Epson Mounting Frame for Projectors [FRAME-EVO-E10] User Manual

FRAME-EVO-E10
Mounting frame for projectors
Manual Version 1.6

Date	Revision No.	Author	Checked	Approved	Description
18.12.2018	1.4	DWN	DWN	DWN	Epson model number changed
03.01.2019	1.5	DWN	VIU	DWN	US Version removed
14.01.2019	1.6	DWN	DWN	DWN	New layout

The following projectors can be mounted in this frame:
Epson 3LCD – EB-L1000 series

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Web: **www.solutions4av.com**

Contents

1. Preamble

Congratulations on your purchase of the FRAME-EVO-E10 projector frame from LANG AG.
Please read very carefully the instructions provided in this manual. In the following pages, you will find all the information needed for a safe and fast installation.
After the installation is done properly, you can enjoy all the features of your new product.
Please consider keeping the original box and packaging materials, in case you ever need to ship the frame.
Model number: FRAME-EVO-E10

1.1 FRAME-EVO-E10 designation

Note: In this manual, when reference is made to the manufacturer model number it is also automatically a reference to the Epson model number like described in the table below:

Description	Number
Manufacturer model number	FRAME-EVO-E10
Epson model number	ELPMB59
Epson SKU	V12H996B59

1.2 Tools required

The only tool required is a 4 mm hex key to mount the projector in the FRAME-EVO-E10.

4 mm hex key (Allen key)

These installation instructions must always be handed over to the installing person1
Read these instructions carefully before installing the system.
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2. Safety instructions

INTENDED USE
The FRAME-EVO-E10 frame is intended for use by fully qualified, trained and competent persons to provide safe and secure transportation, installation and adjustment of projectors.
Only use the frame with projector in a closed environment (conference rooms, theaters, convention halls, etc.) where there is no wind, moisture, excessive heat etc.
Make sure that only the corresponding projectors are installed in this frame! Do not try to use it with other projectors because serious accidents can occur!

WARNINGS
Installation work should only be carried out by a qualified technician.

- If this product is not installed correctly, serious accidents may result.

Do not use the FRAME-EVO-E10 frame outdoors.

- This product is made only for indoor usage. If the FRAME-EVO-E10 frame is mounted outdoor, there are many influences like wind or rain that can have an effect on the stability of the whole system. This can cause serious accidents and property damage.

Do not place the frame on top of unstable surfaces.

- If the frame is placed on top of a surface which is sloped or unstable, it may fall down or tip over and injury or damage could result. Make sure that the surface can support a load of 165 kg (363.76 lbs)2 plus the weight of all additional equipment as well as other potential systems.

Do not hang the frame from unstable or inappropriate structures.

- If the frame is hung on an unstable structure, the entire system can fall down and injuries may occur. Make sure that the construction can support a total weight of 165 kg (363.76 lbs) plus the weight of all additional equipment as well as other potential systems.

Make sure to not exceed max. weight loads for ceiling mounting.

- For suspended installations, use only designated hanging accessories, like TH-SHORT150-8, TH-SHORT-60-6, FRAME-PF-UNI-PORAD Portrait Adapter, and FRAME-PF-UNICLP5030, FRAME-PF-UNI-CLP30PT rigging clamps for a max. the weight load of 165 kg (363.76 lbs). Please refer to the corresponding instructions for the accessories used. Please also refer to chapter "4. Optional Accessories" and "11. Maximum stacking information".

2165 kg (363.76 lbs) = 3 x (weight of heaviest projector + weight of heaviest lens + weight of FRAME-EVO-E10)

For stacking, make sure that all four locking pins pass completely through the female stacking bolt.

- Make sure the four male bolts enter into the correspondent female bolts and are locked.

Do not install the FRAME-EVO-E10 or the projector while people are present under the mounting zone during the installation process.

- When installing the projector, make sure no one is in the area underneath the installation zone.

Always secure the frame to the rigging truss with a safety steel cable.

- The frame should always be secured with an appropriate safety steel cable so that in case of a malfunction it doesn't fall more than 5 cm. Please consult the local laws or regulations regarding the additional safety of hanging equipment.

CAUTION

Before installing the projector in the FRAME-EVO-E10 frame, please read the projector's user manual. When the projector has a lens attached, please remove it.

- The FRAME-EVO-E10 frame with the projector inside must be installed only in an environment that is recommended by the projector manufacturer.

Minimum two persons are required to install the FRAME-EVO-E10 frame.

- With regard to the overall weight of all necessary installation devices, make sure to handle those with at least two people.

Make sure that the structure from which you hang up to 3 FRAME-EVO-E10 frames including projectors is capable of carrying the overall weight of approx. 165 kg (363.76 lbs) plus the weight of all additional equipment as well as other potential systems.

- Prior to any installation, you must do a visual inspection to make sure that the system is in a good condition. For more information please refer to chapter "12. System maintenance and inspection (Re-examination)".

RISK SITUATIONS

Risk of injury due to the possibility of falling objects during the assembly or disassembly of the FRAME-EVO-E10 frame.

- Protection objective: avoid injury from falling parts.
- Wear appropriate safety shoes, gloves, and helmet.
- Make sure the area under the installing places is clear.

Risk of hitting the head with the FRAME-EVO-E10 frame during the hanging setup process.

- Protection objective: avoid injury from hitting the head.
- Wear a helmet.

Incorrect installation may lead to certain parts of the FRAME-EVO-E10 frame or the entire FRAME-EVO-E10 frame to fall down.

• Protection objective: prevent personal injury and property damage.
• Double check the FRAME-EVO-E10 frame and its installation.

Insufficient load capacity of the supporting structure may lead to certain parts of the FRAME-EVO-E10 frame or the entire FRAME-EVO-E10 frame falling down.

- Protection objective: prevent personal injury and property damage.
- Provide adequate dimensioning of the supporting structure. The supporting structure must be able to support the combined weight of all the equipment attached to or hung from it.
- Ensure correct installation of the supporting structure.

The fingers or the hand of the user can be caught between the outer rings and the plates or projector.

- Protection objective: prevent personal injury by using safety gloves.
- When the adjustment of the image is made, the user must always keep his hands on the hand levers (see picture below).
- Because the spring of the spring clip is strong, please be careful not to clamp your fingers between the spring and the attachment nut.

3. What's in the box?

704,3 mm / 27.72 In

353,5 mm / 13.91 In

642 mm / 25.27 In

FRAME-EVO-E10

- Used for projector installation
- Number of units: 1
- Weight: 13,8 kg / 30.42 lbs

1) 4 x M6x20 ISO 7380 screws (galvanized steel 10.9)
2) 4 x Ø6 Schnorr Washer
Used to secure the projector in the frame

User manual and installation guide for FRAME-EVO-E10

Make sure your box contains everything you ordered. If any pieces are missing, contact the vendor.

4. Optional Accessories

Please refer to chapter "10. Mounting the frame on a truss" and the following for information regarding the usability of the optional accessories.

TH-SHORT-60-6
Optional accessory for truss mount installations.

More information can be found in the TH-SHORT-60-6 Installation manual.

TH-SHORT-150-8
Optional accessory for truss mount installations.

More information can be found in the TH-SHORT-150-8 Installation manual.
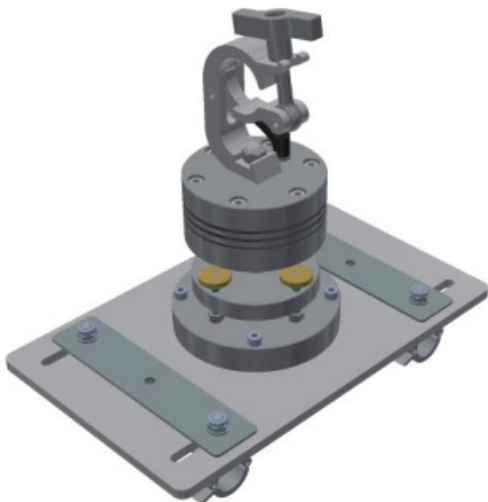
FRAME-PF-UNI-PORAD
Portrait Adapter for Projector Frames

Optional accessory for portrait mode truss mount installations.
Does **not** include the TH-SHORT-150-8

More information can be found in the FRAME-PF-UNI-PORAD installation manual.

FRAME-PF-UNI-CLP5030
Optional accessory for hanging one FRAME-EVO-E10 or two in tandem mode on a truss.

FRAME-PF-UNI-CLP5030 represents a complete set of 4 pieces.

FRAME-PF-UNI-CLP30PT
Optional accessory for portrait mode table installation.

FRAME-PF-UNI-CLP30PT represents a complete set of 4 pieces.

The optional accessories must be purchased separately. They are not included in the standard package!

5. Fitting the projector in the frame

Step1: Place the projector upside down on a suitable flat surface. For easier access, you may first remove the upper ring before mounting the projector. Please refer to chapter "6. Removing the Upper Ring – Installation Version". Otherwise it is recommended to place an appropriate material underneath the projector so that it is lifted up for about 10 cm. This will help during the following process.
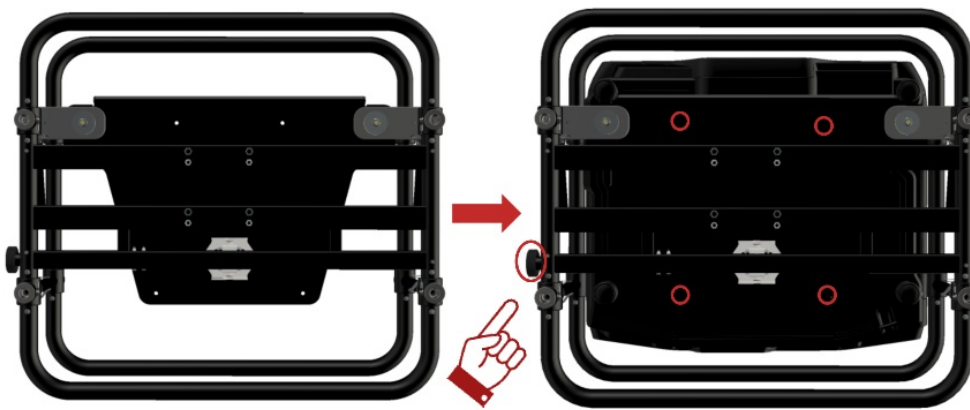
Step 2: Position the frame over the projector so that the adjustment screw is at the back, aligning the M6 screw holes. Please put the projector in the right position so that the front/back position is correct when installing. Otherwise, the position of the holes will not match.

Torque: 4±0.5 Nm
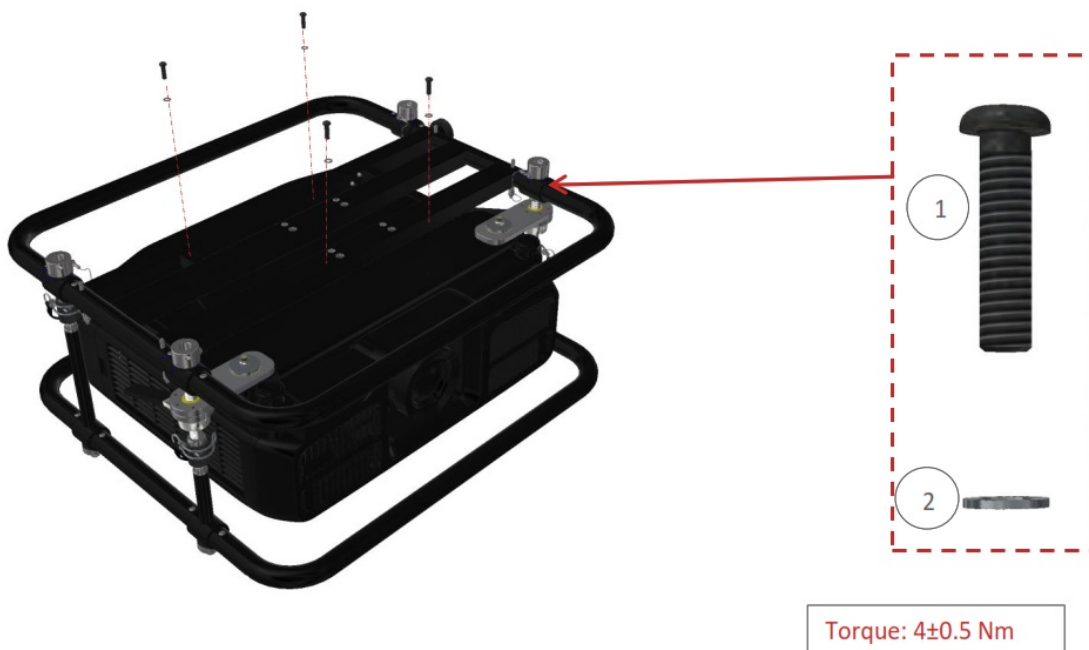
Step 3: Place the 4 x Ø6 Schnorr Washers (2) over each corresponding hole. Secure the 4 x M6x30 ISO 7380 screws (1) into each hole with 4 Nm torque. Ensure each screw runs through the plate and catches into the corresponding M6 hole in the projector surface.

Please make sure to use only the correspondent screw holes when installing a projector!

**Do not forget to use the 4 x Ø6 Schnorr Washers (2) as they are preventing the screws to loose themselves!**

In case you removed the upper ring during Step 1 please now refer to chapter "7. Reinstalling the Upper Ring" and attach the upper ring back to the base.

6. Removing the Upper Ring – Installation Version

The purpose of the Installation Version is to have a quick, simple, and tool-free possibility to install the ELPLX02 ultra-short throw lens, or any other short throw lenses, without any limitation regarding the frame.
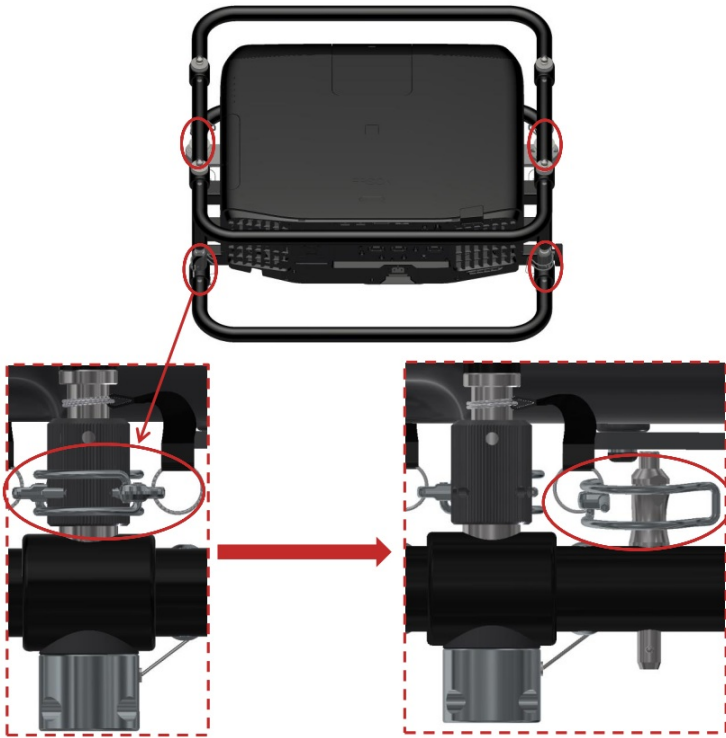
Step 1: Remove the 4 x spring clips as presented in the above picture. Because the spring of the spring clip is strong, please be careful not to clamp your fingers between the spring and the attachment nut.
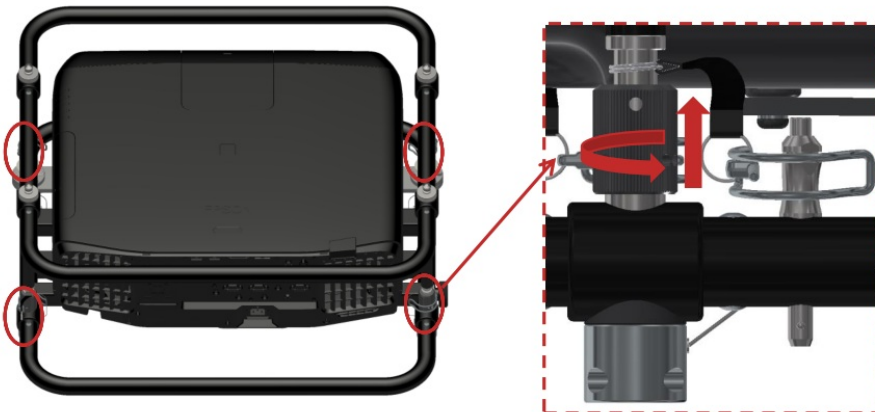
Step 2: Unscrew the 4 x attachment nuts (as presented in the above picture) until they are completely loose and can be moved up and down freely.
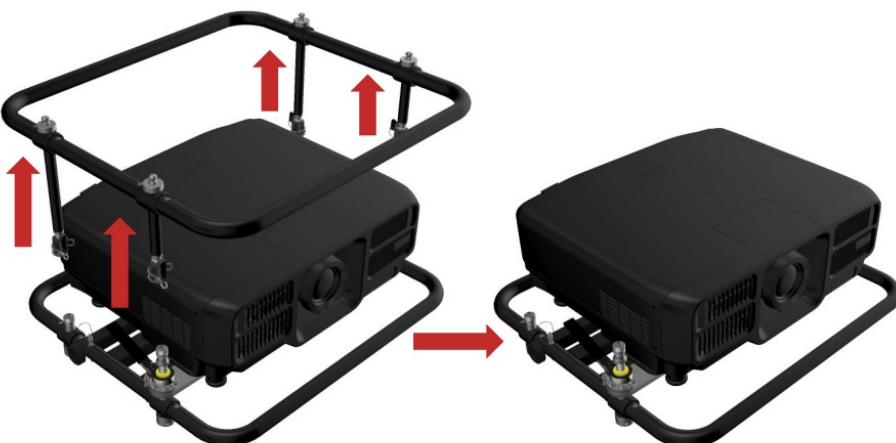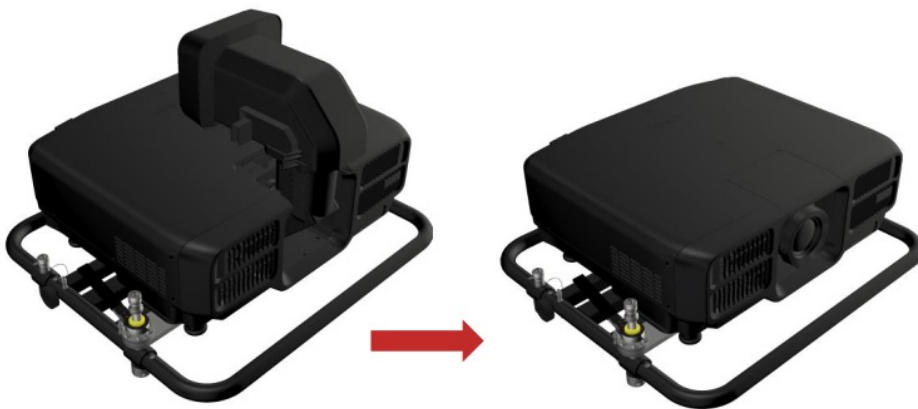
Step 3: Remove the Upper Ring and you will have the Installation Version of the frame.

Step 4: Now the ELPLX02 ultra-short throw lens can be attached to the projector.
Note: The image shown above is for illustration only, please refer to the Epson user manual for installation of the lens ELPLX02.
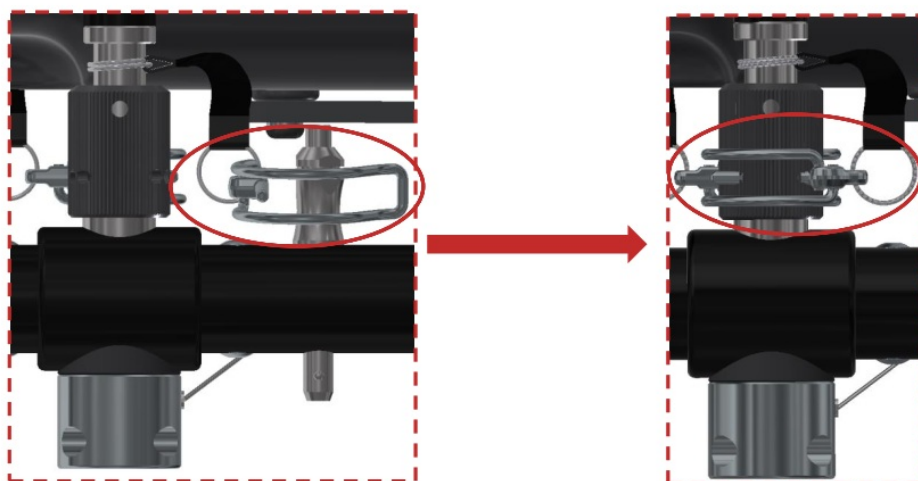
7. Reinstalling the Upper Ring

Step 1: Remove the ELPLX02 ultra-short throw lens.
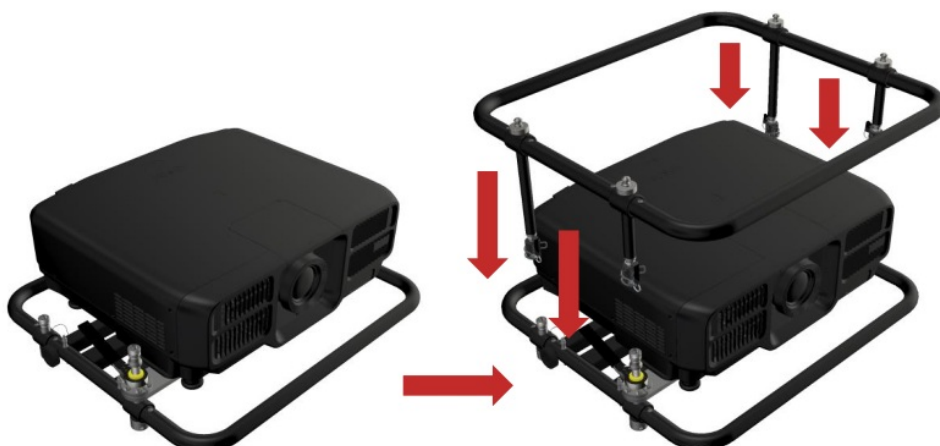
Step 2: Reposition the Upper Ring on the top of the Bottom Ring in such a way that the 4 x attachment nuts are on the corresponding position.
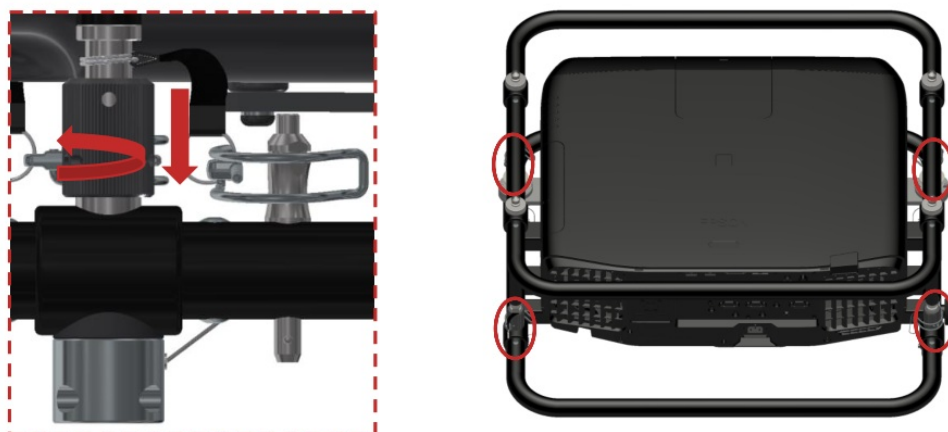
Step 3: Tighten back the 4 x attachment nuts until there is no play and the attachment nuts can not be moved up or down.

Step 4: In the process of attaching the Upper Ring back to the frame, as a last step, please don't forget to reinsert the 4 x spring clips back into the attachment nut. Because the spring of the spring clip is strong, please be careful not to clamp your fingers between the spring and the attachment nut.

8. Adjustment options

Roll:
Using the hand levers to the left and right you can adjust the position of the projector with an angle of ±2.7 degrees.

You can lower or lift the front left or right corner.

To roll the projector around the center axis, the two hand levers must be turned in opposite directions.
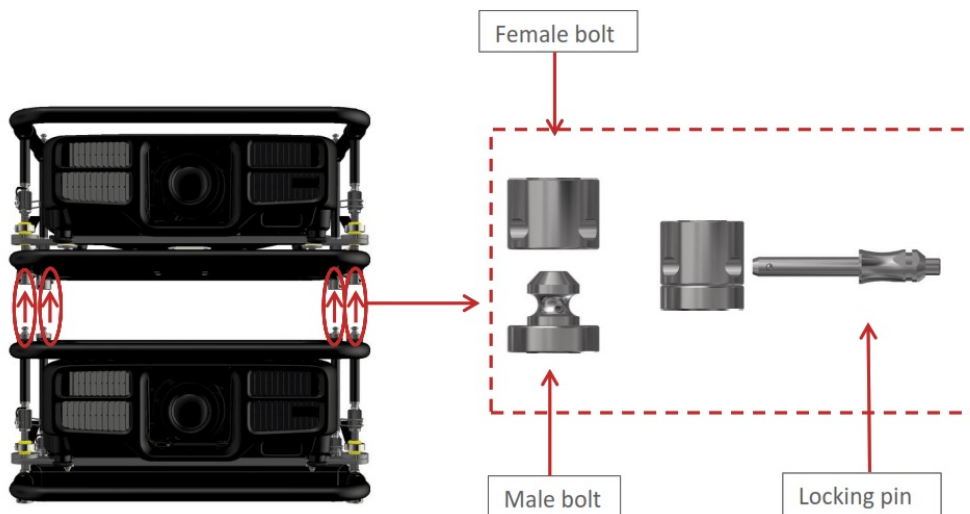

Pitch:
Also by using the two hand levers at the sides you can lower the projector with an angle of -3.5 degrees and lift it with an angle of +4.3 degrees.

Yaw:
By turning the adjustment screw below the projector, you can move the back of the projector to the left or to the right with an angle of ±3.3 degrees.

9. Stacking frames
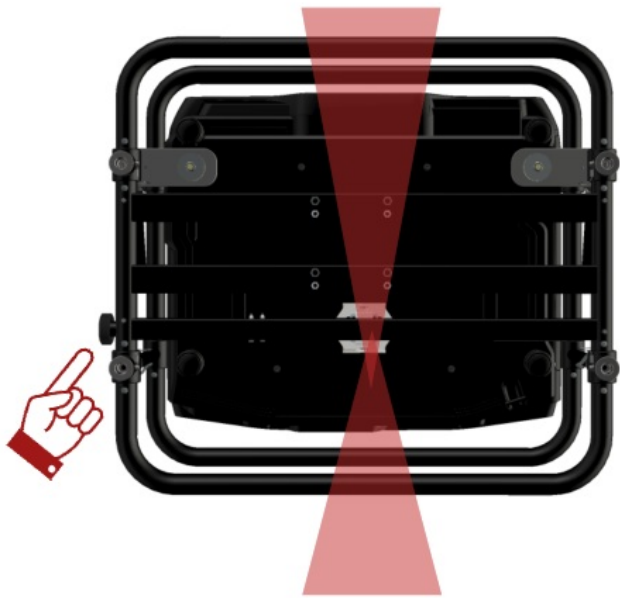
Female bolt

Male bolt

Locking pin

Step 1: Place the upper frame with mounted projector on top of the lower frame with mounted projector. Make sure the four male bolts enter into the correspondent female bolts. To secure, insert the locking pins through the holes in the female bolts. Always make sure that the locking pins are locked after being inserted.

10. Mounting the frame on a truss

To hang the frame on a truss one must use the recommended 4 x M6 or the 4 x M8 threaded holes to attach a mounting accessory like the TH-SHORT-60-6 or TH-SHORT-150-8. Use only the original and recommended accessories for this procedure.

Another mounting option is using the optional Portrait Adapter FRAME-PF-UNI-PORAD that can be mounted on the frame and then hung on the truss. For further information regarding the setup of the Portrait Adapter (FRAME-PF-UNI-PORAD), please consult in the FRAME-PFUNI-PORAD installation manual.

Always secure the frame using appropriate safety steel cables. Make sure they are chosen correctly regarding strength, format, and length. Please avoid high dynamic forces by ensuring that the frame will not drop more than 5 cm into the safety.

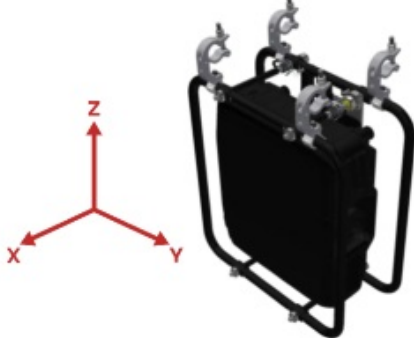Please consult the local laws or regulations regarding the additional safety of hanging equipment.

Safety steel cable
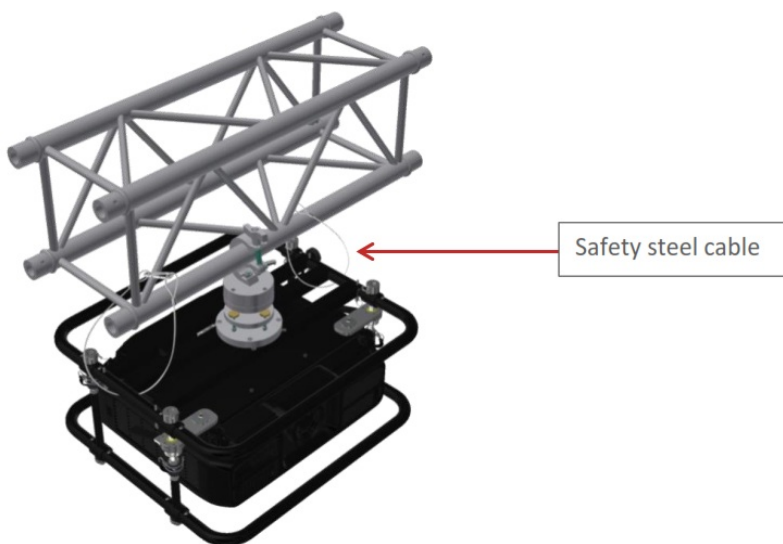
11. Maximum stacking information

Please refer to the tables below to confirm proper usage.
Do not try to setup the frame in other positions as presented, because accidents can occur!

With TH-SHORT-60-6			
	1		
Landscape			

With TH-SHORT-150-8			
	1	2	3
Landscape			

With rigging clamps FRAME-PF-UNI-CLP30PT

Portrait		Distance between the rigging clamps: • On X axis: 265 mm • On Y axis: between 380 mm and 390 mm

	1	2
Landscape		Distance between the rigging clamps: • On X axis: 664,5 mm • On Y axis: between 380 mm and 390 mm

Warning: triple-hanging with the rigging clamps is **not possible**! Please do no try to hang three projectors with the rigging clamps beacause mechanical failure and accidents can occur.

Vertical Down		Distance between the rigging clamps: • On X axis: between 240 mm and 350 mm • On Y axis: 265 mm
Vertical Up	Not possible because of the cooling system that is located on the back side of the projector. There always must be an unobstructed space around the projector, please refer to the corresponding projector manual.	

With Portrait Adapter FRAME-PF-UNI-PORAD together with TH-SHORT-150-8		
Portrait		• If using FRAME-EVO-E10 together with FRAME-PF-UNI-PORAD one of the four clamp must be removed so that only three clamps are used • More information can be found in the FRAME-PF-UNI-PORAD installation
Vertical Down		

On a table			
Portrait		In this position one must use the **FRAME-PF-UNI-CLP30PT** and the frame has to be positioned with the **adjustment screw** on top.	
	1	2	3
Landscape			
Vertical Up	Not possible because of the cooling system that is located on the back side of the projector. There always must be an unobstructed space around the projector, please refer to the corresponding projector manual.		

Installation Version - without the Upper Ring		
Portrait	With rigging clamps FRAME-PF-UNI-CLP30PT	
Landscape	On a table	With **TH-SHORT-60-6** or with **TH-SHORT-150-8**	With rigging clamps FRAME-PF-UNI-CLP30PT

| With rigging clamps FRAME-PF-UNI-CLP30PT		
Vertical Down		In this case, please always be sure that the minimum distance between the back of the projector and the nearby surface is respected. This value can be found in the projector manual.
Vertical Up		In this case, please always be sure that the minimum distance between the back of the projector and the nearby surface is respected. This value can be found in the projector manual.

12. System maintenance and inspection (Re-examination)

The FRAME-EVO-E10 does not require special maintenance but a visual inspection must be done **prior to every installation** in which the system is involved:
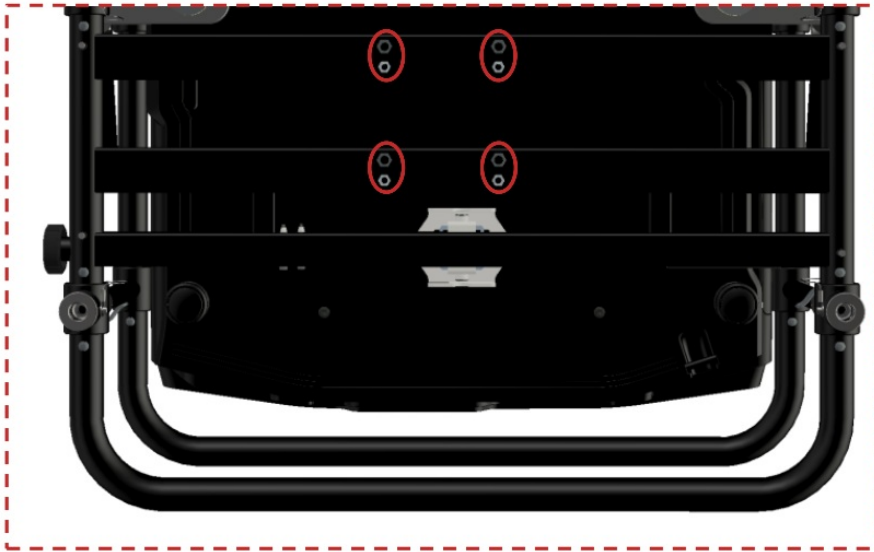
- Before and after each installation, the M6 and M8 mounting holes must be carefully inspected, as they may get damaged during the installation of the hanging accessory.
- Please carefully examine the M6 and M8 mounting holes by looking inside each one of them and make sure the thread is not broken or damaged in any way.
- Please make a visual inspection to be sure that all the screws are in the right place and none are missing.
- Make sure that the screws, nuts, stacking pins, connection rods, mounting plate, and all the components are not bended, damaged, or broken.
- If any parts are broken or missing, please contact the seller so he can provide the spare parts.

Bottom view:
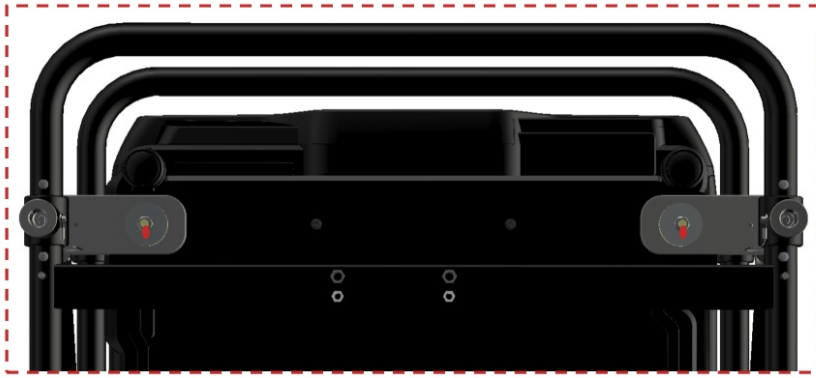
Top view:
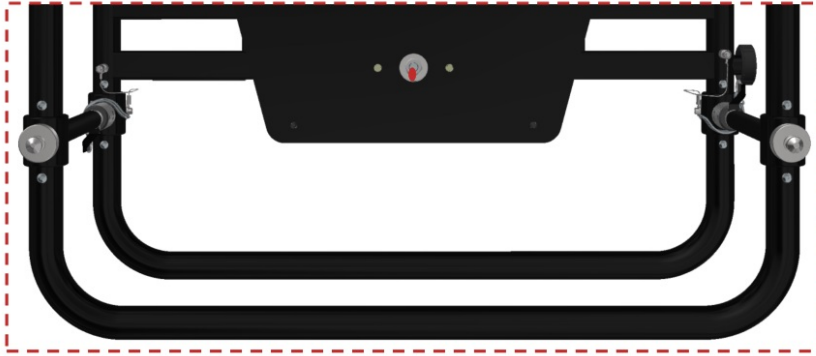
- On the three screws + nuts presented in the above picture, a red color sealing wax was applied to be sure that the nuts will always be in the same position and no one will try to tighten or loosen them.
- Do not try to manipulate the nuts, because the adjustment mechanism can be blocked and accidents can occur!
- If one notices that the sealing wax is broken or the nut is moved, please contact the manufacturer!
- Except for the situation described on the previous point, please control, with corresponding tool, that all the other screws are properly tightened.

Do not exchange broken or malfunctioning parts with ones that are not accredited by the manufacturer because serious injuries and property damage can occur!

The inspection must be done by a qualified person!

One meticulous inspection must be performed every year. For that, a qualified person needs to carefully check that none of the components are damaged or broken.

13. Declaration of Conformity

EC - Declaration of Conformity

We hereby confirm that the following described lifting accessory in its conception, construction and form put by us in circulation is in full accordance with all relevant health and safety requirements and complies with the following EC-directive:

2006 / 42 / EG (EG-Machinery Directive)

This declaration is no longer valid if the lifting accessory is modified without our written consent.

Manufacturer:

LANG AG
Schlosserstraße 8
D-51789 Lindlar
Tel.: +49(0)226674764-0

Description of the lifting accessory:

- Function: Rigging frame for EPSON projectors series: **Epson 3LCD – EB-L1000 series**
- Type/model: **FRAME-EVO-E10 or FRAME-EVO-E10-US**
- Serial number: **FE-E10XX.YYYYY or FE-E10XX.US.YYYYY**
- Year of construction: 2018

The applied harmonized EN - standards include:

- **DIN EN ISO 1200:2010**   Safety of machinery – General principles for design – Risk assessment and risk reduction

Further applied standards and regulations include:

DIN EN 1991-1	DE: Eurocode 1: Einwirkungen auf Tragwerke (12/2010) EN: Eurocode 1: Actions on structures (12/2010)
DIN EN 1993 -1	DE: Eurocode 3: Bemessung und Konstruktion von Stahlbauten (12/2010) EN: Eurocode 3: Design of steel structures (12/2010)
DIN EN 1999 -1	DE: Eurocode 9: Bemessung und Konstruktion von Aluminiumtragwerken (05/2010) EN: Eurocode 9: Design of aluminum structures (05/2010)
DGUV V17/18	DE: UVV Veranstaltungs- und Produktionsstätten für szenische Darstellung, Stand Januar 2011 (bisher: BGV C1) EN: Accident Prevention Regulation for Staging and Production Facilities for the Entertainment Industry (formerly BGV C1)
DGUV 315-390	DE: Grundsätze für die Prüfung maschinentechnischer Einrichtungen in Bühnen und Studios (bisher: BGG/GUV-G 912) EN: Fundamentals for testing in stages and studios of the mechanical equipment (formerly BGG/GUV-G 912)
BGI 810-3	DE: Lasten über Personen. Sicherheit bei Produktionen und Veranstaltungen von Fernsehen, Hörfunk, Film, Theater, Messen, Veranstaltungen EN: Safety at Productions and Events – Loads Suspended above Persons

Place/date: Lindlar, 04.10.2018

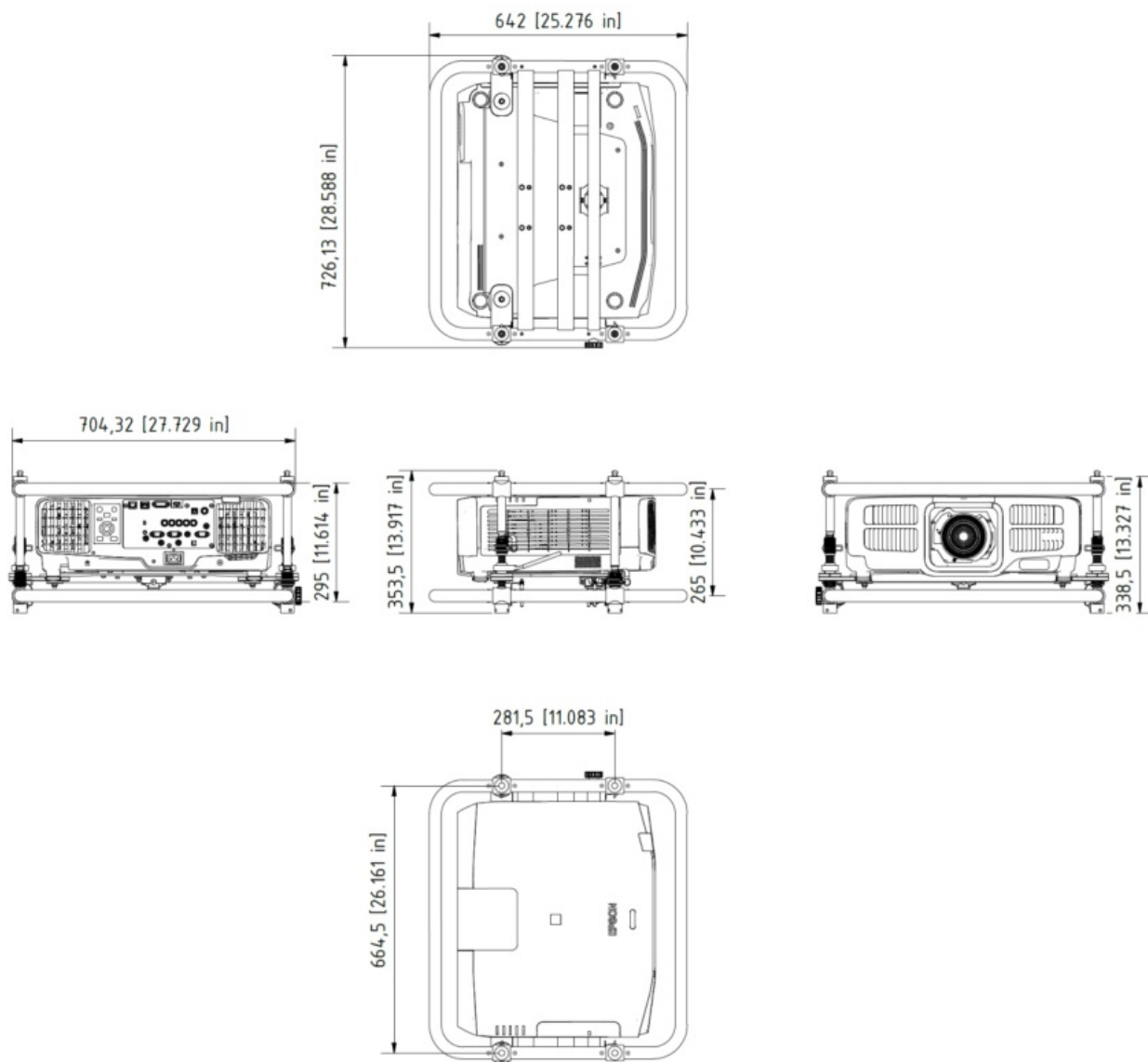Personal data of signer (name, position): *Peter Mathia, CEO*
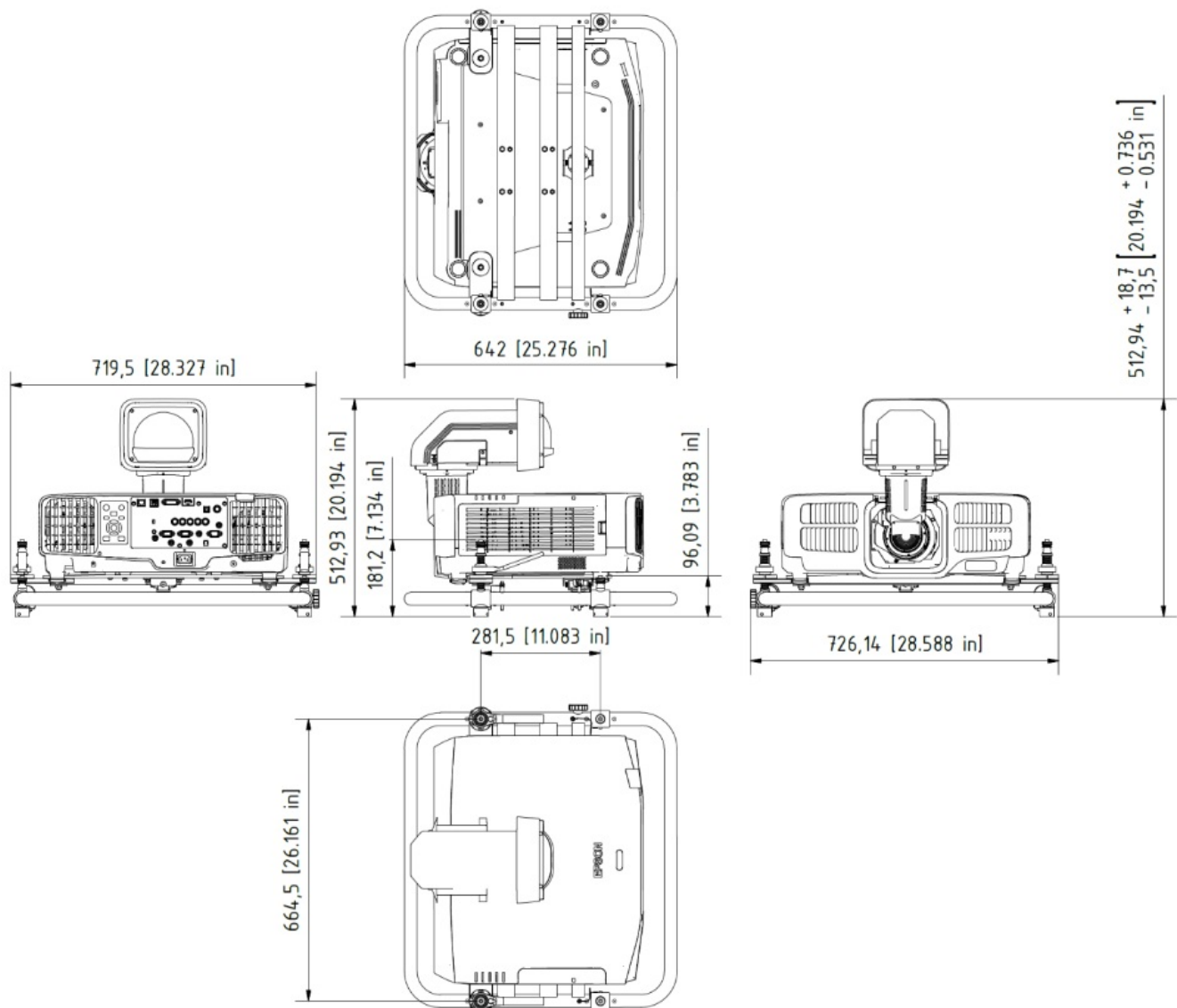
Signature: _____

C E

14 Dimensions

14.1 FRAME-EVO-E10

Frame weight: 13,8 kg / 30.42 lbs; (only frame)

14.2 FRAME-EVO-E10 Installation Version – without the Upper Ring

Frame weight: 3,7 kg / 8.15 lbs; (only frame)

Imprint

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