

SIM2 Multimedia

NERO3 PLUS

User Guide



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1 Important information

About this User Guide

This User Guide describes how to set up and operate the following projectors:

- NERO3 PLUS
- NERO3 PLUS ST

Except where otherwise indicated, the information in this guide applies to all the projectors listed above, that will be referred to as “NERO3PLUS”.

Information contained in this User Guide may be updated from time to time due to product improvements and customer feedback. Visit www.sim2.com to find the latest version of this document.

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Safety



To reduce the risk of electrocution, disconnect the power cord on the rear panel before removing the glass cover of the projector. For technical service refer to trained personnel authorized by the manufacturer.

Read this manual

Read all chapters of this manual carefully before switching on the projector. This manual provides basic instructions for operating the NERO3PLUS projector. Installation, preliminary adjustments and procedures that necessitate the removal of the glass cover and the contact with electrical components, must be performed by authorized trained technicians. To ensure safe operation and long term reliability use only the power cord supplied by the manufacturer. Observe all warnings and precautions. Keep the manual for future consultation.

Do not touch internal parts of the projector

Inside the housing there are electrical parts carrying dangerously high voltages and parts operating at high temperature. Never open the housing. Entrust all servicing and repair work to a SIM2 Authorized Service Center. Opening the housing voids the warranty.

Disconnect the appliance from the power supply

The device that disconnects the projector from the mains is the power plug. Ensure that the power cord plugs and the electrical outlets are easily accessible during installation operations. Pull the plug, not the cord, to disconnect the projector from the mains. Use only the specified power supply. Connect the projector to a mains electrical supply with rated voltage of between 100-240 V AC, 50/60 Hz and equipped with a protective earth connection. If you are not sure of your domestic mains rating,

contact an electrician. Take care to avoid overloading the power socket and any extension leads.

Switching the projector off

Pay attention to the switch off procedure for the projector. The projector must always be brought back to the standby state to allow the projector to carry out the cooling procedure. Should this not happen, for example due to a power cut, the projector may enter a state of protection that leads to switch-on being blocked. This block will last until the internal components of the projector have completely cooled down.

Be careful with cables

Make sure cables are routed so that people are not impeded or become a trip hazard. Keep all cables away from children. Install the projector as close to the wall socket as possible. Avoid stepping on power cords, make certain they do not become tangled, and never jerk or tug them; do not expose them to sources of heat, and make sure they do not become knotted or crimped. If the power cords become damaged, stop using the projector and request the assistance of an authorized technician.

Disconnect the projector from the mains power during electrical storms and when not in use

To prevent damage from lightning strikes in the vicinity, disconnect the projector during storms or when the projector is going to be left unused for a long time.

Avoid contact with liquids and exposure to damp

Do not use the projector near water (sinks, tubs and so on); do not place objects containing liquids on or near the projector and do not expose it to rain, humidity, drops of water or sprays; do not use water or liquid detergent to clean it.

Place the projector on a stable surface

Place the projector on a stable surface or use a suitable ceiling mounting bracket (see "Installation" at page 14). Never place the projector on its side or rear, on the lens or top panel.

Do not allow the projector to overheat

To prevent overheating, allow a free space of at least 0.20 m (5 in) on the rear, on the top, and on the right and left sides of the projector. Do not obstruct the ventilation slots. Do not place the projector near heat sources such as heaters, radiators or other devices (including amplifiers) that generate heat. Do not place the projector in an area where there is insufficient space (shelving units, bookshelves and so on) and in general avoid placing it in poorly ventilated areas as this may prevent sufficient cooling and significantly reduce lamp life.

Never look directly at the projection led

Never look directly into the lens when the led is on as the intense light may damage your eyes. Take particular care that children cannot do so.

Take special care regarding movement of the lens

Do not place objects in the slots on the side of the lens and also ensure that vertical lens movements are not impeded by external objects.

Do not insert objects through the openings in the projector

Make sure that no objects are inserted inside the projector. If this should occur, disconnect the projector from the power supply immediately and call an authorized technician.

Power saving

We advise disconnecting the projector from the power supply when not in use. In this way you will achieve considerable power savings while at the same time protecting internal electrical parts from wear.

Class B emissions limits

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

LED LIGHT
DO NOT STARE INTO BEAM
CLASS 2 LED PRODUCT
$P \leq 0.88 \text{ mW}$ $\lambda = 452 \text{ nm}$
ICE 60825-1:1993 + A1:1997 + A2:2001
EN 60825-1:1994 + A2:2001 + A1:2002

3D content

Discomfort (such as eye strain, headaches, motion sickness, nausea, dizziness, disorientation) may be experienced while watching 3D content. In this case, stop watching and consult a doctor if symptoms are severe.

Consult a doctor before allowing young children (especially those under six years old) to watch 3D content as their visual system is still under development.

Monitor children (including teenagers) watching 3D content, as they are more at risk of experiencing discomfort and less inclined to report symptoms.

Individuals who may be susceptible to epileptic seizures or strokes (on the basis of personal and family history) should consult a doctor before watching 3D content.

All viewers should take regular breaks from watching 3D content. Length and frequency of these breaks may vary from person to person.

Environment

This product contains materials derived from natural resources during its manufacture. It may contain materials that constitute a health and environmental hazard. To prevent harmful materials from being released into the environment and to promote the use of natural materials, SIM2 provides the following information regarding the disposal and recycling of the product.

Waste electrical and electronic materials (WEEE) should never be disposed of in normal urban waste disposal facilities.



The label on the product, shown here, indicating a canceled garbage can, is intended to remind you that the product requires special handling at the end of its service life. Materials such as glass, plastic and some chemical compounds are recoverable and can be recycled for reuse.

Observe the following instructions:

- When you no longer wish to use your electrical and electronic equipment, take it to your local waste disposal facility for recycling.
- You may return your old equipment to your SIM2 Authorized Dealer free of charge when you buy a new product that is equivalent or has the same functions as the old one. Contact SIM2 to find your local dealer.
- If you need more information regarding recycling, reuse and product exchanges, contact SIM2 customer service.

Lastly we suggest further measures to safeguard the environment, such as recycling of internal and external packaging (including that used for shipping) in which the product was delivered. With your help, we can reduce the amount of environmental resources required to make electric and electronic equipment, reduce the use of waste tips for used equipment and, in general, improve our quality of life by making sure that hazardous materials are correctly scrapped. Incorrect treatment of the product at the end of its service life and failure to follow the above disposal instructions are punishable under local legislation.

Notice

The appliance has been subjected to exhaustive operating tests by SIM2 to guarantee the highest quality. The projector light source life should thus initially be around 30-60 hours. In addition to the customary checks, the Quality Control department also runs additional statistical tests before shipment. In such cases, the packaging may show signs of having been opened, and the hours of light source operation may prove to be higher than those normally shown when only standard tests are performed.

As the optical system of the NERO3PLUS is extremely compact and has the purpose of developing very high brightness and contrast, it is possible that a small quantity of light is visible outside of the projection area and will vary depending the zoom and shift setup. This characteristic of the optical system is to be deemed as normal. In order to reduce this effect SIM2 recommends that the area surrounding the projection screen is as dark as possible.

2 Introduction

Created for discerning viewers the NERO3PLUS sets a new standard for colour performance with consistent, breath-taking, perfectly balanced colours from the first time, every time and for years to come. Whether you just fancy a relaxed movie night or immersing yourself in adrenaline-pumping 3D, the NERO3PLUS is the perfect choice for recreating the big-screen experience.

Key Features and Benefits

LED Technology

Powered by 3 x LEDs, the NERO3PLUS delivers enhanced image quality with a wide colour gamut, superior colour saturation and outstanding brightness using separate red, blue and green LEDs to produce intense yet accurate colours. Advanced switching of these LEDs provides increased image stability.

Dynamic Black

Dynamic black smoothly adjusts the light output automatically, based on the brightness information of each frame; to create a stunning 30.000:1 contrast ratio. Bright scenes are crisp and clear, while dark scenes remain detailed with deep blacks which gives exceptional light and shade detail.

Pure Action

The NERO3PLUS Incorporates the Pure Action. In its lowest setting, Pure Action retains the “dream like” quality of film while maximizing the detail of every frame – whereas the highest setting virtually eliminates motion Blur; perfect for fast-paced sports, where absolute fluidity is essential. Whether you are watching in 2D or 3D, Pure Action gives you silky smooth performance.

Fine Detail

Fine Detail uses sophisticated motion adaptive edge enhancement algorithms to ensure that all the information contained in an image is faithfully reproduced on the screen giving a stunning crystal clear, pin sharp picture.

Vivid Color

Vivid Color provides vivid, perfectly balanced colour with impeccable colour uniformity for vibrant natural looking images. Vivid Color makes it possible for the NERO3PLUS to reproduce billions of colours ensuring smooth tonal transitions and subtle graduations between hues.

CMS (Color Management System)

Get perfectly calibrated picture quality most fitting to the physical setting of your room. The NERO3PLUS comes equipped with a full colour management system, giving you the flexibility to choose between 5 preset colour gamuts (Native, HDTV, SMPTE-C, and Cinema SIM2), 6 colour temperatures (D50, D65, D83, D93 and Native) or alternatively, fine tune intensity and x/y co-ordinates of primary and secondary colours for ultimate calibration precision.

HDMI Link

Control HDMI CEC compatible devices. HDMI Link allows you to turn on/off the NERO3PLUS and multiple source device with one remote.

2D-3D Conversion

See more in 3D with the built in 2D to 3D converter. You can now enjoy the big game, your favorite TV shows, and movies in stunning 3D to ensure you get the most out of your experience. Dedicated 2D to 3D technology converts 2D movies and shows into 3D, making even familiar content more thrillingly immersive than ever before.

Full 3D

Using the inherent speed of DLP technology, the NERO3PLUS Full 3D projector can display true 3D content from almost any 3D display device.

Flexible Placement

The efficiency of the LED powered NERO3PLUS produces less heat so less cooling is required, resulting in near silent operation. Therefore, the NERO3PLUS can be installed closer to walls or ceilings or even built into a small enclosure offering previously unexplored installation options.

Lens Shift

The combination of the manual adjustment of Lens Shift, and a wide 1.9x zoom range for the NERO3PLUS, and a wide 1.25 zoom range for the NERO3PLUS ST, enables a wider range of projector placement possibilities. This remarkable combination makes it easier to position the projector in your viewing room and allows a wider range of screen size options.

System Components

Your NERO3PLUS projector ships with the following items:

- 1 x backlit remote control unit (with two AAA/LR03 batteries)
- 1 x AC power cord - 2 m (6.6 ft.) long
- 1 x Quick Start Guide
- 1 x User Guide (this document)
- 5 Spacer (4 PCS 25 mm length, 1 PCS 35 mm length – see page 51 for details)

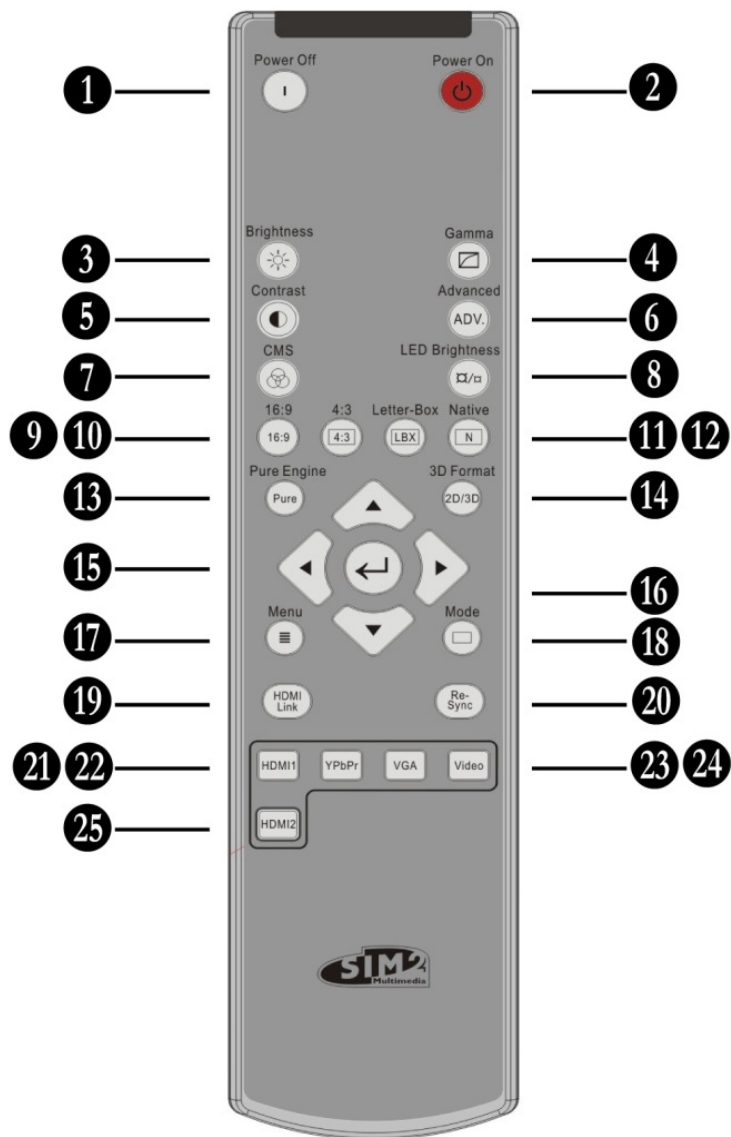
If any items are missing or damaged, contact your SIM2 Authorized Dealer as soon as possible. Keep the original packaging in case anything has to be shipped.

Optional Accessories

- Projector universal bracket (UNIBRKMB)
- PANAMORPH & ISCO Anamorphic lens systems (static or motorized)
- VISUSRF-BOX (8 SIM2 Visus 3D RF glasses)
- VISUSRF-SYSTEM (7 SIM2 Visus 3D RF glasses and 1 RF emitter for SIM2 Visus 3D RF glasses)
- VISUSRF-SYSTEM-ACC (4 SIM2 Visus 3D RF glasses and 1 RF emitter for SIM2 Visus 3D RF glasses)

3 Overview

Remote Control



B	Power Off
C	Power On
D	Brightness
E	Gamma
F	Contrast
G	Advanced
H	CMS
I	LED Brightness
J	16:9
K	4:3
L	Letter Box
M	Native
N	Pure Engine
O	3D Format
P	Arrows for Menu
Q	Enter
R	Menu
S	Mode
T	HDMI Link
U	Re-Sync
V	HDMI 1
W	YPbPr
X	VGA
Y	Video
Z	HDMI 2

B	Power Off	Turn Off the projector
C	Power On	Turn On the projector
D	Brightness	Adjust the brightness of the image
E	Gamma	Set up gamma curve type
F	Contrast	Control the degree of difference between the lightest and darkest parts of the picture
G	Advanced	Display or exit the “IMAGE Advanced” menu
H	CMS	CMS (Color Management System) – Select one of the colors (R/G/B/C/M/Y) to adjust its x/y offset and brightness
I	LED Brightness	Increase/Decrease the luminance of the image
J	16:9	Scale the image at a 16:9 (1920x1080) aspect ratio
K	4:3	Scale the image at a 4:3 (1440x1080) aspect ratio
L	Letter Box	Enable the viewing of the letterboxed non-anamorphically enhanced movie at full screen width. Part of the original image will be lost if the image aspect ratio is less than 2.35:1
M	Native	The input source will be displayed without scaling
N	Pure Engine	The PureEngine is a collection of advanced image processing technologies that enhances the quality of the displayed image.
O	3D Format	Manually select a 3D mode that matches your 3D content
P	Arrows for Menu	Four directional select keys – use these menu arrows to select items or make adjustments to your selection
Q	Enter	Confirm your item selection
R	Menu	Display or exit the on-screen display menus for projector
S	Mode	Select a display mode for optimized settings for different applications
T	HDMI Link	Enables and disables the HDMI Link function
U	Re-Sync	Automatically synchronizes the projector to the input source
V	HDMI 1	Press “HDMI 1” to choose source from HDMI 1 connector
W	YPbPr	Press “YPbPr” to choose source from YPbPr connector
X	VGA	Press “VGA” to choose source from VGA connector
Y	Video	Press “Video” to choose source from Video connector
Z	HDMI 2	Press “HDMI 2” to choose source from HDMI 2 connector

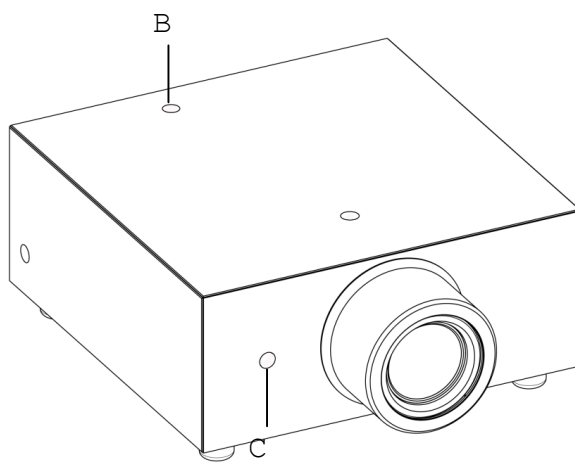
Custom Remotes

You can use your own IR remote control to control your NERO3PLUS projector.

- If you are using a remote control with learning capabilities, use the projector remote control to teach the commands to your remote.
- If you are using a programmable remote control, the setup software probably allows importing of Pronto Hex codes. See *SIM2 NERO3PLUS IR Control* for a list of all the projector codes in Pronto Hex format, including a number of discrete codes for:
 - Aspects
 - Memories
 - 3D Controls (3D Mode and Input Formats)

Operation

The NERO3PLUS projector has two IR receivers (B , C) one on the front of the unit and one on the top. The operative range of the remote control is approximately 10 m (33 ft.). Make sure that there is nothing obstructing the infrared beam between the remote control and the IR receiver you are pointing to. You can point the remote control towards the screen, as the IR beam is reflected by the screen towards front IR receiver of the projector. In this case the effective range of the remote control may be smaller than declared.



<i>Item</i>	<i>Description</i>
B	Top IR receiver
C	Front IR receiver

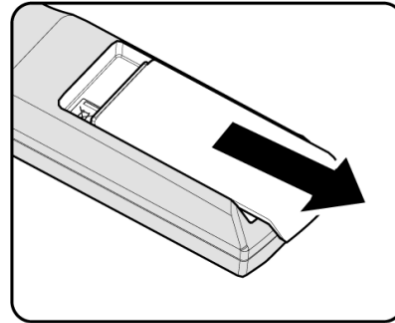
Batteries

To install batteries in the remote control:

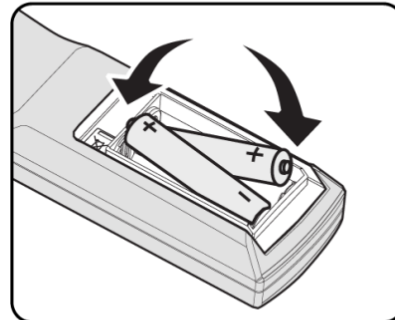
- Open the battery cover.
- Insert two AAA (LR03) batteries making sure the polarities match the + marks inside the battery compartment.
- Replace the cover.

Replace the batteries with new ones when the operating range of the remote control decreases. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to local regulations. Make sure you do not mix old and new batteries or different types of batteries.

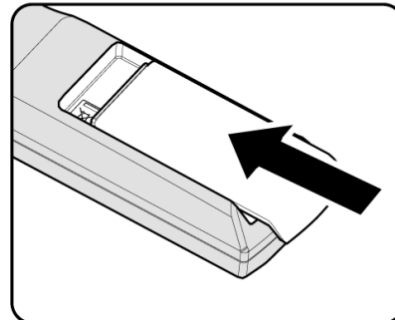
Remove the battery compartment cover by sliding the cover in the direction of the arrow.



Insert the batteries paying attention to the positive pole.

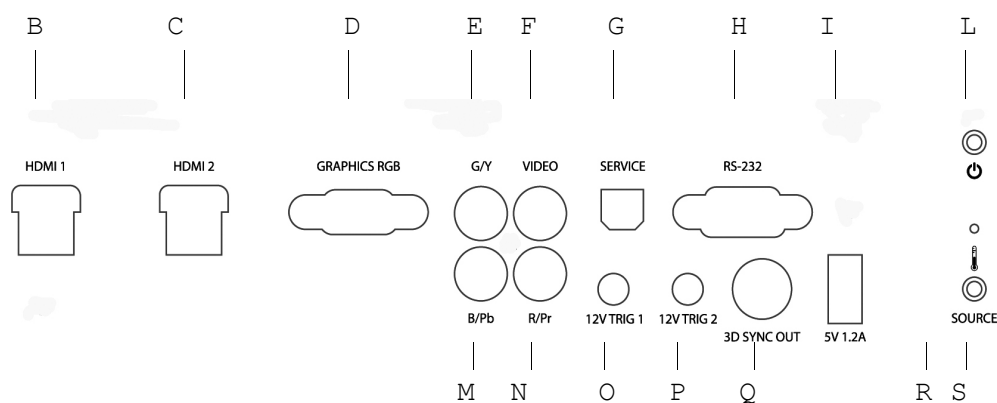


Reinsert the compartment cover by sliding the cover in the direction of the arrow.



Warning: If you will not use the remote control for a long time, remove the batteries to avoid battery leakage. When you dispose of the battery, you must obey the law in the relative area or country.

Connections



Inputs	B	HDMI 1	Accept both HDMI and DVI digital video inputs.
	C	HDMI 2	
	D	Graphics RGB	One D-Sub 15-pin female connector. Accepts component or RGB high-definition signals.
	E M N	Components/RGB-HV	Four RCA connectors. They accept both standard and high-definition component (YPrPb) and RGB-HV signals. Also used as RGB input for SCART RGBS signals.
	F	Video	One RCA connector. Accepts composite video signals. Also used as composite sync input for SCART RGBS signals.
Control/Service	L	Standby	Power button / Power LED.
	S	Source	Source button.
	G	SERVICE	USB (type B) port for firmware upgrade.
Outputs	H	RS-232	RS232 (female D-Sub 9-pin) port for serial commands and firmware upgrade.
	R	Temperature LED	Temperature warning indicator LED.
	O	12V TRIG 1	12 V 250 mA max output, for motorized screen control. Activates when the projector is switched on.
	P	12V TRIG 2	12 V 250 mA max output, for motorized screen. Enabled when the corresponding display mode is selected. See “12V Trigger 1 & 2” on page 44.
	Q	3D Sync OUT	VESA DIN-3 connector for 3D RF Emitter cable.

4 Installation

This section provides instructions for the installation of the NERO3PLUS projector.

Important: Installation procedures should be performed by a qualified AV system specialist.

Location

When installing the NERO3PLUS projector, take the following considerations into account.

Installation Type

Select the installation type that best suits your needs:

- front or rear projection
- floor or ceiling mount

Cooling

Make sure that the planned location for the projector has adequate ventilation. Check that room temperature is below 35° C and that the projector is away from heating vents. Ensure a minimum 0.20 m (5 in.) clearance on the left, right and rear sides of the projector.

Power Outlets

Verify that the power outlets are grounded and preferably shielded from power surges and fluctuations. A UPS is optional. NERO3PLUS power supply operates on any nominal line voltage between 100-240 V AC, 50-60 Hz.

Cables

Check planned cable lengths for video and control cables and make sure these lengths do not exceed specifications.

Ambient Light

Avoid or minimize light sources directed at the screen to preserve the quality of the projected image.

Mounting

The projector can be Floor mounted (upright) or Ceiling mounted (inverted). Choose the method that best suits your installation.

The NERO3PLUS projector has been design to be submit the EN60950/UL950 Safety Norms with it's glass cabinet.

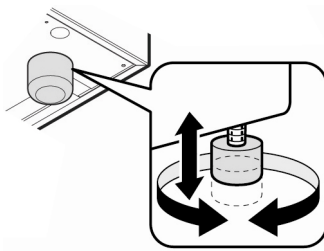
Nevertheless, even if the best materials and adhesives available in the market, in order to guarantee a safe application on the long long run, exclusively for the ceiling mounting applications, SIM2 has equipped the projector with glass safety screw that are aesthetic parts of its cabinet (see D, E at page 11)

To determine where to position the projector, consider the size and shape of your screen, the location of your power outlets, and the distance between the projector and the rest of your equipment.

Important: The projection lens is centered to the chassis (see “ Dimensions” on page 59 for details). Make sure the centerline of the lens is centered horizontally to the center of the screen.

Floor Mounting

Place the projector on a secure and flat surface (such as a table or a shelf). Adjust the four elevator feet at the bottom of the projector until the projector is level on all sides. Rotate the adjustable feet clockwise to raise the projector or counter clockwise to lower it. Repeat with the remaining feet as needed.



Ceiling Mounting

Invert the projector and suspend it from the ceiling using a specific bracket.

- To fit the bracket unscrew and remove the 4 elevator feet
- Attach bracket by using 4 x M6 screws not exceeding 15 mm in thread length
- For more details see page 51 “How to install a bracket to the NERO”



For ceiling mounting use only SIM2-approved ceiling brackets and adhere to the installation instructions and safety guidelines provided with the bracket. Do not over-tighten the screws.

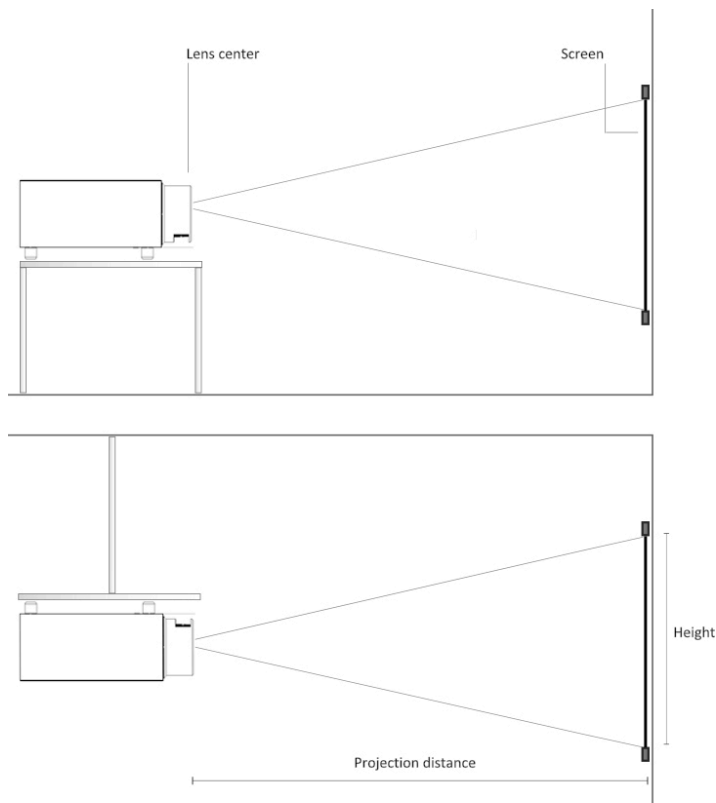
Orientation

By default, the NERO3PLUS is configured for a Front installation (projector installed upright and in front of the screen). If the projector is installed behind the screen or inverted, you can use the image orientation function of the projector (see “Projection” on page 43).

Vertical Lens Shift

Ideally, the projector should be positioned at a right angle to the screen and in such a way that:

- the lens center and screen center are aligned with each other
- the projected image fills the screen perfectly



Keystone

If the projector is ceiling-mounted and the screen is lower than the projector, you may need to tilt the projector by adjusting the ceiling mount. If you do so:

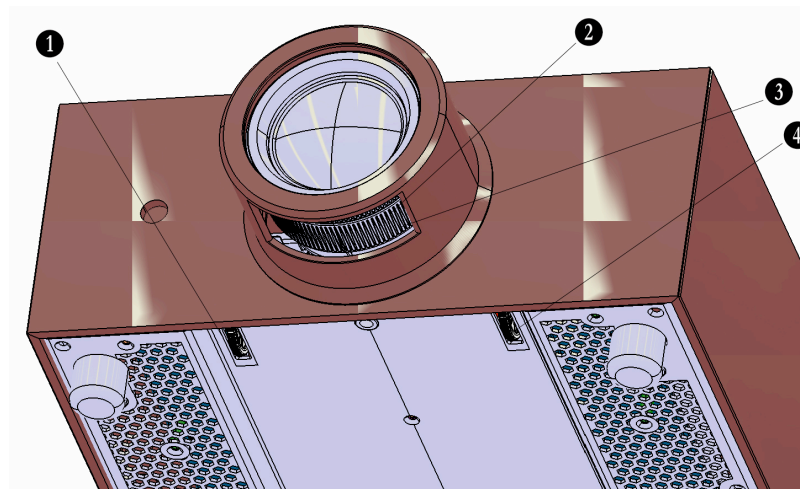
- the top and bottom borders of the image will be unequal in length
- the sides of the image will be inclined

If the tilt is not excessive, you can use the Keystone function of the projector to correct the image shape. (See “V Keystone” on page 42)

Note: Keystone correction may cause artifacts in the image and may not be available when displaying specific 3D content.

Zoom and Focus

The NERO3PLUS provides manual Zoom and Focus controls.



<i>Item</i>	<i>Description</i>
B	Horizontal Lens Shift Lever
C	Zoom Ring
D	Focus Ring
E	Vertical Lens Shift Lever

Connections

Proceed as follows to connect the NERO3PLUS to video sources, control devices, screen control systems, 3D sync emitter and AC power.

When connecting your equipment:

- turn off all equipment before making any connections
- use the correct signal cables for each source
- make sure cables are routed so that people are not impeded or become a trip hazard
- ensure that the cables are securely connected (tighten the thumbscrews on connectors that have them)

Video

Often the sources (Blu-ray Players, Set Top Boxes, Game Consoles and so on) have several outputs. Choose HDMI whenever possible.

HDMI The major benefits of this signal type are:

- best image quality, because the signal is carried in the digital domain throughout the entire signal path
- highest available resolution, because video sources can deliver full resolution content via HDMI only
- availability of 3D content, because most 3D compatible sources deliver 3D content from HDMI only
- optimization of several image parameters (2D/3D content, color space, aspect, signal range, over scan), thanks to auxiliary information (AVI infoframe) sent by the source device together with the signal.

If your source has dual HDMI outputs, we would recommend direct connection to the projector from one of the HDMI connections and the second HDMI output to the input of an appropriate AV receiver/processor for audio.

Sources with a DVI-D output can be connected to the HDMI input of the projector using a suitable DVI-D to HDMI cable. In this case no auxiliary information is sent from the source to the projector.

Note: HDMI uses a code known as HDCP (High-bandwidth Digital Copy Protection), which protects the recorded supports from being copied illegally. The connection between the source and display require that the two devices perform a handshake and exchange code keys before being able to display an image. The InstaPort technology allows a simultaneous pre-authentication of every attached device at the same it is connected, reducing drastically the time required for HDMI source switching. For this reason you may note a slight delay before the image appears on the screen, but it is perfectly normal.

- **Graphics RGB** Input for Personal Computer and other sources that outputs RGB or YPrPb signals. These sources must be able to provide separate H/V sync or composite H+V sync.
- **RGB/YPrPb** Input for DVD Players, Set Top Boxes and other sources that output one of the following signals:
- Component (YPrPb)

- RGB with composite sync on green (RGsB)
- RGB with HV composite sync

RGB connectors also provides RGB input for SCART RGBS sources. See “Video” below)

- **Video** This is the input for composite video sources (such as VCR or camcorders). This connector is also the composite sync input for SCART RGBS sources. See “RGB/YPrPb” above.

Control

You can connect the NERO3PLUS projector to a Personal Computer or a control system through one of the following methods:

- RS-232 port, using a standard 9-pin straight serial cable
- RS-232 port, using a USB to serial converter cable. In this case, installation of a device driver provided by the cable manufacturer may be required.

Note: RS-232 communications are limited to max 15 m (50 ft.), VGA communication are limited to max 20 m (65 ft.), HDMI communication are limited to max 20 m (65 ft.), CVBS & YPbPr are limited to max 20 m (65 ft.).

Triggers

Some Home Theater devices can be controlled through a 12 V signal. The projector can output two 12 V (250mA) signals:

- 12V TRIG 1 provides a standard trigger for motorized screens control
- 12V TRIG 2 provides a trigger for motorized screen.

Enabled when the corresponding display mode choose is selected (see “12V Trigger 1 & 2” at page 44).

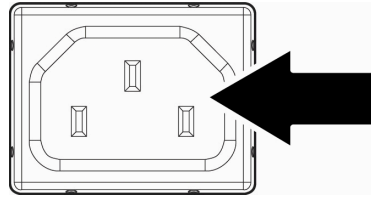
- AC Power




Plug the female end of the power cord to the AC receptacle located on the left hand side of the projector (100-240 V AC, 50-60 Hz) and the other end into a grounded AC outlet. An high-quality surge protector is recommended while a UPS is optional.

Switching On and Off

Switching On



- I. Securely connect the power cord supplied and the signal cable. When connected, the Power LED will turn red.

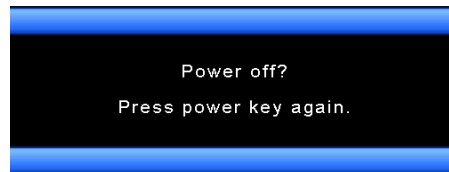





- II. Turn on the projector by pressing  button either on the back panel of the projector or the " " button on remote control. The power LED will now turn blue. The startup screen will display in approximately 10 seconds. The first time you use the projector, you will be asked to select the preferred language (see "Languages" page 46).
- III. Turn on and connect the source that you want to display on the screen (computer, notebook, video player, etc). The projector will detect the source automatically. If not, push menu button  and go to "SETUP". Make sure that the "Source Lock" has been set to "Off".



Note: if you connect multiple sources at the same time, press the "SOURCE" button on the back panel or the direct source keys on the remote control to switch between inputs.

Switching Off

- I. Press the " " button on the remote control or  button on the back panel of the projector one time. The following message will be displayed on the screen.








Press the " " button on the remote control, or the  on the back panel again to confirm, otherwise the message will disappear after 15 seconds. When you press the " " button for the second time, the projector will shut down (the interval between pressing has to be around one second to turn off the projector).

- II. The cooling fans continue to operate for about 10 seconds for cooling cycle and the Power LED will flash blue. When the Power LED lights solid red, the projector has entered in standby mode. If you wish to turn the projector back on, you must wait until the projector has completed the cooling cycle and has entered standby mode. Once in standby mode, simply press the  button on the back panel or the " " on the remote control to restart the projector.
- III. Disconnect the power cord from the electrical outlet and the projector.




Warning: Do not turn on the projector immediately following a power off procedure.

Temperature LED indicator

When the warning indicators come on, the projector will automatically shutdown:

1. “” LED indicators flashes red.
2. “” LED indicator is lit red and if “” LED indicator flashes red. This indicates the projector has overheated. Under normal conditions, the projector can be switched back on.
3. “” LED indicator flashes red and if “” LED indicator flashes red.

Unplug the power cord from projector, wait for 30 seconds and try again. If the warning indicator light up again, please contact your nearest service center for assistance.

MESSAGE	POWER LED  (Red)	POWER LED  (Blue)	TEMP LED  (Red)
Standby State (Input power cord)	Steady Light*	Off	Off
Power On (Warming)	Off	Flashing	Off
Power On and LED Lighting	Off	Steady Light	Off
Power Off (Cooling)	Off	Flashing	Off
Error (LED fail)	Flashing	Off	Off
Error (Fan fail)	Flashing	Off	Flashing
Error (Over Temperature)	Flashing	Off	Steady Light

* ON/STANDBY LED be ON when OSD appears, be OFF when OSD disappears.

Note: Power LED on: No signal; OSD menu appears and signal had been detected.
Power LED off: Signal had been detected but OSD menu disappears.

5 Operation

Viewing 3D Content

3D stereo visualization offers clear and sharp 3D images thanks to single chip DLP Imaging technology. This technique achieves channel separation using active shutter glasses.

- Active shutter glasses turn on and off in rapid succession and stop light reaching your eyes. The glasses are synced using a RF emitter connected to the projector.
- When an image is destined for the left eye, the right lens of the glasses goes dark preventing any of the image for your left eye from reaching the right eye. The left lens is completely open.
- The process repeats very quickly (up to 144 times per second) for each eye.
- The human brain combines the two images and creates the illusion of 3D.

Important: Glasses & Emitter are sold separately as optional accessories.

Read 3D safety information at the beginning of this User Manual before viewing 3D content.

Your NERO3PLUS projector is capable of displaying 3D Images of exceptional high quality; to ensure maximum enjoyment and trouble free viewing we recommend the following guidelines.

- You will need a Blu-ray player or equivalent that is capable of playing 3D content and is HDMI 1.4 compliant plus of course a copy of a film that has released on Blu-ray in 3D. Only films with the 3D logo are compatible.
- Ensure your player has the latest software installed.
- If your Blu-ray Player has dual HDMI outputs, we would recommend direct connection to the projector from one of the HDMI connections and the second HDMI output to the input of an appropriate AV receiver/processor for audio.
- If you are routing all of your HDMI sources through an AV receiver/processor the product must be 3D compatible and HDMI 1.4 compliant. Ensure your equipment has the latest firmware installed (refer to the manufacturer for further information).
- Other 3D content providers are available such as Satellite Broadcasters, Cable providers, VOD and Streaming services, gaming consoles such as PlayStation 3. Details of the 3D service provided can be obtained by contacting your local/regional operators.



To watch 3D Content via Blu-ray

- Switch on the NERO3PLUS and all other relevant products such as Blu-ray player and AV receiver and ensure the correct inputs have been selected.
- Insert your 3D Blu-ray disc and press play, follow the on-screen menus.

Note: Some discs contain both the 3D and 2D versions of the film, ensure you select the correct one.

- Switch on your 3D glasses. Refer to the instructions supplied with the glasses to ensure correct operation.
- The projector will automatically detect the 3D signal and you will be prompted to wear your glasses via the OSD.

To Watch 3D Content via Satellite, Cable and Games Console

- Switch on the NERO3PLUS and all other relevant products such as Satellite receiver and AV receiver and ensure the correct inputs have been selected.
- Select the appropriate 3D channel.
- If the projector displays two distorted images side by side or one on top of each other, select the 3D menu by pressing the “3D Format” button on the remote control (see “3D Format” at page 23).
- Switch on your 3D glasses. Refer to the instructions supplied with the glasses to ensure correct operation.

Important: All 3D technologies currently available today filter out a large amount of light. Therefore it is perfectly normal for the 3D image to be noticeably dimmer when compared to the picture in 2D mode. Adjust the 3D picture and LED Brightness settings accordingly for 3D viewing.

3D Menu

To view 3D content additional adjustments are required. With 3D content playing, press **3D Format (O)** on the remote control to access the OSD **3D** menu.

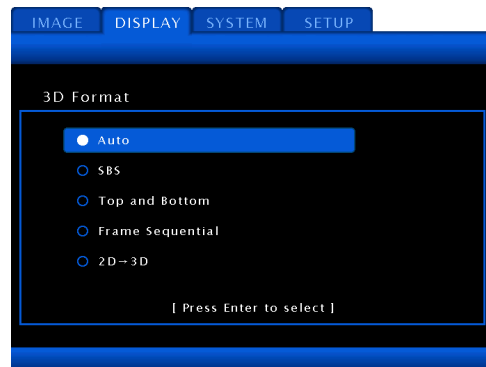


3D Format

The NERO3PLUS checks AVI infoframe data and input signal resolution in order to determine the appropriate 3D format. When automatic detection of 3D format is not possible, choose one of the following options:



- **Auto:** Display the native format
- **SBS - Side by Side:** Display 3D signal in “side by side” format. Left and right halves of the image are separated, rescaled and displayed. This mode should be applied to 3D images composed of two stereoscopic images compressed to half of their original horizontal resolution and sent simultaneously.
- **Top and Bottom:** Display 3D signal in “Top and Bottom” format. Top and bottom halves of the image are separated, rescaled and displayed. This mode should be applied to 3D images composed of two stereoscopic images compressed to half of their original vertical resolution and sent simultaneously.
- **Frame Sequential:** Display 3D signal in “Frame sequential” format. This mode should be applied to 3D images that consist of a sequence of alternating frames wherein each successive frame carries the image meant for one or the other eye.
- **2D → 3D:** 2D signal transform 3D signal.



3D → 2D

You can choose one of the following options:

- **3D:** display the 3D signal.
- **L (left):** display the left frame of 3D content.
- **r (right):** display the right frame of 3D content.

2D → 3D

This features permit to select 3D depth of field (or strength) from Low, Middle or High. Use this setting if the 3D effect has an uncomfortable look about it. This setting will change the perception of depth. It is important that the image destined for the left/right eye reaches the correct eye (see 3D Sync Invert below).

3D Sync. Invert

You may need to change the order in which left and right frames are displayed. Sometimes the easiest way to check if the image destined for the left/right eye reaches the correct eye, is to pause the program content.


- **ON:** invert left and right frame contents.
- **OFF:** for default frame contents.

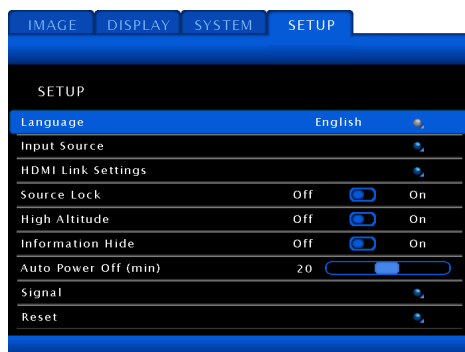
Supported 3D Video Formats

Compatible 3D formats are listed below:





INPUT RESOLUTION		INPUT TIMING	
HDMI 1.4a 3D INPUT	1280 x 720p @ 50 Hz	Top and Bottom	
	1280 x 720p @ 60 Hz	Top and Bottom	
	1280 x 720p @ 50 Hz	Frame Packing	
	1280 x 720p @ 60 Hz	Frame Packing	
	1920 x 1080i @ 50 Hz	Side by Side (Half)	
	1920 x 1080i @ 60 Hz	Side by Side (Half)	
	1920 x 1080p @ 24 Hz	Top and Bottom	
	1920 x 1080p @ 24 Hz	Frame Packing	
	1920 x 1080p @ 60 Hz		
HDMI 1.3 3D CONTENT	1920 x 1080i @ 50 Hz	Side by Side (Half)	While 3D Format is "SBS"
	1920 x 1080i @ 60 Hz		
	1280 x 720p @ 50 Hz		
	1280 x 720p @ 60 Hz		
	1920 x 1080p @ 60 Hz		
	1920 x 1080i @ 50 Hz	Top and Bottom	While 3D Format is "Top and Bottom"
	1920 x 1080i @ 60 Hz		
	1280 x 720p @ 50 Hz		
	1280 x 720p @ 60 Hz		
	480i	HQFS	While 3D Format is "Frame Sequential"


Input Menu

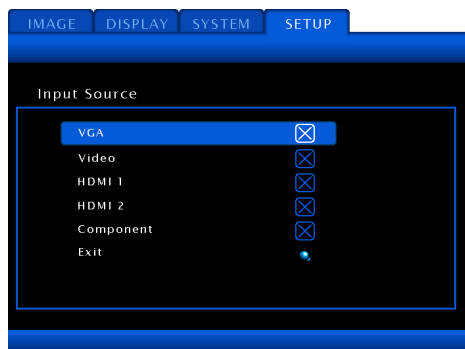
Press the menu button  on the remote control and go to “SETUP” to enter into the Input Source menu, or directly select the desired input by pressing the corresponding button on the remote control (HDMI1, HDMI2, VGA, etc) or press the SOURCE button on the back panel.



Use this option to enable/disable input source.

Press  to enter the sub menu, press  or  on the remote control to highlight the input, and select which sources you require. Press  to finalize the selection. The projector will only search for inputs that are enabled.

Press  on the remote control to exit from the Input Source menu.



Each time an Input is changed an information window appears on the screen and remains there until a valid signal is detected (this feature can be disabled in the **Setup** section (see “Information Hide” at page 47).



If no signal is detected on the selected input, a “No Source Found” message is displayed.

Main Menu


The main menu gives access to all projector adjustments. It is divided in four main sections:






- **Image**
- **Display**
- **System**
- **Setup**

with various item and submenus in each of them.

To enter the main menu and select the desired section press  on the remote control. To enter a submenu (when available) press  on the remote control.

Use  or  to select an item on a list either in the main menu and the submenu.

To return to the previous menu when in a submenu press  on the remote control.

To select menu items press   on the remote control. To turn off the main menu press  on the remote control. Use   to change settings on a selected item.

Note: Depending on the selected input source and signal characteristics, some adjustments may not be available.

Image and **Display** menu sections provide access to most commonly-used projector adjustments. Note that:

- you can enter these sections only when an image is displayed;
- the controls in these sections only operate on the active input;
- when you select another input or change mode (2D/3D), all the settings in these sections are automatically saved;
- each time you select an input or change mode (2D/3D), the previously saved settings for that input or mode will be automatically recalled;

System and **Setup** sections provide access to installation and OSD adjustments. The settings in these sections are global (for all inputs and modes, not just the active one).

Live Colors Calibration software (LCC)

To aid calibration, the NERO3PLUS projector, feature the new SIM2's advanced Live Colors Calibration 2.0 software that enables professional calibration of many projection parameters such as complete adjustment of the primary, secondary and white point color coordinates. This PC-based software gives calibration experts unprecedented control over the projector image quality.

SIM2 recommends the use of LCC software to calibration experts only, by using spectrophotometers probes to correctly analyze and adjust the colourimetry.

NERO3PLUS is factory adjusted to reach the HDTV standard in SIM2 premises; however, some fine tuning would be necessary to adapt NERO3PLUS to your screen, environment and sources.

Contact your authorized dealer, or the SIM2 distributor, and ask for calibration on site.

Image

This menu section provides access to common image quality adjustments. Adjustments not available for a given input are not displayed in the menu (See “Table 1” for details).



Table 1

	Video	RGBS YPrPb	RGB Graphics	HDMI 1/2
Contrast	✓	✓	✓	✓
Brightness	✓	✓	✓	✓
Color	✓	✓		✓
Tint	✓	✓		✓
Sharpness	✓	✓	✓	✓
Noise Reduction	✓	✓		✓ ¹
Fine Detail	✓	✓	✓	✓
Vivid Color	✓	✓	✓	✓
Pure Action	✓	✓	✓	✓
Pure Engine Demo	✓	✓	✓	✓
LED Brightness	✓	✓	✓	✓

¹ HDMI 1/2: 1080p not included since no function

Display Mode

There are many factory presets optimized for various types of images:



NATURAL: this mode is intended to reproduce, as close as possible, the image the way the movie director intended. Color, color temperature, brightness and gamma settings are all configured to standard reference levels. The default Color Gamut is the HDTV and Color Temperature D65 (HDTV – D65).

DYNAMIC: optimized for displaying photographic images. This mode tends to over saturate the colors to exalt the image displayed.

The default Color Gamut is the Native – D75.

CINEMA: default settings for home theater.

The default Color Gamut is the Cinema SIM2 (available only D65).

FILM: the purest color settings for home theater.

The default Color Gamut is the Cinema SIM2 (available only D65).

BRIGHT: maximum brightness from PC input.

The default Color Gamut is the Native – Native.

USER: user's settings.

The default Color Gamut is the HDTV – D65

3D: recommended setting for 3D mode enabled. When in 3D mode all the display mode are dimmed except the User that becomes User 3D. Adjustment by the user in User 3D will be saved for further use.

The default Color Gamut is the Native – D65.

Note: The Display Mode depends on the input source and timings. For example, the display mode will be different from HDMI and VGA.

User mode has the same initial settings of the NATURAL mode.

If you change any of the image settings, the display mode presets will be changed and saved automatically. If you want to return to the factory default display mode, select RESET CURRENT from the menu SETUP (see page “Reset” at page 49).

The table below show the available options for the Color Temperature and Color Gamut regarding display modes.

Display Mode	Color Temperature available	Color Gamut available
<i>Natural</i>	D65, D75	Native, HDTV, Color
<i>Dynamic</i>	All	Native, LCC, Cinema SIM2, HDTV, Color
<i>Cinema</i>	Dimmed (only D65)	Native, LCC, Cinema SIM2, Color
<i>Film</i>	All	Native, Cinema SIM2, HDTV, Color
<i>Bright</i>	All	Native, Cinema SIM2, HDTV, Color
<i>User</i>	All	Native, LCC, Cinema SIM2, HDTV, Color
<i>3D</i>	All	Native, Cinema SIM2, HDTV, Color
<i>3D User</i>	All	Native, LCC, Cinema SIM2, HDTV, Color

Contrast

The contrast controls the degree of difference between the lightest and darkest parts of the picture.

Use this control to adjust the image's white level without affecting its dark areas. For correct adjustment it may prove useful to display a gray scale test pattern with at least twenty bands. Now try to increase the brightness of the white band as much as possible while ensuring that it can still be distinguished from the adjacent band with brightness slightly less than white. Alternatively use a scene composed of well-lit white objects surrounded by light objects with lower level lighting, and try to ensure that all the objects can be separately identified.

Press ◀ to decrease the contrast

Press ▶ to increase the contrast

Brightness

Adjust the brightness of the image.

Use this control to adjust the darker areas of the picture (black level), without affecting bright areas. Increasing the value will give more detail in darker parts of the picture. For correct adjustment it may prove useful to display a gray scale test pattern with at least twenty bands. Now try to reduce the brightness of the black band as much as possible while ensuring that it can still be distinguished from the adjacent band with brightness slightly higher than black. Alternatively use a scene composed of black objects alongside other dark colored objects and try to ensure that all the objects can be separately identified.

Press ◀ to darken the image

Press ▶ to lighten the image

Color

Adjust a video image from black and white to fully saturated color.

This control (also called Saturation) increases or decreases the picture color intensity. When set to zero, color images are shown in black and white. Increase the value until

the colors appear natural: suitable references include skin tones and the green in grass in landscape shots.

Press ◀ to decrease the color saturation in the image

Press ▶ to increase the color saturation in the image

Note: Color is only supported for composite and component sources.

Tint

Adjust the color balance of red and green

This adjustment controls the purity of colors. Basically it determines the red-green ratio of the picture. Decreasing the value increases the red content of the image, increasing it increases the green content. For this adjustment use skin tones or a test card image with color bars as a reference. This adjustment is primarily used for NTSC sourced material.

Press ◀ to increase the amount of green in the image

Press ▶ to increase the amount of red in the image

Note: Tint is only supported for composite and component sources.

Sharpness

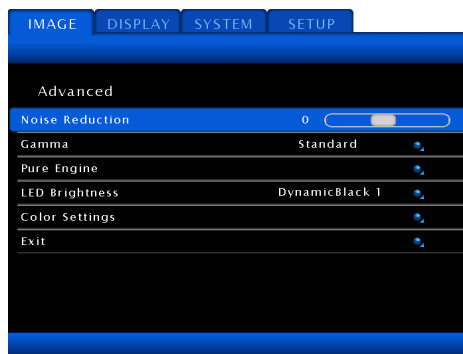
Adjust the sharpness of the image.

This adjustment increases or decreases the level of picture detail. When the sharpness value is reduced the image details appear less pronounced, while increasing the value raises image definition, making the outline of objects sharper. Note that an excessively large value may result in a noisy picture and the outline of images will have a high amount of edge enhancement.

Press ◀ to decrease the sharpness

Press ▶ to increase the sharpness

Advanced Settings



Noise Reduction

This adjustment lets you choose the value of the noise reduction filter. The Noise Reduction reduces the amount of visible interlaced signals. The range is from “0” to “10” (0 = OFF)

Press ◀ to decrease the noise reduction

Press ▶ to increase the noise reduction

Gamma

Determines the projector response to the gray scale, emphasizing or attenuating the different grades of brightness (blacks, dark, medium and light grays, whites) in the projected image. Choose the setting that is appropriate to the type of video source, the ambient lighting and your subjective preferences.



This allow you to set up gamma curve type. After the initial setup and fine tuning is completed, utilize the Gamma adjustment steps to optimize you image output.

The available settings are:

- **FILM:** for home theater
- **VIDEO:** for video or TV source
- **STANDARD:** for standardized setting
- **GRAPHICS:** for PC/Photo source

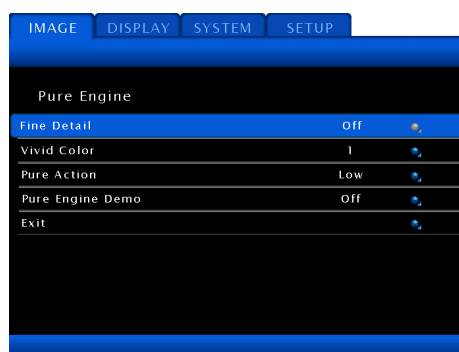
For each of this presets you can set the OFFSET. Offset is to adjust current gamma R/G/B offset values.

Select RESET if you want to cancel the adjustments you done, press EXIT to esc from the GAMMA menu.



Pure Engine

The Pure Engine is a collection of advanced image processing technologies that enhances the quality of the displayed image.



- **Fine Detail**

FineDetail is an edge enhancement tool that enables the edges in the projected image to be enhanced thus providing more perceived detail. The available options are *Off*, *On* and *HD+*.

- **Vivid Color**

This adjustable item utilizes a new color- processing algorithm and enhancements to enable the picture's vividness to be significantly increased. The range is from "0" to "5".

- **Pure Action**

Pure Action uses sophisticated algorithms to ensure that the natural in the image is preserved. The available options are *Off*, *Low*, *Middle* and *High*.

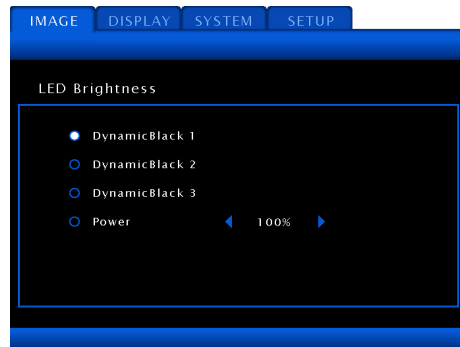
- **Pure Engine Demo**

This feature enables you to see the difference in the image quality between the raw unprocessed image and the image processed as processed by the PureEngine. Use this mode to check the adjustments that you make to the PureEngine settings. The available options are *Off*, *H Split* and *V Split*.

Note: Turn the Pure Action feature to “Off” to reduce the response lag during game play.

LED Brightness (Dynamic Black)

It is a process that gains up the signal and reduces the light source to compensate by reducing the LED power. Reduces black level revealing low level detail, improves contrast.



- **DynamicBlack 1:** automatically adjusts the LED brightness between 100% ~ 13%
- **DynamicBlack 2:** automatically adjusts the LED brightness between 100% ~ 5%
- **DynamicBlack 3:** automatically adjusts the LED brightness between 100% ~ 0%
- **POWER:** manually adjust the LED brightness (100% ~ 50%)

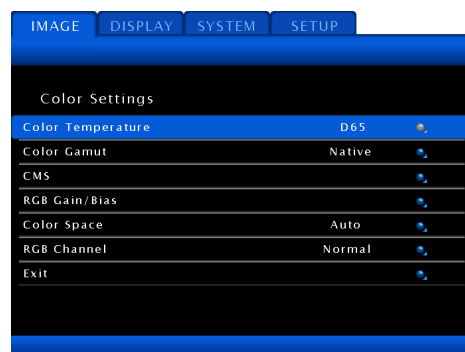
Color Settings

Press the \leftarrow to enter the menu and then use \blacktriangle or \blacktriangledown to select item.

- **Color Temperature**

Select a color temperature from D50, D65, D75, D83, D93 and Native.

- **Native** the projector native white point
- **D50, D65, D75, D83, D93** the C standard CIE illuminants



- **Color Gamut**



The Color Gamut are the whole values of the primaries (red, green and blue), secondaries (yellow, cyan and magenta), the white color coordinates and the brightness. Each NERO3PLUS projector is individually calibrated taking in account the projector hardware and optics to reach the best HDTV and CINEMA SIM2 Color Gamut.

Select an appropriate color gamut from Native, HDTV, LCC, Color and Cinema SIM2.

- **Native:** the projector native color gamut.
- **HDTV:** the color gamut defined by the standards.
- **LCC:** the color gamut defined by the user through the LCC software. The default starting value is the HDTV standard. This Color Gamut is available only in the Display Mode *Dynamic*, *Cinema* and *User* (User 2D and 3D mode). The projector is able to store the LCC values for any of the display mode mentioned above (4 memory slot). When selected the LCC color gamut, the CMS menu and the Color Temperature are dimmed. With Live Color Calibration (LCC) you can change any of the color gamut directly entering absolute values.
- **Color:** the color gamut defined by the standards. This is the only mode where the user is able to change the whole relative values of the color gamut through the On Screen Display.
- **Cinema SIM2:** the color gamut nearest to the DLP Cinema.

Note: the HDTV and the Cinema SIM2 cannot be changeable from the CMS menu.

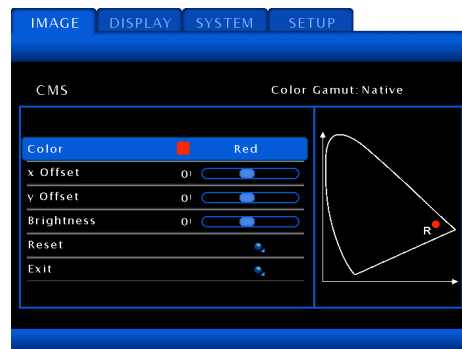
Color Gamut	Enabled colors	CMS Menu
<i>Native</i>	W	Available only for W
<i>Color</i>	RGBCMYW	Available only for W
<i>LCC</i>	RGBCMYW	Not available
<i>HDTV, Cinema SIM2</i>	RGBCMYW	Display only the scaled values

- **CMS (Color Management System)**

This function allow to customize the color gamut by the user.

Press the \leftarrow to enter the menu and then use \blacktriangle or \blacktriangledown to select item.

Select one of the colors (R/G/B/C/M/Y) to adjust its x & y offset and brightness.



- **Color:** use \blacktriangleleft or \blacktriangleright to select from Red, Green, Blue, Cyan, Magenta or Yellow colors.
- **x Offset:** use \blacktriangleleft or \blacktriangleright to adjust the x offset value of selected color.
- **y Offset:** use \blacktriangleleft or \blacktriangleright to adjust the y offset value of selected color.
- **Brightness:** use \blacktriangleleft or \blacktriangleright to adjust the brightness value of selected color.
- **Reset:** choose "YES" to apply the factory default settings for color adjustments.
- **Exit:** to exit from the CMS settings.

- **RGB Gain/Bias**



Press the \leftarrow to enter the menu and then use \blacktriangle or \blacktriangledown to select item.

Use \blacktriangleleft or \blacktriangleright to adjust the Red, Green or Blue brightness (Gain) and contrast (Bias).

- **RESET:** choose "YES" to apply the factory default settings for color adjustments.
- **EXIT:** to exit from the RGB Gain/Bias settings.

- **Color Space**

Determines the signal data range of HDMI signals. It is available when the HDMI signal comes from a RGB source or when the AVI (Auxiliary Video Information) infoframe of the HDMI signal is missing or inconsistent.

Select an appropriate color matrix type from AUTO, RGB (0-255) RGB (16-235) or YUV.

- **Auto** determines the signal range using the information provided by the AVI infoframe of the HDMI signal. If the AVI infoframe is missing or inconsistent, the projector uses values 0-255. Auto (which is the default setting) usually selects the correct signal range but you can force either 16-235 or 0-255
- **RGB (0-255)** sets black at R, G, B = 0 and white at R, G, B = 255
- **RGB (16-235)** sets black at R, G, B = 16 and white at R, G, B = 235, to match the luminance values of digital component standards
- **YUV:** YUV signals are typically created from RGB (red, green and blue) source. Weighted values of R, G, and B are summed to produce Y', a measure of overall brightness or luminance. U and V are computed as scaled differences between Y' and the B and R values.

- **RGB Channel**

Press the \leftarrow to enter the menu and then use \blacktriangleleft or \blacktriangleright to select from Normal, Red, Green or Blue channels.

Display

Format

This adjustment changes the dimensions and aspect ratio (relationship between width and height) of the displayed image. There are six default aspects available. You can select a different aspect for each source: the selected aspect ratio will be automatically applied the next time the relative source is displayed. You can also select the required aspect ratio from the remote control (J K L M).



The following aspects are available:

- **4:3:** this format is for 4x3 input sources.
- **16:9:** this format is for 16x9 input sources, like HDTV and DVD enhanced for Widescreen TV.
- **LBX (Letterbox):** this format is for non-16x9, letterbox source and for users who use external anamorphic lens to display 2.35:1 aspect ratio using full resolution. It displays a 4:3 letterbox image (source signal with black bands above and below the picture) in such a way that it fills the 16:9 screen and maintains the correct aspect. This aspect ratio is also recommended when using Anamorphic Lenses. Some letter box format DVDs are not enhanced for 16x9 played in 16:9 mode. In this situation, please try to use the 4:3 mode to view the DVD. If the content is not 4:3, there will be black bars around the image in 16:9 display. For this type of content, you can use LBX mode to fill the image on the 16:9 display. If you use an external anamorphic lens, this LBX mode also allows you to watch a 2.35:1 content (include Anamorphic DVD and HDTV film source) that support anamorphic wide is enhanced for 16x9 Display in a wide 2.35:1 image. In this case, there are no black bars. LED power and vertical resolution are fully utilized.
- **Native:** this format displays the original image without scaling.
- **Auto235:** automatically selects the appropriate display format.
- **Auto235_Subtitle:** automatically selects the appropriate display format with subtitle moving the image upwards, making enough space for the subtitles to be seen.

Note: **Native** aspect is not supported in the movable or fixed of anamorphic lens. **Auto235** aspect is only supported when System/Anamorphic Lens is Fixed or Movable. When Auto235 feature is selected the 12V Trigger 2 will send power to the anamorphic lens if the source format is 2.35:1 It will not send the power when the

source format is 4:3 or 16:9. Pressing Native button on the remote will be “Auto235” when anamorphic lens is fixed or movable.

HDMI	Auto235 OFF			
	4:3	16:9	LBX	Native
<i>2D/HQFS/2D->3D</i>	✓	✓	✓	✓
<i>SBS</i>		✓		
<i>Top and Bottom</i>		✓	✓	
<i>1080p24FP</i>	✓	✓	✓	✓
<i>720pFP</i>	✓	✓	✓	

HDMI	Auto235 ON				
	4:3	16:9	LBX	Auto235	Auto235 Subtitle
<i>2D/HQFS/2D->3D</i>	✓	✓	✓	✓	✓
<i>SBS</i>		✓			
<i>Top and Bottom</i>		✓	✓	✓	✓
<i>1080p24FP</i>	✓	✓	✓	✓	✓
<i>720pFP</i>	✓	✓	✓	✓	✓

Component	Auto235 OFF			
	4:3	16:9	LBX	Native
<i>2D/HQFS/2D->3D</i>	✓	✓	✓	✓
<i>SBS</i>		✓		
<i>Top and Bottom</i>		✓		

Component	Auto235 ON				
	4:3	16:9	LBX	Auto235	Auto235 Subtitle
<i>2D/HQFS/2D->3D</i>	✓	✓	✓	✓	✓
<i>SBS</i>		✓			
<i>Top and Bottom</i>		✓			

No anamorphic lens attached

1080p Scaling Table

16:9 Screen	480i/p	576i/p	1080i/p	720p	PC
4:3	1440 x 1080 center				
16:9	1920 x 1080 center				
LBX*	1920 x 1440 center, then get the central 1920x1080 image to display				
Native	No resize image, 1:1 mapping and centered. This format shows original image without scaling.				
Auto 235	<p>If this format is selected, screen type will auto become 16:9 (1920 x 1080)</p> <p>If source is 4:3, auto resize to 1440 x 1080</p> <p>If source is 16:9, auto resize to 1920 x 1080</p> <p>If source is 16:10, auto resize to 1920 x 1200 and cut 1920 x 1080 are to display</p>				

Anamorphic movable lens

16:9 Screen	480i/p	576i/p	1080i/p	720p	PC
4:3	1440 x1080 center				
16:9	1920 x 1080 center				
LBX*	Catch 720x363 (Center)	Catch 720x436 (Center)	Catch 1920x817 (Center)	Catch 1920x545 (Center)	Catch 75.65% of height (Center)
	Scale to 1920 x 1440, then get the central 1920x1080 image to display				
Auto 235*	<p>When source is 2.35:1 (with black bar at top/bottom), doing LBX format.</p> <p>When source isn't 2.35:1 that is full 4x3 or 16x9 (there is no black bar at top/bottom), doing 16x9 format</p>				
Auto235_Subtitle	Catch 720x422 (Bottom)	Catch 720x506 (Bottom)	Catch 1920x948 (Bottom)	Catch 1920x632 (Bottom)	Catch 87.8% of height (Bottom)
	<p>When source is 2.35:1 (with black bar at top/bottom), doing above catching rule and scale to 1920x1440, then get the central 1920x1080 image to display.</p> <p>When source isn't 2.35:1 that is full 4x3 or 16x9 (there is no black bar at top/bottom), doing 16x9 format</p>				

<i>Anamorphic fixed lens</i>					
16:9 Screen	480i/p	576i/p	1080i/p	720p	PC
4:3	1080 x1080 center				
16:9	1440 x 1080 center				
LBX*	Catch 720x363 (Center)	Catch 720x436 (Center)	Catch 1920x817 (Center)	Catch 1920x545 (Center)	Catch 75.65% of height (Center)
	Scale to 1920 x 1440, then get the central 1920x1080 image to display				
Auto 235* (the same button of Native on the remote control)	When source is 2.35:1 (with black bar at top/bottom), doing LBX format. When source isn't 2.35:1 that is full 4x3 or 16x9 (there is no black bar at top/bottom), doing 16x9 format				
Auto235_Subtitle	Catch 720x422 (Bottom)	Catch 720x506 (Bottom)	Catch 1920x948 (Bottom)	Catch 1920x632 (Bottom)	Catch 87.8% of height (Bottom)
	When source is 2.35:1 (with black bar at top/bottom), doing above catching rule and scale to 1920x1440, then get the central 1920x1080 image to display. When source isn't 2.35:1 that is full 4x3 or 16x9 (there is no black bar at top/bottom), doing 16x9 format				

*: LBX is not supported in SBS mode.

Pressing "Native" button on the remote control will be "Auto 235" when anamorphic lens is fixed or movable.

Zoom

Press ◀ to reduce the size of an image

Press ▶ to magnify an image on the projection screen

Edge Mask

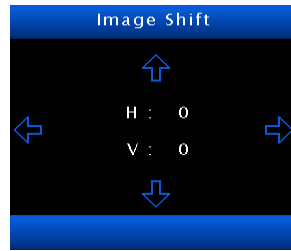
Edge mask the image to remove video encoding noise on the edge of video source.

It removes the outer edges of the image and magnifies the remaining portion of the image to fill the display area. It is useful with sources that output images with imperfections around their borders.

Note: Each I/O has different setting of "Edge Mask".

Image Shift

Press the \leftarrow to enter the menu.



H: press the \blacktriangleleft \blacktriangleright to shift the projected image position horizontally

V: press the \blacktriangleup \blacktriangledown to shift the projected image position vertically

V Keystone

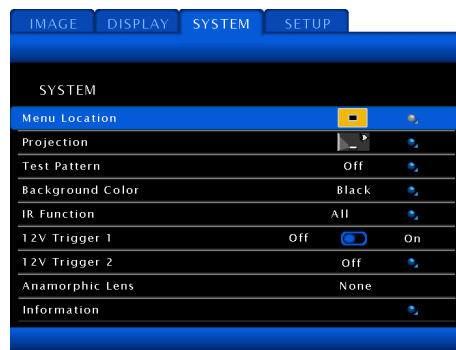
Press the \blacktriangleleft or \blacktriangleright to adjust image distortion vertically and make a squarer image.

3D

See "3D Menu" at page 23.

System

This menu section provides access to installation adjustments.



Menu Location

Changes the location of the OSD menu on the display screen

Press \leftarrow to select one of the five preset positions.

Note: Avoid locations too close to corners or edges to prevent cropping of larger menus.

Projection

Selects the orientation of the projected image.

Press \leftarrow to select one of the four preset orientation.

- **Front-Projection:** this is the default selection. The image is projected straight on the screen.
- **Rear-Desktop:** when selected, the image will appear reversed
- **Front-Ceiling:** when selected, the image will turn upside down
- **Rear-Ceiling:** when selected, the image will appear reversed in upside down position

Note: Rear-Desktop and Rear-Ceiling are to be used with a translucent screen.

Test Pattern

Enters internal test patterns, that are needed for installation or calibration purposes.

Press \leftarrow to select one of the available test patterns (*Grid*, *White* and *Off*).

Note: OSD menus are not available while test patterns are displayed.

Background Color

Press \leftarrow to display a *Blue*, *Gray* or *Black* screen when no signal is available.

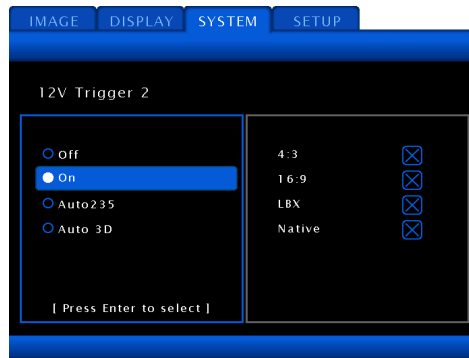
IR Function

You can choose one of the following options:

- **All:** choose “All”, the projector can be operated by the remote control from front or top IR receiver (see page 11).
- **Front:** choose “Front”, the projector can be operated by the remote control only from front IR receiver.
- **Top:** choose “Top”, the projector can be operated by the remote control only from top IR receiver.

12V Trigger 1 & 2

Some Home Theater devices can be controlled through a 12V signal.



The projector can output two 12V (250mA max) signals:

- **12V Trigger 1:** provides a standard trigger for motorized screens.
- **12V Trigger 2:** press the “Off” to disable the trigger. Press the “On” to enable the trigger and the programmable sub-menu. The sub-menu is accessed by selecting the “On” option then pressing the \leftarrow button on the remote control. Checking an option in the sub-menu will activate the trigger when the corresponding display mode is selected. For the example, 4:3 has been selected – this means that Trigger 2 will be active when the projector display mode is set to 4:3. The trigger will be inactive for all the other display mode options.
- **Auto 3D:** when “Auto 3D” is enabled, the projector will automatically detect when a 3D image is shown and will activate the trigger on this port.

Note: the 12V Trigger 2 when the movable lens is selected, will be gray out and become “Auto 235”.

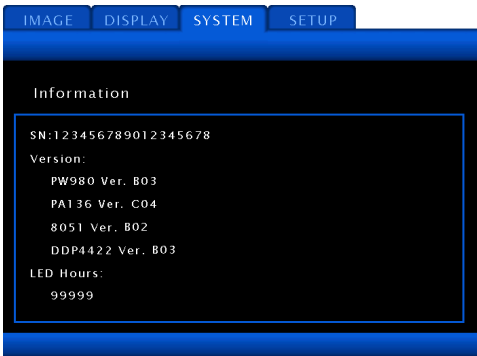
Anamorphic Lens

12V Trigger 2 control should be used for the control of a motorized anamorphic lens. This feature can select an anamorphic Lens from *None*, *Fixed*, or *Movable*.

12V Trigger 2				
Anamorphic Lens	Off	On	Auto 235	Auto 3D
None	✓	✓		✓
Fixed			✓	
Movable			✓	

Information

Press ↵ to view the serial number of the projector, the FW versions and the LED hours.



Setup

Languages

Selects the desired OSD language.



It can display the menus in Multilanguage.

Press \leftarrow to into the sub menu and then use \blacktriangle or \blacktriangledown or \blacktriangleleft or \blacktriangleright to select your preferred language. Press \leftarrow to finalize the selection.

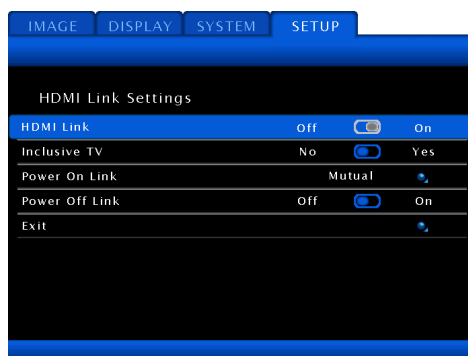


Input Source

See "Input menu" at page 26.

HDMI Link Settings

This feature let you use the HDMI Link function.



When you connect HDMI CEC-compatible devices to the projector with HDMI cables, you can control them on same Power On or Power Off status using the HDMI Link control feature on the projector's OSD.

This lets one device or multiple devices in a group Power On or Power Off via HDMI Link feature.

In a typical configuration, your DVD player may be connected to the projector through an amplifier or home theater system.

- **HDMI Link**

Enable/Disable the HDMI Link function. The inclusive TV, Power On Link, and Power Off Link options will only available if the setting is set to On.

- **Inclusive of TV**

If the setting is set to "Yes", both TV and projector will be automatically turned off at the same time. To prevent both devices to be turned off at the same time, set the setting to "No".

- **Power On Link**

CEC power on command

- **Mutual:** both projector and CEC device will be turned on simultaneously.
- **PJ → Device:** the CEC device will be turned on only after the projector is switched on.
- **Device → PJ:** the projector will be switched on only after the CEC device is turned on.

- **Power Off Link**

If the setting is set to "On", both HDMI Link and projector will be automatically turned off at the same time. Set to "Off", both HDMI Link and projector will be not automatically turned off at the same time.

Source Lock

- **On:** the projector will only search current input connection
- **Off:** the projector will search for other signals if the current input signal is lost.

High Altitude

When "On" is selected, the fans will spin faster. This feature is useful in high altitude areas where the air is thin.

Information Hide

- **On:** choose "On" to hide the info message
- **Off:** choose "Off" to show the "Searching" message.

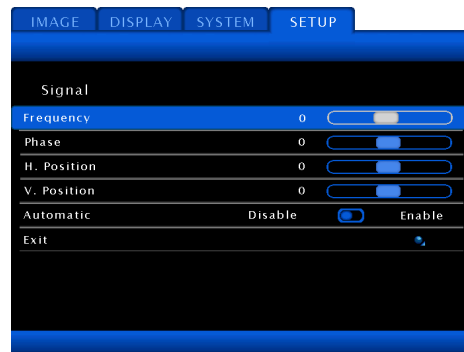
Auto Power Off (min)

Sets the countdown timer interval. The countdown timer will start, when there is no signal being sent to the projector. The projector will automatically power off when the countdown has finished (in minutes). The range is from 0 ÷ 180 minutes (0 is equal to OFF, function not enabled).

Signal

- **Signal (VGA)**

This menu is only available and supported in Analog VGA (RGB) signal.



- **Frequency**

Change the display data frequency to match the frequency of your computer's graphic card. Use this function only if the image appears to flicker vertically.

- **Phase**

Synchronize the signal timing of the display with the graphic card. If the image appears to be unstable or flickers, use this function to correct it.

- **H. Position**

Press the ◀ to move the image left.

Press the ▶ to move the image right.

- **V. Position**

Press the ◀ to move the image down.

Press the ▶ to move the image up.

- **Automatic**

Automatically configures the signal (the Frequency and Phase items are grayed out). If Automatic is disabled, the Frequency and Phase items will appear for user to manually tune and save the settings.

- **Signal (VIDEO)**

This menu is only available and supported in Analog VGA (RGB) signal.



- **White Level**

Allow user adjust White Level when inputting Video Signals.

- **Black Level**

Allow user adjust Black Level when inputting Video signals.

- **Saturation**

Adjust a video image from black and white to fully saturated color.

Press the ◀ to decrease the amount of color in the image.

Press the ▶ to increase the amount of color in the image.

- **Hue**

Adjust the color balance of red and green.

Press the ◀ to increase the amount of green in the image.

Press the ▶ to increase the amount of red in the image.

- **IRE**

Adjust measurement of composite video signals.

Note: "Signal" is not supported when the source is HDMI. "IRE" is only supported on NTSC signal.

Reset

- **Current:** choose "Yes" to return the display parameters on this menu to the factory default settings.
- **All:** choose "Yes" to return the display parameters on all menus to the factory default settings.

6 Compatibility Modes

Computer/Video/HDMI/Mac Compatibility

Signal	Resolution	Refresh Rate (Hz)	Video	Analog	HDMI	Mac
NTSC	720 x 480	60	✓	-	-	-
PAL/SECAM	720 x 576	50	✓	-	-	-
VGA	640 x 480	60	-	✓	✓	✓
	640 x 480	67	-	✓	-	-
	640 x 480	72.8	-	✓	-	✓
	640 x 480	85	-	✓	-	✓
SVGA	800 x 600	56.3	-	✓	-	-
	800 x 600	60.3	-	✓	✓	✓
	800 x 600	72.2	-	✓	✓	✓
	800 x 600	85.1	-	✓	✓	✓
	800 x 600	120 ²	-	✓	✓	-
XGA	1024 x 768	60	-	✓	✓	✓
	1024 x 768	70.1	-	✓	✓	✓
	1024 x 768	75	-	✓	✓	✓
	1024 x 768	85	-	✓	✓	✓
	1024 x 768	120 ²	-	✓	✓	-
HDTV (720p)	1280 x 720	50	✓	✓	✓	-
	1280 x 720	60	✓	✓	✓	✓
	1280 x 720	120 ²	-	✓	✓	-
WXGA	1280 x 768	60	-	✓	✓	✓ ³
	1280 x 768	75	-	✓	✓	✓
	1280 x 768	85	-	✓	✓	✓ ³
	1280 x 768	60	-	✓	✓	✓
SXGA	1280 x 1024	60	-	✓	✓	✓
	1280 x 1024	75	-	✓	✓	✓
	1280 x 1024	85	-	✓	✓	-
SXGA+	1400 x 1050	60	-	✓	✓	-
UXGA	1600 x 1200	60	-	✓	✓	-
HDTV (1080p)	1920 x 1080	24	✓	✓	✓	-
	1920 x 1080	30	-	-	✓	-
	1920 x 1080	50	✓	✓	✓	-
	1920 x 1080	60	✓	✓	✓	✓
HDTV (1080i)	1920 x 1080	50	✓	-	✓	-
	1920 x 1080	60	✓	-	✓	-
WUXGA	1920 x 1200	60 ¹	-	✓	✓	✓
SDTV (576i)	720 x 576	50	✓	-	✓	-
SDTV (576p)	720 x 576	50	✓	-	✓	-
SDTV (480i)	720 x 480	60	✓	-	✓	-
SDTV (480p)	720 x 480	60	✓	-	✓	-

¹: 1920 X 1200 @ 60 Hz only support RB (reduced blanking).

²: 3D timing for True 3D projector.

³: is not supported HDMI input signal for Mac.

Note: 120 Hz input signals may be dependent on graphics cards support.

7 How to install a bracket to the NERO3PLUS

This quick guide explain how to install a bracket to the NERO3PLUS.

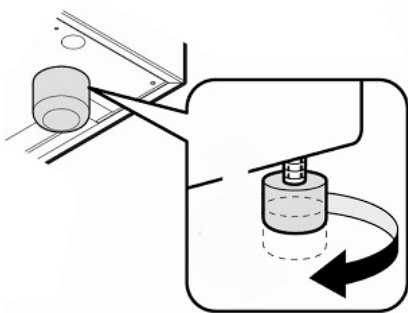


For ceiling mounting use only SIM2-approved ceiling brackets and adhere to the installation instructions and safety guidelines provided with the bracket. Do not over-tighten the screws.

The screw to fix the bracket has to not exceeding 15 mm in thread length inside the metallic base of the bottom of the projector.

Remove the four elevator feet from the bottom of the projector as indicated on the image.

B



In the accessories of the projector there are 5 spacers: 4 pcs of 25 length (A) and 1 pcs of 35 length (B). The spacers have to be put between the bottom of the projector and the metallic plate of the bracket.

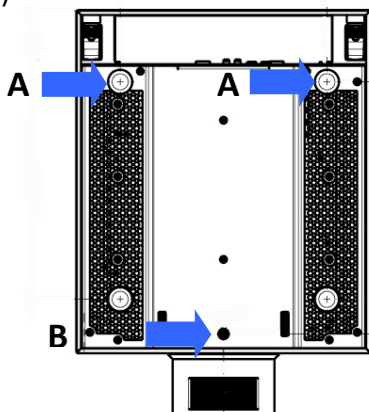
C



Anamorphic lens bracket compatibility (System Flex)

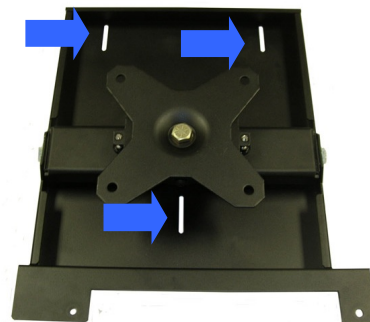
Put between the plate of the bracket and the bottom of the projector the spacer supplied (A position is for the 25 mm length spacer and the B position is for the 35 mm length)

D



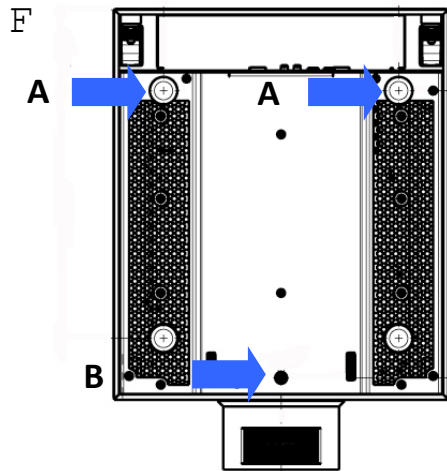
Align the sled bracket to the projector using the slotted mounting holes as shown below and secure it using three M6 screws as shown.

E

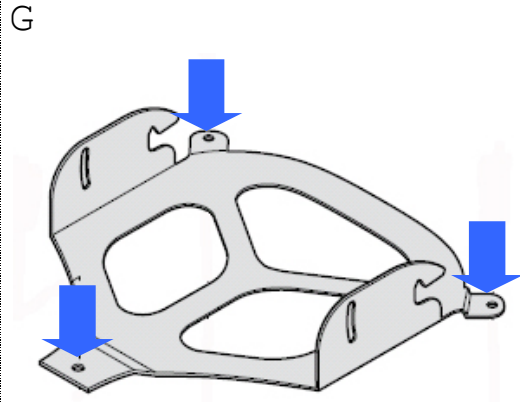


C3X and LUMIS bracket compatibility

Put between the plate of the C3X/LUMIS bracket and the bottom of the projector the spacer supplied (A position is for the 25 mm length spacer and the B position is for the 35 mm length)

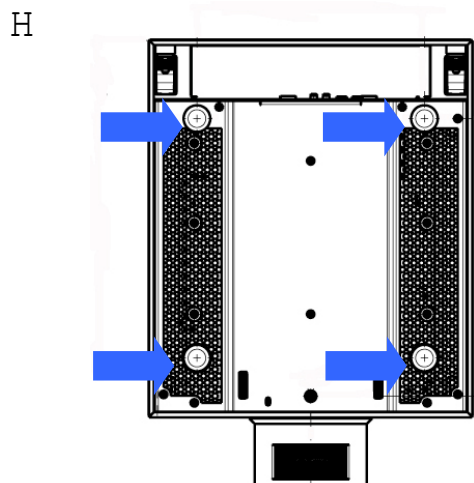


Align the bracket to the projector using the mounting holes as shown below and secure it using three M6 screws.

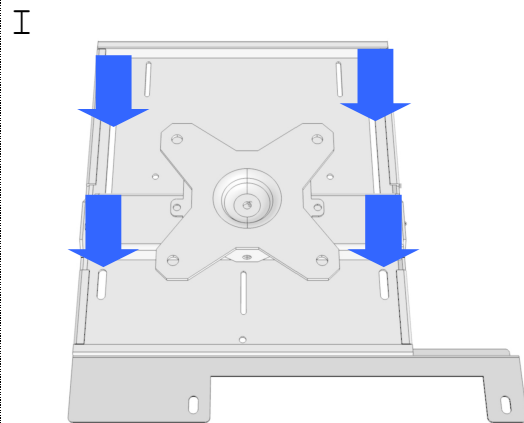


SFM150 & SFUNI

Put between the plate of the bracket and the bottom of the projector the spacers supplied (only the 25 mm length spacer)



Align the bracket to the projector using the slotted mounting holes as shown below and secure it using M6 screws.



Note: If you use a bracket that is not approved by SIM2 always use the spacers for spacing the metal bracket from the bottom of the projector (this to assure a cooling system to the projector).

8 Troubleshooting

These guidelines provide tips to deal with problems you may encounter while using the projector. If the problem remains unsolved, contact your dealer for assistance. Often after time spent troubleshooting, the problem is traced to something as simple as a loose connection. Check the following before proceeding to the problem-specific solutions.

Use some other electrical device to confirm that the electrical outlet is working.

- ❑ Ensure the projector is turned on.
- ❑ Ensure all connections are securely attached.
- ❑ Ensure the attached device is turned on.
- ❑ Ensure a connected PC is not in suspending mode.
- ❑ Ensure a connected notebook computer is configured for an external display.
- ❑ (This is usually done by pressing an Fn-key combination on the notebook.)

“No Signal” Message is displayed

Make sure the correct Input is selected.

Make sure the desired video source is on and its output is configured correctly.

Check cable connection from the desired video source to the projector.

Image Problems (No image appears on-screen)

Ensure all the cables and power connections are correctly and securely connected as described in the “Installation” section.

Ensure the pins of connectors are not crooked or broken.

Image is out of focus

Adjust the Focus Ring on the projector lens.

Make sure the projection screen is between the required distance from the projector (see “projection distances”)

The image is stretched when displaying 16:9 DVD title

When you play anamorphic DVD or 16:9 DVD, the projector will show the best image in 16:9 format on the projector side.

If you play the LBX format DVD title, please change the format as 4:3 in projector OSD

If the image is still stretched, you will also need to adjust the aspect ratio by referring to the following:

- ❑ setup the display format as 16:9 (wide) aspect ratio type on your DVD player.

The image is too small or too large

Adjust the zoom lever on the bottom of the projector.

Move the projector closer to or further from the screen.

Press “MENU” on the back panel or in the remote control, to “DISPLAY → FORMAT”: try the different settings.

Image has slanted sides

If possible, reposition the projector so that it is centered on the screen, and below the

bottom of the screen.

Use "DISPLAY → V Keystone" from the OSD to make an adjustment.

Image is reversed

Select "SYSTEM → Projection" from the OSD and adjust the projection direction.

Blurry double image

Press "3D FORMAT" button and switch to "Auto" to avoid normal 2D image is blurry double image.

Two images, side by side format

Press "3D FORMAT" button and switch to "SBS" if the input signal is HDMI 1.3 2D 1080i side by side.

Image does not display in 3D

Check if 3D glasses are charged.

Check if the 3D glasses are turned on.

When the input signal is HDMI 1.3 2D (1080i side by side half), press "3D FORMAT" button and switch to "SBS"

Remote control does not work

When using the remote control, point it directly at the front of the projector.

Check the operating angle of the remote control is within +/- 25° both horizontally and vertically of one of the IR receivers on the projector.

Remove any obstacles between the remote control and the infrared sensor in the front of the projector.

Make sure the remote control batteries are in good condition and are inserted correctly.

Replace batteries if they are exhausted.

3D content cannot be displayed

Turn the projector off and the 3D source off.

Ensure your source is 3D compatible and the 3D output is enabled. Ensure 1080p resolution and 24 Hz options are enabled in the 3D source to enjoy full HD 3D viewing. (See your 3D source user guide).

Turn the projector on first and then turn the 3D source on. Try to play 3D content again.

Ensure your glasses are switched on.

3D content is displayed as two near-identical images

If they are next to each other, press the 3D Format button on the remote control and then choose Side by Side 3D Input Format.

If they are one above the other, press the 3D Format button on the remote control and then choose Top and Bottom 3D Input Format.

HDMI Connection Issues

3D requires a substantial data throughput therefore use a good quality High Speed HDMI cable – with or without Ethernet.

Avoid using excessively long HDMI cables as this contributes to poor connection issues.

Cable lengths over 10 m are not recommended.

Avoid using HDMI cables that have illuminated plugs or active systems that draw on the 5 V supply rail. If the 5 V drops lower than 4.7 V you will not get any picture!

Sparkles of random color on screen. This usually means that the cable doesn't have the bandwidth capabilities to handle the signal.

Try changing the cable or use a shorter cable.

Try using a lower resolution for example if you are using 1080p try switching to 1080i. If this solves the problem the cable is the likely culprit.

When switching inputs on either the projector or the AV Receiver/Processor sometimes the picture is either green or pink. This usually means the incorrect color standard has been selected. This is sent automatically every time you switch HDMI inputs but sometimes the information is not received by the display.

Reselect input, if problem persists disconnect the HDMI cable to either the display or output of the receiver and reconnect – this instigate a hot-plug detect and should resolve the issue.

If the problem persists check with your AV receiver/processor/Blu-ray manufacturer for the latest software updates.

Try a different HDMI cable.

Snowy picture. This means that the HDCP system has not authorized the playback of the material.

Usually re-selecting the input will resolve the problem.

If the problem persists then it is more than likely to be cable related. Try other cables.

Try bypassing other product in the system chain. For example connect the Blu-ray player direct to the projector.

9 Specifications

Projection Type	Digital Light Processing (DLP), 1-chip DLP Type: 0.65 in., 1920 x 1080
Projection Lens	High-quality glass <u>NERO3</u> 1.5 ÷ 2.89 ± 5% Zoom range (ratio): 1.9x <u>NERO3PLUS ST</u> 1.22 ÷ 1.52 ± 5% Zoom range (ratio): 1.25x
Lens shift	Manual Horizontal: ± 10% offset Vertically: ± 60% offset
Zoom and Focus Adjustment	Manual
LED module	3 x P2W
Inputs	<ul style="list-style-type: none"> • 1 x Composite Video (RCA) • 1 x Component - Analog YPrPb/RGBS (4 x RCA) • 1 x RGBHV (D-Sub 15-pin female) • 2 x HDMI 1.4 with 3D, DeepColor and InstaPort
Controls	<ul style="list-style-type: none"> • IR remote control • Standby and Source button on rear panel • RS-232 Serial commands • HDMI Link
Communication Ports	<ul style="list-style-type: none"> • 1 x USB 1.1 (type B) firmware upgrade for onboard memory • 1 x RS232 (male D-Sub 9-pin) for serial connection for control systems
Outputs	<ul style="list-style-type: none"> • 1 x VESA DIN-3 for 3D Sync Out • 1 x 12V 250 mA 3.5mm female jack for system on/off • 1 x 12V 250 mA 3.5mm female jack for 4:3/16:9 aspect ratio
Frequency	<ul style="list-style-type: none"> • Horizontal: 15.375~91.146 kHz • Vertical: 24~85 Hz (120Hz for 2D MEMC is on/3D feature projector)
Video Standards	<ul style="list-style-type: none"> • Composite: NTSC M/J, 3.58 MHz, 4.43 MHz PAL B/D/G/H/I/M/N, 4.43 MHz SECAM B/D/G/K/K1/L, 4.25/4.4 MHz SDTV 480i/p, 576i/p HDTV 720p (50/60Hz), 1080i (50/60Hz), 1080p (50/60Hz)

	<ul style="list-style-type: none"> • Components/RGBHV: 480i @ 60, 576i @ 50, 480p @ 60, 576p @ 50, 1080i @ 50/60, 720p @ 50/60, 1080p 24/50/60, VGA, SVGA, XGA, WXGA, SXGA, SXGA+, UXGA • HDMI: 480i @ 60, 576i @ 50, 480p @ 60, 576p @ 50, 1080i @ 50/60, 720p @ 50/60/120, 1080p @ 24/30/50/60, VGA, SVGA, XGA, WXGA, SXGA, SXGA+, UXGA
3D Formats	See “Supported 3D Video formats” table at page 25
Aspect Ratios	4:3, 16:9, Letterbox (LBX), Native
Power	<ul style="list-style-type: none"> • Requirement: 100~240 V AC $\pm 10\%$ @ 50-60 Hz • Operating Consumption: <ul style="list-style-type: none"> Bright (Normal): <ul style="list-style-type: none"> Typical 190W MAX 240W @ 110VAC Typical 185W MAX 235W @ 220VAC Standard (Film): <ul style="list-style-type: none"> Typical 135W MAX 170W @ 110VAC Typical 130W MAX 165W @ 220VAC • Standby Consumption: < 0.5 W
Size and Weight	<ul style="list-style-type: none"> • Depth: 502 mm (19.76 in. - lens included) • Width: 365 mm (14.4 in.) • Height: 176 mm (6.92 in. - lever feet included) • Weight: 13 kg (28 lb.) approx.
Temperature	<ul style="list-style-type: none"> • Operating: 5° C to 40° C • Storage: -10° C to 60° C
Certifications	<ul style="list-style-type: none"> • Low Voltage Directive: EN 60950-1/UL60950 • EMC Directives: EN 55022, EN 55022 A1 A2, EN61000-3-2, EN61000-3-3

10 Projection Distances

NERO3

<i>Focal Length (f) (mm)</i>	22.56~42.87
<i>F Number</i>	2.3~3.39
<i>Zoom Range (ratio)</i>	1.90
<i>Zoom & Focus Adjustment</i>	Manual
<i>Optical Lens Shift</i>	Horizontal: $\pm 10\%$, Vertical: $\pm 60\%$

The following table explain the distance from screen to lens.

1.78:1 (16:9) Screen

Diagonal Size (in.)	Width (m)	Height (m)	Min (m)	Max (m)	Min (ft.)	Max (ft.)
100	2.21	1.25	3.3	6.4	18.9	20.9
120	2.66	1.49	4	7.7	13.1	25.2
150	3.32	1.87	5	9.6	16.3	31.4
180	3.98	2.24	6	11.5	19.6	27.7
200	4.43	2.49	6.6	12.8	21.9	42
220	4.87	2.74	7.3	14	24	46.2
250	5.53	3.11	8.3	16	27.2	52.4
280	6.20	3.49	9.3	17.9	30.5	58.8
300	6.64	3.74	9.9	19.2	32.7	62.9

NERO3ST

<i>Focal Length (f) (mm)</i>	18.07 ~ 22.59 mm
<i>F Number</i>	2.0~2.32
<i>Zoom Range (ratio)</i>	1.25
<i>Zoom & Focus Adjustment</i>	Manual
<i>Optical Lens Shift</i>	Horizontal: $\pm 10\%$, Vertical: $\pm 60\%$

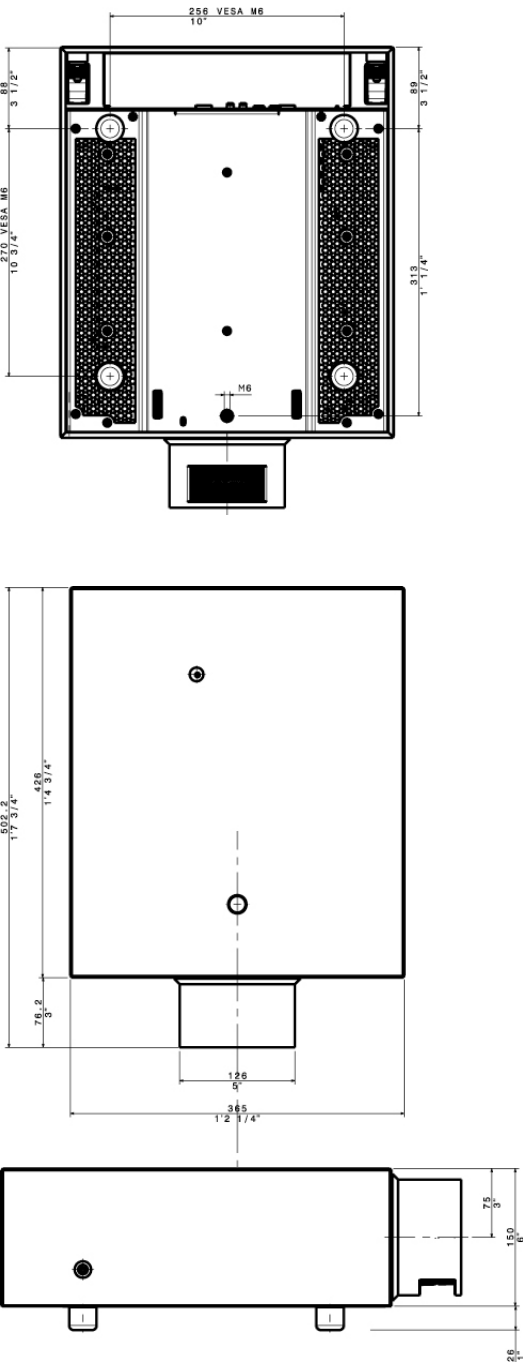
The following table explain the distance from screen to lens.

1.78:1 (16:9) Screen

Diagonal Size (in.)	Width (m)	Height (m)	Min (m)	Max (m)	Min (ft.)	Max (ft.)
100	2.21	1.25	2,7	3,3	8.8	10.8
120	2.66	1.49	3,2	4	10.8	13,1
150	3.32	1.87	4	5	13.1	16.4
180	3.98	2.24	4,8	6	15.7	19.6
200	4.43	2.49	5,4	6,7	17.7	22
220	4.87	2.74	5,9	7,4	19.3	24.3
250	5.53	3.11	6,7	8,4	22	27.6
280	6.20	3.49	7,6	9,4	24.9	30.8
300	6.64	3.74	8,1	10	26.6	32.8

11 Dimensions

NERO3 dimensions in millimeters and (inches).



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