

# ParaBeam® DMX



The ParaBeam 410 and 210 studio fixtures display about the same amount of soft light as a 2,000 Watt and 1,000 Watt tungsten light, respectively. But ParaBeams only use 1/10th as much power! Both studio lights take Kino Flo True Match® high color rendering lamps (CRI 95).

The soft beam actually can be focused for a wide variety of set lighting looks, from lighting four people across a news desk to spotting down to a single subject. Some of the ParaBeam's details are:

- Onboard/remote DMX dimming
- Lamp/Select switching (410 fixture only)
- Parabolic intensifying reflector
- Gel Frame
- Focusing Louver
- True Match® daylight, tungsten

**Available in Center Mount, Yoke Mount and Pole-Op**

## Details Of Features



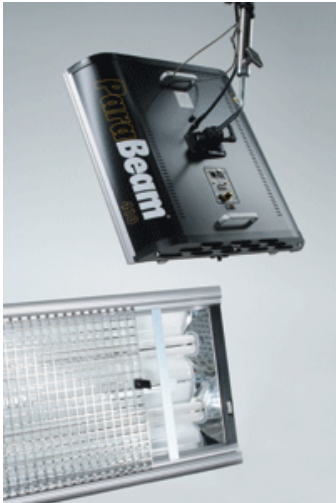
More Information

## ParaBeam Highlights

## Kino Flo ParaBeam Product Detail

The ParaBeam has distinct advantages over conventional quartz softlights.

- Low amperage draw, energy savings
- Longer lamp life, low lamp replacements, low maintenance labor
- Low operating temperature
- Low air-conditioning costs
- More efficient heat management design for stable color temperature
- Full spectrum (CRI 95) lamps available in 3200K and 5500K
- Kino Flo lamps also available in 420nm blue and 550nm green for blue and green screen applications.
- High color rendering True Match lamps work well alongside conventional quartz lights or HMI's
- DMX control for stable color temperature and light level control
- Color gels do not burn out or fade due to lower heat of fixture
- Center mount for horizontal and vertical axis rotation, Yoke Mount and Pole Operation
- Quick ballast maintenance
- Honeycomb louvers 90°, 60° and 45° reduce the need for barndoors
- Slender design for a less crowded lighting grid



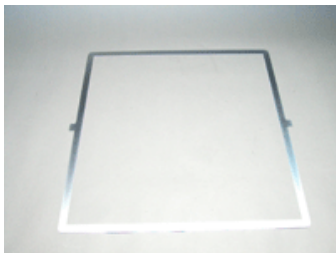
The ParaBeam is a directional softlight ideally suited for today's rigorous demands for high quality, color-correct, cool lighting for HD television. With the introduction of HD broadcasts, it has become highly evident that the quality of light is more critical than ever. Every imperfection and detail of camera talent is now up for scrutiny. Traditional hard light can exaggerate those textural details. Soft light can subdue those same textures and render a more cosmetic appearance.

The ParaBeams afford lighting designers the necessary light control required for a studio environment. The lamps are dimmable from 100% to 5% as well as switchable (turning on/off two lamps at a time) from a lighting board through DMX. The instrument can be tilted and panned as well as rotated to take full advantage of the lateral beam. Varying degrees of louvers (90°, 60°, 45°) reduce the need for barndoors and help create a soft edge.



The sleek profile is well suited for a studio environment. The parabolic reflector design eliminates the necessity of adding intensifiers. In small studios a narrow design also allows other fixtures to operate within close proximity. The fixture is not encumbered with long barndoors or intensifiers. The selection of the appropriate louver 90°, 60° or 45° is more efficient than barndoors.

Intensifiers are necessary in fixture designs that have inefficient reflectors and where lamps are too closely spaced.



A **Gel Frame** is provided to hold colored gels or standard theatrical diffusion materials.



A **Silver Louver** is included with all ParaBeam Fixtures.

### ParaBeam Kits

ParaBeams with Center Mounts are available in kits for location lighting or in production rental situations.



**KIT-P4-120**  
ParaBeam 410 DMX Center Kit,  
120VAC  
**KIT-P4-230**  
ParaBeam 410 DMX Center Kit,  
230VAC

#### Contents

- 1 ParaBeam 410 DMX Center
- 1 Lamp Case
- 1 Ship Case

#### Dimensions

29.5 x 11 x 29.5"  
(75 x 28 x 75cm)

#### Weight

61 lb (27.5kg)



**KIT-P2-120**  
ParaBeam 210 DMX Center Kit,  
120VAC  
**KIT-P2-230**  
ParaBeam 210 DMX Center Kit,  
230VAC

#### Contents

- 1 ParaBeam 210 DMX Center
- 1 Lamp Case
- 1 Ship Case

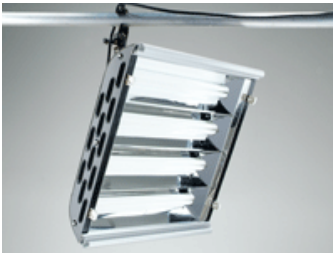
#### Dimensions

21.5 x 11.5 x 29"  
(54.6 x 29.2 x 73.6cm)

#### Weight

45 lb (20.3 kg)

### ParaBeam Fixture Styles



Center Mount



Yoke Mount



Pole-Op

The ParaBeam DMX fixture styles available include: Center Mount, Yoke Mount and Pole-Op.

### The Center Mount



The classic **Center Mount** allows the fixture to be oriented at any desired beam angle. On a Fresnel fixture you would rotate the Barndoor to achieve the same effect. The center mount fixture includes a junior pin for stand mounting or fixed pipe mounting.



**MTP-LMT**



**Pantograph**

When the arm is used with a pantograph, it tends to hang slightly off axis.

A center hanging arm, **MTP-LMT**, can be used to center the weight of the fixture when using a telescoping pantograph.

### The Yoke Mount



ParaBeam w/ Yoke



**MTP-180**

The **Yoke Mount** can be mounted onto a pipe grid. The required Junior Pin Assembly, **MTP-180**, (sold separately) can be used in conjunction with a junior pipe hanger.

### The Pole-Op



## Kino Flo ParaBeam Product Detail

ParaBeam w/ Pole-Op

Pole-Op

Jr. Pin

The **Pole-Op** allows the ParaBeam to be hung from a pipe grid and adjusted from the ground using a long pole. The fixture includes a yoke with an attached junior pin.

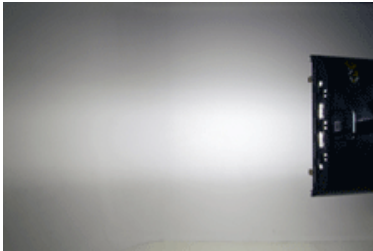
The blue cup alters the Pan (left or right) and the white cup alters the Tilt (up or down).



The graphics are designed to make it easy to orient the lamps in the fixture correctly. **Lamp orientation** is important to maintain good color and lamp performance. The lamps can either be in a horizontal or vertical mode in which the cathode end of the lamp is at the top. This ensures rapid heat dissipation. In the horizontal mode the ParaBeam graphic reads correctly. In the vertical Mode the control panel and the Kino Flo logo also read correctly. If they are upside down, the fixture is incorrectly oriented.

### Understanding "The Beam"

Generally, fluorescents have a very broad soft light output. The light tends to drop off rapidly which means the units need to be positioned close to the subject they are lighting. The ParaBeam has a computer aided designed (CAD) parabolic reflector that was designed to maximize the light output at about 16 feet (5 meters). This achieves two things: it doubles the light output of the lamps and concentrates the light where the lighting director needs it most. Compared to the Diva-Lite, which uses the same four 55Watt compact lamps and the same ballast, the ParaBeam is twice as bright.



In the **open face** mode the fixture has nothing obstructing the front of the unit. To best see the beam structure, shine it on a white wall. You can see a wide hot center of the beam. The light above and below the beam tapers off in intensity. Although the fixture is square, the beam of light is a broad lateral oval because of the parabolic reflector.



The **90° Louver** concentrates the light and behaves much like a 24" barndoor. The beam is slightly oval with a hot center. The light tapers off to a nice soft edge.



The **60° Louver** further concentrates the light into a smaller, tighter soft edged circle.





The **45° Louver** is the most concentrated circle of light. It would be similar to putting a 6 feet (1.5 meter) long snoot onto the ParaBeam. The spot displays a beautiful soft edge.

Controlling the beam spread with Louvers is far more efficient than barndoors and takes up far less room. The minimal light loss with louvers is the best solution when you consider the efficiency of the fixture and the versatility of the compact design.

### DMX Control



The ParaBeam 410 features DMX control of dim levels as well as four or two-lamp operation. The fixture operates on 1 or 2 DMX addresses. Address One allows dimming control of all four lamps; address Two allows two channel control of two individual sets of lamps. Additional DMX control, dimming control and power switch are conveniently located on one control panel.

For more detailed DMX information, see the Operation Manual.

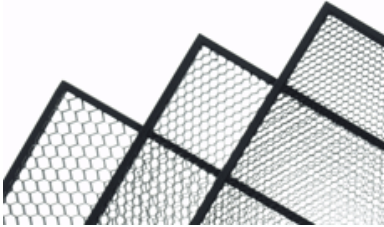


The ParaBeam 410 can also be controlled manually. The user can select 2 or 4 lamp operation as well as dimming control.

### Light Control



**Barndoors** (sold separately) are available but rarely used. The most effective ones are the doors opposite the lamp ends. On this axis the doors actually have some effect. The side doors have little effect due to the deep set parabolic reflector. They can be effective from blocking a view from camera.



**Honeycomb Louvers** are available in 90°, 60° and 45°. They provide great beam control and for the most part eliminate the need for barndoors.

### The Lamps



ParaBeams operate on 55W twin tube compact fluorescents. Kino Flo's True Match® KF55 and KF32 are designed for daylight and tungsten respectively. In 1995 Kino Flo received a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences in part for the development of its color-correct line of fluorescent lamps.

The True Match lamps allow the KF32 to mix seamlessly with regular studio quartz hard lights. The KF55 mixes seamlessly with natural daylight or HMI's.

Like other lamps in the True Match family, the new 55W Compact's color (CRI 95) is formulated by Kino Flo to match the spectral sensitivity curves of HD and digital film imaging equipment. With its proprietary chemistry, the True Match lamps in a Kino Flo fixture display a unique quality of soft light. The smooth beam gradient responds especially well to the new generation of HD cameras on the set and works side by side with traditional tungsten sources without corrective filtration.

The 420nm blue and 550nm green lamps are also available for lighting blue and green screens. The narrow band lamps provide an efficient light source for special effects compositing.

### ParaBeam Advantage

#### Environmental Advantage

From a "green perspective" the ParaBeams provide great energy savings.

For example: 2000Watt Quartz softlight = 16 amps  
220Watt ParaBeam 410's = 2.0 amps  
Both have the same light output.

The air conditioning load to handle heat generated by lighting is calculated in Btu/kWhr.  
2000Watts = 6826 Btu/kWhr  
220Watts = 750.86 Btu/kWhr

## Kino Flo ParaBeam Product Detail

Factoring this type of power and energy differential in a studio adds up to monumental savings in green house gases, not to mention money saved.

### **Long Lamp Life**

Lamp life of a compact fluorescent for the television and motion picture industry is determined more by its lumen maintenance than by its actual burn time. All fluorescent lamps display a lumen depreciation curve. This means that over time the light output gradually drops and lowers in color temperature. A lamp may be rated at 10,000 to 20,000 hours but its useful light quality is shorter. It is realistically more in the 2000 to 2500 hour range. In a Studio environment this adds up to about 1 year of continuous use.

All fluorescent lamps require some "burn in" time before they operate at their rated Kelvin temperature and brightness. For dimming products, the lamps perform best after 100 hours of operation.

### **True Match Color-Correct Lamps**

True Match lamps are formulated to correspond to the spectral distribution curves of film and television cameras as well as look correct to the eye. They are designed to match the colors from studio quartz units or daylight sources such as HMI's. This gives the lighting director the option of mixing quartz hard light sources with fluorescent soft sources. Most lighting designers want the ability to use both qualities of light to enhance the set.

Architectural lamps are designed to optimize government-mandated standards for lumens per Watt efficiencies (energy savings targets). In order to achieve these standards the lamps contain high levels of green spectrum, which our eyes don't perceive as inaccurate. Film and television cameras do record this added green. For example, green renders a Caucasian skin tone as grayish and unattractive. The architectural lamps do not match with other studio lamps. They render colors inaccurately and make correction in post almost impossible.

In 1995 Kino Flo received a technical achievement award from the Academy of Motion Picture Arts and Sciences for the development of the first color-correct lamps for film. Kino Flo continues to be a leader in the industry introducing new developments and constantly improving the efficiencies and formulations of its lamp technology.

### **Heat Management Design**

For Kino Flo heat management is a critical design element of fixture design. The physical heat of the lamp directly influences color temperature and lumen performance and lamp life.

In order to maintain a stable color performance the lamp requires:

- a cool spot at the tip of the lamp
- a horizontal orientation
- or a vertical orientation where the base of the lamp is above the lamp tip.

The ParaBeam design addresses these requirements:

- Two special cooling chambers at opposite ends of the fixture provide ventilation. This ensures that the heat from the lamp is drawn out of the fixture and away from the body of the lamp. A temperature-stabilized lamp will provide consistent color performance.
- The deep parabolic reflector further prevents the heat from lower lamps to be transmitted to the lamps above.

A well maintained lamp temperature extends the lumen maintenance, color temperature and life of a lamp.

### **Reflector Design**

The parabolic reflector design puts out a narrow lateral beam. When lighting a news set you very often are lighting two to three people at a news desk. The effective area to be lighted is a broad rectangle. With conventional lights, the lighting projection would be a large round area. Barndoors or flags would be used to remove the light from above and below the rectangular area. This constitutes tremendous loss of light and efficiency. The ParaBeam puts the light where it is needed most. Barndoors or flags can still be used to eliminate spill above and below the rectangular area without reducing the efficiency of the instrument.

Another great advantage of the ParaBeam over conventional quartz softlight units is the efficiency of the reflector design. Quartz soft lights rely on a white painted reflector that yellows and gathers dust. This alters the color temperature and reduces light output. The drop off is much like a bounce card. For this reason



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soft lights have to work close to their subject matter. The ParaBeam reflector is a precision design using highly reflective material that is shaped to project a beam of soft light at a focal distance of about 16 feet. This explains how 110Watts of good design can equal 2000Watts of inefficient design.

Reflector designs by other manufacturers of fluorescents tend to be shallow and inefficient. In order to get more light output, they add expensive and time consuming accessories called intensifiers. These are large reflector panels that attach to the four sides of the fixture. They make the fixture twice as big and add unnecessary cost.

### **High Efficiency Output**

The ParaBeam's lumens per Watt out performs all other units in the market, using a 110Watt fixture to do the work of another manufacturer's 220Watt fixture. Photometric performance is very important. It is also important to note that other manufacturers use high green-spiked lamps to artificially boost their photometric values.

### **Center Mount, Yoke Mount and Pole-Op**

The Center Mount includes a ball center mount design enabling the beam to be oriented at any angle. This allows the beam to be rotated and have the same effect as rotating a barn door on a Fresnel. The Yoke Mount includes a welded alloy yoke bale offering 360 degrees of fixture movement to focus the soft beam when lighting from a grid.

The Pole-Op Yoke includes an attached junior pin and offers an advantage of lighting from a grid and eliminating the need for ladder access or costly automated rigging and hoist systems.

### **DMX Control**

The ParaBeams can be controlled through a DMX 512 digital protocol. They do not require dimmer racks. This saves capital costs as well as energy costs.

Most studios are designed with dimmer racks that are regulated from a lighting board. The lighting board sends out a DMX signal to the rack that adjusts the voltage to the lamps through pulse width modulation. The more quartz lights are used more dimmer racks need to be added. These racks generate heat and noise and require a special soundproof room.

Studios using Kino Flos can rely on a simple DMX lighting board to control the fixtures. The dimming electronics are contained in the fixture and do not require expensive dimmer racks to adjust line voltage. The DMX signal regulates the dimming levels. There is no additional noise or heat generated by this process. Small studios can use dimmer control boards that cost as little as \$400.

### **Ballast Maintenance**

The ParaBeam features a unique method of servicing the ballast. By removing one of the side ventilation panels you expose the lock tabs for the ballast trays. Unlatch the tabs and pull the ballast out. Electrical contact is made through the edge card. No hand tools are required to remove and replace the ballast. This process can be done in seconds. The simplicity of maintenance is important for a studio that is operating for many hours per day.

### **Cost Savings**

#### **Cost savings attributed to fluorescents cover a broad range of concerns:**

- Lower energy costs
- Less heat so lower air-conditioning expenses
- No gel replacements because of low heat
- Fewer lamp replacements due to longer lamp life
- Lamp replacement labor reduced by a factor of 10

### **Energy Savings Calculations**

With the push for reducing fossil fuel consumption, TV studios are looking at cooler more efficient lighting systems

## Kino Flo ParaBeam Product Detail

to reduce costs and save energy. Part of this process involves generating energy values to determine savings.

One of the most important values is Btu/kWh.

### **British Thermal Units per Kilowatt Hour**

Any light generates a percentage of usable light and the rest in heat.

For example, a standard incandescent light bulb converts only 11 percent of its electrical input into visible light, while the rest is dissipated directly as heat. There are energy costs involved in cooling the studio environment.

The measure of Btu/kWh is a means of calculating the thermal loads related to operating lighting.

Use the following information to calculate Btu/kWh:

Watts to BTU

1 KWH= 3413 BTU/Hr.

1 watt= 3.413 BTU/Hr.

3.413 BTU per watt-hour

Example: ParaBeam 410 = 220 watts

$220 \times 3.413 = 750.86$  Btu/kWh