



#### Information specifically for:

DM-VECTORLED36QWZ

This manual contains important information. Please read before operating fixture. v1.0

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#### Save original packing and documentation for warranty, service and return issues.

Limited Warranty: This warranty covers defects or malfunctions in this equipment. This warranty lasts for a period of one year from date of purchase. It is the owner's responsibility to provide invoices for proof of purchase, purchase date and dealer or distributor. If purchase date can not be provided, warranty period will start at manufacture date. It is the sole discretion of Techni-Lux to repair or replace parts or equipment. All shipping will be paid by purchaser. This warranty does not cover lamps, fuses, belts, power semiconductors, relays, cleaning, standard maintenance adjustments or normal wear items or any problem resulting from the following: improper wiring, incorrect voltage (including low or over voltage conditions and lightning), abuse, misuse, improper maintenance or an act of God or damage resulting from shipping. Warranty will be null and void if the product is altered, modified, misused, damaged, or subjected to unauthorized repairs. Lamps are covered by relevant manufacturer warranty. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Any liability for consequential and incidental damages is expressly disclaimed. No other warranty, expressed or implied is made. Techni-Lux liability in all events is limited to, and shall not exceed, the purchase price paid.

Returning equipment and Repairs: All returns must be accompanied by a Return Merchandise Authorization (RMA) number and sent pre-paid. Contact the dealer or Techni-Lux directly to obtain an RMA. The RMA number must be clearly listed on the shipping label. Due care must be exercised in packing all merchandise to be returned. All repairs must be accompanied by a written explanation of the claimed problem or error encountered. Techni-Lux is solely responsible for determining a product's eligibility for coverage under warranty. If returning for consideration of credit, all accessories and documentation, original protective material and cartons must be included and the equipment, packing and carton must be in new resalable condition. Credit for returned merchandise will be issued at the lowest current price and is subject to a restocking fee. No returns accepted on discontinued items. Techni-Lux is not responsible for merchandise damaged in transit and reserves the right to refuse any return that is damaged by the carrier, not accompanied by a Return Authorization Number (RMA#) or sent by freight collect.

Claims: All claims must be made within seven (7) days of receipt of merchandise. Any physical damage must be reported to carrier upon receipt of merchandise.

Please record the following information for future reference:
Model Number: DM-VECTORLED36QWZ

Serial Number: \_\_\_\_\_

Dealer: \_\_\_\_\_

Date of Purchase:

www.Techni-Lux.com 10900 Palmbay Drive Orlando, FL 32824 U.S.A.

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## **Specifications**

#### Fixture Overview

- 36 Full Color Quad Element 10w LED Red, Green, Blue, White
- Long Life LED
- 8 or 16 bit resolution Pan/Tilt movement for smooth accurate positioning
- Pan range of movement User selectable: 540° or 630°
- Tilt range of movement: 265°
- Consistent & auto correcting Pan/Tilt positioning
- Pan/Tilt motor speed control
- Motorized Beam angle 15° to 50°
- Digital shutter for 0 18 FPS strobing effects and quick blackouts
- Digital dimming 0-100% for smooth fades and even fields
- DMX512 Control thru 14 Channels and 5 pin In/Out XLRs
- Remote reset
- Digital display for DMX addressing and fixture settings
- Forced Air Ventilation
- Precision Anti-Reflective Coated Optics
- Luminous Output: 720 lumen
- Light weight at 20 pounds (9 kg)

#### Physical

Color Width Depth Height Weight Packed Weight

Black 13.8" (35cm) 10.2" (26cm) 13.8" (35cm) 20 pounds (9 kg) 24 pounds (10.8 kg)

### Lamp Source

Lamp Type Luminous Output 36 Quad Element 10w LED – Red, Green, Blue, White 720 lumen

### Environmental

Environmental Protection Rating	IP20
Maximum ambient temperature	105°F (40°C)
Maximum exterior surface temperature	176°F (80°C)
Minimum distance to flammable surface	3.3ft (1m)
Minimum distance to illuminated surface	3.3ft (1m)

### Electrical

Selectable Voltages Connection Rated Power Fuses Auto Switching 100-240v 50/60Hz IEC (C13) Power Inlet with Fuse 300W, 2.6A @ 117v 5A Fast Blow Size: 5x20mm

## Control

Protocol Channels Pan/Tilt Resolution Data I/O Modes USITT DMX512 (1990) 14 8 or 16 bit 5 Pin XLR (Cannon) Master / Slave / DMX

## **Optics**

Lenses Beam Angle Precision Anti-Reflective Coated Optics  $15^{\circ} - 50^{\circ}$ 

## Rigging

Position Orientation Mounting Floor or Truss mount Any Omega type clamp adapter with 0.5" hole

### **Unit Parts**

- 1 Head
- 2 Yoke
- 3 Base
- 4 Control Panel
- 5 Base Bottom
- 6 Omega Clamp Adapter





## Unpacking

Immediately upon receipt, carefully unpack and inspect the fixture to verify that all parts are present and have been received in good condition. If any parts appear damaged from shipping or the shipping carton shows signs of mishandling, retain all packing material for inspection and notify the shipper immediately. Save original carton and packing. In the event that the merchandise is to be returned, the original carton and packing must be used. The customer will be billed for a new carton and packing if merchandise is received without the original carton and packing. The plastic bag shipped with the fixture can be used to keep the fixture clean if stored or installed in a temporarily dusty environment. Do not operate fixture with plastic bag in place.

#### Save Shipping Materials

The packing and carton are designed to provide the fixture with protection during shipping. Save original packing and documentation for warranty, service and return issues. Additional charges will be applied to return items not received in original or incomplete packing.

#### Claims

Physical damage must be reported to the Freight Carrier or Shipping Company upon receipt of merchandise. Damage incurred in shipping is the responsibility of the Freight Carrier or Shipping Company. It is the customer's obligation in the event that merchandise is received damaged caused by shipping to notify the Freight Carrier or Shipping Company immediately. All other claims not related to damage incurred during shipping must be made to the Dealer or Distributor within 7 (seven) days of receiving merchandise.

#### Returns

Returned merchandise must be sent prepaid, in the original packing with a Return Merchandise Authorization number (RMA) clearly listed on the shipping label. Items sent by Freight Collect or without a RMA number will be refused. Call your sales person and request a RMA prior to shipping. Be prepared to provide the model number, serial number and a brief description of the nature of the return. Shipping damage resulting from inadequate packaging is the customer's responsibility. Customer will be charged additional shipping charges to return products received in non original packing and or cartons.

### Power

Power is connected to the fixture with an IEC power inlet and cord.



Before applying power to fixture, set the power switch to "OFF" and verify input voltage matches the power source voltage. Check all power cords to verify they are of proper type and sufficient rating for the equipment attached. For protection against electric shock, fixture must be connected to suitable earth ground. The listed current rating is its average draw under normal conditions. All fixtures must be powered directly from a switched circuit. This fixture cannot be run on rheostat or dimmer circuits - even if used solely for a 0% to 100% switching. Consult a qualified electrician if there are any concerns about proper connection to power.

### **Voltage Selection**

This Fixture is equipped with an Auto Switching Power Supply. It will automatically adjust to any line voltage within the specified range.

### **LED Engine**

This unit is equipped with a Long Life LEDs that are aligned at the factory. There is no need for the user to change lamps or perform any alignment.



Do not stare directly into the light source.

## Mounting

Always consult a qualified professional when rigging. This fixture may be placed on any flat surface or truss that is capable of safely supporting the weight. When selecting a mounting position, take into consideration access for routine maintenance. This fixture may be mounted in any position provided there is adequate room for movement and ventilation. Mount the fixture securely using an appropriate clamp and a safety cable. Safety cables must always be attached to the fixture. Do not use handles as secondary mounting points. Do not mount in a place where the fixture will be exposed to rain, high humidity, extreme temperature changes or restricted ventilation. Do not obstruct the vents or fans. Keep fixture a minimum of 3.3ft (1m) from flammable materials.



## **Control Panel Menu**

The fixture's Control Panel to accesses the Options Menu. ENTER confirms the selection, Menu back out to the Menu List and the UP / DOWN buttons move between possible selections. Settings are stored and recalled on subsequent power cycles.

An LED indicates the presence of data: Blinking = Data, Solid = No Data

Note: Display will automatically turn off after 30 seconds, press any button to turn back on.

Menu	Options	Description
DMX Address	001-512	DMX Start Address
Pan Invert	No/Yes	Invert Pan Direction
Pan Degrees	630°/540°	Select Pan Range
Tilt Invert	No/Yes	Invert Tilt Direction
Mode	DMX512	Responds to DMX Data, auto detect Sound or Auto
	Slave	Responds only to another fixture set to Sound or Auto
	Sound	Responds to internal Mic, drives fixtures set Slave or DMX
	Auto-matism	Runs internal programs, drives fixtures in Slave or DMX
Manual	CH:01	Pan Coarse Position
	CH:02	Pan Fine Position
	CH:03	Tilt Coarse Position
	CH:04	Tilt Fine Position
	CH:05	Red
	CH:06	Green
	CH:07	Blue
	CH:08	White
	CH:09	Shutter
	CH:10	Master Dimmer
	CH:11	Color Macro
	CH:12	Zoom
	CH:13	Pan/Tilt Speed
	CH:14	Control
Reset	Motor	Reset Motor Positions
	Factory	Reset Options to Factory Default

### **DMX-512 Start Address**

The Start Address of a fixture is set using the "DMX Address" Menu Item in the Control Panel. Consult the manual of the system's DMX512 controller to select a desirable addressing scheme before addressing fixtures. Each fixture connected to the DMX-512 data link requires a Start Address to indicate the first DMX channel containing data designated for that fixture, see DMX-512 Background. Valid Start Addresses range from 1 to 512. Fixtures requiring more than one channel for control will read subsequent channels up to the total number of channels required. A fixture requiring five (5) channels of DMX, set to a Start Address of eleven (11), would read data from the Start Address channel 11 and the four following channels of 12, 13, 14, 15. The next logical Start Address without concern to order in the DMX-512 Daisy Chain or physical location. Choose a Start Address so the channels used do not overlap with other fixtures. In some cases, it may be desirable to set two or more same type fixtures to the same Start Address. In this case, the fixtures will be slaved together and respond to the same data.

**Example** Select Start Addresses: 4 fixtures each requiring 14 channels of DMX.

- Since these are the first fixtures added to the system, the first unit will be set to Start Address=1. This fixture occupies DMX channels 1 thru 14.
- The next open DMX channel available for a Start Address is found by adding the previous fixture's Start Address to its channel requirement: 1+14=15. DMX channel 15 is the next open Start Address.
- In this example, to maximize channel usage no empty channels are left between fixtures so the second fixture's Start Address is set to DMX channel 15. This fixture occupies the next 14 channels, starting with 15 up to and including 28.
- Repeat the process for the remaining two fixtures: Next open DMX channel is 15+14=29 and then 29+14=43.
- Therefore, the four 14 channel fixtures have Start Addresses of 1, 15, 29 and 43.
- Repeat the technique once more to find the next open channel in the system, 43+14=57. Channels 57 thru 512 are available for system expansion.

## **DMX-512 Channel Assignment**

The Vector LED Wash Zoom requires 14 channels of DMX.

Channel	Function
1	Pan Coarse Position
2	Pan Fine Position
3	Tilt Coarse Position
4	Tilt Fine Position
5	Red
6	Green
7	Blue
8	White
9	Shutter
10	Master Dimmer
11	Color Macro
12	Zoom
13	Pan/Tilt Speed
14	Control

#### CH 1-4 : Pan / Tilt Position

Pan range is user selectable 540° or 630°. Tilt range is 265°. A position feedback system is used to enable auto correction of Pan and Tilt. Speed and Movement options are controlled by the Pan/Tilt Speed Channel 13 and Control Channel 14.

CH 1 – Pan Coarse Position (540° or 630°)		
CH 2 – Pan Fine Position (3.6°)		
CH 3 – Tilt Coarse Position (265°)		
CH 4 – Tilt Fine Position (3.6°)		
DMX Value	Function	
0 – 255	Position - Minimum to Maximum	

#### CH 5 : Red

Sets relative intensity of Red. Actual value is subject to Master Dimmer Channel 10. The Color Macro Channel 11 and Control Channel 14 will override this channel.

CH 5 – Red	
DMX Value	Function
0-4	No Output
5-255	Intensity - Off to Full On

#### CH 6 : Green

Sets relative intensity of Green. Actual value is subject to Master Dimmer Channel 10. The Color Macro Channel 11 and Control Channel 14 will override this channel.

CH 6 – Green	
DMX Value	Function
0-4	No Output
5-255	Intensity - Off to Full On

#### CH 7 : Blue

Sets relative intensity of Blue. Actual value is subject to Master Dimmer Channel 10. The Color Macro Channel 11 and Control Channel 14 will override this channel.

CH 7 – Blue	
DMX Value	Function
0-4	No Output
5-255	Intensity - Off to Full On

### CH 8 : White

Sets relative intensity of White. Actual value is subject to Master Dimmer Channel 10. The Color Macro Channel 11 and Control Channel 14 will override this channel.

CH 8 – White	
DMX Value	Function
0-4	No Output
5-255	Intensity - Off to Full On

### CH 9 : Shutter / Strobe

The Shutter channel works directly on the LED Light Engine. It is an electronic shutter that enables instantaneous shutter Open and Closed "movements." Because no mechanical elements are involved it is completely silent with no wipe effect allowing for incredibly fast and unique strobing effects.

CH 9 – Shutter / Strobe	
DMX Value	Function
0-6	No Function
7-65	Strobe, Slow to Fast
66-69	No Function
70-128	Strobe Pulse, Slow to Fast
129-132	No Function
133-191	Fade In, Slow to Fast
192-195	No Function
196-255	Fade Out, Slow to Fast

#### CH 10 : Dimmer

Proportionally works on each RGBW LED source to function as a Master dimmer (except for Color Macros) to vary beam intensity while maintaining the selected color mix. Electronic control allows smooth dimming with an absolutely flat field even at low levels.

CH 10 – Dimmer	
DMX Value	Function
0-255	Intensity – Black Out to Full Open

#### CH 11 : Color Macro

The Color Macro selects between Static and Color Scroll Functions. This will override the relative values set by the individual RGBW channels 5, 6, 7 & 8.

CH 11 – Color Macro	
DMX Value	Function
0-4	- Color Macro Disabled -
5-9	Static Color Red
10-14	Static Color Amber
15-19	Static Color Yellow
20-24	Static Color Green
25-29	Static Color Cyan
30-34	Static Color Blue
35-39	Static Color Magenta
40-44	Static Color White
45-49	- Color Macro Disabled -
50-94	Eight color step at 9 speeds
95-99	- Color Macro Disabled -
100-149	Eight color fade at 5 speeds
150-154	- Color Macro Disabled -
155-166	Stepped: Red to Yellow $(R \rightarrow RG)$
167-178	Stepped: Yellow to Green (RG $\rightarrow$ G)
179-190	Stepped: Green to Cyan (G → GB)
191-202	Stepped: Cyan to Blue (GB → B)
203-214	Stepped: Blue to Magenta ( $B \rightarrow BR$ )
215-226	Stepped: Magenta to Red (BR $\rightarrow$ R)
227-238	Stepped Color Temperature (R → RGB)
239-250	Stepped Cyan to Magenta (BR → BG)
251-255	Full Bright (RGBW)

### CH 12 : Zoom

The Zoom is used to vary the beam angle from Narrow to Wide.

CH 12 – Zoom	
DMX Value	Function
0-255	Zoom – Narrow to Wide

#### CH 13 : Pan / Tilt Speed

When set to zero (0), movement speed is determined by the controller. Other values under Tracking Speed allow user selectable movement speeds.

CH 13 – Pan / Tilt Speed	
DMX Value	Function
0-255	Tracking Speed Fast to Slow

### CH 14 : Control

The internal programs can be remotely activated.

CH 14 – Control	
DMX Value	Function
0-127	- Control Disabled -
128-240	Internal Programs – Auto Trigger
241-245	- Control Disabled -
246-250	Fixture Reset – Hold for 3 Seconds
251-255	- Control Disabled -

### Data Link DMX-512

For data, this fixture uses XLR (Cannon) type connectors and shielded twisted pair cable approved for EIA-422/EIA485 use. Fixtures are connected in Daisy Chain topography with only one data source and no branching. Systems using 3 or 5 pin DMX interfaces can be accommodated by purchasing 3-to-5 pin adapters or building adapter cables.



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#### Adapter 5-to-3 pin

Numbers designating each pin can be found on connectors. Converting between the two XLR types is done in a pin-to-pin fashion. Connect the shields to pin 1, then connect pin 2 to pin 2 and pin 3 to pin 3. This is true for converting either 5 to 3 pin or 3 to 5 pin regardless of either connector's gender. Pins 4 and 5 are not used on the 5 pin XLR connectors.



A Data Terminator can be connected to the DATA OUT connection of the last fixture to reduce the effects of noise in the signal; it is not required for all installations. To make a Data Terminator, connect a 120-ohm ¼ watt resistor across pin 2, Data Negative (S-) and pin 3, Data positive (S+). A qualified technician can determine if a Data Terminator is needed.

### Maintenance

Make sure fixture is cool and disconnected from power mains before any service.

Weekly operating hours and environmental conditions will establish how often the fixtures need cleaning. Fixtures should be cleaned and inspected at least once a month to maintain optimum performance. Accumulation of dust and fog residue increases heat build up, can lead to malfunctions, overheating and reduction in maximum light output. This condition may cause undue stress on electronics, mechanical elements, reduce LED Engine life, fixture life and over all performance. Before conducting any maintenance, disconnect fixture from power mains.

1) Disconnect fixture from power mains.

2) Use a vacuum with a soft brush to remove dust collected on external vents and internal components. If using an air compressor, use low pressures and extreme care to prevent damaging any internal parts or effects.

3) Vacuum dust buildup from fan intakes and check that all fans function correctly.

4) Clean all optical elements when the fixture is cold. Use a soft lint free cotton cloth or tissue and either Isopropyl or Denatured Alcohol. Any cleaner approved for coated eyeglass lenses will also work.

5) Inspect clamps and safety cables to ensure fixture is secure and safe.





### DMX-512 Background

DMX-512 is a digital data transmission standard developed by the United States Institute for Theater Technology (USITT). It is designed to enable control of lighting equipment, originally dimmers. DMX deals solely with the formatting of data for transmission and does not dictate how the data is created or used.

Under DMX, signals are transmitted in much the same way a computer modem transmits data. The Data, divided in to channels, is "Framed" using a start bit, high (1), eight data bits and finally, two stop bits, both high (1). DMX uses no parity to check the integrity of the signal. Instead, DMX relies on the ultra low probability of an error occurring in the same place when the data is resent. The rate at which data is sent is fixed at 250k bps, almost four and a half times faster that a 56k modem. This speed allows all data on a DMX chain to be updated more than 44 times every second.

The transmitted data follows a specific format. DMX allows for 512 channels each with eight data bits, giving each channel the possibility of 256 values. When a data "Packet" is sent, all channels are transmitted one after another. Even if the data on a specific channel has not been changed, it must be sent. In a packet, a "start code" of all zeros is sent before the data to identify the signal as a Standard DMX transmission. This start code is transparent to the user and is handled by the controller.

The physical signals are transmitted using a twisted pair of wires and a common shield, a configuration called Balanced. The controller and all receiving equipment are connected using a "Daisy Chain" connection. The signal is jumped from the controller to a piece of DMX equipment. From there, the signal is jumped to the next piece of equipment and so on until the last piece of equipment is connected. No branches are allowed and the signal does not come back to the controller. The final piece of equipment will have only one cable connection. As a result, all equipment connected to the chain will see exactly the same signal whether it is first or last. When connecting equipment, no particular attention needs to be paid to the order in which the equipment is connected. Depending on the conditions and equipment, a line terminator may be required. If there is any question, in most circumstances the addition of a terminator will not degrade the signal. To make a terminator, add a 120-ohm resistor between the Signal Data Negative and Signal Data Positive pins of a connector in the last piece of equipment in the chain.

The DMX Standard calls for connections between DMX compatible equipment to be made using 5 pin XLR connectors. However, it is common to see fixtures with 3 pin XLR connectors as these types of balanced or "Lo-Z" cables are common in the audio industry. In either case, pin numbers are the same and carry the same signals.

Pin 1 -	Signal Common (Shield)
Pin 2 -	Signal Data Negative
Pin 3 -	Signal Data Positive

- Pin 4 (not used)
- Pin 5 (not used)

# Troubleshooting

Symptom	Possible Cause / Solution
No Power	Check power switch
	Check for power on mains
	Check main fuse and fuse holder
No response to DMX	Check data cables
	Check Start Address
	Check that fixture isn't in the Demo mode
Incorrectly responds to DMX	Check Start Address
(Dispussion to chairman for DNA) issues. Oct	Check for overlapping addresses
(Diagnostic technique for DMX issues: Set	Check fixture set up (Pan/Tilt Invert)
correctly functioning fixture. If both units then	Check Data cables (faults and proper wiring)
function correctly, issue is programming)	
No Light Output / Low Output	Check that both Shutter and Dimmer values
	are set properly
	Inspect fixture light path and verify no effects are blocking beam
	Remove from DMX, Control Panel to test in demo/manual mode
	Over temperature – Turn fixture off and allow to cool then attempt again. If condition improves, check all fans.
Erratic operation	Check Pan/Tilt are not blocked or coming in contact with anything during movement
	See "Incorrectly responds to DMX"
	Check for properly wired DMX cables
	Check for broken wires inside unit
	Check for damaged Data transceiver IC
	Mains Voltage too low or noisy

# **Accessory Items**

Order Code	Description	
CLAMP-MEGA/B	Clamp-Mega Black - Heavy Duty	
CLAMP-CBHALF	Coupler Half Cheeseborough	
SAFETYCABLE30S	Safety Cable Silver 30"	
SAFETYCABLE30B	Safety Cable Black 30"	
SAFETYCABLE18B	Safety Cable Black 18"	
SAFETYCABLE18S	Safety Cable Silver 18"	
CA-XLR3/1	Pre-made 1' 3-pin XLR Cable	
CA-XLR3/5	Pre-made 5' 3-pin XLR Cable	
CA-XLR3/10	Pre-made 10' 3-pin XLR Cable	
CA-XLR3/25	Pre-made 25' 3-pin XLR Cable	
CA-XLR3/50	Pre-made 50' 3-pin XLR Cable	
CA-XLR3/100	Pre-made 100' 3-pin XLR Cable	
CA-XLR5/1	Pre-made 1' 5-pin XLR Cable	
CA-XLR5/5	Pre-made 5' 5-pin XLR Cable	
CA-XLR5/10	Pre-made 10' 5-pin XLR Cable	
CA-XLR5/25	Pre-made 25' 5-pin XLR Cable	
CA-XLR5/50	Pre-made 50' 5-pin XLR Cable	
CA-XLR5/100	Pre-made 100' 5-pin XLR Cable	
CO-XLR3M	XLR Connector 3-pin Male	
CO-XLR3F	XLR Connector 3-pin Female	
CO-XLR5M	XLR Connector 5-pin Male	
CO-XLR5F	XLR Connector 5-pin Female	
CO-XLRTERM3	XLR 3 Pin Data Terminator	
CO-XLRTERM5	XLR 5 Pin Data Terminator	
CO-XLR3MTO5F	XLR 3 Pin Male to 5 Pin Female Adapter	
CO-XLR5MTO3F	XLR 5 Pin Male to 3 Pin Female Adapter	