

# User Manual

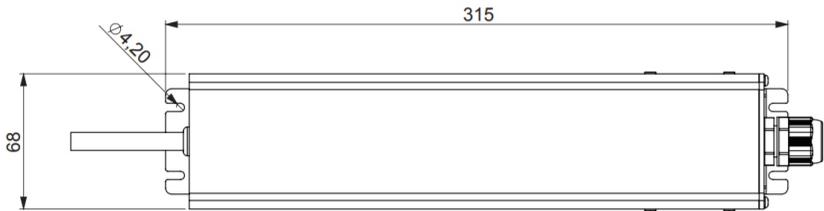
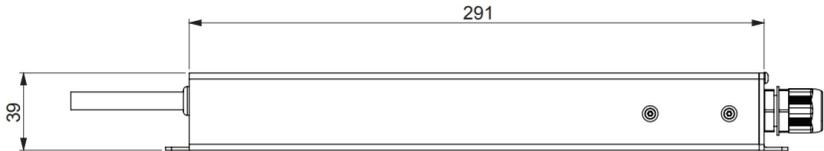
## Martin IP66 PSU 240W



**Martin**<sup>®</sup>  
by HARMAN

# Dimensions

Dimensions are in millimeters



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# Safety Information

**Warning! Read the safety precautions in this section before installing, powering, operating or servicing the Martin IP66 PSU 240W.**

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



**DANGER!**  
Safety hazard. Risk of severe injury or death.



**Warning!**  
Hazardous voltage. Risk of lethal or severe electric shock.



**Warning!**  
Burn hazard. Hot surface. Do not touch



**Warning!**  
Refer to user manual.

The Martin IP66 PSU 240W is for professional use only. It is not for household use. It presents risks of severe injury or death due to fire hazards, electric shock and falls.

**Read this manual** before installing, powering or servicing the Martin IP66 PSU 240W. Follow the safety precautions listed below and observe all warnings in this manual and printed on the PSU. Install and operate the Martin IP66 PSU 240W only as described in this manual and in accordance with local laws and regulations. Refer any operation not described in this manual to an authorized Martin Service partner.

If you have questions about how to operate the PSU or connected devices safely, please contact your Martin distributor (see [www.martin.com/distributors](http://www.martin.com/distributors) for details), or in the USA call 1-888-tech-180.



## Protection from electric shock

- Shut down power to the entire installation at the main power distribution board and lock out power (by removing the fuse at the distribution board for example) before carrying out any installation or maintenance work.



- Isolate the Martin IP66 PSU 240W and connected devices from AC power before removing or installing any cover or part and when not in use.
- Connect the Martin IP66 PSU 240W electrically to ground (earth).
- 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.
- Before using the Martin IP66 PSU 240W and connected devices, check that all power distribution equipment and cables are in perfect condition and are rated for the current requirements of all connected devices.
- Isolate all devices from power immediately if any cable, seal, cover or other component is damaged, cracked or deformed. Do not reapply power until repairs have been completed.
- The Martin IP66 PSU 240W can be installed outdoors.
- Refer any service operation not described in this manual to an authorized Martin Service partner.



## Protection from fire and burns

- Do not operate the Martin IP66 PSU 240W if the ambient temperature ( $T_a$ ) exceeds  $45^{\circ}\text{C}$  ( $113^{\circ}\text{F}$ ).
- The exterior surface of the Martin IP66 PSU 240W can become hot (up to  $80^{\circ}\text{C}$ ,  $176^{\circ}\text{F}$ ) during normal operation. Ensure that accidental physical contact with the device is impossible.
- Allow the Martin IP66 PSU 240W to cool for at least 10 minutes before servicing.
- Install the Martin IP66 PSU 240W at least 20 cm (8 in.) away from combustible materials (for example textiles, wood, paper).
- Keep flammable materials well away from the Martin IP66 PSU 240W.
- Do not modify the Martin IP66 PSU 240W in any way not described in this manual. Only install genuine Martin parts.
- Install the Martin IP66 PSU 240W indoors in a well-ventilated area only or outdoors. Provide a minimum clearance of 5 cm (2 in.) and ensure unrestricted airflow around the PSU.



## Protection from injury

- Ensure that all external covers, components and installation fittings are securely fastened.
- Block access below the work area and work from a stable platform whenever installing, servicing or moving devices overhead.
- 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.



### 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.

# Introduction

Thank you for using the Martin Professional® range of lighting and LED video products.

The Martin IP66 PSU 240W replaces the Martin Tripix Power IP66 external power supply unit and has identical specifications with that unit.

The Martin IP66 PSU 240W is an IP66-rated external power supply unit that can supply 48 VDC power to various Martin lighting and LED video products such as Exterior PixLine, Exterior Dot-HP and VC-Dot. It provides an alternative to the P3 PowerPort in supplying power to fixtures in a DMX-controlled system. The unit offers the following features:

- IP66-rated
- Wall-mountable
- Protection against overvoltage, overcurrent, short circuit, over-temperature, all with auto-recovery
- Surge protection up to 4 KV
- No configuration or addressing required.

For the latest documentation, product specifications and other information about this and all Martin Professional products, please visit the Martin website at <http://www.martin.com>.

## Using for the first time

Before applying power to the Martin IP66 PSU 240W:

- Carefully review “Safety Information” on page 3.
- Check that the local AC power voltage is within the range listed on the Martin IP66 PSU 240W’s serial number label.

# Physical installation



**Warning!** Read “Safety Information” on page 3 before installing devices.

**The safety and suitability of lifting equipment, installation location, anchoring method, mounting hardware and electrical installation is the responsibility of the installer. All local safety regulations and legal requirements must be observed when installing and connecting the devices. 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.

## Location and orientation

The Martin IP66 PSU 240W has an IP rating of 66 and is suitable for outdoor installation.

Allow 5 cm (2 in.) space and free airflow around the Martin IP66 PSU 240W. Do not bury or cover the PSU.

Install the Martin IP66 PSU 240W at least 20 cm (8 in.) away from any combustible materials (wood, paper, etc.) and well away from any flammable materials.

The housing of the Martin IP66 PSU 240W can reach 80° C (176° F). Restrict public access or locate PSUs so that they cannot accidentally be touched.

The PSU can be installed in any orientation.

## Mounting

Respect all local safety, fire and building regulations governing the installation of electrical equipment in cavities or plenums. Allow free airflow and at least 5 cm (2 in.) of free space around the device. Allow sufficient ventilation to ensure that the ambient temperature will not exceed 40° C (104° F) for the Martin IP66 PSU 240W and 45° C (113° F) for Tripix fixtures.

The Martin IP66 PSU 240W must be screwed or bolted securely to a flat surface in a location that is accessible for service using 5 mm shaft diameter screws or M5 bolts through the four mounting holes at the corners of the devices. Use washers under the screw or bolt heads. Use screw anchors in the mounting surface if necessary.

# AC power



**Warning!** Read “Safety Information” on page 3 before installing this product. Lock out power to the entire installation before working on cables and connections or removing any cover.

**Warning!** Electrical installation must be carried out by qualified professionals only.

**Warning!** For protection from dangerous electric shock, the Martin IP66 PSU 240W must be grounded (earthed). The AC power distribution system must be fitted with current overload and ground-fault (earth-fault) circuit breakers as well as a means to isolate the system from power and lock out power during service.

**Important!** Do not connect the Martin IP66 PSU 240W to an electrical dimmer system. Doing so can damage the electronics.

If you require help in planning or dimensioning the power distribution system, please contact your Martin supplier for assistance.

The Martin IP66 PSU 240W must be connected to a single-phase 3-wire (live, neutral, ground/earth) power distribution system at 100-240 VAC nominal, 50/60 Hz. Do not connect to power at any other voltage or frequency.

The Martin IP66 PSU 240W does not have a power on/off switch. Make sure that a means of isolating it from power (an on/off switch or a power plug that can be removed from a power outlet) is easily accessible.

## Power input cable



**Warning!** The electrical equipment and cable used to supply the Martin IP66 PSU 240W with power must be in perfect condition, be adequately dimensioned for current requirements and respect maximum cable run lengths.

To connect the Martin IP66 PSU 240W to AC mains power:

- For North America, use only SJTW (or STW), 3-conductor 18 AWG (or 16 AWG) power input cable rated minimum 105° C (221° F), VW-1.
- For the EU, use only power input cable type H05RN-F, 3 x 0.75 mm<sup>2</sup>.

Check the condition of cables carefully. If there is a break or cut at any point in a cable (for example at a connection point), and if this is

exposed to water, moisture can be drawn up the inside of the cable due to the vacuum effect of temperature fluctuations during operation.

## Power plug

The Martin IP66 PSU 240W can be hard-wired to a building's AC mains electrical installation, but if you decide to fit the power cable with a plug that is suitable for your AC mains power outlets, install a grounding-type (earthed) plug following the plug manufacturer's instructions.

Table 1 shows some possible pin identification schemes; if pins are not clearly identified, or if you have any doubts about proper installation, consult a qualified electrician.

Wire color (US system)	Wire color (EU system)	Conductor	Symbol	Screw (US)
Black	Brown	Live	L	Yellow or Brass
White	Blue	Neutral	N	Silver
Green	Yellow/Green	Ground (Earth)		Green

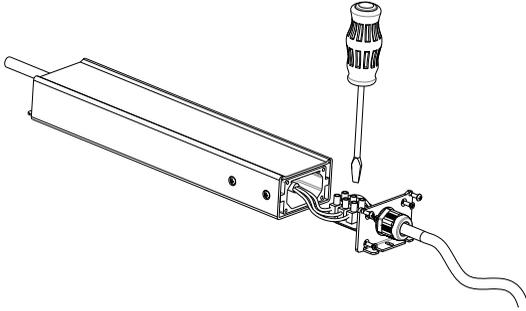
**Table 1: Cable color-coding and conductor identification**

## Power input cable

A power input cable that meets the specifications given under "Power input cable" on the previous page must be supplied by the user. The cable must have an external diameter of 5 – 9.5 mm (0.2 – 0.37 in.), otherwise the power cable entry gland will not be effective to IP66.

### ***Installing the power input cable***

1. Unfasten all the screws on the input side cover and lift the cover away from the housing as shown in Figure 1.



**Figure 1. Installing a power input cable**

2. Pass the power input cable through the cable gland.
3. Connect the power cable conductors to the power terminals inside the cover using Table 1 and the markings on the terminals as a guide.
4. Check carefully that the cover seal is correctly positioned, then replace the cover and tighten all the screws to a torque of  $1 \pm 0.1$  Nm
5. Tighten the outer nut on the cable gland to compress the gland and make the cable entry waterproof.
6. Prepare the other end of the power input cable for connection to AC mains power, but do not apply power until all installation work is completed.

# Connections



**Important! Read the user manuals of all products involved before making connections. Incorrect configuration may present a risk of fire, electric shock or damage.**

**Isolate the system from power before making connections.**

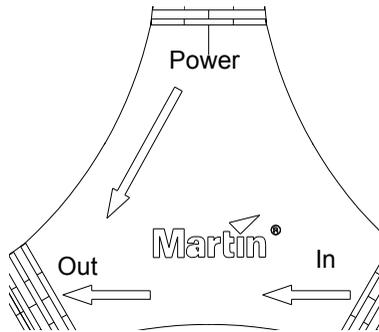
The Martin IP66 PSU 240W is used together with a Y-shaped input / power inserter cable that combines DC power from the PSU with DMX data from a DMX/RDM controller and sends a hybrid (combined power and data) signal to lighting / video display fixtures.

The following input cables are available from Martin for the different lighting / video display fixtures in Martin's product range:

<b>Lighting / video display product</b>	<b>Y-shaped input cable</b>	<b>Part number</b>
VC-Grid	Input Y-Cable, XLR5 + Martin IP66 PSU to XLR4	91616039
VC-Strip	Input Y-Cable, XLR5 + Martin IP66 PSU to XLR4	91616039
Exterior PixLine	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
Exterior Dot-HP	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
VDO Sceptron	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
VDO Fatron	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
VDO Dotron	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
Newer VC-Feeder (VC-Dot system)	Input Y-Cable, XLR5 + Martin IP66 PSU to BBD	91616050
Older VC-Feeder (VC-Dot system)	Input Y-Cable, XLR5 + Martin IP66 PSU to M16	11840195
Tripix system	Input Y-Cable Martin IP66 PSU 240 W to Tripix system	91611339

The connections from the PSU, from the DMX data source and to fixtures are marked on power inserter cables (see Figure 2). When you are cabling the installation:

- Connect the Martin IP66 PSU 240W to the cable tail marked **Power**
- Connect the DMX data source (RDM/DMX lighting controller) to the cable tail marked **In**
- Connect the chain of lighting / video display fixtures (or the VC-Feeder and chain of VC-Dots) to the cable tail marked **Out**.



**Figure 2. Markings on Input Cables**

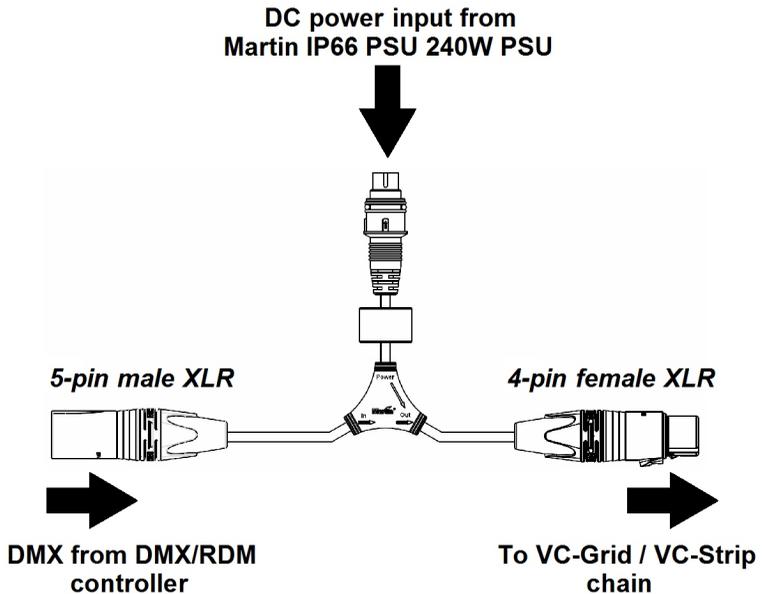
## VC-Grid and VC-Strip

VC-Grid and VC-Strip lighting / video display fixtures have 4-pin XLR connectors for power and data input.

To draw DC power from the Martin IP66 PSU 240W in an installation consisting of:

- Martin VC-Grid
- and/or VC-Strip products,

you will need an **Input Y-Cable, XLR5 + Martin IP66 PSU to XLR4, 0.25 m (9.8 in.), P/N 91616039** (see Figure 3). This Y-shaped cable connects the Martin IP66 PSU 240W and data from a DMX controller to a chain of VC-Grid or VC-Strip products via a 4-pin XLR connector.



**Figure 3. XLR5 + IP66 PSU to XLR4 Cable, P/N 91616039**

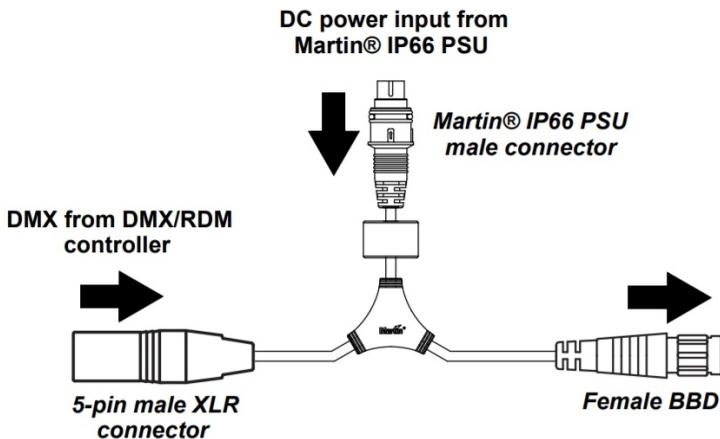
## Newer VC-Feeders and products with BBD connectors

Newer VC-Feeder units and Exterior PixLine, VDO Sceptron, VDO Dotron, VDO Fatron and Exterior Dot-HP lighting / video display fixtures have BBD connectors for power and data input.

To draw DC power from the Martin IP66 PSU 240W in an installation consisting of:

- VC-Dot products that are powered and managed via newer VC-Feeders,
- Martin Exterior PixLine,
- VDO Sceptron,
- VDO Dotron,
- VDO Fatron
- and/or Exterior Dot-HP products,

you will need an **XLR5 + Martin IP66 PSU-to-BBD Input Cable, 0.25 m, P/N 91616050** (see Figure 4) to connect the Martin IP66 PSU 240W and data from a DMX controller to a chain of VC video display products via a BBD-type connector.

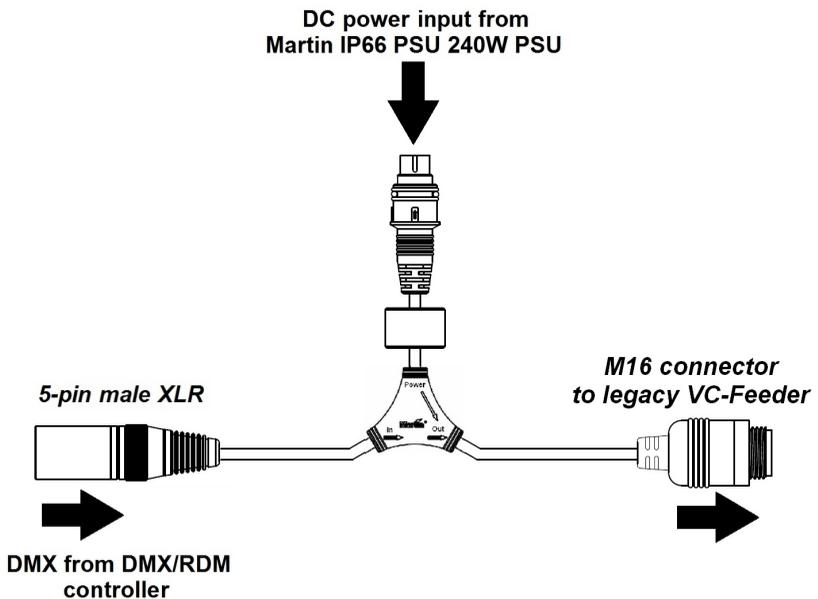


**Figure 4. XLR5 + IP66 PSU to BBD Input Cable, P/N 91616050**

## Legacy VC-Feeders with M16 connectors

Older VC-Feeder units had IP65-rated M16 connectors for power and data input.

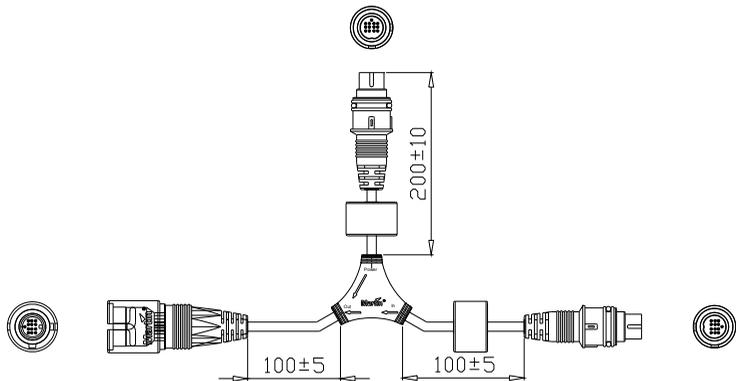
To draw DC power from the Martin IP66 PSU 240W in an installation consisting of Martin VC-Dot products that are powered and managed via legacy VC-Feeder units, you will need an **XLR5 + Martin IP66 PSU to M16 Input Cable, 0.25 m (9.8 in.), P/N 11840195** (see Figure 5) to connect the Martin IP66 PSU 240W and data from a DMX controller to an older VC-Feeder.



**Figure 5. XLR5 + IP66 PSU to M16 Input Cable, P/N 11840195**

## Tripix system

To draw DC power from the Martin IP66 PSU 240W in an installation consisting of Martin Tripix lighting fixtures, you will need a **Power Inserter Cable, Martin IP66 PSU 240 W to Tripix system, P/N 91611339** (see Figure 6). This Y-shaped cable connects the Martin IP66 PSU 240W and data from a DMX controller to a chain of Tripix fixtures.



**Figure 6. Tripix Power Inserter cable P/N 91611339**

# Service and maintenance



**Warning! Read “Safety Information” on page 3 before carrying out service or maintenance work on the Martin IP66 PSU 240W. Lock out power to the entire distribution system and allow fixtures to cool before servicing or opening any cover.**

The service and maintenance procedures described in this section must be carried out by qualified professionals only. Any service procedures not described in this section must be carried out by the Martin Service organization or its authorized agents.

## Cleaning



**Warning! Do not use a high-pressure water jet for cleaning.**

Regular cleaning is essential for fixture life and performance. Build up of dust and dirt degrades the PSU's cooling ability.

Clean the Martin IP66 PSU 240W when it becomes dirty. Use a soft cloth dampened with a solution of water and a mild detergent such as car shampoo. Take care not to damage cables during cleaning. Do not use products that contain solvents, abrasives or caustic agents for cleaning.

## Fuse



**Warning! The fuse in the Martin IP66 PSU 240W must be replaced by an authorized Martin Service partner only.**

If you suspect that the PSU's fuse has blown, contact Martin for assistance.

# Troubleshooting

<b>Problem</b>	<b>Probable cause(s)</b>	<b>Remedy</b>
PSU and connected lighting fixtures are completely dead	No power to Martin IP66 PSU 240W	Check power and connections.
	Primary fuse blown	Isolate device from power. Contact Martin for service.
Connected lighting fixtures cut out intermittently	Martin IP66 PSU 240W is too hot	<p>Ensure free airflow around Martin IP66 PSU 240W.</p> <p>Clean the Martin IP66 PSU 240W.</p> <p>Check that ambient temperature does not exceed maximum permitted level.</p> <p>Contact Martin for service.</p>

**Table 7: Troubleshooting**

# Specifications

## Physical

### Martin IP66 PSU 240W

Length .....	314 mm (12.4 in.)
Width .....	68 mm (2.7 in.)
Height .....	39 mm (1.5 in.)
Weight .....	1.5 kg (3.3 lb.)
Output cable tail length.....	350 mm (13.8 in.)

## System integration

- Exterior PixLine™ family
- Exterior Dot-HP™ family
- VDO Sceptron™ family
- VDO Dotron™ family
- VDO Fatron™ family
- VC-Dot™ family via VC-Feeder™
- VC-Grid™ family (indoor product)
- VC-Strip™ family (indoor product)
- Tripix family

## Construction

Housing .....	Aluminum
Finish .....	Clear Anodized
IP rating .....	IP 66, NEMA 4X
RoHS compliant	

## Installation

Orientation .....	Any
Mounting.....	Fixation points for surface mounting

## Connections

AC power input .....	Hard-wired (terminal block) via cable gland
48 VDC power out .....	Cable tail with 13-pin DIN connector, IP66

### DC power connection options

To VC-Grid .....	Input Y-Cable, XLR5 + Martin IP66 PSU to PSU to XLR4, 0.25 m (9.8 in.), P/N 91616039
To VC-Strip.....	Input Y-Cable, XLR5 + Martin IP66 PSU to XLR4, 0.25 m (9.8 in.), P/N 91616039

To VDO Sceptron .....	Via Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD, 0.25 m (9.8 in.), P/N 91616050
To VDO Dotron .....	Via Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD, 0.25 m (9.8 in.), P/N 91616050
To VDO Fatron .....	Via Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD, 0.25 m (9.8 in.), P/N 91616050
To Exterior PixLine .....	Via Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD, 0.25 m (9.8 in.), P/N 91616050
To Exterior Dot-HP .....	Via Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD, 0.25 m (9.8 in.), P/N 91616050
To newer VC-Feeder .....	Input Y-Cable, XLR5 + Martin IP66 PSU 240W to BBD connector, 0.25 m (9.8 in.), P/N 91616050
To legacy VC-Feeder .....	Input Y-Cable, XLR5 + Martin IP66 PSU 240W to M16 connector, 0.25 m (9.8 in.), P/N 11840195
To Tripix .....	Via Power Inserter Cable, Martin IP66 PSU 240 W to Tripix system, 0.25 m (9.8 in.), P/N 91611339

*See user manuals of compatible products for latest complete information on suitable cables and connectors, safety limits, etc.*

## Electrical

AC power.....	100-240 VAC nominal, 50/60 Hz
Power supply unit .....	Auto-sensing multi-voltage switch mode
DC power output.....	48 V
Maximum DC output power .....	240 W
Maximum DC output current draw .....	5 A
Protection .....	Overvoltage, overcurrent, short circuit, over-temperature, all with auto-recovery
Surge protection .....	4 KV

## Thermal

Cooling .....	Convection
Maximum ambient temperature (Ta max.).....	45° C (113° F)
Minimum ambient temperature (Ta min.).....	-30° C (-22° F)
Maximum surface temperature, steady state, Ta=45° C: .....	80° C (176° F)
Total heat dissipation (calculated, including max. number of connected devices, all at full load) .....	.820 BTU/hr.

## Approvals



EU Safety .....	EN 60598-1, EN 60598-2-1
LED Safety .....	IEC 60825-1, 2001; IEC 62471, 2006
EU EMC .....	EN 55 015, EN 55 103, EN 61 000-3
US Safety .....	UL 1598
Canadian Safety .....	CAN/CSA C.22.2 No. 250

## Accessories\*

Input Y-Cable, 5-pin XLR + Martin IP66 PSU 240W to BBD, 0.25m (9.8 in.).....	P/N 91616050
Input Y-Cable, 5-pin male XLR + Martin IP66 PSU 240W to 4-pin fem. XLR, 0.25 m (9.8 in.).....	P/N 91616039
Input Y-Cable, 5-pin male XLR + Martin IP66 PSU 240W to M16, 0.25 m (9.8 in.).....	P/N 11840195
Input Y-Cable, Martin IP66 PSU 240 W to Tripix™ system.....	P/N 91611339

\*See also overview of power input cables on page 12

## Ordering Information

Martin IP66 PSU 240W .....	P/N 90760330
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*Specifications subject to change without notice. Please see [www.martin.com](http://www.martin.com) for latest product information and specifications.*



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