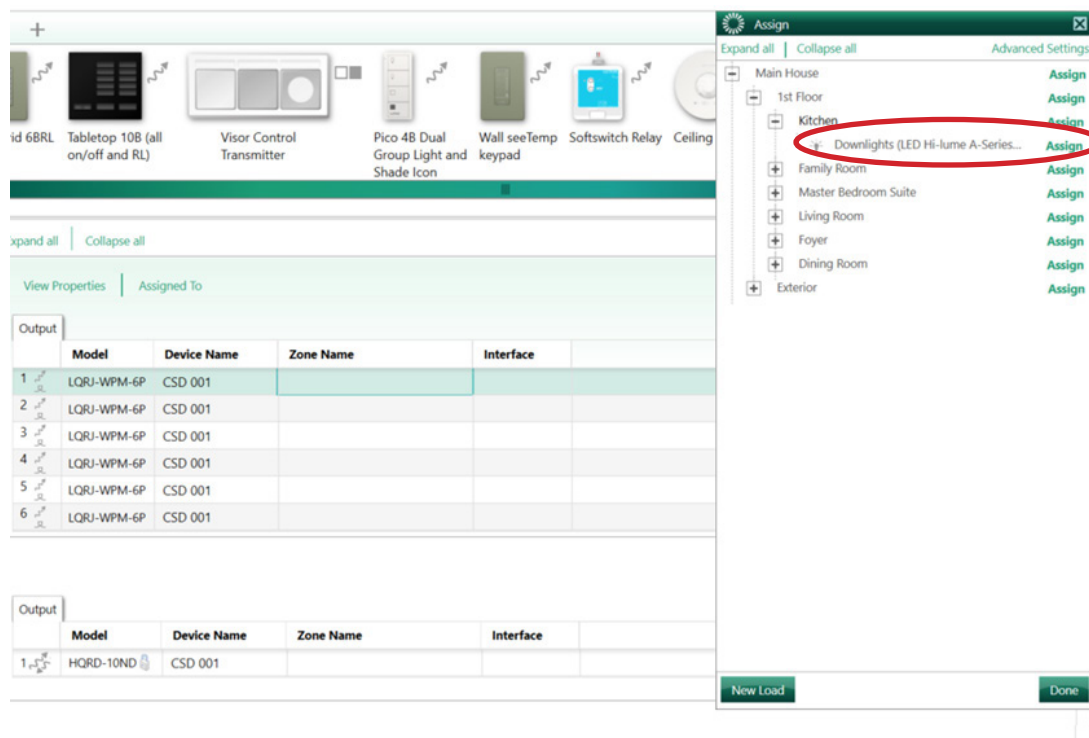
Hi-lume 1% 3-Wire Driver *(continued)*

HomeWorks: Assign the load to a control *(continued)*

If the load is being assigned to a control that does not directly support 3-wire dimming, be sure to select the correct interface in the **Interface** dropdown menu.

If the load is being assigned to a DIN Rail Power Module (DPM), this will be done in the **design>equipment** tab. Use the area tree to navigate to the desired module / output and select **Assign**.

Hi-lume 1% 3-Wire Driver *(continued)*

HomeWorks: Assign the load to a control *(continued)*

A window will appear on the right hand side of the screen. Find the load in question and select **Assign**.

Since the load is being assigned to a control that does not directly support 3-wire dimming, be sure to select the correct interface in the **Interface** dropdown menu.

Hi-lume 1% 3-Wire Driver *(continued)*

RadioRA 2: Add the control to the database

Using RadioRA 2 programming software, navigate to the **design** tab and select the **+** icon to add a new device location.
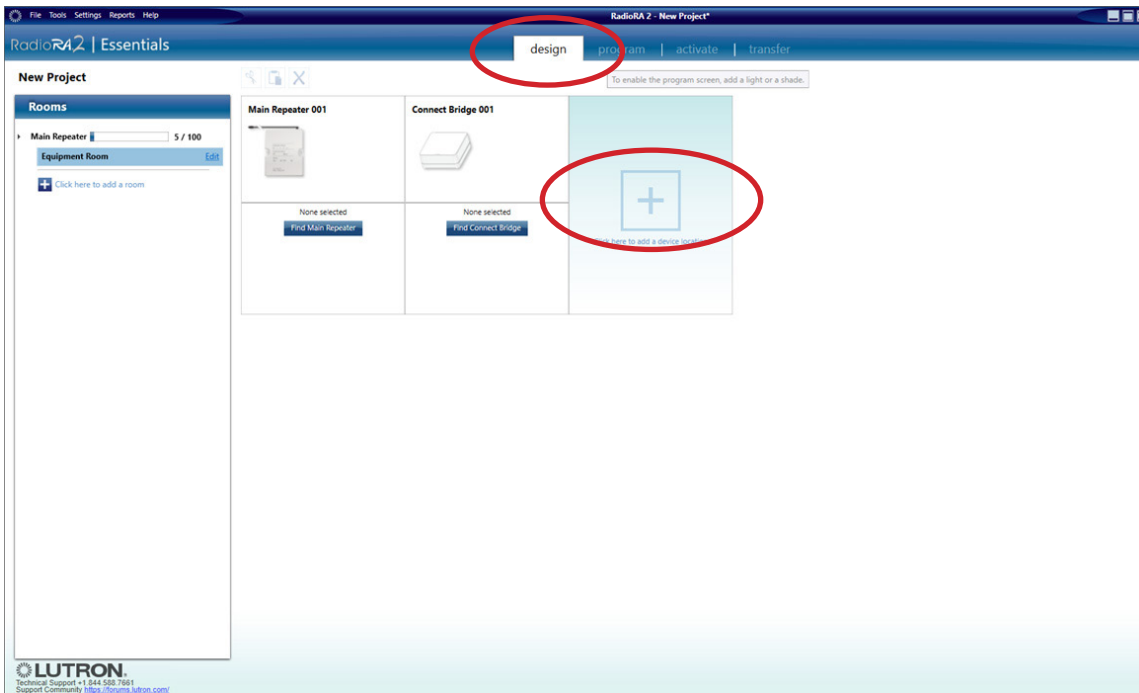
The **Add New Device** window will appear. Select the first dimmer available under **Dimmers & Switches** and select the **Ivalo Recessed LED/Hi-lume A-Series LED Driver (3-wire)** under **Device Type**. This will automatically set the high and low-end trims to the appropriate levels. High = 78%; Low = 32%.

Note: Older versions of software may require the trim values to be adjusted manually. After the dimmer is added, right click on the device and select "Advanced Settings" to adjust the trim values.
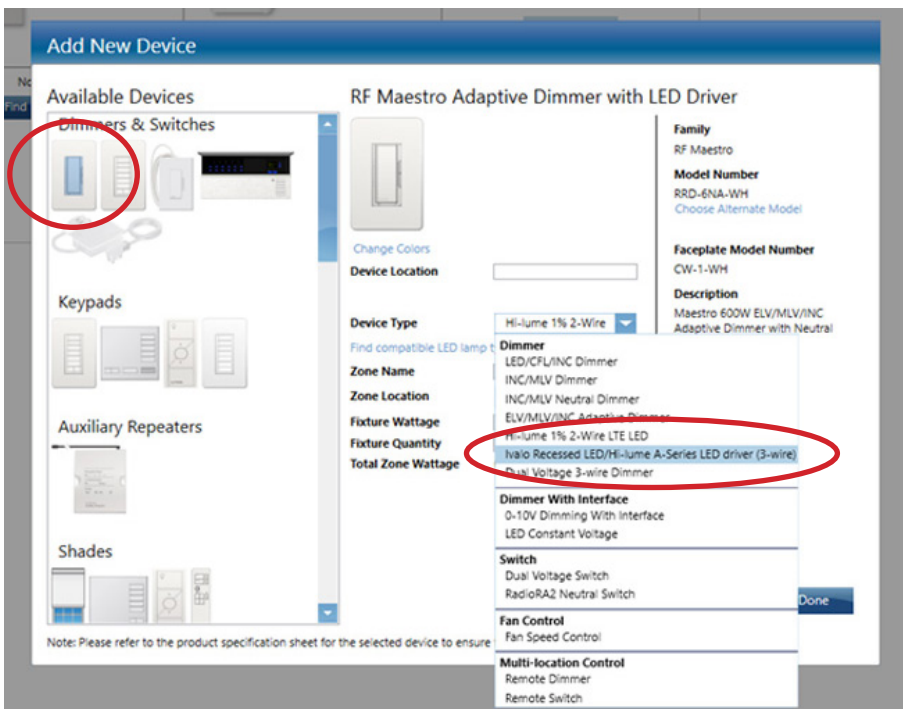
Hi-lume 1% 3-Wire *(continued)*

RA2 Select: Adjusting Trim Settings

To edit a device using the RA2 Select App, select the device from the home screen of the App by pressing on the icon or name of the device. First select **Edit Device** then select **Trim** from the **Advanced Settings** menu.

Set the high-end to 78 and press **Test & Save**. Set the low-end to 32 and press **Test & Save**. Select the back arrow (<) and select **Save** in the **Edit Device** window.
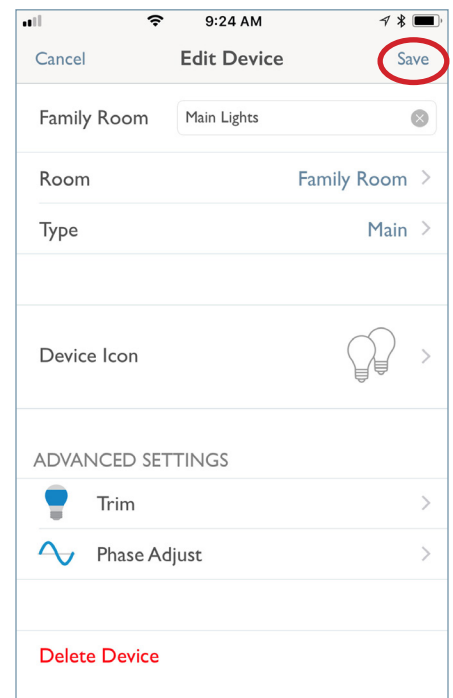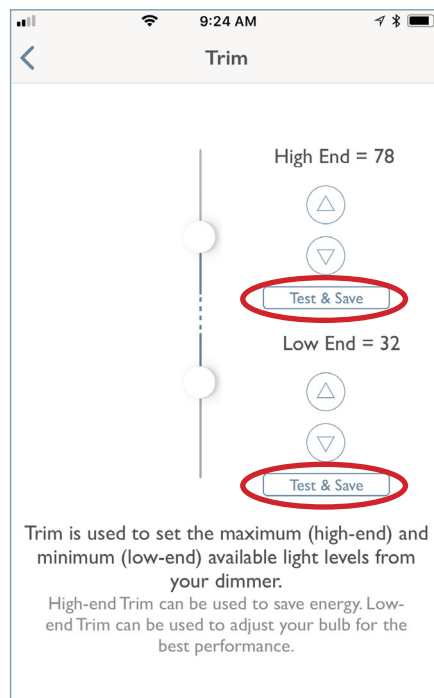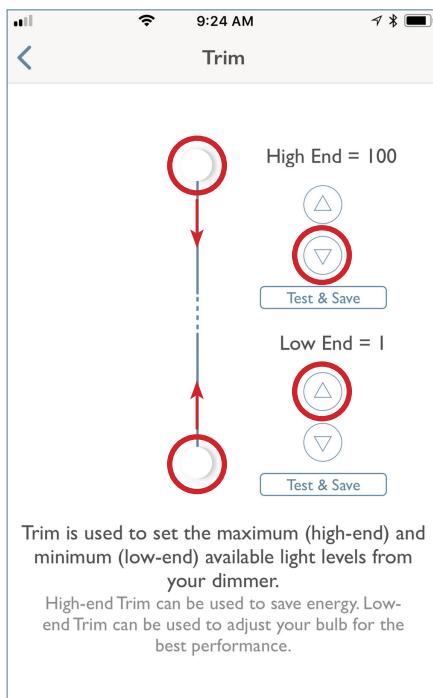
Hi-lume 1%, 5-Series, and Embedded EcoSystem Solutions[1]

Please refer to the following Application Note for an explanation of how to design, program, activate, and troubleshoot a HomeWorks QS system that utilizes EcoSystem ballasts/drivers. The document is split into two sections, with one section focused on the DIN-rail Power Module with EcoSystem solution, and the other section focused on the GRAFIK Eye QS with EcoSystem solution. Please refer to the appropriate section based on the control hardware being used on the specific project.

www.lutron.com/PasswordProtectedDocumentLibrary/Using%20EcoSystem%20in%20HWQS.pdf

Compatible Controls

The Hi-lume 1% EcoSystem driver can be assigned to the following controls:

Product	Model Number		Recommended Software Version	Drivers per Control
	120 V∼	277 V∼		
HomeWorks QS with EcoSystem	LQSE-2ECO-D QSGRJ-_E QSGR-_E	—	10 or higher	64 per EcoSystem link

HomeWorks QS: Load Schedule (LQSE-2ECO-D)

To add a load to the load schedule go to the **design>loads** tab and select the appropriate load type for the driver. For the Hi-lume 1%, 5-series, and Embedded EcoSystem drivers, select **LED EcoSystem**.

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[1] EcoSystem drivers are no longer available to order as of September 1, 2021.

Hi-lume 1%, 5-Series, and Embedded EcoSystem Solutions *(continued)*

HomeWorks QS: Assign the load to a control (LQSE-2ECO-D)

If the load is being assigned to to a LQSE-2ECO-D the assignment will be done in the **design>equipment** tab. Select the desired loop and select **Assign** under the **Ballasts** column.
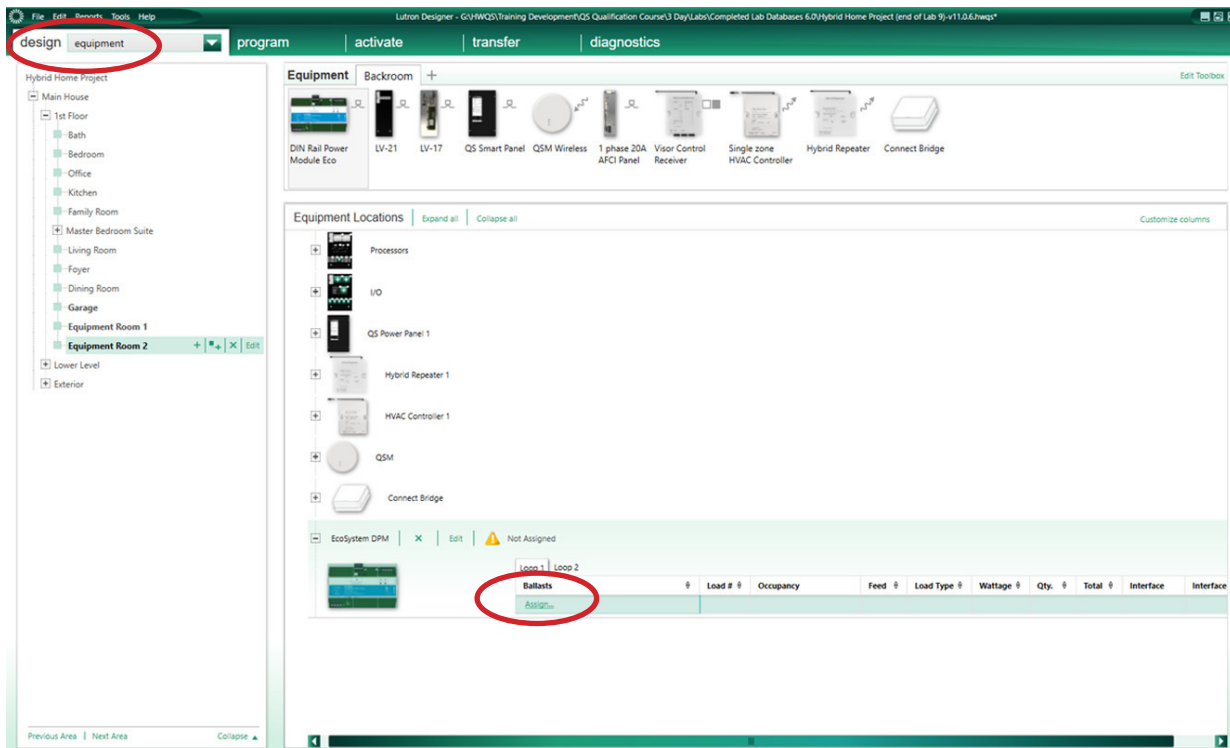
A window will appear on the righthand side of your screen. Find the load in question and select **Assign**.
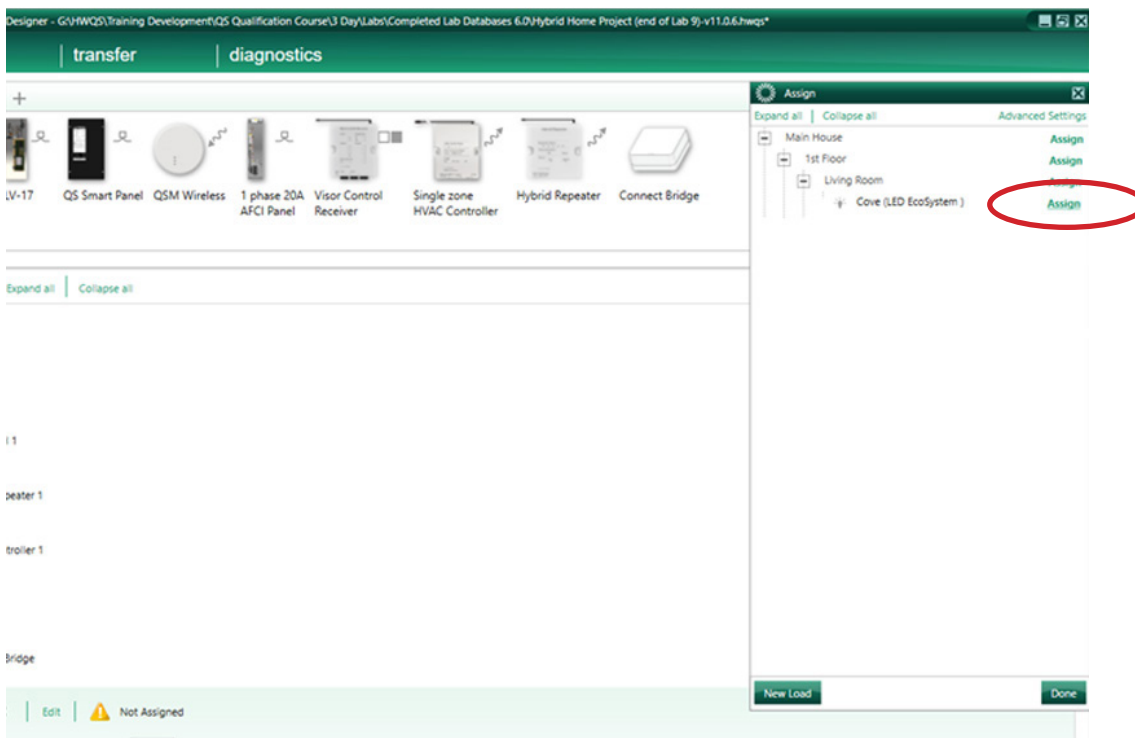
Hi-lume 1%, 5-Series, and Embedded EcoSystem Solutions *(continued)*

HomeWorks QS: Load Schedule (QSGRJ-_E)

To add a load to the load schedule navigate to the **design>loads** tab and select the appropriate load type for the driver. For the Hi-lume 1%, 5-series, and Embedded EcoSystem drivers, select **LED EcoSystem**.

Each GRAFIK Eye QS with EcoSystem unit can have a maximum of 64 EcoSystem ballasts/drivers connected to it and can control a maximum of up to 16 zones, however, **Fixture Qty** is unable to be changed to anything other than 1 for an EcoSystem load type in the software. For EcoSystem zones that contain multiple ballasts/drivers the fixture quantity will need to be left at 1 and the TOTAL fixture wattage will have to be entered in the **Fixture Wattage** field.

For example, if there are 4 EcoSystem Sconce fixtures that are 25 W each and are all in the same zone, 100 W would be entered in the **Fixture Wattage** field and the **Fixture Qty** would be left at 1.

Note: EcoSystem ballasts and drivers must be programmed and assigned to GRAFIK Eye QS zones using the local buttons and display on the GRAFIK Eye. EcoSystem ballast/driver to zone mapping cannot be performed through the HomeWorks QS software.

Hi-lume 1%, 5-Series, and Embedded EcoSystem Solutions *(continued)*

HomeWorks QS: Assign the load to a control (QSGRJ-_E)

If the load is being assigned to a QSGRJ-_E, navigate to the **design>controls** tab. Select one of the Eco outputs and select **Assign** under the **Zone Name** column.
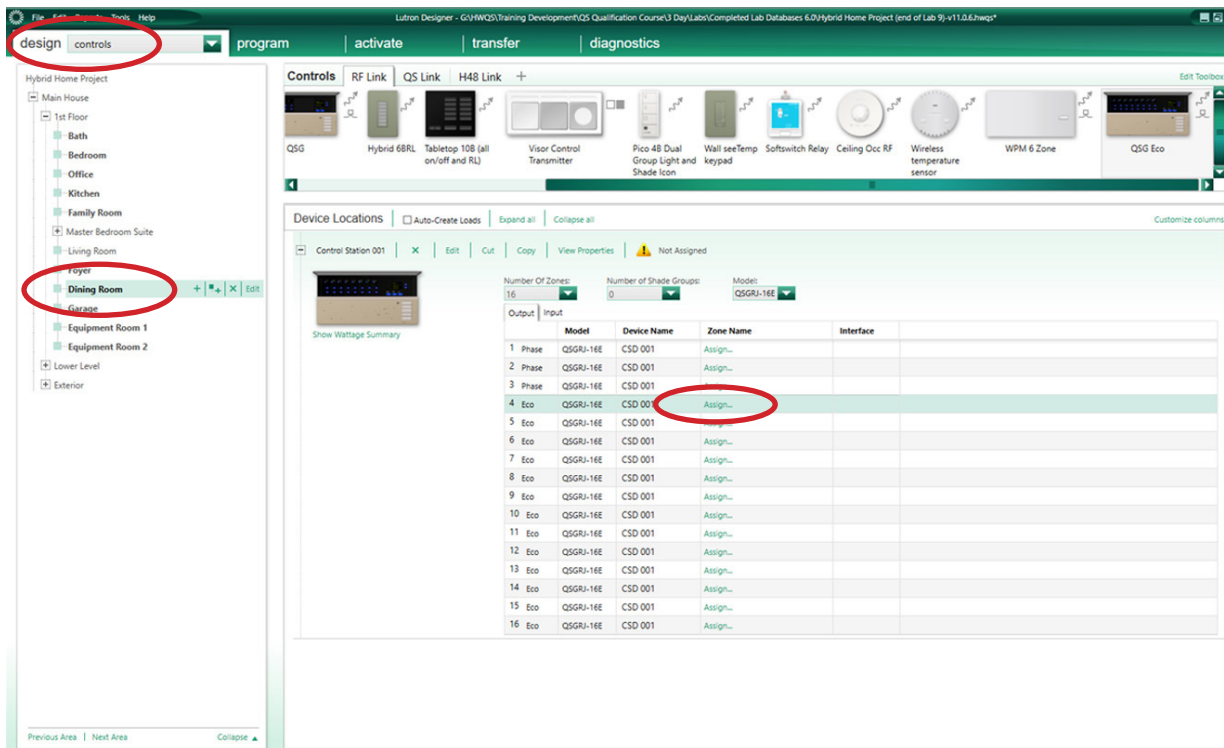
A window will appear on the right side of the screen. Find the load in question and select **Assign**.
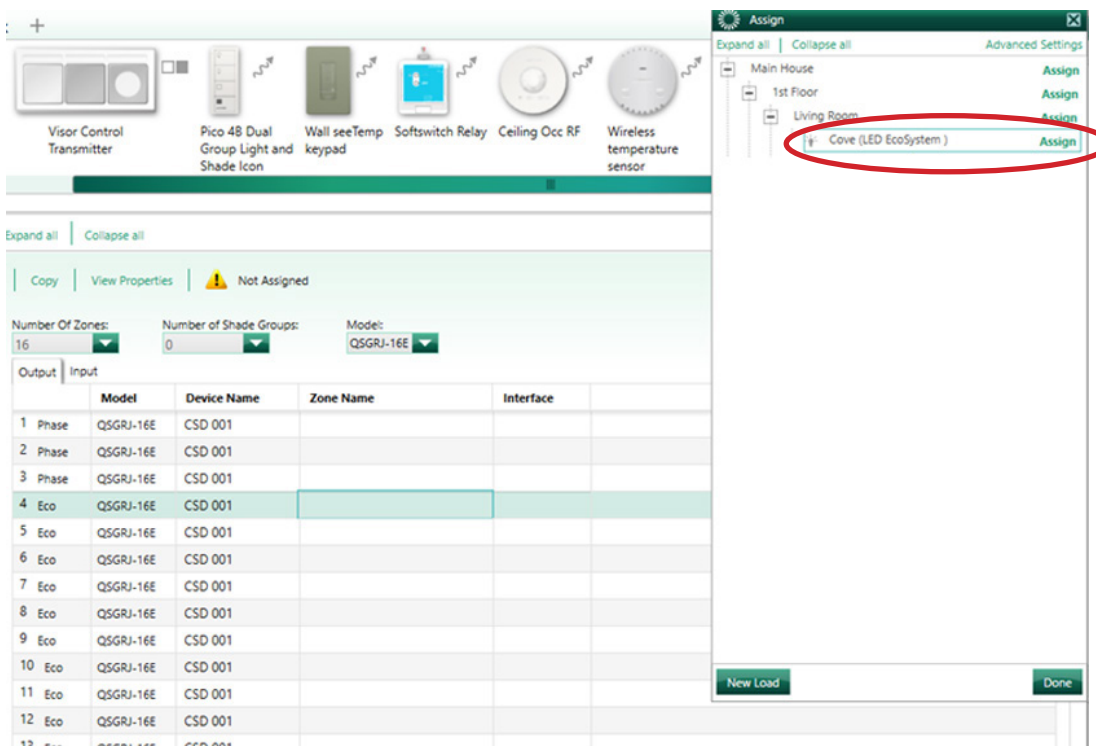
Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver[1]

The Hi-lume Premier 0.1% Constant-Voltage Driver (L3D0) is a high-performance LED driver capable of controlling up to 96 W of 24 V∼ constant-voltage loads. This driver provides smooth and continuous dimming down to 0.1% low-end. It is ideal for use with strip lighting in applications such as coves, under or over cabinet lighting and pathway lighting. The driver is UL® listed with an integrated wiring compartment and can be mounted up to 150 ft (45 m) away from the load.

Compatible Controls for 3-Wire Driver

The Hi-lume Premier 0.1% Constant-Voltage driver is compatible with both EcoSystem and 3-wire control types. When using a 3-wire control, the Hi-lume Premier 0.1% Constant-Voltage driver is compatible with the following controls:

HomeWorks QS

Product	Model Number		Recommended System Version	Drivers per Control	
	120 V∼	277 V∼		120 V∼	277 V∼
HomeWorks QS with EcoSystem	HQRD-F6AN-DV	HQRD-F6AN-DV	10 or higher	1-6	1-14

RadioRA2

Product	Model Number		Recommended System Version	Drivers per Control	
	120 V∼	277 V∼		120 V∼	277 V∼
RadioRA 2	RRD-F6AN-DV	RRD-F6AN-DV	10 or higher	1-6	1-14

HomeWorks QS: Load Schedule for 3-Wire Driver

To add a load to the load schedule navigate to the **design>loads** tab and select the appropriate load type for the driver. For the Hi-lume Premier 0.1% Constant-Voltage driver, select **LED Constant Voltage**.

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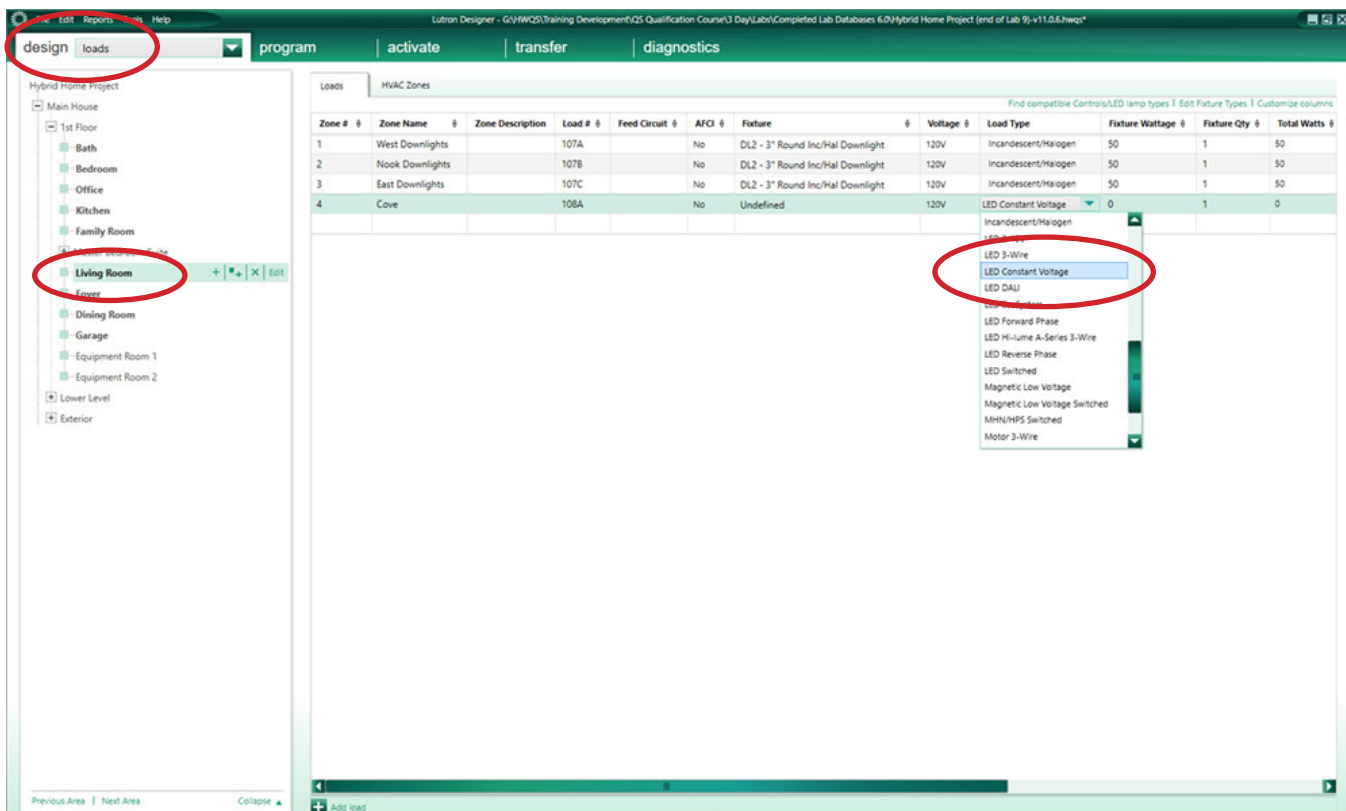
[1] EcoSystem drivers are no longer available to order as of September 1, 2021.

Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Assign the load to a control for 3-Wire Driver

If the load is being assigned to a HQRD-F6AN-DV navigate to the **design>controls** tab. Select the **Assign** under the **Zone Name** column.
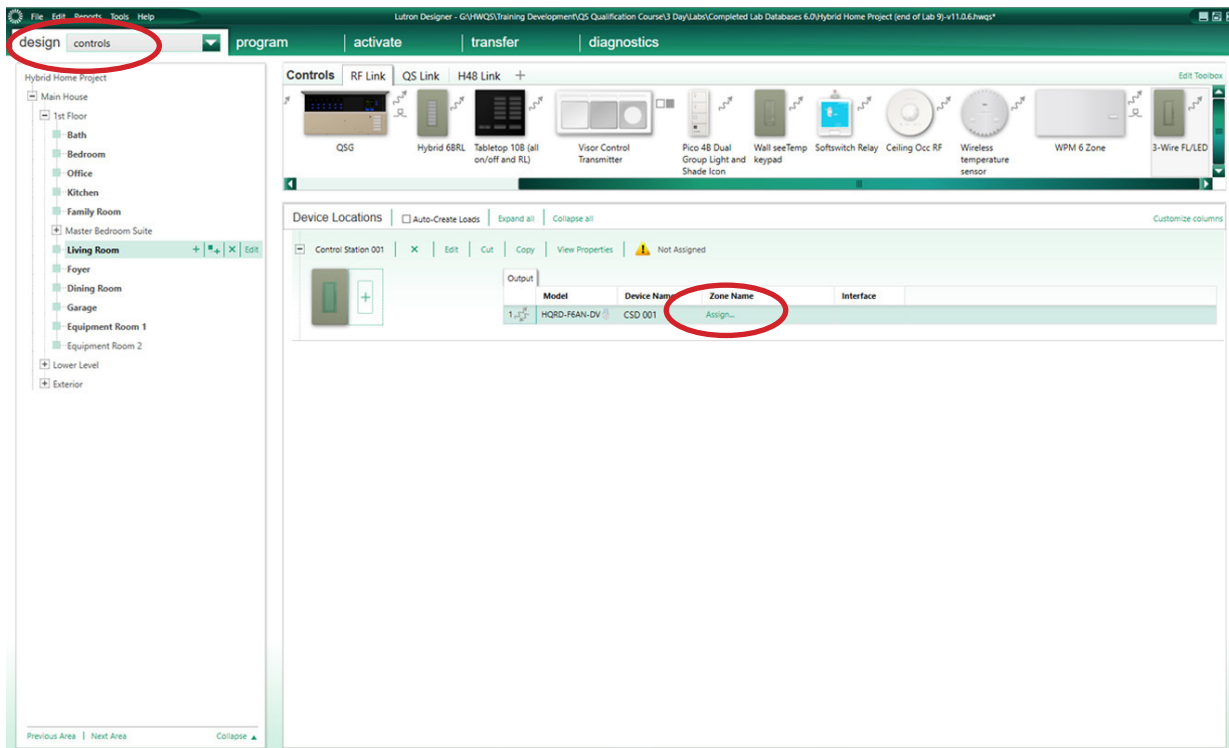
A window will appear on the righthand side of your screen. Find the load in question and select **Assign**.
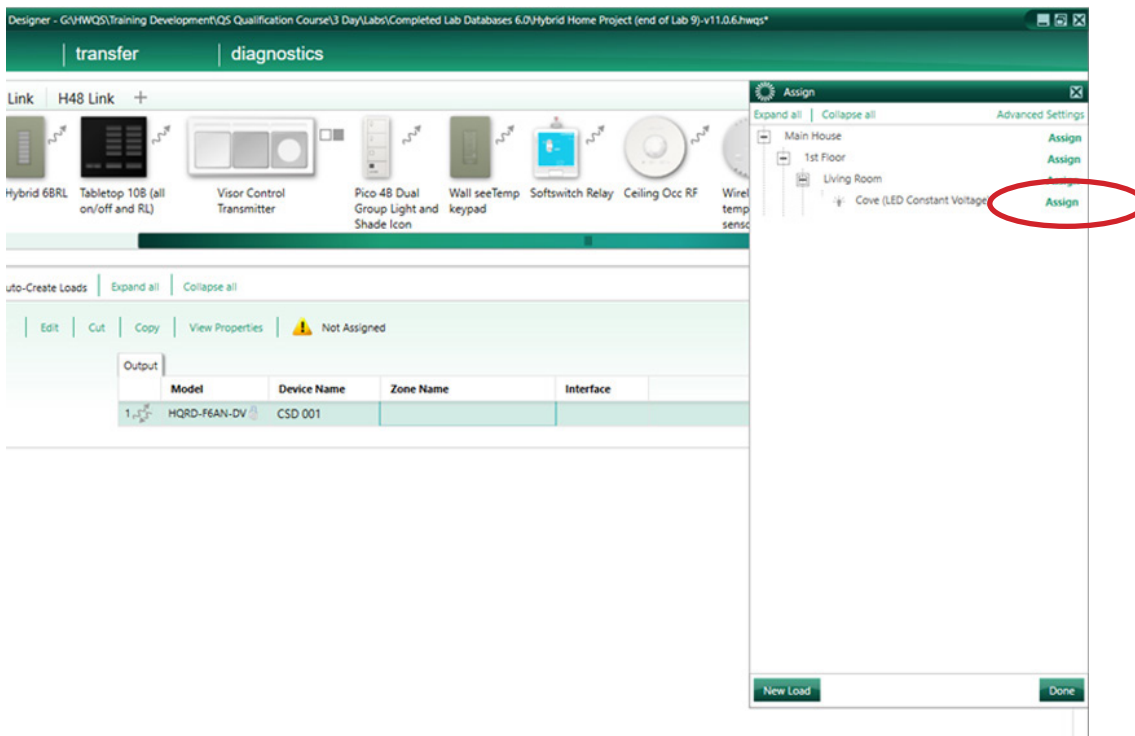
Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

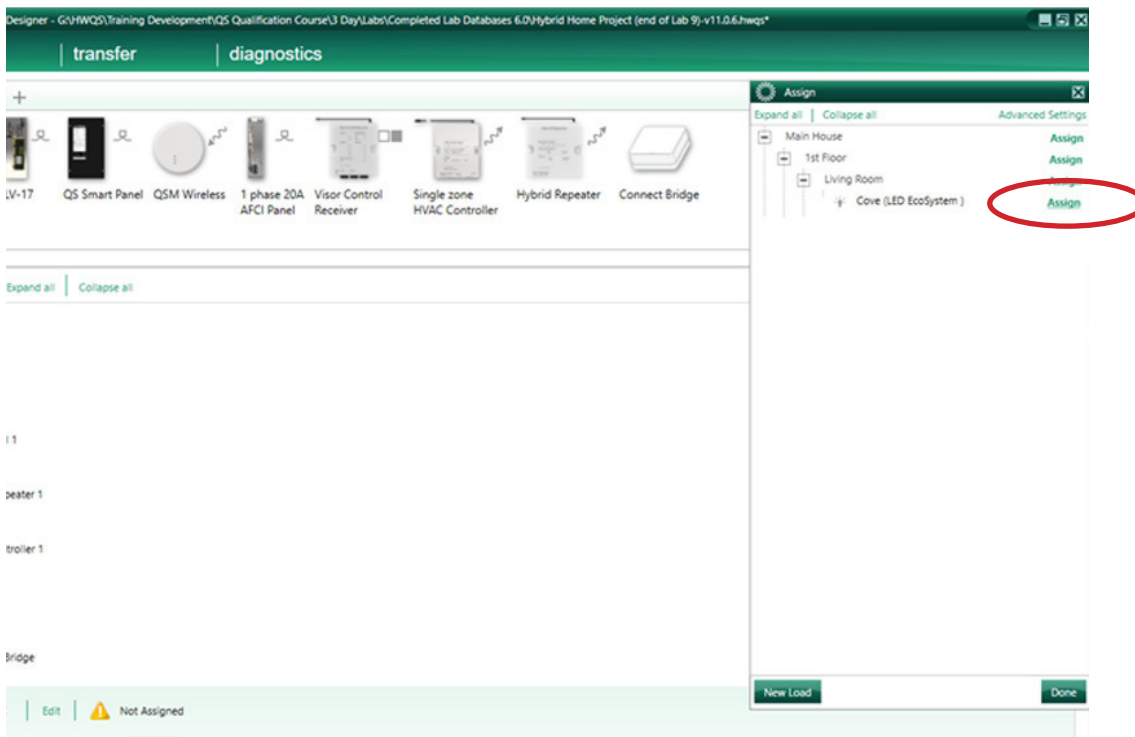## HomeWorks QS: Assign the load to a control for 3-Wire Driver *(continued)*

After the load has been assigned to the control, the model number of the driver will appear in the **Interface** column.

Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

RadioRA 2: Add the control to the database for 3-Wire Driver

On the **design** tab of the programming software select the **+** icon to add a new device location.
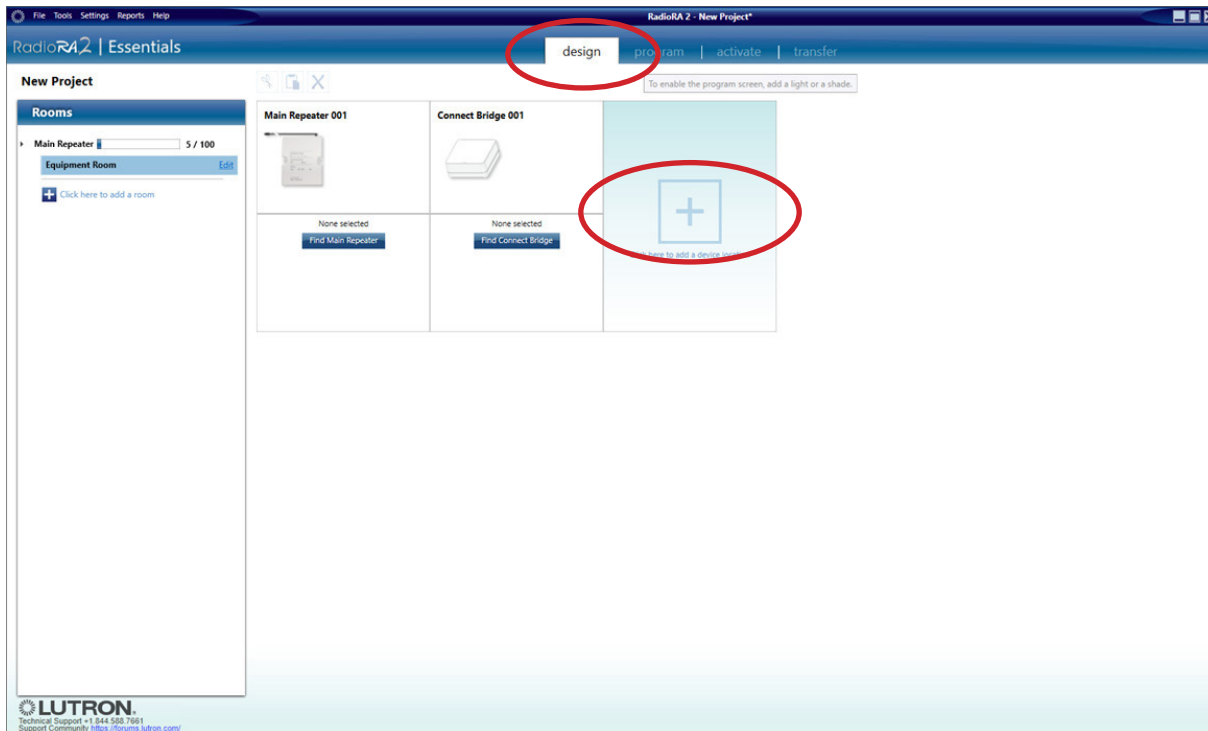
The **Add a New Device** window will appear. Select the first dimmer available under **Dimmers & Switches** and select **LED Constant Voltage** under **Device Type**.
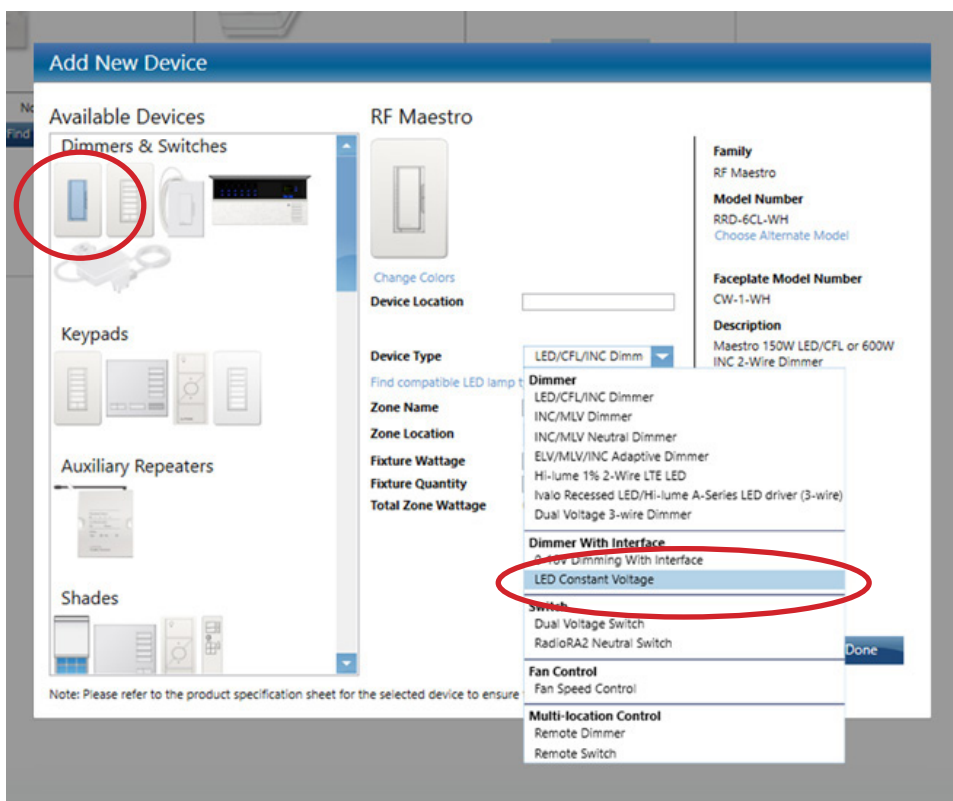
Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

The Hi-lume Premier 0.1% Constant Voltage Driver (L3D0) is a high-performance LED driver capable of controlling up to 96 W of 24 V constant voltage loads. This driver provides smooth, continuous, and flicker-free dimming down to 0.1% low-end. It is ideal for use with strip lighting in applications such as coves, under or over cabinet lighting and pathway lighting. The driver is UL® Listed with an integrated wiring compartment and can be mounted up to 150 ft (45 m) away from the load, depending on the wire gauge.

Compatible Controls for EcoSystem Driver

The Hi-lume Premier 0.1% LED driver can be assigned to the following controls:

HomeWorks QS with EcoSystem

Product	Model Number		Recommended System Version	Drivers per Control
	120 V∼	277 V∼		
HomeWorks QS with EcoSystem	LQSE-2ECO-D QSGRJ-_E QSGR-_E	–	10 or higher	64 per EcoSystem link

HomeWorks QS: Load Schedule (LQSE-2ECO-D)

To add a load to the load schedule go to the **design>loads** tab and select the appropriate load type for the driver. For the Hi-lume Premier 0.1% driver select **LED Constant Voltage**.

Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Assign the load to a control (LQSE-2ECO-D)

To assign the load to a LQSE-2ECO-D, navigate to the **design>equipment** tab. Select the desired loop and select **Assign** under the **Ballasts** column.

A window will appear on the right hand side of the screen. Find the load in question and select **Assign**.

Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Assign the load to a control (LQSE-2ECO-D) *(continued)*

After the load has been assigned to the EcoSystem loop, the model number of the driver will appear in the **Interface** column.
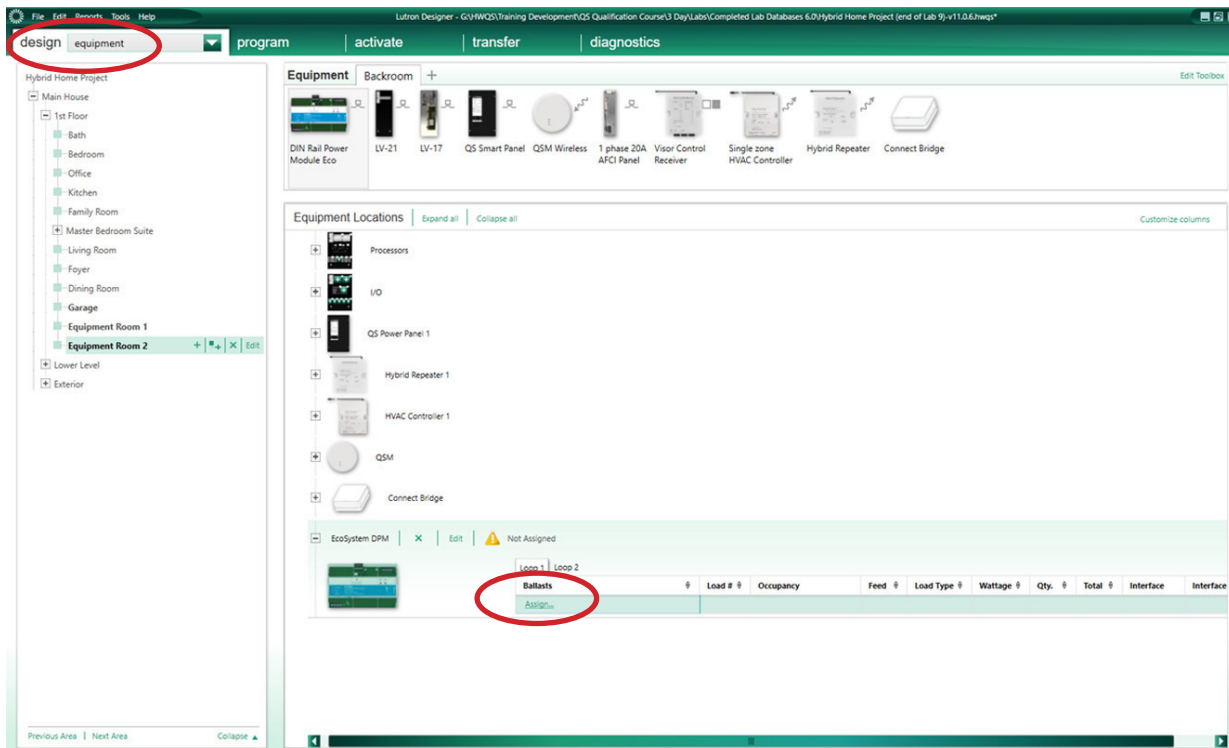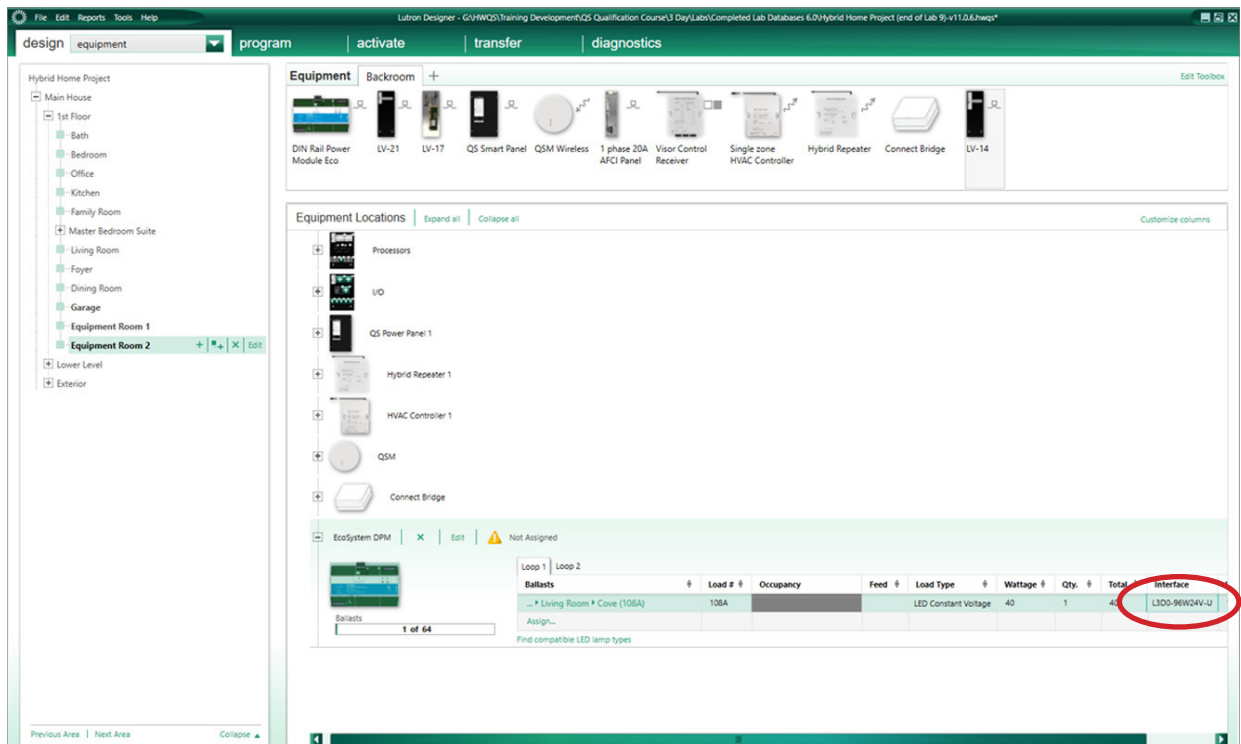
Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Load Schedule (QSGRJ-_E)

To add a load to the load schedule go to the **design>loads** tab and select the appropriate load type for the driver. For the Hi-lume Premier 0.1% driver select **LED Constant Voltage**.

Each GRAFIK Eye QS with EcoSystem unit can have a maximum of 64 EcoSystem ballasts/drivers connected to it and can control a maximum of up to 16 zones. However, **Fixture Qty** is unable to be changed to anything other than 1 for an EcoSystem load type in the software. For EcoSystem zones that contain multiple ballasts/drivers the fixture quantity will need to be left at 1 and the TOTAL fixture wattage should be entered in the **Fixture Wattage** field.

For example, if there are 4 EcoSystem Sconce fixtures that are 25 W each and are all in the same zone, 100 W would be entered in the **Fixture Wattage** field and the **Fixture Qty** would be left at 1.

Note: EcoSystem ballasts and drivers must be programmed and assigned to GRAFIK Eye QS zones using the local buttons and display on the GRAFIK Eye. EcoSystem ballast/driver to zone mapping cannot be performed through the HomeWorks QS software.

Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Assign the load to a control (QSGRJ-_E)

If the load is being assigned to a QSGRJ-_E the assignment will be done in the **design>controls** tab. Select one of the Eco outputs and select **Assign** under the **Zone Name** column.
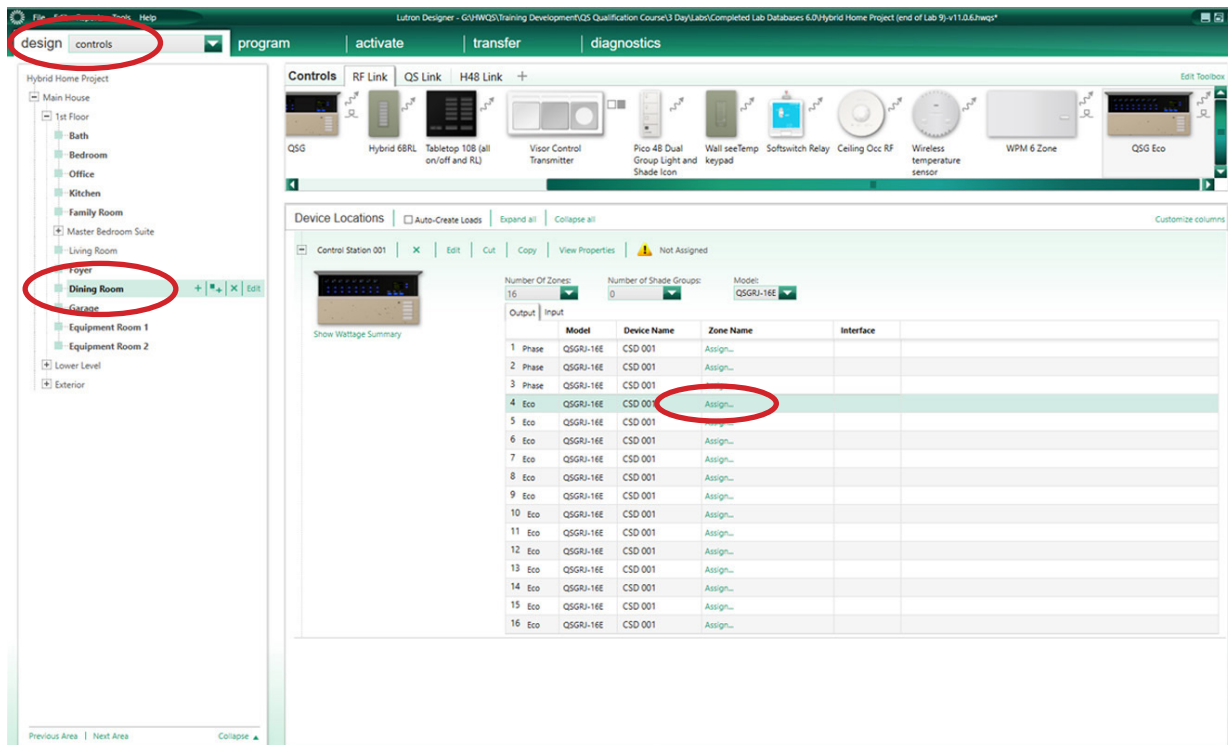
A window will appear on the right hand side of the screen. Find the load in question and select **Assign**.
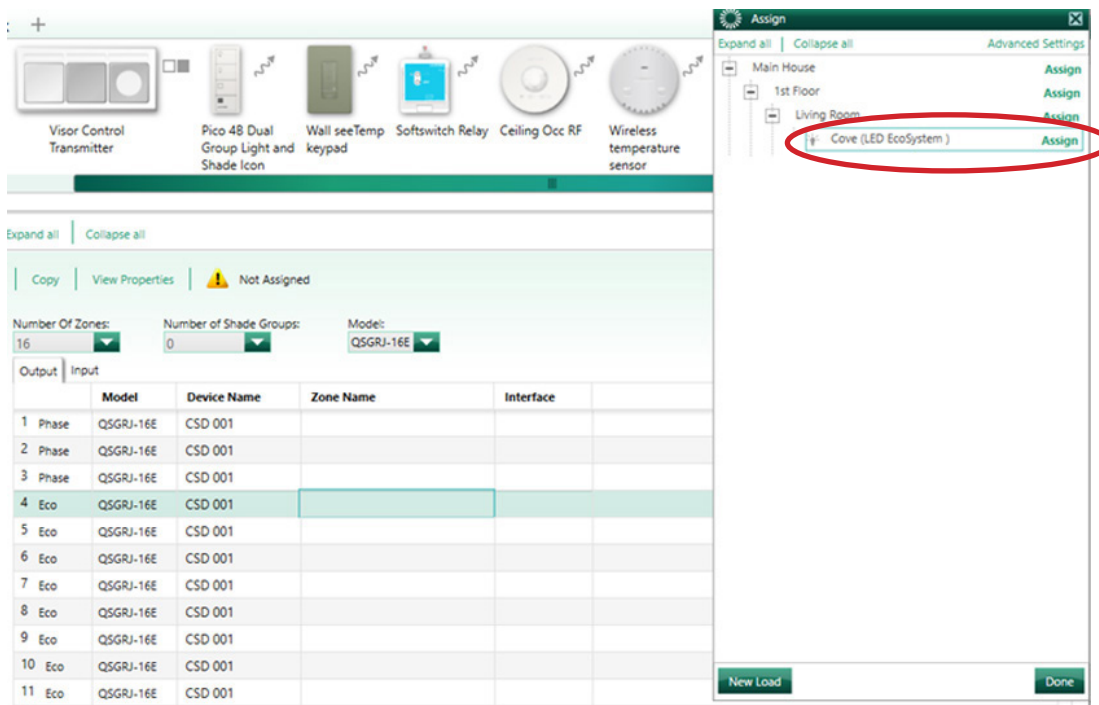
Hi-lume Premier 0.1% 3-Wire Driver and EcoSystem Driver *(continued)*

HomeWorks QS: Assign the load to a control (QSGRJ-_E) *(continued)*

After the load has been assigned to the EcoSystem loop, the model number of the driver will appear in the **Interface** column.

HomeWorks Digital Controller and HomeWorks Digital 0.1% LED Controller

HomeWorks Digital 0.1% LED controllers provide a high-performance solution for any space, in any application. They provide smooth, continuous dimming down to 0.1% of full output current, and fade smoothly between 0% and 0.1% with Soft-on, Fade-to-Black.

Compatible Controls for HomeWorks Digital Controller

Product	Model Number		Recommended Software Version	Drivers per Control
	120 V∼	277 V∼		
HomeWorks QSX with Digital	LQSE-2HDC-D	LQSE-2HDC-D	21.4 or higher	64 per digital link

HomeWorks QSX: Load Schedule for HomeWorks Digital Controller

To add a load to the load schedule, navigate to the **design>loads** tab and select the appropriate load type for the driver. For the HomeWorks Digital Controller, select HomeWorks Digital.
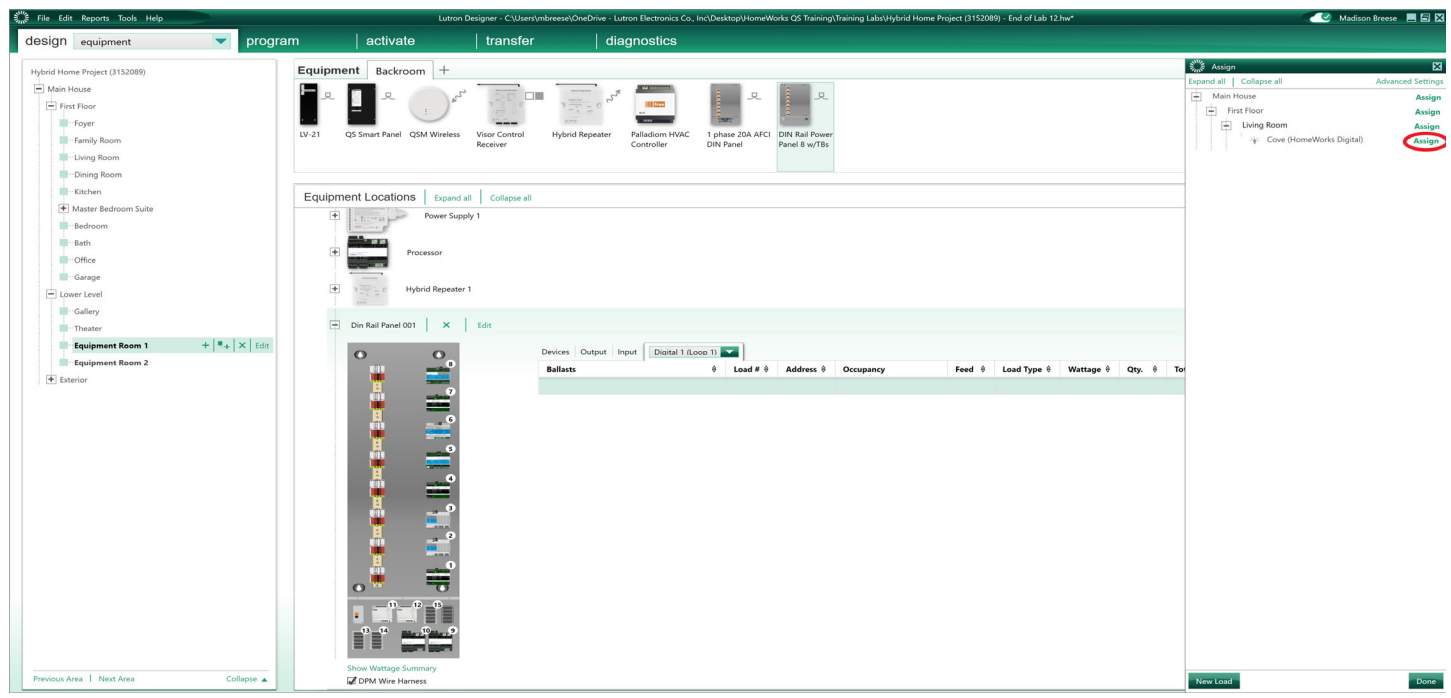
HomeWorks Digital Controller and HomeWorks Digital 0.1% LED Controller
(continued)

HomeWorks QSX: Assign the load to a control (LQSE-2HDC-D)

To assign the load to a LQSE-2HDC-D, navigate to the **design>equipment** tab. Select the desired loop and select **Assign** under the **Ballasts** column.
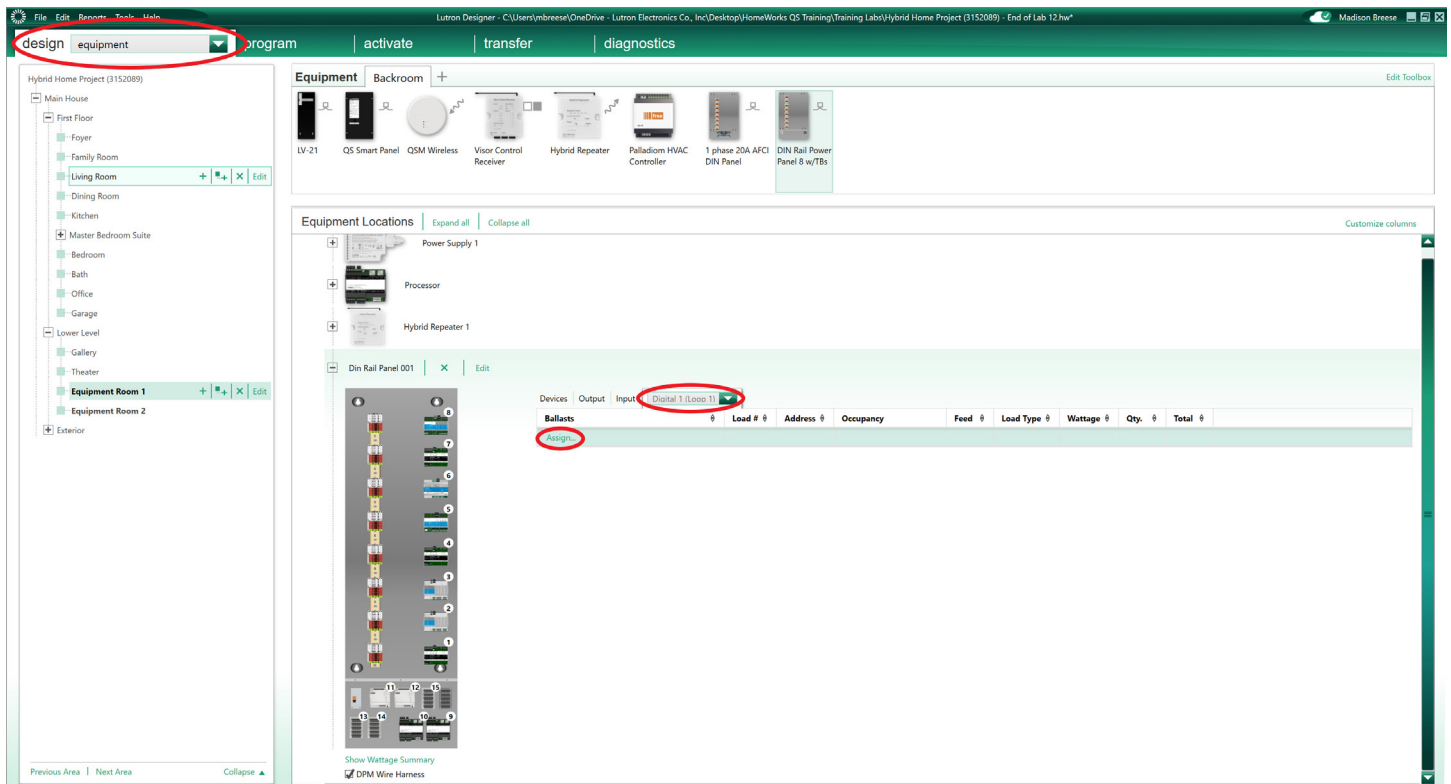
A window will appear on the right hand side of the screen. Find the load in question and select **Assign**.

HomeWorks Digital Controller and HomeWorks Digital 0.1% LED Controller
(continued)

HomeWorks QSX: Assign the load to a control (LQSE-2HDC-D) *(continued)*

Additional Information and Resources

EcoSystem Programming

For more information on configuring and using EcoSystem loads, refer to **Using EcoSystem Ballasts/Drivers in HomeWorks QS** available in the Application Notes section at www.lutron.com (requires a myLutron login).

Specification Submittals:

Hi-lume 1% 2-wire / EcoSystem (LTEA)

Hi-lume 1% 3-Wire / EcoSystem (L3DA)

Hi-lume Premier 0.1% EcoSystem/3-wire Constant Voltage (L3D0)

0.1% Premier HomeWorks Digital Controller

HomeWorks Digital Power Module

Installation Guides:

Hi-lume 1% 2-wire

Hi-lume 1% EcoSystem

Hi-lume 1% 3-Wire / EcoSystem

Hi-lume 0.1% 3-wire / EcoSystem

LCI Online - www.lutron.com/LCIonline

OVW 103 - Understanding Load Types

OVW 301 - Introduction to LEDs and LED Drivers

OVW 206 - Hi lume A Series LED Driver

Dimming LEDs

Controlling LEDs White Paper

Residential Systems Control of LED Lighting

Challenges of Dimming LED Loads on ELV and MLV Transformers

0-10 V⎓ Control Topology

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