High End Systems
Zeo
Automated Luminaire User Manual

Version 1.2.4

Part Number: 2593M1200-1.2.4 Rev: B

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Table of Contents

Introduction

This manual provides important information for the safe installation, configuration, and maintenance of your High End Systems Zeo fixture. For your safety, read this entire manual prior to installing, operating, or servicing the fixture.

ETC recommends that you update your fixture with the latest version of software before you use the fixture. Software is available for free download from the ETC website: etcconnect.com/Products/Automated-Fixtures.

- See *View Software Version on page 20* to determine which version of software is currently installed on your fixture.
- See *Update Software on page 26* for instructions about updating your fixture.

Document Conventions

This document uses the following conventions to draw your attention to important information.

Note: *Notes are helpful hints and information that is supplemental to the main text.*

CAUTION: ***A Caution statement indicates situations where there may be unwanted consequences of an action, potential for data loss, or an equipment problem.***

CAUTION: ***Hot Surfaces. This statement indicates that while operating, equipment surfaces may reach very high temperatures. Allow the fixture to cool before handling or servicing.***

WARNING: A Warning statement indicates situations where damage may occur, people may be harmed, or there are serious or dangerous consequences of an action.

WARNING: RISK OF ELECTRIC SHOCK! This warning statement indicates situations where there is a risk of electric shock.

All ETC High End Systems documents are available for free download from our website: etcconnect.com/Products/Automated-Fixtures.

Please email comments about this manual to: TechComm@etcconnect.com.

Help from Technical Services

If you have questions that are not answered by this document, try the ETC support website at support.etcconnect.com or the ETC LED Automated Lighting product website at etcconnect.com/Products/Automated-Fixtures. If none of these resources are sufficient, visit etcconnect.com/contactETC and contact ETC Technical Services. Emergency service is available from all ETC offices outside of normal business hours.

When calling for help, take these steps first:

- Prepare a detailed description of the problem
- Go near the equipment for troubleshooting
- Find your notification number if you have called in previously

Safety Considerations

To ensure safe operation, follow the safety instructions and warning notes in the user manual.

- This fixture is intended for professional use only. Not for residential use. Read the entire manual before using this equipment.
- Contact your authorized ETC dealer or Technical Services before performing any service in order to maintain warranty coverage.

WARNING: Note the following safety warnings before use:

- **This equipment is designed for operation by qualified personnel only.**
- **Do not stare at the operating lamp. May be harmful to the eyes.**
- **Replace fuses with the specified type and rating only. See *page 30*.**
- **Ensure that the available voltage is within the stated range. See *page 11*.**
- **Do not use this fixture with a damaged power lead (cord set). If the lead is damaged, it must be replaced by a qualified technician with an equivalent type before use. Contact your local authorized dealer for replacement power leads.**
- **Do not use this fixture if the lens is damaged. Damaged lenses must be replaced before use. Contact your local authorized dealer for a replacement.**
- **The fixture should be positioned so that prolonged staring into the fixture at a distance closer than 6.4 m (21 ft) is not expected.**
- **Do not mount the fixture on or near flammable surfaces.**
- **Minimum distance from fixture head to combustible materials: 0.1 m (4 in).**
- **Minimum distance to lighted objects: 2.0 m (6 ft 7 in).**

AVERTISSEMENT : Pour votre sécurité, lisez les mises en garde et les avis suivants avant toute utilisation :

- **Cet équipement est conçu pour être utilisé par un personnel qualifié uniquement.**
- **Ne regardez pas la lampe en fonctionnement. Peut être nocif pour les yeux.**
- **Remplacez les fusibles uniquement par le type et le calibre indiqués. Voir *page 30*.**
- **Veillez à ce que la tension disponible soit dans la plage indiquée. Voir *page 11*.**
- **N'utilisez pas ce projecteur avec un cordon d'alimentation endommagé (fils électriques). Si le cordon est endommagé, un technicien qualifié doit le remplacer par un cordon de type équivalent avant que l'appareil ne puisse être utilisé. Contactez votre distributeur agréé local pour obtenir des cordons d'alimentation de rechange.**
- **N'utilisez pas cet appareil si la lentille est endommagée. Les lentilles endommagées doivent être remplacées avant l'utilisation. Contactez votre revendeur agréé local pour un remplacement.**
- **L'appareil doit être positionné de manière à ce qu'un regard prolongé dans l'appareil à une distance inférieure à 6,4 m (21 pi) soit peu probable.**
- **Ne pas installer le projecteur sur ou à côté d'une surface inflammable.**
- **Distance minimum entre la tête du luminaire et les matériaux combustibles : 0.1 m (4 in).**
- **Distance minimum avec les objets éclairés : 2.0 m (6 ft 7 in).**

WARNING: RISK OF ELECTRIC SHOCK!

- **Do not operate this device with the cover open.**
- **Disconnect the fixture from power and DMX and allow it to cool before performing any cleaning and maintenance.**

AVERTISSEMENT : RISQUE DE CHOC ÉLÉCTRIQUE!

- **N'utilisez pas cet appareil avec le couvercle ouvert.**
- **Débrancher la lampe de son alimentation et du DMX et la laisser refroidir avant d'effectuer un nettoyage ou un entretien.**

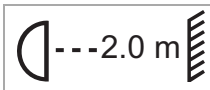
RISK GROUP 2: CAUTION. ***Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.***

GROUPE DE RISQUE 2 (RISQUE MODÉRÉ) : ATTENTION. Rayonnement optique potentiellement dangereux émis par ce produit. Ne regardez pas la lampe en fonctionnement. Peut être nocif pour les yeux.

CAUTION: ***Hot Surfaces. Allow the device to cool completely before handling and servicing.***

ATTENTION : ***Surfaces chaudes. Laissez le luminaire refroidir complètement avant de le manipuler et de procéder à son entretien.***

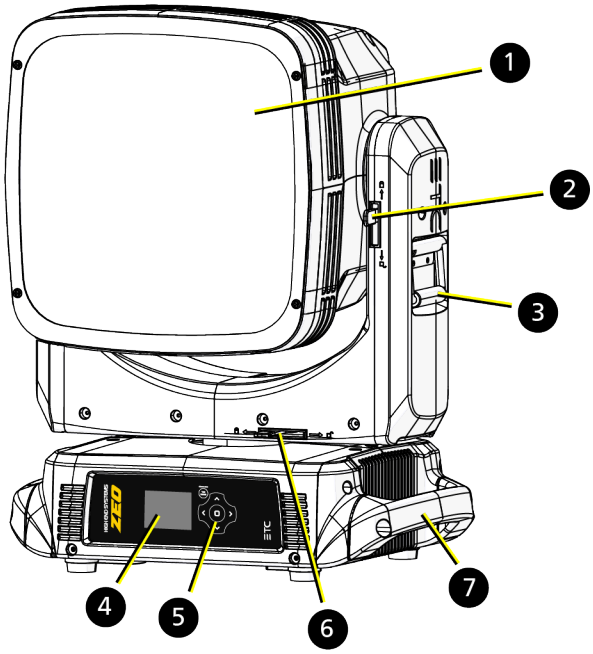
Symbols used on the product label are defined below:

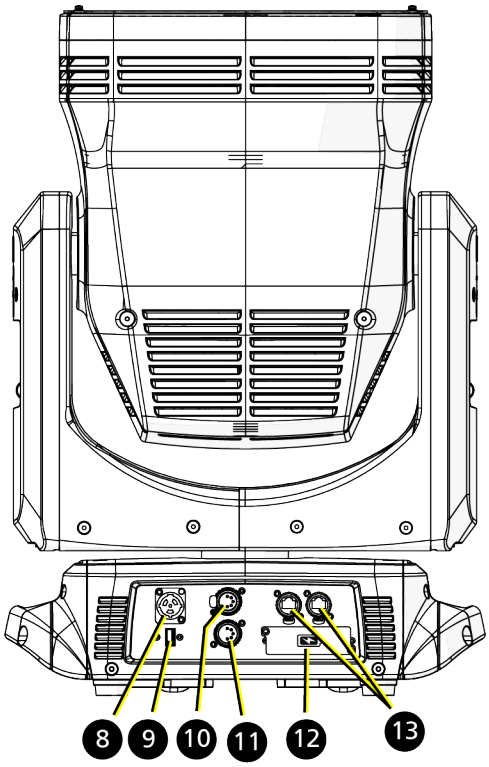
	The luminaire must be installed at least 2.0 m (6 ft 7 in) away from all lighted objects.	Le luminaire doit être installé à au moins 2,0 m (6 pi. 7 po.) de tout objet éclairé.
	General warning	Avertissement général
	Do not stare at the operating light source.	Ne pas regarder la source de lumière lorsqu'elle fonctionne.
	This product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.	Ce produit ne doit pas être jeté avec les déchets ménagers mais doit être déposé dans une collecte de déchets électroniques ou dans un point de collecte.
	Operate indoors only, not where this product would be exposed to the weather.	Ne fonctionne qu'à l'intérieur, pas là où ce produit serait exposé aux intempéries.

General Operation and Use Guidelines

- This fixture is only allowed to be operated with the maximum alternating current that is stated in the technical specifications label provided on the fixture.
- Lighting effects are not designed for permanent operation. Consistent operation breaks may extend the life of the fixture.
- When choosing the installation location, make sure the fixture will not be exposed to extreme heat, moisture, or dust.
- Operate the fixture only after having familiarized yourself with its functions. Do not permit persons who are not qualified and familiar with its functions to operate the fixture.
- Do not modify the fixture. Any modifications will void the warranty.
- This manual describes the proper installation and operation of this fixture. Using this fixture in any way other than the intended use may cause damage and void the warranty.
- When the fixture has been stored or transported in cold temperatures, allow it to warm to room temperature for a minimum of one hour before applying power. Applying power to a cold fixture may cause damage to the fixture and void the manufacturer warranty.
- Please use the original packaging if the fixture is to be transported. ETC will not be responsible for the fixture if packaging other than manufacturer provided packaging is used.

Fixture Overview





1. Lens
2. Tilt lock
3. Yoke handle
4. Display
5. Navigation controls
6. Pan lock
7. Upper enclosure handle
8. Power In
9. USB port
10. DMX Thru
11. DMX In
12. Battery compartment
13. Ethernet ports (x2)

Specifications

For complete technical specifications, see the technical datasheet: etcconnect.com/Zeo/Documentation.

Environment

- Ambient operating temperature range: -10°C to 40°C (14°F to 104°F).
- Relative humidity: 0%–90%, non-condensing.
- Storage temperature: -20°C to 60°C (-4°F to 140°F).
- Indoor use only.
- Dry locations only, IP20 rated.

Power

WARNING: Connect the fixture to a non-dimmable power source in order to avoid damage to the fixture's internal power supply and other electrical components. Using a dimmable power source can damage the fixture and will void the warranty.

Electrical

- 100–240 VAC at 50/60 Hz
- Listed maximum wattage: 1670 W

Input and Power Factor

The values listed below were measured with the fixture in Standard mode with LEDs at full and all motors functioning.

VAC	Amps	Hz	Watts	VA	PF
100	16.8	50	1670	1676	0.99
120	13.4	60	1597	1596	0.99
200	7.6	50	1497	1512	0.98
208	7.3	60	1487	1501	0.98
220	6.9	50	1485	1504	0.98
230	6.6	50	1475	1495	0.98
240	6.3	60	1466	1492	0.98

Fixtures per Circuit

One fixture is allowed per circuit via an ETC R20 or similar breaker module. Consult the upstream breaker trip curves when using other equipment.

Connector Specifications

WARNING: Risk of Shock and Fire. Assemble a grounding-type attachment plug with integral cord grip that is within the voltage and amperage rating of this luminaire.

AVERTISSEMENT : Risque de choc et d'incendie. Assurez-vous d'utiliser une prise de mise à la terre avec décharge de traction intégrée qui respecte la tension et l'ampérage de ce luminaire.

A power input cable with powerCON® TRUE1® TOP input to bare ends is provided. The power input cable is rated for maximum 20 A (120 VAC/60 Hz) and 16 A (240 VAC/50 Hz). Install a suitable connector to meet the installation requirements. See the following wire color code chart:

Wire Color Code (EU)	Wire Color Code (US Standard)	Connection type	Terminal
Green/Yellow	Green	Earth/Ground	⏚
Blue	White	Neutral	N
Brown	Black	Line (Live)	L

Install the Fixture

Overhead rigging must be performed by qualified personnel. Follow all local and national codes and recommended practices.

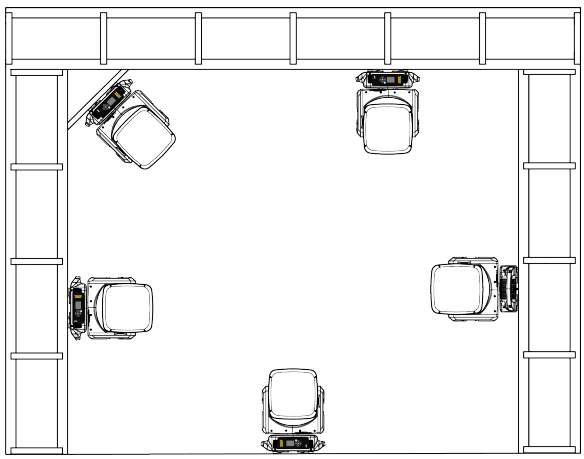
WARNING:

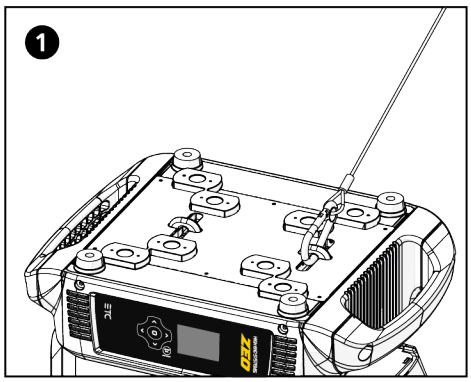
- **The installation location must support a minimum point load of 10 times the weight of the fixture. Fixture weight is 20 kg (44 lb).**
- **The installation must always be secured with a secondary safety attachment. An appropriate safety cable is supplied.**
- **Safety cable attachment must be rated by a safety factor of 10.**
- **A supportive and stable surface must be used when fixtures are placed on their feet.**
- **Never stand directly below the installed fixture when mounting, removing, or servicing the fixture.**
- **All safety and technical aspects of fixture installation must be approved by qualified personnel before operation.**
- **The installation must be regularly inspected by qualified personnel.**

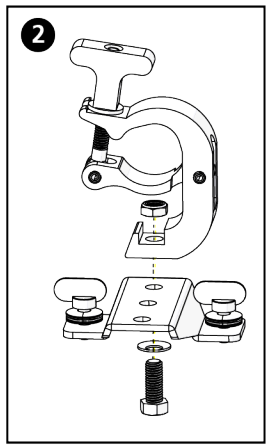
AVERTISSEMENT :

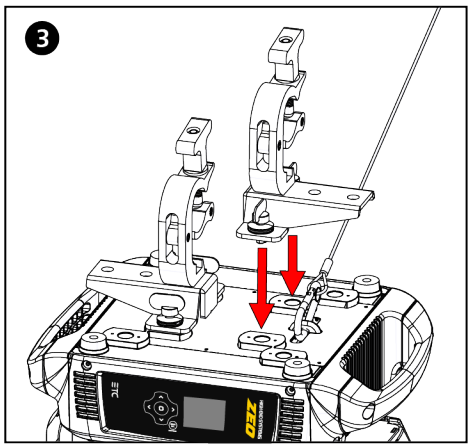
- **L'emplacement d'installation doit supporter une charge concentrée minimale de 10 fois le poids de l'appareil. Le poids du projecteur est de 20 kg.**
- **L'installation doit toujours être sécurisée par une fixation de sécurité auxiliaire. Un câble de sécurité approprié est fourni.**
- **La fixation du câble de sécurité doit être classée avec un facteur de sécurité de 10.**
- **Une surface d'appui stable doit être utilisée quand les projecteurs sont placés sur pieds.**
- **Ne vous placez jamais directement sous le projecteur lors du montage, du démontage ou de son entretien.**
- **Tous les aspects techniques et de sécurité de l'installation du projecteur doivent être approuvés par un personnel qualifié avant qu'il ne soit utilisé.**
- **L'installation doit être régulièrement inspectée par du personnel qualifié.**

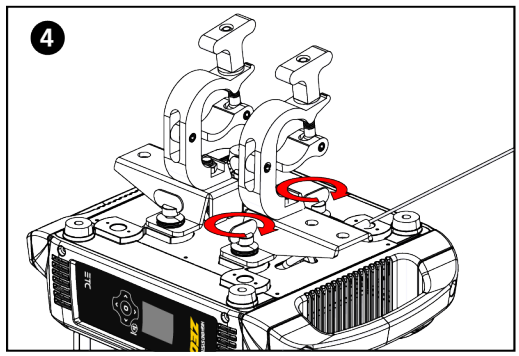
You can install the fixture in any of the orientations shown below.











1. Attach the provided safety cable through one of the two attachment points on the bottom of the fixture upper enclosure.
2. Assemble the clamp (provided by others) to the bracket that was provided with the fixture and secure together using appropriately sized hardware (not provided). You can use any of the holes in the three-position bracket depending on how you want to align the fixture in the truss.
3. Align the assembled bracket and quick-lock fasteners into the respective holes on the bottom of the fixture upper enclosure.
4. Tighten each of the quick-lock fasteners fully, turning clockwise. You will hear and feel a click when the fastener is fully secured.
5. Repeat steps 2 through 4 for the second clamp and bracket.
6. Attach the fixture to the installation location using the clamp manufacturer's instructions for a secure fit. When using an Omega clamp, close the safety and fully tighten the clamp wing nut until secure.
7. Secure the safety cable to the trussing system or some other safe installation point. Follow local codes and recommended safety standards for securing the fixture to the installation location.
8. Unlock the pan and tilt locks.
9. Apply power to the fixture.
10. Inspect the installation prior to lifting the fixture overhead.

DMX Control

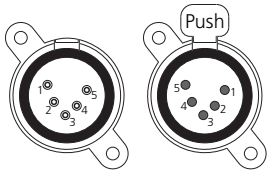
The Zeo fixture operates on standard DMX512 control bus, controlled by a DMX console. The fixture requires a maximum of 51 channels of DMX.

Attach the fixture to the control bus using a two-core, shielded cable with a 5-pin XLR connector (Belden 9729 is preferred). DMX512 connections must be Class 2.

The fixture includes two 5-pin XLR connectors, one for DMX Input and one for DMX Thru (for use when daisy-chaining fixtures on the DMX control bus).

DMX Connector Pinout

Use the following standard pinout when preparing DMX cable with 5-pin XLR connectors. ETC recommends using Belden 9729 or equivalent cable. (See the ETC cable cross database for equivalent alternatives: etcconnect.com/cablecross.) The second data pair in the recommended cable type is not used, but is reserved future service.

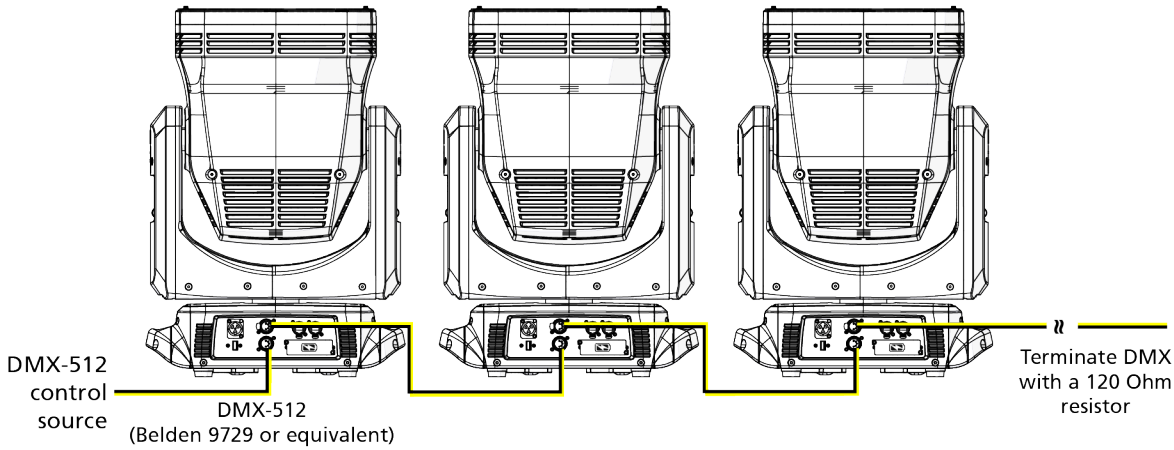
DMX Pinout for Five-Pin XLR	Pin	Use
	1	Common (shield)
	2	Data -
	3	Data +
	4	Not connected
	5	Not connected

Connect DMX Cables to Fixture

The following instructions are guidelines for connecting DMX to your fixture. Your installation may vary.

1. Connect a DMX data cable to the DMX control source and the DMX In XLR receptacle on the first fixture in the DMX data run.
2. Link the remaining fixtures in the data run by connecting a DMX data cable from the DMX Thru connector on a fixture to the DMX In connector on the next fixture in the data run.

Note: *To ensure that cumulative leakage current on control wiring does not exceed 3.5 mA, connect no more than 32 DMX devices on a single DMX data run.*



Terminate DMX

Use a DMX terminator or install a resistor on the last fixture of the DMX control run to prevent corruption (data reflection) of the digital control signal by electrical noise.

A DMX terminator is an XLR plug with a 120 Ω resistor connected between pins 2 and 3 that can be installed into the DMX output receptacle of the last fixture in the DMX control run. Contact your authorized dealer or ETC for ordering information (etcconnect.com/contactETC), or purchase an XLR DMX terminator from the ETC Online Shop (shop.etcconnect.com).

Set the DMX Start Address

Give each fixture a unique DMX starting address so that the correct fixture responds to the control signals. This DMX start address is the channel number from which the fixture starts to "listen" to the digital control information sent out from the control source.

Modify the fixture DMX start address on the user interface, located on the upper enclosure. See *Control Options on page 20*.

Example: *The Zeo requires 51 channels of control in standard mode. If you set the DMX starting address of the first fixture to 1, you could set the second fixture to 52 (51+1), the third to 103 (51+52), and so on.*

DMX Channels

The current DMX channel map for the Zeo can be found on the ETC website: etcconnect.com/Zeo/Documentation.

Ethernet Control

The Zeo fixture includes two Ethernet ports that allow sending and receiving of control signals using the Art-Net protocol or sACN.

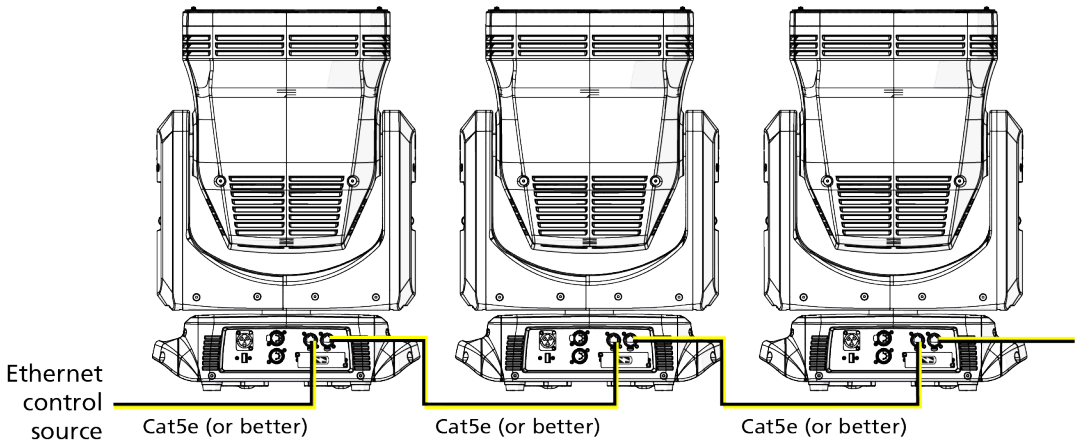
Use a Cat5e (or better) cable and terminate to RJ45 connectors following the TIA/EIA 568B wiring standard.

Connect Ethernet Cables to a Fixture

The following instructions are guidelines for connecting Ethernet to your fixture. Your installation may vary.

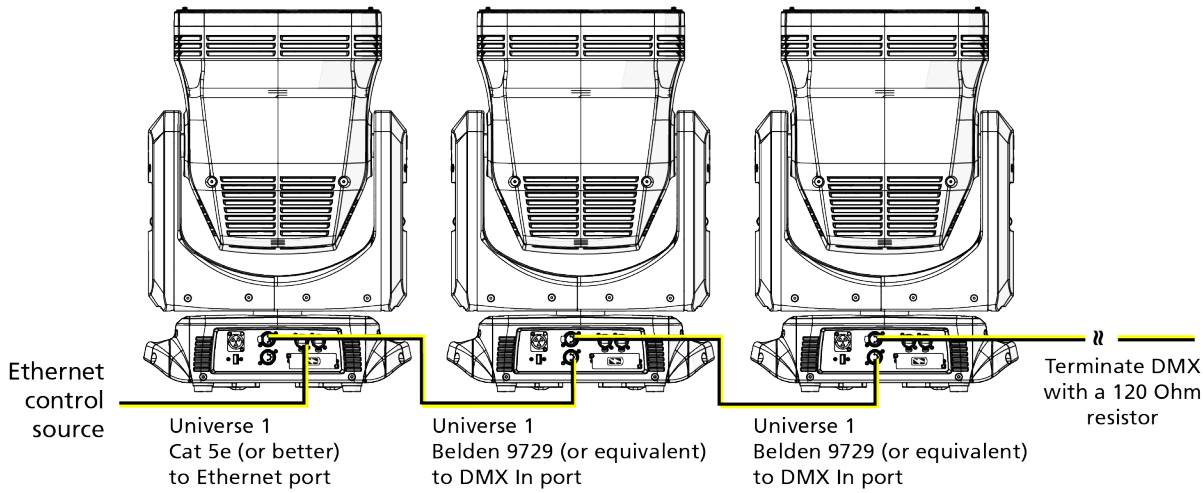
1. Connect a cable from the Ethernet control source to one of the Ethernet ports on the first fixture in the Ethernet control run.
2. Connect the first fixture to a second fixture by connecting a cable from the second Ethernet port on the first fixture to one of the Ethernet ports on the second fixture.
3. Continue linking the remaining fixtures by connecting a cable from Ethernet port to Ethernet port on the fixtures on the control run.

Note: *The Cat5e cable distance should not exceed 100 m (328 ft), and you should not connect more than 20 fixtures in one Ethernet control run.*



Ethernet Control and DMX Thru

You can use Ethernet control and DMX Thru. When a fixture is set up to receive Ethernet control input, it automatically distributes DMX via the DMX Thru port. The DMX signal is sent as a single universe that corresponds to the universe of the fixture that is receiving Ethernet control. This works with either the Art-Net protocol or sACN.



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Example: *The Zeo requires 51 channels of control in standard mode. If you set the DMX starting address of the first fixture to 1, you could set the second fixture to 52 (51+1), the third to 103 (51+52), and so on.*

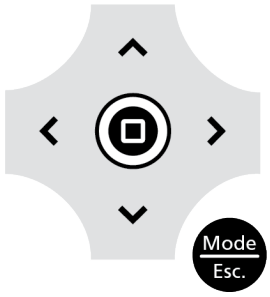
Set the Control Source and Universe

For Ethernet control, you must configure the control source (Art-Net or sACN) and set a universe (000-255) for each fixture. See *Control Options on page 20* for details.

Configure the Fixture

You can configure Zeo fixtures through the onboard user interface.

Navigate the User Interface



1. Press the [MODE/ESC] button to access the main menu. (The display is powered by battery when the fixture has no power; press and hold the [MODE/ESC] button for three seconds to access the main menu.)
2. Browse the menu by pressing the up, down, left, or right navigation buttons.
3. Press the Enter button to select a menu item.
4. Modify the selection by pressing the up, down, left, or right navigation buttons according to the selection.
5. Press the Enter button to confirm a modified selection.
6. To exit the menu, press the [MODE/ESC] button.

Set Fixture Parameters

This section provides instructions to configure and set up the Zeo fixture. See *Navigate the User Interface on page 19* for information about the navigation buttons.

Provide power to the fixture before configuring it. If you do not provide power, the fixture will use battery power to power the user interface.

Control Options

Navigate: Main Menu → Address

The Address menu lets you configure the control source.

Parameter	Value	Description
Address	001-xxx	Set the DMX address for the fixture. The default value is 001.
Source	• DMX • Art-Net • sACN	Select the control source.
Protocol	• Standard • Reduced • Wash	Set the DMX protocol: • Standard: This is the default mode. • Reduced: This mode removes individual cell control while maintaining Inclusive Macros. • Wash: This mode is 15 channels and is intended to allow the Zeo fixture to fit into a very small DMX footprint by removing all effect and macro capabilities.
Universe	000–255	When using Art-Net or sACN control source, set the universe.

Info Menu

View Software Version

Navigate: Main Menu → Info → Software Ver

Displays the software version installed on the fixture.

View Fixture Head Temperature

Navigate: Main Menu → Info → Head Temp

Displays the current fixture temperature as read from the fixture head (near the CMY filter).

View Pump Temperature

Navigate: Main Menu → Info → Pump Temp

Displays the current temperature as read from the cooling pump.

View Power Temperature

Navigate: Main Menu → Info → Power Temp

Displays the current temperature as read from the power supply in the fixture base, which can help you to determine if the power supply is overheating.

Set the Time Information

Navigate: Main Menu → Info → Time Info

Parameter	Value	Description
Current Time	XXXX (Hours)	Running time of the fixture from the last time that the fixture was powered on, shown in hours (h). The counter resets after the fixture is turned off.
Ttl Life Hrs	XXXX (Hours)	Total running time of the fixture, shown in hours (h).
Last Run Hrs	XXXX (Hours)	Running time of the fixture from the last time that the run time value was reset, shown in hours (h).
LED Hours	XXXX (Hours)	Total running time of the fixture LEDs, shown in hours (h).
Timer PIN	Timer PIN XXX	You must enter the Timer PIN in order to access the Clr Last Run menu item. The default Timer PIN is 038.
Clr Last Run	• ON • OFF	This password-protected menu item resets the Last Run Hrs value. You must enter the Timer PIN to access this menu item. Select ON to clear the value for the Last Run Hrs parameter for the fixture.
LED Time PIN	LED Time PIN XXX	You must enter the LED Time PIN in order to access the Clear LED Time menu item. The default LED Time PIN is 038.
Clear LED Time	• ON • OFF	This password-protected menu item resets the LED Hours value. You must enter the LED Time PIN to access this menu item. Select ON to clear the value for the LED Hours parameter.

View Fixture Errors

Navigate: Main Menu → Info → Error History

Displays any current fixture errors. See *Error Codes on page 28* for information about the errors.

View DMX Values for Channels

Navigate: Main Menu → Info → DMX Value

View the DMX value of one of the fixture's channels. Scroll to the channel that you want to view (Pan Coarse, Pan Fine, etc.) and press the Enter button. The DMX value of the channel you chose is shown in the main window of the UI.

View Fan Speeds

Navigate: Main Menu → Info → Fan Speed

Displays the speeds of the fixture's fans (in RPM).

View Sensor Status

Navigate: Main Menu → Info → Sensors

Displays the status of the sensors, which can help you to determine whether the fixture is recognizing the movement and position of the zoom rail and the pan and tilt drive gears. The display toggles between ON and OFF as a magnet passes one of the sensors.

View Ethernet IP Address

Navigate: Main Menu → Info → Ethernet IP

Displays the Ethernet IP address for the fixture. You can modify this value in the Set menu. See *Access Service Settings on page 24*.

Set Menu

Set the Status Options

Navigate: Main Menu → Set → Status

Parameter	Value	Description
No DMX Mode	• Close Shutter • Hold • Auto Program	Control mode when DMX is absent. The default value is Hold.
Pan Reverse	• ON • OFF	Reverse the pan movement of the fixture. The default value is OFF.
Tilt Reverse	• ON • OFF	Reverse the tilt movement of the fixture. The default value is OFF.
Pan Degree	• 630 • 540	Change the pan rotation of the fixture from the default setting of 540 degrees to 630 degrees.
Encoders	• ON • OFF	Turn on or off the encoder feedback for pan and tilt movement. You may want to turn off encoders when working on a fixture so that you can move pan and tilt without the fixture automatically moving back to position.
Hibernation	• OFF • 1–99 minutes	Hibernation mode forces the LEDs and stepper motors to power off when the fixture loses DMX control signal for a set period of time. The default time setting is 15 minutes.
Refresh Rate	• 2.4 kHz • 16 kHz	Set the refresh rate of the fixture. The 16 kHz setting is quieter than the 2.4 kHz setting and creates a beam that does not flicker when shown on camera. The 2.4 kHz setting prioritizes flawless, stepless dimming.
P/T Home Mode	• Standard • Tilt First • Pan First	Set the order in which pan and tilt homing is performed. • Standard: the pan and tilt home procedures run simultaneously. • Tilt First: the tilt home procedure runs to completion, then the pan home procedure begins. • Pan First: the pan home procedure runs to completion, then the tilt home procedure begins.

Access Service Settings

Navigate: Main Menu → Set → Service Setting

Parameter	Value	Description
Service PIN	Service PIN XXX	You must enter the Service PIN in order to access the other Service Setting parameters. The default Service PIN is 050.
RDM UID	Manufacturer ID and a randomly generated number	This password-protected menu item lets you modify the RDM UID. You must enter the Service PIN to access this menu item. **Note:** Remote Device Management (RDM) requires that all RDM devices have a unique identifier (UID). Modifying this setting can break the RDM capability of this fixture. Duplicate RDM UIDs on the same DMX control run will result in a data collision, causing a communication failure. Ensure that all fixtures have a unique RDM UID if RDM functionality is to be used. If DMX splitters are used and RDM control is to be used, these splitters must support RDM.
Ethernet IP	• Set As IP2 • Set As IP10 • Set As Any IP	This password-protected menu item lets you view the IP addresses used when Art-Net is the Ethernet source and change the IP address used when sACN is the Ethernet source. You must enter the Service PIN to access this menu item. • Set As IP2: This is a view-only IP address used with Art-Net. • Set As IP10: This is a view-only IP address used with Art-Net. • Set As Any IP: Change the IP address used with sACN. - Press the left and right navigation buttons to move between the octets. - Press the up and down navigation buttons to change the value of the selected octet.
Ethernet Mask IP	XXX.XXX.XXX.XXX	This password-protected menu item lets you modify the IP subnet mask. You must enter the Service PIN to access this menu item. The default IP subnet mask is 255.000.000.000. • Press the left and right navigation buttons to move between the octets. • Press the up and down navigation buttons to change the value of the selected octet.
Clr Err Info	• ON • OFF	This password-protected menu item lets you clear error messages after you have fixed the errors. You must enter the Service PIN to access this menu item. Set this parameter to ON in order to clear the error messages. The default setting is OFF.

Set the Fans Mode

Navigate: Main Menu → Set → Fans Mode Setting

Select the fan mode for the fixture:

- Standard
- Studio (reduces fan noise, but decreases fixture output by approximately 20%)

Note: *Fan Speed DMX control overrides the Fans Mode setting in the fixture user interface when the DMX control is set to Auto or Studio. See the Zeo DMX channel map for more details: etcconnect.com/Zeo/Documentation.*

Set Display Settings

Navigate: Main Menu → Set → Disp. Setting

Parameter	Value	Description
Shutoff Time	02–60 minutes	Enter the amount of time the fixture waits after the last user interface button press until the display goes to sleep. The default value is 5 minutes.
Flip Display	• ON • OFF	Flip the display 180° when the fixture is mounted vertically. The default value is OFF. Shortcut: With the main UI window displayed, press [>] to flip the display 180°. Press [<] to flip it back to its original orientation.
Key Lock	• ON • OFF	Lock the user interface. The default value is OFF. To unlock the user interface navigation buttons, press and hold the [MODE/ESC] button for three seconds.

Set the Temperature Scale

Navigate: Main Menu → Set → Temp. C/F

Select the temperature scale for the fixture:

- Celsius (default value)
- Fahrenheit

Update Software

For assistance, contact ETC Technical Services. See *Help from Technical Services on page 6*.

CAUTION: ***Do not remove the USB drive from the fixture until the update procedure is finished and the fixture display returns to its default state.***

Navigate: Main Menu → Set → USB Update

Fixture software updates are available on the ETC website at etcconnect.com/Products/Automated-Fixtures.

1. Download the software zip file from the ETC website.
2. Unzip the contents of the zip file.
3. Save the contents of the zip file to the root directory of a FAT32-formatted USB drive.
4. Insert the USB drive into the USB port on the fixture base.
5. On the **Main Menu**, select **Set** → **USB Update**. The fixture reads the USB drive and displays a list of any software update files on the USB drive.
6. Select the .NCW file and press the Enter button ◎.
7. The software prompts you to confirm the update with the message "Update fixture?" Use the navigation buttons to select "Yes," and then press the Enter button to start the software update.
   - A progress monitor shows you the progress of the update.
   - When the update is complete, the fixture performs a data check to verify the update and then the fixture restarts itself.
   - The software update is complete when the display returns to its default state.
8. Remove the USB drive from the fixture.

Reset Fixture to Factory Default Settings

Navigate: Main Menu → Set → Reset Default

Select ON to reset the fixture to the factory default settings.

Test Menu

Reset (Home) the Mechanical Positions on the Fixture

Navigate: Main Menu → Test → Home

Reset ("home") all features on the fixture, including, pan, tilt, colors, gobos, etc.

Test the Fixture

Navigate: Main Menu → Test → Self Test

Run a self-test program on the fixture. When you run the test, the display indicates "Running" and the fixture automatically runs a self-test procedure, testing each of the functions. Press the [MODE/ESC] button to end the self-test and return the display to the previous menu.

Test an Individual Channel

Navigate: Main Menu → Test → Test Channel

Run a self-test program on individual channels. The default value is Control. Select a different channel to run a self-test on that channel.

Manually Set an Individual Channel

Navigate: Main Menu → Test → Manual Ctrl.

Select an individual channel on the fixture and manually set the channel value. While in Manual Control mode, all effects are canceled, the shutter opens, and the dimmer intensity is set to 100%.

Re-Calibrate an Individual Feature

Navigate: Main Menu → Test → Calibration

Please contact Technical Services before using this parameter. See *Help from Technical Services on page 6*.

You must enter the Calibration PIN in order to access the Calibration menu items. The default Calibration PIN is 050.

Once you have accessed the Calibration menu, select an individual feature on the fixture and manually calibrate it to a new "home" setting.

Note: *Changes you make to the fixture settings in the Calibration menu are not changed if you reset the fixture to the factory default settings. The Calibration settings are saved until they are changed in the Calibration menu.*

Preset Menu

Navigate: Main Menu → Preset

Presets are built by combining scenes into programs and then assigning the programs to Program Partitions for playback. For information about the **Preset** menu, access the *High End Systems Preset Menu Guide* from the ETC support website: support.etcconnect.com.

Error Codes

When you apply power to the fixture, it runs a calibration (homing) sequence and displays any errors that it detects. The display briefly lists the errors and then shows the main window.

1. Navigate to the Error History menu (Main Menu → Info → Error History) to view a list of the errors. (Errors are stored in the fixture error history until the errors are cleared from memory.)
2. Make adjustments, as you are able, to correct the errors (for example, confirm that the pan and tilt locks are unlocked if Pan Coarse and Tilt Coarse errors are shown).
3. Cycle the power off and on to rehome the fixture:
4. If errors persist after rehoming is complete, contact ETC Technical Services for assistance.

Errors

Pan

This message displays after the reset of the fixture if any of the following conditions exist:

- the yoke's magnetic-indexing circuit malfunctions (optical or magnetic sensor failure)
- the stepper motor is defective or the related IC driver on the main PCB has failed
- the Pan movement is not located in the default position after the reset

Tilt

This message displays after the reset of the fixture if any of the following conditions exist:

- the magnetic-indexing circuit malfunctions (optical or magnetic sensor failure)
- the stepper motor is defective or the related IC driver on the main PCB has failed
- the Tilt movement is not located in the default position after the reset

Zoom

This message displays after the reset of the fixture if any of the following conditions exist:

- the magnetic-indexing circuit malfunctions (optical or magnetic sensor failure)
- the stepper motor is defective or the related IC driver on the main PCB has failed
- the Zoom wheel is not located in the default position after the reset

Maintenance

CAUTION: ***RISK OF ELECTRIC SHOCK! Disconnect power before servicing.***

ATTENTION : ***RISQUE DE CHOC ÉLECTRIQUE! Couper l'alimentation avant l'entretien.***

To ensure that the fixture remains in good working condition and does not fail prematurely, ETC recommends that you perform regular maintenance on the fixture.

Keep the following in mind during regular service and inspection:

- All screws for installing the fixture or parts of the fixture must be tightly connected and must not be corroded.
- There must not be any deformations to the housing, lenses, rigging, and installation points (ceiling, suspension, trussing).
- Moving parts must not show any signs of wear and must move smoothly without issue.
- The power supply cables must not show any damage, material fatigue, or sediment.
- If spare parts are required, order only genuine parts from ETC or your authorized ETC dealer.

Clean the Fixture

CAUTION: ***The use of paper toweling or other abrasive, high-friction wipes and ammonia-based glass cleaners may permanently damage the lens and reflectors.***

Required tool and supplies (if cleaning the lens):

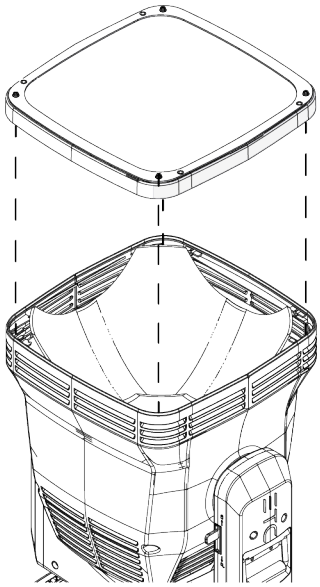
- 3 mm hex key
- Microfiber optical cloth or other non-abrasive cloth
- Purified water or ammonia-free glass cleaner

1. Clean the fans regularly to ensure maximum airflow and efficient cooling. This will ensure that the light source operates in the best possible condition.

Note: *If you use compressed air to clean the fans, hold the fan blades in place while cleaning them. Letting the fans spin while using compressed air could damage the fans.*

CAUTION: ***Failure to use the appropriate cloth or cleaners may damage the lens and reflectors.***

2. Clean the lens and reflectors only when necessary, and only use a Silky Microfiber Optical Cloth with purified water or an ammonia-free glass cleaner such as Miller Stevenson MS-260 Glass Cleaner.
   a. To remove the lens, use a 3 mm hex key to loosen the four captive screws that secure the lens to the fixture, and gently lift the lens from the fixture.



Replace the Fuse

The fuse in this fixture is not user-replaceable. Contact ETC Technical Services for assistance. See *Help from Technical Services on page 6* for contact information.

Replace the Battery

WARNING: Replace the battery with the specified type and rating only.

AVERTISSEMENT : Remplacez la batterie uniquement par le type et le calibre indiqués.

Replacement batteries for Zeo fixtures are available for purchase from ETC. Contact ETC or your authorized ETC dealer and order part number 2595A3220.

Parts and tools required:

- One replacement battery: Lithium-ion rechargeable; ICR 14500; 3.7 V, ≥700 mAh
- #2 Phillips screwdriver

1. Disconnect power to the fixture.
2. Using a #2 Phillips screwdriver, remove the two screws that secure the battery cover to the fixture.
3. Remove the old battery and install the replacement battery.
4. Reattach the battery cover to the fixture.

Compliance

For current and complete compliance information, view the product datasheet at etcconnect.com/Products/Automated-Fixtures. For complete product documentation, including compliance documentation, visit etcconnect.com/products.

FCC Compliance

Zeo

(For any FCC matters):

Electronic Theatre Controls, Inc.
3031 Pleasant View Road
Middleton, WI 53562
+1 (608) 831-4116
etcconnect.com

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. Visit etcconnect.com/products for current and complete compliance information including FCC compliance.

Note: *This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. 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. Any modifications or changes to this product not expressly approved by Electronic Theatre Controls, Inc. could void the user's authority to operate the product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at their own expense.*

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