

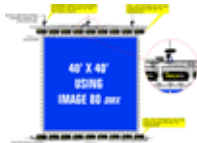
FAQ



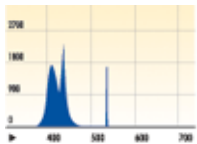
1. True Match Lamps



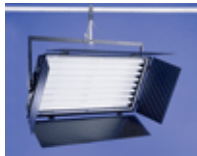
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True Match® Lamps

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What is the difference between Kino Flos and store bought fluorescents?

Kino Flo True Match® lamps are the only High Output (HO) fluorescent lamps designed to correspond to the spectral sensitivity of film and digital imaging. In 1995 Kino Flo was awarded an Academy Award for Technical Achievement for its unique lamp engineering and fixture designs.

Is there a color difference between Kino Flo lamps operating in an architectural fixture vs. a Kino Flo fixture?

Kino Flo's 4ft and 2ft T12 800ma lamps can be used in architectural fixtures. Due to the lower operating currents of architectural fixtures, the Kino Flo lamps may appear slightly more magenta to the eye than the same lamps in Kino Flo fixtures. However, on film, video or digital the light quality of the two fixture types matches.

What is the difference between single pin lamps and double pin lamps?

Single pin lamps are referred to as Slimline fluorescents. Slimline lamps will not operate on Kino Flo HO ballasts. Most double pin (bi-pin) lamps will operate on Kino Flo ballasts. However, Kino Flo HO ballasts will shorten the life span of store bought bi-pin lamps.

Do Kino Flo lamps operate in architectural High Output (HO) fixtures?

Architectural HO fixtures can range in lengths of 4ft, 6ft and 8ft. They use a lamp that has a double recessed bi-pin end cap. It looks similar to a single pin lamp but the pin is hollow and oval shaped. Kino Flo 6ft and 8ft lamps can be modified with an accessory Double Recessed End Cap that slides over the lamps normal medium bi-pins. However, Kino Flo 4ft lamps cannot be modified this way because architectural 4ft HO lamps are three inches shorter.

Why do some lamps in a fixture seem slightly different?

Slight variations in appearance are common from lamp to lamp. The age of a lamp and the batch number can account for variations. When evaluating color temperature, position the color meter at least 24 inches (.5 meter) from the fixture or lamp. Holding the meter too close may result in inaccurate readings.

What does High Output (HO) mean?

High Output (HO) is the term to describe lamps that are burning at a higher than Standard (Std) lamp current. Normal fluorescent lamp currents operate a lamp at between 280ma to 320ma. HO refers to lamps operating at or above 800ma. Lamps operating at 1500ma are referred to as Very High Output (VHO). Kino Flo Select ballasts can switch between HO/4ft and Std/2ft lamp operation.

Why do my lamps read green on my color meter?

In a fixture with restricted air flow, lamps can heat up and exceed the temperature operating range for good color. Lamps should never be fully enclosed with gel or diffusion. As the temperature of a lamp increases, so does the mercury pressure in the lamp. This increased mercury pressure appears as a blue green light. The higher the temperature the bluer and greener a lamp will appear.

Tip: *If a 4ft lamp is operating too hot and the color is shifting green, move the select switch to Std (or 2ft). This will reduce the lamp current and drop the green spike.*

Dimming vs. Switching

All fluorescent lamps will drift toward magenta when dimmed. The shift is continual as the lamp physically cools. Kino Flo recommends only dimming one f-stop to ensure good color. The Select Ballast series changes light levels without affecting color balance by switching lamps on and off, and by using the 2ft/4ft select switch, which adjusts the lamps by 1/2 f-stop.

How do color meters read fluorescent lamps ?

Unfortunately, color meters available to cinematographers are far from being scientifically accurate when reading fluorescents. They act as a great comparative tool to determine differences between two given light sources but are inadequate in providing definitive data. You will rarely find two color meters, even if they are the same make and model, that provide equal data. Results between meters may be similar but not identical.

Ballasts

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What is the select switch for?

The select switch is used to optimize lamp performance and color temperature. Four-foot lamps should operate at the 4ft setting. Two-foot lamps should operate at the 2ft setting. The select switch can also be used to control light output by switching a 4ft lamp from 4ft to 2ft in a 1/8 f-stop increment.

Caution: *If a 2ft lamp operates in the 4ft setting the color may turn green and not match the color of a 4ft lamp.*

Tip: *If a 4ft lamp is operating too hot and the color is shifting green, move the select switch to Std (or 2ft). This will reduce the lamp current and drop the green spike.*

Can I shoot at 50Hz?

Kino Flo ballasts can operate at 50Hz, 60Hz and as high as 400Hz. When shooting in a 50Hz country, it will be important to use a 230VAC ballast or use a step down transformer. The Kino Flo ballast is designed to be flicker free in either a 50Hz or 60Hz environment.

Can I use an inverter and battery pack to operate a Kino Flo ballast?

Kino Flo recommends a pure sine wave inverter. Inexpensive saw tooth or near sine wave inverters may not work.

Can I use a Kino Flo Inverter with a car battery?

Kino Flo's Inverter System is an integrated system. The battery packs and power cables are sized to

allow sufficient power to operate as much as 1800 watts. A regular car battery would not have significant power to drive the system.

When should I use an Opto-Isolator?

Opto-Isolators are recommended for DMX runs greater than 250ft.

Can I shoot at any shutter speed and not get flicker?

Kino Flo ballasts are designed to be flicker free at any shutter speed. As with any electronics, failure of certain components within the ballast may result in flicker on a high speed shot. For this reason it is advisable to run a camera test on any critical high-speed shot.

Can I use Kino Flo ballasts on a dimmer board?

Kino Flo ballasts can operate through a dimmer board. Set the operating channel as a non-dim control. This enables the board to turn the ballast on or off. The lamps will not dim through the dimmer. If the ballast is dimmed on the dimmer the lamps will strobe and go out. A DMX dimmer board can switch individual lamps on and off or dim certain models of fixtures through DMX commands.

How many extensions can I run with Kino ballasts?

Do not exceed 3 x 25ft extensions. Using more extensions may result in lamp instability.

Why is the neutral drawing more than the hot leg?

Kino Flo ballasts are generally not power factor corrected. They will draw double the current on the neutral from what is being drawn on the two hot legs. On large installations it may be necessary to double your neutral run so as not to exceed your cable capacity. The Diva-Lite and ParaBeam series of fixtures are power factor corrected and do not need additional capacity on the neutral.

Lighting Blue/Green Screens

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Blue Screen vs Green Screen?

In film, the determining factor may be the colors of the subject (contrast to screen). In television and video work, the color blue has traditionally been used for chromakey work. Green became popular when DV 25/50 came into use. The compression in this format uses blue and red to mathematically make up the green channel. This being the case, the green channel is cleaner than the other two. Thus, green screen was born. For other formats, blue is still used. **

Why use Kino Flos to light a blue or green screen?

For the best results the screen needs to be lit evenly and with the best possible color saturation. Evenness is easily achieved using Kino Flos because of the soft quality of the light and the wide beam spread. The best saturation of color is achieved by using blue-spike lamps on blue screens and green-spike lamps on green screens. It's not as much about how much light is used to light a screen, but rather what produces the best saturation of reflected blue or green light.

Other benefits of using Kino Flos?

Benefits include: ten times more light per watt than tungsten lighting; manual and DMX remote light level control without color shift; fast set-up; low power consumption; low heat; and cost savings from not using color gels.

Which fixtures should I use?

Because lighting screens is about evenness, you generally want to use bigger fixtures with the widest beam spread. For portability and versatility, 4ft/4Bank Systems and Image 45/85 DMX fixtures have been the most popular units for blue and green screen applications.

However, depending on the size of the screen (especially in installations) Double Systems (4ft, 6ft, 8ft) and 4Banks (4ft, 6ft, 8ft) can be used. Sometimes choosing the appropriate fixture is based upon the size of the screen that needs to be lit. Bigger units covering more area become more economical. Diva-Lites with their smaller profile and ParaBeams with their more directional beam can also be used, but the results usually are not as efficient as Image fixtures.

Which lamps should I use?

For lighting bluescreens, we recommend the 420nm blue lamp and for greenscreens we recommend the 525nm green lamp. Providers of blue and green screen material name their products differently, but in the end what counts is the quality of the reflected color.

If blue and green spike lamps display the best saturation, why not use them 100% of the time?

There are times when the subject is very close to the screen or standing on a cyclorama with a floor painted blue or green. In these cases where it is impossible to keep the light from contaminating the subject matter, we recommend using our KF32 (3200K) Lamps. The KF32 Lamps deliver all the benefits of evenness, but they do not have as much contaminating red spectrum as tungsten hot lights.

Where do I place the fixtures?

The general rule: about the height of the screen, half that distance in front at a 45% angle. So if the screen is 20ft (7m) high, the lights would hang 8-10ft (3-3.5m) in front of the screen. Generally, the 4ft fixtures are rigged 2-3ft (1m) apart in a row. On screens lower than 20ft (7m), one row across the top is sufficient. For better evenness and a brighter screen, a row of fixtures may be placed along the bottom as well.

Is there light drop off in the middle of the screen?

Use a spot meter, not an incident meter to get readings. Our experience has been that if the fixtures are properly placed we have not seen more than a 1/10th difference (spot meter) from top to bottom of screen. On screens 40ft (13m), the screen is evenly lit having one row across the top and one row across the bottom. For taller screens 60-80ft (20-26m) an additional row may be placed on the top and angled more towards the center. Sometimes when units are placed on chain hoists, the lights can be moved to light the screen and still be out of camera view.

Do I need to light the subject separately from the screen?

Yes, the screen should be lit first to the light level required. Then the subject should be lit separately.

What is the light level for the subject and the screen?

For best results shoot a density wedge test to determine exposure for the screen. Generally people shoot at key for greenscreen, or underexpose the shot as much as 2/3 f-stop to 1 f-stop under key. Bluescreens are underexposed 1 1/2 f-stop to 1 2/3 f-stop below the key light level.

What should I use to light my subject?

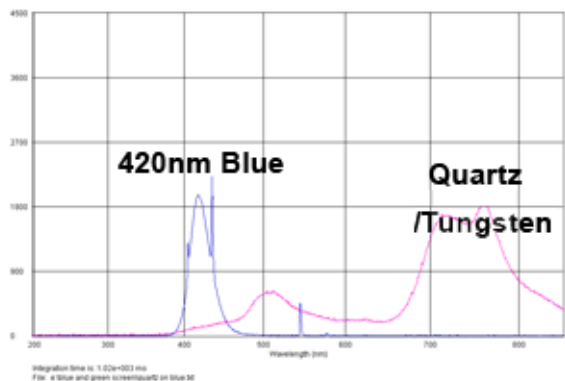
You can choose any light for the subject. But once the screen has been lit, try to keep stray light off the screen. In many cases Kino Flos are used to illuminate the foreground subject because the soft quality of fluorescents drops off and doesn't spill unwanted light onto the screen.

** Thanks to Kim Norwood for his technical input.

[Compare lamps Blue/Green Screen](#)

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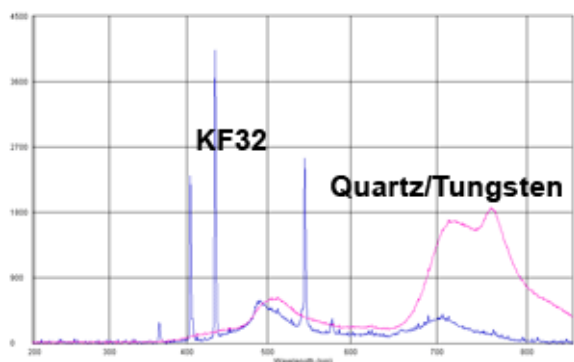
420nm Blue vs Tungsten on Blue Screen



Blue Screen Option #1

Use the 420nm blue lamp. The blue spike of this lamp is ideally suited for blue screen. Before Kino Flo, tungsten light was used, but its broad spectral distribution does not saturate the screen as well as the 420nm blue lamp. Tungsten displays a high peak of contaminating red color between 670nm to 800nm making a clean blue layer exposure very difficult.

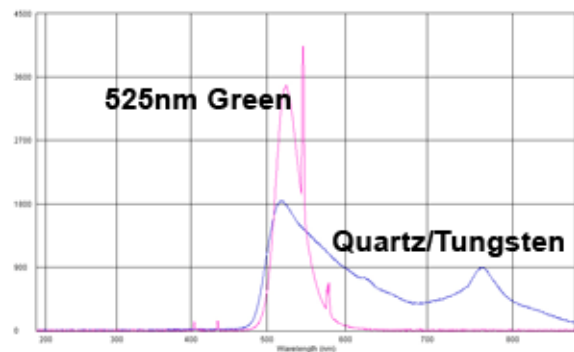
KF32 vs Tungsten on Blue Screen



Blue Screen Option #2

Use KF32 (3200K) Lamps when the subject matter is in direct contact with the bluescreen. The KF32 peaks slightly bluer at 490nm. The additional blue energy spikes at 404nm and 436nm further enhance the ability of the KF32 to deliver superior blue layer exposure. Quartz/tungsten light has its blue energy peaking at 515nm. The KF32 has dramatically lower red energy making it better at cleanly exposing the blue layer of film. Quartz/tungsten has contaminating red energy between 670nm and 800nm.

525nm Green vs Tungsten on Green Screen



Green Screen Option #1

Use 525nm green lamps. The lamp has a narrow concentration of green between 500nm and 560nm. This highly efficient green source makes it ideal for clean green layer exposure. Quartz tungsten has a

broad spectral distribution. Its green energy peaks between 490nm and 675nm with an undesirable rise in red contamination between 690nm and 800nm.

KF32 vs Tungsten on Green Screen

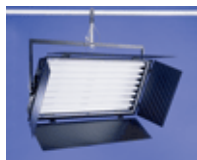


Green Screen Option #2

Use KF32 lamps when the subject matter is in direct contact with the greenscreen. On greenscreen material, both quartz and Kino Flo's KF32 (3200K) follow very similar spectral distributions. The KF32 has an advantage over quartz due to its lack of red spectrum and because it has a slight green spike at 547nm. The green spike means you need less KF32 illumination than quartz to get the correct density on the green layer.

Image 85 DMX Addressing

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Each Image 85 fixture operates on 9 addresses.

After the first DMX address is entered, the Image 85 Fixture automatically captures 9 addresses. Eight addresses to lamps 1 – 8 and the 9th address to control the **HO/Standard** select feature. For the sake of simplification, it is advisable to select address sequences such as 1, 10, 20, 30, 40 and so on.

The 9th address controls the **HO/STD** setting of all the lamps in the fixture. A dimmer level of 0%-50% sets the lamps in the **HO** mode. Dimmer settings from 50%- 100% sets the lamps into the **STD** mode.

Note: Manual lamp switching is disabled as soon as the DMX cables are applied. For Manual control with DMX cables plugged in, set address to "000". There is a 5 second delay when switching between DMX and Manual control

[Click here for complete Image 85 Dmx Operation Manual under PDF format.](#)

IMPORTANT!

The dimmer board/light console should have its channel set to LINEAR light output response. (LINEAR response is the default setting on most dimmer boards.)

NOTE: If a Fixture or Ballast loses its DMX signal, it will hold its last DMX command. For this reason it is important to turn a Fixture or Ballast off using the DMX commands. For example, if you try to turn off the lights by turning off the dimmer board, the lights will remember their last DMX command and stay on. The Fixtures or Ballasts require a DMX "Off" or "Black-out" command in order to turn off.



Push the tabs above or below the number window to set the address.

(Valid addresses range from 001 to 512.) The yellow light above the address block will illuminate if a DMX signal is present.



The **DMX Terminate Switch** must be set to open (**O**) on Fixtures within the DMX chain.

Set to closed (**I**) when the Fixture is the last DMX control device in the chain.

Note: When the last Fixture's DMX Terminate Switch is set to "I," it will absorb all energy in the DMX line; ensuring DMX signals are transmitted correctly. If a signal is not terminated, it is called a "Reflected Wave," and may create transmission errors by causing valid DMX signals to be canceled.



Setting the unit to "**Fixture Mode**" allows the user to turn lamps on and off with an "inside-out" pattern from a dimmer board.

| DMX Lamp Sequence | |
|-------------------|--------------|
| Lamp # | Dimmer Level |
| 8 | Lamp 1 |
| 6 | Lamp 1~2 |
| 4 | Lamp 1~3 |
| 2 | Lamp 1~4 |
| 1 | Lamp 1~5 |
| 3 | Lamp 1~6 |
| 5 | Lamp 1~7 |
| 7 | Lamp 1~8 |

One of the best applications for the "**Fixture Mode**" is when lighting Blue and Green Screens or large Cycloramas.

For example: One row of fixtures can be set to Fixture mode on a common address. When the fader on the dimmer board is brought up or down all the Fixtures on that address will have the same lamps turned on. Assigning the 9th address on all the fixtures renders control over the HO/STD settings.

Dimmer level - Lamp response Sliding the fader on the dimmer board from 0% ~ 100% controls the number of lamps that are on within a fixture. Note: the lamps may respond \pm 4 channel levels, depending on the dimmer board.

IMPORTANT! The dimmer board/light console should have its channel set to LINEAR light output response. (LINEAR response is the default setting on most dimmer boards.)



Setting the unit to "**Individual Lamp**" mode allows each lamp within the fixture to have its own address. Although this option will use up a lot of addresses, it may be preferable for certain situations. The "Individual Lamp" mode is useful in achieving light effects like flickering, chasing or creating light patterns.

After the first DMX address is entered, the DMX Image 85 automatically captures 9 addresses. Lamps are on addresses 1- 8. The 9th address controls the HO/STD mode. For the sake of simplification it is advisable to select address sequences such as 1, 10, 20, 30, 40 and so on. If the 9th address is not addressed the fixture will default in the HO setting. Settings of 0%~50% on the dimmer slider on the 9th address will operate lamps in the HO setting. Settings from 50%~ 100% operate the lamps in the STD mode and the overall light output of the fixture drops by ½ f Stop.

For example, if the DMX IMAGE 85 base address is set at 001, the configuration below will provide eight lamps individually addressable through DMX512. Address 009 controls the HO/STD mode.

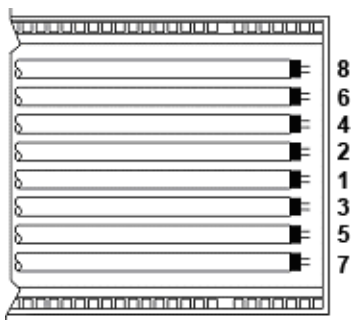


Image 85 Address Sequence

DMX Address = 001

| Lamp # | DMX Address |
|--------|-------------|
| Lamp 1 | 1 |
| Lamp 2 | 2 |
| Lamp 3 | 3 |
| Lamp 4 | 4 |
| Lamp 5 | 5 |
| Lamp 6 | 6 |
| Lamp 7 | 7 |
| Lamp 8 | 8 |
| HO/STD | 9 |