VDO Atomic Dot

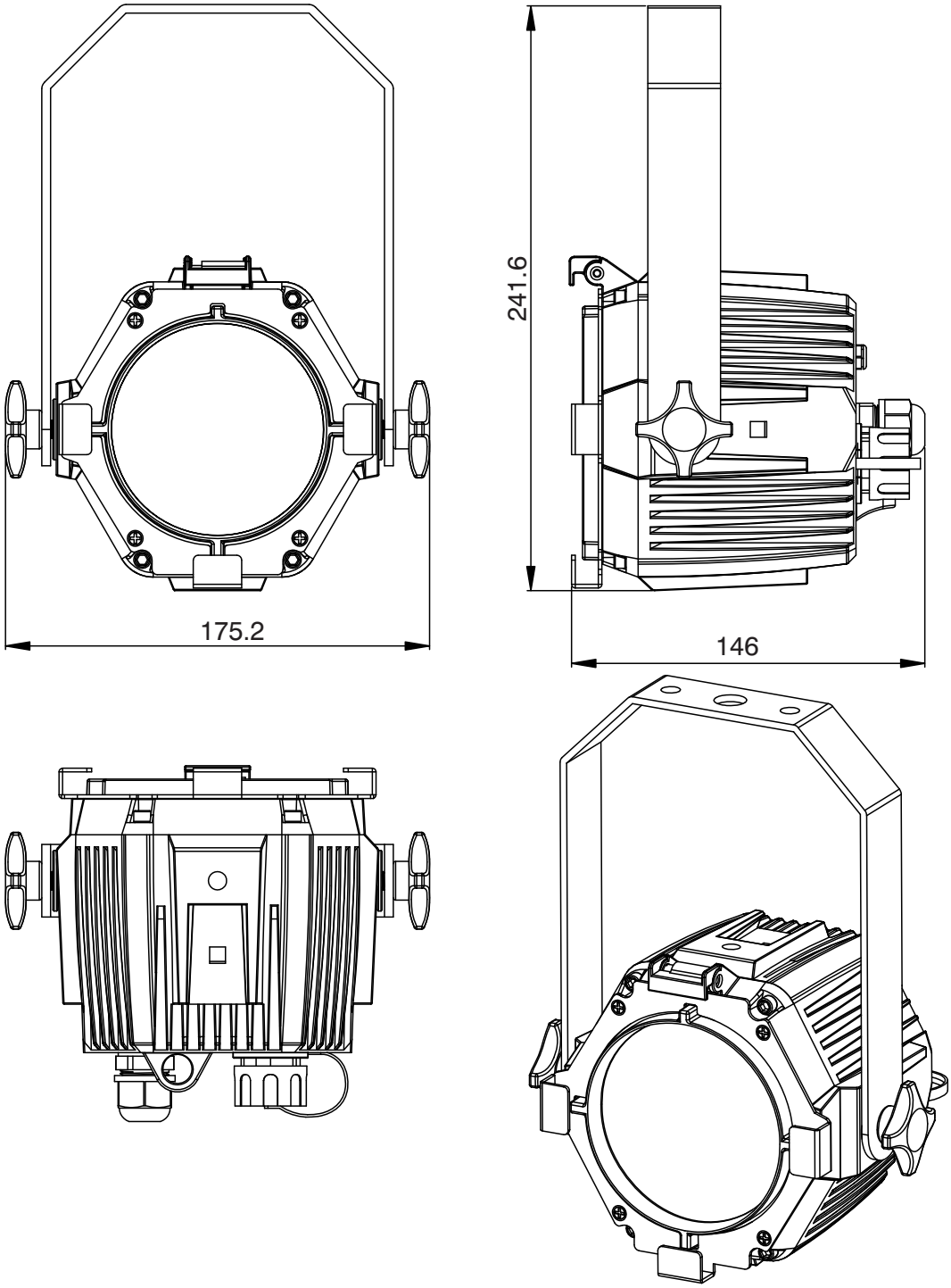
User Guide

Martin by HARMAN

Table of contents

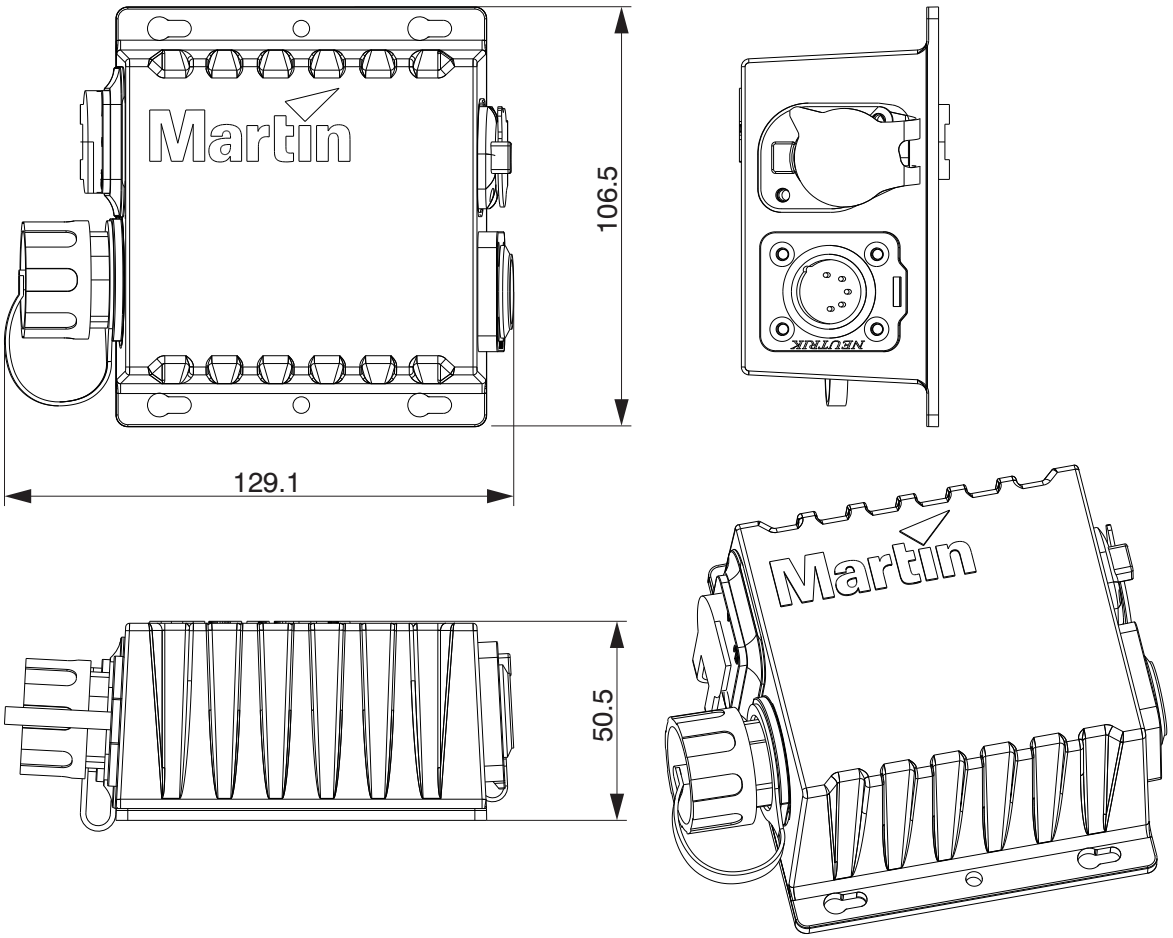
Dimensions

Fixture dimensions



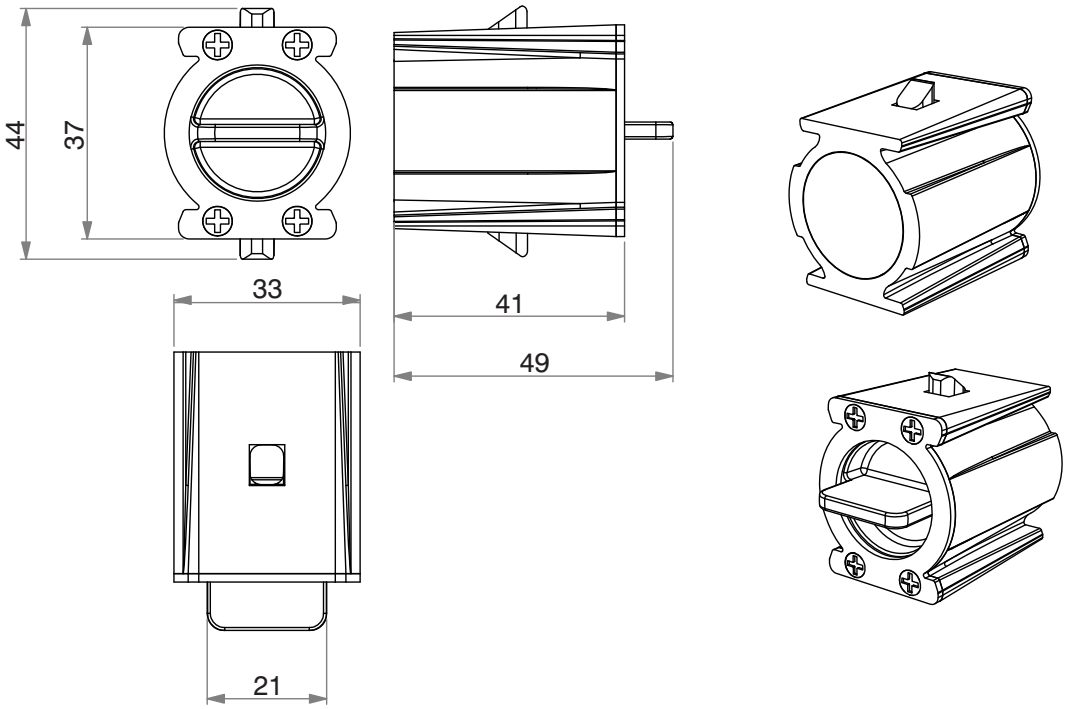
All dimensions are given in millimeters.

Junction Box dimensions

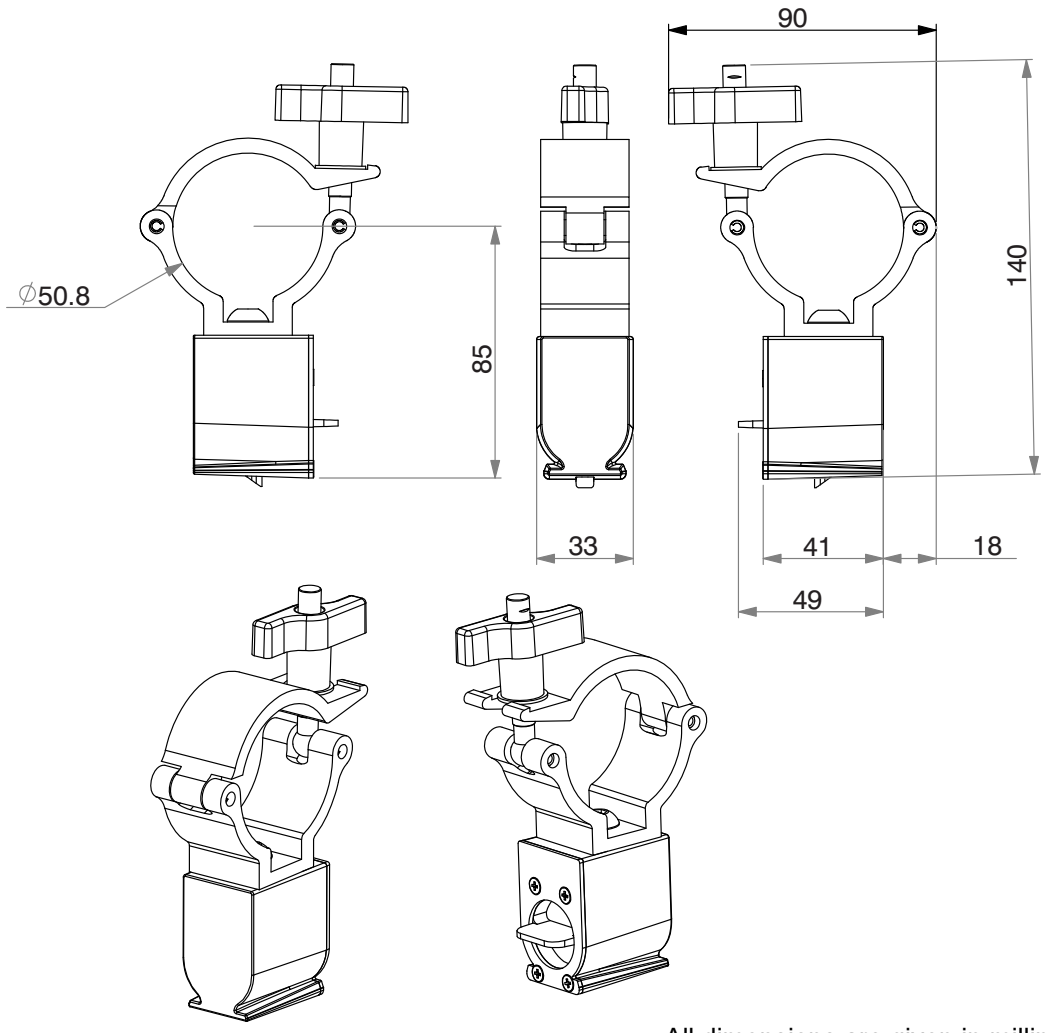


All dimensions are given in millimeters.

Coupler (for interlocking two fixtures)

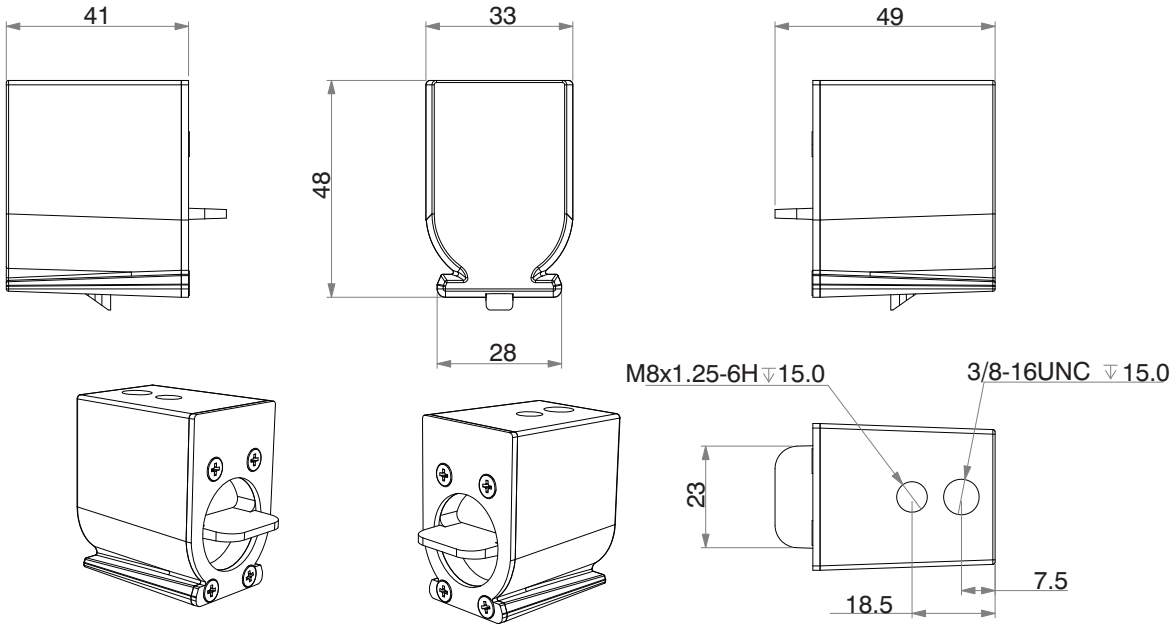


Half Coupler (for attaching to truss)

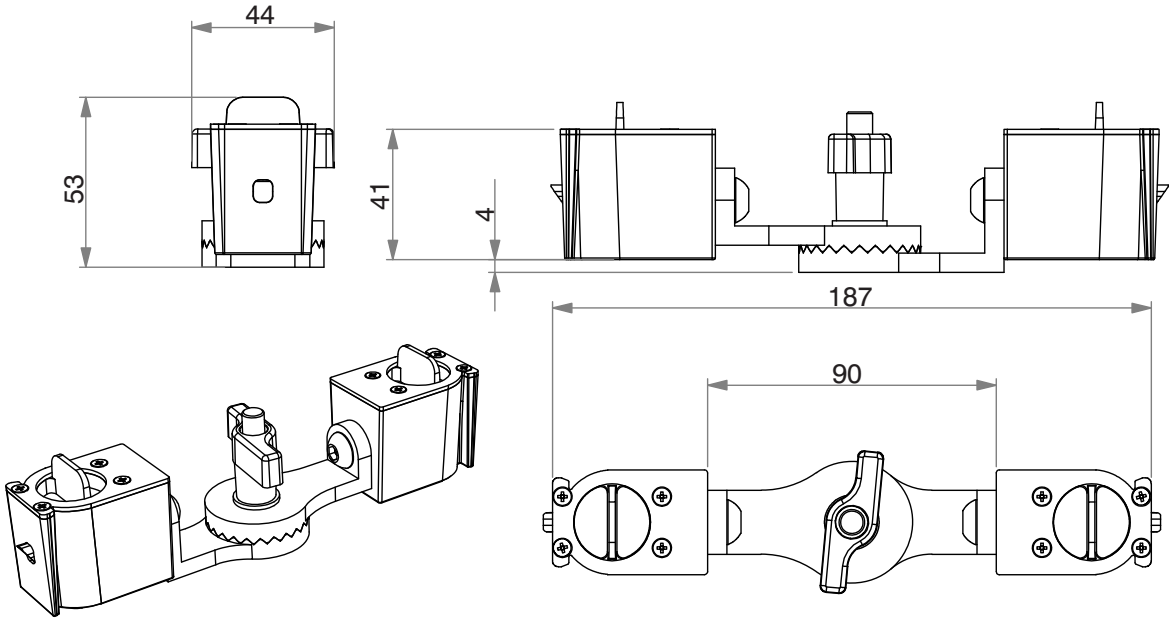


All dimensions are given in millimeters.

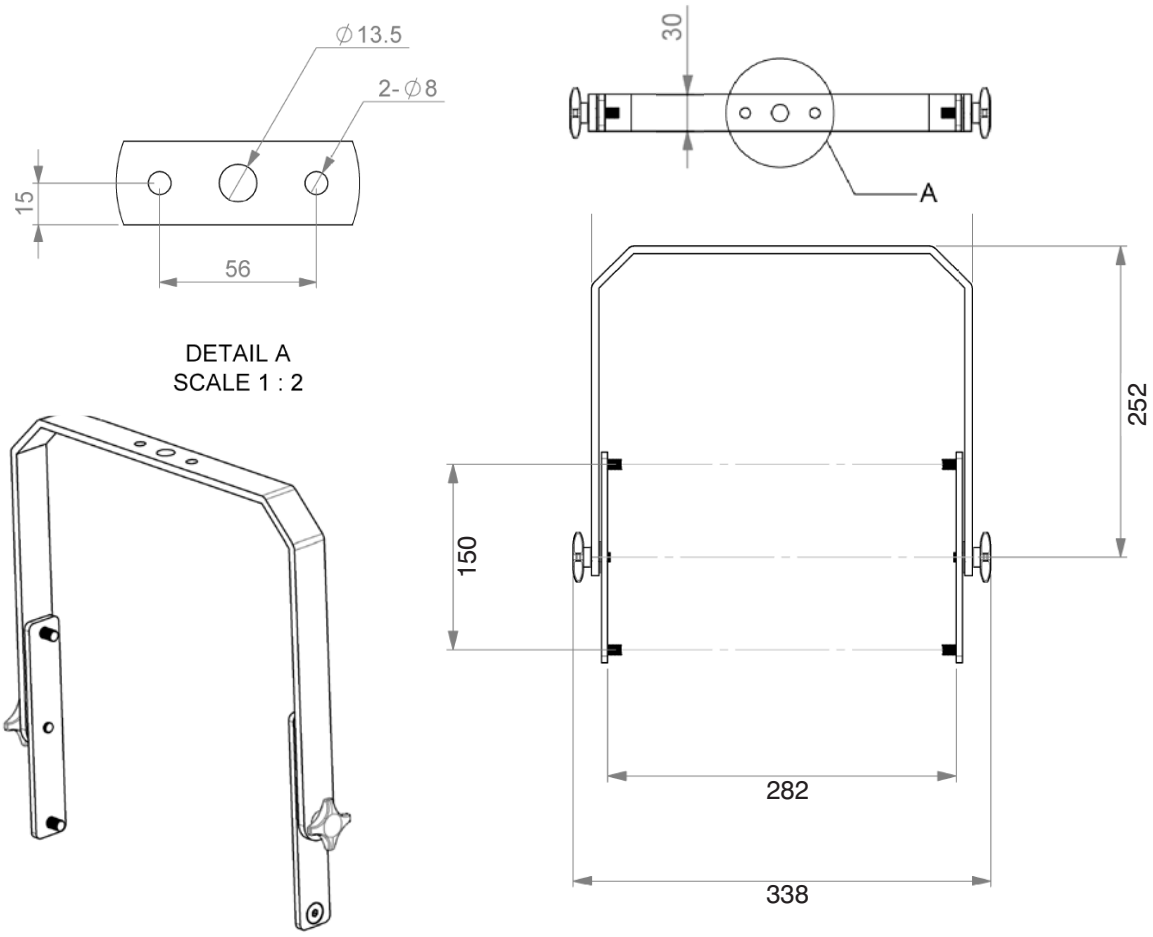
Interlock Adapter (for attaching to microphone stand)



Pivot coupler (for interlocking two fixtures at an angle)

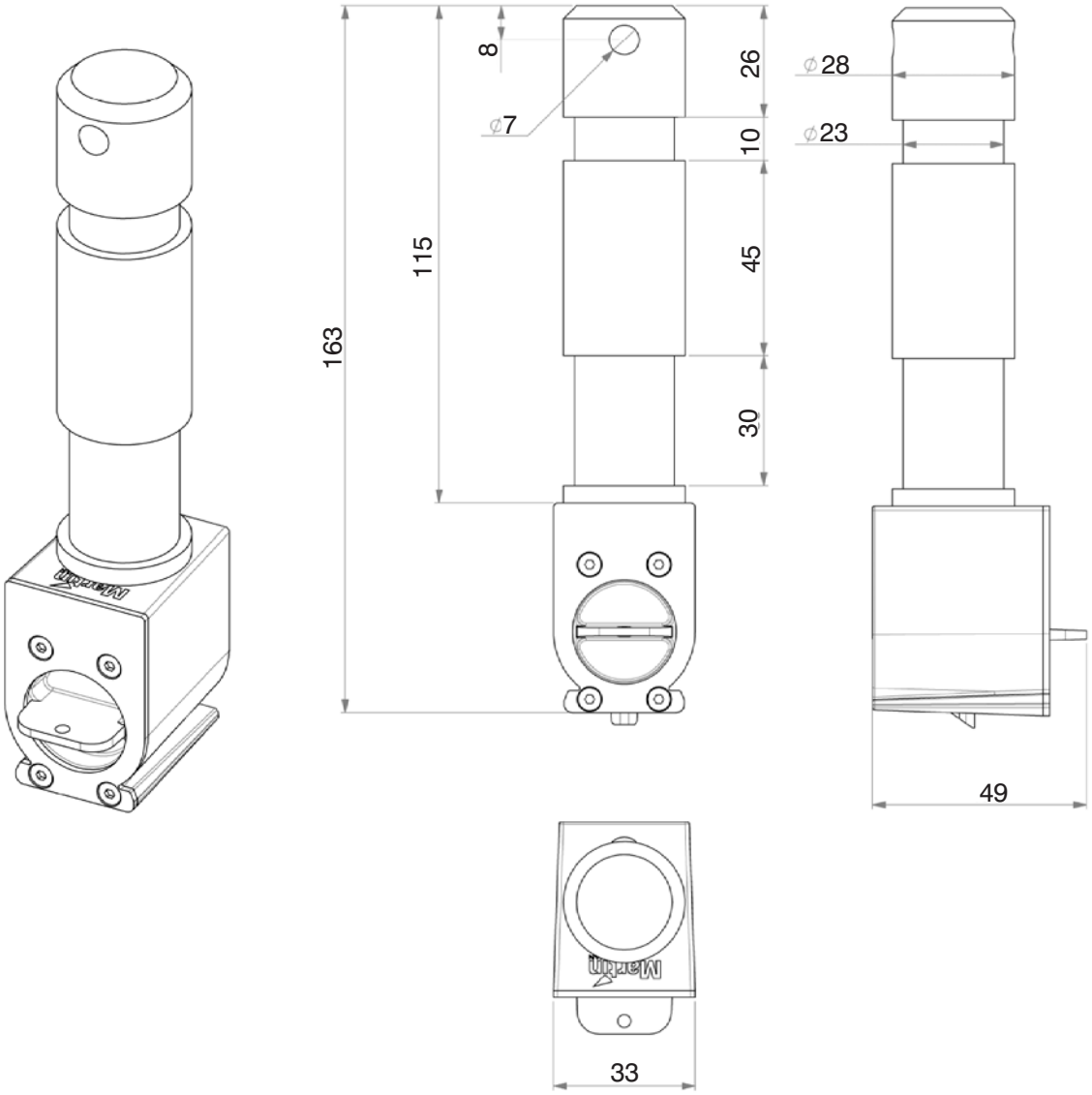


Double Width Bracket (for creating 2-lite and 4-lite fixtures)



All dimensions are given in millimeters.

Spigot Adapter (for mounting on standard spigot accessories)



All dimensions are given in millimeters.

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Safety information

WARNING!

Read the safety precautions in this manual before installing, operating or servicing this product.

The following symbols are used to identify important safety information on the product and in this manual:

Warning!

Safety hazard. Risk of severe injury or death.

Warning!

Powerful light emission. Risk of eye injury.

Warning!

See user manual for important safety information.

Warning!

Hazardous voltage. Risk of lethal or severe electric shock.

Warning!

Fire hazard.

Warning!

Hot surfaces.

VDO Atomic Dot CLD only: Warning! Risk Group 2 product according to EN 62471 and IEC/TR 62778. Possibly hazardous radiation emitted from this product. May be harmful to the eyes. Do not stare at operating lamp and do not view the light output with optical instruments or any device that may concentrate the beam.

This lighting fixture is for professional use only and must be installed by a qualified technician. It is not for household use. It presents risks of severe injury or death due to fire hazards, electric shock and falls. It can create a fire hazard or a risk of eye injury if the safety precautions below are not followed.

Install, operate and service Martin® products only as directed in their user manuals, or you may create a safety hazard or cause damage that is not covered by product warranties. Follow the safety precautions listed below and observe all warnings in this manual and printed on the product. Keep this user manual for future use.

For the latest user documentation and other information about this and all Martin® products, please visit the Martin® website at http://www.martin.com

If you have any questions about how to install, operate or service the fixture safely, please contact your Martin® distributor (see www.martin.com/distributors for details) or in the USA on 1-844-776-4899.

Respect all locally applicable laws, codes and regulations when installing, operating or servicing the fixture.

Protection from electric shock

Ensure that the fixture is electrically connected to ground (earth).

Disconnect the fixture from AC power when not in use.

Do not open the fixture or remove any cover. Refer any service operation not described in this manual to an authorized Martin Service partner.

Shut down power to the entire installation at the main power distribution board and lock out power before carrying out any installation or maintenance work.

Use only a source of AC power that complies with local building and electrical codes and has both overload and ground-fault (earth-fault) protection.

Isolate the fixture from power immediately if any seal, cover, cable, or other component is damaged, defective, deformed or showing signs of overheating. Do not reapply power until repairs have been completed

Before using the fixture, check that all power distribution equipment and cables are in perfect condition and are of suitable type for the location (including water, pollution, temperature and UV resistance).

Do not immerse the fixture in water or any other fluid, or install it in a location where flooding may occur.

The light source contained in this luminaire shall only be replaced by the manufacturer or their service agent or a similar qualified person.

When connecting multiple fixtures in a daisy chain, observe the safety limits in section “Safety limits for connecting devices” on page 22.

Protection from burns and fire

Do not operate the fixture if the ambient temperature (Ta) exceeds 40° C (104° F).

The surface of the fixture can reach up to 55° C (131° F) if the fixture is operated at the maximum permitted ambient temperature. Allow the fixture to cool for at least 5 minutes before handling.

Install the fixture on a non-combustible surface (brick, concrete, plaster etc.) only.

Do not aim the fixture towards combustible materials (fabric, wood, paper etc.) that are within 50 cm (19 in.) of the fixture.

Keep the fixture well away from flammable materials (volatile liquids etc.).

Ensure that there is free and unobstructed airflow around the fixture.

Allow at least 0.1 m (4 in.) free space around the fixture.

Do not attempt to bypass thermostatic switches or fuses.

Do not modify the fixture in any way not described in this manual or install other than genuine Martin® parts. Do not stick filters, masks or other materials onto any lens or other optical component. Use only accessories approved by Martin® to modify the light beam.

Protection from eye injury

VDO Atomic Dot CLD only: Warning! Risk Group 2 product according to EN 62471 and IEC/TR 62778.

Do not look directly into the product’s light output.

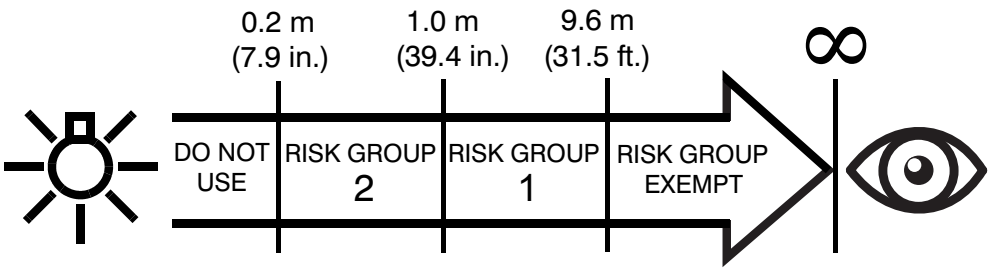
Do not look at operating lamp. Eye injury may result.

Do not look at the light output with magnifiers, telescopes, binoculars or similar optical instruments that may concentrate the light output.

Ensure that persons are not looking directly into the front of the fixture when the product lights up suddenly. This can happen when power is applied, when the product receives a DMX signal, or when certain control menu items are selected.

To minimize the risk of eye irritation or injury, disconnect the fixture from power at all times when the fixture is not in use and provide well-lit conditions to reduce the pupil diameter of anyone working on or near the fixture.

The VDO Atomic Dot CLD fixture fixtures fall into the following risk groups according to EN 62471 and IEC/TR 62778 at the distances indicated below.



The luminaire should be positioned so that prolonged staring into the luminaire at a distance closer than 1 m is not expected.

Protection from injury

Fasten the fixture securely to a fixed surface or structure when in use. The fixture is not portable when installed.

Ensure that all supporting structures, surfaces, fasteners and lifting equipment can bear the weight of all the devices they are intended to support plus an adequate safety margin, and that they conform to local building and safety regulations.

Ensure that any accessory such as gel frames, gobo holders are securely fastened.

Block access below the work area and work from a stable platform whenever installing, setting, adjusting, or cleaning the fixture.

Do not operate the fixture with missing or damaged covers, shields or any optical component.

If an operating problem occurs, stop using the fixture immediately and disconnect it from power. Do not attempt to use a fixture that is obviously damaged.

Introduction

Thank you for selecting the Martin VDO Atomic Dot product. This versatile product can be used for a wide variety of effects:

- Compact strobe fixture
- Compact blinder fixture
- Compact beam fixture
- Compact video pixel with 16 LEDs of individual control

The VDO Atomic Dot is available in two variants:

- A WRM variant featuring a primary white LED with a color temperature of 2700K
- A CLD variant featuring a primary white LED with a color temperature of 5700K

Both variants also contain 16 individually controllable RGB LEDs for additional Aura effects behind the front-lens.

As the fixture is fully IP65-rated, it is suitable for both indoor and outdoor applications.

Multiple VDO Atomic Dots can be combined together into battens and arrays to create large visual effects, by using the integrated interconnecting mechanics.

The VDO Atomic Dot is compatible with a large variety of lighting and video control protocols, allowing the fixture to be controlled in the most suitable way:

- DMX/RDM
- Art-Net
- sACN
- P3

Power and data is supplied to the fixture via a hybrid cable with hybrid connector that carries power, DMX and Ethernet. This allows many fixtures to be daisy-chained very easily, without requiring multiple cables between them.

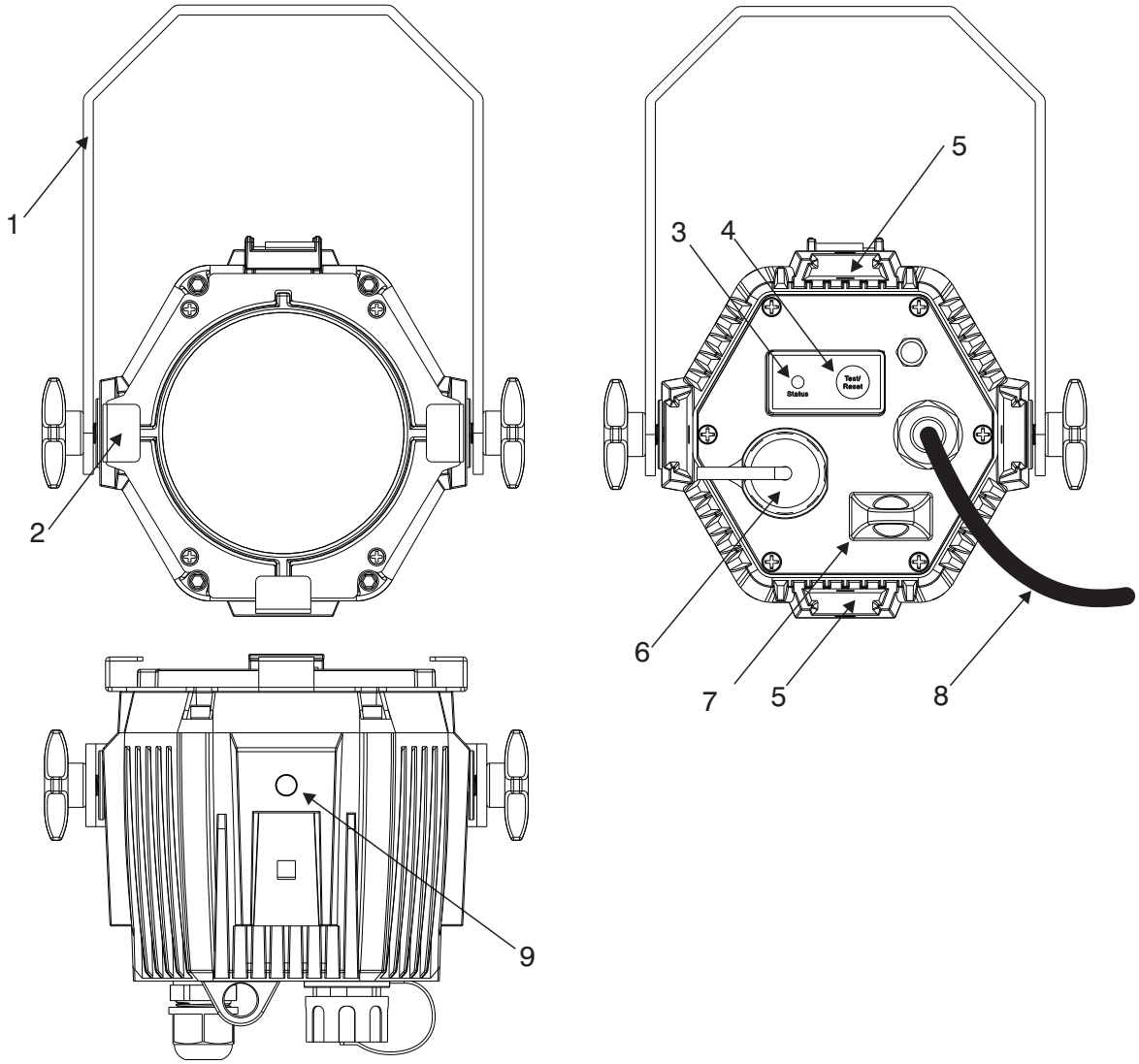
The start of a daisy-chain is made at a Junction Box that takes standard Power, DMX and Ethernet inputs and merges them into the PDE hybrid connector.

The front of the VDO Atomic Dot features an industry-standard PAR30-sized holder, allowing installation of standard accessories such as diffusers, color filters and barndoors.

Before using the product for the first time

1. Read ‘Safety information’ on page 9 before installing, operating or servicing the fixture.
2. Unpack and ensure that there is no transportation damage before using the fixture. Do not attempt to operate a damaged fixture.
3. Before operating, ensure that the voltage and frequency of the power supply match the power requirements of the fixture.
4. Obtain a power cable fitted with Neutrik powerCON TRUE1 connector. Cables are available from Martin (see Accessories list on page 46).
5. Check the support pages on the Martin® website at www.martin.com for the most recent user documentation and technical information about the fixture. Martin® user manual revisions are identified by the revision letter at the bottom of the inside cover.

Fixture overview



1 – Hanging bracket (can be taken off)

2 – PAR30 sized holder

3 – Status LED

4 – Test / Reset button

5 – Interlock slots for interlock accessories (4 slots, one on each side of fixture)

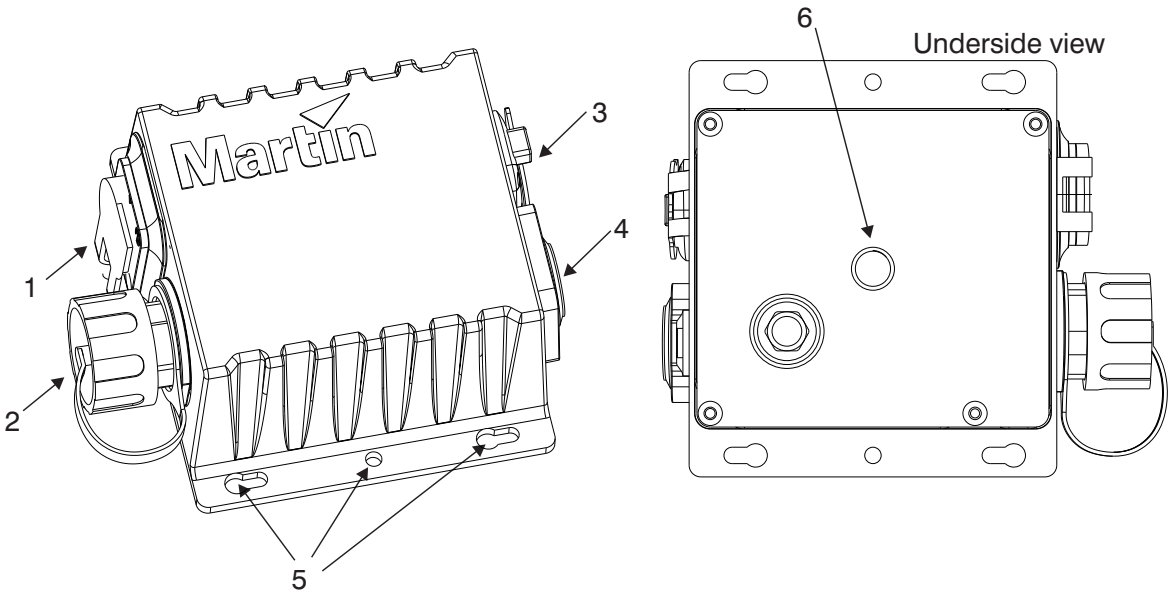
6 – Thru connector (chassis mount, with sealing cap)

7 – Safety cable attachment point

8 – Input cable with connector

9 – M8 holes for hanging bracket attachment, maximum bolt length 15 mm (4 holes, one on each side of fixture). May also be used for mounting fixture if standard interlock accessories are not suitable.

Junction box overview



1 – Neutrik PowerCON TRUE1 input

2 – Hybrid PDE output connector

3 – Neutrik etherCON input

4 – Neutrik XLR5 DMX input

5 – Holes for mounting to wall / surface

6 – M10 hole for adding clamp (on underside of box)

Physical installation

Warning! Read ‘Safety information’ on page 9 before installing the fixture.

Warning! The safety and suitability of lifting equipment, installation location, anchoring method, mounting hardware and electrical installation are the responsibility of the installer. All local safety regulations and legal requirements must be observed when installing and connecting the VDO Atomic Dot fixture and Junction Box. Installation must be carried out by qualified professionals only.

Contact your Martin supplier for assistance if you have any questions about how to install this product safely.

Fixture location

The VDO Atomic Dot fixture and Junction Box is fully IP65 rated and may be used indoors or in a temporary outdoor location.

Observe the following limitations in selecting a location:

- Respect the limitations listed under Safety information’ on page 9.
- Do not locate the fixture in an unventilated space.

Ways of mounting the fixture

Warning! All fasteners used to mount VDO Atomic Dot fixtures or arrays of fixtures must be strong enough to hold the fixtures safely. Install a washer directly under the head of each fastener when anchoring the mounting bracket to the installation surface.

The fixture has a number of mounting options:

- Via the hanging bracket to a truss or surface
- A VDO Atomic Dot Half Coupler may be attached directly to one of the interlock slots on the fixture (without the hanging bracket)
- Multiple fixtures may be interlocked together using the slide-in Interlock Coupler. A maximum of 16 fixtures may be interlocked in a column. When interlocking fixtures horizontally, a rigging clamp must be used every 3rd fixture to support the array (so a maximum of 2 unsupported fixtures between each supported one)
- A Pivot Interlock Coupler is available which couples fixtures at any multiple of 15 degrees. This allows circles or other shapes of fixtures to be created.
- An Interlock Adaptor is available which attaches to one of the interlock slots enabling you to mount a single VDO Atomic Dot on a microphone stand with standard 5/8 in. thread.
- A Double Width Bracket is available to join 2 fixtures in a 2-lite or 4 fixtures in a 4-lite, which can then be attached to a truss or surface.
- A Spigot Adapter is available to attach a fixture to standard spigot-compatible accessories such as floorplates and stands.
- Safety bonds must be fitted to each fixture, even when fixtures are interlocked, using the safety bond attachment point on the rear.

Warning! The VDO Atomic Dot Half Coupler, Pivot Interlock Coupler, Interlock Adapter and Spigot Adapter are not suitable for permanent outdoor usage. Long term exposure to humidity and pollution can affect the correct and safe functioning of these mechanisms.

Mounting the fixture on a truss using the hanging bracket

The fixture or array of fixtures can be clamped to a truss or similar rigging structure using the hanging bracket which allows adjustment of the fixture angle. Use a suitable rigging clamps such as a G-clamp or a half-coupler clamp fastened to the hanging bracket.

To clamp the fixture or array to a truss:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Block access under the work area.
3. Bolt a rigging clamp securely to the hanging bracket. The bolts used must be M12, grade 8.8 steel minimum, and fastened with a self-locking nut.
4. Working from a stable platform, mount the fixture on the truss and fasten the rigging clamp onto the truss.
5. Attach a safety bond to the fixture and loop around a fixed point.

Mounting 2 or 4 fixtures on a truss using the double width hanging bracket

Two or four fixtures can be joined together using the double width bracket to create a 2-lite or 4-lite fixture. The double width bracket allows adjustment of the fixture angle when clamped to a truss or similar rigging structure. Use a suitable rigging clamp such as a G-clamp or a half-coupler fastened to the hanging bracket.

To create a 2-lite:

1. Put aside the 2 interlinking plates and 4 bolts supplied with the double width bracket. These are not used when creating a 2-lite.
2. Attach two VDO Atomic Dot fixtures side-by-side using a VDO Atomic Dot Coupler (P/N 91610003).
3. Attach the double-width bracket to the joined fixtures using the supplied knobs.
4. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
5. Block access under the work area.
6. Bolt a rigging clamp securely to the double width hanging bracket. The bolts used must be M12, grade 8.8 steel minimum, and fastened with a self-locking nut.
7. Working from a stable platform, mount the fixture-assembly on the truss and fasten the rigging clamp onto the truss.
8. Attach a safety bond to both fixtures and loop around a fixed point.

To create a 4-lite:

1. Attach four VDO Atomic Dot fixtures in a 2 by 2 array using 4x VDO Atomic Dot Couplers (P/N 91610003).
2. Attach the 2 interlinking plates supplied with the double width bracket assembly to the left side and right side of the array, using the supplied M8 bolts, fitted into the M8 holes in the sides of the fixtures.

3. Attach the double-width bracket to the center holes of the interlinking plates, using the supplied knobs.
4. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
5. Block access under the work area.
6. Bolt a rigging clamp securely to the double width hanging bracket. The bolts used must be M12, grade 8.8 steel minimum, and fastened with a self-locking nut.
7. Working from a stable platform, mount the fixture-assembly on the truss and fasten the rigging clamp onto the truss.
8. Attach a safety bond to all four fixtures and loop around a fixed point.

Mounting the fixture on a truss using direct clamp

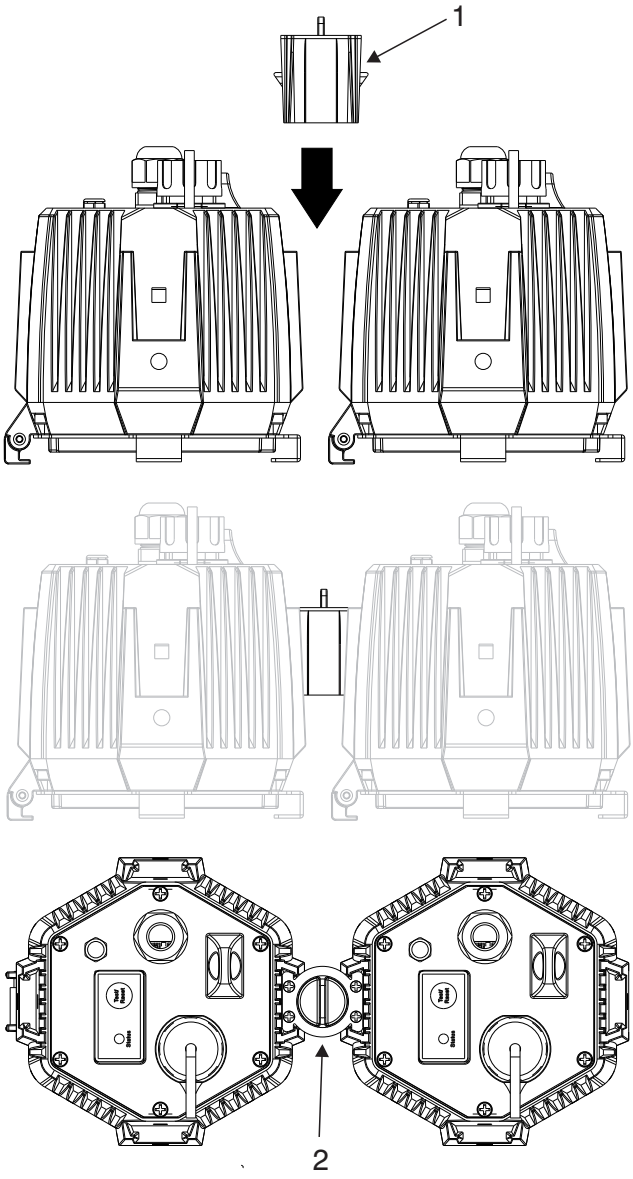
The VDO Atomic Dot Half Coupler may be directly mounted to the fixture or array of fixtures using one of the interlock slots on any side.

To rig using a directly attached clamp:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Block access under the work area.
3. Slide VDO Atomic Dot Half Couplers into the fixture interlock slot on one or more fixtures as required.
4. Working from a stable platform, lift the fixture(s) to the truss and fasten the half coupler clamp onto the truss.
5. Attach a safety bond to the fixture and loop around a fixed point. Each fixture must have an individual safety bond even when interlocked into an array.

Interlocking multiple fixtures

Multiple fixtures may be interlocked on any side using the slide-in interlock coupler to form arrays of any shape.

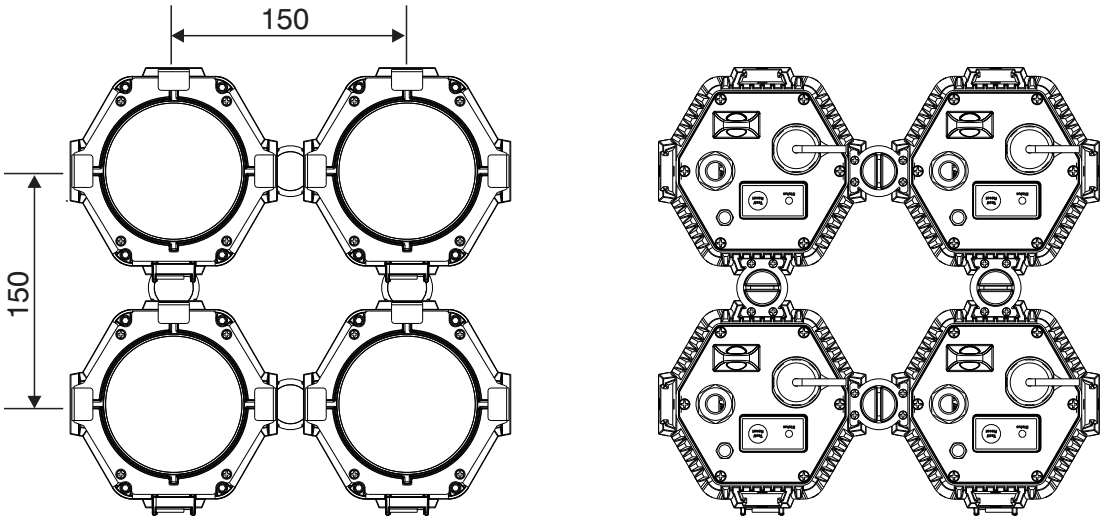


To install the Interlock Coupler, locate two fixtures side by side and slide in the coupler (1) from the rear. The coupler has two retention clips which lock into each fixture. Ensure the release key (2) is oriented as shown so that the clips are secured in place.

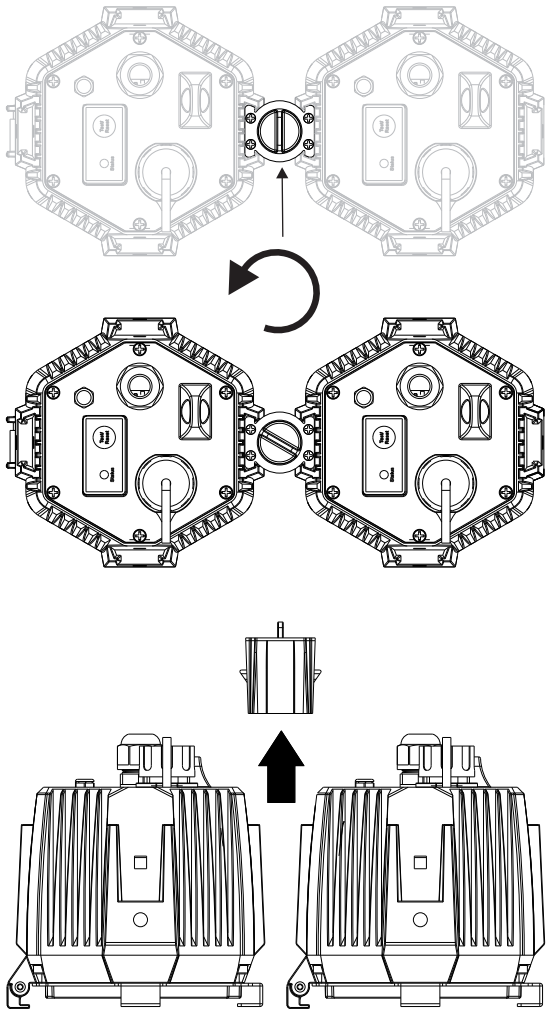
Note:

- A maximum of 16 fixtures may be interlocked in a column.
- When interlocking fixtures horizontally, a rigging clamp must be used every 3rd fixture to support the array (so a maximum of 2 unsupported fixtures between each supported one)

When fixtures are interlocked, the spacing is 150mm.



To remove the coupler, twist the release key to retract the clips. The coupler can then be slid out towards the rear of the fixtures.

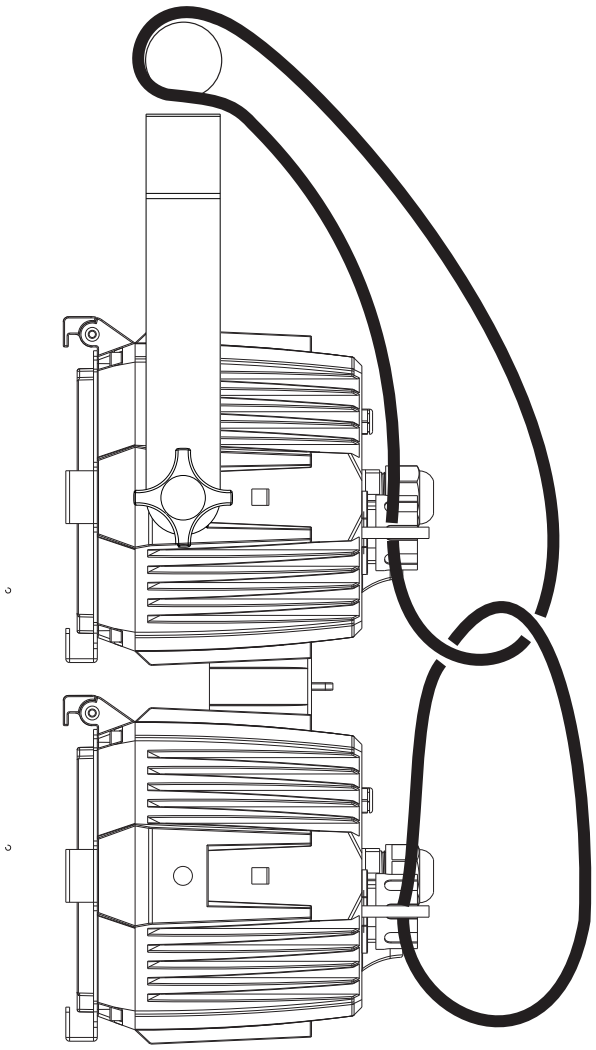


The Pivot Coupler, Half Coupler, Interlock Adapter and Spigot Adapter use the same locking mechanism.

Safety bonds

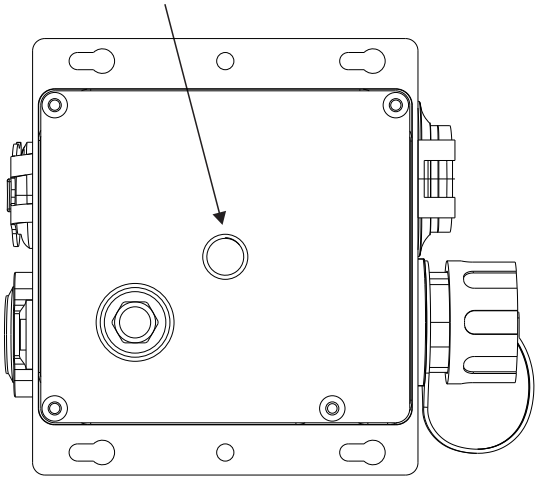
To protect against the fixtures falling if the main rigging point fails, you should fit a safety bond to the attachment point on the back of each fixture.

If fixtures are linked together into a larger array, you should still attach a safety bond to each fixture since a failure of a coupler could cause parts of the assembly to fall. However to make rigging easier you can attach the top one round a fixed point, then loop the lower safety bonds into each other as shown in the picture.



Mounting the junction box

The junction box may be mounted directly to a surface using the holes provided on the side flanges, or a rigging clamp (such as the Super Lightweight Half Coupler Rigging Clamp black: P/N 91602018, listed in the accessories) may be attached to the rear side using an M10 bolt.



AC power and data connection

Warning! Read ‘Safety information’ on page 9 before installing the fixture.

For protection from electric shock, the power input to the Junction Box must be grounded (earthed). The power distribution circuit must be equipped with a 16A fuse or circuit breaker and ground-fault (earth-fault) protection.

AC power and control data are connected to the Junction Box. Up to 32 VDO Atomic Dot fixtures may then be connected in a daisy chain to each junction box using a hybrid PDE cable which carries both power and data.

Safety limits for connecting devices

As the fixtures are connected in a chain, there is a limit to how many fixtures you can link together and how far apart they can be.

- Maximum of 32 fixtures connected in a chain.
- When DMX is being used as control protocol, the total length of DMX cable and Hybrid PDE cable combined must not exceed 300 m (measured between lighting console, DMX node or DMX splitter and last fixture on the chain).
- When Art-Net, sACN or P3 is being used as control protocol, the combined length of Ethernet cable (between network switch and junction box) and hybrid PDE cable to first fixture must not exceed 90 m. The length of hybrid PDE cable between any two daisy-chained fixtures may also not exceed 90 m.
- Install the sealing cap on the thru connector of the last fixture in the chain.

AC power connection to Junction Box

Do not use an external dimming system to supply power to the Junction Box and fixtures, as this may cause damage to the fixtures that is not covered by the product warranty.

Socket outlets or external power switches used to supply the system with power must be located near the system and easily accessible so that the system can easily be disconnected from power.

If you install a power plug on the power cable, install a grounding type (earthed) plug with integral cable grip that is suitable for your local mains voltage at a current of 16A. Follow the plug manufacturer’s instructions and connect the wires in the power cable as shown in this table:

	Live or L	**Neutral or N**	**Earth, Ground or ⏚**
US system	Black	White	Green
EU system	Brown	Blue	Yellow/green

The fixture has an auto-ranging power supply that accepts AC mains power at 100-240 V at 50/60 Hz. Do not apply AC mains power at any other voltage or frequency to the fixture.

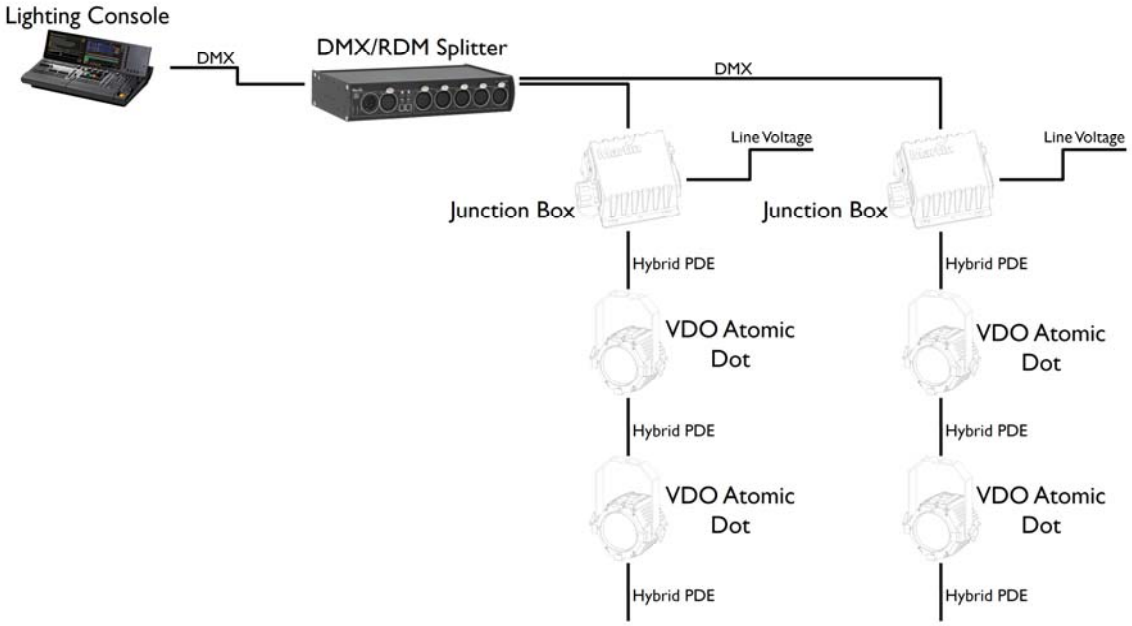
Data connection to Junction Box

The VDO Atomic Dot fixtures may be controlled by DMX512, Art-Net, sACN, or Martin P3 protocol. The data connection is made to the junction box and then linked to the fixtures via the PDE connections.

Using DMX512

In a DMX-controlled system, an RDM-compliant DMX lighting controller sends a DMX control data signal over a DMX link to the junction boxes of the system, and then over the hybrid link to the VDO Atomic Dot fixtures.

A DMX pass – through connector is not provided. If you need to connect multiple Junction Boxes to the same DMX line, you must use an RDM-compliant splitter as described below.



The DMX link requires DMX cable. It can be maximum 300 m (1000 ft.) in length and must run in one single daisy-chain, but it can be extended or split into branches using an RDM-compliant amplifier/splitter such as the Martin® RDM 5.5 Splitter (P/N 90758150). Alternatively, you can run the DMX signal from the controller over Ethernet cable using Art-Net protocol and convert it to a DMX-compliant signal with an Art-Net to DMX converter.

The total length of DMX cable and Hybrid PDE cable combined must not exceed 300 m (measured between lighting console, DMX node or DMX splitter and last fixture on the chain).

If you would like assistance with creating a DMX link, your Martin® supplier will be glad to advise.

The number of VDO Atomic Dots that you can control on one DMX link is limited by the number of DMX channels the dots will use and the 512 DMX channels available in one DMX universe at the DMX controller. Each time you have used 512 channels, you must create a new DMX link that is connected to a new DMX universe on the controller. Note that this limit applies to the *DMX link*. The maximum safety limits that apply to the chain of dots and cable (see “Safety limits for connecting devices” on page 22) take priority and must be respected in all cases.

DMX512 data is connected to the junction box using the XLR5 connector. The pin-out is:

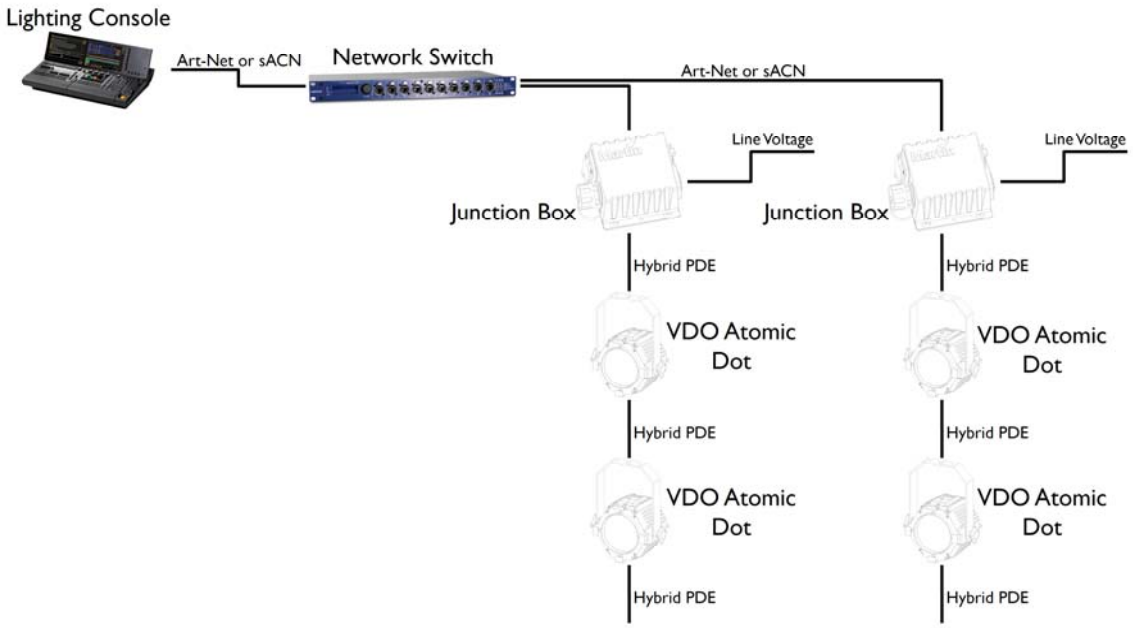
- pin 1 = shield
- pin 2 = cold (-)
- pin 3 = hot (+).

Pins 4 and 5 in the XLR connectors are not used.

Using Art-Net or sACN

Art-Net or sACN data is connected to the system using the etherCON socket on the Junction Box. Each Junction Box must have its own Ethernet connection from a network switch.

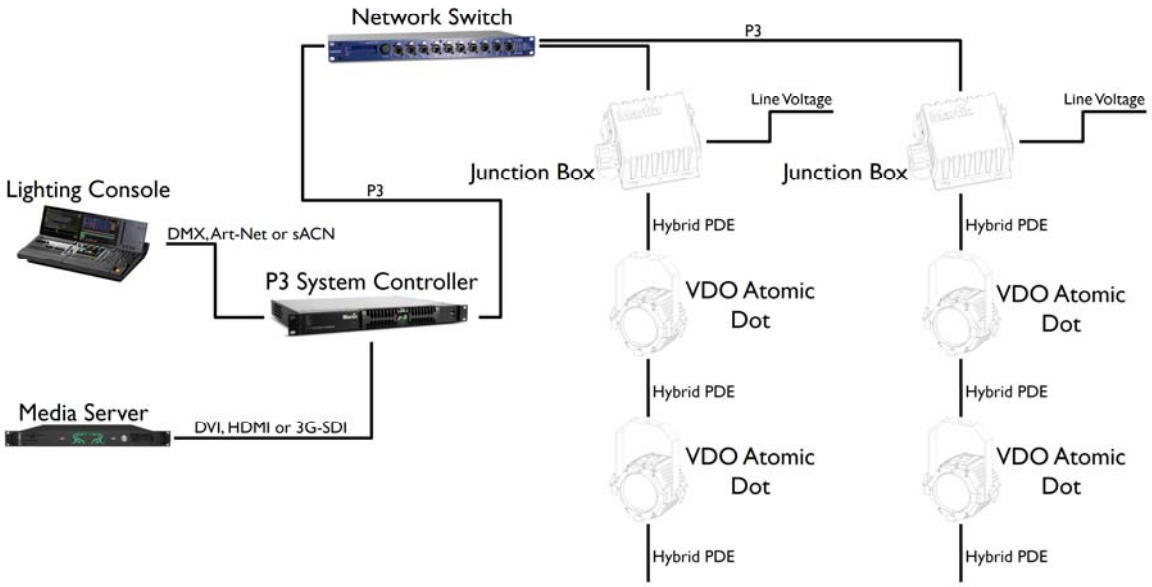
- Please ensure that network switch can operate at 100Mbit Ethernet link speed towards the junction boxes, as the VDO Atomic Dot can only operate at that link speed.
- The combined length of Ethernet cable (between network switch and junction box) and hybrid PDE cable to first fixture must not exceed 90 m. The length of hybrid PDE cable between any two daisy-chained fixtures may also not exceed 90 m.
- A shielded Ethernet cable must be used between the Network Switch and the Junction Box.



Using P3

The Martin P3 System Controller combines control information from the lighting console with video information from a media server. This is distributed to the fixtures using a network switch. Each Junction Box must have its own Ethernet connection from the network switch.

- Please ensure that network switch can operate at 100Mbit Ethernet link speed towards junction boxes, as the VDO Atomic Dot can only operate at that link speed.
- Please ensure that network switch can operate at 1Gbit Ethernet link speed towards the P3 System Controller, as it can only operate at that link speed.
- The combined length of Ethernet cable (between network switch and junction box) and hybrid PDE cable to first fixture must not exceed 90 m. The length of hybrid PDE cable between any two daisy-chained fixtures may also not exceed 90 m.
- A shielded Ethernet cable must be used between the Network Switch and the Junction Box.
- Other P3-compatible fixtures such as the MAC Allure Profile and P3 PowerPort 1500 can be connected to the same network switch to operate all together from the same P3 System Controller.



PDE connections between fixtures

The VDO Atomic Dot fixtures are linked to each other and the Junction Box using a PDE connection which carries both power and data.

- To make the connection, align the pins of the connectors and push together. The connector will lock automatically.
- To remove the connection, twist the locking ring counter-clockwise to unlock and then pull apart.

System Setup

All setup options for the VDO Atomic Dot are configured over the data link.

If you are using a Martin P3 system to control the fixture, please refer to the P3 System Controller user manual and instruction videos.

For DMX, Art-Net and sACN the fixture is configured using RDM.

It is also possible to configure the VDO Atomic Dot fixtures using a P3 System Controller (or P3-PC) to set DMX start addresses, DMX modes, DMX universes and other parameters. Once the fixtures are configured you can then run the fixtures directly using DMX, Art-Net or sACN without using the P3 System Controller.

Setting options by RDM

The VDO Atomic Dot fixture is remotely configured over the DMX line using RDM.

A full list of the RDM functions that the VDO Atomic Dot fixture supports is given at the end of this chapter. These functions are generally referred to using the more specific term ‘PIDs’ or ‘Parameter IDs’.

Scanning for RDM devices on the data link

Before you can communicate with fixtures using RDM, you must send a scan command (also called a device discovery command) to all the devices on the data link so that the RDM controller can identify them. It does this by retrieving each device’s factory-set unique identifier (UID). This process can take some time depending on the number of devices on the link.

To identify the fixtures on the link:

1. Check that the fixtures are correctly connected to the RDM controller on the data link and that power is applied to all fixtures.
2. Give the controller time to identify the devices on the link and prepare for communication with the devices.

Getting status and setting options by RDM

The status and options listed in the table below can be read and set by RDM.

You can set an option on one fixture by sending a unicast RDM command to that one fixture only, or you can set the same option on all the fixtures on the data link by sending a broadcast RDM command to all the devices on the link.

For status reading, you can only use unicast RDM to read information from an individual fixture.

RDM

As a minimum, the VDO Atomic Dot fixtures support the following RDM functions:

Device discovery

DISC_UNIQUE_BRANCH
DISC_MUTE
DISC_UN_MUTE

Device management

	GET	SET
QUEUED_MESSAGE	✓	
STATUS_MESSAGES	✓	
STATUS_ID_DESCRIPTION	✓	
SUPPORTED_PARAMETERS	✓	
DEVICE_INFO	✓	
DEVICE_MODEL_DESCRIPTION	✓	
MANUFACTURER_LABEL	✓	
DEVICE_LABEL	✓	✓
SOFTWARE_VERSION_LABEL	✓	
BOOT_SOFTWARE_VERSION_ID	✓	
BOOT_SOFTWARE_VERSION_LABEL	✓	
DMX_PERSONALITY	✓	✓
DMX_START_ADDRESS	✓	✓
DEVICE_HOURS	✓	✓
IDENTIFY_DEVICE	✓	✓
LAST_STATE		✓
DIMMER_CURVE		✓

Using the VDO Atomic Dot

Warning! Read ‘Safety information’ on page 9 before applying power to the VDO Atomic Dot.

Do not use the VDO Atomic Dot if the ambient temperature exceeds 40° C (104° F) or falls below 0° C (32° F).

Thermal regulation

The VDO Atomic Dot uses passive cooling without a fan, and controls its temperature by dimming down automatically if it gets too hot, for example on full white it will dim after about 10 seconds to a lower intensity. At high ambient temperatures the output will also be reduced.

Video display using P3

The VDO Atomic Dot can display video from all common video sources. The video signal must be sent to a Martin® P3 controller and then distributed to fixtures. The P3 controller lets you map, configure and control an installation containing VDO Atomic Dots (and other Martin® P3 video display products if you have them).

Once the VDO Atomic Dot fixtures are mapped and addressed on the P3 System Controller, it is possible to map video onto them, while still having control from the lighting desk. At any given moment the output from the fixture can be controlled by video content, DMX channels, internal effect macros or a mix.

See the P3 controller documentation for details.

DMX control

The VDO Atomic Dot can display effects controlled by DMX (either using the 5-pin XLR, via Art-Net / sACN or via DMX sent through the P3 System Controller).

Five DMX modes are available:

- **1 channel** mode: uses a single DMX channel and operates the fixture as a white “blinder” with automatic tungsten fade effect
- **3 channel** mode: gives strobe functionality of intensity / duration / rate, same as Atomic 3000 DMX/LED (no backlight functions)
- **4 channel** mode: As 3 channel mode but with an additional effects channel, same as Atomic 3000 DMX/LED (no backlight functions)
- **Basic** mode: uses 19 DMX channels and gives RGB color mixing of backlight/aura, strobe effects and pre-programmed dynamic effects. P3 video data can also be superimposed or mixed under DMX control.
- **Extended** mode: uses 64 DMX channels to add to Basic mode by allowing individual control of the 16 LEDs in the backlight/aura. P3 video data can also be superimposed or mixed under DMX control.

See “DMX protocols” on page 32 for full details of DMX control.

An RDM-compatible DMX controller or P3 System Controller is required so that you can address and configure the fixtures. See the DMX/RDM controller documentation for details.

Status LED

The only user controls on the VDO Atomic Dot are a status LED and a pushbutton. The function of these is described below.

LED indication	Meaning
Blue Constant	Busy (e.g. booting up or writing to flash memory)
Red Constant	Error. The fixture has encountered a fatal error and cannot run.
Red Flashing	No control source detected (no protocols detected on DMX or Ethernet).
Green Flashing	Ready. P3 packets detected, but fixture not in joined state.
Green Constant	Running normally in P3 mode (P3 joined).
Cyan Flashing	Ready. Fixture in DMX mode but not receiving valid DMX data.
Cyan Constant	Running normally in DMX mode.
Yellow Constant	Overtemperature.
Magenta Flashing	Ready. Fixture in Art-Net or sACN mode but not receiving valid DMX data.
Magenta Constant	Running normally in Art-Net or sACN mode.

Pushbutton functions

The pushbutton can be used to activate internal test patterns within the fixture, perform a fixture reboot or perform a factory reset of the fixture (just like other Martin LED Video fixtures).

If the pushbutton is given a short press, the first internal test pattern is activated. If the pushbutton is then given another short press, the next internal test pattern is activated. This way the user can “step” through the different internal test patterns.

Press once: 16 backlight LEDs to full red

Press again: 16 backlight LEDs to full green

Press again: 16 backlight LEDs to full blue

Press again: 16 backlight LEDs to full white

Press again: White beam LED at full on (backlight LEDs off)

Press again: Dynamic test pattern activated

Press again: Test patterns stopped, fixture returns to normal operation

If the button is pressed, and kept held in for 5 seconds, the Status LED will turn blue. If the user then releases the button, the fixture will perform a normal reboot.

If the button is pressed, and kept held in for 8 seconds, the Status LED will turn white. If the user then releases the button, the fixture will perform a factory reset (return to factory default/backup firmware image).

Maintenance

Read Safety information on page 6 before maintaining the fixture. Always comply with the safety instructions.

Refer any service operation not described in this user manual to a qualified service technician.

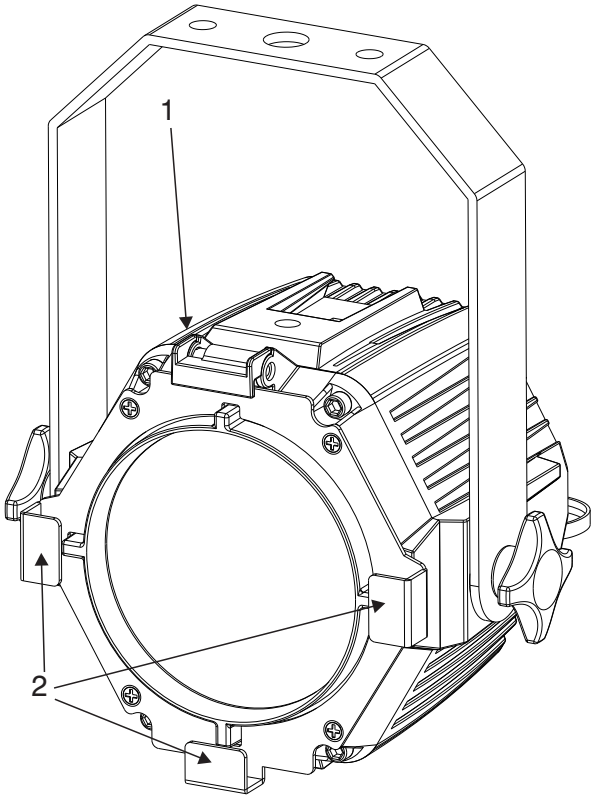
Excessive dust, smoke fluid, and particle buildup degrades performance, causes overheating and will damage the fixture. Damage caused by inadequate cleaning or maintenance is not covered by the product warranty.

Disconnect mains power before cleaning or servicing the fixture.

Fixtures must be serviced in an area where there is no risk of anyone being injured by failing parts, tools or other materials.

Installing optical accessories

Installing one of the optical accessories available from Martin® for the VDO Atomic Dot takes a few seconds. No tools are required.



To install an optical accessory:

1. Slide and lift up the hinged retaining clip (1) on the top of the VDO Atomic Dot and hold it back.
2. Slide the optical accessory into the PAR30-sized holders (2) on the front of the fixture, ensuring that the accessory is correctly located on all sides.
3. Gently release the retaining clip and ensure it locks the accessory in position.

When using the Martin VDO Atomic Dot Diffuser, make sure that you insert them with the matt side towards the fixture.

Cleaning

Cleaning schedules vary depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the VDO Atomic Dot. Environmental factors that may result in a need for frequent cleaning include airborne dust and pollution.

Inspect products frequently to see whether cleaning is necessary. If in doubt, consult your Martin® dealer about a suitable maintenance schedule.

To clean the product, use warm water and a soft brush or a low-pressure or medium-pressure water jet. Use car shampoo to help remove dirt and grease. If possible, dry with a soft cloth to avoid streaking. Do not use a stiff brush or scouring pad. Do not use solvents or abrasives.

LED performance

Martin® use the best components available, but the characteristics of all LEDs change gradually over many thousands of hours of use. Not all colors change at the same rate, and rates of change vary depending on factors such as temperature and how intensively a particular color is used. Because of the changes, overall light output and the exact hues obtained from specific color mixes in all LED-based products can be expected to shift slightly over time.

To help you obtain consistent output despite these changes, Martin® P3 software from version 4.1.0 contains the P3 Fixture Adjuster tool. This feature lets you compensate for changes in LED characteristics and restore initial output and color authenticity levels. Please contact Martin® for more details.

Installing new software

It may be necessary to upload new software (i.e. device firmware) to the VDO Atomic Dot if it appears to have a software-related fault or if you want to update to a newer software version. Software for Martin® products is available from the Martin® website.

The VDO Atomic Dot software can be installed from the P3 System Controller over the P3 data link. See the P3 System Controller user manual for software installation instructions.

Alternatively software may be installed over the DMX data link using the Martin Companion cable and Martin Companion application.

DMX protocol

The VDO Atomic Dot has five possible DMX modes

DMX Mode	DMX channels	Functions
1 channel	1	Single channel “blinder” with automatic tungsten effect
3 channel	3	As Atomic 3000 DMX/LED (no backlight)
4 channel	4	As Atomic 3000 DMX/LED (no backlight)
Basic	19	Including Aura backlight control and P3 mode control
Extended	64	As Basic mode, but including individual control over 16 Aura backlight pixels

- While in Basic mode the DMX control of the Aura backlight does not offer individual pixel control, the pixels can still be driven individually using the P3 System Controller pixels.

DMX mode 1 channel

Channel	Value	Function	Fade Status	Default Value
1		**Dimmer**	Fade	0
	0 - 255	Close → Open		

Notes:

- Fixture will automatically reduce intensity to control temperature when running at high power for too long
- Aura Backlight will be driven automatically to emulate tungsten effect

DMX mode 3 channel

Channel	Value	Function	Fade Status	Default Value
1		**Beam Flash Intensity**	Snap	0
	0	Blackout		
	1 - 255	Minimum → Maximum Intensity		
2		**Beam Flash Duration**	Snap	0
	0 - 255	7 → 650 ms		
3		**Beam Flash Rate**	Snap	0
	0 - 255	0.289 → 16.67 Hz		

Notes:

- Fixture will automatically reduce intensity to control temperature when running at high power for too long
- Aura Backlight is not used in this mode
- As Atomic 3000 DMX/LED 3-Channel Mode

DMX mode 4 channel

Channel	Value	Function	Fade Status	Default Value
1		**Beam Flash Intensity**	Snap	0
	0	Blackout		
	1 - 255	Minimum → Maximum Intensity		
2		**Beam Flash Duration**	Snap	0
	0 - 255	7 → 650 ms		
3		**Beam Flash Rate**	Snap	0
	0 - 255	0.289 → 16.67 Hz		
4		**Beam Special Effects**	Snap	0
	0 - 5	No Effect		
	6 - 42	Ramp Up		
	43 - 85	Ramp Down		
	86 - 128	Ramp Up, Down		
	129 - 171	Random		
	172 - 214	Lightning		
	215 - 255	Spikes (flash over low light)		

Notes:

- Fixture will automatically reduce intensity to control temperature when running at high power for too long
- Aura Backlight is not used in this mode
- As Atomic 3000 DMX/LED 4-Channel Mode

DMX mode Basic

Basic	Value	Function	Fade Status	Default Value
1 - 2		**Beam Flash Intensity**	Snap	0
	0	Blackout		
	1 - 65535	Minimum → Maximum Intensity		
3		**Beam Flash Duration**	Snap	0
	0 - 255	7 → 650 ms		
4		**Beam Flash Rate**	Snap	0
	0 - 255	0.289 → 16.67 Hz		
5		**Beam Special Effects**	Snap	0
	0 - 5	No Effect		
	6 - 42	Ramp Up		
	43 - 85	Ramp Down		
	86 - 128	Ramp Up, Down		
	129 - 171	Random		
	172 - 214	Lightning		
	215 - 255	Spikes (flash over low light)		
6		**Beam P3 Mode**	Snap	0

Basic	Value	Function	Fade Status	Default Value
	0 - 26	DMX-Mode Output of beam LED is fully controlled by channel 1-5 (P3 pixels are ignored)		
	27 - 228	Mix-Mode Output of beam LED is defined by mix of: - Channel 1-5 - P3 pixels (range 27 to 228 performs cross-fade between the two)		
	229 - 255	Video-Mode P3 pixels are used as basis on top of which channel 1-5 are applied		
7		**Control / Settings**	Snap	0
	0 - 9	No Function		
	10 - 14	Reset Entire Fixture - 5 sec		
	15 - 22	No Function		
	23	Linear Dimming Curve - 1 sec		
	24	Square Law Dimming Curve - 1 sec		
	25	Inverse Square Law Dimming Curve - 1 sec		
	26	S-Curve Dimming Curve - 1 sec		
	27 - 35	No Function		
	36	Enable Video Tracking		
	37	Disable Video Tracking		
	38 - 58	No Function		
	59	Strobe Behavior = LED		
	60	Strobe Behavior = Xenon		
	61 - 255	No Function		
8		**FX Select**	Snap	0
	0	No FX		
	1-255	FX Selection (see table)		
9		**FX Speed / Modifier (depending on effect)**	Fade	128
	0 – 126	Rev Fast → Slow		
	127 – 128	Stop		
	129 – 255	Slow → Fast		
10		**FX Synchronization**	Snap	0
	0	No Sync		
	1	Fixture Offset 10 Degree		
	2	Fixture Offset 20 Degree		
	3-34	Fixture Offset…		
	35	Fixture Offset 350 Degree		
	36	Synchronized		
	37-100	No Function		
	101 – 120	Random Start		
	121 - 140	Random Duration		
	141 - 255	No Function		
11		**Aura Strobe Effect**	Snap	0
	0 - 49	No Strobe		
	50 - 200	Strobe, Slow → Fast		

Basic	Value	Function	Fade Status	Default Value
	201 - 210	No Strobe		
	211 - 255	Random Strobe, Slow → Fast		
12 - 13		**Aura Dimmer**	Fade	0
	0 - 65535	Close → Open		
14		**Aura CTC**	Fade	0
	0 – 10	Disabled (Still controllable from P3 System Controller, when used)		
	11-191	2000K to 11000K in 50K steps (11=2000K, 101=6500K, 191=11000K)		
	192-255	11000K		
15		**Aura Color Presets**	Snap	0
	0 - 10	None, mix color via RGB		
	11 - 15	Color 1 - Moroccan pink		
	16 - 20	Color 2 - Pink		
	21 - 25	Color 3 - Special rose pink		
	26 - 30	Color 4 - Follies pink		
	31 - 35	Color 5 - Fuchsia pink		
	36 - 40	Color 6 - Surprise pink		
	41 - 45	Color 7 - Congo Blue		
	46 - 50	Color 8 - Tokyo Blue		
	51 - 55	Color 9 -Deep Blue		
	56 - 60	Color 10 - Just Blue		
	61 - 65	Color 11 - Medium Blue		
	66 - 70	Color 12 - Double CT Blue		
	71 - 75	Color 13 - Slate Blue		
	76 - 80	Color 14 - Full CT Blue		
	81 - 85	Color 15 - Half CT Blue		
	86 - 90	Color 16 -Steel Blue		
	91 - 95	Color 17 - Lighter Blue		
	96 - 100	Color 18 - Light Blue		
	101 - 105	Color 19 - Medium Blue Green		
	106 - 110	Color 20 - Dark Green		
	111 - 115	Color 21 - Primary Green		
	116 - 120	Color 22 - Moss Green		
	121 - 125	Color 23 - Fern Green		
	126 - 130	Color 24 - JAS Green		
	131 - 135	Color 25 - Lime Green		
	136 - 140	Color 26 - Spring Yellow		
	141 - 145	Color 27 - Deep Amber		
	146 - 150	Color 28 - Chrome Orange		
	151 - 155	Color 29 - Orange		
	156 - 160	Color 30 - Gold Amber		
	161 - 165	Color 31 - Millennium Gold		
	166 - 170	Color 32 - Deep Golden Amber		
	171 - 175	Color 33 - Flame Red		
	176 - 180	Color 34 - Magenta		
	181 - 185	Color 35 - Medium Lavender		

Basic	Value	Function	Fade Status	Default Value
	186 - 190	Color 36 - White		
	191 - 214	Color Wheel Rotation Fast → Slow		
	215 - 219	Color Wheel Rotation Stop (stop on last color)		
	220 - 243	Color Wheel Rotation Inverse Slow → Fast		
	244 - 247	Random Colors Fast		
	248 - 251	Random Colors Medium		
	252 - 255	Random Colors Slow		
16		**Aura P3 Mode**	Snap	0
	0 - 26	DMX-Mode Color of Aura LEDs is fully controlled by channel 17-19 (Aura Red, Green & Blue) (P3 pixels are ignored)		
	27 - 228	Mix-Mode Color of Aura LEDs is defined by mix of: - Channel 17-19 (Aura Red, Green & Blue) - P3 pixels (range 27 to 228 performs cross-fade between the two)		
	229 - 255	Video-Mode Color and brightness of Aura LEDs is driven by P3 pixels, but Aura Red/Green/Blue channels 17-19 keep ability to "color" the video.		
17		**Aura Red**	Fade	255
	0 - 255	0 → 100%		
18		**Aura Green**	Fade	255
	0 - 255	0 → 100%		
19		**Aura Blue**	Fade	255
	0 - 255	0 → 100%		

Notes:

- Fixture will automatically reduce intensity to control temperature when running at high power for too long

DMX mode Extended

Extended	Value	Function	Fade Status	Default Value
1 - 2		**Beam Flash Intensity**	Snap	0
	0	Blackout		
	1 - 65535	Minimum → Maximum Intensity		
3		**Beam Flash Duration**	Snap	0
	0 - 255	7 → 650 ms		
4		**Beam Flash Rate**	Snap	0
	0 - 255	0.289 → 16.67 Hz		
5		**Beam Special Effects**	Snap	0
	0 - 5	No Effect		
	6 - 42	Ramp Up		
	43 - 85	Ramp Down		

Extended	Value	Function	Fade Status	Default Value
	86 - 128	Ramp Up, Down		
	129 - 171	Random		
	172 - 214	Lightning		
	215 - 255	Spikes (flash over low light)		
6		**Beam P3 Mode**	Snap	0
	0 - 26	DMX-Mode Output of beam LED is fully controlled by channel 1-5 (P3 pixels are ignored)		
	27 - 228	Mix-Mode Output of beam LED is defined by mix of: - Channel 1-5 - P3 pixels (range 27 to 228 performs cross-fade between the two)		
	229 - 255	Video-Mode P3 pixels are used as basis on top of which channel 1-5 are applied		
7		**Control / Settings**	Snap	0
	0 - 9	No Function		
	10 - 14	Reset Entire Fixture - 5 sec		
	15 - 22	No Function		
	23	Linear Dimming Curve - 1 sec		
	24	Square Law Dimming Curve - 1 sec		
	25	Inverse Square Law Dimming Curve - 1 sec		
	26	S-Curve Dimming Curve - 1 sec		
	27 - 35	No Function		
	36	Enable Video Tracking		
	37	Disable Video Tracking		
	38 - 58	No Function		
	59	Strobe Behavior = LED		
	60	Strobe Behavior = Xenon		
	61 - 255	No Function		
8		**FX Select**	Snap	0
	0	No FX		
	1-255	FX Selection (see table)		
9		**FX Speed / Modifier (depending on effect)**	Fade	128
	0 – 126	Rev Fast → Slow		
	127 – 128	Stop		
	129 – 255	Slow → Fast		
10		**FX Synchronization**	Snap	0
	0	No Sync		
	1	Fixture Offset 10 Degree		
	2	Fixture Offset 20 Degree		
	3-34	Fixture Offset…		
	35	Fixture Offset 350 Degree		
	36	Synchronized		
	37-100	No Function		
	101 – 120	Random Start		

Extended	Value	Function	Fade Status	Default Value
	121 - 140	Random Duration		
	141 - 255	No Function		
11		**Aura Strobe Effect**	Snap	0
	0 - 49	No Strobe		
	50 - 200	Strobe, Slow → Fast		
	201 - 210	No Strobe		
	211 - 255	Random Strobe, Slow → Fast		
12 - 13		**Aura Dimmer**	Fade	0
	0 - 65535	Close → Open		
14		**Aura CTC**	Fade	0
	0 – 10	Disabled (Still controllable from P3 System Controller, when used)		
	11-191	2000K to 11000K in 50K steps (11=2000K, 101=6500K, 191=11000K)		
	192-255	11000K		
15		**Aura Color Presets**	Snap	0
	0 - 10	None, mix color via RGB		
	11 - 15	Color 1 - Moroccan pink		
	16 - 20	Color 2 - Pink		
	21 - 25	Color 3 - Special rose pink		
	26 - 30	Color 4 - Follies pink		
	31 - 35	Color 5 - Fuchsia pink		
	36 - 40	Color 6 - Surprise pink		
	41 - 45	Color 7 - Congo Blue		
	46 - 50	Color 8 - Tokyo Blue		
	51 - 55	Color 9 - Deep Blue		
	56 - 60	Color 10 - Just Blue		
	61 - 65	Color 11 - Medium Blue		
	66 - 70	Color 12 - Double CT Blue		
	71 - 75	Color 13 - Slate Blue		
	76 - 80	Color 14 - Full CT Blue		
	81 - 85	Color 15 - Half CT Blue		
	86 - 90	Color 16 - Steel Blue		
	91 - 95	Color 17 - Lighter Blue		
	96 - 100	Color 18 - Light Blue		
	101 - 105	Color 19 - Medium Blue Green		
	106 - 110	Color 20 - Dark Green		
	111 - 115	Color 21 - Primary Green		
	116 - 120	Color 22 - Moss Green		
	121 - 125	Color 23 - Fern Green		
	126 - 130	Color 24 - JAS Green		
	131 - 135	Color 25 - Lime Green		
	136 - 140	Color 26 - Spring Yellow		
	141 - 145	Color 27 - Deep Amber		
	146 - 150	Color 28 - Chrome Orange		
	151 - 155	Color 29 - Orange		
	156 - 160	Color 30 - Gold Amber		

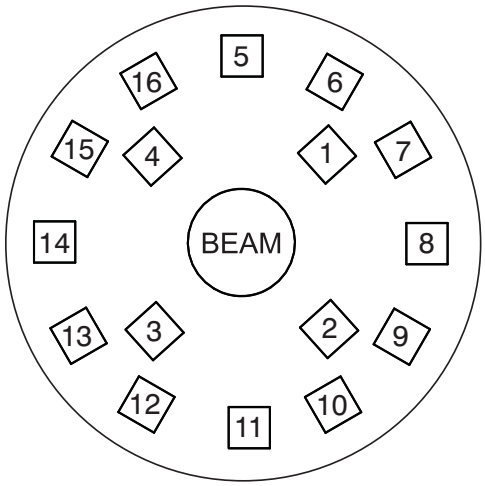
Extended	Value	Function	Fade Status	Default Value
	161 - 165	Color 31 - Millennium Gold		
	166 - 170	Color 32 - Deep Golden Amber		
	171 - 175	Color 33 - Flame Red		
	176 - 180	Color 34 - Magenta		
	181 - 185	Color 35 - Medium Lavender		
	186 - 190	Color 36 - White		
	191 - 214	Color Wheel Rotation Fast → Slow		
	215 - 219	Color Wheel Rotation Stop (stop on last color)		
	220 - 243	Color Wheel Rotation Inverse Slow → Fast		
	244 - 247	Random Colors Fast		
	248 - 251	Random Colors Medium		
	252 - 255	Random Colors Slow		
16		**Aura P3 Mode**	Snap	0
	0 - 26	DMX-Mode Color of Aura LEDs is fully controlled by channel 17-64 (Aura Red, Green & Blue) (P3 pixels are ignored)		
	27 - 228	Mix-Mode Color of Aura LEDs is defined by mix of: - Channel 17-64 (Aura Red, Green & Blue) - P3 pixels (range 27 to 228 performs cross-fade between the two)		
	229 - 255	Video-Mode Color and brightness of Aura LEDs is driven by P3 pixels, but Aura Red/Green/Blue channels 17-64 keep ability to "color" the video.		
17		**Aura Red Pixel 1**	Fade	255
	0 - 255	0 → 100%		
18		**Aura Green Pixel 1**	Fade	255
	0 - 255	0 → 100%		
19		**Aura Blue Pixel 1**	Fade	255
	0 - 255	0 → 100%		
20		**Aura Red Pixel 2**	Fade	255
	0 - 255	0 → 100%		
21		**Aura Green Pixel 2**	Fade	255
	0 - 255	0 → 100%		
22		**Aura Blue Pixel 2**	Fade	255
	0 - 255	0 → 100%		
23		**Aura Red Pixel 3**	Fade	255
	0 - 255	0 → 100%		
24		**Aura Green Pixel 3**	Fade	255
	0 - 255	0 → 100%		
25		**Aura Blue Pixel 3**	Fade	255
	0 - 255	0 → 100%		
26		**Aura Red Pixel 4**	Fade	255
	0 - 255	0 → 100%		
27		**Aura Green Pixel 4**	Fade	255

Extended	Value	Function	Fade Status	Default Value
	0 - 255	0 → 100%		
28		**Aura Blue Pixel 4**	Fade	255
	0 - 255	0 → 100%		
29		**Aura Red Pixel 5**	Fade	255
	0 - 255	0 → 100%		
30		**Aura Green Pixel 5**	Fade	255
	0 - 255	0 → 100%		
31		**Aura Blue Pixel 5**	Fade	255
	0 - 255	0 → 100%		
32		**Aura Red Pixel 6**	Fade	255
	0 - 255	0 → 100%		
33		**Aura Green Pixel 6**	Fade	255
	0 - 255	0 → 100%		
34		**Aura Blue Pixel 6**	Fade	255
	0 - 255	0 → 100%		
35		**Aura Red Pixel 7**	Fade	255
	0 - 255	0 → 100%		
36		**Aura Green Pixel 7**	Fade	255
	0 - 255	0 → 100%		
37		**Aura Blue Pixel 7**	Fade	255
	0 - 255	0 → 100%		
38		**Aura Red Pixel 8**	Fade	255
	0 - 255	0 → 100%		
39		**Aura Green Pixel 8**	Fade	255
	0 - 255	0 → 100%		
40		**Aura Blue Pixel 8**	Fade	255
	0 - 255	0 → 100%		
41		**Aura Red Pixel 9**	Fade	255
	0 - 255	0 → 100%		
42		**Aura Green Pixel 9**	Fade	255
	0 - 255	0 → 100%		
43		**Aura Blue Pixel 9**	Fade	255
	0 - 255	0 → 100%		
44		**Aura Red Pixel 10**	Fade	255
	0 - 255	0 → 100%		
45		**Aura Green Pixel 10**	Fade	255
	0 - 255	0 → 100%		
46		**Aura Blue Pixel 10**	Fade	255
	0 - 255	0 → 100%		
47		**Aura Red Pixel 11**	Fade	255
	0 - 255	0 → 100%		
48		**Aura Green Pixel 11**	Fade	255
	0 - 255	0 → 100%		
49		**Aura Blue Pixel 11**	Fade	255
	0 - 255	0 → 100%		
50		**Aura Red Pixel 12**	Fade	255
	0 - 255	0 → 100%		

Extended	Value	Function	Fade Status	Default Value
51		**Aura Green Pixel 12**	Fade	255
	0 - 255	0 → 100%		
52		**Aura Blue Pixel 12**	Fade	255
	0 - 255	0 → 100%		
53		**Aura Red Pixel 13**	Fade	255
	0 - 255	0 → 100%		
54		**Aura Green Pixel 13**	Fade	255
	0 - 255	0 → 100%		
55		**Aura Blue Pixel 13**	Fade	255
	0 - 255	0 → 100%		
56		**Aura Red Pixel 14**	Fade	255
	0 - 255	0 → 100%		
57		**Aura Green Pixel 14**	Fade	255
	0 - 255	0 → 100%		
58		**Aura Blue Pixel 14**	Fade	255
	0 - 255	0 → 100%		
59		**Aura Red Pixel 15**	Fade	255
	0 - 255	0 → 100%		
60		**Aura Green Pixel 15**	Fade	255
	0 - 255	0 → 100%		
61		**Aura Blue Pixel 15**	Fade	255
	0 - 255	0 → 100%		
62		**Aura Red Pixel 16**	Fade	255
	0 - 255	0 → 100%		
63		**Aura Green Pixel 16**	Fade	255
	0 - 255	0 → 100%		
64		**Aura Blue Pixel 16**	Fade	255
	0 - 255	0 → 100%		

Note:

- Fixture will automatically reduce intensity to control temperature when running at high power for too long
- The Aura pixels are mapped as shown in the diagram below, looking into the fixture lens.



FX Table

Type	DMX	FX Name
	0	No Effect
Beam Effects	1	Beam Wave
	2	Beam Step
	3	Beam Pulse
	4	Beam Blackout Strobe
	5	Beam 2x Strobe
	6	Beam 3x Strobe
	7	Beam 4x Strobe
	8	Beam Up, Down Flash
	9	Beam Up, Flash, Down, Flash
	10	Beam Random Levels
	11	Beam HouseLight
	12	Beam (strobe) auto-firing when intensity of content hits certain minimum (threshold set by adjustment channel)
	13	Beam threshold effect (Beam lighting up when content above a certain level which can be set with adjustment channel)
	14-15	No function
Aura Intensity Effects	16	Aura Wave
	17	Aura Step
	18	Aura Pulse
	19	Aura Blackout Strobe
	20	Aura 2x Strobe
	21	Aura 3x Strobe
	22	Aura 4x Strobe
	23	Aura Up, Down Flash
	24	Aura Up, Flash, Down, Flash
	25	Aura Random Levels
	26	Aura Noise Overlay
	27	Aura PixelKiller
	28	Aura Build Up/Down
	29	Aura In-Out Wave
	30	Aura In-Out Step
	31	Aura In-Out Pulse
	32	Aura Waterdrop
	33	Aura Sonar (1 pixel)
	34	Aura Sonar (2 pixel)
	35	Aura Sonar (3 pixel)
	36	Aura Sonar (6 pixel)
	37	Aura Sonar (9 pixel)
	38	Aura Slice Pie chase
	39	Aura Random Chase
	40	Aura Movie Flicker
	41	Aura Electric Arc
	42	Aura Atomic Lighting
	43	Aura Thunderstorm
	44-47	No function

Type	DMX	FX Name
Aura Color Effects	48	Aura Rainbow Wave
	49	Aura Rainbow Step
	50	Aura Rainbow Pulse
	51	Aura RGB Wave
	52	Aura RGB Step
	53	Aura RGB Pulse
	54	Aura CMY Wave
	55	Aura CMY Step
	56	Aura CMY Pulse
	57	Aura Random Mix Wave
	58	Aura Random Mix Step
	59	Aura Random Mix Pulse
	60	Aura Solid
	61	Aura Spectrum Shifter
	62	Aura RGB to White Wave
	63	Aura RGB to White Step
	64	Aura RGB to White Pulse
	65	Aura RGB to White Strobe
	66	Aura Normal to White Wave
	67	Aura Normal to White Step
	68	Aura Normal to White Pulse
	69	Aura Normal to White Strobe
	70	Aura RGB to Inverted Color In/Out Wave
	71	Aura RGB to Inverted Color In/Out Step
	72	Aura RGB to Inverted Color In/Out Pulse
	73	Aura Normal to Inverted Color In/Out Wave
	74	Aura Normal to Inverted Color In/Out Step
	75	Aura Normal to Inverted Color In/Out Pulse
	76-79	No function
Aura Complete Effects	80	Aura Red white blue fade
	81	Aura Red white blue snaps
	82	Aura Fire
	83	Aura Water
	84	Aura Ice
	85	Aura Hot and cold
	86	Aura Warm and fuzzy
	87	Aura Silver and gold
	88	Aura Gold and silver
	89	Aura NightRider
	90	Aura Police car 1
	91	Aura Police car 2
	92	Aura Police car 3
	93	Aura Swimming pool
	94	Aura Electric arc
	95	Aura Stars
	96	Aura Fiberoptic White
	97	Aura Fiberoptic Mix
	98	Aura Plasma

Type	DMX	FX Name
	99	Aura Starfield
	100	Aura Colorwave
	101	Aura Noise
	102	Aura Snowflakes
	103	Aura Rain
	104-111	No function
Beam+Aura Combined Effects	112	Tungsten Emulation using Aura backlight to complement main beam
	113	Tungsten Emulation using Aura backlight to complement main beam, including decay
	114	Thunderstorm
	115	Welding
	116	3 Step strobe
	117	Tick Tock
	118	Aura ramp beam flash
	119	Beam ramp aura flash
	120	Police Car 4
	121	Police Car 5
	122	Police Car 6
	123	Police Car 7
	124	Police Car 8
	125	Police Car 9
	126-255	No function

Troubleshooting

This section describes a few common problems that may occur during operation and provides some suggestions for easy troubleshooting:

Symptom	Potential cause	Remedies
No light from fixture.	Power supply issue, such as blown fuse, faulty connector or damaged cable.	Ensure that the mains supply is connected to the junction box and supplying power to the fixture. Ensure that the fixture's test LED lights up when the test button is pressed. Check all power connections and cables.
Fixture does not respond to control.	Fault in the control network due to wiring problem, connector or cable damaged, or	Check if the fixture status LED is flashing red to show that control data is not being received, and if so, check all DMX cables and connections to ensure the integrity of the physical network. Ensure that the DMX network is terminated. Check that the components in the DMX network all use standard DMX polarity.
	incorrect DMX addressing, or	Ensure that the fixture is set to the correct DMX address, one that matches that set on the DMX control device. Check the pins on the connectors from the previous fixture in the DMX network. Attempt to control the fixture with another DMX control device.
	potential interference from proximity to a high voltage installation.	Move the fixture if it is being operated very close to an unshielded high-voltage installation.

Specifications

Physical Fixture

Width including hanging bracket ..... 175 mm (6.9 in.)
Height ..... 138 mm (5.4 in.)
Depth ..... 146 mm (5.7 in.)
Fixture center to center using interlock couplers (vertical and horizontal) ..... 150 mm (5.9 in.)
Weight ..... 2.2 kg (4.9 lb.)

Physical PDE Junction Box

Width ..... 94 mm (3.7 in.)
Height ..... 50 mm (2.0 in.)
Depth ..... 106 mm (4.2 in.)
Weight ..... 0.5 kg (1.1 lb.)

Dynamic Effects

Strobe ..... 0.289 – 16.557 Hz, variable flash rate, intensity and duration (inc. blinder mode)
Aura ..... RGB control per pixel, 16 pixels
Built-in FX ..... Various pre-programmed effects on Strobe, Aura and combination of both

Control and Programming

Control protocols ..... DMX, RDM,Art-Net, sACN, P3
Protocol detection ..... Automatic
DMX channels 1/3/4/19/64
Setting and addressing ..... RDM or P3
Fixture identification ..... User settable ID number
DMX compliance ..... USITT DMX512 A
RDM compliance ..... ANSI/ESTA E1.20 RDM
Art-Net compliance ..... Art-Net 1, 2, 3 and 4, including RDM over Art-Net
sACN compliance ..... ANSI E1.31 – 2016
Martin P3 Compliance ..... P3 System Controller Software 5.1.0 or newer
DMX/RDM Transceiver RS-485
Ethernet Transceiver 10/100Mbit
Firmware update ..... via DMX using Martin Companion
..... or via Ethernet using P3 System Controller

P3 Video Processing

Color resolution ..... 16 bit per color (48 bit per pixel)
Color temperature control ..... 2000-11000K (Aura)
Color Gamut Control ..... full spectrum control (Aura)
Synchronization ..... system-wide
Frame Rate ..... up to 75 frames/sec
Brightness Control ..... 0-100% (maintaining full color depth)
Gamma Correction and Control ..... fully controllable

Control / User Interface

Device status ..... Multi-color status LED
Device test and reset ..... Pushbutton to call up local test patterns and reset device

Optics and photometric data

Beam/Strobe LED VDO Atomic Dot CLD
Max. total lumen output ..... 3350 lumens
CRI (Color Rendering Index) ..... >80
Beam angle ..... 11 degrees (half peak)
Field angle ..... 22 degrees (one-tenth peak)
Color temperature 5700K
Resolution 16-bit
Minimum LED lifetime ..... 50 000 hours (to >70% luminous output)*

Beam/Strobe LED VDO Atomic Dot WRM
Max. total lumen output ..... 2850 lumens
CRI (Color Rendering Index) ..... >84
Beam angle ..... 11 degrees (half peak)
Field angle ..... 22 degrees (one-tenth peak)
Color temperature 2700K
Resolution 16-bit
Minimum LED lifetime ..... 50 000 hours (to >70% luminous output)*

Aura backlight LEDs
Color temperature ..... Variable
Resolution ..... 16-bit per color per pixel
Minimum LED lifetime ..... 50 000 hours (to >70% luminous output)*
**Figure obtained under manufacturer's test conditions:*

Construction

Color ..... Black
Housing material ..... Aluminum
Protection rating IP65
RoHS ..... Compliant
REACH ..... Compliant

Installation

Mounting Options ..... hanging from bracket, hanging from clamp attached directly to fixture
..... or hanging from other fixture using interlock mechanism
Clamp attachment to hanging bracket M12
Clamp attachment directly to fixture M8
Maximum vertical column height ..... 16 fixtures
Orientation ..... Any
Minimum distance to combustible materials ..... 0.1 m
Minimum distance to illuminated surfaces ..... 0.2 m
Location ..... indoor or temporary outdoor use

Connections

VDO Atomic Dot fixture
AC power, DMX and Network input ..... Cable tail with PDE hybrid connector (IP65)
AC power, DMX and Network thru ..... Chassis mount PDE hybrid connector (IP65)
Hot plugging ..... Compatible

PDE Junction Box
AC Power input ..... Neutrik powerCON TRUE1 TOP
..... (IP65 when mated with matching Neutrik cable connector)
DMX input ..... Neutrik XLR 5-pin Male TOP
..... (IP65 when mated with matching Neutrik cable connector,
..... compatible with standard 5-pin XLR connectors)
Ethernet input ..... Neutrik etherCON TOP
..... (IP65 when mated with matching Neutrik cable connector,
..... compatible with standard etherCON Cat 5E and Cat 6A,
..... NOT compatible with etherCON Cat 6 push-pull)
AC Power, DMX and Network output ..... chassis-mount PDE hybrid connector (IP65)
Hot plugging ..... Compatible

Electrical

AC power ..... 100-240 V nominal, 50/60 Hz
Power Supply Unit ..... Auto-ranging electronic switch mode
Maximum power consumption ..... 55 W
Typical half-cycle RMS inrush current ..... 1.12 A
Typical earth-leakage current ..... 0.25 mA

Typical Power and Current

100V, 60Hz ..... 49.0 W, 0.49 A, PF 0.99
120V, 60Hz ..... 48.9 W, 0.412 A, PF 0.98
208V, 60Hz ..... 48.6 W, 0.244 A, PF 0.95
230V, 50Hz ..... 50.2 W, 0.227 A, PF 0.96
240V, 50Hz ..... 49.6 W, 0.219 A, PF 0.94

Measurements made at nominal voltage with all LEDs at full intensity. Allow for a deviation of +/- 10%. PF = power factor.

Thermal

Cooling ..... Convection
Maximum ambient temperature (Ta max.) ..... 40° C (104° F)
Minimum ambient temperature (Ta min.) ..... 0° C (32° F)
Total heat dissipation (calculated, +/- 10%) ..... 171 BTU/hr.

Approvals

EU safety ..... EN 60598-2-17 (EN 60598-1), EN 62471, EN 62493
EU EMC ..... EN 55015, EN 55032, EN 55103-2, EN 61000-3-2, EN 61000-3-3, EN 61547
US safety ..... UL 1573
US EMC ..... 47 CRF §15 Class B
Canadian safety ..... CSA C22.2 No. 166
Canadian EMC ..... ICES-003 Class B, ICES-005 Class B
Australia/NZ ..... RCM (pending)

Accessories

Junction Box

Junction Box Power-DMX-Ethernet to PDE ..... P/N 91610001

Optical Accessories

VDO Atomic Dot Diffuser 60 Degrees ..... P/N 91610002
VDO Atomic Dot Diffuser 30 Degrees ..... P/N 91610005

Mechanical Accessories

Super Lightweight Half Coupler Rigging Clamp, black ..... P/N 91602018
G-clamp (vertical hanging installation only) ..... P/N 91602003
Half-coupler clamp ..... P/N 91602005
Quick trigger clamp (vertical hanging installation only) ..... P/N 91602007
Safety Cable, SWL 60 kg, BGV C1 / DGUV 17, black ..... P/N 91604006
Safety Cable, SWL 60 kg, BGV C1 / DGUV 17, silver ..... P/N 91604007
Set of 10 VDO Atomic Dot Couplers ..... P/N 91610003
VDO Atomic Dot Half Coupler ..... P/N 91610004
VDO Atomic Dot Interlock Adapter ..... P/N 91610006
VDO Atomic Dot Pivot Coupler ..... P/N 91610007
VDO Atomic Dot Double Width Bracket ..... P/N 91616117
VDO Atomic Spigot Adapter 28mm ..... P/N MAR-91616118

Pre-Assembled Cables

Power+Data Cable Rental PDE-PDE 1m ..... P/N 91616001
Power+Data Cable Rental PDE-PDE 2,5m ..... P/N 91616002
Power+Data Cable Rental PDE-PDE 5m ..... P/N 91616003
Power+Data Cable Rental PDE-PDE 10m ..... P/N 91616004
Power+Data Cable Rental PDE-PDE 25m ..... P/N 91616005

Bulk Cable and Connectors

Power+Data Connector PDE Male ..... P/N 91611701
Power+Data Connector PDE Female ..... P/N 91611702
Power+Data Cable Power-DMX-Ethernet Rental 100m ..... P/N 91616006

Power Cables and Connectors for Junction Box

Power Input Cable, H07RN-F, 2.5 mm2, bare ends to
Neutrik TRUE1 NAC3FX-W (female), 1.5 m (4.9 ft.) ..... P/N 91611797
Power Input Cable, H07RN-F, 2.5 mm2, bare ends to
Neutrik TRUE1 NAC3FX-W (female), 5 m (16.4 ft.) ..... P/N 91611786

Power Input Cable, SJOOW, 12 AWG, bare ends to
TRUE1 NAC3FX-W (female), 1.5 m (4.9 ft.) .....P/N 91610173
Power Input Cable, SJOOW, 12 AWG, bare ends to
TRUE1 NAC3FX-W (female), 5 m (16.4 ft.) .....P/N 91610174
Cable Connector, Neutrik power CON TRUE1 NAC3FX-W (female) .....P/N 91611789

Flightcase

Flightcase for 15 x VDO Atomic Dot.....P/N 91515053
Flightcase Extender for 15 x VDO Atomic Dot .....P/N 91515054

DemoKit

VDO Atomic Dot Demo Kit.....P/N 91311001

Related Items

Martin Companion Cable (for firmware update over DMX) .....P/N 91616091
Martin RDM 5.5 Splitter .....P/N 90758150
Martin P3-050™ System Controller.....P/N 90721090
Martin P3-150™ System Controller.....P/N 90721015
Martin P3-300™ System Controller.....P/N 90721060
Martin P3-PC™ System Controller.....free download from martin.com

Ordering Information

VDO Atomic Dot CLD in cardboard .....P/N 90357701
VDO Atomic Dot WRM in cardboard .....P/N 90357702

Specifications are subject to change without notice. For the latest product specifications, see www.martin.com

Disposing of this product

Martin™ products are supplied in compliance with Directive 2012/19/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), where applicable. Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of Martin products

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Supplier's Declaration of Conformity

Harman Professional, Inc. have issued an FCC Supplier's Declaration of Conformity for this product. The Declaration of Conformity is available for download from the VDO Atomic Dot area of the Martin website at www.martin.com

Canadian Interference-Causing Equipment Regulations - *Règlement sur le Matériel Brouilleur du Canada*

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations CAN ICES-3 (B)/NMB-3(B) and CAN ICES-005 (B) / NMB-005 (B).

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

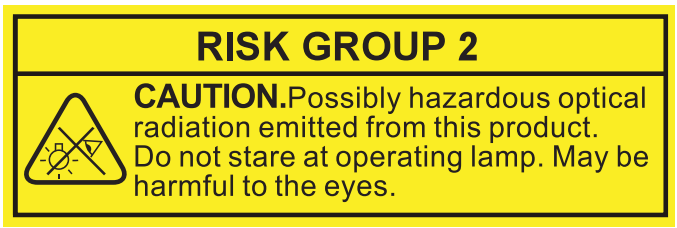
EU EMC

Not for use in a computer room as defined in the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.

Ne peut être utilisé dans une salle d'ordinateurs telle que définie dans la norme ANSI/NFPA 75 Standard for the Protection of Information Technology Equipment.

Photobiological Safety Warning

The label shown below is displayed on the CLD version of this product. If it becomes difficult or impossible to read, it must be replaced using the illustration below to reproduce new labels sized 17 x 51 mm, in black on a yellow background.



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