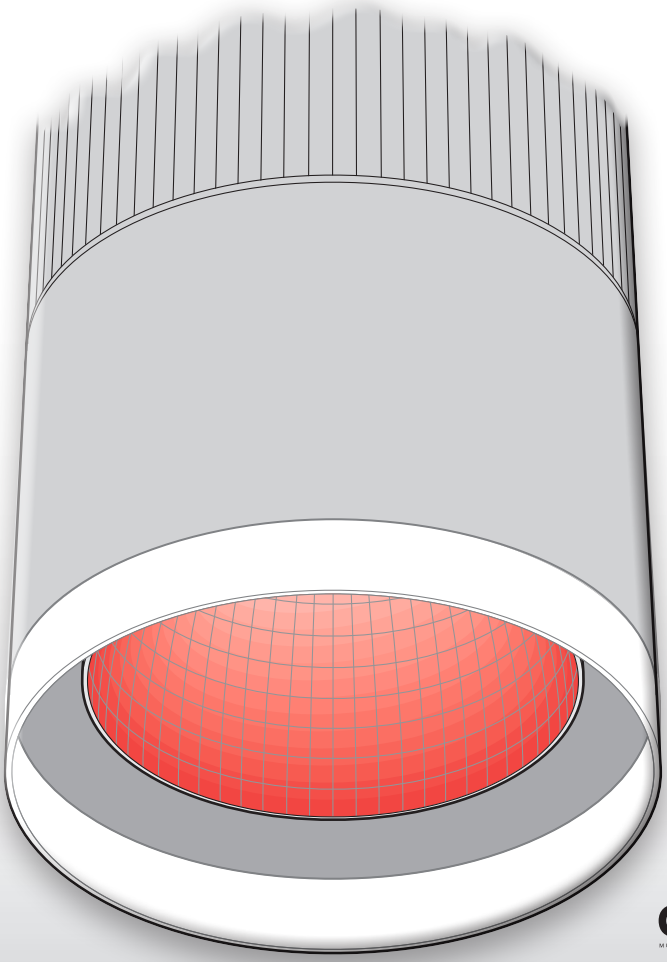
Acclaim™



aria MULTI-BAND WIRELESS CONTROL

SpectrumFive technology

AcclaimModular systems

Cylinder One Spectrum™

User guide

Contents

Introduction

Welcome

Cylinder One Spectrum™ downlights are self-contained high performance fixtures for medium- to long-throw applications. Maintaining a common overall sleek design, Cylinder One Spectrum fixtures offer four distinct mounting options to elegantly satisfy multiple architectural constraints.

At the heart of each Cylinder One Spectrum fixture sits our celebrated **Spectrum Five** light engine. This calibrated source can produce saturated RGBAL color mixes or any temperature of white from 1800K to 8000K. Alternatively, a special single channel Ai Dim mode can be used to accurately emulate the red-shift dimming of a traditional incandescent source.

Configuration is handled via RDM across the wired DMX interface, while Aria X2™ wireless DMX is fitted as standard to simplify deployment in legacy locations that lack cabled control infrastructure.

The self-contained power supply accepts mains feeds from 100 to 277VAC and the fixture draws a maximum power of just 120W.

Safety

- When fixtures are mounted off-ground, ensure they are securely fitted to an appropriate mounting surface.
- Ensure that the power input is supplied from a correctly fused, earthed and environmentally protected location.

Maintenance

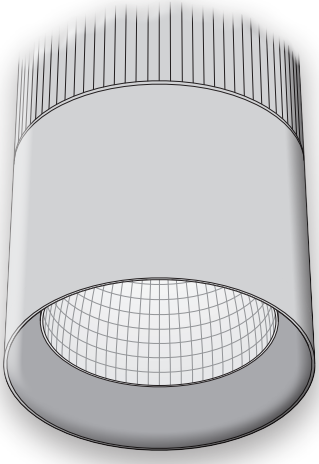
CAUTION: Always isolate mains power before starting maintenance operations.

- Ensure that all mounting (and device) screws/bolts are fully tight and free of corrosion.
- Ensure there is no deformation to the housing, lenses or fixing points.
- Check that all power supply cables are free from physical damage or material fatigue.
- Use only genuine spare parts supplied by Acclaim Lighting.

Cleaning

- Use a moist, lint-free cloth when cleaning each fixture.
- Never use alcohol or solvents.

Supplied items

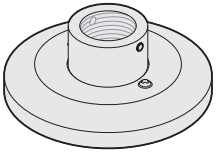


Cylinder One

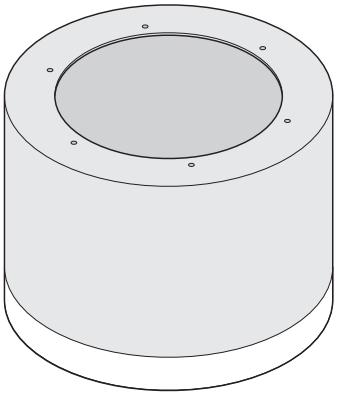
With chosen mount type (A, B, C or D), reflector and 20' (6m) power and control tails.

A pendant mount is supplied as standard with the 3/4" NPS mounting option.

Vaulted ceiling mount
[CHMB#]



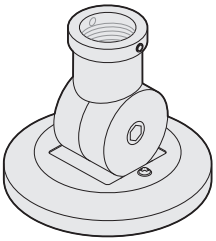
Accessories



Illuminated trim ring
[COHTR#]

NPS pipe
(3/4" NPS, O/D=1.050")
12" gray [NPS34-12G]
24" gray [NPS34-24G]
36" gray [NPS34-36G]

(For other colors, substitute G suffix for:
B = black
W = white
C = custom)



Vaulted ceiling mount
[COHVCM#]

Where # = color:
1 = black
2 = white
4 = gray
7 = custom

Emergency backup systems

Do not use with dispersed backup systems

Cylinder One Spectrum fixtures **are not** compatible with dispersed emergency backup systems (for fire and/or power) that use a single ballast per light; these typically send low voltage (24–50VDC) to the fixtures.

Compatible with centralized backup systems

Cylinder One Spectrum fixtures **are** compatible with centralized lighting backup systems that can provide AC power to all required emergency circuits. While Cylinder One Spectrum fixtures are not UL 924 approved, per NEC 2023 700.24, they can operate as *directly controlled emergency luminaires*, which default to 100% output upon disconnection of the control input.

The following conditions must all be met:

- The power feed is derived from an emergency backup system capable of supplying AC power for a minimum of 90 minutes operation,
- The control connection is fed via a UL 924 listed Emergency Lighting Control Device (ELCD) that will remove the DMX control feed upon activation (per NEC 2023 700.24),

  and,
- Each Cylinder One Spectrum fixture must be placed into the *Solo Behavior* > *Internal (setting 2)* and a full output white color mix Internal Color setting created. With these modes selected the fixtures will automatically provide a bright intensity output shortly after the DMX control signal is lost. Please see “Determining the solo behavior” on page 25 and “Setting an internal color” on page 26.

Note: It can take 5-7 seconds for the fixtures to respond and produce light output within solo behavior mode when DMX control is lost but AC power remains present. This lies within the limits of the National Electrical Code, which allows up to ten seconds for emergency lighting to respond.

Installation

Mounting

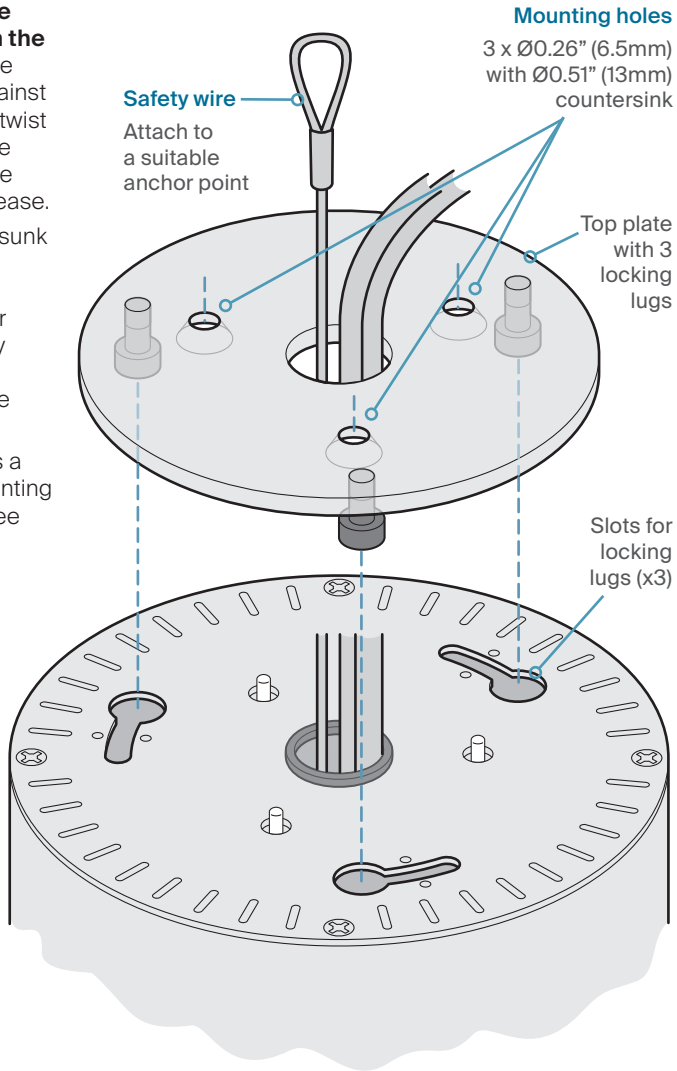
Four different (factory fitted) mounting options are available for Cylinder One fixtures.

Note: Please see the junction box details given on page 10.

Surface mount [Type A]

This mount allows the top surface of the Cylinder One fixture to be fixed almost flush to the ceiling above. A locking top plate allows quick mounting and dismounting of the fixture.

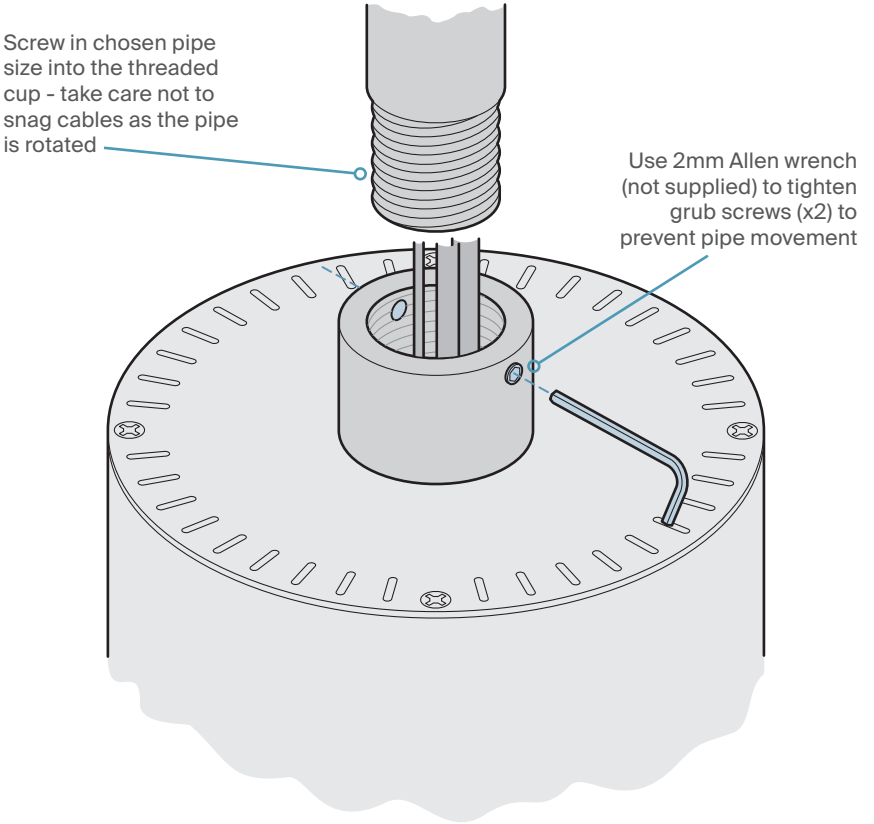
- **To disconnect the fixture body from the top plate**: Push the fixture body up against the top plate then twist the body clockwise (as viewed from the emitter end) to release.
- Use three countersunk screws/bolts that are load rated (Grade 5 or greater fixings are strongly recommended) and suitable for the mounting surface.
- Ensure that there's a suitable solid mounting surface for the three countersunk mounting screws/bolts to connect with.
- Ensure that the safety wire is attached to a suitable anchor point within the ceiling space.
- **To reconnect the fixture body to the top plate**: Ensure the locking lugs of the top plate engage with the three holes in the upper surface of the main body. Push the fixture body up against the top plate then twist the body counter-clockwise (as viewed from the emitter end) to lock into place. Ensure that the lugs are fully locked and the fixture body cannot fall.



3/4” NPS pendant mount [Type B]

This mount allows the Cylinder One fixture to be mounted as a pendant light, with a choice of three pipe sizes (from 12” to 36”) connecting to either a fixed or a swivel bracket (for vaulted ceilings).

- Feed the power and signal cables, plus the safety wire through the chosen pipe and carefully screw it all the way into the threaded cup on the top surface of the Cylinder One fixture - take great care not to snag the cables within the pipe as it is rotated into place.
- Ensure that the two grub screws in the threaded cup are fully tightened to prevent any movement of the pipe - requires a 2mm Allen wrench (not supplied).
- Attach the required bracket to the other end of the pipe - see page 7.
- *Note: Please see the junction box details given on page 10.*

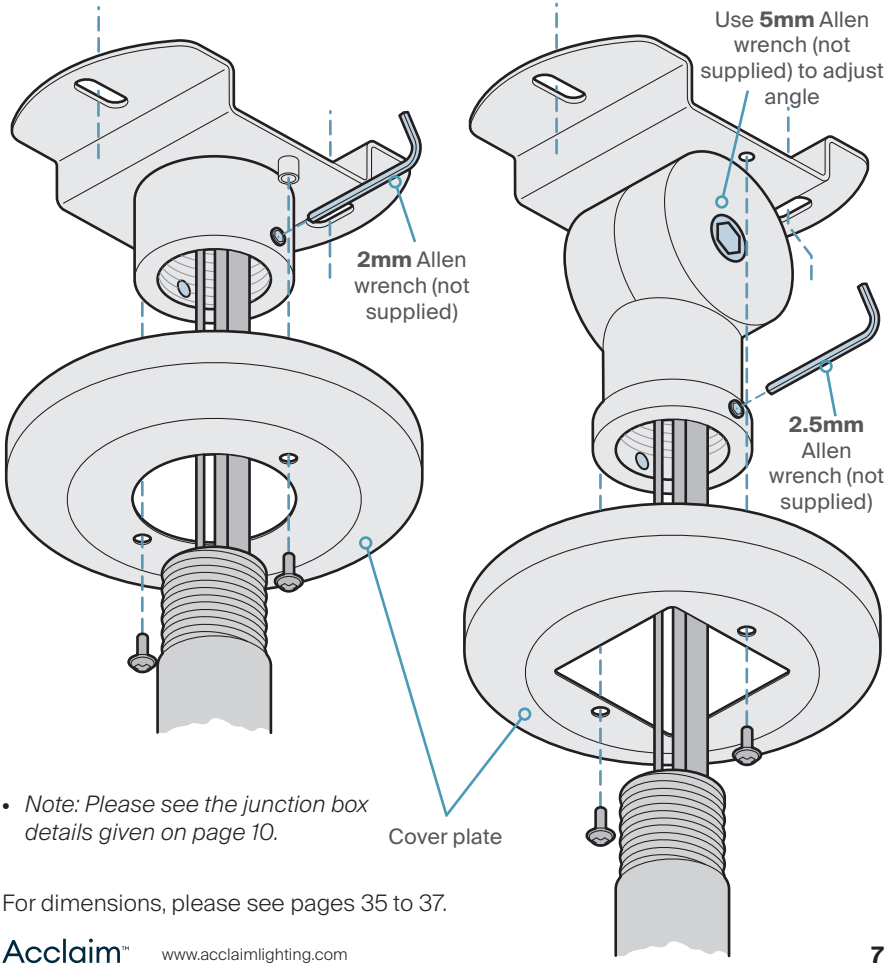


For dimensions, please see pages 35 to 37.

3/4” NPS pendant mount - brackets [Type B]

Two types of bracket are available for use with the 3/4” NPS pendant version of the Cylinder One - a fixed vertical type for level surfaces or a swivel type for vaulted ceilings. The swivel type can be angled up to 60º from vertical.

- Fit the chosen pipe to the Cylinder One fixture as outlined on page 6.
- Feed the power and signal cables, plus the safety wire from the pipe through the threaded cup of the bracket - take great care not to snag the cables as it is rotated into place.
- Ensure that the two grub screws in the threaded cup of the bracket are fully tightened to prevent any pipe movement - requires either a 2mm or 2.5mm Allen wrench (not supplied).
- Remove the two screws that hold the cover plate in place to gain access to the mount holes.
- Use two screws/bolts that are load rated (Grade 5 or greater fixings are strongly recommended) and suitable for the surface to fix the bracket.
- Ensure that there’s a suitable solid mounting surface for the two mounting screws/ bolts to connect with.
- Ensure that the safety wire is attached to a suitable anchor point within the ceiling space.



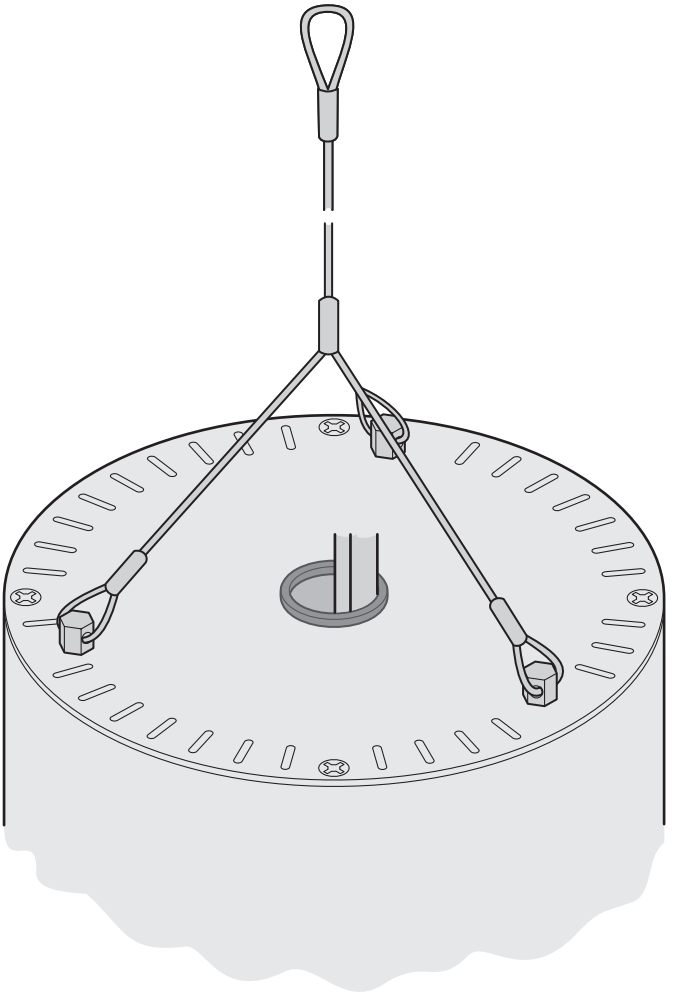
- *Note: Please see the junction box details given on page 10.*

For dimensions, please see pages 35 to 37.

Aircraft cable mount [Type C]

This mount allows the Cylinder One fixture to be hung from a securely mounted hook or ring.

- Ensure that the chosen hook is sufficiently load rated (Grade 5 or greater fixings are strongly recommended) for the weight of the fixture and is securely attached to the mounting surface.
- *Note: Please see the junction box details given on page 10.*

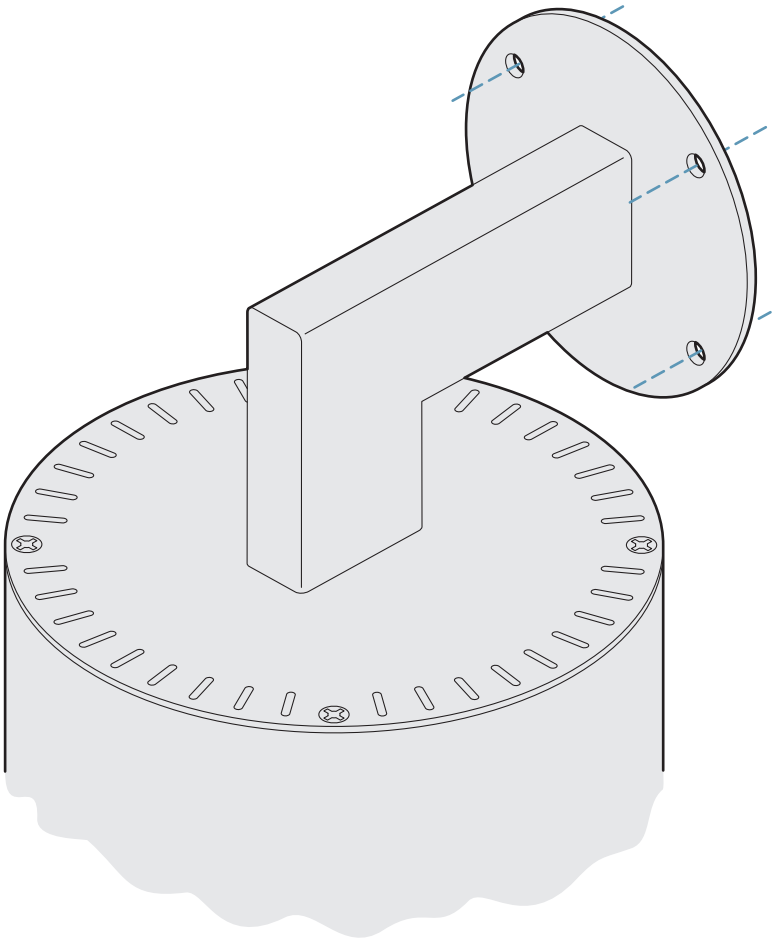


For dimensions, please see pages 35 to 37.

Wall mount [Type D]

This mount allows the Cylinder One fixture to be secured directly to a vertical wall surface.

- Ensure that the wall surface is of sound construction and able to support the weight of the fixture.
- Use load rated fixings (Grade 5 or greater fixings are strongly recommended) that are appropriate to the wall construction.
- Ensure that the safety wire is attached to a suitable anchor point within the wall space.
- *Note: Please see the junction box details given on page 10.*

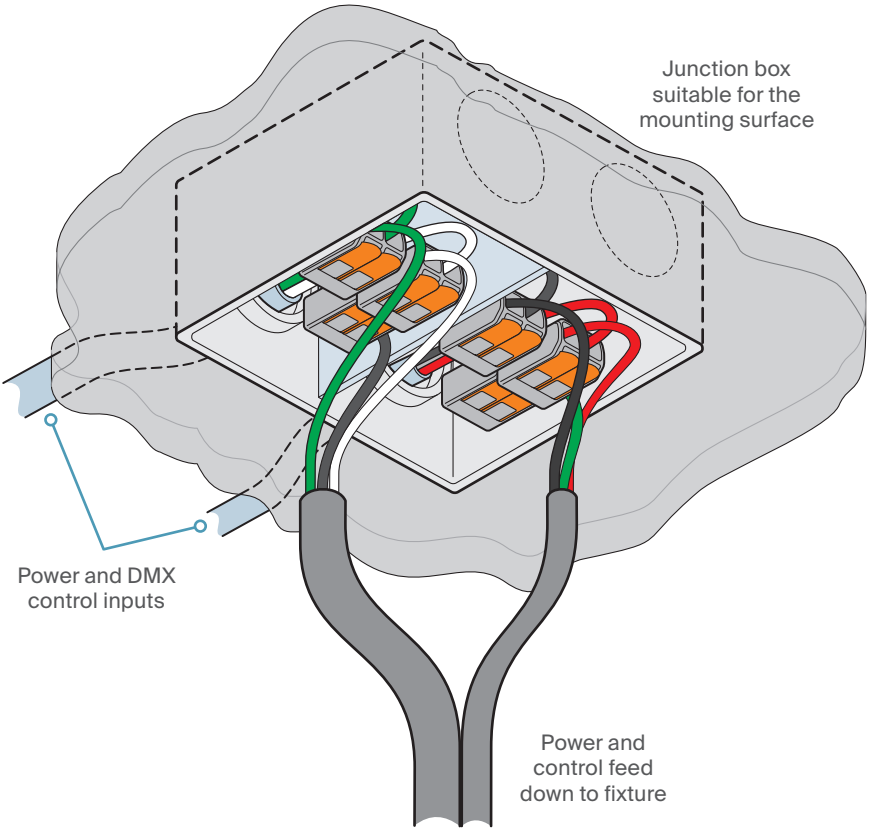


For dimensions, please see pages 35 to 37.

Junction box connections

In-line with best practice, you are recommended to install a suitable junction box above or close to each Cylinder One fixture. Please note the following:

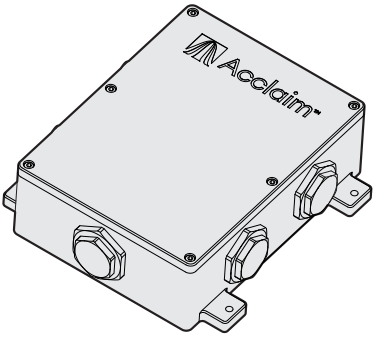
- The mains power supply and the DMX control signals must be contained within separated compartments, or alternatively within different junction boxes.
- Ensure that the junction box dimensions and its positioning does not interfere with the mounting structure for the Cylinder One fixture itself.
- For power and control wiring information, see page 13.



AJBOX1 Extended (IP66) junction box
NEC compliant high+low voltage

Part code: **AJBOX1E#**
(# = color)

Multiple ½" conduit inputs for AC + DMX. Built-in AC surge protection up to 10kV and 10kA



Reflectors

A selection of reflectors are available to allow you to match the correct beam size to each installation space. Reflectors are quick and easy to change.

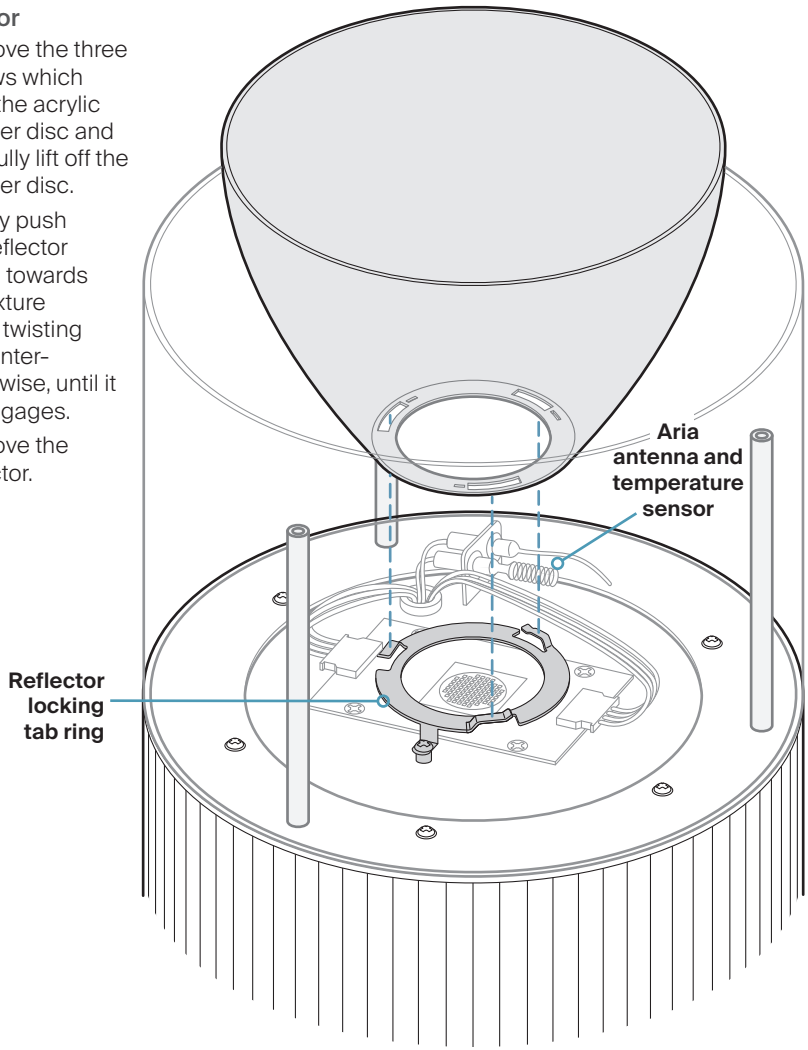
Note: Take care not to disturb the Aria antenna and temperature sensor, which are adjacent to the locking tab ring.

To remove a reflector

1 Remove the three screws which hold the acrylic diffuser disc and carefully lift off the diffuser disc.

2 Gently push the reflector down towards the fixture while twisting it counter-clockwise, until it disengages.

3 Remove the reflector.



To fit a reflector

1 Align the three cut outs in the base of the new reflector with the three locking tabs located on the locking tab ring which surrounds the LED emitter.

2 Gently push the reflector onto the locking tabs and twist it clockwise until it locks into place.

3 Place the acrylic diffuser disc (smooth side outwards) onto the three pillars and secure with the three screws removed earlier.

Trim rings

The standard trim ring can be replaced for an optional model with an illuminating edge.

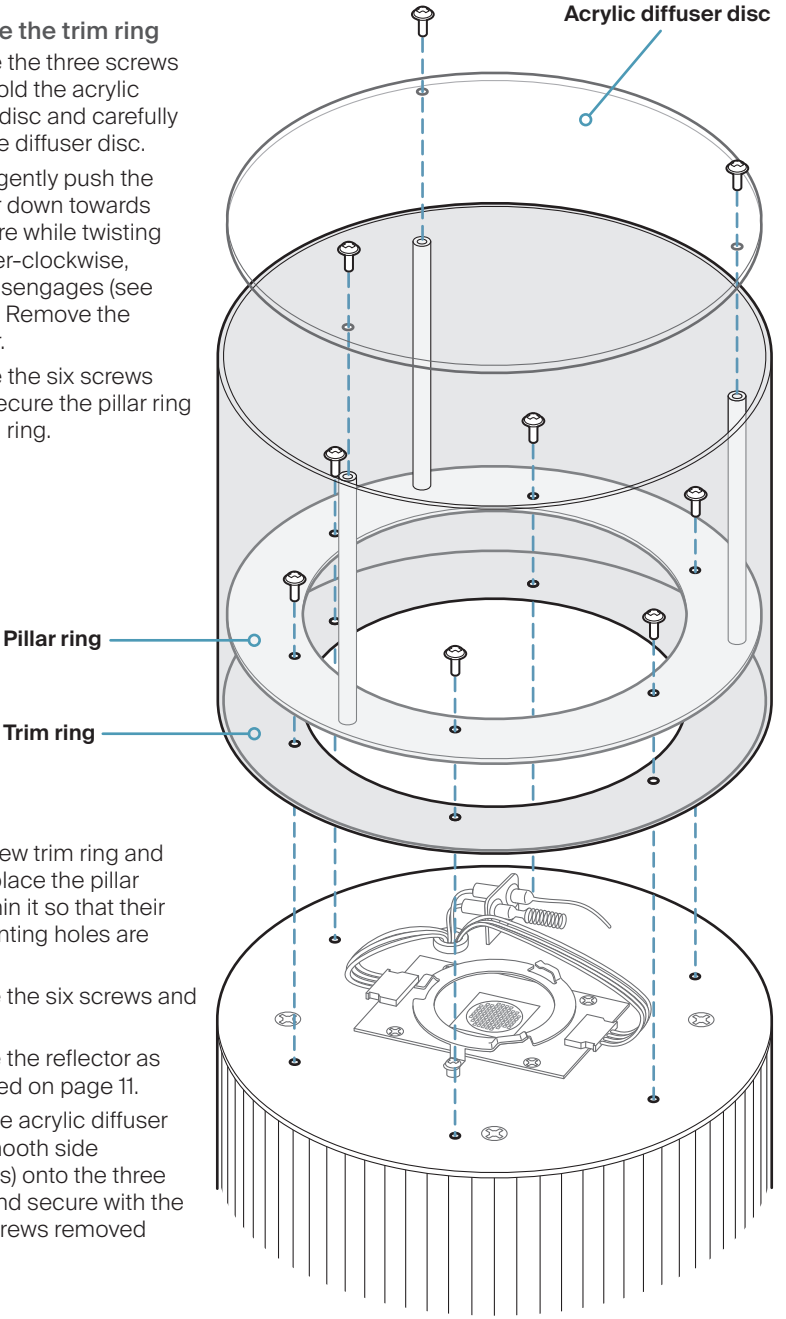
Note: Take care not to disturb the Aria antenna and temperature sensor, which are adjacent to the locking tab ring (see page 11).

To change the trim ring

1 Remove the three screws which hold the acrylic diffuser disc and carefully lift off the diffuser disc.

2 If fitted, gently push the reflector down towards the fixture while twisting it counter-clockwise, until it disengages (see page 11). Remove the reflector.

3 Remove the six screws which secure the pillar ring and trim ring.



4 Fit the new trim ring and then replace the pillar ring within it so that their six mounting holes are aligned.

5 Replace the six screws and tighten.

6 Replace the reflector as discussed on page 11.

7 Place the acrylic diffuser disc (smooth side outwards) onto the three pillars and secure with the three screws removed earlier.

Power and control wiring

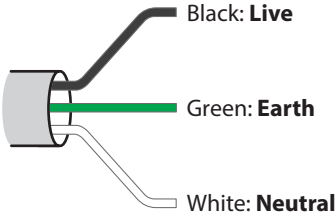
The power and control cords (each roughly twenty feet, 6m in length) are supplied with bare tails.

Power connections

The power requirements are as follows:

- Voltage: 100-277VAC 50/60Hz
- Power: 120W steady state

The power cord color designations are as follows:



Power cores:
AWG 18 / 0.82mm²

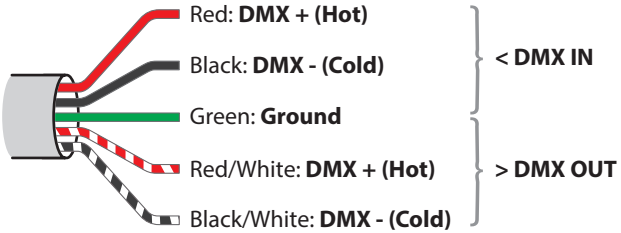
Ensure that the power input is supplied from a correctly fused, earthed and environmentally protected location.

In-rush current

Although LED fixtures are low power devices compared to their incandescent equivalents, their power supplies exhibit a trait known as 'in-rush current' when they are first powered on. This is caused by the various components within the switching power supplies topping themselves up with power. The in-rush current period lasts only milliseconds and does not cause any effect when a handful of units are powered on at the exact same time. However, if many fixtures are linked to the same power input, they will momentarily pull a current that may greatly exceed their normal operating level. This may affect over-current trips when power is applied. For this reason it is advisable to limit the number of fixtures on any one power input.

Control connections

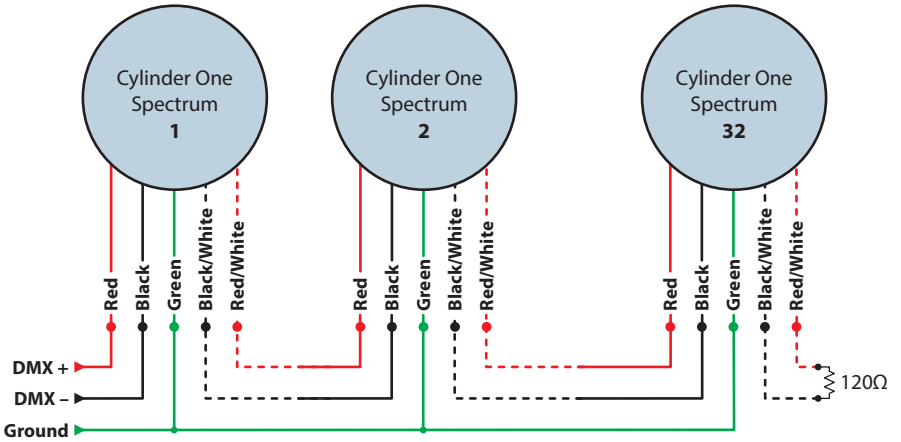
The DMX control cord color designations are as follows:



Signal cores:
AWG 22 / 0.32mm²

Control connections for multiple fixtures

When connecting multiple fixtures, connect the DMX control input lines to the first fixture and feed the output of that fixture to the next. The final fixture in the line should have a 120Ω terminating resistor connected between the DMX + and DMX – lines:



Wired DMX control

We recommend the following Belden signal cables for control links into the input feed:

- Indoor exposed or inside conduit above grade: .....Belden 9842
- Indoor plenum: .....Belden 82842
- Outdoor exposed, direct burial, or inside conduit below grade: Belden 3107DB

Suitable alternative cables must meet all of the following requirements:

- Construction: Shielded, twisted pair (or multi-pair).
- Impedance: Between 90 and 120Ω.
- Capacitance: 15pF or less.

Tips for achieving successful DMX control

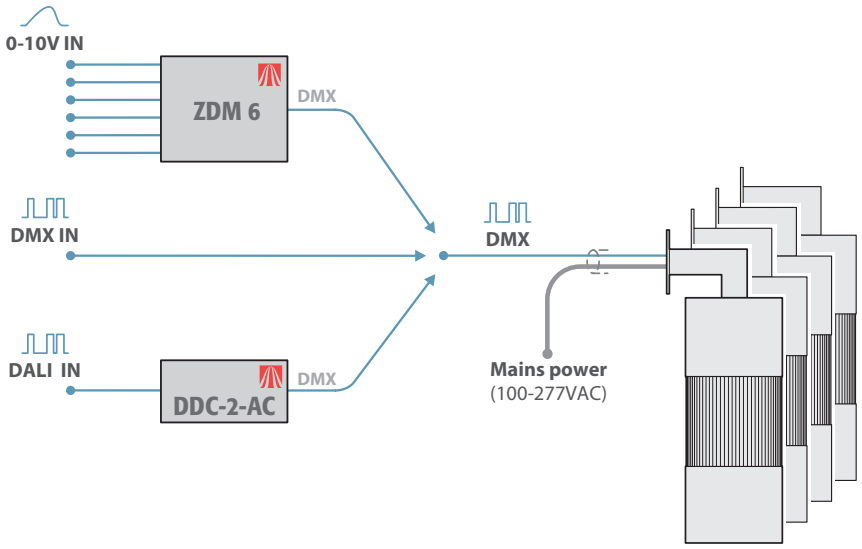
- Do not exceed a total cable length of 1,500 ft (457m) without buffering.
- Do not exceed a total of 32 fixtures on a single line without buffering.
- Use only connection cables with a characteristic impedance of 120Ω, preferably where the DMX + and DMX – data lines are twisted around each other and the ground link exists as a coaxial screen surrounding the inner cores.
- Connect a 120Ω terminating resistor between the DMX + and DMX – output connections of the final fixture.
- Do not introduce a passive Y-split into the control cabling. If it is necessary to split the control link in order feed fixtures located in different directions, use a powered DMX splitter/buffer.
- Ensure that the DMX + and DMX – connections do not become crossed at any point.

DALI and 0-10V control

Cylinder One Spectrum fixtures use DMX as their native control method, however, it is possible to use other common control protocols when required, such as 0-10V (source or sink) or DALI.

Control inputs via converters

- DMX - connect a DMX input directly into the feed cable.
- 0-10V - use an Acclaim Lighting ZDM 6 (or similar) to convert one or more analog control feeds into a combined DMX feed[1].
- DALI - use an Acclaim Lighting DDC-2-AC (or similar) to convert one or more DALI channels into a combined DMX feed[1].

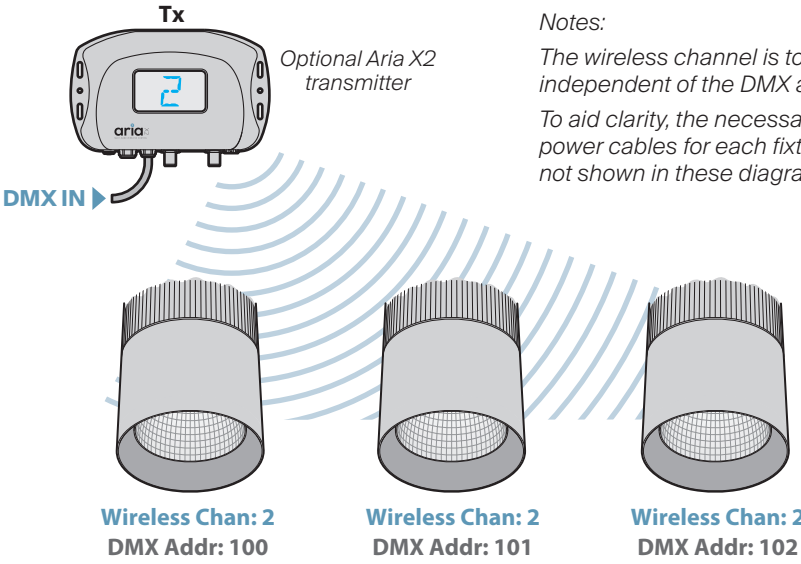


Note:

[1] When using Acclaim Lighting ZDM 6 or DDC-2-AC modules it is possible to convert up to six 0-10V feeds or up to 64 DALI channels into separate DMX channels within a consolidated feed - thus allowing multiple Cylinder One Spectrum fixtures to be uniquely addressed.

Wireless control

The embedded Aria™ X2 wireless system allows you to control any number of Cylinder One fixtures that are within range of an Aria transmitter set to use the same wireless channel:



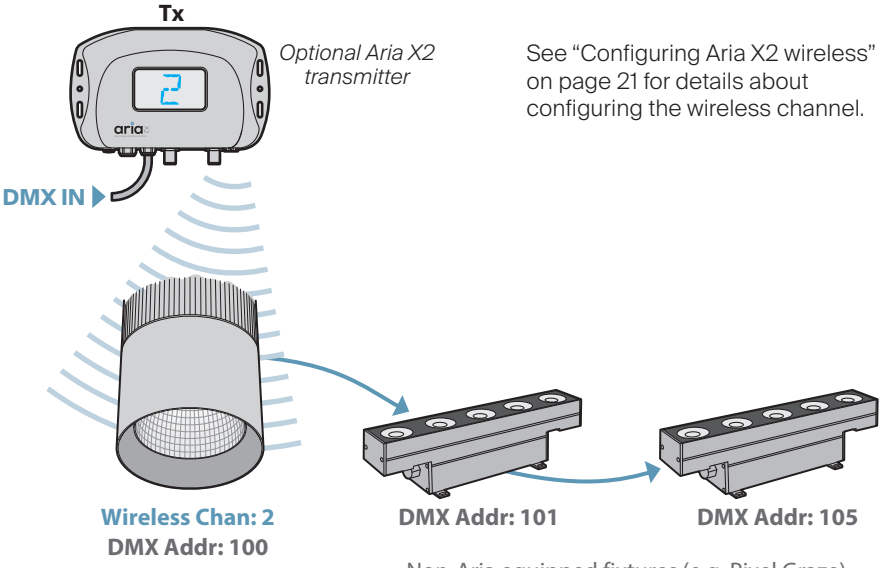
Notes:

The wireless channel is totally independent of the DMX address.

To aid clarity, the necessary power cables for each fixture are not shown in these diagrams.

Using a Cylinder One as a wireless hub

When a Cylinder One fixture receives a wireless input (and it has no wired DMX input), it will automatically output the full received DMX universe on its output wires. This means that you can wire through and control up to 32 non-Aria DMX fixtures (such as Pixel Graze), or more, if an active repeater is used.

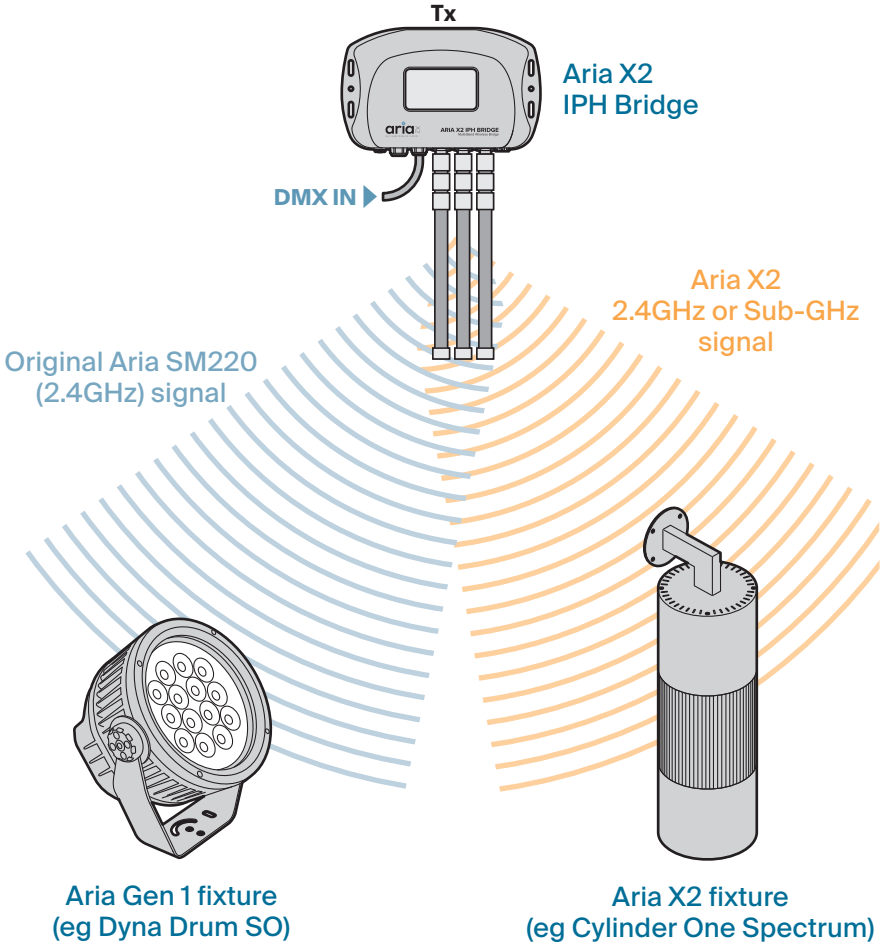


See “Configuring Aria X2 wireless” on page 21 for details about configuring the wireless channel.

Non-Aria equipped fixtures (e.g. Pixel Graze)

Mixing Aria Gen 1 (SM220) and Aria X2

Cylinder One Spectrum fixtures have in-built Aria X2 receivers, which are not directly compatible with the original Aria Gen 1 (SM220) devices. If Cylinder One Spectrum fixtures need to be wirelessly controlled alongside older Acclaim fixtures, then you will need to install an Aria X2 IPH Bridge. This multi-function device can output the original Aria SM220 (2.4GHz) signal at the same time as an Aria X2 signal: either 2.4GHz or a Sub-GHz band.



Always carry out a spectrum analysis

Prior to using the Aria™ X2 wireless feature, we strongly recommend that you perform a spectrum analysis of the on site radio frequencies to ensure the system will function correctly at the planned location.

Please also see page 31 for details about channel selection.

Configuration

Cylinder One fixtures have no external controls and instead rely on RDM (Remote Device Management) for all configuration via the DMX interface. This allows multiple devices to be configured either before or after installation (when fully cabled).

Note: It is not possible to carry out RDM configuration on fixtures via the Aria™ X2 wireless DMX link.

The main items that can be configured on each fixture (via RDM) are:

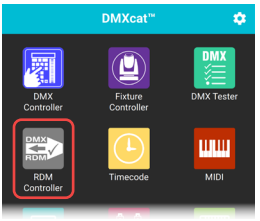
- DMX address see page 19
- Aria wireless receiver see page 21
- DMX personality see page 24
- Solo behavior/internal color see pages 25 and 26
- Color calibration see page 27
- Bluetooth Low Energy (BLE) see page 28

Various third party DMX/RDM tools are available; we recommend the DMXcat-E™ from City Theatrical™ for this task.

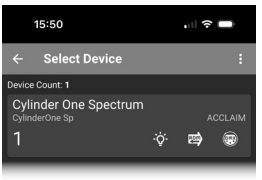
To configure other options *(see page 19 for setting the DMX address)*

1 Connect the DMXcat-E to the DMX input line of the Cylinder One installation.

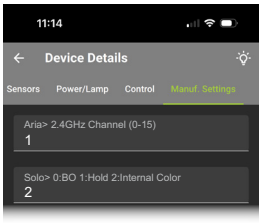
2 In the DMXcat app on your phone, link to the DMXcat-E unit and then choose the **RDM Controller** tool:



3 The DMXcat-E will search for RDM devices and after a short while it will display a list of all located fixtures:



4 Tap the RDM icon for the required fixture to view its Device Details, then scroll to the right side of the option headings at the top of the page and tap the **Manuf. Settings** entry:

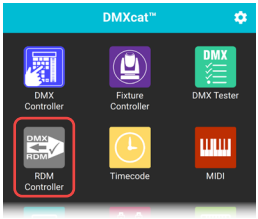


Setting the DMX address

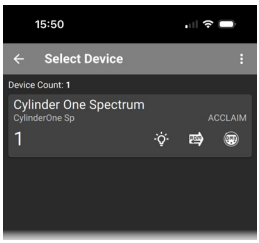
To set the DMX address

1 Connect the DMXcat-E to the DMX input line of the Cylinder One installation.

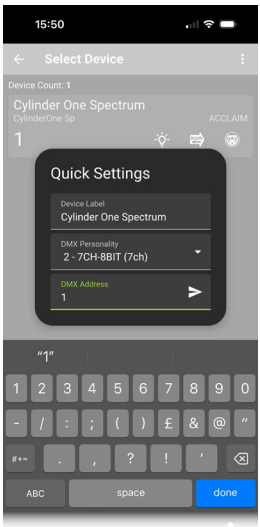
2 In the DMXcat app on your phone, link to the DMXcat-E unit and then choose the RDM Controller tool:



3 The DMXcat-E will search for RDM devices and after a short while it will display a list of all located fixtures:



4 Tap the list entry for the required fixture to view the Quick Settings popup:



5 Tap the **DMX Address** entry, enter the required address and tap the ➤ icon.

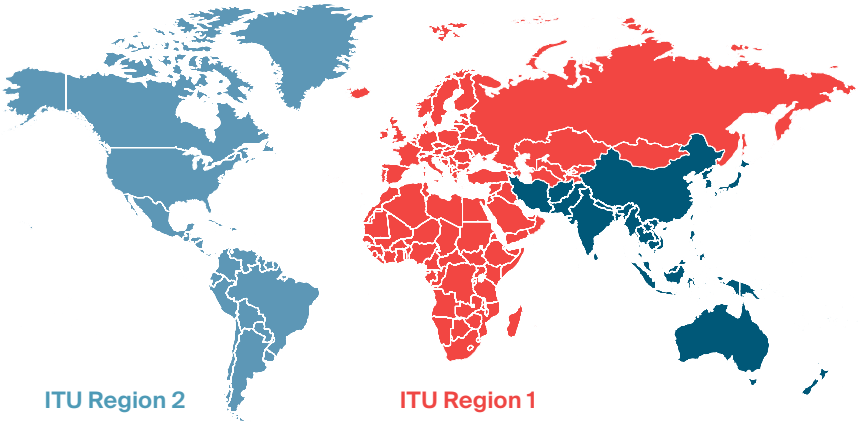
Note: If necessary, you can also change the DMX personality in this page. See pages 22 to 24 for details about DMX personalities.

Aria X2 wireless DMX

Each Cylinder One Spectrum fixture incorporates an internal Aria™ X2 wireless DMX receiver so that it can be remotely controlled by an optional Aria X2 transmitter.

The Aria X2 standard provides a choice of three separate wireless frequency bands:

- **2.4GHz** - *(2404-2480MHz)* - This licence-free radio band is approved for use in most countries worldwide. This band provides good results in most areas.
- **Sub-GHz NA** - **Channel 0 only** - *(868MHz)*. This narrow licence-free radio band is approved for use across the Europe, Africa, the Commonwealth of Independent States, Mongolia and the Middle East, west of the Persian Gulf, including Iraq (see map below). **Important:** This option can only be used in countries located within **ITU Region 1**.
- **Sub-GHz NA** - **Channels 1 to 10** - *(902-928MHz)*. This licence-free radio band is approved for use across the Americas, Greenland and some of the eastern Pacific Islands (see map below), overseen by the FCC. **Important:** This option can only be used in countries located within **ITU Region 2**.



Choosing the appropriate frequency band

We strongly recommend you carry out a radio spectrum survey prior to installation in order to determine any potential sources of temporary or permanent interference.

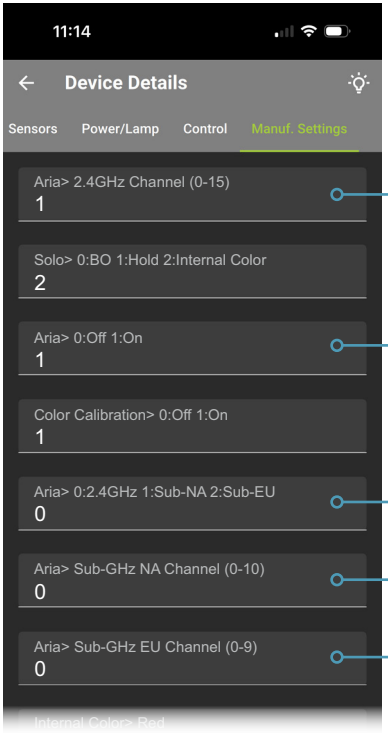
The **2.4GHz** band provides good results, however, this frequency range can become congested in areas where other devices, particularly Wi-Fi equipment are also in use. See also “Optimizing signal strength via channel selection (2.4GHz band)” on page 31

If your installation is located in ITU regions 1 or 2, then the **Sub-GHz** bands become a possible alternative. Their lower frequency, longer wavelength transmission characteristics can provide improved obstacle penetration over the 2.4GHz band. However, both are susceptible to interference from other license-exempt transmitting devices using the same frequency space. A radio spectrum survey will help to identify the best option within any given environment. See also “Aria X2 Sub-GHz bands” on page 32.

Configuring Aria X2 wireless

To configure wireless DMX

1 On your DMXcat-E device, display the **Manuf. Settings** page (see page 18):



(C) Tap to choose a 2.4GHz channel

(A) Tap to enable/disable the Aria X2 wireless receiver

(B) Tap to choose the wireless band: 2.4GHz (opt **0**) or Sub-GHz NA (opt **1**)

(C) Tap to choose a Sub-GHz NA channel

Reserved

2 Within this page, you can configure all aspects of Aria X2 operation. There are numerous aspects to consider, so it is best to approach the configuration in this order:

(A) Enable the X2 wireless receiver - ensure this option is set to '1'.

(B) Choose the appropriate wireless band. There are two to choose from *(see 20 for more detail)*:

- 2.4GHz (setting **0**) - can be used in most countries worldwide.
- Sub-GHz NA (setting **1**) - varying channels can be used in ITU regions 1 and 2 (see map on page 20 and see below).

(C) Depending on the chosen band, choose a wireless channel that matches the channel set on your transmitter, in either the 2.4GHz or Sub-GHz NA options.

IMPORTANT: These restrictions apply when using the Sub-GHz option:

- Sub-GHz NA channel **0** is the only one that can be used in ITU region 1 (Europe, Africa, the Commonwealth of Independent States, Mongolia and the Middle East, west of the Persian Gulf, including Iraq).
- Sub-GHz NA channels **1** to **10** can be used only in ITU region 2 (the Americas, Greenland and some of the eastern Pacific Islands).

3 For each option that you change, tap the ➤ icon to save your choice.

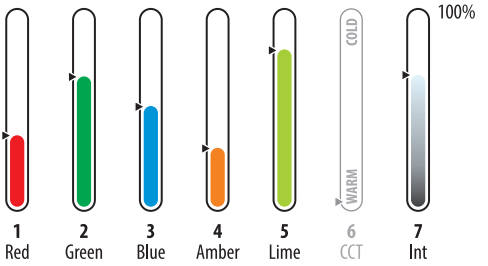
DMX personalities (channel modes)

Cylinder one Spectrum fixtures provide numerous different channel modes to determine how received DMX input values are mapped to the various emitter colors. Two of the channel modes use 8-bit color mixing, where the level for each color (between 0 and 100%), is determined in 255 steps. Alternatively, there are two 16-bit channel modes, which offer much greater color mixing precision by using 65,535 steps to determine each level between 0 and 100%.

See “Setting the DMX personality (channel mode)” on page 24.

7 Channel (8-bit) mode

Allows you to control the five emitter colors individually or alternatively to choose a particular color temperature of white. An intensity channel is provided.



Mixing colors individually

Use channels 1 to 5 to mix the required shade.

Use channel 7 to determine the overall output intensity.

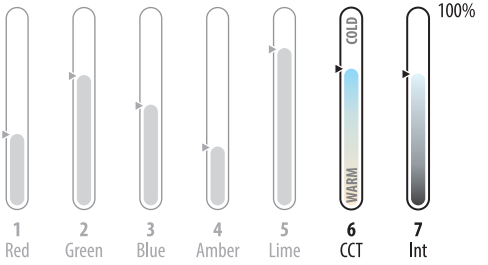
*Note: **Channel 6** must be at **zero**.*

Choosing a temperature of white

Use channel 6 to select the required correlated color temperature (CCT) ranging from 1800K (at 1%) to 8000K (at 100%).

See page 30 for a full list of color temperatures and the DMX input values required at channel 6.

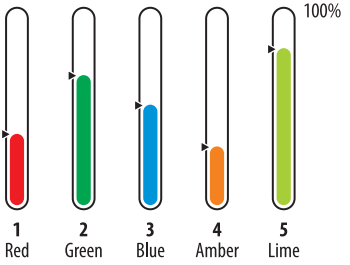
Use channel 7 to control the overall output intensity.



Note: When channel 6 receives any value other than zero, the input values of channels 1 to 5 will be ignored.

5 Channel (8-bit) mode

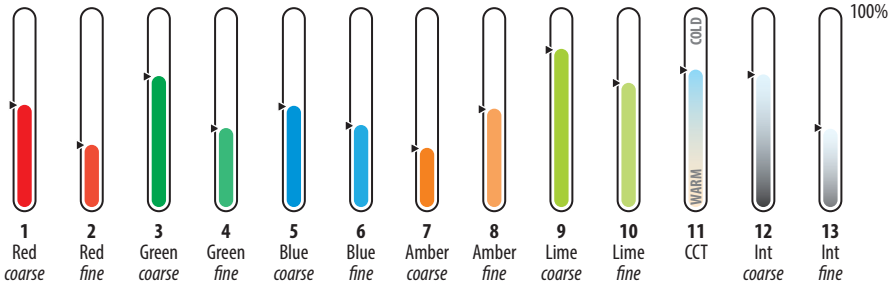
Allows you to mix the required shade using the five distinct emitter colors. No intensity channel is used.



13 Channel (16-bit) mode

Allows you to control the five emitter colors individually, using two DMX channels per color (to achieve a 16-bit value). For each color (and the intensity control), the first channel is the coarse value and the second provides the fine value. Use channels 12 and 13 to control the overall output intensity.

*Note: **Channel 11** must be at **zero** to allow color mixing. When channel 11 receives any value other than zero, the input values of channels 1 to 10 will be ignored.*

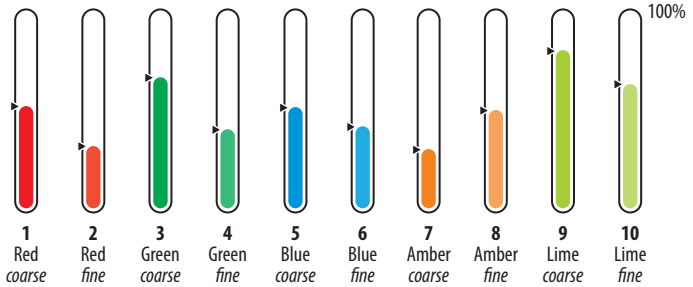


Choosing a temperature of white

Use channel 11 to select the required correlated color temperature (CCT) ranging from 1800K (at 1%) to 8000K (at 100%). See page 30 for a full list of color temperatures and the DMX input values that need to be presented at channel 11.

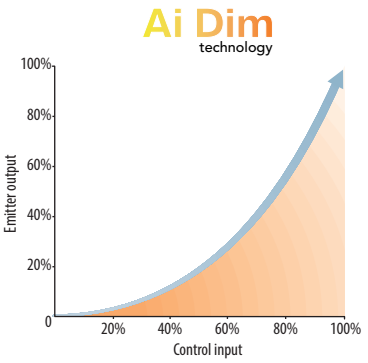
10 Channel (16-bit) mode

Allows you to mix the required shade using the five distinct emitter colors - each controlled by two DMX channels to achieve a 16-bit value. No intensity channels are used.



1 Channel (8-bit) mode (Single channel tungsten emulation)

In addition to the multi-channel control modes mentioned above, each Cylinder One Spectrum fixture also offers a simple one channel option. As the single channel is raised from zero to 100% and back to zero, the fixture responds with combined graduations of both intensity and color temperature to skilfully emulate the dimming response of a typical high-output tungsten source.

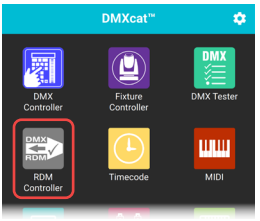


Setting the DMX personality (channel mode)

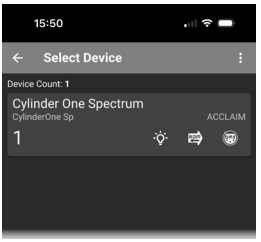
To set the DMX personality using the DMXcat-E

1 Connect the DMXcat-E to the DMX input line of the Cylinder One installation.

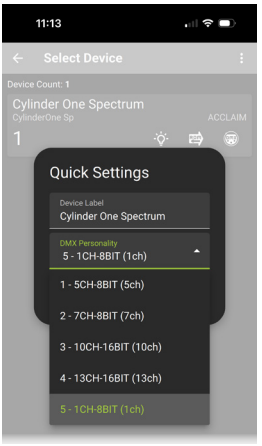
2 In the DMXcat app on your phone, link to the DMXcat-E unit and then choose the **RDM Controller** tool:



3 The DMXcat-E will search for RDM devices and after a short while it will display a list of all located fixtures:



4 Tap the list entry for the required fixture to view the Quick Settings popup:



5 Tap the **DMX Personality** entry, tap the required mode from the drop down list and then tap the ➤ icon.

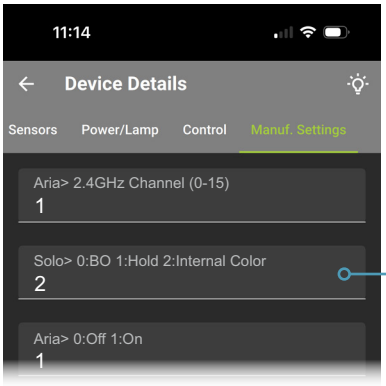
Determining the solo behavior

You can choose how the fixture should behave when it is running solo, either because an external control input is not being used at all or in reaction to the control signal being been temporarily lost. There are three solo behavior choices:

- **BO** (Black Out) - (setting **0**) In this mode, when no external control is present, the emitter output will be extinguished.
- **Hold** (Last DMX Value) - (setting **1**) In this mode, when no external control is present, the emitter output will remain as per the last received instruction.
- **Internal** - (setting **2**) In this mode, when no external control is present, the fixture will output the mix that has been pre-determined using the **Internal Color** setting (see page 26).

To determine the solo behavior

1 On your DMXcat-E device, display the **Manuf. Settings** page (see page 18):



Tap to determine the solo behavior

2 Tap the **Solo> ...** entry and set the solo behavior mode as required:
   - Enter **0** to set **BO** (Black Out) mode.
   - Enter **1** to set **Hold** (Last DMX Value) mode.
   - Enter **2** to set **Internal** mode.

3 Tap the ➤ icon.

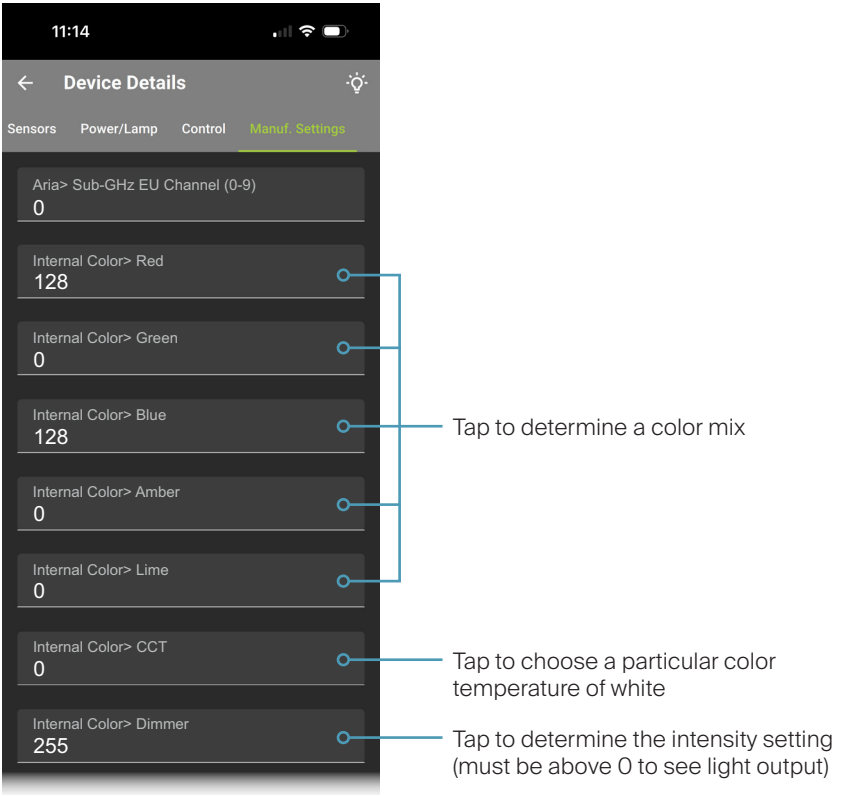
Setting an internal color

This option allows you to mix a static color which will be displayed whenever the following two criteria are met:

- The **Solo** option is set to **Internal** (see page 25) and,
- There is no DMX input signal.

To set an internal color

1 On your DMXcat-E device, display the **Manuf. Settings** page (see page 18):



2 Toward the middle of the list you will see a collection of **Internal Color> ...** options.

- Tap and configure each color individually to create the required output mix.
- Alternatively, to select a particular color temperature of white, set a value for the **Internal Color> CCT** option (the red, green, blue, amber and lime values will be ignored if this CCT value is above 0).
- Ensure that the **Internal Color> Dimmer** value is above 0.

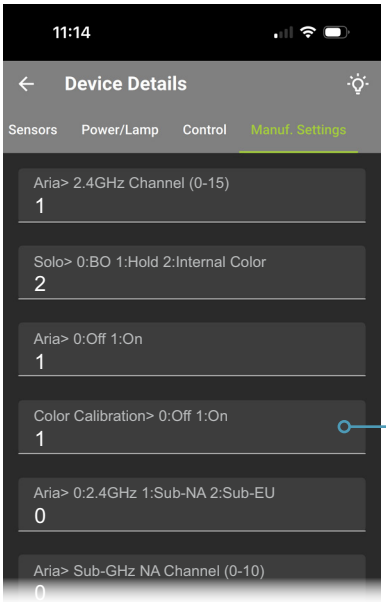
3 For each option that you change, tap the ➤ icon to save your choice.

Color calibration

Each fixture undergoes ColorSync calibration at our Los Angeles headquarters in order to maintain consistent color matching between fixtures when displaying the various temperatures of white in 7 or 13 channel modes. It is possible to disable the internally held calibration values with the possible result of noticeable differences in output between neighboring fixtures.

To enable/disable color calibration

1 On your DMXcat-E device, display the **Manuf. Settings** page (see page 18):



2 Tap the **Color Calibration>...** entry:

- Enter **0** to disable Color Calibration.
- Enter **1** to enable Color Calibration.

3 Tap the ➤ icon.

Bluetooth Low Energy (BLE) configuration

(This feature will be included in future firmware updates).

Further information

Troubleshooting

No light output is visible when expected.

- Check that there is no damage to the power input cord and that power is correctly applied to the fixture.
- When the 7 or 13 channel modes are being used, ensure that the intensity control channel(s) (7 or 12 and 13) are above zero.
- The fixture continually monitors its internal temperature and will automatically shut off the output circuitry in the event of a cooling fan failure. The internal cooling fan (which spins whenever power is applied) is an ultra quiet model but is audible when in close proximity within a quiet environment. If there is no light output, listen carefully for the cooling fan; if it is not spinning when power is applied then it may have failed, causing an internal shut down.
- Use an RDM tool to perform an emitter test.
- Check that the DMX address set within the fixture matches that being output by the controlling source device.
- If wired DMX control is being used, check the DMX output near to the source to confirm a valid signal is being originated.
- If wired DMX control is being used, check that the DMX + (hot) and DMX - (cold) lines have not been crossed.
- If Aria wireless DMX control is being used, check that the fixture is set to the same wireless channel as the transmitter (the wireless channel is independent of the DMX address). Try changing the transmitter and receiving fixture(s) to different (but equal) wireless channels to check for clear space in the radio spectrum from interference by other devices, such as WiFi.

Dimming and/or chase changes are jerky when using Aria.

- Check for WiFi sources near to the transmitter or receiver devices. Try changing the transmitter and receiving fixture(s) to different (but equal) wireless channels to check for clear space in the radio spectrum from interference by other devices.

Correlated color temperature selection

This chart lists the DMX values which must be presented in order to achieve an output with a particular correlated color temperature (CCT) of white. In 7 Channel (8-bit) mode [7CH-8BIT], CCT is determined by the value presented at channel **6**; in 13 Channel (16-bit) mode [13CH-16BIT], CCT is determined by the value presented at channel **11**.

Note: The fixture must either be in the [7CH-8BIT] or [13CH-16BIT] modes to use CCT selection - see "Setting the DMX personality (channel mode)" on page 24.

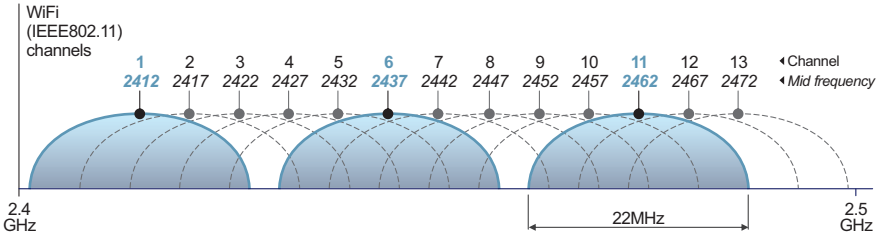
DMX input value	Color temperature
0	Off
001-002	1800K
003-004	2200K
005-008	2500K
009-013	2600K
014-017	2700K
018-022	2800K
023-026	2900K
027-031	3000K
032-035	3100K
036-040	3200K
041-044	3300K
045-049	3400K
050-053	3500K
054-058	3600K
059-062	3700K
063-067	3800K
068-071	3900K
072-076	4000K
077-080	4100K
081-085	4200K
086-089	4300K
090-094	4400K
095-098	4500K
099-103	4600K
104-107	4700K
108-112	4800K
113-116	4900K
117-121	5000K
122-125	5100K

DMX input value	Color temperature
126-130	5200K
131-134	5300K
135-139	5400K
140-143	5500K
144-148	5600K
149-152	5700K
153-157	5800K
158-161	5900K
162-166	6000K
167-170	6100K
171-175	6200K
176-179	6300K
180-184	6400K
185-188	6500K
189-193	6600K
194-197	6700K
198-202	6800K
203-206	6900K
207-211	7000K
212-215	7100K
216-220	7200K
221-224	7300K
225-229	7400K
230-233	7500K
234-238	7600K
239-242	7700K
243-247	7800K
248-251	7900K
252-255	8000K

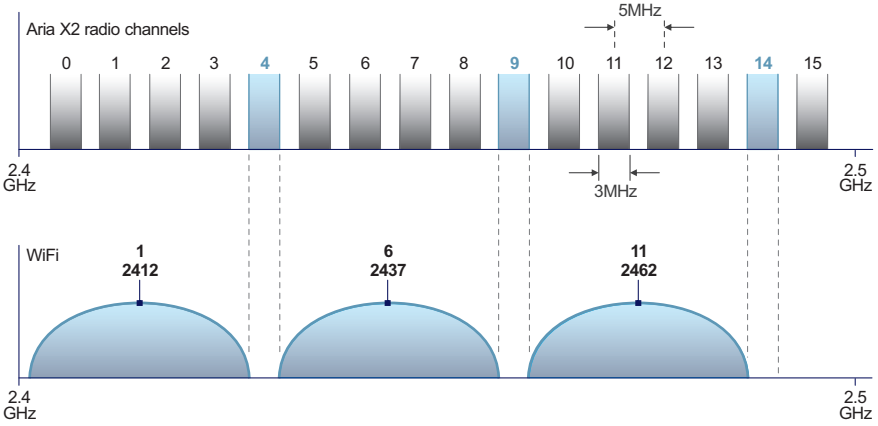
Optimizing signal strength via channel selection (2.4GHz band)

Aria™ X2 wireless transceivers can use radio frequencies contained within the Industrial Scientific and Medical (ISM) band that runs between 2.4GHz and 2.5GHz. As one of the few license-free radio bands agreed upon in most countries, many other devices also use this band, most notably WiFi. Aria X2 units use the 2.4GHz band in a different manner than WiFi and the two can coexist. However, where distances between Aria X2 units are great and WiFi access points are reasonably close, then interference can become an issue.

WiFi uses the IEEE802.11 standard, which divides the ISM band into 13 (sometimes 14) channels, each of which is 22MHz wide. However, the channels overlap and so cannot all be used simultaneously. Hence, most WiFi access points settle upon channels 1, 6 and 11 to avoid any overlap:



Aria uses the IEEE802.15.4 standard, with channels that are 3MHz in width and do not overlap. Many Aria X2 channels do, however, coincide with the common WiFi channels. The notable exceptions are Aria X2 channels 4, 9 and 14, which fall into the gaps between the most commonly used WiFi channels:



Where interference is suspected, a radio frequency survey may provide useful indications. If you have control over the nearest WiFi access points, it is suggested that you lock them down to one or more of the common channels (to prevent them from roaming) and select Aria channels that sit comfortably alongside.

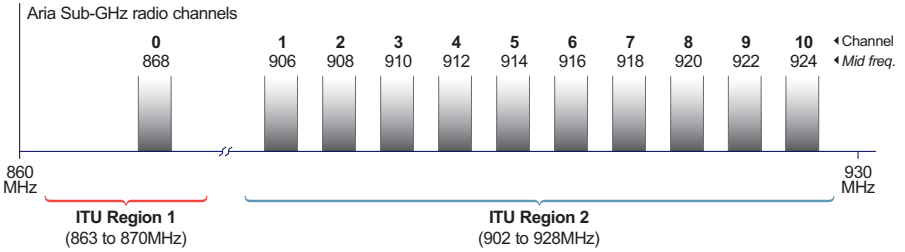
Notes:

The Aria X2 channel notations (0 to 15) are directly equivalent to the IEEE802.15.4 channels 11 to 26, inclusive.

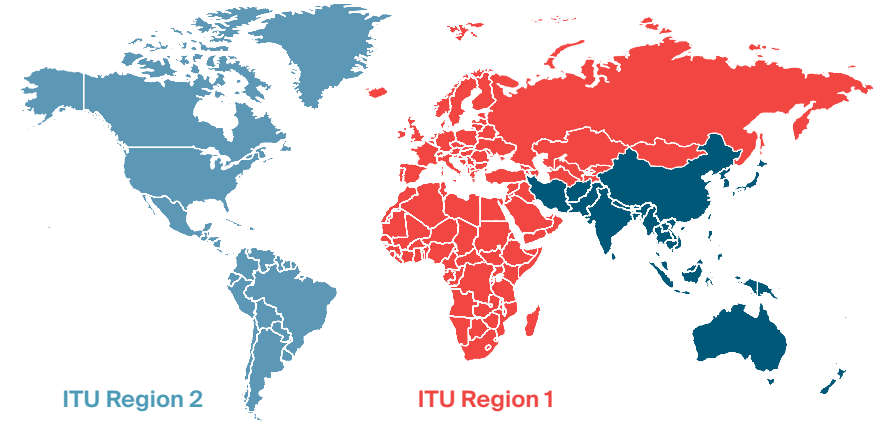
Aria X2 Sub-GHz bands

In addition to using the 2.4GHz ISM band, Aria X2 transceivers can also take advantage of lower frequency bands that are cleared for use in certain geographical regions. The lower frequency, longer wavelength transmission characteristics of the Sub-GHz bands can provide improved obstacle penetration over the 2.4GHz band. However, they can be susceptible to interference from other license-exempt transmitting devices using the same frequency space. As always, a radio spectrum survey will help to identify the best option within any given environment.

At present, two distinct Sub-GHz bands are supported. A single channel is available for use only in ITU Region 1 (at 868MHz) while ten channels (from 906 to 924MHz) are cleared for use in ITU Region 2:



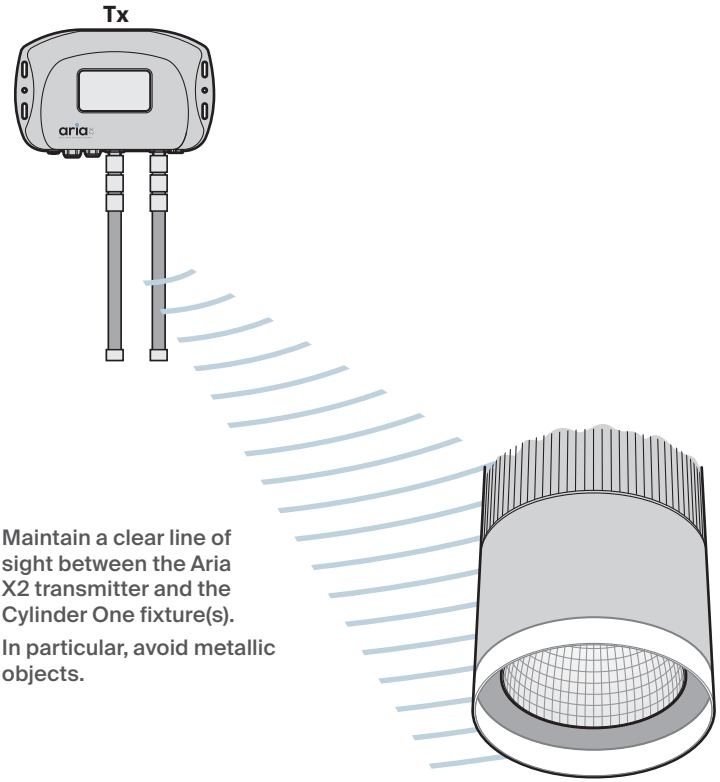
The map below shows the geographical spread of the ITU regions:



Choosing the right location

Your choice of installation locations for your Aria X2 transmitter(s) and Cylinder One fixture(s) can have a significant effect on their range and speed of communication.

- Avoid installing either the Aria X2 transmitter or the Cylinder One fixtures(s) near to metallic objects.
- Maintain a clear 'line of sight' path between the Aria X2 transmitter and the Cylinder One fixture(s).



Maintain a clear line of sight between the Aria X2 transmitter and the Cylinder One fixture(s).

In particular, avoid metallic objects.

Interference created by objects

The composition of nearby objects can have a significant impact on the quality of the RF signal. Here are a few examples:

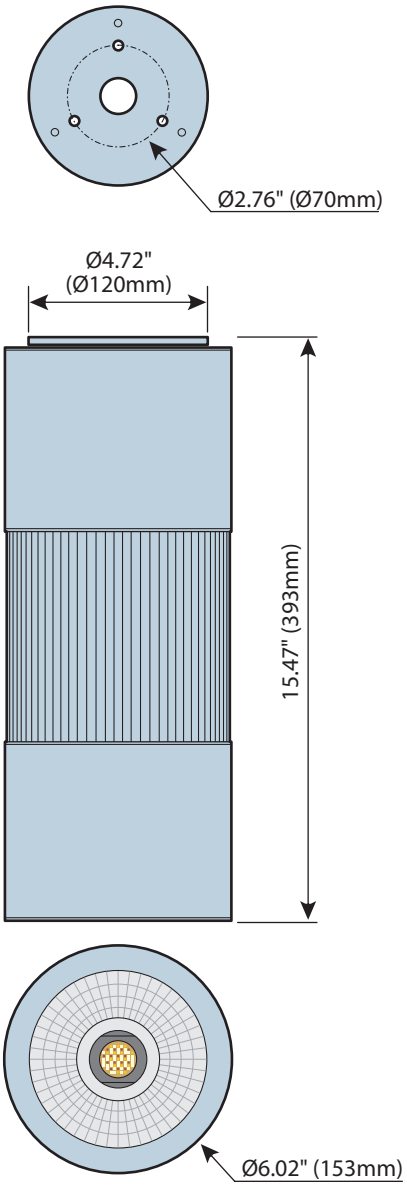
- Standard drywall does not present much of an issue to the 2.4GHz wireless spectrum. However, things inside or attached to the drywall, such as copper pipe, electrical conduit, and circuit breaker panels, will partially block RF signal propagation.
- Hollow cement block walls will dampen the RF signal.
- Reinforced concrete walls typically contain rebar that will contribute to significant RF signal strength loss.
- Large metal structures such as metal cabinets, HVAC units, machinery, brew kettles, etc. may partially or completely block the RF signal.

Specifications

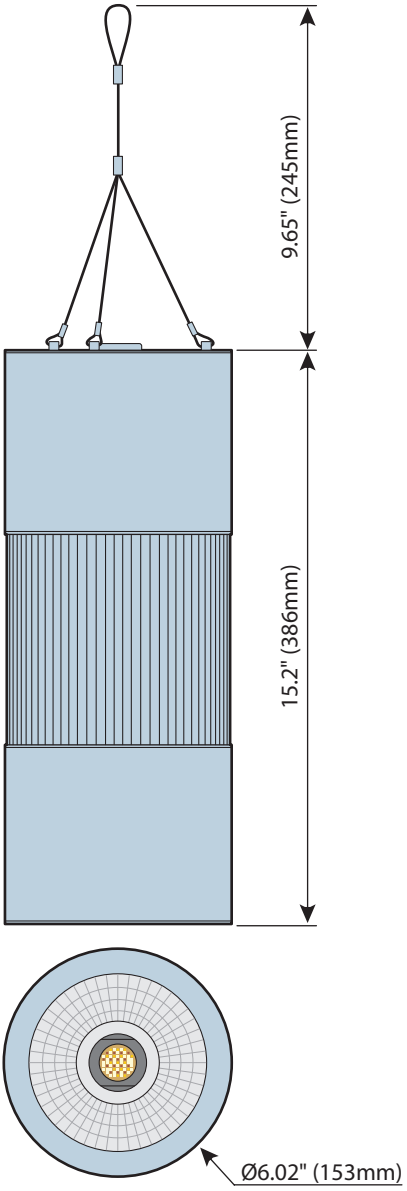
Emitters	**Spectrum Five** light engine: Red, Green, Blue, Amber, Lime plus CCT select: 1800K to 8000K
Optics	20° x 20°, 40°x 40°, 65° x 65° via quick change reflectors
Lumen maintenance (L_{70})	150,000 hours (25°C)
Aria™ X2 wireless protocols	2.4GHz, IEEE802.15.4, 863-870 MHz (ITU region 1), 902-928 MHz (US and ITU region 2)
Estimated transmission range	Clear line of sight: 2600 feet (792m) Through obstructions (walls, etc): 300 feet (91m)
Selectable radio channels	16 (2.4GHz band)
Aria signal encryption	AES 128
Housing	Die cast aluminum
Ingress protection	IP40, dry location
Impact protection	IK06, protection against 0.7 joule impact
Power input	100 - 277VAC, 50/60Hz
Power consumption	120W
Connection	Attached 20' (6.09m) AC power cable (18 AWG x 3) plus DMX/RDM cable (22 AWG x 5)
Operating temperature	-4°F to 113°F (-20°C to 45°C)
Weight	12.9 lbs (5.85 kg)
Certifications	Intertek, CE, UKCA, FC, RoHS COMPLIANT

Dimensions

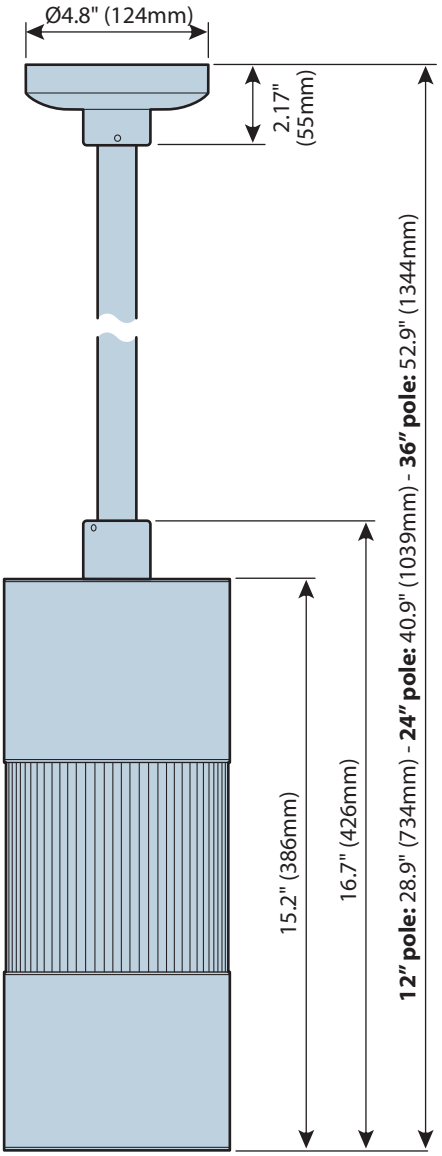
Surface mount [Type A]

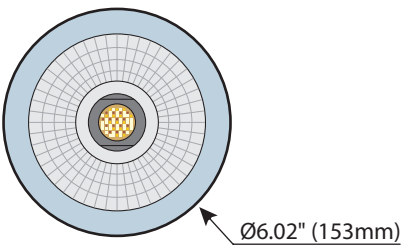


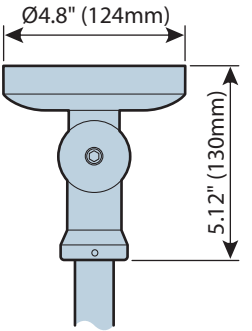
Aircraft cable mount [Type C]



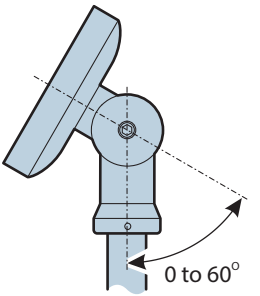
3/4” NPS Pendant mount [Type B]

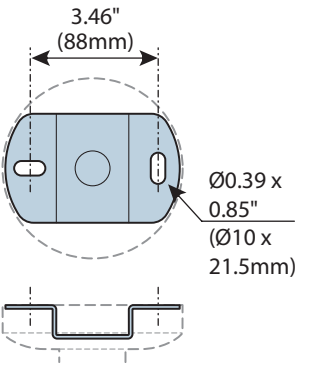






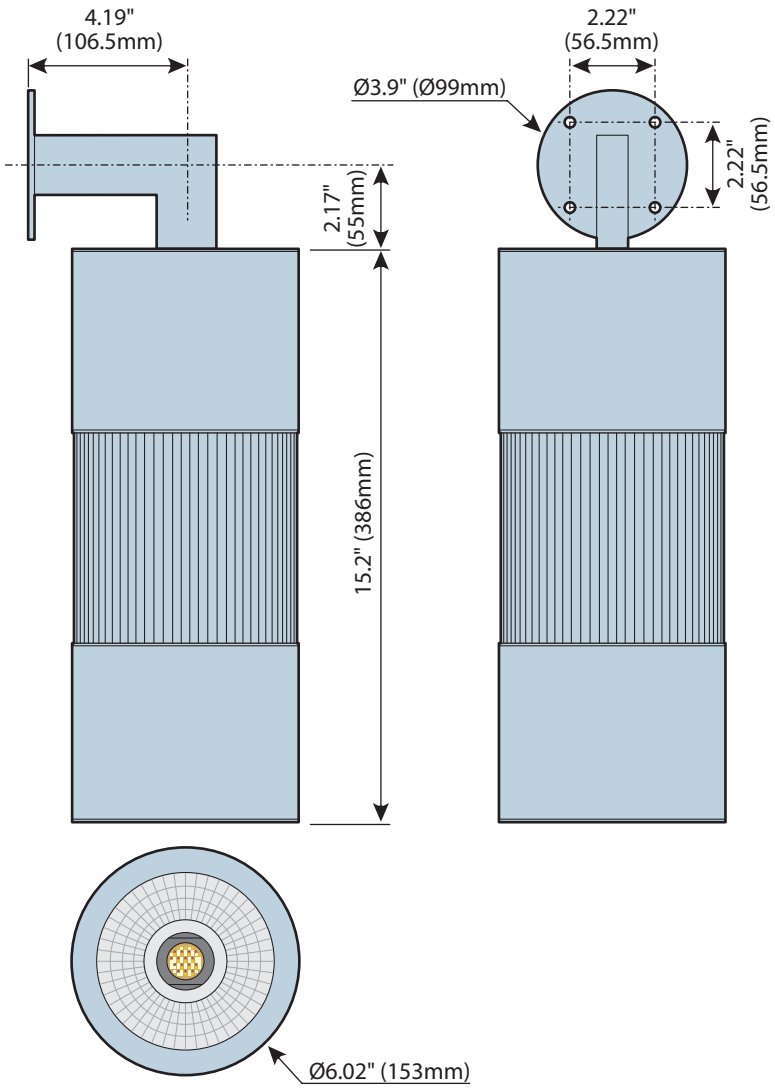
Optional vaulted ceiling mount





(Fixed and vaulted bracket internal detail)

Wall mount [Type D]



Limited product warranty

A. Acclaim Lighting™ hereby warrants, to the original purchaser, Acclaim Lighting finished products to be free of manufacturing defects in material and workmanship for a standard period of:

- Fixtures: 5 Years (1,825 days) from the date of purchase.
- Drivers, power supplies and accessories: 5 Years (1,825 days) from the date of purchase.
- Flex Products: 3 Years (1,095 days) from the date of purchase.
- Controllers: 2 Years (730 days) from the date of purchase.

It is the owner's responsibility to establish the date and place of purchase and warranty terms by acceptable evidence, at the time service is sought.

B. For warranty service, send the product only to the Acclaim factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, Acclaim Lighting will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, Acclaim Lighting shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return there of. Acclaim reserves the right to replace the item with same or similar product at its discretion.

C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which Acclaim concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the Acclaim Lighting factory unless prior written authorization was issued to purchaser by Acclaim Lighting; if the product is damaged because not properly maintained as set forth in the instruction manual.

D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up nor do we guarantee as part of this warranty any lumen performance during period. Parts not covered by this warranty include: fuses, external power supplies, third party items not manufactures by Acclaim lighting. During the period specified above, Acclaim Lighting will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of Acclaim Lighting under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of Acclaim Lighting. At no time will installation or re-installation or products labor or liability costs will be assumed by Acclaim Lighting. All products covered by this warranty were manufactured after January 1, 2012, and bear identifying serial number marks to that effect.

E. Acclaim Lighting reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products describe above. Except to the extent prohibited by applicable law, all implied warranties made by Acclaim Lighting in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired.

F. Marine or extreme weather location applications using Acclaim lighting products are subject to a 2 year limited warranty and Acclaim must be notified prior to delivery of units for such applications so that preventative treatment can be made to the products to ensure proper performance and product life with a special marine code coating / sealing process at an additional cost.

G. The consumer's and or dealer's sole remedy shall be such repair or replacement as is expressly provide above; and under no circumstances shall Acclaim Lighting be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product. This warranty is the only written warranty applicable to Acclaim Lighting products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

www.acclaimlighting.com