

WEC+3 DUAL PORT

V4.0 USER GUIDE

16-bit RGB(W) Pixel Control over Wi-Fi
Closed or Open Network / Optional App



Pictured: WEC
DUAL PORT
Gen3 Wi-Fi
Effects
Controller



Intelligent Illumination
from the Minleon Group



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2025's WEC3
Model adds
an external
hard reset
button & a
second port



WEC+3 DUAL PORT V4.0

WHAT'S NEW

The WEC Dual Port – has only 2-ports. The second connector on each port is a power input. **A Power T must be used, if using 2 transformers.**



- A SECOND “INDIVIDUALLY CONTROLLABLE” LIGHT OUTPUT
- TWO SPLIT-PORTS: NO NEED TO POWER WITH BASIC T’S OR 4-WIRE ADAPTERS. **(IF USING 2 TRANSFORMERS, THE SECOND MUST HAVE A POWER T)**
- EXTERNAL HARD RESET BUTTON (SEE GREEN TRIANGLE AT LEFT IN PHOTO)
- REMOTE ACCESS (RA), FOR OFF-SITE CONTROL & SCHEDULING
- ZONING: PIXEL MAPPER TO RUN 2 EFFECTS SIMULTANEOUSLY ON DIFFERENT SECTIONS OF YOUR DISPLAY
- NEW COMPACT, STURDY WI-FI ANTENNA
- BACKSIDE MOUNTING BRACKET

NOTE: THESE ENHANCEMENTS & MORE WILL BE AVAILABLE IN “PIXEL DANCER” APP FOR BOTH IOS & ANDROID IN LATE 2024 & EARLY 2025. **BUT THEY ARE IMMEDIATELY AVAILABLE IN THE WEB UI.**



WEC+3 DUAL PORT V4.0

SIMPLE LAYOUT

The Gen3
Wi-Fi Effects
Controller –
Dual Port
has both a
power input
& light string
input on
each “split
port”.



- THE WEC3 DUAL PORT HAS BOTH A POWER INPUT & LIGHT STRING INPUT ON EACH “SPLIT PORT.”
- EACH PORT SPLITS INTO 2 FEMALE CONNECTORS
 1. 4-PIN CONNECTOR
 2. 3-PIN CONNECTOR
- IF ONLY RUNNING A SINGLE LINE, WE SHOULD CAP THE CONNECTORS ON PORT 2.
- THINK OF EACH PORT WITH A “BUILT-IN” BASIC T-WAY. WE DO NOT HAVE “INDIVIDUAL” CONTROL OF 4-PORTS. **THIS IS NOT A 4-PORT CONTROLLER.**
- IT IS POSSIBLE TO PLACE POWER ON ONE PORT AND LIGHTS ON THE OTHER PORT, WHILE CAPPING THE OTHER CONNECTIONS.



WEC+3 DUAL PORT V4.0

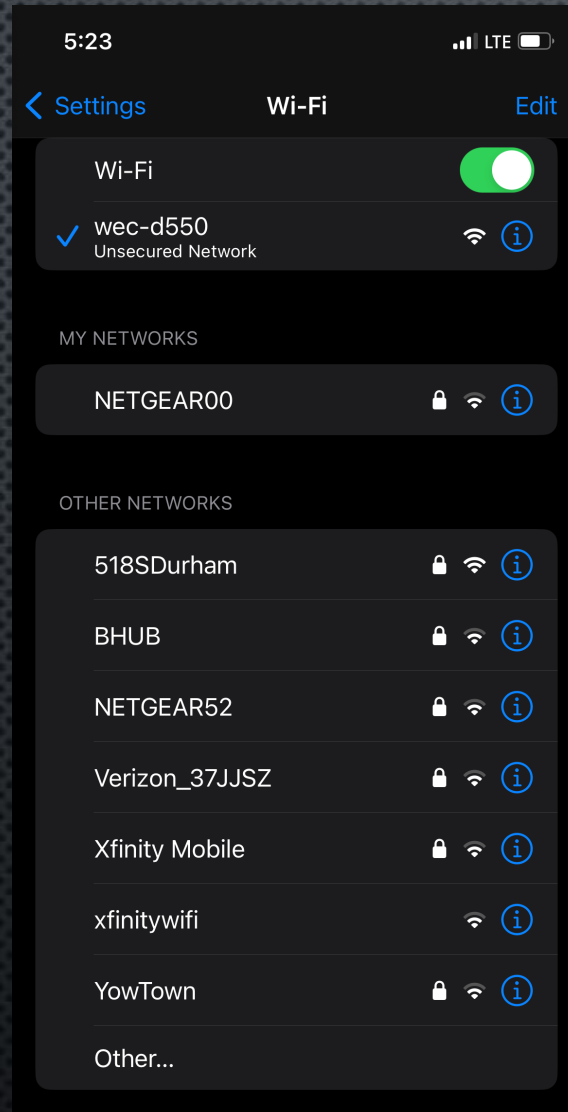
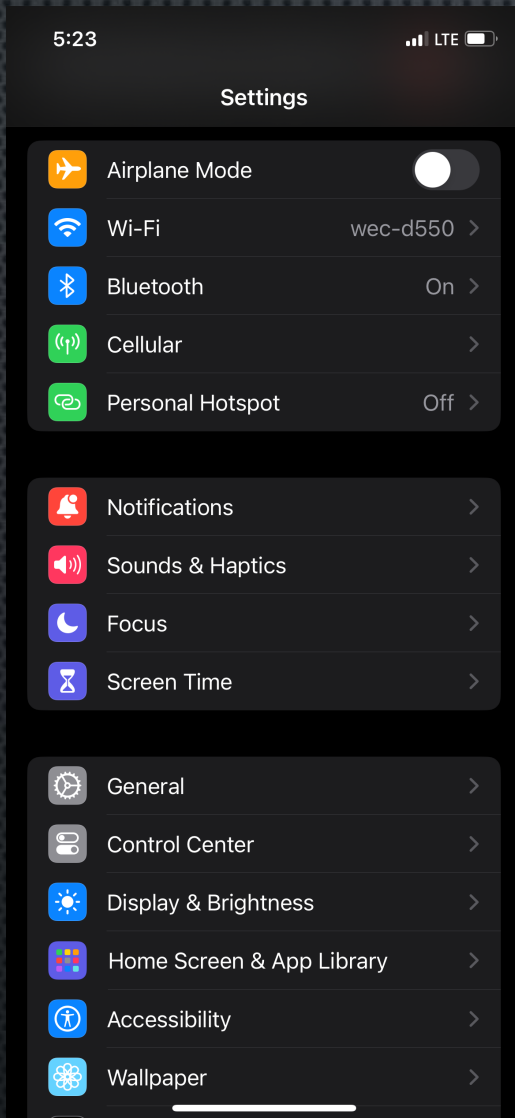
DUAL LAYOUT

We must
use a
Minleon
POWER T,
if using a
second
transformer



- WE CAN USE POWER SUPPLIES ON EACH PORT TO RUN UP TO 400 PIXELS, BUT **WE CANNOT HAVE BOTH POWER SUPPLIES BACK-FEEDING POWER BACK TO THE CONTROLLER—AS THIS WILL DAMAGE THE DEVICE & WILL NOT BE COVERED BY THE MANUFACTURER'S WARRANTY.**
- WEC DUAL PORT'S ARE SHIPPED WITH A STICKER WARNING OF THE ABOVE. PLEASE TAKE NOTE.
- TO PREVENT THE BACK-FEEDING OF YOUR SECOND TRANSFORMER—**ALWAYS USE A POWER T. POWER T'S FORCE ALL POWER FORWARD THRU ONLY THE FEMALE CONNECTOR. A BASIC T WILL SEND POWER EVERY DIRECTION & WILL DAMAGE THE WEC DUAL PORT IF USED FOR POWER INJECTION.**

WEC+3 DUAL PORT V4.0 CONNECTING & CONFIGURING



1. GO TO YOUR SMART DEVICE OR LAPTOP'S WI-FI SETTINGS
2. LOOK FOR A WI-FI NETWORK NAMED WEC-XXXX & CONNECT
3. OPEN A WEB BROWSER LIKE GOOGLE CHROME, AND GO TO WEB PAGE 192.168.2.2
4. ONCE THE BLUE WEB UI APPEARS, **TAP "CONFIGURATION"**
5. NAME YOUR WEC+3. THIS WILL BE HANDY IF USING THE WEB UI, AS YOUR DEVICE NAME + ".LOCAL" WILL BE HOW WE FIND THE WEC ON THE NETWORK

192.168.2.2

WEC3 v4.27 wec-7054

COLORS **EFFECTS** **SHOWS**

CONFIGURATION **OUTPUTS**

LED chip settings:

Load defaults for: RGB+2

Timing: T0H: 350 ns, T1H: 700 ns, Tbit: 1250 ns, Treset: 250

Conversion: RGB=>RGB(12bit)

Maximum Lights (within power limits): 1024

Output	Smart-Ts	Lights per String	Reverse?
1	0	50	☐
2	0	50	☐

Total physical lights configured: 100

Effect 1: Generate effects for 2 Sets of 50 Lights (100 total)

Effect 2: Generate effects for 2 Sets of 50 Lights (100 total, but 0)

Pixel Mapping (for effects only) [select a mapping, then select pixels]

- Effect 1
- Effect 2
- Mix
- Priority (Effect 2, if Off then Effect 1)
- Skip
- Blank

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

WEC+3 DUAL PORT V4.0

SETTING YOUR LIGHT COUNT

1. ONCE CONNECTED TO THE WEC3 WI-FI ACCESS POINT, OPEN A WEB BROWSER AND GO TO URL: 192.168.2.2
2. SELECT "OUTPUTS" MENU
3. IF ONLY 1 OUTPUT APPEARS, SELECT THE BLUE "OUTPUT" TEXT ON THE LEFT MARGIN.
4. SMART T'S ARE FOR 2-DIMENSIONAL GRIDS & SHOULD NOT BE USED FOR ROOFLINE TRACK LIGHTING. **DO NOT CONFUSE** SMART T'S WITH POWER T'S OR BASIC T'S—WHICH DO NOT NEED CONFIGURED.
5. ENTER THE NUMBER OF LIGHTS YOU PLAN TO INSTALL ON EACH WEC3 PORT IN "LIGHTS PER STRING"
6. IF YOU CONFIGURE 2 OUTPUTS, ENTER "2" SETS OF LIGHTS.
7. RE-ENTER THE NUMBER OF LIGHTS PER OUTPUT IN THE FINAL FIELD, SO THEY MATCH THE VALUES ABOVE.

PRO TIP: USE AN INCOGNITO OR PRIVATE WEB BROWSER, TO PREVENT ANY WEB CACHING ISSUES.

192.168.2.2



WEC3 v4.27 wec-7054

COLORS

EFFECTS

SHOWS

CONFIGURATION

OUTPUTS

LED chip settings:

Load defaults for: RGB+2

Timing: T0H: 350 ns, T1H: 700 ns, Tbit: 1250 ns, Treset: 250

Conversion: RGB=>RGB(12bit)

WEC+3 DUAL PORT V4.0 CONFIRM YOUR CHIPSET

1. MINLEON MANUFACTURES MANY OF THE SAME RGB-LEDs WITH THE DIFFERENT CHIPSET SETTINGS. BE SURE THE SETTINGS IN YOUR WEC3 MATCH THE LIGHT SET OR FIXTURES YOU HAVE CONNECTED.
2. THE LIGHT STRING OR FIXTURE SHOULD HAVE A FLAG BY THE MALE INPUT, OR UNDERNEATH THE FIXTURE, TO ID ITS CHIPSET.
3. FACTORY DEFAULT IS RGB+2 WHICH IS FOR MINLEON-RAINMIN'S 4-WIRE RGB+2 PEBBLES, DOTS & FLOOD TILES.
 - IF YOU ARE RUNNING 3-WIRE MAGNETIC PEBBLES, THIS WOULD NEED CHANGED TO RGB+.
 - IF YOU ARE RUNNING 4-WIRE RGB-W PEBBLES, THIS WOULD NEED CHANGED TO RGBW+2.
4. DO NOT CHANGE THE TIMING OR CONVERSION FIELDS. THE DEFAULT VALUES SHOULD BE USED.

NOTE: IF YOUR COLORS DO NOT MATCH, OR IF YOU ARE GETTING NO LIGHT OUTPUT ON YOUR STRINGS, IT IS LIKELY BECAUSE THESE CHIPSET SETTINGS ARE INCORRECT.

PRO TIP: THE MINLEON FACTORY USES "+2" TO IDENTIFY 4-WIRE STRINGS & FIXTURES THAT HAVE A DOUBLE-DATA LINE. RGBW+2 IS NEW IN 2024.

P50T RGB Pebble Light

Input:DC 24V
Power: 0.35W/Light
Chip: UCS5603/RGB+2
out door/indoor use
2023

192.168.2.2

WEC3 v4.27 wec-7054

COLORS **EFFECTS** **SHOWS**

CONFIGURATION **OUTPUTS**

Name:

Connection Mode: ☒ Direct (AP) ☐ Network (AP Client)
Network Mode Hostname: wec-7054.local

SSID:

Security: ☒ Open ☐ WPA/WPA2

Key:

Address: ☐ Fixed ☒ DHCP
Always uses Fixed settings below if in Direct (AP) mode

IP: . . .

NetMask: . . .

Router: . . .

Protocols:

☒ DHCP

☐ ARP: data from 6 contiguous universes (of bytes) starting with universe

Remote Access: (only available in Network Mode) [Current Status: Disconnected]

☐ Enable Remote Access via URL <https://ra.minleonusa.com:4443/ra/w31/76e375bf0ca0782184f270>

Change made above this line require a Save and Reboot.

[Save and Reboot](#)

Wait about 10 seconds after Reboot, and then (if needed) reconnect and Reload this page.
If you make changes and can no longer connect to the WEC, hold the button in for a few seconds

WEC+3 DUAL PORT V4.0

REMOTE ACCESS FOR OFFSITE CONTROL

THE WEC3 v4.2 AND HIGHER, CAN BE CONTROLLED FROM OFF-SITE, WHEN CONNECTED TO A THIRD-PARTY ROUTER WITH INTERNET.

THE REMOTE ACCESS (RA) URL LINK IS LOCATED HALFWAY DOWN ON THE CONFIGURATION PAGE. BE SURE TO CHECK THE BOX TO ENABLE, WHEN USING, THEN "SAVE & REBOOT".

PLEASE NOTE: FACTORY RESET WILL GENERATE A NEW RA URL.

FOR THE PLAYBOOK TO SET YOUR WEC3 DUAL PORT TO "NETWORK MODE", PLEASE REFER TO OUR **WEC+3 BOSS v3.0 USER GUIDE** AND/OR THE **PIXEL DANCER: NETWORKING & GROUPING GUIDE** ON OUR WEBSITE SUPPORT PAGE.

192.168.2.2

WEC3 v4.27 wec-7054

COLORS

EFFECTS

SHOWS

CONFIGURATION

OUTPUTS

LED chip settings:

Load defaults for:

RGB+2

Timing: T0H:

350

ns, T1H:

700

ns, Tbit:

1250

ns, Treset:

250

Conversion:

RGB=>RGB(12bit)

Maximum Lights (within power limits): 1024

Output	Smart-Ts	Lights per String	Reverse?
1	0	50	☐
2	0	50	☐

Total physical lights configured: 100

Effect 1: Generate effects for

2

 Sets of

50

 Lights (100 total)

Effect 2: Generate effects for

2

 Sets of

50

 Lights (100 total, but 0)

Pixel Mapping (for effects only) [select a mapping, then select pixels]

Effect 1

Effect 2

Mix

Priority (Effect 2, if Off then Effect 1)

Skip

Blank

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Set All Pixels

WEC+3 DUAL PORT V4.0

ZONE 2: PIXEL MAPPING

AT THE BOTTOM OF THE OUTPUTS PAGE, WE CAN FIND THE WEC3 PIXEL MAPPER.

(ONLY AVAILABLE VIA WEB UI. *PIXEL DANCER APPS* WILL SUPPORT IN MID-2025.)

AFTER WE HAVE OUR LIGHT COUNTS CONFIGURED, WE CAN COLOR-CODE EACH PIXEL WE SET UP TO PLAY

- EFFECT 1
- EFFECT 2
- A MIX OF BOTH
- PRIORITY (EFFECT 2, IF OFF THEN EFFECT 1)
- SKIP
- BLANK

PRO TIP: THE PIXEL MAPPER IS USEFUL WHEN LAYERING A WHITE TWINKLING EFFECT TO DIFFERENT PEAKS ON ROOFLINES.

WEC+3 DUAL PORT V4.0

PIXEL DANCER APP



PIXEL DANCER APP FOR BOTH IOS & ANDROID

WILL BE SUPPORTING MOST OF THESE GEN3 WEC ENHANCEMENTS. MANY ARE CURRENTLY ACTIVE, SUCH AS NETWORK MODE. FIND THEM HERE:

[HTTPS://APPS.APPLE.COM/US/APP/PIXEL-DANCER/ID1539840886](https://apps.apple.com/us/app/pixel-dancer/id1539840886)

[HTTPS://PLAY.GOOGLE.COM/STORE/APPS/DETAILS?ID=COM.RAINMIN.PD&HL=EN&GL=US&PLI=1](https://play.google.com/store/apps/details?id=com.rainmin.pd&hl=en&gl=us&pli=1)



WEC+3 DUAL PORT V4.0 TROUBLESHOOTING & BEST PRACTICES

Lost the Wi-Fi Connection:

Remember, when you power down or Reboot the controller the Wireless signal disappears. Ensure you are connected to "wec-xxx", or to the name you assigned to the controller. You may need to reconnect to the WEC2 network signal once the controller powers back up, especially if another wireless signal is your primary Internet connection by default.

PRO TIP:
Consider making the WEC network signal your primary Wi-Fi connection during installs.

WEC2 does not appear in your Wireless Networks:

Toggle the Wi-Fi off, then back on. If still nothing, try another smart device. Be sure you are in range of the WEC3 or router. If you programmed your Master WEC3 to an external router, log in to that network & be sure you are within its range. If you programmed the WEC3 to be a "Network Client" and not the Master Controller, it's Access Point (AP) will be disabled. This is intentional. To regain individual control of a "Network Client", or any WEC3, ***try using a third-party IP scanner on the Network.*** If that does not work, hard reset the controller: Disconnect the controller from the powered light string. Then hold the WEC's button for 10 seconds as you re-make the connection to the powered string, (***press->connect to power->hold 10s***). Then release button. This will restore control with the default settings and allow the WEC's unique Wi-Fi signal/AP to reappear.



WEC+3 DUAL PORT V4.0 TROUBLESHOOTING & BEST PRACTICES

Remote Access (RA) Troubleshooting

1. If on your config page it is showing "[**Current Status: Disconnected**]", this means that a WEC is not able to connect to the **ra.minleonusa.com** site. Check if your third-party Internet router has any firewall issues that exist or anything related to such. Try to ping that site from the same network AP that the WEC is connected to. It needs to show "Connected" or it will not work.
2. After hitting Enable be sure to "Save & Reboot" and then recheck the Current Status.
3. After enabling RA and rebooting, status should switch to Connected. It might take a minute or two after reboot, so refresh Config page to check status. If not connected in a few minutes, then some kind of Internet connectivity issue.





WEC+3 DUAL PORT V4.0 RESTORING DEFAULT SETTINGS

IF YOU DO NOT KNOW A WEC'S IP ADDRESS, OR IF IT BECOMES UNRESPONSIVE, IT IS POSSIBLE TO RESET THE **Wi-Fi** TO FACTORY DEFAULT SETTINGS.

Hard Reset
button



THE RESET BUTTON IS THE GREEN TRIANGLE LOCATED ON FACE OF THE WEC DUAL PORT:

1. POWER DOWN THE WEC.
2. PRESS-AND-HOLD THE GREEN BUTTON
3. RE-APPLY POWER, WHILE HOLDING THE BUTTON
4. CONTINUE TO HOLD IT FOR **10** SECONDS AFTER RE-APPLYING POWER, THEN RELEASE.
5. AFTER A MINUTE OR SO, FIND THE WEC ACCESS POINT IN YOUR SMART DEVICE'S **Wi-Fi SETTINGS**

****REMEMBER THIS WILL CHANGE OUR REMOTE ACCESS URL.**

WEC+3 DUAL PORT V4.0 FIRMWARE UPDATES

PERIODICALLY, MINLEON WILL RELEASE SOFTWARE UPDATES TO ADD FEATURES OR FIX BUGS WITH THE WEC+3.

THE WEC3 DUAL PORT, WEC3 BOSS & WEC3-MINI WILL ALL USE THE SAME FIRMWARE. (OUTPUT 2 IF CONFIGURED, WILL ONLY WORK WITH THE WEC3 DUAL PORT.)

THESE UPDATES ARE HOUSED AT WWW.MINLEONUSA.COM, ON THE WEC+3 PRODUCT PAGE AS **.BIN FILES**, OR CAN BE EMAILED ON REQUEST FROM SUPPORT@MINLEONUSA.COM.

1. GO TO CONFIGURATION PAGE & SCROLL TO BOTTOM
2. NEXT TO “**UPGRADE WEC SOFTWARE**”, SELECT “**CHOOSE FILE**” FROM THE LOCATION YOU SAVED IT
3. SELECT “**UPLOAD BIN FILE**” ONCE, (AT THE FAR RIGHT OF SCREEN) AND GIVE THE CONTROLLER A MINUTE TO RE-BOOT

PRO TIP: WE CAN ALSO DOWNLOAD CONFIGURATIONS FOR CUSTOMERS TO UPLOAD INTO THEIR OWN WEC+3's.

Maximum Lights (within power limits): 1024

Lights per String:

Number of Smart-Ts:

Generate effects for Sets of Lights

Network Effects: ☐ Master ☐ Slave ☒ None

☐ Enable On/Off using light sensor (currently 24%)

Turn On when level goes below % for seconds

☒ Turn Off when level goes above % for seconds

☐ Turn Off after minutes

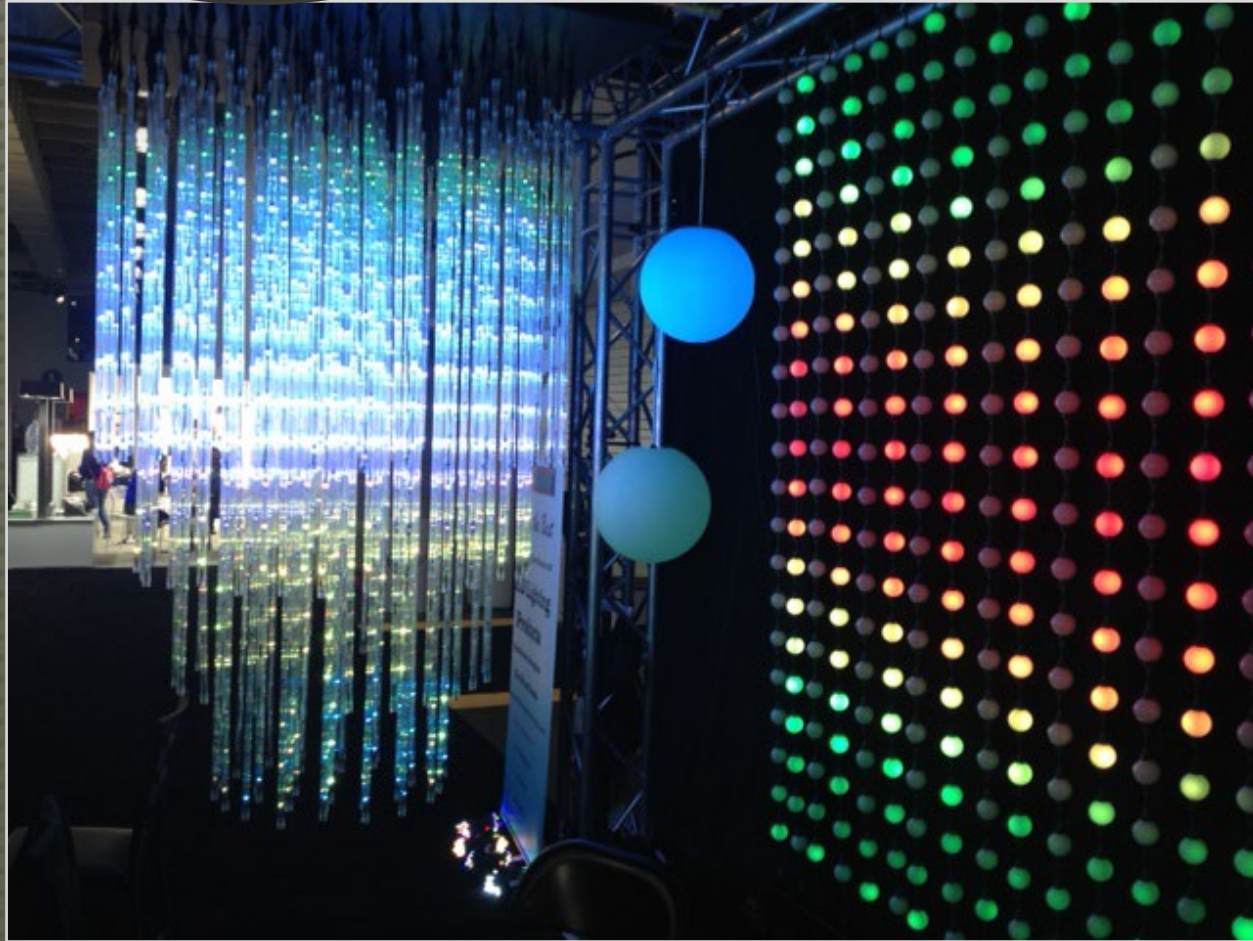
[Save and Reboot](#)

Wait about 10 seconds after Reboot, and then (if needed) reconnect. If you make changes and can no longer connect to the WEC, hold

Upgrade WEC software: [Choose File](#) no file selected

Date: - - 24hr Time: : Zone: [Update](#)

Firmware
Update



WEC+3 DUAL PORT V4.0 QUESTIONS & RESOURCES

PLEASE E-MAIL

SUPPORT@MINLEONUSA.COM

& REFERENCE THIS PRESENTATION.

WE ENCOURAGE YOU TO VIEW THESE RELATED
TUTORIALS:

- **PIXEL DANCER: NETWORKING & GROUPING**
 - **WEC+3 BOSS v3.0 USER GUIDE**
 - **PIXEL DANCER: 2024 USER GUIDE V2**

THANK YOU FOR YOUR INTEREST IN
MINLEON RGB's!



Videos on Facebook: [Minleon USA](https://www.facebook.com/MinleonUSA)



Minleon USA

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MinleonUSA.com

Mechanicsburg, PA

Rainmin Illumination
Commercial Manufacturing

Rainmin.com

Dongguan City, China

