Model VPSP-11100

SUMMARY

I. PRODUCT OVERVIEW

The SmartCrystal™ Cinema Neo is Volfoni's latest innovation in passive 3D technology. The SmartCrystal™ Cinema polarization window is placed directly in front of a 3D cinema projector lens, thereby generating stereoscopic 3D images on suitable screens when viewed with passive 3D glasses.

This passive polarization system is perfect for any movie theater with DCI-compliant DLP projectors, and permits a quick installation in any projection booth with its optimal support brackets.

The SmartCrystal™ Cinema panel is made of a multi-layer stack of liquid crystal elements. This enables high frame rates of up to 240Hz, creating crisp and bright 3D images.

The SmartCrystal™ Cinema Neo can be connected directly to any suitable 3D synchronization source and operates with cinema projectors up to 7kW.
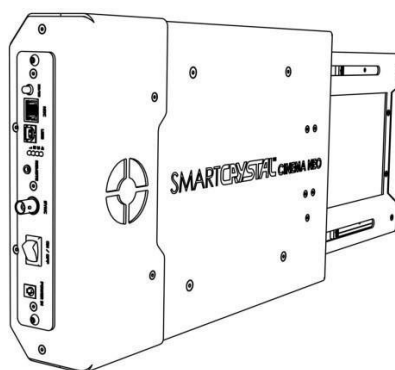
Fig 01

II. REQUIREMENTS

To use the SmartCrystal™ Cinema Neo unit, the following is required:
- 3D content
- 3D cinema projector
- Polarization preserving silver screen
- Passive circular-polarized 3D glasses

Fig 02

Most types of 3D cinema projectors are compatible with the SmartCrystal™ Cinema Neo system.

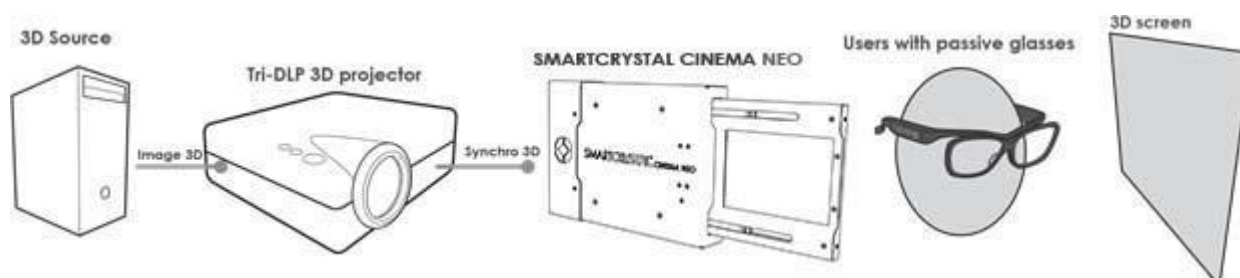DLP (Digital Light Processing) projectors are especially efficient for 3D projection. The system is easy to set-up with a DCI-compliant DLP projector and works with projector lamps up to 7KW.

LCD™ (Liquid Crystal Display) and LCoS™ (Liquid Crystal on Silicon) projection technologies, such as JVC's D-ILA™ and Sony's SXRD™, generate a polarized light beam that may not be compatible with SmartCrystal™ Cinema Neo's active polarization system. Please consult Volfoni for additional information.

Polarization-preserving silver screen

In order to enjoy the best quality of 3D images, a polarization-preserving silver screen designed for 3D projection is required. If your screen was not manufactured specifically for 3D use, you might experience uncomfortable and blurry 3D images with a high level of cross-talk.

The SmartCrystal™ Cinema is designed for projection with screen sizes up to 20 meters (66 feet) wide, with a 2.4 screen gain.

Passive polarized 3D glasses

The SmartCrystal™ Cinema Neo is compatible with most commonly used passive 3D glasses (circular-polarized only).

Please contact Volfoni (contact@volfoni.com) should you be interested in our line of passive 3D glasses.
Use Volfoni 3D passive glasses for a better result

III.   SMARTCRYSTAL CINEMA NEO FEATURES

A. General specifications

- Aluminum mechanical-housingmaterial
- Pi-Cell Technology for crisp and bright 3D images
- Upgradable software for optimal 3D performance
- Meets all standards for electronics approved by CE
- Easy maintenance
- 3-year warranty
- For use with lightweight circular-polarized passive 3D glasses

> Passive 3D glasses as well as clip-on 3D glasses are available from Volfoni. Please contact us for more details. contact@volfoni.com

B. Technical specifications

- Maximum power of projector lamp: 7 kW
- Maximum switching speed: 244Hz
- Optical light efficiency: > 18%
- Power supply: 100V-240V 50/60Hz
- Operating temperature: +10°C to +40°C (50°F to 122°F)
- Storage temperature: -5°C to +50°C (23°F to 122°F)
- Polarization window dimension: 171 x 116mm (6.7 x 4.5 in)
- Product dimensions (L x W x H): 380 x 254 x 77mm (15x 10 x 3in)
- Weight: 6kg(13.2lbs)

C. Electrical specifications

- V= 100-240 V AC
- F = 50 / 60 Hz
- P = 18 W
- I=0,7A
- The unit has a built-in surge protector
- The system is supplied with different adapters: UK, EU, US
- **This equipment should be electrically grounded**
- In case of malfunction, one of the LED indicators on the control board will light up
- To rectify any indicated faults, please contact your reseller or integrator stating the model number shown on the silver label of the product.
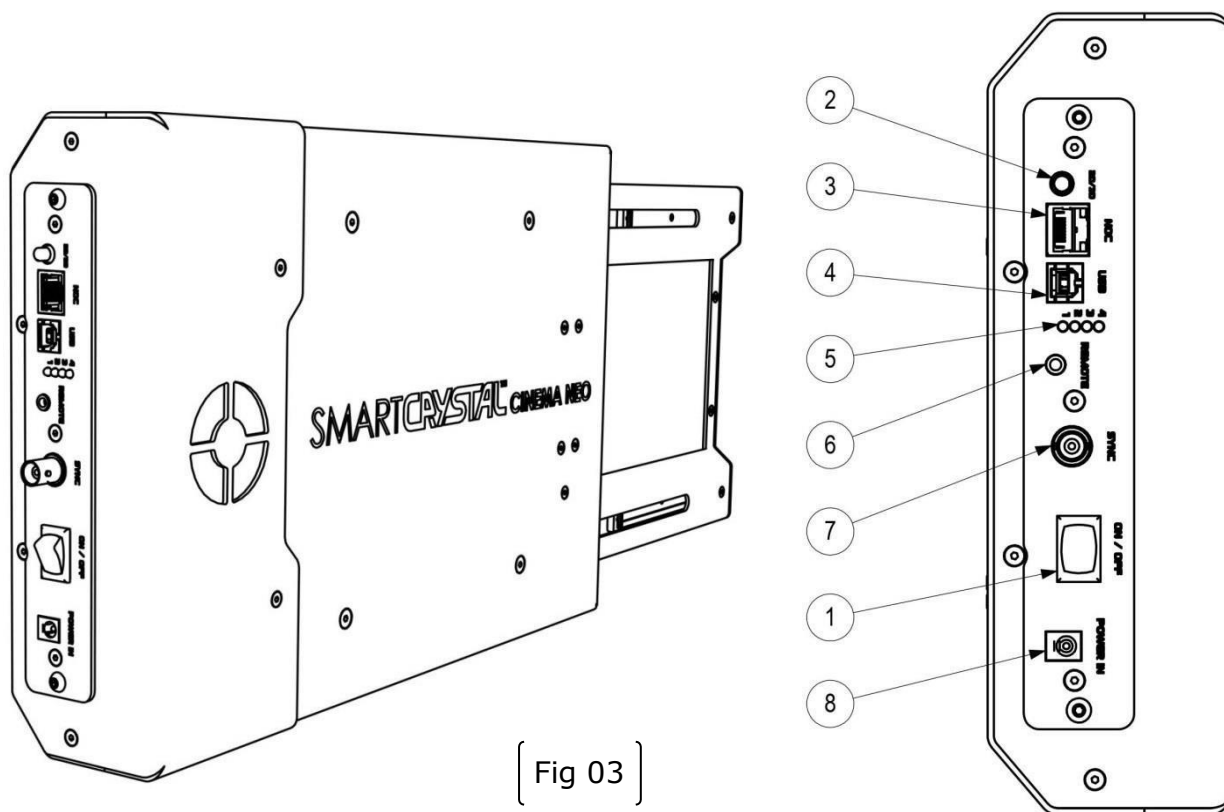
D. Projector settings

To use the SmartCrystal™ Cinema Neo, the 3D projector should be set as below:

- Dark Time: 350 µs
- Delay: 0

IV.   USING THE SMARTCRYSTAL CINEMA NEO

A. User interface description

Fig 03

1- Switch ON/OFF
2- 2D/3D
3- RJ45 (NOC)
4- USB (Software Update)
5- LEDS (Visual Control)
6- Remote control
7- BNC (Synchronisation)
8- 12V (Power supply)

B. Using the user interface

1. ON / OFF switch

Put this button in position ON to power the SmartCrystal™ Cinema Neo and begin operating the system. Put it in position OFF when you want to stop using the 3D system.

2. 2D / 3D mode

There is one button that moves the polarization window of the SmartCrystal™ Cinema Neo left and right. When the system is powered, press this button and the polarization window will emerge from its encasement (3D mode). Press this same button when you want to stop using the SmartCrystal™ Cinema, and the polarization window will go back inside its encasement (2D mode).
This button blinks in green when the polarization window is moving. Typically when you open or close the polarization window of the SmartCrystal™ Néo.
This button is green continuously when the 3D system is open and the polarization window is out of the encasement. This button is not illuminated when the polarization window is in 2D mode.

Security system: The polarization window will stay in 3D mode if the 3D sync is still detected. This is a security measure to prevent the closing of the 3D system during a 3D projection.

When not using the SmartCrystal™ Cinema, put the system in 2D mode to protect the polarization window from dust and damage, and thereby increase product longevity.

3. Network connection – Rj45 plug

The NOC connector allows the system to be connected to a central network in order to retrieve information and perform remote operations on the SmartCrystal™ Cinema Neo (e.g., monitoring, remote control, etc.).
There are two different modes of use for the SmartCrystal™ Cinema Neo:

- Manual mode: the user interface of the SmartCrystal™ Cinema Neo directly controls the operation of the 3D system.
- NOC mode: information and operations are automatically sent from the server via the central network.

4. Software update – USB port

Please referrer page 8 of this user manual (part 8).

5. LED check

There are 4 different LED lights that indicate the following information:

LED number 1: **STATE OF FAN**
This LED is blue when the fan is running and red when there is a problem with the ventilation system.

LED number 2: **STATE OF MOTOR**
This LED is blue when the motor is running and red when there is a problem with the system.

LED number 3: **STATE OF SYNC**
This "SYNC" LED operates as follows:
- Once the system is powered (but not synchronized), the SYNC LED will illuminate in red. The system starts as soon as it is connected to a power source.
- Once the SmartCrystal™ Cinema receives the synchronization signal, the SYNC LED will illuminate in blue as follows:

- Blue continuous light: signal for 2D synchronization (less than 96Hz)
- Blue blinking light: signal for 3D synchronization (greater than 96Hz)

LED number 4: **POWER SUPPLY**
This LED is blue when the system is properly powered and off when the system is not powered.

6. Remote control

Will be developed later

7. BNC connector

The BNC connector allows the user to synchronize the SmartCrystal™ Cinema Neo with the cinema projector. Three cables are supplied with the SmartCrystal™ Cinema Neo:

BNC/BNC cable (2 meters long) meters long)   BNC/GPIO 15 cable (2 meters long)   BNC/GPIO 37 cable (2
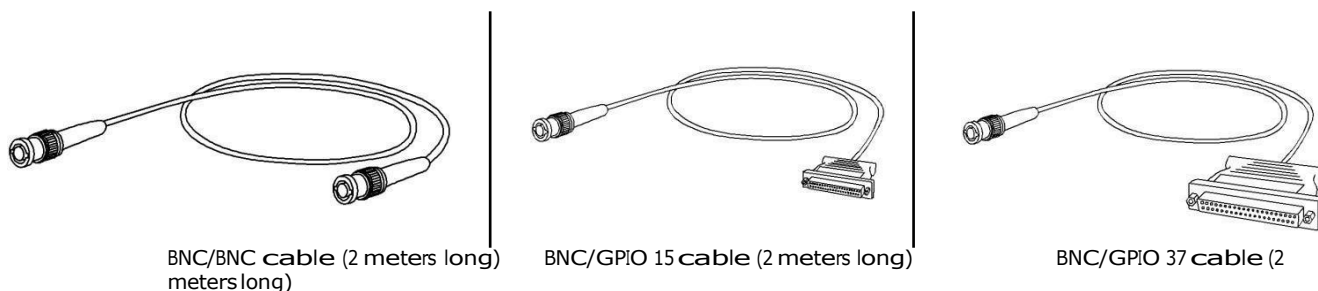
8. Connect the power cable to SmartCrsytal™ Cinema

Power IN

9. Snap hook

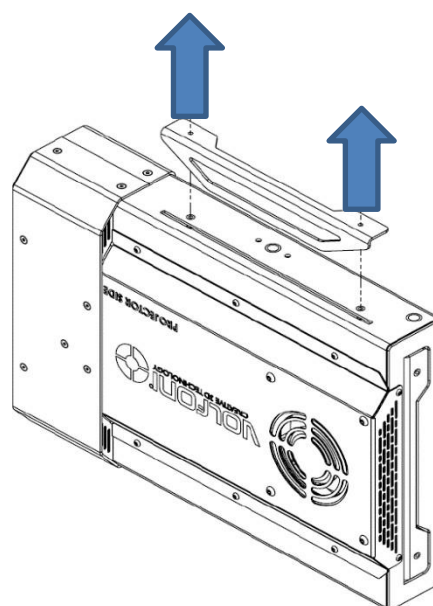To increase safety, please use the snap hook when fixing the SmartCrystal™ Cinema Neo.

10. Easy maintenance

To facilitate the maintenance, you can operate the frame manually. It allows you to easily clean the LCD from dust for example.

a. Unscrew 2 following screws

b. Fix the handle to the LCD frame with the two screws you have just remove
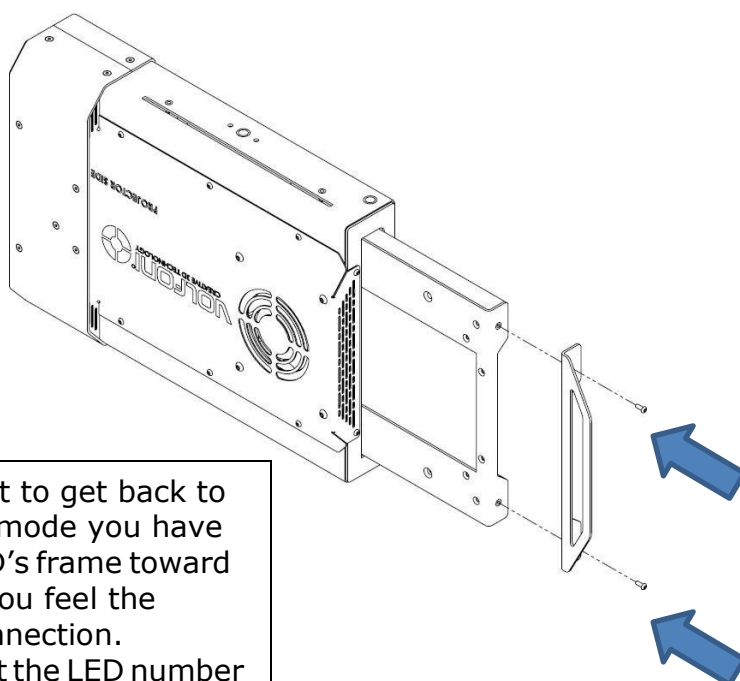
When you want to get back to the automatic mode you have to push the LCD's frame toward the inside till you feel the mechanical connection.
Then check that the LED number 2 isn't red.

V.   SMARTCRYSTAL CINEMA NEO BRACKET

Before installing the SmartCrystal™ Cinema Neo in front of the projector lens, make sure you have all the needed tools and the instruction manual. This wall fixing part is provided with all the screws and wall anchors you might need.
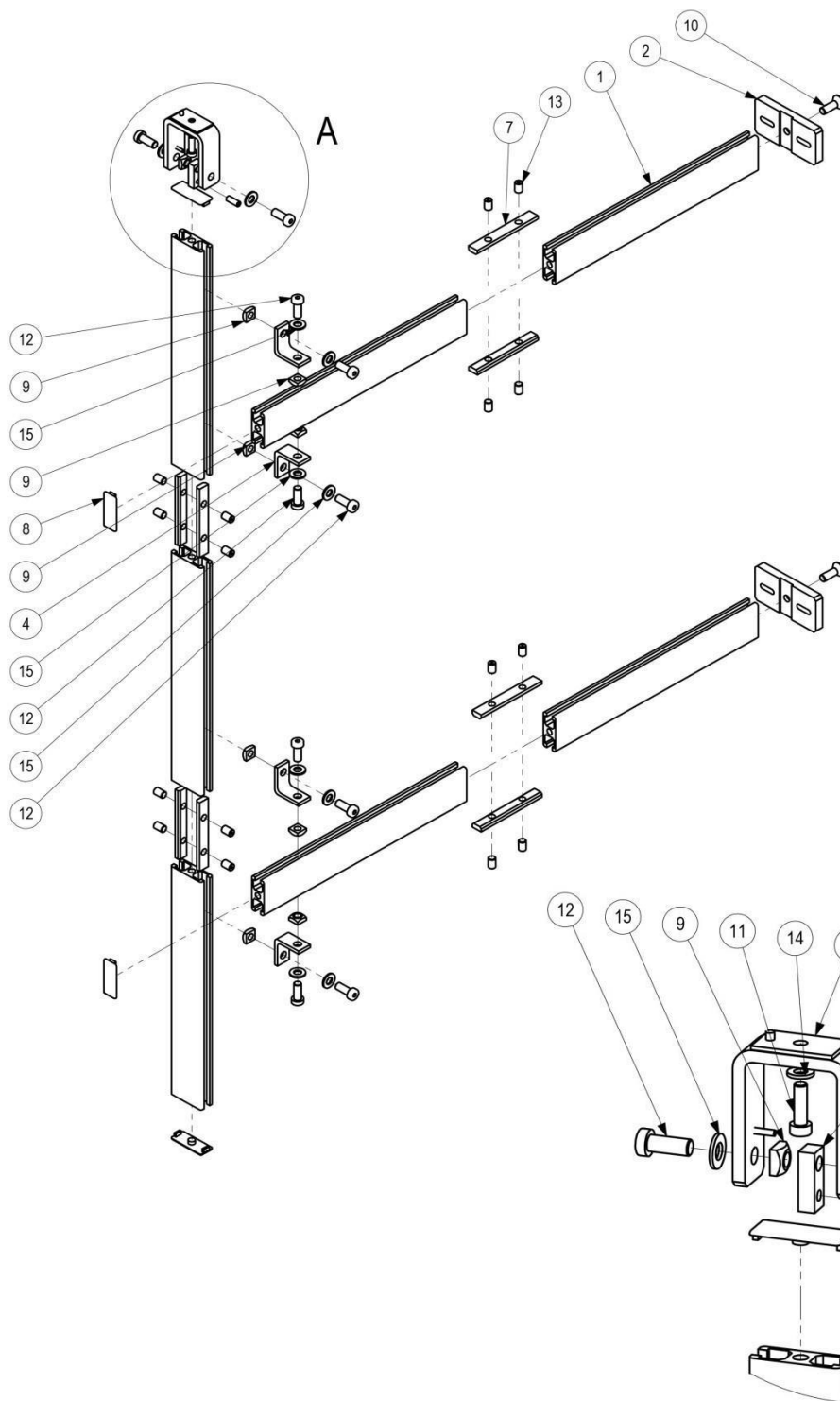
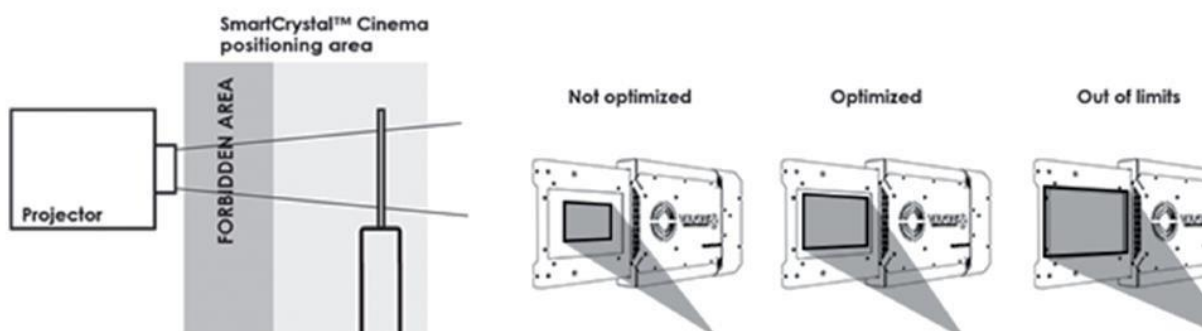| N°	Référence Volfoni	Description	Qté
1	8300-01A	Profile L = 300mm	7
2	8300-002	Wall bracket	2
3	8300-04A	Mouting_Flange_Bracket	1
4	8300-03A	Square_90°	4
5	8300-06A	Safety_Nut	1
6	8300-007	Protective_Foam	1
7	8300-05A	Connection_Strip	8
8	N1702	Cap_Bracket	4
9	N3310	Nut_M8_profile	9
10	ave_M8x25_MODEL	FHC_M8x25	2
11	Allen M6x20	CHC M6x20	1
12	DIN7984	CHC M8x20	10
13	Esp. M8x12	Grub screws M8x12	16
14	DIN 125 M6	Washer M6	1
15	DIN7984	Washer_M8	10

VI. INSTALLATION

The SmartCrystal™ Cinema Neo should be placed directly in front of the lens of the projector at a distance such that the image from the projector covers as much as possible the entire area of the polarization window in order to minimize thermal heating effects.
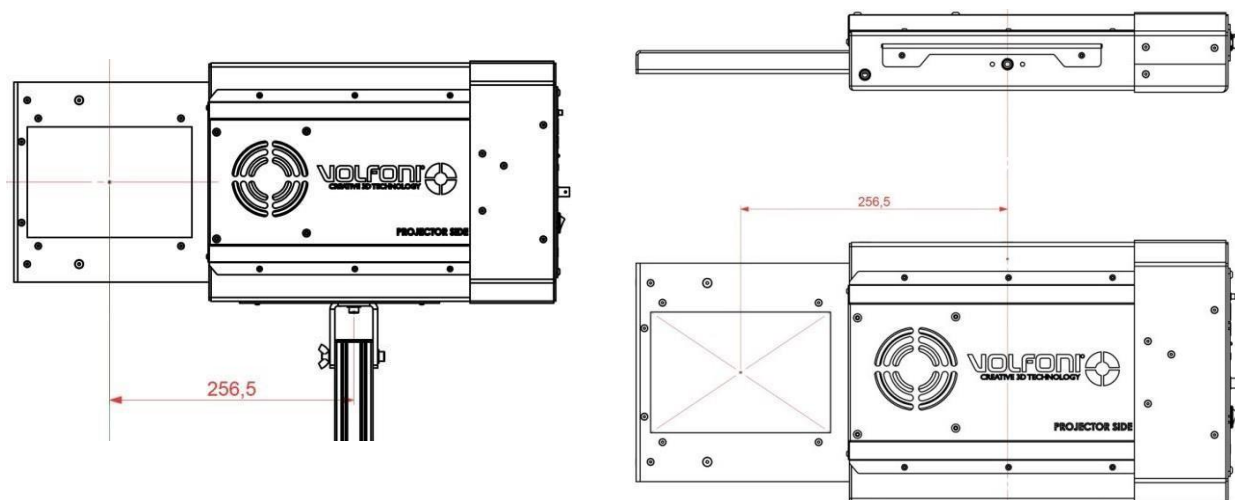
Ensure that the side of the SmartCrystal™ Cinema marked "PROJECTOR SIDE" is facing towards the projector.

Try not to incline too much the LCD (LCD inclination increase the ghosting effect)

A. Phase one

B. Phase two
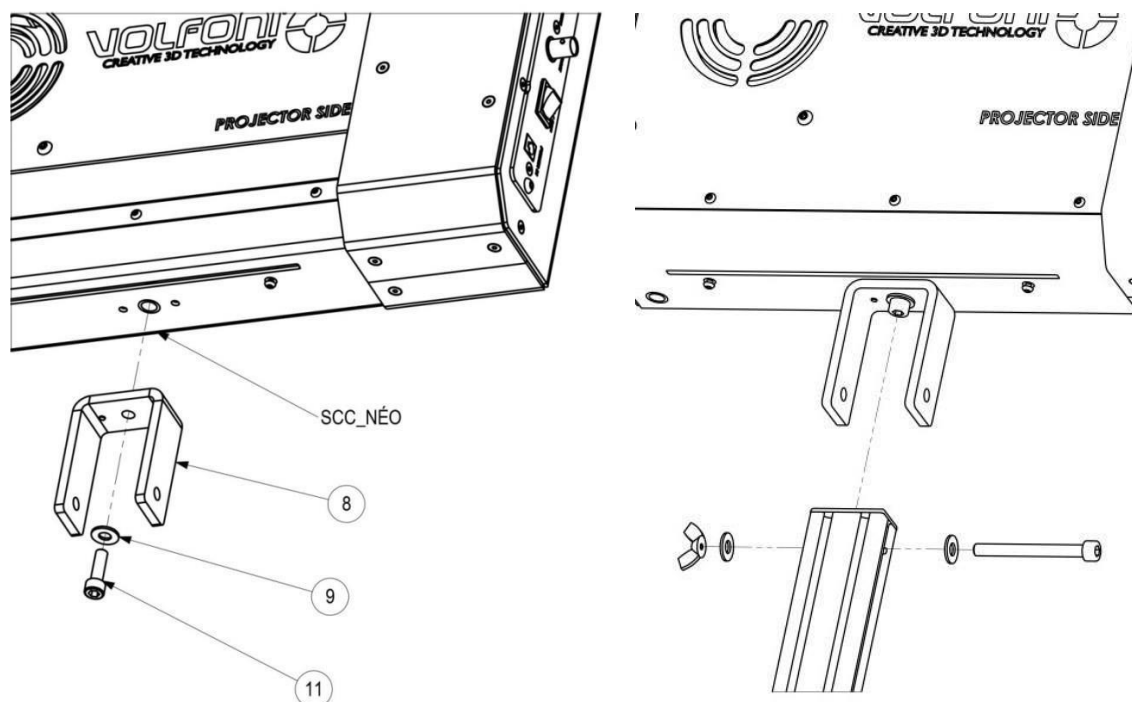
VII. TROUBLESHOOTING

PROBLEM	SOLUTION
The system does not work.	Verify that the Power LED is illuminated when working. If it is OFF, this indicates that there is a problem with the power-supply of the system. Check that the SmartCrystal™ Cinema Neo electronic module is correctly mounted in the bracket. Check that the power supply is connected and that the system is in the power ON state. Should the error persists, please contact your technical support.
SYNC LED does not illuminate.	Ensure the sync cable is connected to the SmartCrystal™ Cinema Neo Polarizer Module.
Redcontinuous light. (Sync LED)	The system is powered but there is no synchronization signal. Ensure the 3D mode is selected in the setup of your 3D source.
The LED flashes correctly but no 3D images are shown. (Sync LED)	Ensure the SmartCrystal™ Cinema Neo is facing the right way (i.e the side marked PROJECTOR SIDE should be facing the projector). Check that the projection screen is 3D-compliant (silver screen with gain 2,4), content is 3D, and the projector is running in 3D mode.
The LED for "state motor" illuminates inred.	In such case, please contact directly your reseller or integrator. Do not touch the electronics of the SmartCrystal™ Cinema Neo.
The LED for "state fan" lights in red.	In such case, please contact directly your reseller or integrator. Do not touch the electronics of the SmartCrystal™ Cinema Neo.
The LED number 2 is red	Fix the handle as describe page 9. Pull out the LCD's frame at the maximum then push the LCD's frame toward the inside till you feel the mechanical connection.

VIII.   SOFTWARE UPDATE

The latest software is available on Volfoni website to update your product. How to use the software update:

- Go to Volfoni website (www.volfoni.com)
- Choose the menu SERVICES/SUPPORT
- Download the software VOLFONI LOADER
- Connect your computer to SmartCrystal™ Cinema Neo with the cable USB-A/USB-B (cable supplied with your SmartCrystal™ Cinema Neo)
- Turn on your SmartCrystal™ Cinema Neo
- Verify that the software recognizes your system
- Once the SmartCrystal™ Cinema Neo is connected, press CHECK FOR UPDATE
- Load the latest version if it's not already on your SmartCrystal™ Cinema Neo

IX.   IMPORTANT SAFETY RECOMMENDATIONS

- Protect all parts of the 3D system from direct sunlight, heat or water.
- Extreme conditions may alter the product's performance.
- Do not modify the electrical or mechanical components of your 3D system
- Do not apply force to the window of the polarization modulator.
- Do not touch the polarization window.
- Avoid vibrations and shock.
- Use a clean soft cloth when cleaning the polarization modulator to avoid scratching.
- Always transport the SmartCrystal™ Cinema Neo system with the window of the SmartCrystal™ Cinema Neo Polarizer Module returned into its encasement to avoid scratching the LCD or the frame.
- In case of problems with the cooling ventilation system, turn off the projector, and contact your technical support.
- In case of damage to the SmartCrystal™ Cinema Neo where the skin is exposed to liquid crystal material, we recommend that you immediately wash the area with soap and water.
- In case of eye exposure to liquid crystal material, please seek medical advice immediately.
- Please note that passive 3D glasses must not be used as sunglasses.
- This equipment is not suitable for use in locations where children are likely to be present.
- A power outlet must be installed near the equipment and must be easily accessible.

X.   WARRANTY

The SmartCrystal™ Cinema Neo is protected under warranty to the original purchaser for three (3) years according to local legislation. Equipment (modules and cables) should be returned in their original packaging along with the original proof of purchase.

Equipment that is broken or scratched is not covered. The SmartCrystal™ Cinema may become damaged if it is placed in front of the projector-lens such that the image from the projector does not cover as much as possible the entire area of the polarization-window (see section "Installation"). Damage caused by placing the SmartCrystal™ Cinema too close to the projector lens is not covered by the warranty. Volfoni does not guarantee uninterrupted or error-free operation of the product.

XI.   FURTHER INFORMATION

NOTICE:
The Volfoni Group reserves the right to make changes to the hardware, packaging or other documentation without prior written notice. SmartCrystal™ Cinema is a trademark of the Volfoni Group.
All trademarks are the property of their respective companies. www.volfoni.com

XII.   REGULATORY STANDARDS

European Union - Disposal information:
This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches the end of its life, take it to a collection point designated by local authorities. Some collection points accept product for free. The separate collection and recycling of your product at the time of disposal will help preserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.
- This Class B digital apparatus complies with Canadian ICES-003.