

PART NUMBER

Description: User Manual for the complete LumiNode series.

REVISION: 20190924-REV 1.1.2

Luminex
NETWORK INTELLIGENCE

LumiNode USER MANUAL



LUMINODE PRODUCT FAMILY

LumiNode 1 / LumiNode 2 / LumiNode 4 / LumiNode 12

THANKS FOR CHOOSING LUMINEX

MADE IN BELGIUM



LUMINODE, BUILT FOR TODAY, DESIGNED FOR TOMORROW

TABLE OF CONTENTS

1.	INSTALLATION.....	4
1.1	Mounting the device.....	4
	Rack mount.....	4
	Rack mount - two devices.....	4
	Truss Mount – LumiNode 4.....	5
	Truss Mount – LumiNode 2.....	6
	Wall Mount – LumiNode 2.....	6
1.2	Power up the device.....	7
1.3	Connection.....	8
	Connection to the network.....	8
	Connection to the USB port.....	8
1.4	LED indicators.....	8
1.5	Connection to the web interface.....	8
1.6	Reset.....	8
2.	CONFIGURATION.....	9
2.1	Web Interface Presentation.....	9
	Node page.....	9
	How to reset a process engine.....	10
	How to configure a Process engine.....	10
	How to copy a Process engine.....	11
	DMX / RDM page.....	11
	Toolbox page.....	12
3.	LUMINODE IN DETAIL.....	15
3.1	What is a Process engine?.....	15
	INPUT.....	16
	OUTPUT.....	17
	Mode definition.....	18
	FORWARD.....	18
	LTP MERGE.....	18
	HTP MERGE.....	18
	BACKUP.....	18
	X-FADE.....	19
	SWITCH.....	19
	CUSTOM.....	19
	PATCH OPTION.....	20
	MASTER OPTION.....	20

1. INSTALLATION

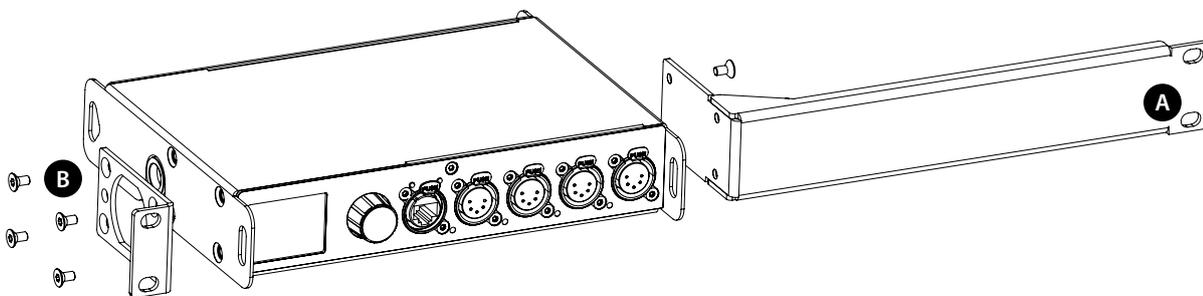
1.1 Mounting the device

LumiNode 4 is a device that can be mounted in a truss as well as in a rack. Please read the following instructions to make sure the device is mounted and secured correctly.

■ RACK MOUNT

In case you want to mount your LumiNode 4 in a standard 19-inch rack, you first have to attach the included mounting ears. Connect the longest ear (A) to right hand side of the device with 4 screws, re-used from the device.

Attach the shorter ear (B) to the left-hand side again with the 4 screws. In this way the input connector nicely lines up with the inputs from possible other devices in the rack.

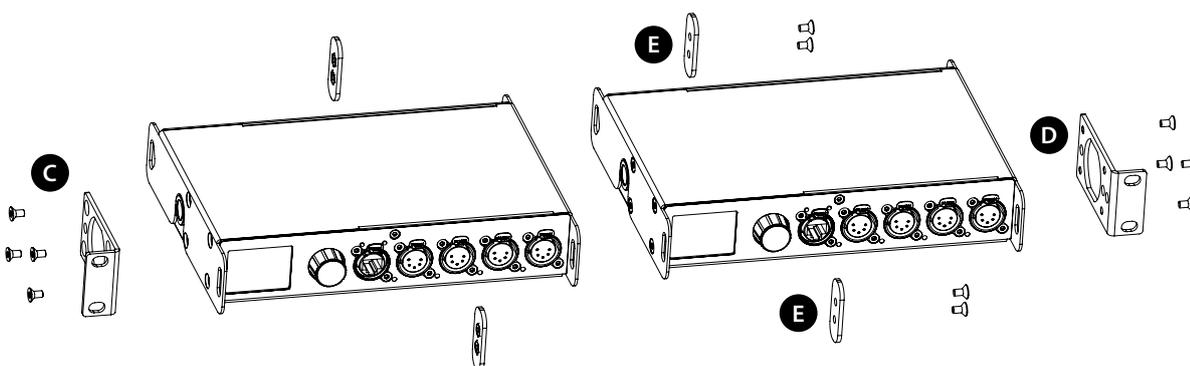


■ RACK MOUNT - TWO DEVICES

In case you want to mount two LumiNode 4 devices in a standard 19-inch rack you can mount the two devices together. In space saving way that the two devices will only consume a single row in your 19-inch rack.

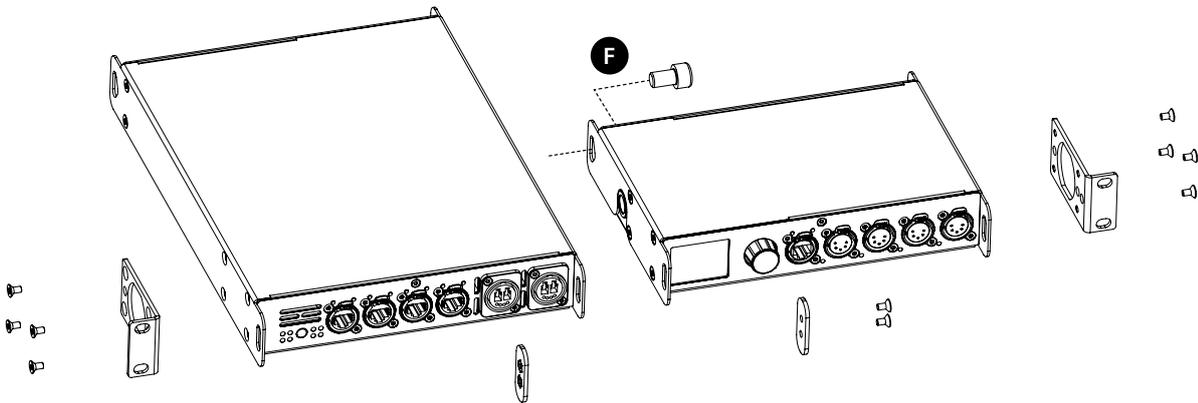
First you attach the shortest mounting ears. Connect the shortest ear (C) to the left-hand side of the first device with 4 screws, re-used from the device. Attach the other shortest ear (D), delivered

with the second device, to the right-hand side again with 4 screws. Use a pair of mounting brackets (E) to connect the two devices in the middle on the frontside. Use a second pair of mounting brackets (E), delivered with the second device, to connect the devices at the rear. Each pair of brackets must be mounted with 2 screws.



To combine a LumiNode 4 device with a Luminex half 19" device, style Gigacore 10, the mounting procedure differs a little. The bolt (F), not included, replaces the rear couplers at the rear side of the device. Use the correct bolt, M10x20, with a screw wire no longer as 20mm. You can order this part from Luminex (Part Number: R 90 01042)

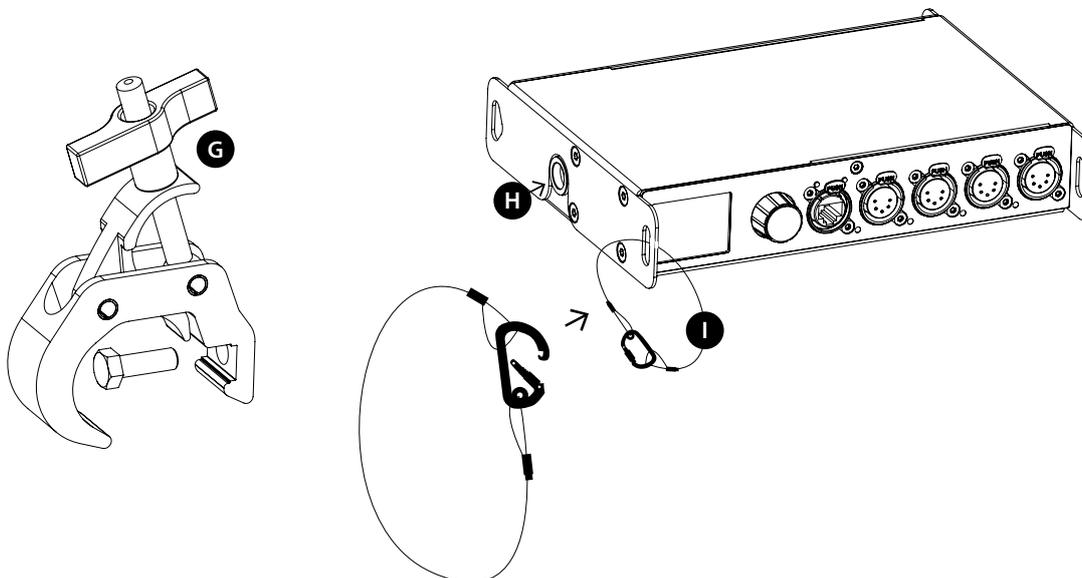
Screw the bolt, through the LumiNode 4 back ear, into the side M10 insert and tighten it. The rest of the mounting procedure remains the same.



■ TRUSS MOUNT – LUMINODE 4

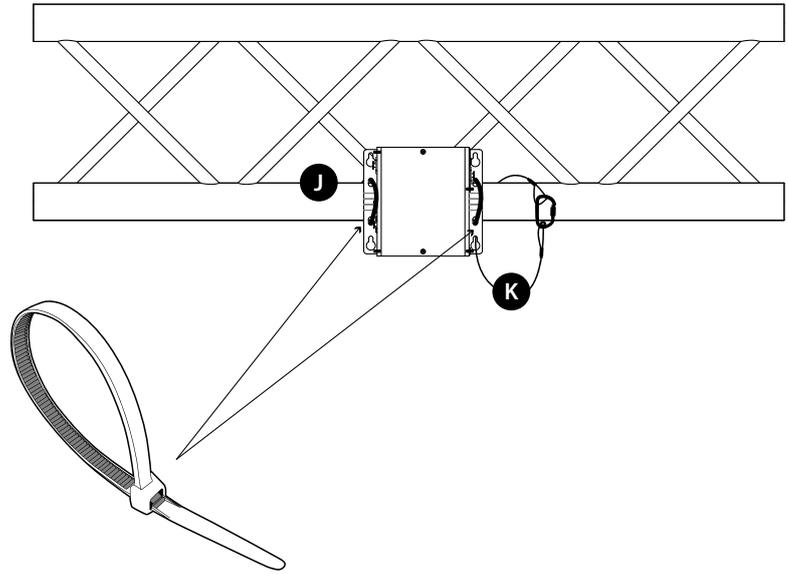
To mount a LumiNode 4 in a truss, you must attach a 10M clamp (G) to the M10 insert (H). After that, you can mount the clamp to

the truss bars. Please also secure the device by attaching a safety line directly to the truss bars as well (I).



TRUSS MOUNT – LUMINODE 2

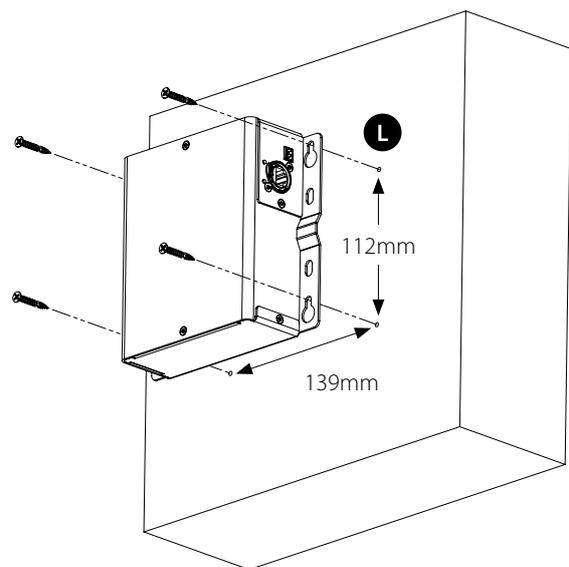
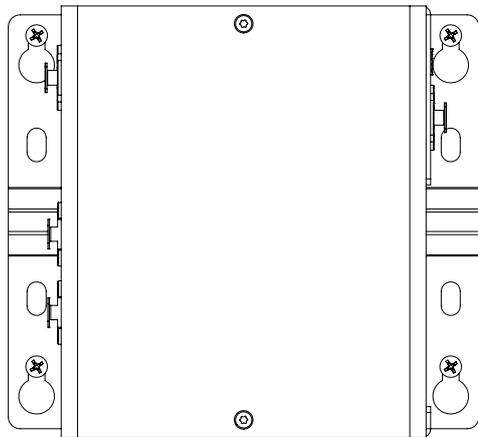
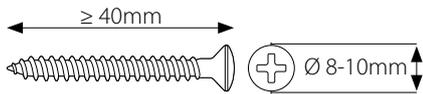
To mount a LumiNode 2 in a truss, use the two plastic tie wraps that are included. Bring on each side a tie wrap through holes of the device, around the truss bar and tighten it (J). Please also secure the device by attaching a safety line directly to the truss bars as well (K).



WALL MOUNT – LUMINODE 2

The LumiNode 2 can be mounted to a concrete or wood wall by using applicable screws and anchors. Make sure that the screw head diameter is between 8 – 10mm and the screw length is at least 40mm in order to make a strong wall connection.

Drill 4 holes, at the correct distance in both directions as indicated in the picture below. Mount the device in such way that the Ethernet and DMX ports are facing sideways, and the chassis side is perpendicular to the ground.



1.2 Power up the device

Depending on the model there are different ways to power your device:

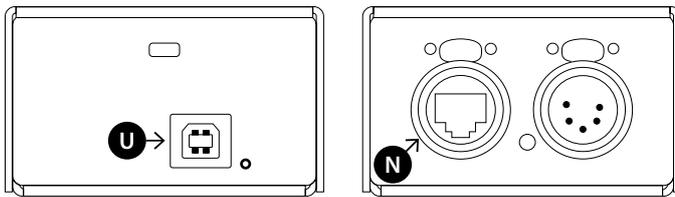
- LumiNode1: Power-up the device with a USB cable (**U**) or with PoE (**N**). The device will automatically switch on. To shut it down after use, just un-plug the USB cable or the network cable again.
- LumiNode2: Power-up the device with a network cable with PoE (**N**). The device will automatically switch on. To shut it down after use, just un-plug the network cable again.
- LumiNode4 and 12: Power-up the device with a power cable fitted with a Neutrik PowerCON TRUE1 connector (**M**) (please contact your local dealer if you don't have a suitable power cable at hand). The device will automatically switch on. To shut it down after use, just un-plug the power cable again.

Alternatively, the LumiNode series are 802.3af compliant (PoE), so that each LumiNode will act as a PD (Powered Device), and can be powered by any compliant PSE (Power Sourcing Equipment) such as Ethernet switch, midspan and PoE injector.

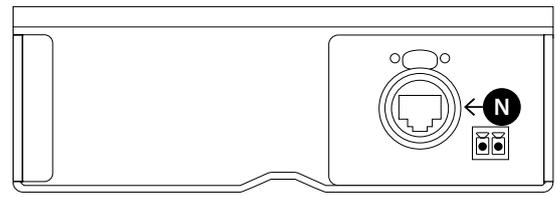
For LumiNode 4 and 12, if both 230V and PoE are used the 230V supply will be prioritized but the PoE will seamlessly take over the running if the 230V fails.

The LumiNode12 offers the option to daisy chain up to 30 devices via the PowerCON TRUE1 outlet on the rear of the unit.

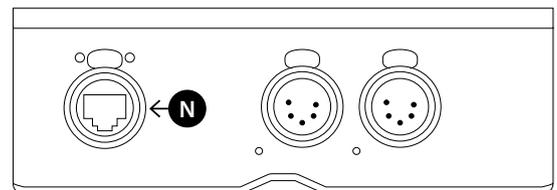
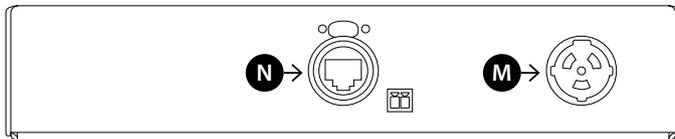
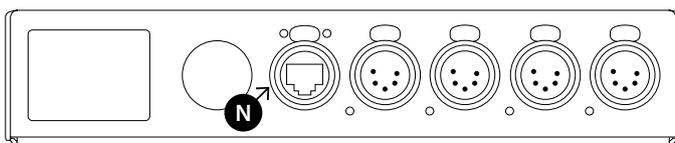
LUMINODE 1



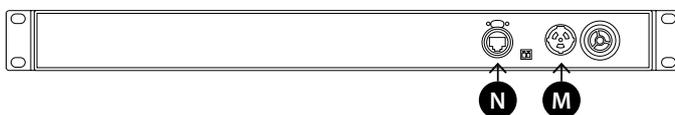
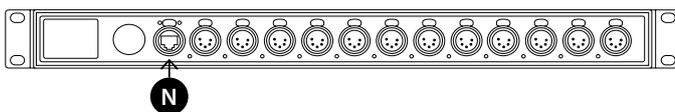
LUMINODE 2



LUMINODE 4



LUMINODE 12



1.3 Connection

■ CONNECTION TO THE NETWORK

In order to get the Luminode online in your system, simply connect either Ethernet 1 or Ethernet 2 port to a computer, or to a port of an Ethernet switch.

Only Ethernet 2 port on the rear of the unit can be used to power the unit through PoE. Check the port labelling for a better identification.

■ CONNECTION TO THE USB PORT

The LumiNode 1 can be powered through its USB port. Simply connect the LumiNode to the USB port of your computer.

The red LED next to the LumiNode's USB port will turn on once the unit is powered.

Additionally, the LumiNode will appear as a new network interface on your computer. No driver needed, the LumiNode supports Windows, Mac OSX and Linux OSes. Once the network adaptor has been added please configure a static IP address in the range you are planning to use for your application in the settings of your operating system.

1.4 LED indicators

There are various LEDs on the Luminode. Here is a list of the LEDs, the possible colors and the meaning of each color

DMX PORT	STATUS	MEANING
DMX only	Cyan	Blinking : DMX activity
DMX + RDM	Blue	Blinking : DMX activity
NETWORK PORT		
Left LED	Green	Gigabit connection Blinking: Ethernet Traffic
	Orange	100Mbit connection
Right LED (future use)	Blue	Default color
USB Port		
USB (node1 only)	Red	Powered from USB or PoE

1.5 Connection to the web interface

- Default Luminode IP address is displayed at the rear of the unit, or at the bottom. Set your computer with a compliant IP address (do not use the same IP address!)
- Connect your computer to the LumiNode with a network cable
- Launch your favorite web browser
- Type the IP address of the node in the address field. Press enter.

1.6 Reset

When the device is powered up, by default it shows the status screen with the status of the first 4 ports. In order to reset the device please follow the following steps:

- Press the jog wheel once to enter the 'Main menu' (5th option from the top)
- Scroll down till you see the 'Toolbox'
- Press the jog wheel once to enter the toolbox
- Scroll down until you see Reset
- Press the jog wheel once to enter the reset menu
- A pop-up window opens giving you the option to 'Preserve IP settings' and 'Preserve user profiles'
- Choose which option you want by using the jog wheel to scroll between the two options and press the jog wheel to confirm
- At the bottom of the pop-up window you have the option to 'Reset' or 'Cancel'
- If you choose 'Cancel' you get a confirmation message that the reset has been cancelled.
- If you choose 'Reset' you get a new screen asking to confirm the reset command. Once 'Yes' is selected the node will reset .

2. CONFIGURATION

2.1 Web Interface Presentation

Launch your favorite web browser and type the IP address of your LumiNode. Press enter to validate.

■ NODE PAGE



(A) Image of your LumiNode: Depending on the model you are using; the image might differ from the one displayed above. This product image shows the configuration of each DMX port. The center icon within each DMX port represents an input or an output. On the top of each port, you can see the mode of the Process engine linked to that port.

(B) Navigation menu

(C) Input: According to the mode set on the Process engine, the input block will display all relevant information, such as the type of incoming protocol, the universe number, the source IP address, or the DMX input port.

(D) Process engine: By default, the Luminode comes with Forward mode activated on as many Process engines as DMX port(s). The block displays the mode currently set on the Process engine; you can change the name. On the left and on the right-hand side of the Process engine, are respectively the patch and master /limiter icons. The color of the icon will change if any parameters of these menus are modified.

(E) Output: The output block will display all relevant information, such as the type of outgoing protocol, the universe number, the destination IP address, or the DMX output port.

(F) Increment / Decrement: Use these shortcuts to quickly increase or decrease the value of a universe. Select the Process engine first, after which the increment /decrement tool becomes available.

(G) Reset tool and padlock: Use this tool to reset one or several Process engines. First select the Process engine by clicking on the top left-hand side corner of the input block. The padlock allows you to lock the Luminode configuration page to prevent unsolicited action on the web page. This is an ideal tool for show time.

(H) Theme and language: Select here if you want to use the dark theme or light theme. Interface supported language is English only for now.

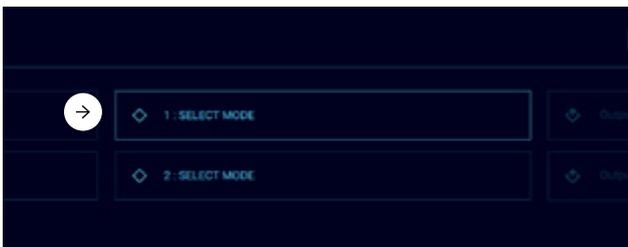
How to reset a process engine

To reset a process engine, hover your mouse over the left-hand side input block, and click on the tick box.

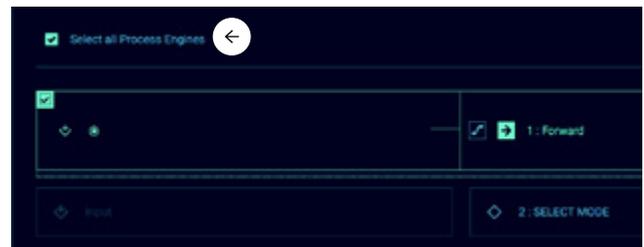
Then, click on the reset icon on the upper right-hand side of the interface.



A blank Process Engine appears as follow:



If you want to reset all the process engines at once navigate to the top left above the first Process engine and select the tick box "Select all Process Engines"

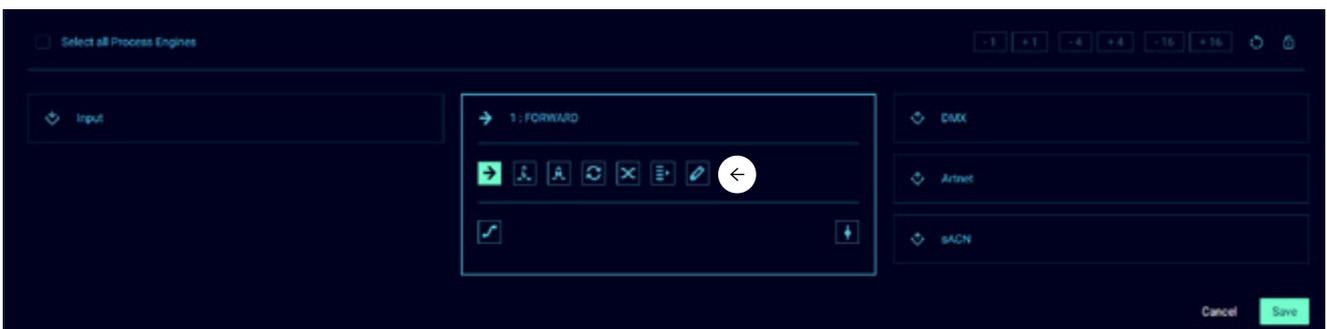


How to configure a Process engine

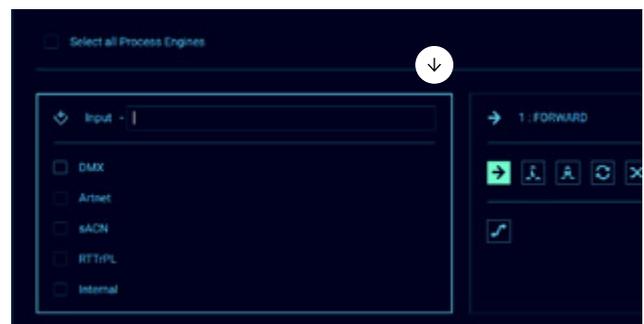
To configure a Process engine, first click on the "SELECT MODE" label, the Process engine panel appears:

Here, simply click on the icon to select the mode you wish to use. Modes are described in chapter 3 of this manual.

At any time, you can click on the Patch button , or the Master / Limit button  to open the relevant configuration panel.



Next, click on the left-hand side block, to select your input; According to the selected mode, the number of inputs may vary. A process engine supports up to four inputs. You can give your input a name and select the type of source.



Next, select your output by clicking on the output block, located on the right-hand side. Here, you can choose between DMX, Art-Net or sACN, to send data coming from the process engine. The three types of output can be used at the same time, providing you with great flexibility.

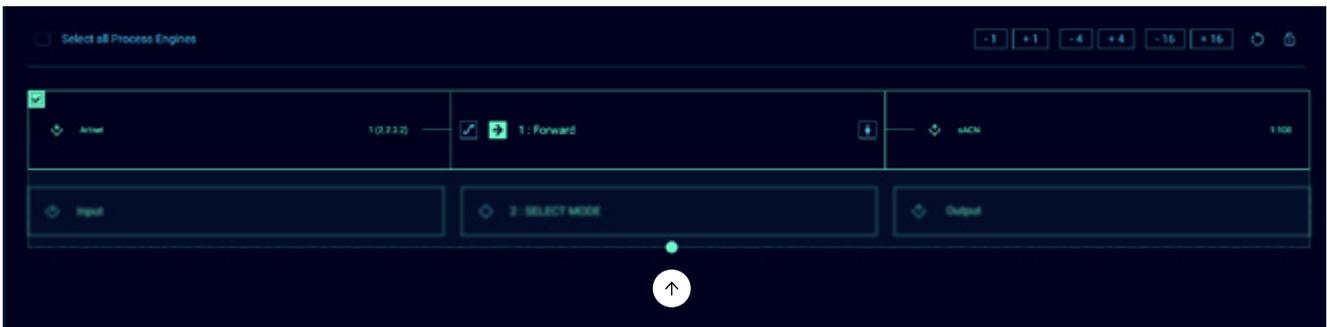
Once selected, click on the Save button, to store the parameters of your process engine. Your engine is ready to go!



How to quickly copy a process engine

Once you've created your first process engine, select it by clicking on the tick box on the upper left-hand side corner. Now a handle appears at the bottom of the process engine. Drag the handle to the bottom, to select other process engines.

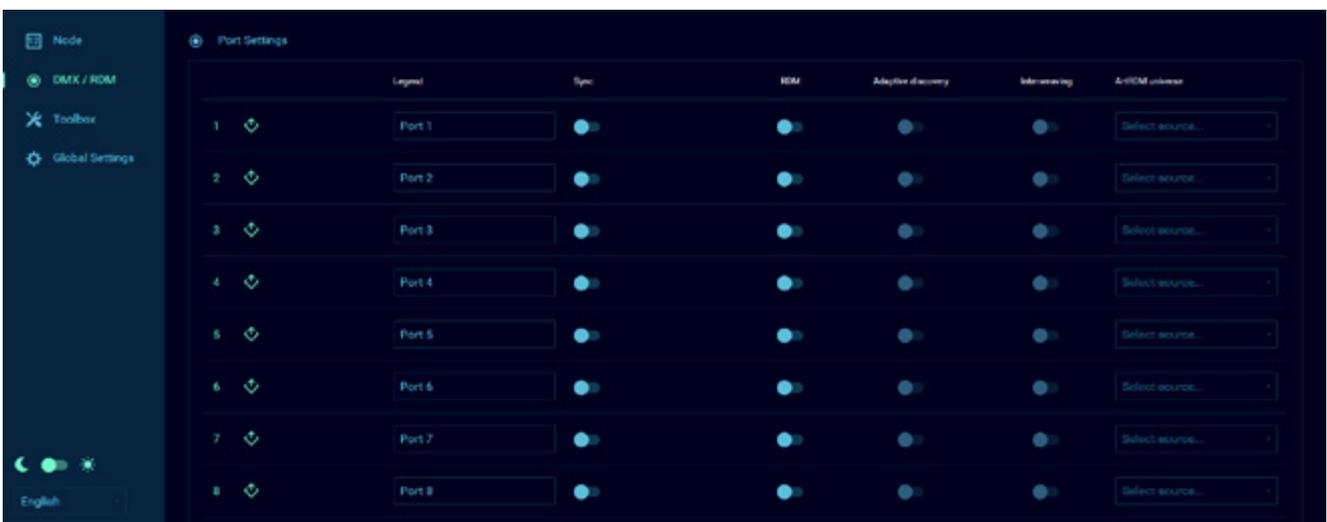
To select more, release the mouse, select the last process engine, and repeat the procedure. The LumiNode will automatically increase the universe number, and the DMX ports, for each following process engine. This allows you to create a complete configuration in a snap!



DMX / RDM PAGE

The DMX/RDM page offers you to add a legend per port, enable Sync mode if your controller supports ArtNet sync packets and to enable RDM, choose adaptive discovery and or interweaving and

to set the ArtRDM universe for future integration with RDMnet. Scroll down and click on the "Save" button to save your settings.



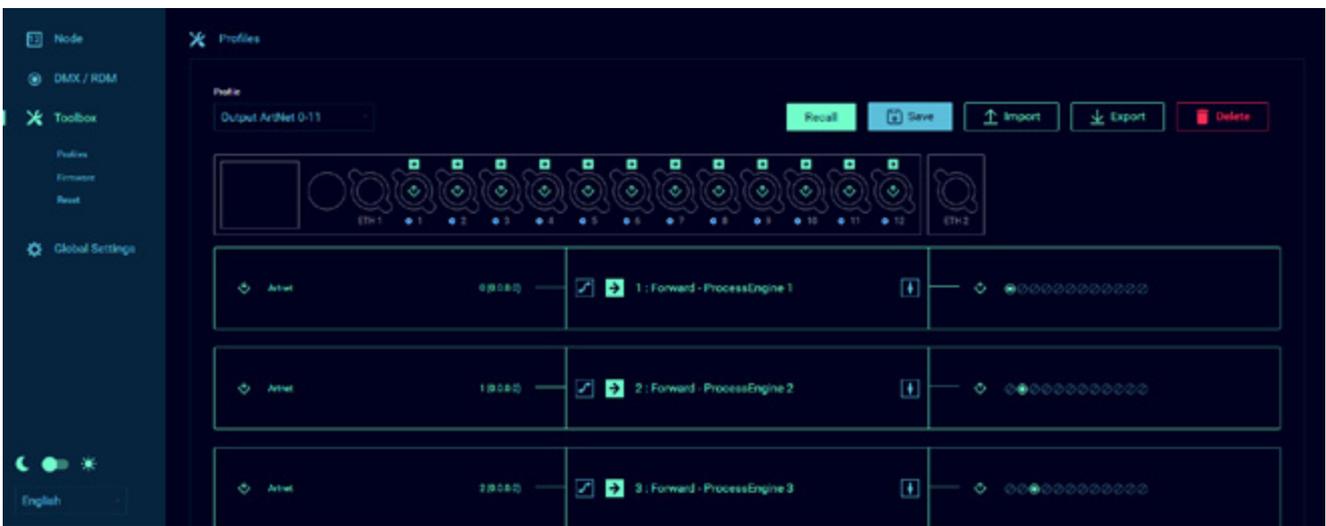
TOOLBOX PAGE

The toolbox page is divided in three sub menus:

Profile manager

Here, you can recall, save, import, export or delete a profile; Select the profile with the drop-down menu located on left hand-side. The Luminode comes with default profiles that can be used or modified, for a fast setup time. Up to 40 profiles can be stored in a unit.

Once a profile is selected, you can preview the configuration below. IP settings included in the profile are displayed at the bottom of the profile.



Firmware

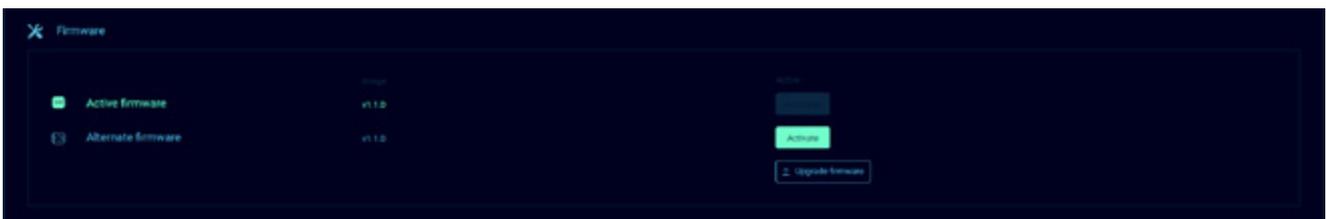
Here, you can see two types of firmware:

Active firmware is the one currently running on the unit. **Alternate firmware** is the previously installed firmware. If you'd like to downgrade the unit to the previously installed firmware, click on the "Activate" button. The unit will reboot with this firmware.

There is only ONE firmware version for the entire range. This can be installed on all different models in the range. You can upgrade the LumiNode with our latest firmware.

To upgrade the unit, please apply the following procedure:

- Download the latest firmware in the support section of our web site.
- Extract the downloaded archive, and have a look at the release notes included
- Click on the firmware upgrade button
- Select the file you've extracted
- The LumiNode will start the firmware upgrade. The unit will reboot after the upgrade is completed.

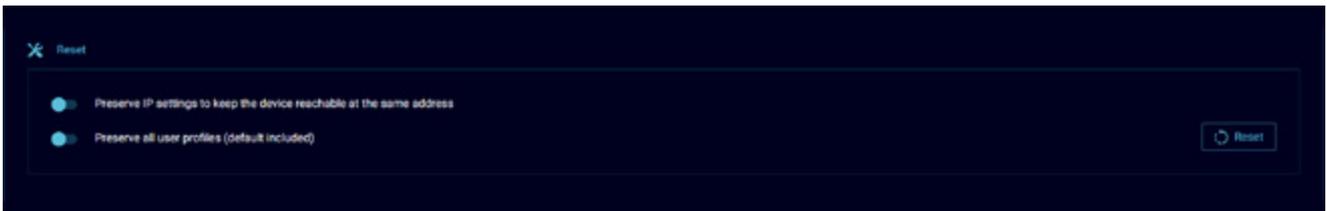


Reset

In this panel, you can reset the Luminode, with two separate options:

- Preserve IP address
- Preserve profiles

Click on the “Reset” button to perform the selected reset. Performing a reset with these two options will bring the LumiNode to its factory settings.

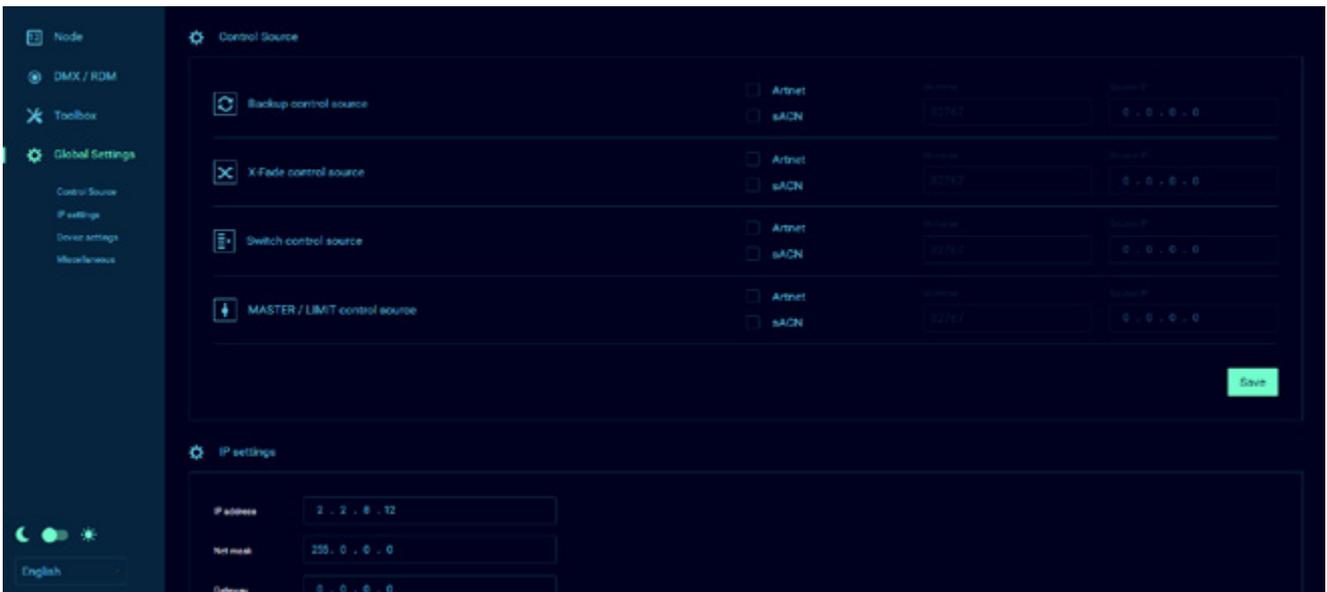


GLOBAL SETTINGS

The Global Setting page is divided in three sub menus.

Control source

Here, you can set the type of protocol, the universe number, and the controller IP address for each control type. Press the “Save” button to apply your settings.



IP settings

In this menu, you can set the IP address, subnet mask and default gateway for your LumiNode.

The Broadcast address displayed below is the default destination IP address the LumiNode will be using when sending ArtNet to the network. Press the “Save” button to apply your settings



Device Settings

In this menu, you can set the Short name and Long name of the LumiNode. The short name is currently used by any ArtNet compli-

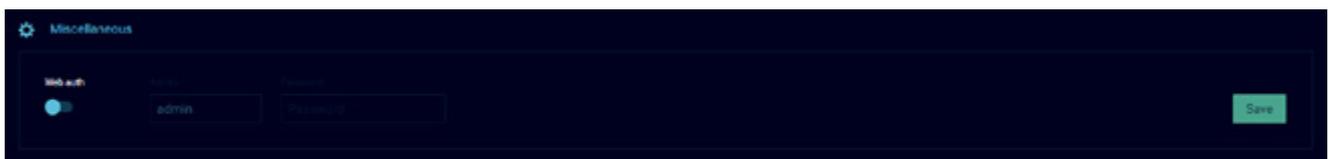
ant controller to identify a device on the network. Press the “Save” button to apply your settings.



Miscellaneous

For security reason, a password can be enabled on the LumiNode web interface. Click on the left-hand side switch to enable web

authentication, and type in your password. Press the “Save” button to apply your settings.



3. LUMINODE IN DETAIL

The LumiNode series is a new range of network converter, inheriting more than a decade of experience from the Luminex Ethernet-DMX converter design and manufacturing. In the past, most of the people were designing their system according to the number of universes and DMX ports they would need on their lighting control system.

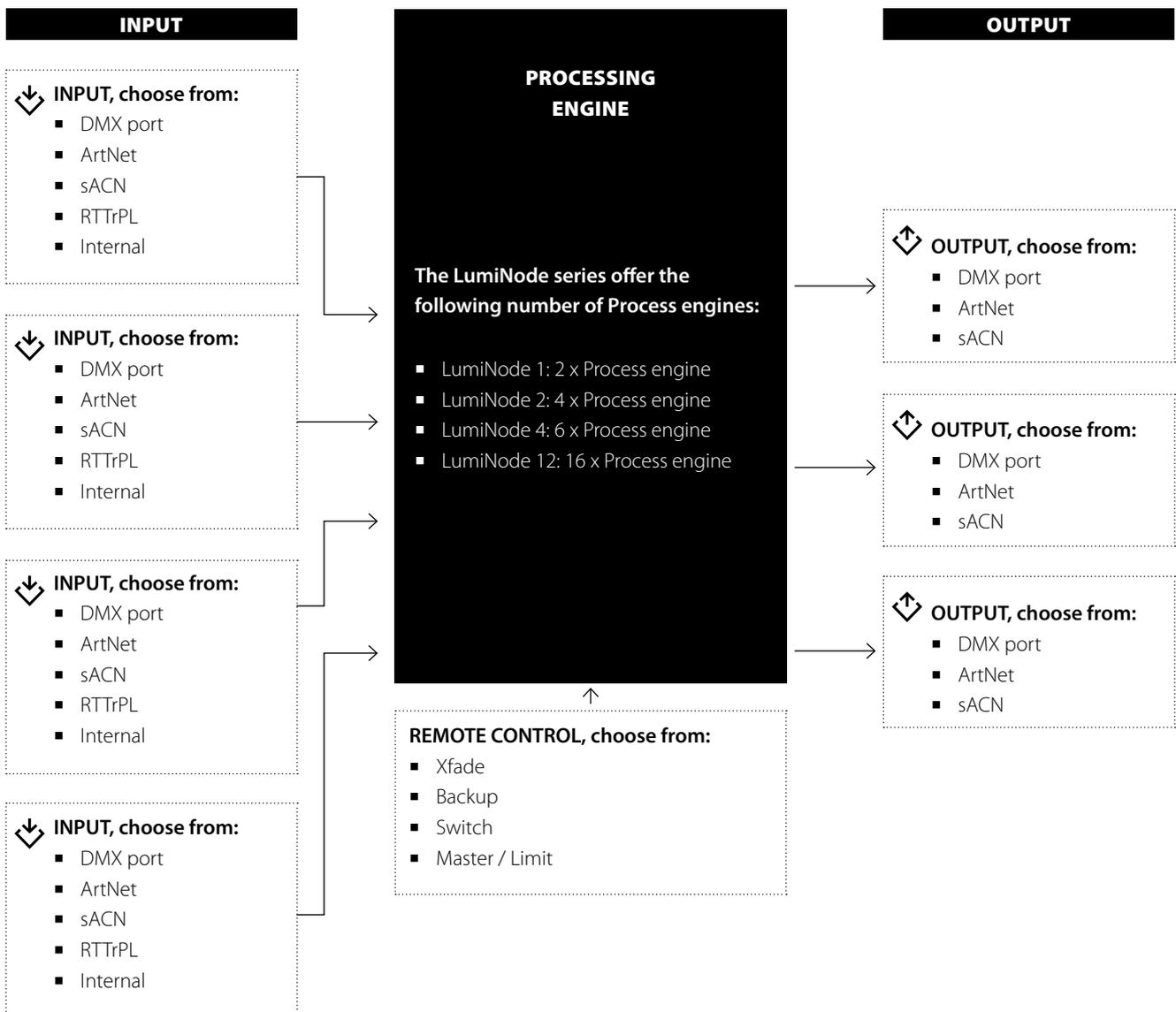
But today, with the ever-increasing number of lighting-controlled devices fitted with an Ethernet port, there is a need for more processing power and data handling flexibility. This is where the LumiNode series steps in.

Instead of assigning universes to a port, the user can now select any incoming data, handle it the way they need, and send it back to the network, or to a DMX port. All the data handling will be powered by process engines.

3.1 What is a Process engine?

A Process engine can be seen as an entity within the LumiNode firmware, accepting up to four sources, and who is able to send it up to three different destinations.

Additionally, remote interaction and control can be applied to the process engine, via specific control channels.

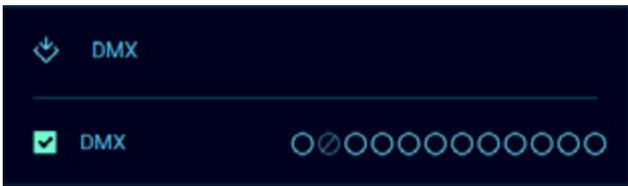


■ INPUT

A Process engine supports the following inputs:

DMX:

A DMX source, such+ as a lighting control desk, can be connected to any of the DMX port(s) of the LumiNode. You'll need to use a male to male adapter to connect the console to the DMX port of the Luminode. Simply tick on the port you wish to use as an input port, to enable the DMX input. A greyed-out port with a bar in the middle means this port is already used.



ArtNet:

Any ArtNet controller can be used as a source for the process engine. The LumiNode supports all ArtNet revisions, including ArtNet IV. Simply tick the box to select ArtNet as an input protocol. Here you can add the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bound this input to the first source using this universe number. You can add a text to your ArtNet source as well, for a better identification.



sACN:

Any sACN controller can be used as a source for the process engine. Simply tick the box to select sACN as an input protocol. You can add here the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bound this input to the first source using this universe number. You can add a text to your sACN source as well, for a better identification.



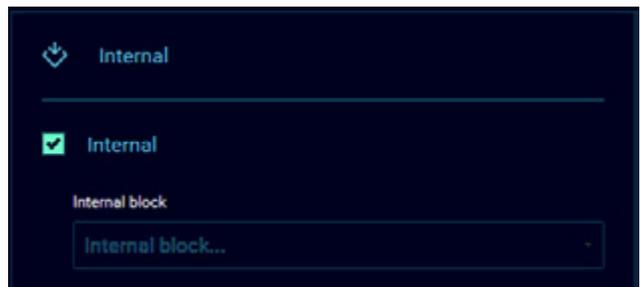
RTTrPL:

Luminode process engine supports Real Time Tracking Protocol for Light, by Cast Software. As an example, the Luminode can be used to transition between a lighting console and a BlackTraX tracking system., seamlessly. Simply tick the box to select RTTrPL as an input protocol. You can add here the universe number you wish to use, and you can specify the IP address of the source as well. If you don't know the IP address of the source, simply leave the field with 0.0.0.0 IP address. The LumiNode process engine will bound this input to the first source using this universe number. You can add a text to your RTTrPL source as well, for a better identification.



Internal:

This input option allows you to use the output of another process engine as input. This allows you to make even more complex set-ups. Use the dropdown menu to select which process engine you want to use as input.

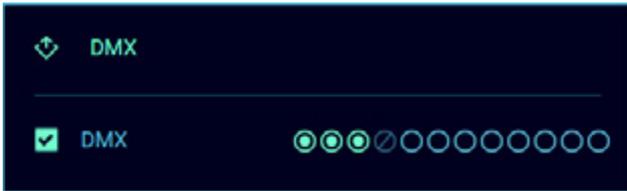


■ OUTPUT

A Process engine offers the following outputs:

DMX:

One or several DMX ports can be selected to output the data transferred by the process engine. A greyed-out port with a bar in the middle, means this port is already used.



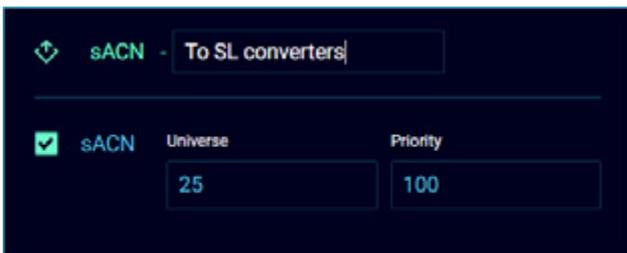
ArtNet:

All data handled by the process engine can be sent back to the network as a new ArtNet universe. You can add here the universe number you wish to use, and you can specify the IP address of the destination, by ticking the Unicast box. By default, the LumiNode will transmit this ArtNet universe to the broadcast address of the IP range the unit is part of. You can add a text to your ArtNet destination as well, for a better identification.



sACN:

All data handled by the process engine can be sent back to the network as a new sACN universe. You can add here the universe number you wish to use, and you can specify the priority for this sACN universe. You can add a text to your sACN destination as well, for a better identification.



MODE DEFINITION

The LumiNode series offer 7 different modes for each process engine:

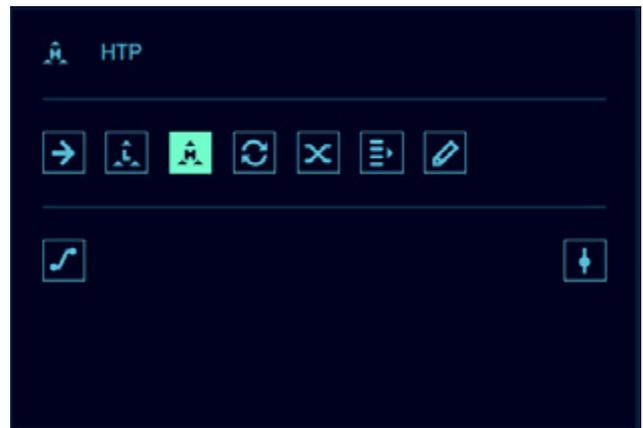
FORWARD:

In forward mode one input source gets send to up to 3 outputs. You can simply output to a physical port on the converter or forward to another ArtNet or sACN universe. Patch and Master/Limit options are available for this mode.



HTP MERGE:

Highest Takes Precedence merging policy is commonly used to merge dimmer channels. Up to 4 sources (ArtNet, sACN, DMX, RTTrPL or Internal) can be merged. Patch and Master/Limit options are available for this mode.



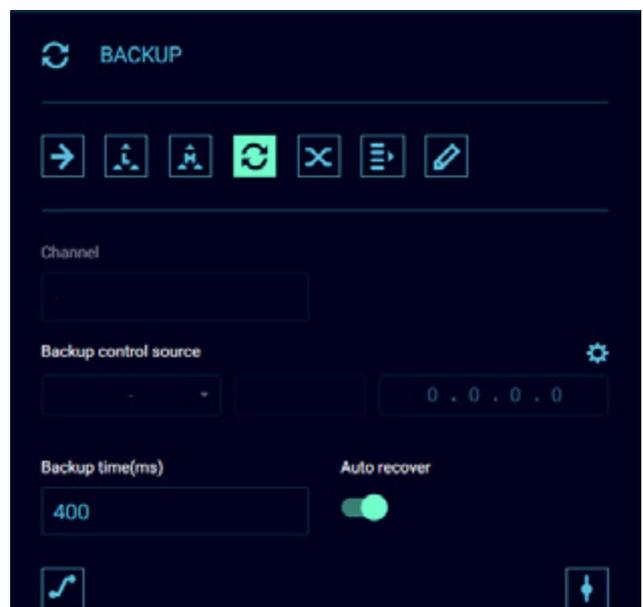
LTP MERGE:

Latest Takes Precedence merging policy is commonly used to merge fixture channels. Up to 4 sources (ArtNet, sACN, DMX, RTTrPL or Internal) can be merged. Patch and Master/Limit options are available for this mode.



BACKUP:

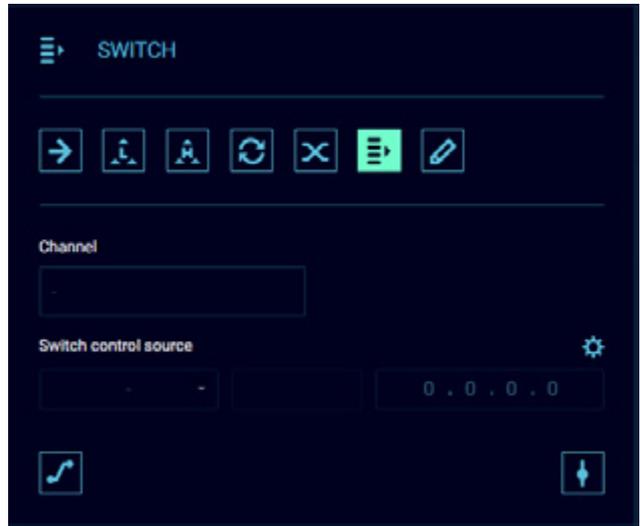
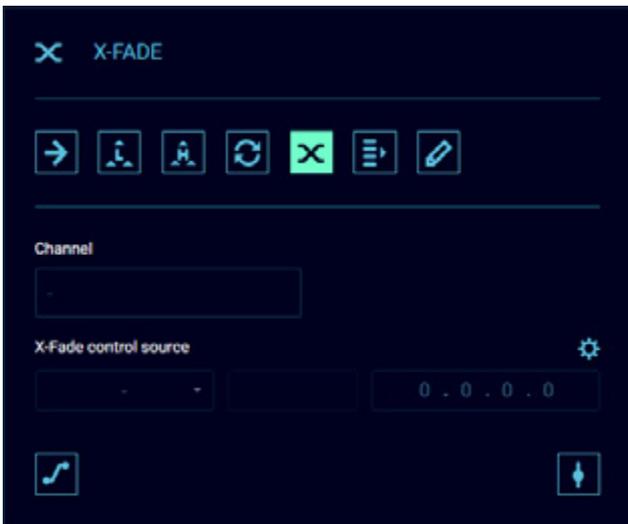
In Backup mode, two inputs will be used which can be DMX, ArtNet, sACN, RTTrPL or Internal where the first input has precedence over the second input. The output can be DMX, ArtNet, sACN. When input 1 fails the node will switch to input 2, automatically. Auto-recover is enabled by default. A control channel can be used to remotely switch back to input 1. Patch and Master/Limit options are available for this mode.



X-FADE:

This mode offers to you to cross fade between two sources. Ideal in a situation where you need to cross fade between a lighting desk and a media server, the control channel allows you to keep full control on the speed and smoothness of the transition.

From the X-Fade panel, you can define the control channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters. When the control channel is at zero, source one is in full control, when the control channel is at full, source two is in full control. Patch and Master/Limit options are available for this mode.



CUSTOM:

This mode is ideal for a complex setup, or when per channel control is needed. Custom offers you to choose what policy to apply for each channel of each universe, and to create a complete custom soft patch. By more, the merging policy can be remotely triggered by DMX. Up to four DMX, ArtNet, sACN, RTTrPL or Internal sources can be merged in this policy.

The custom mode offers you to combine any merging policy, but different modes as well (LTP, HTP, Backup, XFade, Switch).

To get access to the custom patch panel, simply click on the gear wheel icon.

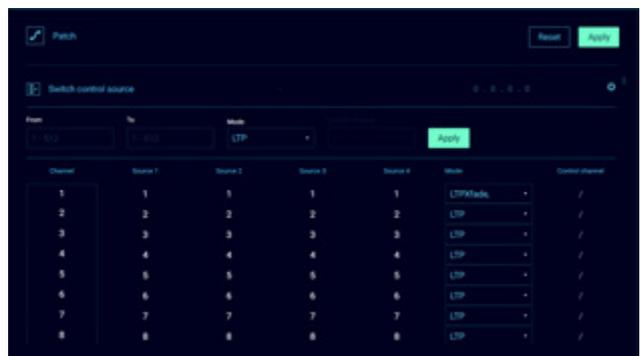
SWITCH:

The switch functionality provides you with an easy to use tool to remotely select within up to four sources, which sources to control your rig. By sending different values for the switch channel, you'll be able to select the relevant source. The switching between sources do not include any crossfade.

From the switch panel, you can define the switching channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters. Patch and Master/Limit options are available for this mode.

Control channel mapping:

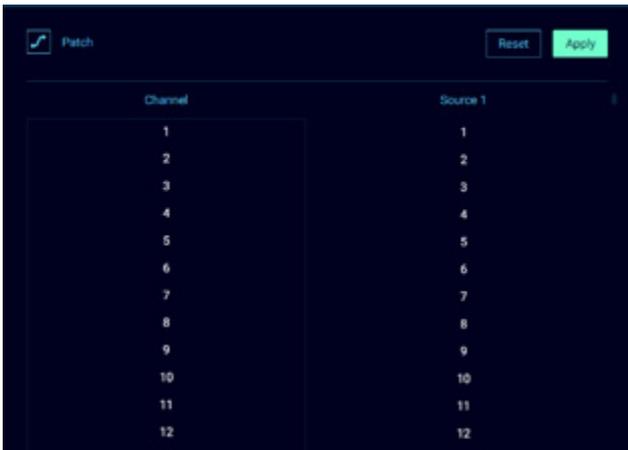
- 000 - 007 Do Nothing (current active source stays active)
- 008 - 015 Source 1
- 016 - 023 Source 2
- 024 - 031 Source 3
- 032 - 039 Source 4
- 040 - 247 Future use
- 248 - 255 Do Nothing (current active source stays active)



From this panel, you can define the complete patch per source, with any merging policy, or remote control. Use the "From To" tool to quickly apply a merging policy or mode to a range of channel. Once the merging policies have been applied to the DMX channels, you'll be able to assign a remote-control channel. Use the "From To" tool to quickly apply a control channel to a range of DMX channel. Press the "Apply" button to save your settings.

Patch option

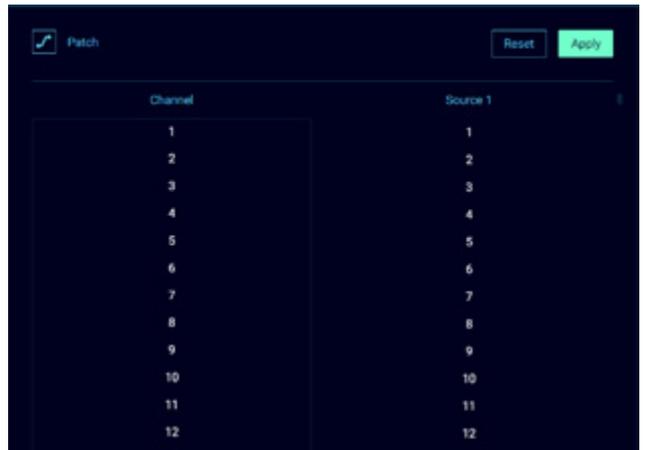
Depending on the selected mode you applied to your process engine, you'll be able to modify the patch for your sources. Once in the process engine panel, click on the patch icon to open the patch panel.



From there, you can apply the patch you wish per channel. Press the "Apply" button to save your settings.

Master option

Depending on the selected mode you applied to your process engine, you'll be able to assign a master or limiter channel to your output. Once in the process engine panel, click on the Master / Limit icon to open the patch panel.



First select the mode you wish to use, by clicking on the Master Limit switch, on the upper left hand-side of the panel. You can define the control channel, the protocol and the universe number, as the IP address of the control source. Click on the gear wheel icon to change these parameters. From there, you can apply any master /limiter control channel to your output channels. Press the "Apply" button to save your settings.

Luminex
NETWORK INTELLIGENCE

YOUR NETWORK SOLUTION FOR
AUDIO, VIDEO AND LIGHTING

EFFECTIVE, RELIABLE, ACCESSIBLE



Luminex

Slamstraat 13 | 3600 Genk | Belgium | T +32 11 812 189 | info@luminex.be | www.luminex.world