PRODUCT USER GUIDE

Apollo LED Display Lighting

Rev: C1

PLEASE READ THIS USER GUIDE BEFORE INSTALLING, OPERATING OR PERFORMING MAINTENANCE ON THIS SYSTEM

FOR INDOOR USE ONLY

MADE IN U.K. PREMIUM QUALITY

Thank you for purchasing this UFO Apollo lighting system.

Please read these instructions fully before performing any installation, operation or maintenance on the system and before connecting power to your Apollo lighting system. Follow all warnings and instructions carefully.

Please keep this manual for future reference.

The UFO Apollo is a configurable LED lighting system which has been specifically designed for ease-of-use in many installation environments. Available in a variety of lengths and heights, with a black or silver finish and with tuneable colour-temperature which can be adjusted between 1800K and 6500K.

WARNINGS AND IMPORTANT SAFETY INFORMATION

Please carefully follow the warnings and information below and throughout this manual. Failure to do so could lead to functional and/or structural failure of the Apollo system, causing damage to the Apollo system and to adjacent items, fixtures and fittings. UFO will accept no responsibility for such failures, nor damage caused as a result, and this would also invalidate the UFO warranty.

Apollo systems must be installed and used only in accordance with the UFO-supplied system design and in accordance with the assembly & installation instructions in this manual.

The UFO Apollo bodies and legs are designed and assembled cut to length by UFO and cannot be cut or modified on site. Any attempt to cut or modify these products will invalidate warranty for the complete UFO Apollo installation.

Apollo LED fittings operate from a constant-voltage, 24V DC supply. They should not be connected to a constant-current driver. Apollo LED fittings are only dimmable with an appropriate constant-voltage dimmer driver. Constant-current and constant-voltage LEDs cannot be intermixed on the same driver.

WARNING – These constant-voltage LED fittings operate on a 24V DC supply only. Connecting these fittings to a different voltage supply is likely to cause malfunction and may even result in catastrophic damage to the LED devices within them. Always check the output voltage of the PSU/driver to ensure correct output voltage prior to powering up the system.
Ensure also that the selected power supply has sufficient power capability for the length of LED tape/track being driven and also voltage drop in the supply cable. The LED tape will generate a load depending on type fitted and tape length as detailed below

- Fixed colour-temperature (2700K, 3000K or 4000K) = 14.4 Watts per metre
- Tuneable colour-temperature (1800K to 6500K) = 12 Watts per metre

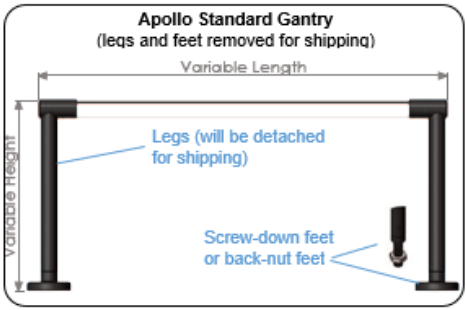
The Apollo system is suitable for indoor/dry areas only and must not be installed in damp or wet conditions.

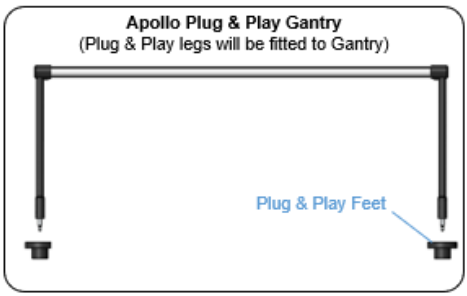
IMPORTANT

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT, ITS COMPONENT PARTS AND THE HAZARDS INVOLVED.

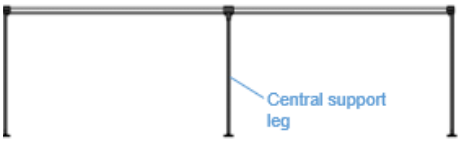
Very carefully unpack the shipment – parts require gentle handling to avoid marking or damage. Particular care must be taken with the Plug & Play Gantry, which comes completely assembled. Check all component parts and accessories against your order.

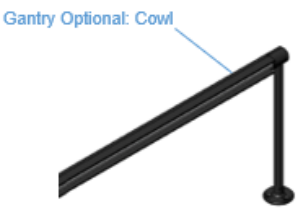
APOLLO GANTRY COMPONENT PARTS



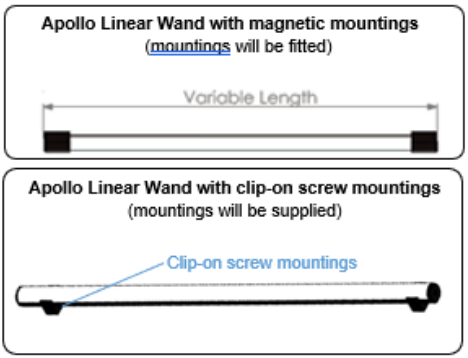


Additional central support legs are required for unsupported spans of more than 1147mm and recommended for those greater than 900mm.
Your UFO representative will be able to advise.

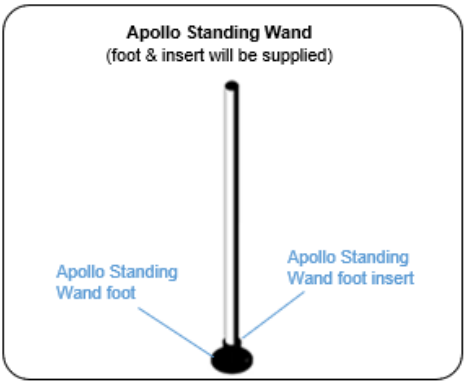




APOLLO LINEAR WAND COMPONENT PARTS



Additional central supports are required for (magnetic & non-magnetic) unsupported spans of more than 1147mm and recommended for those greater than 900mm.
Your UFO representative will be able to advise.



IMPORTANT

DO NOT CONNECT POWER TO YOUR APOLLO SYSTEM UNTIL ALL PARTS ARE FULLY CONNECTED AND YOU HAVE CHECKED ALL YOUR WIRING IS CORRECT AS PER THE UFO-SUPPLIED DESIGN DRAWINGS.

APOLLO PSU JUNCTION BOX

One of these boxes is normally required, in conjunction with a suitable UFO approved 24V PSU, to power one or more Apollo Gantries and/or Linear Wands. See Wiring section later in this manual for more information.

NOTE: Multiple systems should only be connected to a single Apollo PSU junction box if they are being controlled together and the connected PSU is able to supply sufficient power. Apollo systems require 14.4W per metre for fixed colour-temperatures; 12W per metre for tuneable.

UFO 24V DC PSU

The PSU shown is an example of a UFO approved 24V IEC mains lead device, catering for UK,
European and USA mains supplies.

Ensure the power supply used has sufficient power output for the length and type of track being powered. Apollo re-

CONTROL OPTIONS

The Apollo system can be dimmed via a variety of devices, as listed below. Ensure that any controllers used are suitable constant-voltage devices.

- Standard – no dimming
- Manual dimming
- Casambi Bluetooth dimming
- Eulum Xicato enabled Bluetooth
- Dali dimming
- DMX dimming
- 0-10V dimming
- RF remote dimming

See also wiring section below.

STANDARD GANTRY SYSTEM ASSEMBLY

Standard Gantry legs are detached for shipping, so will require to be refitted.
Plug & Play Gantries will be supplied fully assembled as the legs are not removable.

1. Very carefully (the component parts, cables etc are easily damaged), feed the Apollo cable through the top of one of the legs as shown. The top of the leg is the end with the notch and cut-out slot.

2. With the cut-out slot facing towards the Apollo's main body (see 'a' in image), slowly push the leg into the gantry corner, while gently feeding the cable through the leg as you do so (see 'b' in image). Ensure the cable does not get snagged, which will prevent the leg inserting fully and could cause damage

3. Once the leg is fully inserted, secure using an M3x3mm grub screw – supplied, inserted into the end of the gantry corner (see 'c' in image). Tighten fully, but do not overtighten.

4. Procedure for assembly of a non-cable end is essentially the same, except made simpler by the absence of the cable – again ensure that the cut-out on the leg faces towards gantry body.

ADDITIONAL ASSEMBLY FOR LONGER CUSTOM LENGTHS*

1. Remove the non-cable end of the Gantry.

2. Slide the Gantry middle-support(s) onto the Gantry.

3. Position the support(s) equidistantly on the Gantry body, following the design drawing supplied by UFO. Ensure that there is never more than 1147mm of Gantry span unsupported (extra supports advisable for unsupported spans of 900mm).

4. Use 2x M3x3mm grub screws to fix each middle support to the Apollo body, once correctly positioned. Do not overtighten. Some further adjustment may be required when Gantry is fitted in its final position to ensure all legs are straight and not mechanically stressed.

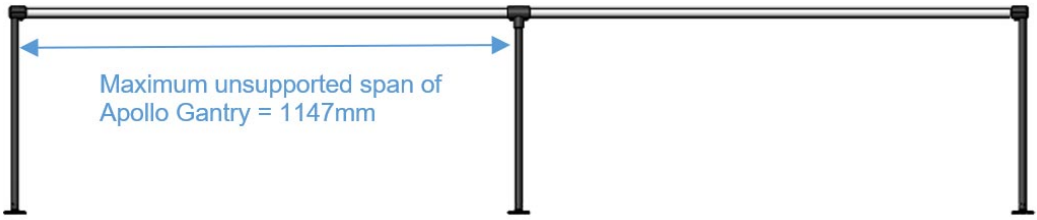
5. Push top of middle leg into middle support and use 3x M2x2mm grub screws to secure leg. Do not overtighten.

6. Insert bottom of middle leg into foot and once correctly positioned, use 3x M2x2mm grub screws to fix each middle support to the foot. Do not overtighten. Loosen grub screws from steps above and re-adjust positions of the various components if required to ensure all legs are straight and not mechanically stressed, then retighten all grub screws.

An example of an assembled custom Gantry is shown below.

IMPORTANT SAFETY INFORMATION

Failure to provide correct support for the Gantry may cause the Gantry to bend/break, possibly leading to structural and functional failure, with the possibility of damaging adjacent items.



* Not applicable to Plug & play Gantries, which will be supplied fully assembled as the legs are not removable.

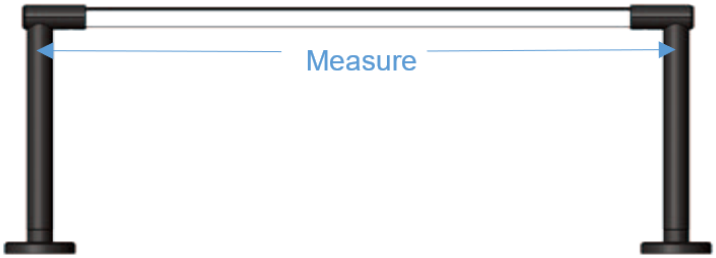
STANDARD GANTRY SYSTEM MOUNTING

There are 3 distinct methods of mounting the Apollo Gantry System:
method 1 - screw-down feet, **method 3** - back nut, **method 3** - plug & play.

METHOD 1 - SCREW DOWN FEET INSTALLATION

1. Before taking any measurements, ensure that each Gantry support leg is fitted correctly to the body in its final position and locked into place using the grub screw(s).

2. Lay the Gantry on a flat surface and measure between the points shown below (to half way across each leg). Be sure to measure close to the top to ensure accuracy. If there are more than two legs (see below for further information on extra legs), repeat the process until all gaps have been measured and noted.



3. Use the measurement(s) to mark the centre point of each of the feet on the surface where the Gantry will be mounted. If there are more than two legs, ensure marks are in a straight line to avoid straining the Apollo's structural components.

4. For routing the cable, drill a 4mm hole through the mounting surface, centred at your mark, on the end that will carry the cable (check below surface first, to ensure there is sufficient clearance and to check that the drill bit will not damage anything as it emerges).

5. Line up the centre of each foot with your mark, then mark the position of the foot's screw holes. Drill pilot holes into the mounting surface, then secure the feet to the surface with suitable screws.

6. Fit the Gantry to the feet, passing the wire through the hole you have drilled and use 3x M2x2mm grub screws (supplied) to secure each leg to its foot. Be careful not to overtighten the grub screws – only just tight is sufficient.

IMPORTANT - ADDITIONAL SUPPORT LEGS

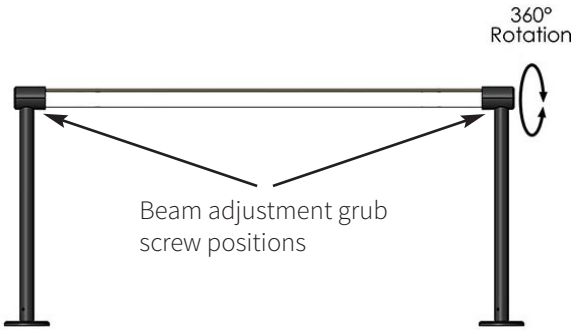
Additional central support legs are required for unsupported spans of longer than 1147mm and recommended for those greater than 900mm (total maximum Gantry length is 3000mm). If required, these will be part of your system's design and will be supplied. They **must** be firmly secured and fitted correctly as per the UFO-supplied design drawings, in order to ensure correct and safe operation of the Apollo, and to fulfil the warranty conditions.

BEAM ANGLE ADJUSTMENT

After installation, the angle of the light beam can be adjusted by loosening the adjustment grub screw at each end (as well as on middle supports if fitted) and rotating the body. Tighten the grub screws once the desired angle has been achieved, but do not overtighten.

IMPORTANT

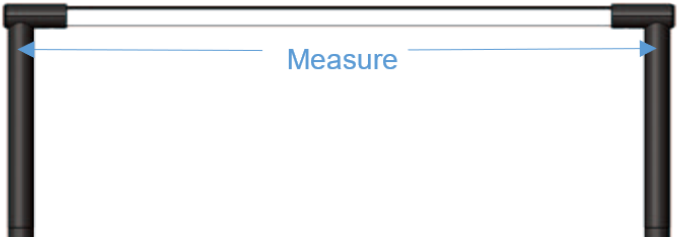
360° rotation is possible, however do NOT rotate the body more than 180° in either direction, as this could damage the electrical connections.



METHOD 2 - BACK NUT FEET INSTALLATION

1. Ensure that each Gantry support leg is fitted correctly to the body in its final position and locked into place using the grub screws before any measurements are taken.

2. Lay the Gantry on a flat surface and measure between the points shown (to half way across each leg). Be sure to measure close to the top to ensure accuracy. If there are more than two legs, repeat the process until all gaps have been measured and noted.



3. Use the measurement(s) to mark the centre point of each of the feet on the surface where the Gantry will be mounted. If there are more than two legs, ensure marks are in a straight line to avoid straining the Apollo's structural components.

4. Drill a 6mm hole through the mounting surface, centred at each of your marks (check below surface first to ensure there is sufficient clearance and to check that the drill bit will not damage anything as it emerges).

5. Pass the threaded section of the foot through the hole in the mounting surface, securing it with the nut below. Repeat for all feet. Tighten nuts, but do not overtighten..

6. Pass the wiring through the foot on one end and fit the Gantry legs to the feet, using 3x M2x2mm grub screws (supplied) to secure each leg to its foot. Be careful not to overtighten grub screws – only just tight is sufficient.

IMPORTANT - ADDITIONAL SUPPORT LEGS

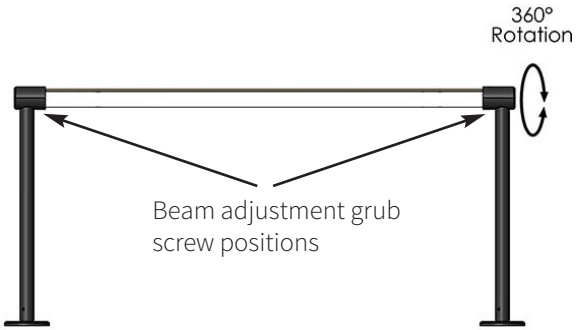
Additional central support legs are required for unsupported spans of longer than 1147mm and recommended for those greater than 900mm (total maximum Gantry length is 3000mm). If required, these will be part of your system's design and will be supplied. They **must** be firmly secured and fitted correctly as per the UFO-supplied design drawings, in order to ensure correct and safe operation of the Apollo, and to fulfil the warranty conditions.

BEAM ANGLE ADJUSTMENT

After installation, the angle of the light beam can be adjusted by loosening the adjustment grub screw at each end (as well as on middle supports if fitted) and rotating the body. Tighten the grub screws once the desired angle has been achieved, but do not overtighten.

IMPORTANT

360° rotation is possible, however do NOT rotate the body more than 180° in either direction, as this could damage the electrical connections.

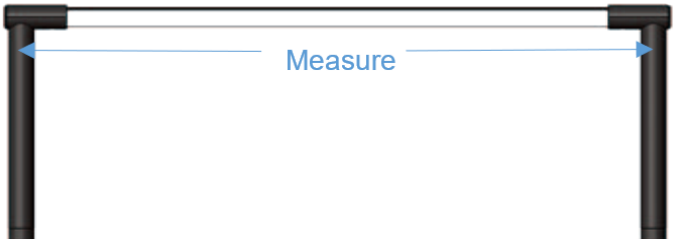


METHOD 3 - PLUG & PLAY GANTRY

Please note – Plug & Play Gantry legs are not removable from the Gantry body, so your gantry will have all its legs fitted in their final positions on arrival.

1. Check that each Gantry support leg is fitted correctly to the body in its final position and locked into place using the grub screws before any measurements are taken.

2. Lay the Gantry down on a flat surface and measure between the points shown below (to half way across each leg). Be sure to measure close to the top to ensure accuracy. If there are more than two legs, repeat the process until all gaps have been measured and noted.



3. Use the measurements to mark the centre point of each of the feet on the surface where the Plug & Play Gantry will be mounted. If there are more than two legs, ensure marks are in a straight line to avoid straining the Apollo's structural components.

4. Drill a 19mm hole through the mounting surface, centred at each mark (check below surface first, to ensure there is sufficient clearance and to check that the drill bit will not damage anything as it emerges).

5. Insert the Plug & Play feet into their holes, ensuring the cable has been passed through the hole first (where applicable).

6. Mark the position of the base's screw holes. Drill pilot holes into the surface, then secure the feet to the mounting surface with suitable screws.

7. Place cover over base and ensure magnets engage.

8. Insert all Plug & Play legs into sockets.

METHOD 1 - MAGNETIC MOUNTING

This method is suitable only for applications where the mounting surface is able to provide a strong attraction for the Wand's magnets.

IMPORTANT - SAFETY INFORMATION

Ensure, when magnetically mounting Linear Wands to the chosen surface, that the surface is flat, clean, clear of obstructions and made of a suitable, magnetically attractive metal. Carefully test the strength of the mounting to ensure it cannot fall off, slide etc., even if bumped or shaken.

Failure to ensure a secure mounting may cause the Linear Wand to fall, which may damage the Wand and adjacent items. UFO will accept no responsibility for such failures, nor damage caused as a result, and this would also invalidate the UFO warranty.

IMPORTANT - ADDITIONAL MAGNETIC SUPPORTS

Additional central magnetic supports are required for those unsupported spans of longer than 1147m and recommended for those longer than 900mm and (total maximum Linear Wand length is 2995mm). If required, these will be part of your system's design and will be supplied. They must be firmly secured and fitted correctly as per the UFO-supplied design drawings, in order to ensure correct and safe operation of the Apollo, and to fulfil the warranty conditions.

To fit additional central supports, remove the non-cable end support, slide the central support(s) on to the Wand and refit the end support. Position the central supports equidistantly, then ensure all mountings are straight & level, and secure using grub screws but do not overtighten.

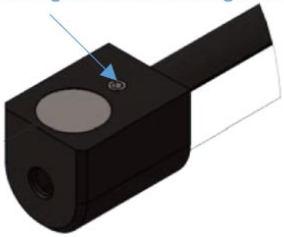
BEAM ANGLE ADJUSTMENT

Loosen the grub screw on all magnetic mountings, adjust the wand to the required angle and tighten both grub screws, but do not overtighten. After adjustment, lie the Linear Wand, magnets down, on a flat surface to ensure all magnetic mountings are aligned at the same angle. Failure to ensure the magnetic mountings are correctly aligned can lead to the Wand magnets not making good contact with the metal surface and could lead to the Wand falling or sliding.

IMPORTANT NOTE – 360° light beam rotation is possible, however do NOT rotate the body more than 180° in either direction, as this could damage the electrical connections.

Finally, magnetically mount the Linear Wand to a suitable metal surface, which is clean and free of obstructions.

Light beam adjustment grub screw on magnetic fittings



METHOD 2 - MOUNTING CLIPS

Mounting clips can be used instead of magnetic mountings in a wide variety of installations. Mounting clips can be screwed to virtually any strong, flat surface, using suitable screws and fixings. The Linear Wand is then clipped into place.

IMPORTANT - SAFETY INFORMATION

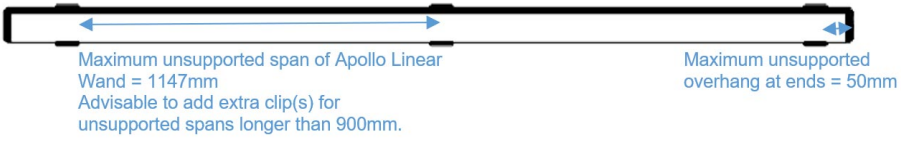
Ensure, when fitting clips to the mounting surface, that the material is sound and strong. Check also that they are screwed in securely using the correct screws/fixings to suit the material into which they are being fixed, and that the Wand is clipped in fully and correctly. Failure to do so may cause the Linear Wand to fall, which could damage the Wand and adjacent items.

If more than two clips are being used, ensure also that they are positioned in a straight line. If they are out of alignment, you may experience difficulties inserting the Linear Wand into the clips, and this may also damage the Wand and/or clips and could cause the Wand to come loose and fall.

Maximum unsupported overhang at the ends is 50mm.

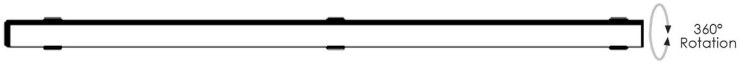
IMPORTANT - ADDITIONAL MOUNTING CLIPS

Additional central mounting clips are required for unsupported spans of longer than 1147mm and recommended for those greater than 900mm (total maximum Linear Wand length is 2995mm). These should be placed equidistantly between the end clips.
If required, these will be part of your system's design and will be supplied. They must be fitted correctly, as per the UFO-supplied design drawings, in order to ensure correct and safe operation of the Apollo, and to fulfil the warranty conditions.



BEAM ANGLE ADJUSTMENT

After installation, the angle of the light beam can be adjusted by simply rotating the Linear Wand, once installation is complete.

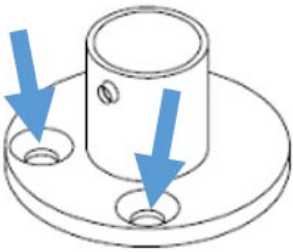


IMPORTANT NOTE – 360° rotation is possible, however do NOT rotate the body more than 180° in either direction, as this could damage the electrical connections.

WARNING: magnetic mounting and surface mounting clips cannot be intermixed or used together on the same Linear Wand

METHOD 3 - FREESTANDING WAND

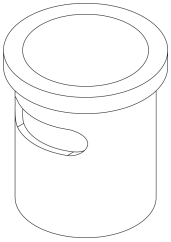
1. Drill a 4mm hole through the mounting surface for cable routing, centred at the Wand's selected position (check below surface first, to ensure there is sufficient clearance and to check that the drill bit will not damage anything as it emerges).



2. Line up the centre of the foot with the centre of your hole and mark the position of the foot's screw holes. Drill pilot holes into the surface, then secure the foot to the surface with suitable screws.

3. Loosen grub screw in foot.

4. Insert the Standing Wand insert into the foot, ensuring that the slot in the insert lines up with the foot's grub screw.



5. Pass the Wand cable through the cable routing hole and insert the Wand into the foot.

6. Rotate Wand to required position then tighten grub screw to secure, but do not overtighten.

UFO will accept no responsibility for failures, nor damage caused as a result of improper or inadequate installation, and this would also invalidate the UFO warranty.

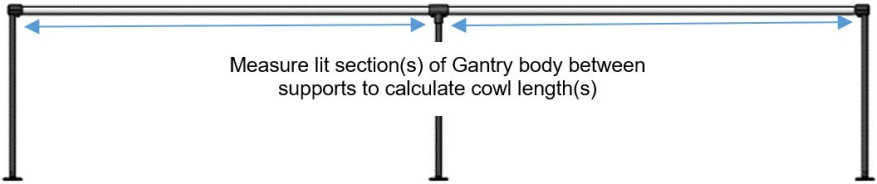
OPTIONAL COWL

The optional cowl can be clipped on to the Gantry, Linear Wand or Standing Wand if required to reduce glare or to focus light spread.

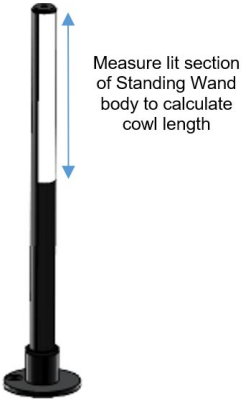
The cowl reduces the beam angle from 100° to 70° and its angle can easily be adjusted.

UFO will normally supply cowls pre-cut to fit your Apollo system, should your requirements be known when ordering/designing your system.

They can also however be supplied later, either pre-cut to your specified length, or as an unfinished (maximum 3000mm) length for you to cut/trim and fit.



Measure Linear Wand body between magnetic supports or clips to calculate cowl length(s)



Some examples of fixed colour temperature Apollo System connection options are shown on the following 5 pages.

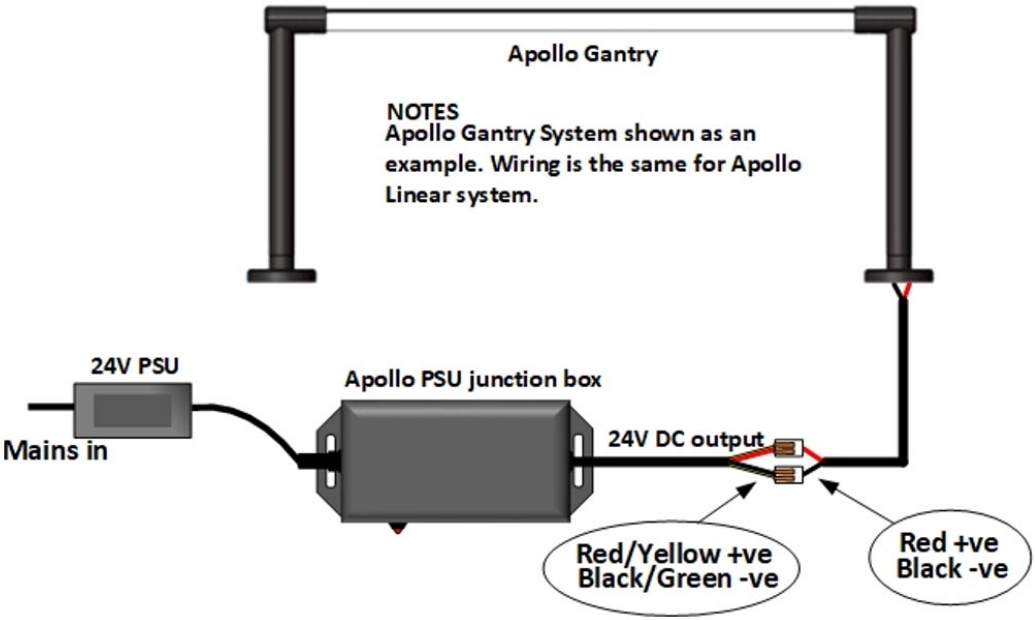
Most 24V constant voltage dimmers/drivers will work with the 24V constant voltage Apollo systems. Schematic connection drawings for specific dimmers/drivers are available from UFO on request.

IMPORTANT

Ensure that the power supply used for each Apollo system has sufficient power for the total length of Apollo – minimum requirement for fixed colour-temperature = 24V DC, 14.4 Watts per metre.

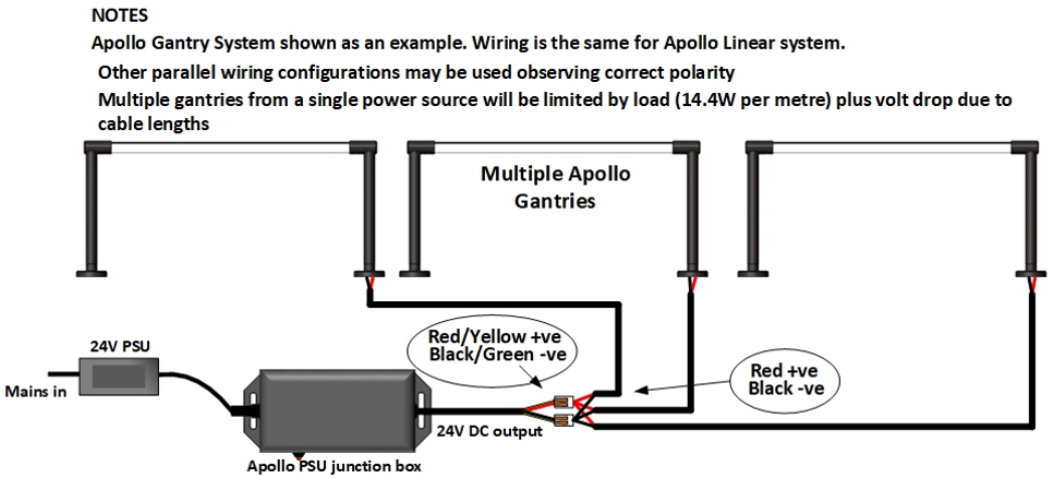
DIRECT CONNECTION – SINGLE APOLLO SYSTEM

No dimming control with direct connection – when the power is connected, the LEDs always operate at 100% power.



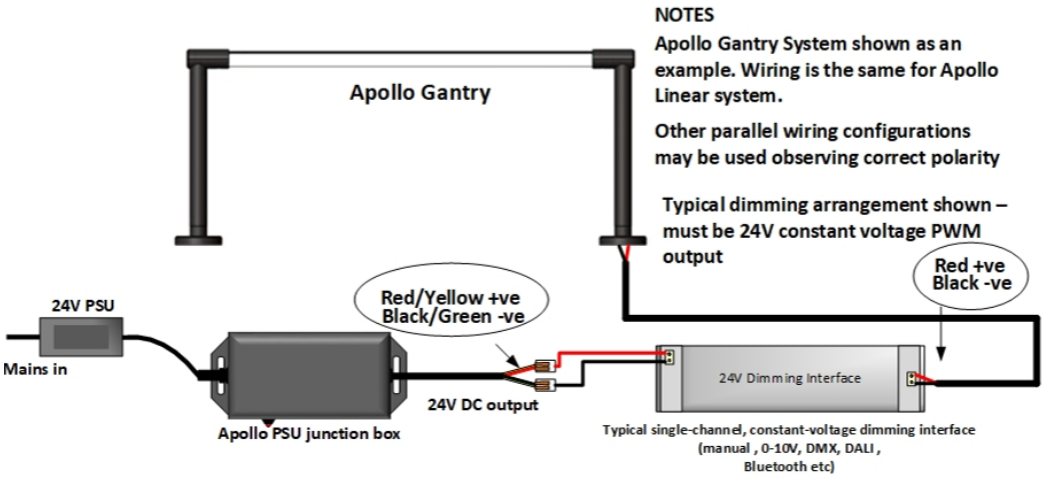
DIRECT CONNECTION – MULTIPLE APOLLO SYSTEMS

No dimming control with direct connection – when the power is connected, all connected LEDs always operate at 100% power.



DIMMER WIRING – SINGLE APOLLO SYSTEM

LEDs can be dimmed between 0-100% brightness.



DIMMER WIRING – MULTIPLE APOLLO SYSTEMS – SINGLE-CHANNEL

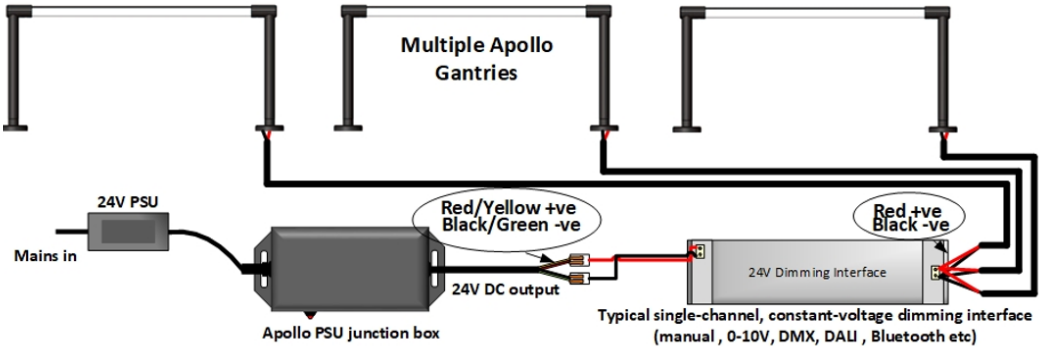
Single channel dimmer – all connected Apollo systems dim/brighten together.

NOTES

Apollo Gantry System shown as an example. Wiring is the same for Apollo Linear system.

Other parallel wiring configurations may be used observing correct polarity

Multiple gantries from a single power source will be limited by load (14.4W per metre) plus volt drop due to cable lengths



DIMMER WIRING – MULTIPLE APOLLO SYSTEMS – MULTI-CHANNEL

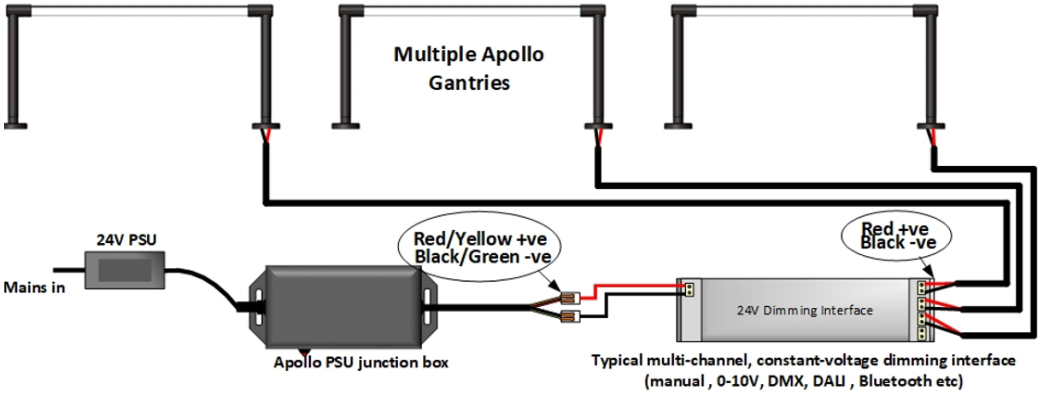
Multi-channel dimmer – Apollo systems can be dimmed or brightened independently.

NOTES

Apollo Gantry System shown as an example. Wiring is the same for Apollo Linear system.

Other parallel wiring configurations may be used observing correct polarity

Multiple gantries from a single power source will be limited by load (14.4W per metre) plus volt drop due to cable lengths



Some examples of tuneable colour temperature Apollo System connection options are shown on the following 3 pages.

Most 24V constant voltage dimmers/drivers will work with the 24V constant voltage Apollo systems. Schematic connection drawings for specific dimmers/drivers are available from UFO on request.

IMPORTANT

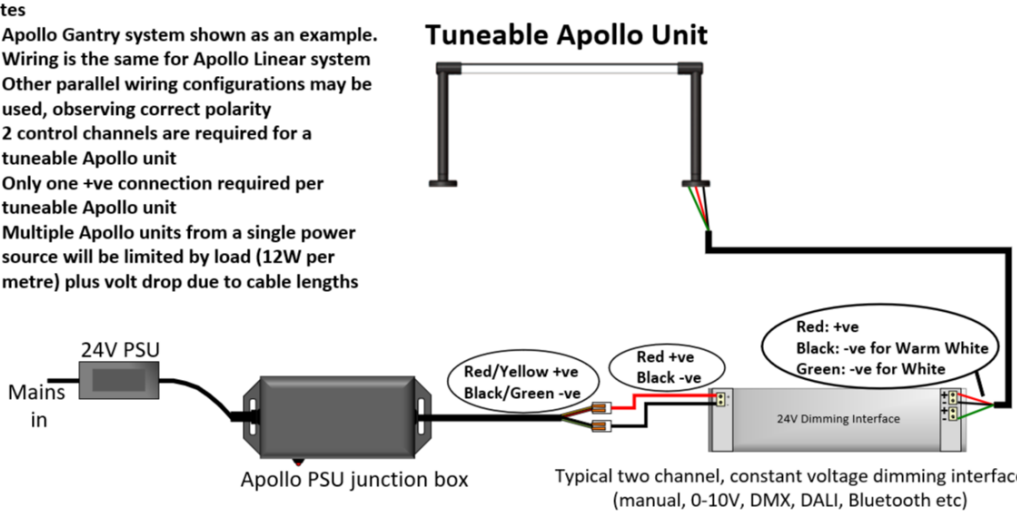
Ensure that the power supply used for each Apollo system has sufficient power for the total length of Apollo – minimum requirement for fixed colour-temperature = 24V DC, 14.4 Watts per metre.

DIMMER WIRING – SINGLE TUNEABLE CT APOLLO SYSTEM

Two-channel dimmer required – Apollo system can be dimmed, brightened or colour temperature adjusted

Notes

- **Apollo Gantry system shown as an example. Wiring is the same for Apollo Linear system**
- **Other parallel wiring configurations may be used, observing correct polarity**
- **2 control channels are required for a tuneable Apollo unit**
- **Only one +ve connection required per tuneable Apollo unit**
- **Multiple Apollo units from a single power source will be limited by load (12W per metre) plus volt drop due to cable lengths**

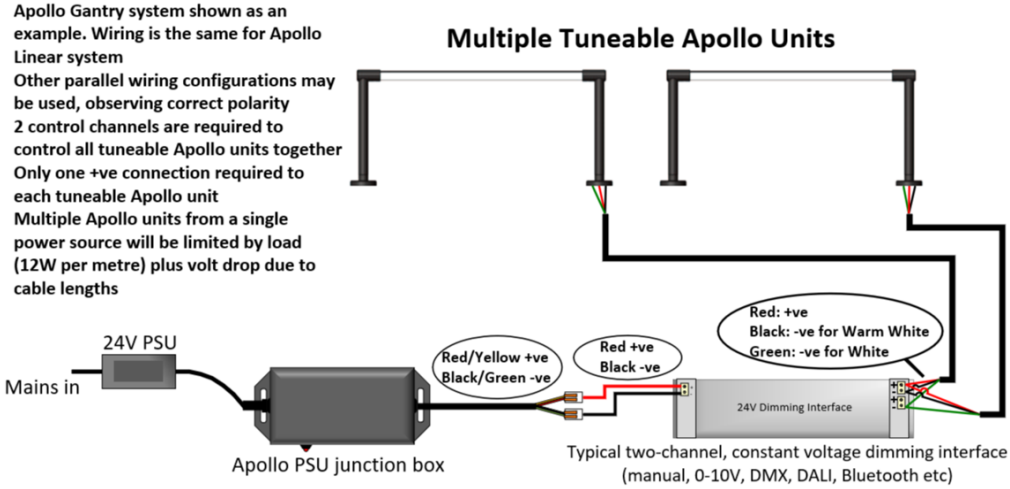


DIMMER – MULTIPLE TUNEABLE CT APOLLO SYSTEMS – CONTROLLED TOGETHER

Two channel dimmer required – all connected Apollo systems will be colour-temperature

Notes

- **Apollo Gantry system shown as an example. Wiring is the same for Apollo Linear system**
- **Other parallel wiring configurations may be used, observing correct polarity**
- **2 control channels are required to control all tuneable Apollo units together**
- **Only one +ve connection required to each tuneable Apollo unit**
- **Multiple Apollo units from a single power source will be limited by load (12W per metre) plus volt drop due to cable lengths**

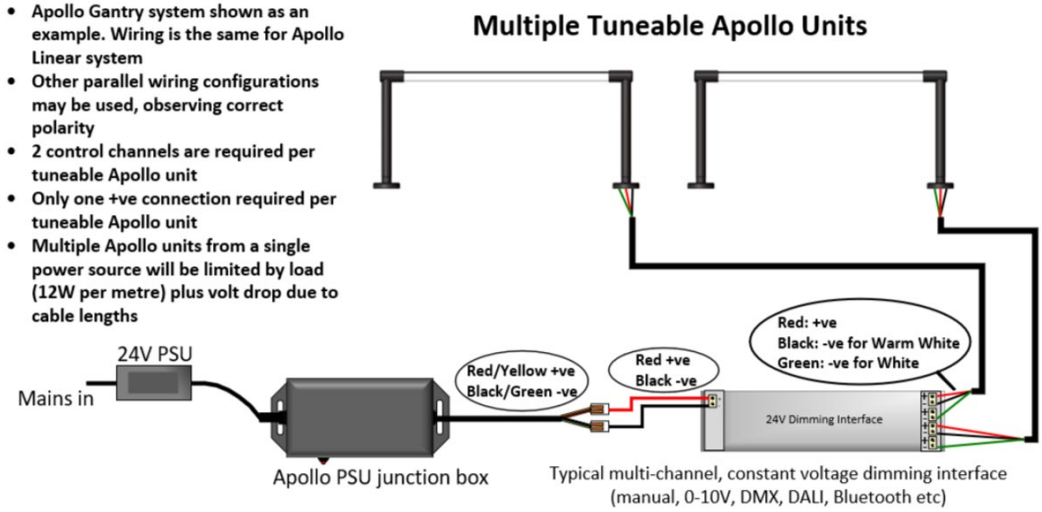


DIMMER – MULTIPLE TUNEABLE CT APOLLO SYSTEMS – CONTROLLED INDEPENDENTLY

Multi-channel dimmer required (2 channels per Apollo unit) – Apollo systems can be

Notes

- **Apollo Gantry system shown as an example. Wiring is the same for Apollo Linear system**
- **Other parallel wiring configurations may be used, observing correct polarity**
- **2 control channels are required per tuneable Apollo unit**
- **Only one +ve connection required per tuneable Apollo unit**
- **Multiple Apollo units from a single power source will be limited by load (12W per metre) plus volt drop due to cable lengths**



MAINTENANCE LOG

Please note that a record of all maintenance MUST be kept in the table below, indicating what maintenance was undertaken and when.

Date	Maintenance Undertaken

Problem	Probable Causes	Remedy
[GENERAL] System is dead- power LED on Apollo PSU junction box not lit – no light output from Apollo	Mains supply off or fuse blown	Check supply & reinstate
	Loose/faulty mains connection	Check and repair
	Loose PSU output wire or connection	Check all connections
	PSU failed – check output with DVM	Replace PSU
[GENERAL] Power LED on Apollo PSU junction box lit, but no light or output from Apollo	Loose or broken wire to Apollo LEDs	Check all connections are secure and making good contact Check junction box output and all connections with DVM
	Output polarity reversed	
[GENERAL] Power LED on Apollo PSU junction box lit, either no light or dim light output from Apollo	PSU output inadequate for load (14.4W/M for fixed CT; 12W/M for tuneable CT, plus voltage drop over cables)	Check PSU output and tape length – upgrade PSU
[DIMMING MODE] No dimming, Apollo LED output always at 100%	Dimmer faulty, wrongly set up, wrongly connected etc	Check / replace dimmer Check dimmer instructions - ensure set up correctly
	Wrong type of dimmer used – ensure 24V constant voltage dimmer used.	
[DIMMING MODE] No output from Apollo when dimmer used (Apollo PSU junction box lit). Also flickering, flashing. Also lighting but not dimming	Dimmer faulty, wrongly set up, wrongly connected etc	Check all wiring. Bypass installation wiring using known good cables to test if wiring is at fault. Check dimmer instructions - ensure set up correctly Check / replace dimmer
	Wrong type of dimmer used – ensure 24V constant voltage dimmer used.	Try bypassing dimmer – connect junction box directly to Apollo to check function
	Wiring issues – incorrect wiring accounts for around 90+% of in-	

DESIGN

SPECIFY

BUILD

INSTALL

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