

## DarkStar® eFinity Series

### Section 1: Material Design

- 1.1 What is it for?** The **DarkStar® eFinity** by EPV Screens represents the absolute pinnacle of ambient light rejecting technology. It features an internal-framework with the wraparound material that is better known as an **EDGE FREE®** design. It is a more aesthetically pleasing format and includes a sleek 9 mm frame bezel. The design blends seamlessly into any home décor. In addition to its design qualities, the eFinity’s EDGE FREE® configuration maximizes the viewing area in a smaller spatial footprint without compromising the screen’s structural integrity. An LED backlighting kit with Infrared remote control is included at no extra charge. Winner of the prestigious CTA “Mark of Excellence” 2016 Product of the Year Award and highly acclaimed by numerous industry video experts, the DarkStar® 9 eFinity sets a new benchmark in front projection screens.
- 1.2 How does it work?** This series features our ISF-Certified and award winning, DarkStar® 9 front-projection Ambient Light Rejecting (ALR) material. The DarkStar® 9 is an advanced retro-reflective, multiple-layer, optical microfilter-based viewing surface that is capable of absorbing up to 90% of in-room ambient light. Its ISF Certification assures accurate color fidelity while providing the deepest blacks possible with an astonishing level of detail in a full 180-degree viewing angle.

### Section 2: Product Features

**2.1 Characteristics**

**Screen Material**

- Gain: 0.9
- View Angle: 180° (90° ±LR)
- Wide Viewing angle with full uniformity for superior on/off-axis viewing
- Uniformity achieves no perceptible color shift, texture, bright spots, or dark corners
- Delivers precise color fidelity, black level and contrast improvement
- Black-backing eliminates light penetration
- Certified by the **Imaging Science Foundation** (ISF)

**Design and Installation**

- Internal framework with wraparound tensioned projection material
- Aluminum lightweight split-frame design
- Sliding wall mount brackets to precisely center the installation
- Ultra-thin 9 mm aluminum black bezel
- LED edge backlighting kit included with Infrared (IR) remote for added visual appearance
- Active 3D, 4K Ultra HD, HDR Ready

**2.2 Certifications**



*“ISF works with the majority of projector manufacturers to deliver factory presets that are close to calibrated. Matching that preset with an ISF Certified screen provides the best option for those who do not have a calibrator on site during installation. Many thanks to Elite Screens for delivering ISF certified screens with accurate color!”*

**Joel Silver, Founder and President, Imaging Science Foundation**

### 2.3 Model Numbers

Model Numbers	Diag. Size	Aspect Ratio	Viewable Height (in)	Viewable Width (in)	Screen Material	Gain	N.W. (lbs)	G.W. (lbs)	Packaging Dimensions (LxWxH)
EF108H-DS9	108"	16:9	53.0	94.1	DarkStar® 9	0.9	29.9	43.3	68.1"x14.2"x10.6"
EF124H-DS9	124"	16:9	60.6	107.8	DarkStar® 9	0.9	34.6	49.7	75.6"x14.9"x11.8"
EF158C-DS9	158"	16:9	60.6	145.5	DarkStar® 9	0.9	37.4	58.4	80.7"x13.4"x11"

## Section 3: Screen Material Specifications

### 3.1 Characteristics

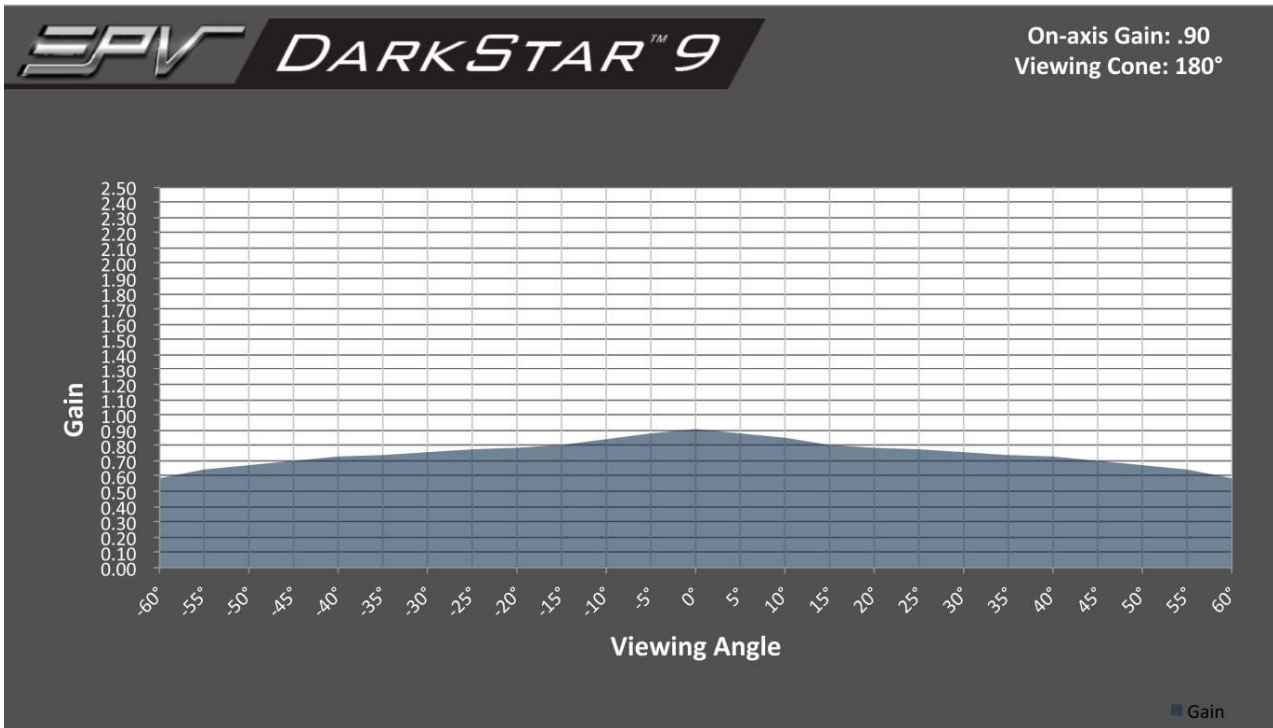
The DarkStar® 9 is Elite Prime Vision's newest Ambient Light Rejecting front projection screen. The DarkStar® 9 possesses very similar characteristics of our award winning 1.4 gain DarkStar® but now offers a wider viewing angle and a very close to unity gain without the compromise of ambient light rejection, contrast enhancement, resolution, and color accuracy.

### Features & Benefits

- Gain: 0.9
- View Angle: 180° (90° ±LR)
- Black backing eliminates light penetration
- Direct Light Reflection Technology
- Absorbs 90% of ambient light from above and below
- Accurate Color Representation - Flat Spectral Response
- Certified by the *Imaging Science Foundation* (ISF)

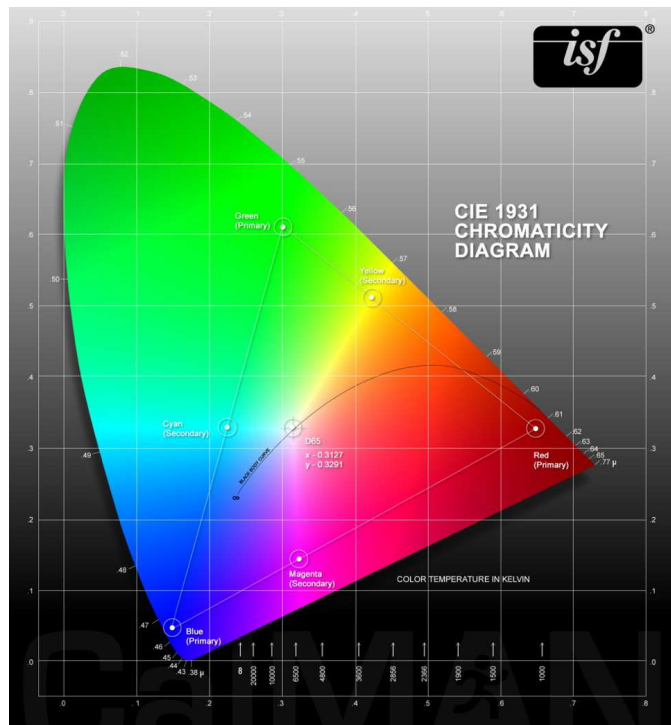
Thickness	0.29 mm
Peak-gain	0.9
Lenticular Pitch	0.065 mm
Horizontal half-gain angle	90 degrees
Vertical half-gain angle	18 degrees
Horizontal Soft-edge blending	Yes
Vertical Soft-edge blending	No
Min. Lens-Throw-Ratio	1.5 x image width
Max. Lens-Throw-Ratio	8 x image width
Diagonal Sizes Available	108"/124" – 16:9 158" – 2.40:1
ISF Certified	Yes

### 3.2 Gain and Viewing Angle chart



### 3.3 Color Reproduction

ISF endorses products that contribute to systems with "High Fidelity Video" through formal licensing programs. They have two licensing programs. One is based on compliance with standards for video performance and the other, ISF ccc, is for HDTV products that are Engineered for Calibration." Those products can be calibrated for their specific brand's optimal performance for both Day and Night modes and will feature locking memories to insure that client's investments in ISF calibrations are secure. A projector screen's ability to achieve a D65 color temperature is determined by its ability to maintain accurate color fidelity with a flat spectral response. In addition to this, proper contrast levels (or "black levels") is essential for picture clarity.



## Essential ISF qualities found in certified projector screens

- **Accurate color fidelity:**

This is a measurement of the projector screen's ability to maintain the same RGB (Red-Green-Blue) color balance of the projector's actual light signal.

- **Flat (or "uniform") spectral response:**

The material will maintain a neutral appearance without color cast even as the projector lighting changes. This is also a key element in achieving superb contrast ratios.

- **Black level performance:**

This is a measurement of the actual black levels represented on the screen. Superb black levels mean the difference between crisp color clarity and visible details in dark images or a murky image with dull color representation

*"EPV Screens ISF certified screen materials deliver precise color fidelity that measures within mere thousandths of ISF's NIST traceable Lambertian White Reference Standard"*

**- Joel Silver, President of the Imaging Science Foundation**

## Section 4: Execution

### 4.1 Cautionary Notes

#### Cautionary notice for the DarkStar® eFinity material

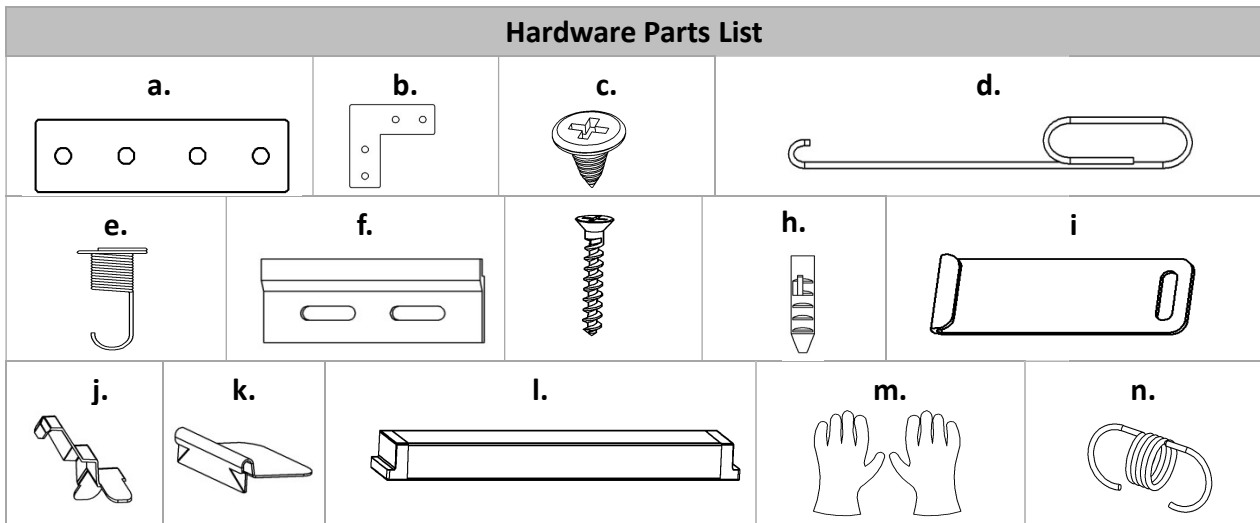
The DarkStar® Fixed Frame Screen material is composed of high quality sensitive multi-layer projection material. Please follow the precautions below for proper care procedures and to prolong the life of your screen.

***Failure to use [these safeguards] will result in voiding your warranty.***

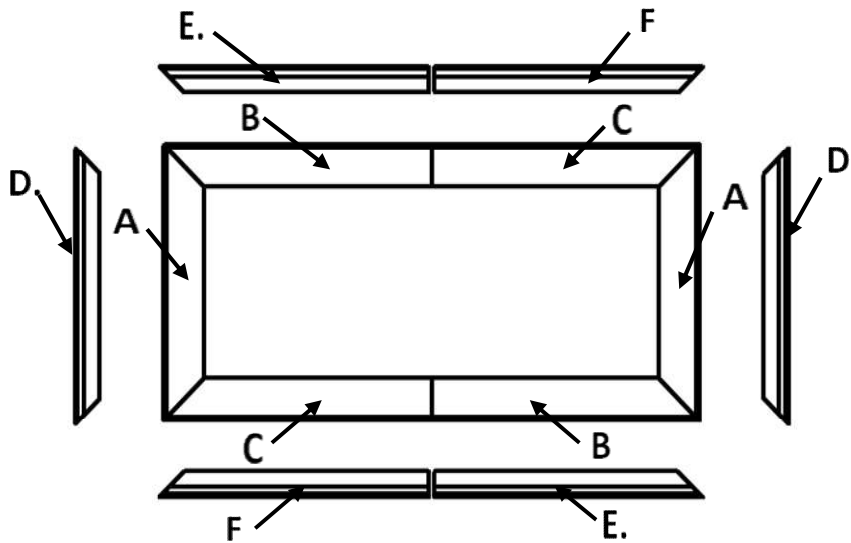
1. Avoid using any chemical compounds or harsh abrasives which will result in permanently damaging the screen material.
2. Use only a soft microfiber cloth with mild soap and water to clean the screen material.
3. Please wear a pair of clean, powder-free glove in the process of installing and operating the screen to keep hand oil and dirt from being transferred to the viewing surface.
4. Be very careful when unrolling and handling the material. Lay the material flat only to avoid permanently creasing the material.
5. Do not rub the cloth with force when cleaning to avoid permanently scratching the surface.
6. Do not touch the screen surface with sharp objects or allow the screen surface to come in contact with anything other than the frame.
7. Use only a soft feathered brush to remove dust.
8. Material damaged in handling, installation, or use is not covered under warranty.

Item	Parts List Qty	EF108H-DS9	EF124H-DS9	EF158C-DS9
a.	Center Joints (1)	4	4	4
b.	Elbow Joints (2)	8	8	8
c.	M4x6 Screws	60	60	60
d.	Spring Hook	2	2	2
e.	Spring	94	106	130
f.	Top wall brackets	2	2	2
g.	Ø5x50 Wall Screws	6	6	6
h.	Hollow Wall anchors	6	6	6
i.	Bottom wall brackets	2	2	2
j.	Angle cover	4	4	4
k.	LED light strip clip	8	8	8
l.	Center Support Bar	1	1	2
m.	white gloves	2	2	2
n.	Extension spring	4	4	4

4.2 Submittals



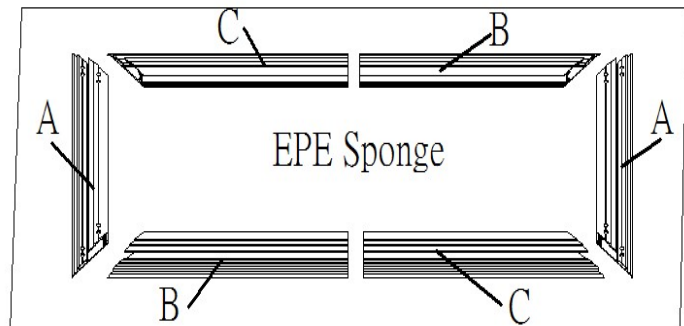
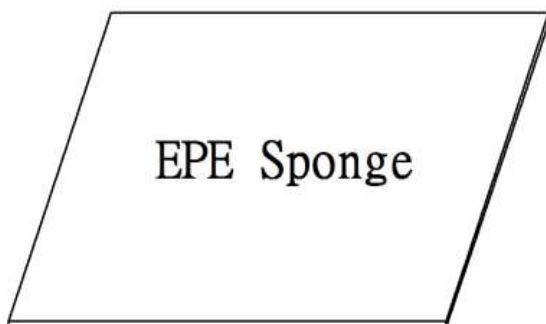
Frame and Edge Trim Parts List			
Qty item	2 pcs Main Frame Parts	Qty item	2 pcs Edge Trim Parts
Part A.	vertical frame 	Part D.	
Part B.	½ horizontal frame 	Part E.	
Part C.	½ horizontal frame 	Part F.	



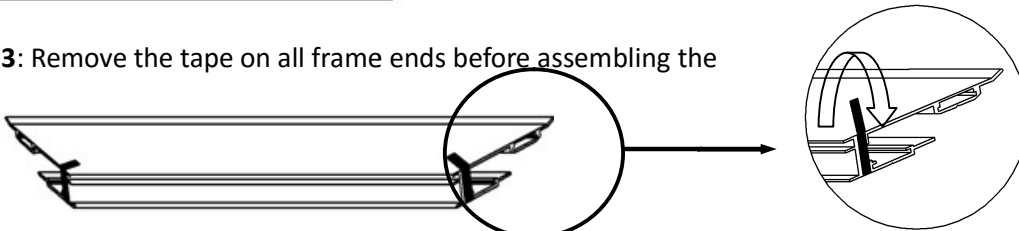
**Frame Assembly**

**Step 1:** Place the soft padded EPE sponge on a clean area on the ground where the screen will be assembled.

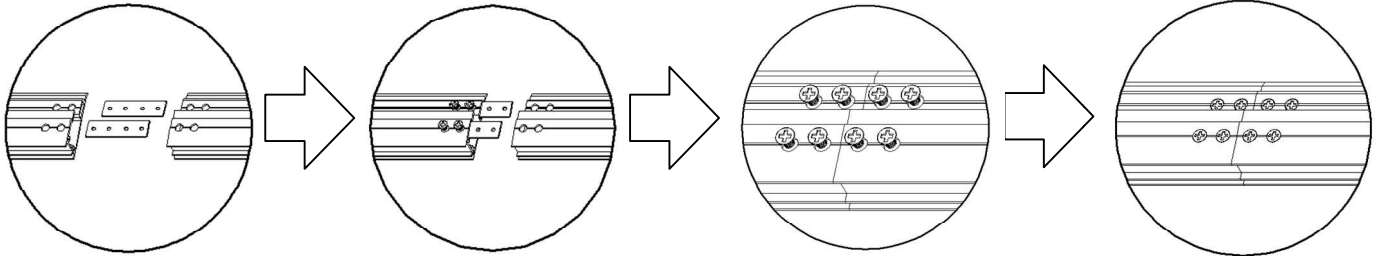
**Step 2:** Position the pieces of the frame on the EPE sponge in the arrangement shown below



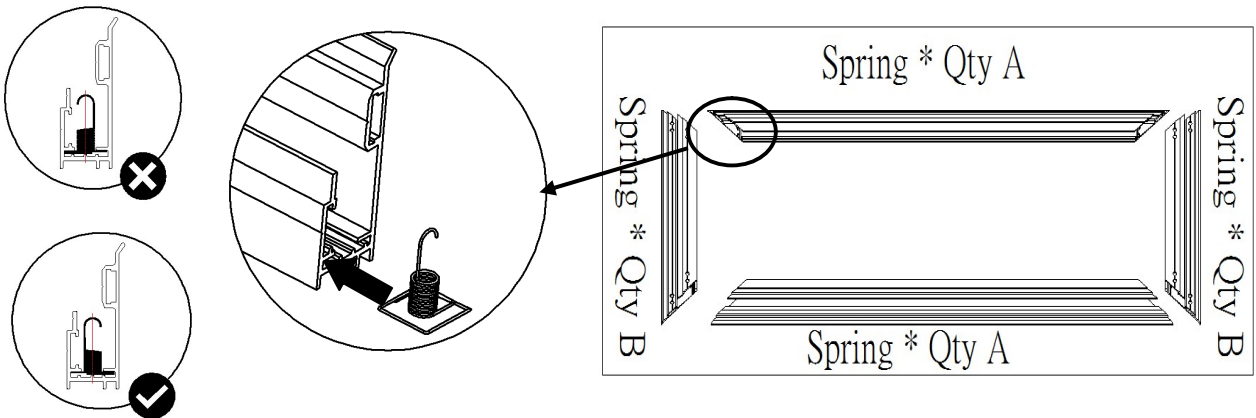
**Step 3:** Remove the tape on all frame ends before assembling the



**Step 3:** Insert the *center joint (a)* connectors into *one-half of the horizontal frame (b/c)* and secure with the *M4x6 screws (c)*.



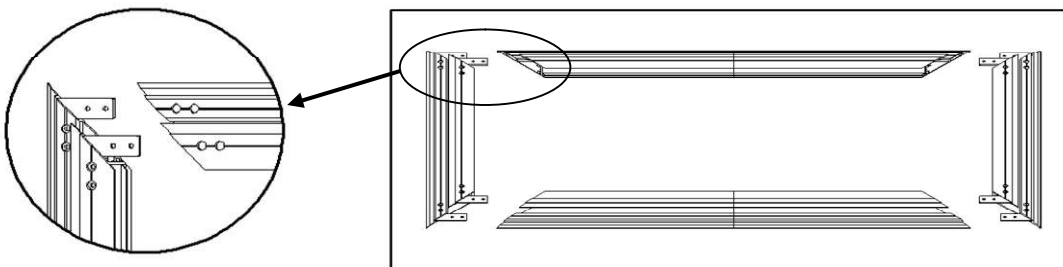
**Step 4:** Insert the *springs (e)* into the grooves of the frame. The spring's hooks should be facing the front side of the frame. For the correct amount of springs to place into the frame, please refer to the table listed below.



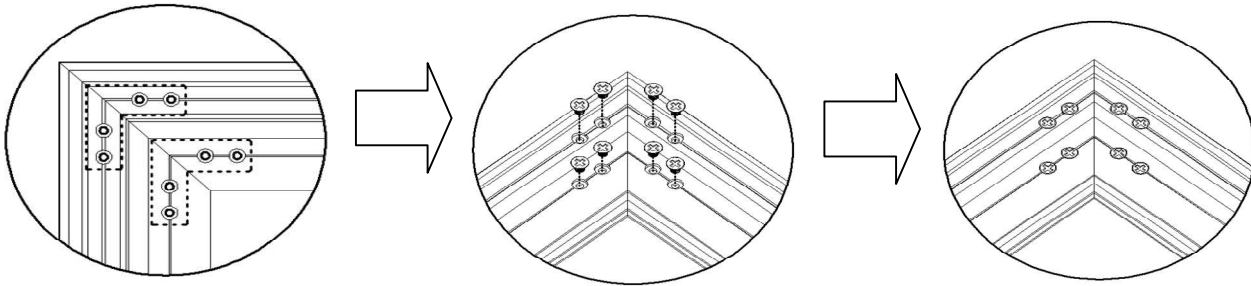
**Note:** The springs are pre-installed into the grooves of the frame.

Model Number		EF108H-DS9	EF124H-DS9	EF158C-DS9
Qty	A(Spring)	30	34	46
	B(Spring)	16	19	19

**Step 5:** Connect the *elbow joints (b)* to the top and bottom sections of the vertical frame. Once inserted, connect the vertical sections to the horizontal frame sections. Make sure all holes are in alignment and the frame pieces are flush (no gaps). They should form perfect right angles.

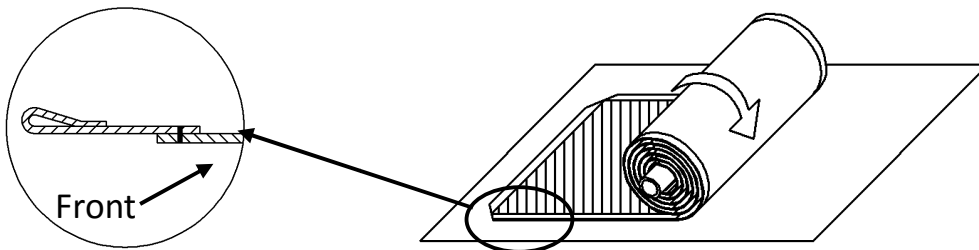


**Step 6:** Secure the elbow joints by fastening them with **M4x6 screws (c)**, 4 at each corner.

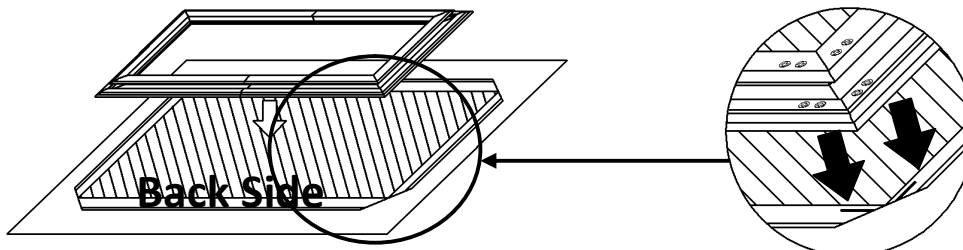


**Screen Material**

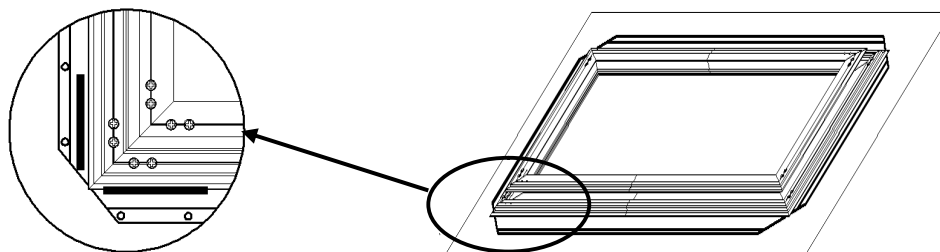
**Step 8:** Put on the **white gloves (m)** and carefully unroll the screen material on a clean surface from the roller to the other side as shown below. The back side of the screen material should be placed upwards.



**Step 9:** Carefully and gently place the assembled frame on top of the screen material. Make sure to not allow the angle edge of the frame to come in direct contact with the screen material to avoid puncturing it.

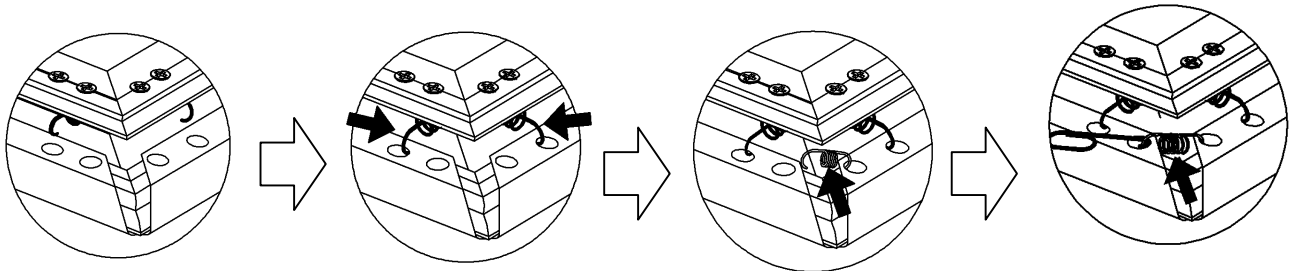


**Note:** Make sure all of the corners of the frame are aligned according to the markings on the back of the material as indicated below.



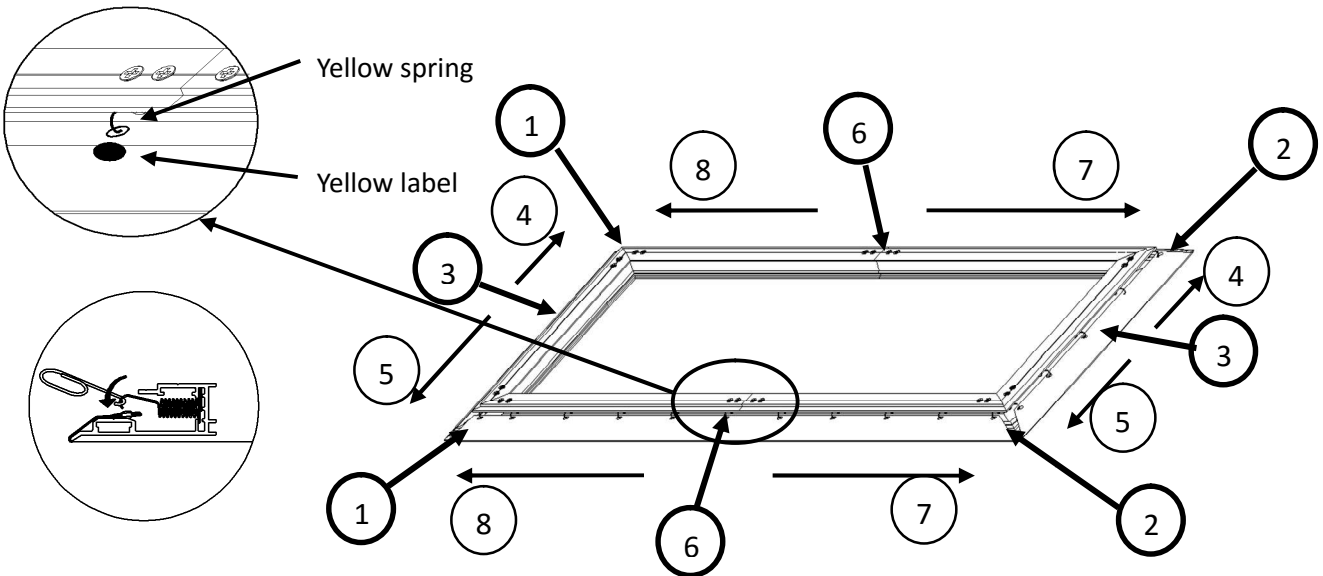
**Step 10:** With one end of the spring and secure inside the groove of the frame, use the **spring hook (d)** to attach the spring to the hole located on the screen material's outer edge in the following order. The four corners first (1) and (2) to install the **spring** on the screen, then assemble the **Extension spring (n.)**.





After those are secure, connect the vertical portions of the material, begin in the center and move towards the corners from (3)to(4)to(5). Lastly, connect the horizontal sections of the material by connecting the center of the material and make your way towards the corners from(6)to(7)to (8).

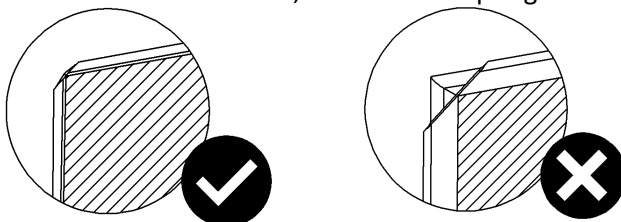
**Note:** Please make note of the yellow label and spring in the center of the frame. This is an indicator to start the screen material installation process from the middle area of the frame.



**Note (after all springs have been attached):**

**Correct material installation** –Corners of the screen material are properly wrapped around the corner edges of the frame and material is evenly tensioned and flat, creating a nicely taut surface.

**Incorrect material installation** –Thecorners of the screen material are not properly wrapped along the edge of the frame leaving the material with unbalanced tension and an uneven finish. To correct, detach springs from material at the corner(s) where material doesn't lie flat along edge of the frame, reposition the material so that it lies flat and wraps along edge of the frame, and reattach springs to the material.

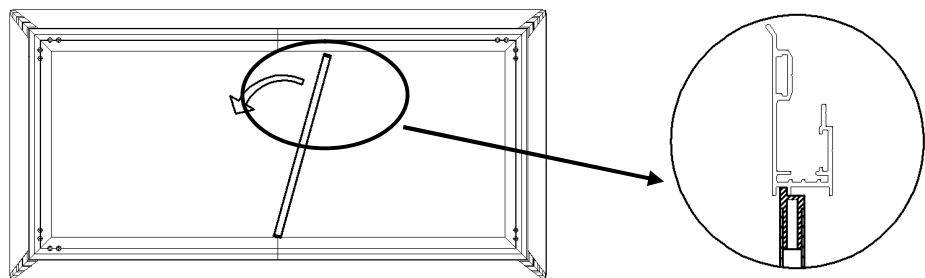


To avoid ripples forming in the material it is imperative that all of the corners are properly wrapped around the edges as illustrated in the check mark diagrams.

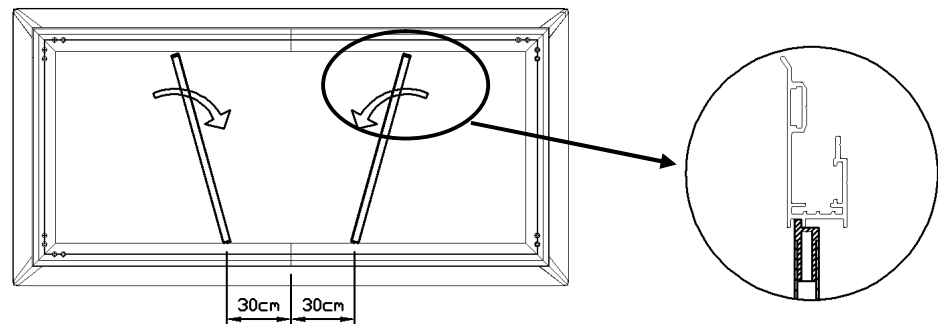
### Center Support Bar

**Step 11:** Insert the **Center Support Bar (i)** into the upper top groove on the back of the frame with the bottom end near the approximate center point of the frame and rotate it in at an angle so that both ends of the bar are in alignment with the groove.

#### Diagonal Models 150" and below use 1 x Center Support Bar

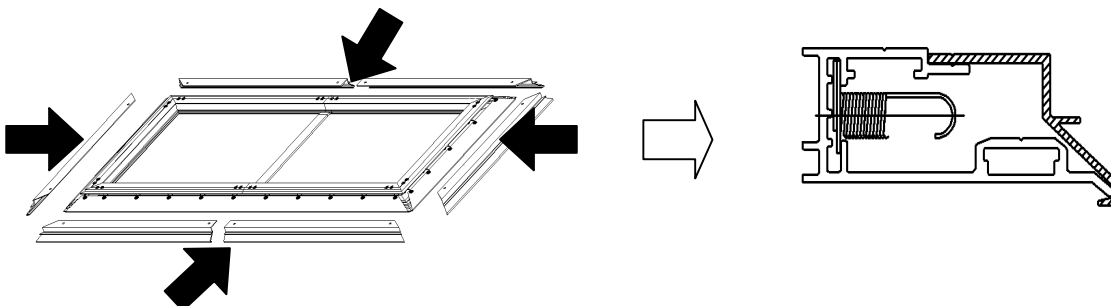


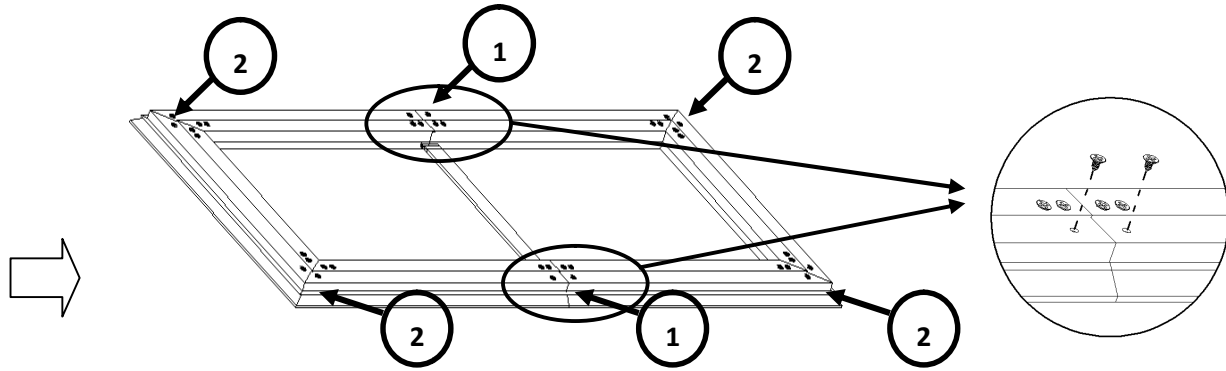
#### Diagonal Models above 150" require 2 x Center Support Bars



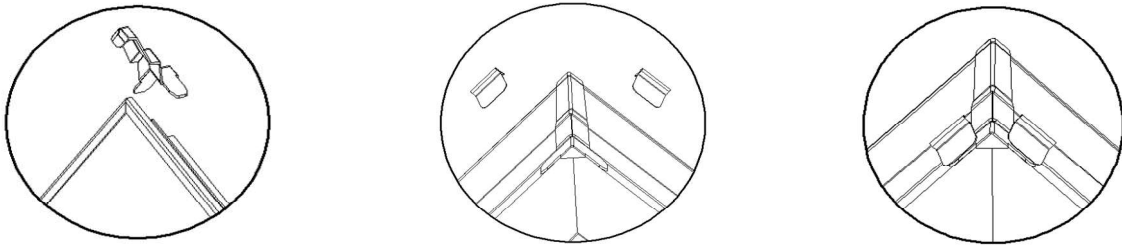
### Edge Trim

**Step 12:** Place the **Edge Trim** over each end of the frame and secure with **M4x6 screws (c)**, Start with the center points first, then the rest of the corners as shown.





**Step 13:** Install the **angle cover (j)** on each corner of the frame and install the LED light strip to hold down the angle cover. Then insert the **LED light clip (l)** to hold the LED light strip in place.



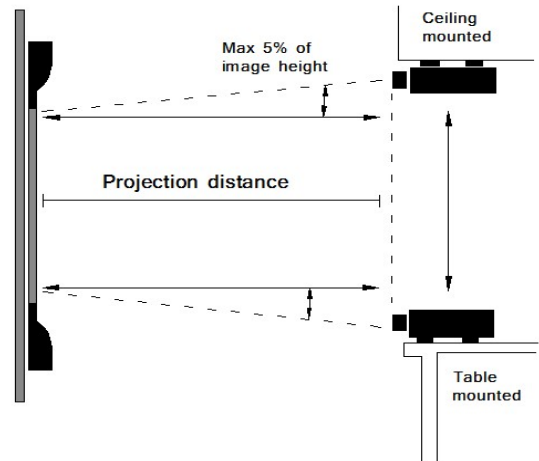
**Notice to Installer:**

Please use the following installation instructions to obtain superior optical performance from the Retro Reflective ALR (Ambient Light Rejecting) DarkStar® eFinity Screen.

The following guidelines should also be followed.

1. Minimum throw distance of 1.5 x the image width
  - Avoid a **hotspot** effect
  - **Light absorption** – The angle of incident light is too steep and will get absorbed by the optical lenses. This will create a very dim image and affect the overall picture quality.
2. Ambient light should not come from the same direction as the projector’s light

**Note:** Do not install the projector at an angle that is greater than 5° off the vertical axis from the screen. The ambient light filtration layer in the material is designed to absorb off-axis light rather than reflect it.

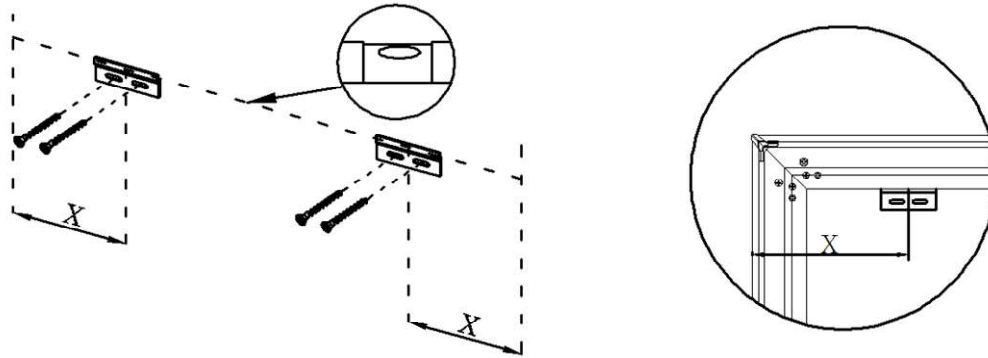


**Proper projector placement**

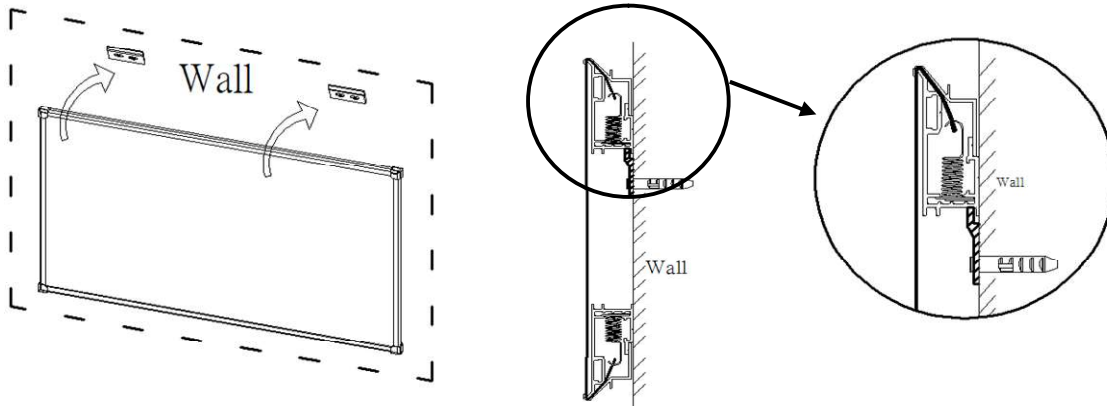
**\*Images are not up to scale and are for illustrations purposes only.**

### Wall Installation

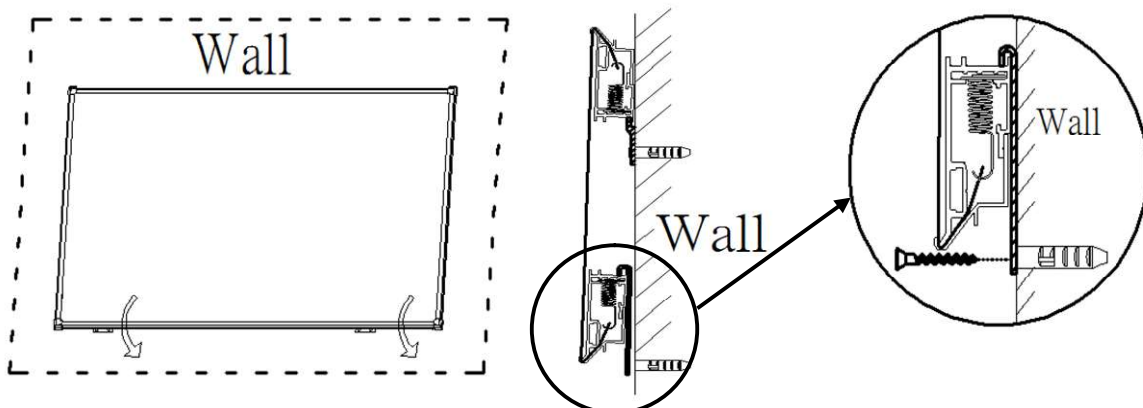
**Step 14:** Measure the overall length and height of the frame and drill holes for the top brackets. Line up the wall brackets with the drilled holes on the installation location and screw them in using a Phillips screwdriver. If not installing into a structural wood stud, use a hollow wall anchor then screw in the M5x50 wood screws with a screwdriver. Make sure the brackets are leveled.



**Step 15:** Position the fixed frame screen onto the top wall brackets as shown below and push down at the center of the top of the frame to secure.



**Step 16:** With the frame slightly tilted outward; connect the bottom brackets onto the bottom groove of the frame. Then secure them by screwing onto the wall.

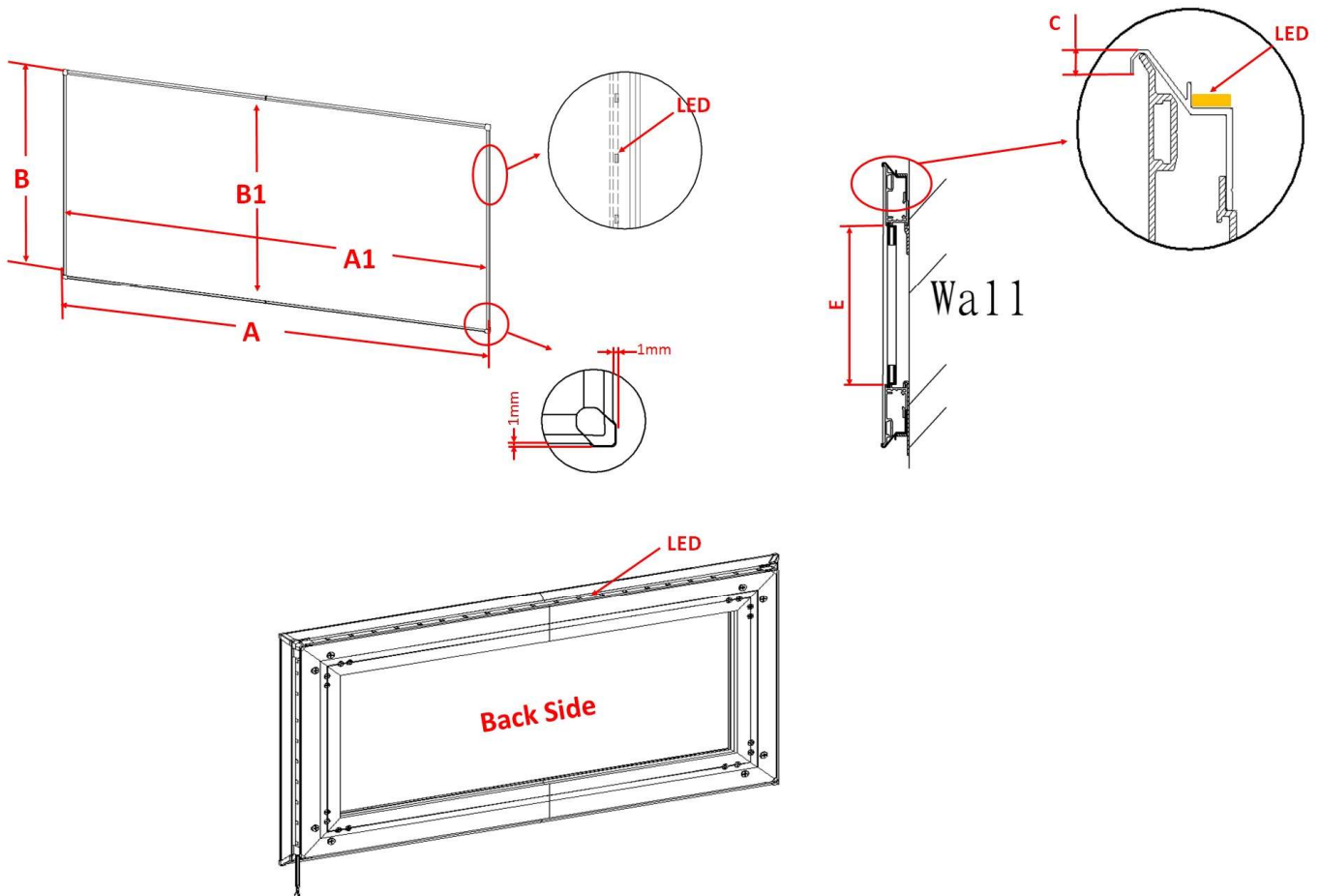


## Section 5: Product Specifications

### 5.1 Dimensions

Model	Nominal Diagonal	Overall Width (A)	View Width (A1)	Overall Height (B)	View Height (B1)	Frame Width (C)	Frame Thickness (D)
Unit: mm							
EF108H-DS9	108"(16:9)	2409	2391	1363	1345	9	32.3
EF124H-DS9	123.7"(16:9)	2755	2737	1558	1540	9	32.3
EF158C-DS9	157.6"(16:9)	3713	3695	1558	1540	9	32.3
Unit: Inches							
EF108H-DS9	108"(16:9)	94.8	94.1	53.7	53.0	0.4	1.3
EF124H-DS9	123.7"(16:9)	108.5	107.8	61.3	60.6	0.4	1.3
EF158C-DS9	157.6"(16:9)	146.2	145.5	61.3	60.6	0.4	1.3

### 5.2 Drawings



### 5.3 Pictures

#### *DarkStar® eFinity Series*– Front View



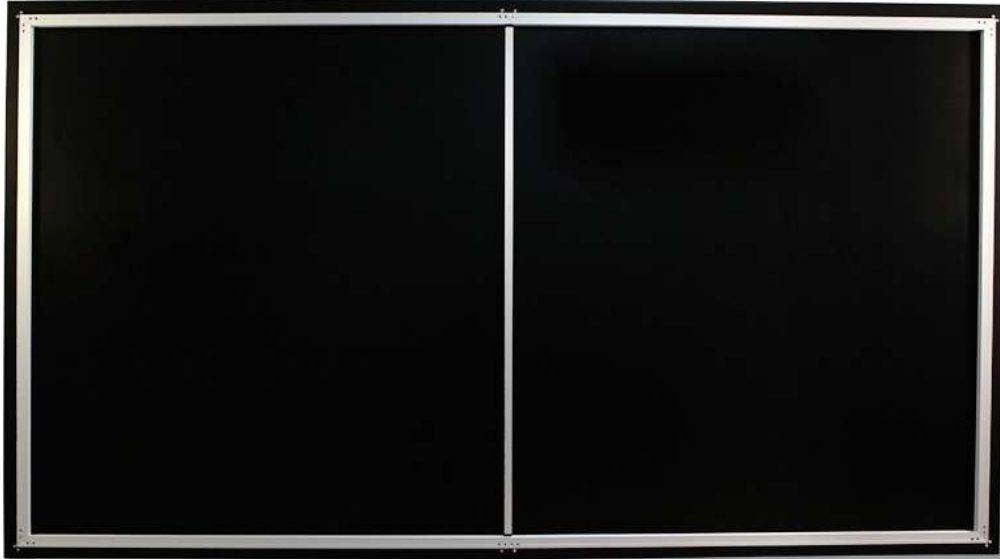
#### Frame Bezel Detail



#### Back View – Detail



**DarkStar® eFinity Series**– Back View



Actual Projection Example



Life Style



## Section 6: About Elite Prime Vision

### 6.1 Company Description

**Elite Prime Vision**, a division of Elite Screens, is dedicated to delivering superior and outstanding products for the custom install and system integration markets. The proprietary product line features a broad, comprehensive range of electric and fixed-frame projection screens in a wide variety of premium, innovative surface materials. From standard matte white and acoustically transparent to ambient light rejecting and polarized 3D materials, Elite Prime Vision provides the right projection screen for every viewing application.

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