Irideon FPZ
User Manual

Version 1.0

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Introduction

The Irideon FPZ takes the beauty and punch of the Source Four Mini beam and puts it into a fixture designed to work in any architectural environment.

The Irideon FPZ has three available mounting options:
- Track-mount—For use with the DataTrack track system.
- Portable—Includes a miniature C-clamp and yoke-mounted driver, and has a permanently installed power cord with 3-prong Edison connector. Region-specific connectors are available. Contact ETC for available options. Use L5-15 plugs on branch circuits with L5-15 receptacles only.
- Canopy—Available in three different control variants:
  - 0–10 V
  - DALI
  - DMX

Canopy

Track-mount   **Portable**
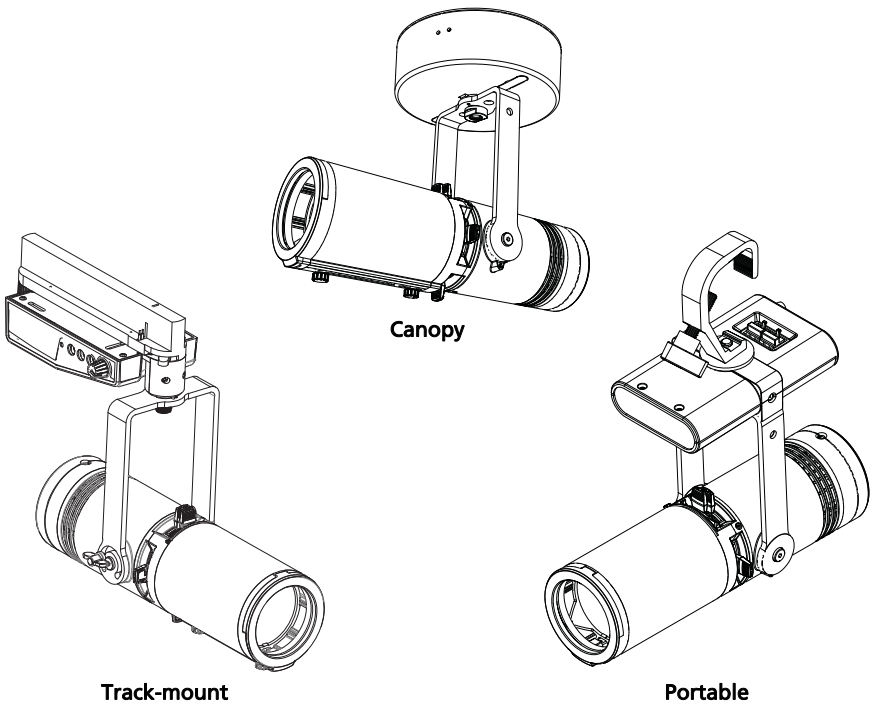
Note: *The miniature C-clamp for the portable fixture is available only in non-EU markets. Within the EU, use an M12 bolt to secure a C-clamp (provided separately) to the fixture.*

WARNING: Please note the following safety warnings before use:

- **Do not mount the fixture on or near combustible surfaces.**
- **Do not operate the fixture without a lens installed, or with a scratch or cracked lens. Damaged lenses must be replaced.**
- **Use in dry locations only, where humidity does not exceed 90 percent (non-condensing). These fixtures are not intended for outdoor use.**

WARNING: For the canopy fixture, turn off power at main fuse or breaker box and verify that the power is off before proceeding with installation or maintenance.

The canopy fixture must be installed by a qualified electrician in accordance with all national and local electrical and construction codes and regulations.

WARNING: Use the track-mount fixture with ceiling-mounted track only.

WARNING: To reduce the risk of fire and electric shock, use the track-mount fixture only with the DataTrack (EUTRAC®) track system.

AVERTIR: Pour éviter le risque d'incendie ou de choc électrique avec le modèle adaptateur pour rail, utiliser uniquement avec une alimentation par rail DataTrack (EUTRAC).

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING - To reduce the risk of FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS:

1) Keep lamp away from materials that may burn.

2) External temperature after 5 minutes of full-brightness operation: 34°C (93°F).

3) External temperature when steady state is achieved: 54°C (129°F).

SAVE THESE INSTRUCTIONS

Specifications

Physical

- Steel yoke with 0.406" (10.3 mm) diameter mounting hole
- Rotating shutter assembly ±175°
- E-size gobo pattern holder (included) 1-1/2" (37.5 mm) with a 1" (25.4 mm) image area
- IP20 rated
- Zoom range to suit a variety of throw distances
- Captive accessory slot for pattern holder (included)
- Locking, stainless steel, full hard shutters in a tri-plane assembly, 0.40 mm (A301 grade)
- Magnetically held integrated media holder for 2.6" (66 mm) diameter color media or diffusion or 1.75 mm-thickness dichroic glass

- Track-mount fixture:
  - Compatible and ETL-listed for DataTrack (EUTRAC) brand track
  - DataTrack color matching track adapter included
- Portable fixture:
  - C-clamp (included in non-EU markets)
  - Optional accessory for Unistrut® mounting (order separately, part number 7191K1000)
- Canopy fixture:
  - Can be installed directly on 4" and 4-11/16" backboxes, or on backboxes with round cover plates
  - Not for installation on 1-gang backboxes or trim rings

Electrical

- Power at full intensity: 20 W (typical), 24 W (maximum)
- Input voltage options:
  - Track-mount and portable: 100–240 V, 50/60 Hz
  - Canopy (0–10 V and DALI): 120–277 V, 50/60 Hz
  - Canopy (DMX): 100–277 V, 50/60 Hz
- Portable fixture: 6 ft power cable hard-wired to fixture with mains connector options of NEMA 5-15P, Schuko, or UK

- Inrush (first half-cycle) for 0–10 V and DALI canopy fixtures:
  - 120 V: 2 A
  - 240 V: 5 A
  - 277 V: 6 A
- Inrush (first half-cycle) for all other fixtures:
  - 120 V: 11 A
  - 240 V: 24 A
  - 277 V: 28 A
- All variants require power from a non-dimmable source

LEDs

- Cree LED source
  - Irideon FPZ 2700 K Gallery: 90+ CRI
  - Irideon FPZ 3000 K: 80+ CRI
  - Irideon FPZ 3000 K Gallery: 90+ CRI
  - Irideon FPZ 4000 K: 80+ CRI
  - Irideon FPZ 5000 K: 80+ CRI

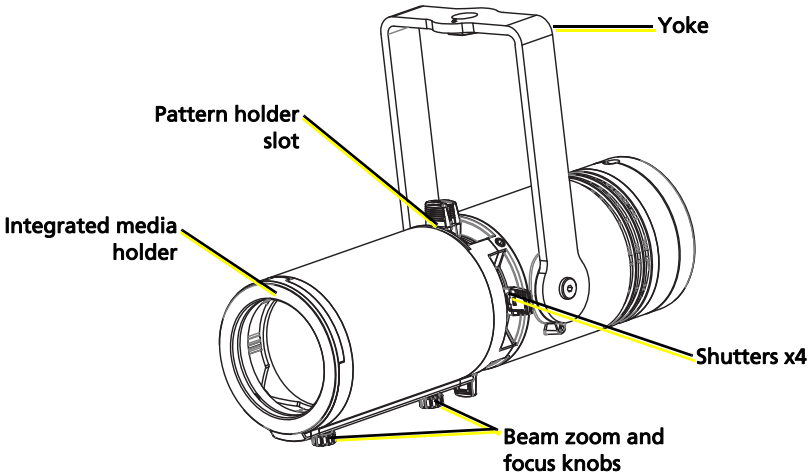- Long-life LED: 70,000 hours L70 lumen maintenance

Optical

- Built-in zoom optics (25–50 degree field-angle)

- Beam edge continually adjustable hard to soft
- Projector-quality, high-contrast lenses

Thermal

- 0°C to 40°C (32°F to 104°F) ambient operating temperature

Basic Assembly

Yoke

Pattern holder slot

Integrated media holder

Shutters x4

Beam zoom and focus knobs

(Illustration shows fixture body only)

Installation

Install Track-Mounted Fixture

Locking mechanism

Circuit selection lock

1:   Insert the DataTrack adapter into the track. The adapter only fits into the track one way with the tabs nesting into the track's groove.

2:   Rotate the locking mechanisms to lock the adapter into place.

3:   Use the circuit selection lock to select the circuit. The desired circuit number should point toward the center of the adapter.
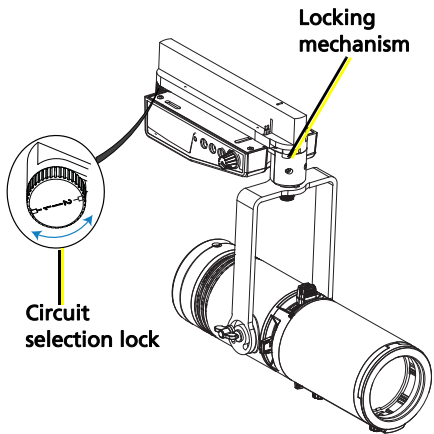
⚠ **WARNING:**   **When using the circuit selection lock, ensure that the selected circuit is a constant power circuit. Dialing into a dimmable circuit may cause fixture damage that will void the ETC warranty.**

Install Canopy Fixture (DMX variant)

Note: *The canopy fixture can be installed directly on 4" and 4-11/16" backboxes, or on backboxes with round cover plates. The canopy fixture cannot be installed on 1-gang backboxes or trim rings.*

Install the Voltage Barrier (DMX variant)

The DMX variant of the canopy fixture includes a voltage barrier to separate the data network from the line voltage inside the backbox. Voltage barriers are provided for both 4" and 4-11/16" backboxes.

CAUTION:
- *DMX control is a Class 2 circuit. DMX wiring cannot be run through the same conduit as line voltage power-supply conductors.*
- *Separate the line voltage from the data side in the backbox. Install the voltage barrier provided by ETC.*

Install the voltage barrier in the backbox with the provided screw, separating the power side from the data side (see image at right).
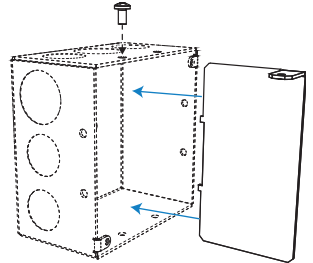
Connect Canopy Wiring (DMX variant)

Cable preparation instructions for DMX termination are included in the termination kits, and are also available for free download at **etcconnect.com**.

1: Remove the adhesive tape or fasteners securing the mounting plate to the fixture to free the mounting plate from the canopy enclosure.
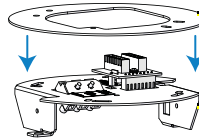

WARNING: **RISK OF ELECTRIC SHOCK! Install the cover plate as directed below for installations where the interior of the canopy enclosure could be exposed after installation with only the mounting plate. For example, install the cover plate when installing to a surface-mount backbox.**

2: Are you flush-mounting the fixture or surface-mounting the fixture?
   • **Flush-mounting:** Continue to step 3.
   • **Surface-mounting:**
   Position the cover plate on top of the mounting plate before wiring the fixture. The cover plate is required when the interior of the canopy enclosure could be exposed after installation with only the mounting plate (the mounting surface is smaller than the canopy enclosure).

Cover plate (if needed for surface-mounting)

Mounting plate

3: Terminate DMX/RDM input from the control source to the backbox.

   If using Belden 9729:

   a: See the *DMX Cable Preparation for Screw Termination Setup Guide* for instructions to prepare and terminate Belden 9729 for DMX input cable to the screw terminal connector.

   b: Install the screw terminal connector with wires terminated to the DMX/RDM Input receptacle on the termination board.
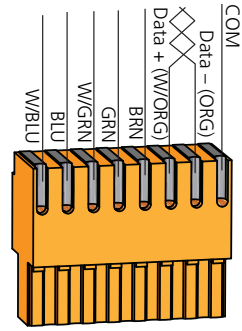
From a DMX/RDM source

COM
Data – (Black)
Data + (Red)

4 to 8 = n/c
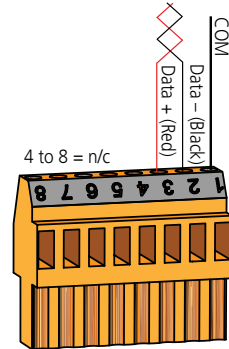
Belden 9729 (or equivalent) wire termination to screw connector

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If using Category 5:

a: See the *Cat5 Cable Preparation for IDC Termination Setup Guide* for instructions to prepare and terminate Category 5 for DMX/RDM input cable to the insulation displacement connector.

b: Install the IDC connector with wires terminated to the DMX/RDM Input receptacle on the termination board.

4: Optionally, terminate DMX/RDM thru to the next device in the DMX data run. Up to 32 DMX/RDM devices can be daisy-chained together per data run.

Cat5 (or equivalent) wire termination to IDC connector

a: See the specific termination setup guide for the type of cable used (either Belden 9729 or Category 5) in the installation. Termination kits are ordered separately.

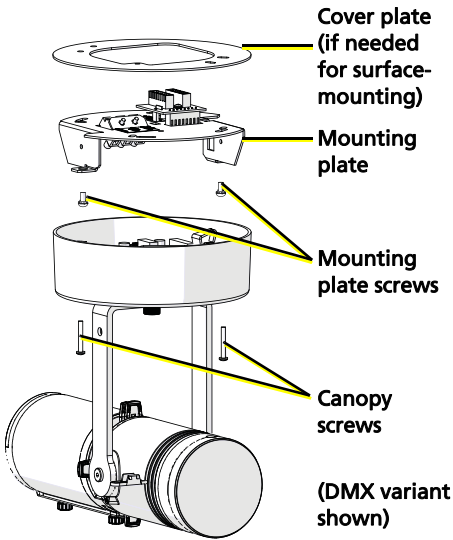b: Install the connector with wires terminated to the DMX/RDM Thru receptacle on the termination board.
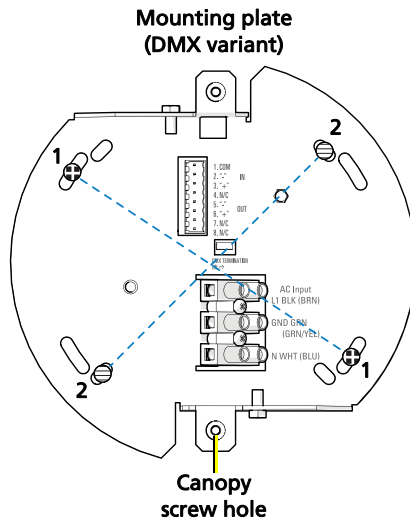

DMX termination board
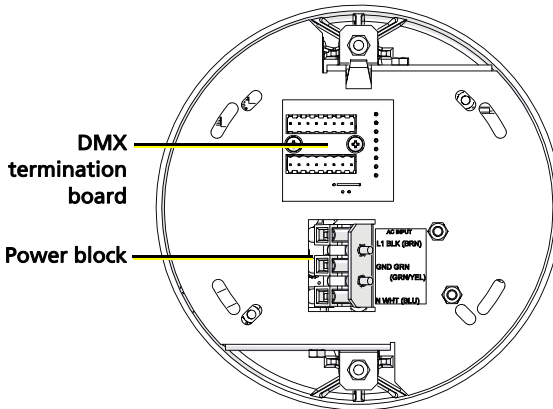
Power block

5: Connect the building ground wire to the power block on the fixture.

6: Following the label on the mounting plate, attach the power wires to the power block.

Install the Mounting Plate and Complete the Wiring (DMX variant)

Cover plate
(if needed
for surface-
mounting)

Mounting
plate

Mounting
plate screws

Canopy
screws

(DMX variant
shown)

1: Secure the mounting plate (or the combination of mounting plate and cover plate for surface-mounting) to the installed backbox, positioning the plate so that the power side and data side are separated by the voltage barrier in the backbox. See *Install the Voltage Barrier (DMX variant)* on *page 5*.

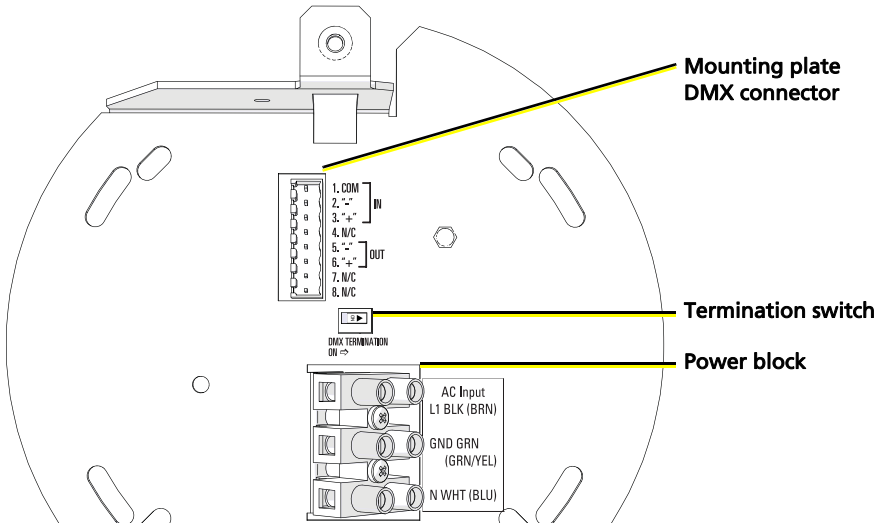Mounting plate
(DMX variant)

2

1

1. COM
2. "+"   IN
3. "-"
4. N/C
5. "+"
6. "-"   OUT
7. N/C
8. N/C

DMX TERMINATION

AC Input
L1 BLK (BRN)

GND GRN
(GRN/YEL)

N WHT (BLU)

2

1

Canopy
screw hole

For this structure...	...secure mounting plate using:
4-11/16" backbox	Large oval slots (see 1 above)
4" backbox	Small oval slots (see 2 above)
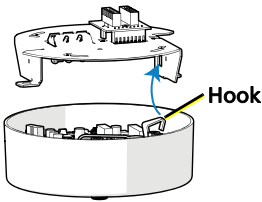
Hook

2: Use the hook in the canopy enclosure to hang the fixture from the mounting plate while you complete the fixture wiring.

3: If desired, manually set the DMX address on the fixture using the three addressing dials in the canopy. See *Set the DMX Address on the Fixture* on *page 15*.

4: Connect the pre-wired DMX connector on the fixture to the mated connector on the mounting plate (shown below).

5: Terminate DMX/RDM data signal for the last DMX/RDM device in the data run by setting the termination switch to ON (to the right, as shown below). All other devices in the data run should retain the default setting for the termination switch (OFF).

6: Following the label on the mounting plate, attach the power wires to the power block.

Mounting plate DMX connector

Termination switch

Power block

1. COM
2. "-"
3. "+"   IN
4. N/C
5. "-"
6. "+"   OUT
7. N/C
8. N/C

DMX TERMINATION
ON ⇨

AC Input
L1 BLK (BRN)

GND GRN
(GRN/YEL)

N WHT (BLU)

7: Use the canopy screws to secure the fixture to the mounting plate.

⚠ **CAUTION:** *Make sure that the wiring is clear of the mounting plate before you secure the fixture.*
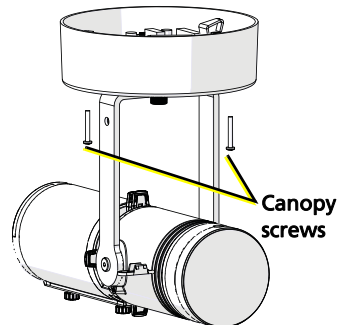
Canopy screws

8: Insert the oval-shaped covers into the canopy enclosure to cover the canopy screw openings.

9: Restore power at the disconnect device.
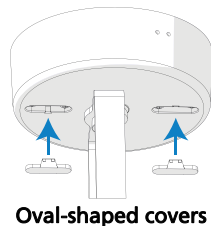
Install Canopy Fixture (0–10 V and DALI variants)

Oval-shaped covers

Note: *The 0–10 V driver conforms to IEC 60929 Annex E. Of the 0–10 V range, use 0–1 V to set the minimum level, and use 1–10 V for continuous dimming.*

Note: *The canopy fixture can be installed directly on 4" and 4-11/16" backboxes, or on backboxes with round cover plates. The canopy fixture cannot be installed on 1-gang backboxes or trim rings.*

WARNING: RISK OF ELECTRIC SHOCK! Install the cover plate as directed below for installations where the interior of the canopy enclosure could be exposed after installation with only the mounting plate. For example, install the cover plate when installing to a surface-mount backbox.

Cover plate (if needed for surface-mounting)

Mounting plate

Mounting plate screws

Canopy screws

(DALI variant shown)
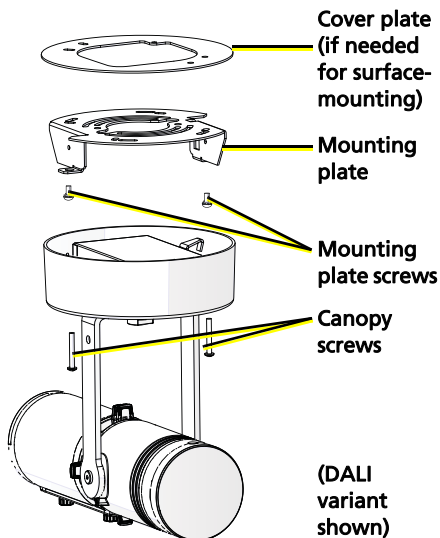
1: Remove the adhesive tape or fasteners securing the mounting plate to the fixture to free the mounting plate from the canopy enclosure.

2: Are you flush-mounting the fixture or surface-mounting the fixture?

- **Flush-mounting:** Using the mounting plate screws, secure the mounting plate to the installed backbox.
- **Surface-mounting:** Position the cover plate on top of the mounting plate, and use the mounting plate screws to secure both plates to the installation surface. The cover plate is required when the interior of the canopy enclosure could be exposed after installation with only the mounting plate (the mounting surface is smaller than the canopy enclosure).
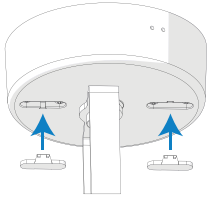
Mounting plate
(0–10 V and DALI variants)
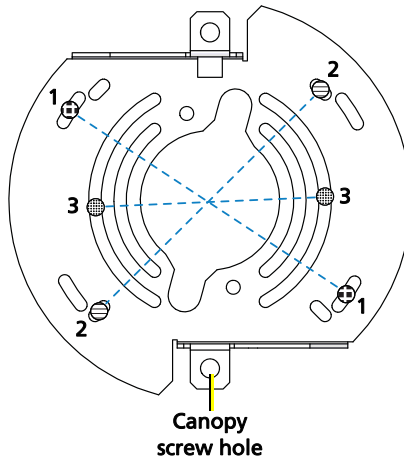
1
2
3
3
1
2

Canopy
screw hole

| For this structure...	...secure mounting plate using:
4-11/16" backbox	Large oval slots (see 1 above)
4" backbox	Small oval slots (see 2 above)
Mud ring and round box	Circular slots (see 3 above)

3: Use the hook in the canopy enclosure to hang the fixture from the mounting plate while you complete the fixture wiring.

Hook

4: Connect the building ground wire to the ground wire on the fixture, following local electrical codes.

5: Connect the supply power wires to the fixture wiring using the included WAGO® connectors.
   • For 120 V fixtures: Connect the black wire to line and the white wire to neutral.
   • For 230 V fixtures: Connect the brown wire to line and the blue wire to neutral.

6: Connect the data wires to the fixture wiring using the included WAGO connectors.
   • For 0–10 V fixtures: Connect the gray wire to data - and the purple wire to data +.
   • For DALI fixtures: Connect the purple wires to data - and data +.
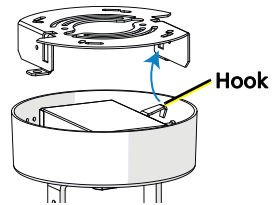
7: Use the canopy screws to secure the fixture to the mounting plate.

8: Insert the oval-shaped covers into the canopy enclosure to cover the canopy screw openings.

Canopy screws

Oval-shaped covers
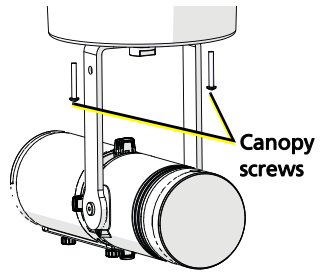
9: Restore power at the disconnect device.

Install Portable Fixture with C-clamp

The C-clamp attaches the fixture to the mounting pipe and allows you to adjust the position of the fixture once it is mounted. The C-clamp will fit a 3/4" to 2" pipe. Two different length pipe bolts are provided to accommodate different pipe sizes.

Note: *The miniature C-clamp is available only in non-EU markets. Within the EU, use an M12 bolt to secure a C-clamp (provided separately) to the fixture.*

1: Insert the spacer into the driver box through the hole in the top of the yoke.

2: Tightly fasten the C-clamp to the yoke with the provided yoke bolt and washers.

3: Place the C-clamp on the mounting pipe, and then tighten the pipe bolt to secure it. Use the standard pipe bolt to secure the fixture to larger mounting pipes. If necessary, exchange the standard pipe bolt for the longer pipe bolt (included) to secure the fixture to smaller mounting pipes.

C-clamp

Pipe bolt

Spacer

Washers

Yoke bolt

Detail view of washers
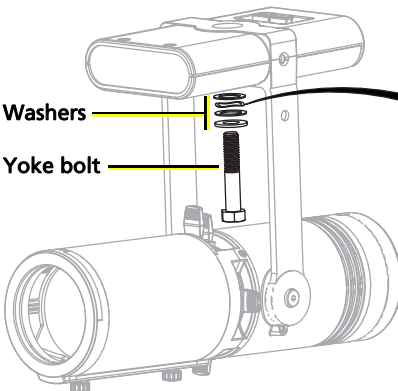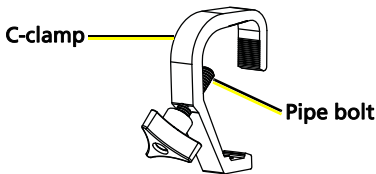
4: Loosen the C-clamp yoke bolt and rotate the yoke to the desired position.

5: Tighten the bolt to lock the fixture.
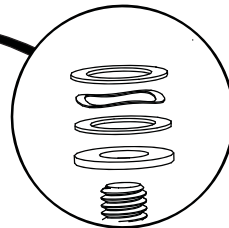
CAUTION: *Tighten the C-clamp pipe bolt to about 18 in/lb (approximately finger-tight plus up to one-quarter turn). Do not use excessive force.*

Install Portable Fixture on Unistrut Track

You can install the portable fixture on Unistrut track using the Irideon FPZ Unistrut Kit (7191K1000).

1:   Insert the spacer into the driver box through the hole in the top of the yoke.

2:   Use the yoke bolt and washers to fasten the fixture to the Unistrut track.

Within the EU, use an M12 bolt and appropriate washers in place of the provided kit hardware.

Spacer

Washers

Yoke bolt
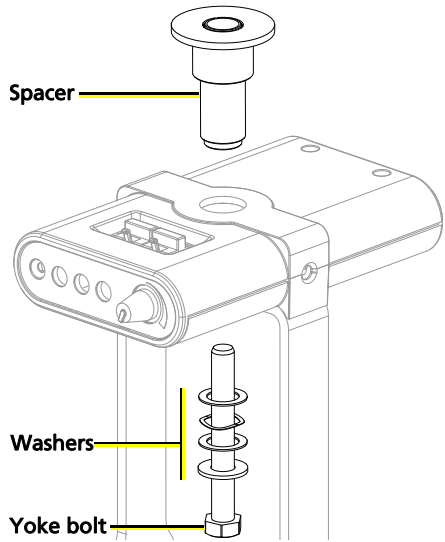
Connect Cables to Portable Fixture

1:   Connect RJ45 data cables to the top of the driver box, one for data in and one for data thru (in either position), as needed.
   • To order RJ45-to-female XLR adapter, use part number W6538.
   • To order RJ45-to-male XLR adapter, use part number W6539.

2:   Connect the fixture to the power source.

Note: • *The Irideon FPZ is not self-terminating. You must terminate the last fixture in line with a 120 Ohm resistor. Please contact your ETC customer service representative to purchase part number N4086.*

   • *No more than 32 DMX devices can be daisy-chained together on a single run. For runs of fixtures totaling more than 32 DMX devices, use a DMX splitter to split the DMX runs.*

   • *When using DMX over Cat5, use Cat5e or better. Cable distance must not exceed 300 m (1000 ft).*

   • *The Irideon FPZ cannot be controlled via network protocols and should not be connected to a system network.*

Portable Fixture DMX Pinout

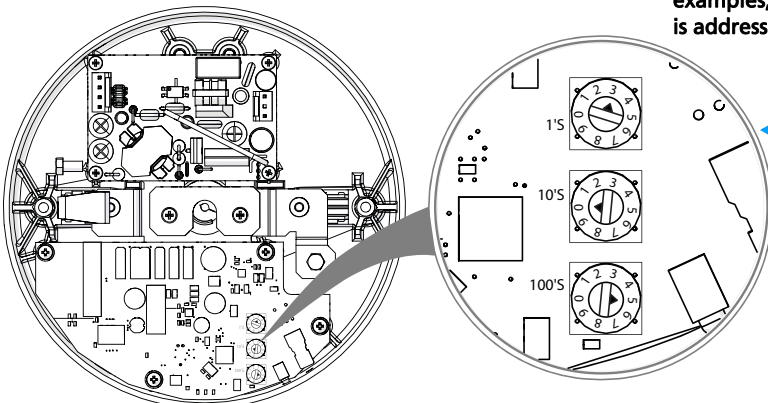| Pin	Wire Color	Description
1	White/orange	DMX1 +
2	Orange	DMX1 -
3	White/green	DMX2 +
4	Blue	Not Connected
5	White/blue	Not Connected
6	Green	DMX2 -
7	White/brown	Iso Common
8	Brown	Iso Common 2

Set the DMX Address on the Fixture

You can set the DMX address using RDM, but you can also set the DMX address on the fixture itself, if necessary. The fixture uses the last address that you set, regardless of whether you set it via RDM or locally on the fixture.

There are three addressing dials on the track adapter (track-mounted fixture), in the canopy (canopy fixture), or on the driver box (portable fixture). To set the DMX address, use a small flat-head screwdriver to move the arrow to the desired address number.

DMX addresses must be set between 1 and 512. Each fixture must be considered a separate DMX device for the purpose of DMX line-loading calculations. The Irideon FPZ only has an intensity channel.

Local intensity control knob

Track-mount

Status LED and DMX addressing dials

Portable

100   0**1**0   00**1**
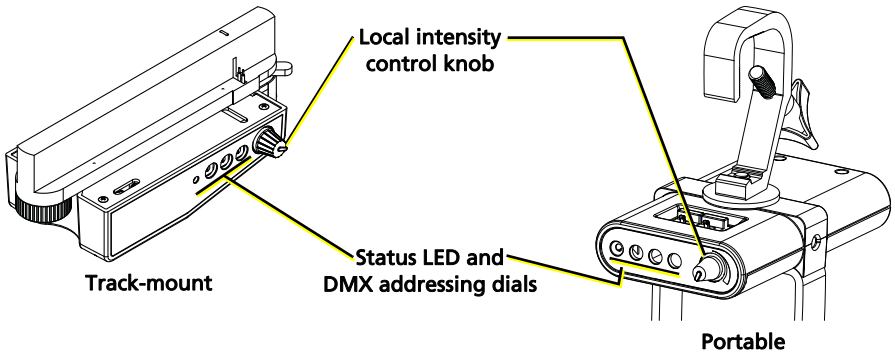
In these addressing examples, the fixture is addressed to 503.

1'S

10'S

100'S

Canopy (mounting plate removed)

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i **Note:** *When using RDM with track-mounted fixtures, ETC recommends connecting no more than 20 fixtures on a single run.*

Alternative DMX Addressing Functions

Certain DMX addresses are reserved for special functions. Addresses 700 and above can be used for setting the intensity level of the fixture. The second and third address numbers set the intensity level. The intensity knob is ignored when using these DMX addresses. See the following table for examples:

DMX Address	Function
701	Intensity at 1%
710	Intensity at 10%
725	Intensity at 25%
799	Intensity at 99%
800	Intensity at 100%

Adjust the Local Intensity

A local intensity knob is located on the track adapter (track-mounted fixture) or on the driver box (portable fixture). See the illustration in *Set the DMX Address on the Fixture* on .

On the canopy fixture (DMX variant only), the local intensity adjustment control is located on the side of the canopy (next to the status LED). To adjust the local intensity knob on the canopy fixture, you will need a small flat-head screwdriver (jeweler's screwdriver).

You can adjust the local intensity with or without DMX being present.
- When DMX is not present, you can control the intensity.
- When DMX is present, you can set the maximum light output. Dimming will be proportional in relation to that setting. When the local intensity is set to Off, the maximum light level over DMX is 100%.
- When DMX is lost and the local intensity is set to Off, the light will go dark.
- When DMX is lost and the local intensity is set to a level greater than 0, the light goes to the level of the local intensity setting.

Initial Power Up

Track-Mount, Portable, and Canopy (DMX) Fixtures

Control and configure the fixture over a DMX/RDM control network or directly from a connected computer running appropriate software. When controlling the fixture directly from a PC, a Gadget II interface or DMX/RDM gateway is required.

Note: *Changing the address via RDM will override the local DMX addressing dials. However, if you change the addressing dials after you set the address via RDM, the addressing dials will override the RDM setting. See Set the DMX Address on the Fixture on page 15.*

Canopy (0–10 V) Fixture

Apply power and dim the fixture using a 0–10 V controller.

Note: *The 0–10 V driver conforms to IEC 60929 Annex E. Of the 0–10 V range, use 0–1 V to set the minimum level, and use 1–10 V for continuous dimming.*

Canopy (DALI) Fixture

Use a DALI configuration and commissioning tool to configure the DALI address of the fixture.

Status LED

The status LED indicates the DMX status. When DMX is present, the LED turns on for 10 seconds, and then it turns off.

Note: *A change to the DMX start address, the local intensity, or the presence of DMX will "wake" the status LED.*

When the local intensity is set to Off, the status LED will flash when there is a loss of DMX.

With the local intensity set to any other position, the status LED will flash for 10 seconds when there is a loss of DMX. Then the LED will turn off.

Adjustments

Set the Angle with the Yoke

1: Loosen the yoke locking knob. Do not remove the knob.

2: Tilt the fixture to the desired position.

3: Tighten the yoke locking knob to secure the position.

Yoke locking knob
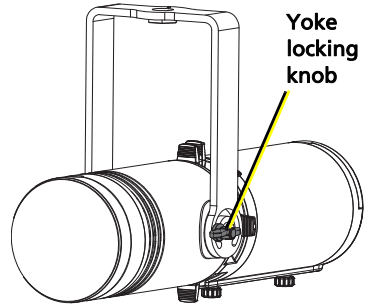
Zoom and Focus the Beam

1: Loosen the beam focus or zoom knob located under the barrel. **Do not** remove either knob.

2: Slide the lens forward or backward to achieve the desired beam edge or angle.

3: Once the fixture is focused, tighten the knobs.

Zoom knob

Beam focus knob
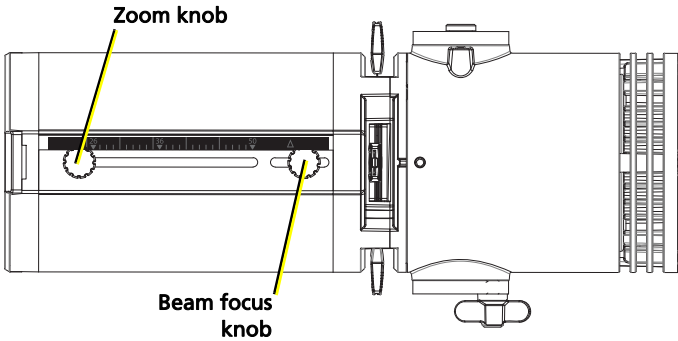
Shape the Beam

You can shape the beam using the four shutters or with a pattern.

Shape the Beam with Shutters

The fixture has four shutters: left, right, top, and bottom. Each shutter can be pulled out or pushed in to create the desired beam shape.

Once the shutters are set, you can lock the shutters in place by using a 3 mm Allen wrench (provided).

Shutter lock
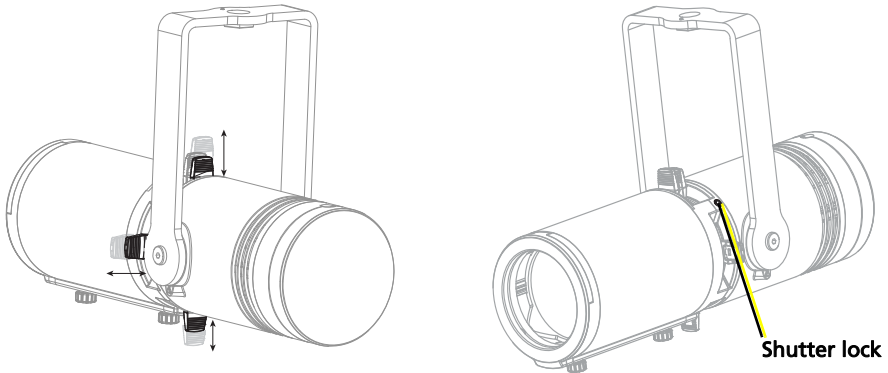
Shape the Beam with a Pattern

The fixture has a pattern-holder slot on the top side of the shutter barrel, in front of the shutter. It accommodates an E-size (37.5 mm with a 25.4 mm image area) pattern. The maximum pattern thickness that can be accommodated is 4 mm (0.158″).

When the slot is not in use, a small plastic cover prevents light leakage.

1″ Diameter

1:   Slide the cover knob on the fixture completely to the side to expose the slot.
2:   Insert the pattern holder.
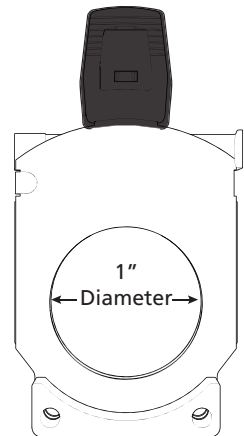
Note: • *When not using a pattern, remove the pattern holder and close the cover to prevent distortion of the beam shape.*
• *Ensure that the pattern-holder slot is on the top side of the shutter barrel. If necessary, rotate the shutter barrel to position the pattern-holder slot on the top side.*

Rotate the Lens Barrel

1: Unlock the rotating barrel lock using the 2 mm Allen wrench (provided).

2: Rotate the barrel to the desired location.

3: Lock the rotating barrel lock using the 2 mm Allen wrench (provided).

**Rotating barrel lock**
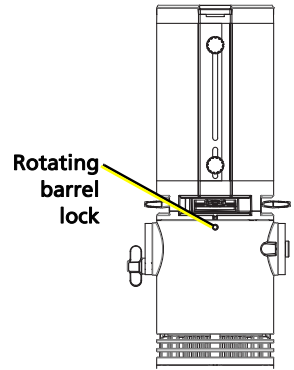
Use the Integrated Media Holder

The Irideon FPZ comes equipped with an integrated media holder, which is a metal frame used to hold color media (often referred to as gel) or diffusion in front of the lens. The media holder is equipped with a magnetic retaining clip that prevents the media from falling out. The integrated media holder can take color media, diffusion, or dichroic glass with a 2.6" (66 mm) diameter.

⚠️ **WARNING:** **Make sure the media holder is locked in position with the magnetic retaining clip.**

Install Color Media or Diffusion

1: Release the magnetic retaining clip by gently pushing it up.

2: Insert the media.

3: Replace the media holder by aligning the tab at the top of the media holder with the inset on the front casting.

Integrated media holder

Magnetic retaining clip
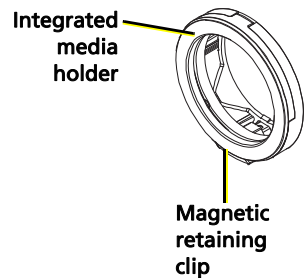
Install Dichroic Glass

The integrated media holder accommodates 1.75 mm-thickness dichroic glass.

1: Release the magnetic retaining clip by gently pushing it up.

2: Place the dichroic glass into the groove.

3: Replace the media holder by aligning the tab at the top of the media holder with the inset on the front casting.

Orange rubber pads

Dichroic glass

Magnet
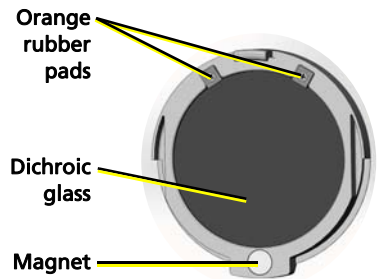
Clean the Lens

1: Remove the integrated media holder.
2: Use a Phillips screwdriver to remove the three screws from the front of the fixture.
3: Remove the front casting and the metal shaft.
4: Remove the light block bracket.
5: Remove the lens adjustment knobs.
6: Remove the front and rear lens holders.
7: Remove dust with a blast of oil-free air or wipe with a clean, lint-free cloth. Isopropyl alcohol, distilled water, or a 50%-50% mixture of each can be used to clean the glass surface.
8: Replace the lens.
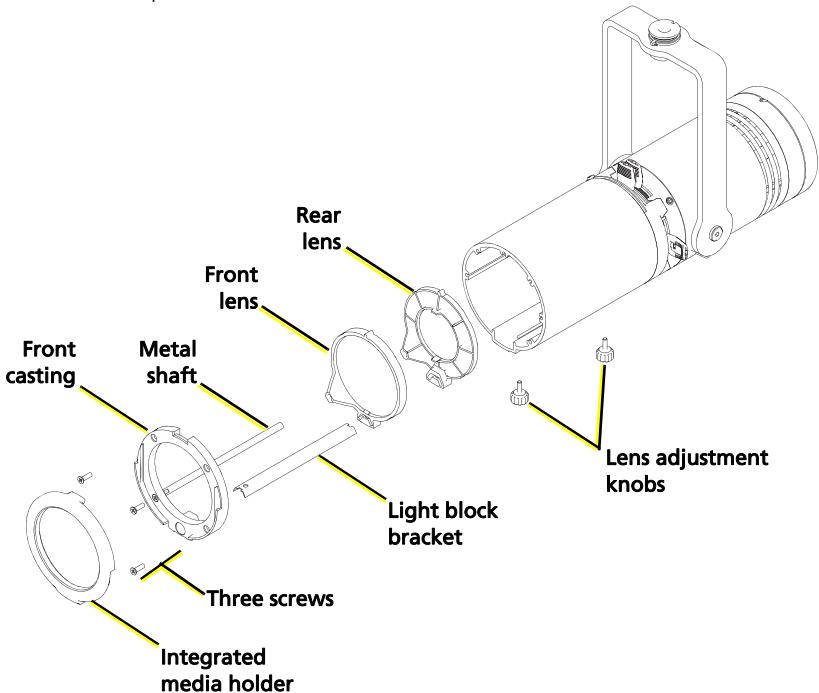
Note: *You may find it easier to insert the metal shaft into its pocket of each lens before replacing the lens.*

9: Replace the lens adjustment knobs.

10: Replace the light block bracket. Make sure that it fits into its pocket of each lens.

11: Replace the metal shaft if you have not previously done so.

12: Replace the front casting and secure it with the screws.

13: Replace the integrated media holder.

RDM Values

Manufacturer ID: 0x6574 (Electronic Theatre Controls)

Model ID: 0x900 (Irideon FPZ)

Parameter	RDM PID	Value
DMX Start Address	0x00F0	Range = 1–512
Personality ID	0x00E0	1 = DMX 2 = Local
Output Frequency	0x8123	0 = Standard (1.2 kHz) 1 = High (25 kHz)