



**Commissioning Guide** 

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# Introduction

# 1.1 General

Luminous Textile is an easy to commission system that with low effort can be integrated with various control and building management systems. This allows for Luminous Textile to become integrated with (available) control systems, reactive to simple or advanced sensors or even interactive to cameras. This document describes the various alternatives and protocols Luminous Textile supports.

It is expected that the reader of this document is acquainted with system integration, lighting control systems and has knowledge about the installation and use of Luminous Textile and it the Luminous Textile Content Manager software.

Note that advanced skills and experience is required to create certain integrated applications. These installations are mostly performed by a partner or installer with programming skills, to build an application to the requirement of the customer. These tasks are commonly done by IT or Audio-Video companies. Signify has partners that can support locally in case more help is required.

# 1.2 Application examples

There is a wide variety of integration options possible to increase the value of the Luminous Textile. Below are some examples how system integration might be of use for reactive or interactive installations.

# 1.2.1 Change content on entry

Imagine walking into a room and the surfaces comes to life! Use a simple ceiling mount sensor to detect presence from a control system like Dynalite, it can easily be linked to Luminous Textile.

# 1.2.2 Integrate in a demonstration setup

Have a luminous textile panel in the showroom? Ensure all demonstration to customers goes perfectly synchronized, every time again. The luminous textile can easily be linked with Crestron / AMX / Pharos and other control systems which are typically used in this type of environment.

# 1.2.3 Different layers of content

Do you like your content, but would you like to use multiple movies at the same time? Or adjust colors in real time, set transparency, zoom and much, much more? Media servers like Pandoras box from Coolux, Green Hippo systems or MA lighting controls can natively control our Luminous Textile panels.

# 1.2.4 Play with cameras

Would you like to link a camera to the panels? Not to 'just' show video, but maybe for some face recognition? Or track where at the panel a person is watching? There are standard solutions available who offer this type of features, such as Pandora's box media server from Coolux.

# 1.2.5 Play with depths and resolutions

The Luminous Textile is a great solution to provide ambient atmosphere. But what if you sometimes need to provide information too? With the use of media servers like mentioned above, you can seamlessly link high resolution projection with our low-resolution ambient lighting, all from a single controller.

# 1.2.6 Integration with functional lighting and building management systems

You have a Dynalite or other system installed to control your functional lighting? Why not ensure that the luminous textile gets ON and OFF at the right times? Ensure to save energy by an unnecessary switched ON Luminous Textile. Video Jockey with Luminous Textile.

For the perfect rhythmic mix of music and content and have real time control to alter to the wishes of the crowd, software programs such as Madrix or other media servers can be used to directly from the controller connect to the Luminous Textile. Great way to create a good party atmosphere.

# 1.2.7 Use Luminous Textile to a display parts of a computer screen

Got some great graphic program on the computer to display in real time on the panels? There are of the shelve systems available to link the video signal to Luminous Textiles. Composite, VGA or DVI? No problem just convert it to the Luminous Textile with the Color Kinetics Video System Manager, Artistic Licence DVNET or media converter.

# 1.2.8 Custom created interactivity, straight from your computer

For those who are comfortable with software programming, a streaming protocol that Luminous Textiles support can easily be integrated. Interactive solutions, ever changing content, content created by users worldwide, the only limit is your imagination...

# 2 Connect a Luminous Textile

In this guide it is assumed that the Luminous Textile panels are correctly mounted and that both the network and the electrical power supply are connected. See the *Installation Instructions Luminous Textile*.

Each Luminous Textile panel features one or two driver boxes. For the larger versions >4.32 m (>14.2 ft) a second driver box is mounted on the same panel. This allows for playback of different types of content, arranged as one or more playlists per album. Each driver box requires a mains power and network connection.

In a Luminous Textile installation that consists of multiple Luminous Textiles, only one driver box is allowed as master driver box. The master takes care that all content is played on all panels with the correct timing. This master controls all the slave Luminous Textile driver boxes in this network. In a single network only one master is possible. All other panels must be act as slave.

For a Luminous Textile installation with more than one driver box, only the web interface of the master must be accessed to control the complete Luminous Textile installation.

To give easy control to users, a user-friendly built-in web interface is integrated to access the Luminous Textile installation via a standard web browser. Alternatively, you can use the DiscoverMe app to do the basic control.

# 2.1 Physical connection

All Luminous Textiles are connected via the Ethernet port of the Luminous Textiles to the commissioning computer and optional third-party devices.

Even though the physical interface on the device (RJ45, 100Base-T, Auto-MDIX capability) might allow for direct interfacing, it is advised to always connect the Luminous Textiles to a router with DHCP functionality. Additionally, it is advised to have at least one spare port on the router available to connect a PC for commissioning, software programming and possible troubleshooting purposes.

Note that a Wi-Fi connection between a third-party device and a Luminous Textile network (via a Wi-Fi enabled router or access point) is possible but might affect the reliability of the connection.

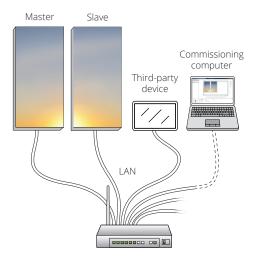


Figure 1 Default setup with Luminous Textiles.

# 2.2 LAN / subnet settings

It is strongly advised to test your Luminous Textiles by connecting all panels, router, and computer on the same network, within the same subnet.

Once this is works correctly, IT departments can help you to route the required signal through another local network.

Luminous Textiles are shipped with DHCP enabled. On the webserver of the Luminous Textile (administrator settings page), the Luminous Textile can be given a fixed IP address/subnet mask / gateway if required. Ensure to save the settings.

Set the IP addresses of a Luminous Textile in the **Settings**, **Control**, **Network** settings section.

# B Note

- Many control systems require to work with a known IP address of the Luminous Textile. It is therefore advised to use a fixed IP address (or DHCP reservation) when an integrated solution is created.
- After the physical connection, from one DHCP server to another, is changed, a reboot of the Luminous Textile is required.

# 2.3 Configure the Luminous Textile panel network

Luminous Textile panels are connected to a Local Area Network. For upload of the created playlists in the Content Manager to one of the panels, the PC must have access to the network to which the Luminous Textile panels is connected. The router in the network assigns a network address to the panel (DHCP). Use this IP address to gain access to the control page of the panel.

Figure 2, 3 and 4 show two different configurations in which Luminous Textile panels are connected to a network via a separate router. In this situation, the IP address of each panel usually starts with 192.168.x.x or 10.x.x.x.

In the configuration shown in Figure 2, connect the PC within the same network as the Luminous Textile installation. The PC is assigned an address in the same address range of the Luminous Textile panels and is able to communicate with them.

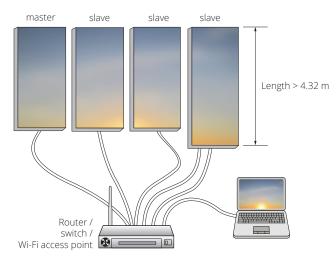


Figure 2: A private network. Luminous Textiles are not accessible from PCs outside this network.

In the configuration shown in Figure 3 the router is connected to the corporate network, to which the PC is also connected. The playlists can be uploaded via the corporate network. The PC needs not be connected directly to the private network router. Align with the local IT department to accomplish such installations.

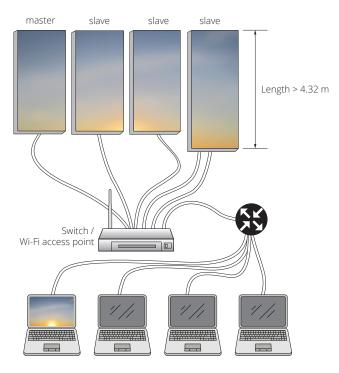


Figure 3: A private Luminous Textile network is accessible from PCs connected to the corporate network

In the situation shown in Figure 4, the Luminous Textiles are connected directly to a corporate network, to which the PC is also connected. The playlists can be uploaded via the corporate network. Align with the local IT department to accomplish such installations.

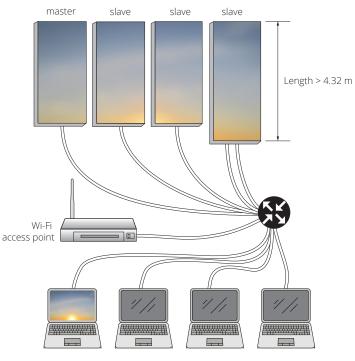


Figure 4: Corporate network

# 3 Content Manager

# 3.1 Platforms

Content Manager is designed to run on a Microsoft Windows PC. The graphics card must support DirectX. Ethernet support is required to connect to the Luminous Textile panels.

# 3.2 Main functions

The Content Manager software is an application that allows to set up a Luminous Textile panel configuration and create, edit and upload content to the Luminous Textile panels. It enables the user to create playlists for the Luminous Textile panel installation. It can use imported video files and convert them to the format compatible with the Luminous Textile panels. Once converted, the files and settings must be uploaded to the Luminous Textile installation.

It has four main functions:

- 1 Configure the panels and network via the **Surface Configurator**.
- 2 Create content playlists via the **Playlist Editor**.
- 3 Convert playlists to panel content via the **Content Converter.**
- 4 Upload all the files created above via the **Uploader**.

# 3.3 Terminology

Here you can find terminology used in the Content Manager software.

Content	Video files or animations that can be imported in the Content Manager. The Content Manager only accepts Windows Media Video files (WMV v9 VC-1 codec). When media with audio information is imported into the Content Manager, the audio data is ignored.
Panel	A Luminous Textile surface.
Player	The driver box of a panel. Each Luminous Textile contains at least one player.
Timeline	A timeline is a chronological sequence ruler on which the user can place animation files.
Playlists	Multiple content files on a timeline that are played in a continuous loop, with fade in/out transitions. A playlist has a fixed length and can contain periods of time in which no content is displayed.
Album	An album is a collection of playlists generated in Content Manager. The album name can be entered in the Content Converter window. The album can be selected at the control page.
Fade	A video fade is when a shot gradually fades to (or from) a single color, usually black or white.
Crossfade	A gradual fade from one shot to the next is known as a crossfade, mix or dissolve.
LSC file	The surface configuration file.
LCP file	LCP is the extension for a Luminous Textile panel content project file. An LCP project file contains the content, the timelines for various playlists, and the panel and wall configuration. An LCP file is created when a Content Manager project is saved.
LCF file	The converted content files that can be played by a panel.

# 3.4 Recommendation for video files

The software only supports the Windows Media Video (WMV) format. During the encode process, use these settings for optimal playback:

- Format: WMV (Windows Media Video v9)
- Codec: VC-1
- Bit rate: average 1 Mbps (for standard quality)
- Key frame interval: 1 s

# 3.5 Getting started

# 3.5.1 Hardware requirements

Verify the computer meets the minimum system requirements, before the installation of the Content Manager software:

- Operating system: Microsoft Windows
- Microsoft .NET 4.0 or later
- Minimum 1 GB of available disk space, it is recommended to reserve more disk space for source videos and content.

The Content Manager must be installed at the main drive of the computer. The processor speed and the available RAM may affect the graphical performance in the preview mode.

# 3.5.2 Content Manager installation

- Contact your local Signify representative to receive the latest version of Content Manger software.
- Store and extract the zip file to a desired directory at the main drive of the computer.
- Double-click the Content Manager setup .exe file to start the installation.
- Follow the instructions in the installation wizard.

# 3.6 Menus and functions overview

To start the Content Manager:

- At the desktop, click on the Content Manager icon, or In the Windows start menu navigate to Luminous Textile, and select Content Manager 3.
- The Content Manager opens.

# 3.6.1 Content manager overview

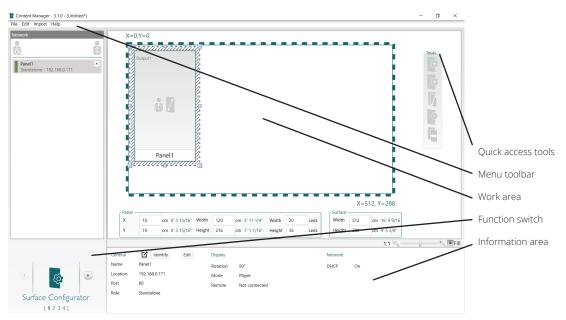


Figure 5: Content Manager overview

Name	Description
Tools	Quick access to the key tools
Menu toolbar	Menu toolbar that provides access to all functions of the software
Work area	This area provides different functionality for each of the functions.
	Surface Configurator: Configure the surface, add/remove a panel, position a panel, etc.
	Playlist Editor: View/preview a playlist, move and scale the content, zoom in and out, etc.
	Content Converter: Convert the imported content and playlists into a compatible format that can be played on
	the Luminous Textile.
	• Uploader: Upload different settings and content to the Luminous Textile installation and monitor the progress.
Function switch	Switch between functions
Information area	This area provides different functionality for each of the functions.
	Surface Configurator: configure the Luminous Textile network settings.
	Playlist Editor: edit the playlists.
	Content Converter: empty area, no functionality.
	Liploader: empty area to functionality

• Uploader: empty area, no functionality.

# Important

Make sure the dimensions of the surface and the Luminous Textile panels defined in the Surface Configurator match the actual installation. The Surface Configurator allows the user to configure the Luminous Textile panel layout and edit the network settings. The surface (marked by a dashed line) represents the wall on which the Luminous Textile panels are mounted.

The created content in the next chapters is not displayed correctly if the Surface Configurator settings do not match the Luminous Textile installation. Before the start of a project take care that all following questions are understood and can be answered.

#### 1 Configure the surface.

- a What is the size of the surface?
- b How many panels are installed at the surface?
- c How are the panels be positioned at the surface?
- 2 Configure the network of the panel.
  - a Are the panels connected to the same network?
  - b Is every panel reachable in the panel network?
  - c Which panel in the network is the master panel?
  - d Does the Luminous Textile installation play content over the different panels?
  - e Is a network configuration assigned to a panel?
- 3 Create the playlists.
  - a How many playlists must be created?
  - b When and for how long must a playlist be played?
  - c Which video files must be used to create the playlists?
  - d Are the video files available in WMV format?
  - e Where must the fade in/out and crossfade be added?

# 🖨 Note

*If the network configuration is not finalized in the Surface Configurator, the upload is not possible.* 

# 3.6.2 Configure the panel

There are two ways to configure and assign the network configurations to a panel.

- Auto discover the panels
- Manually configure the panels

## 3.6.2.1 Auto discover panel network

If the computer where Content Manager is installed is connected to the same sub network of the panels, click and in the *network configuration area* to discover all connected panels.

# 3.6.2.2 Manually configure panel network

If the computer has multiple network adapters active a popup asks to select the network adapter. Select the correct network adapter and click **Discover**.

Select network adapter		_	×
Npcap Loopback Adapter Intel(R) Dual Band Wireless-AC 8260			
Discover	Canc	el	

➡ Note If panels can be reached via a wireless network, make sure that the PC is connected to the same

wireless network.

Figure 6: Select network adapter

# 3.6.2.3 Add a network configuration.

Click 🛔 in the *Surface Configurator* to add a network configuration.

Network	
	•
Panel1 Master - 192.168.0.171	x
Panel2 Slave - 192.168.0.172	×
Panel3 Slave - 192.168.0.173	×
Panel4 Slave - 192.168.0.174	×

Figure 7: Network configuration

If required, enter a name for the new configuration. The default name is "NetworkConfig" followed by a number.

Type the actual IP address in the address field.

If all panels are connected to a LAN behind a router, they are all in the same IP address range.

Then:

- Assign a unique control port number.
- Assign a unique upload port number.
- Click **x** to delete a configuration.

🖨 Note

The control port (Port 80) and upload port (Port 21) can be configured in the router. To learn more about port forwarding or router setup, consult your local IT department.

## 3.6.2.4 Set the panel type

If an installation contains more than one panel, it is required to set a type for each panel in order to play content among all panels in a synchronized way.

Select a type in the type field. Either *Master, Slave* or *Standalone* can be chosen.

- *Master:* the panel with this network configuration is the master panel, which initiates the synchronization signal, command, etc. The icon represents the master panel.
- Slave: the panels with this network configuration are the slave panels, these panels receive the synchronization signal, commands, etc., from the master and execute them. The icon represents a slave panel.
- *Standalone:* these panels operate independently. The 🚡 icon represents a standalone panel.

Remote: indicates that a remote control is connected to this panel. In general, the remote control is connected to the utility port of the master panel.

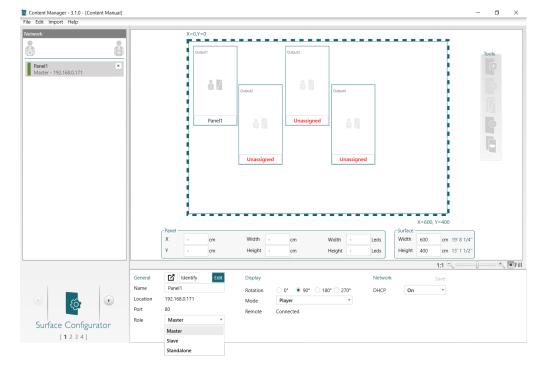


Figure 8: Content Manager - Set panel type

For an "oversized" panel, if the panel is set as *Standalone*, set one of the subpanels as the *Master* and another as *Slave* to have them play the content as one panel.

#### 3.6.2.5 Assign a network configuration to a panel

Click at **Unassigned** on a panel in the work area and select one of the configurations from the list to assign a configuration to a panel. The icon represents an unassigned panel.



#### Figure 9: Surface Configuration Assign

Important

refer to "Master and Slave or Standalone configuration" in the Installation Guide.

*Click* **Set type** *icon to execute the* 

set action for each panel after

setting-up the panel type. For more information about the

#### Important

Ensure there is only one master panel in the network. Multiple masters in a network lead to undesired behavior of slave panels.

#### B Note

If only one panel is discovered, and there is only one panel in the surface, the panel is automatically assigned. After the configuration of the panel network, assign each panel to one of these network configurations.

It is not possible to assign a network configuration to two panels. This is blocked by the Content Manager.

# 3.6.2.6 Panel status

When the assignment is finished, the connection status of a panel is available. There are four statuses:

- The green icon indicates that a player with related IP address is found in the network and assigned to a panel that is shown above.
- The red icon indicates that a player with related IP address is not found in the network, but it is assigned to a panel that is shown above.
- The orange icon indicates that a player with related IP address is found in the network, but it is not assigned to a panel that is shown above.
- The grey icon indicates that a player with related IP address is not found in the network and it is not assigned to a panel that is shown above.

A yellow warning A appears in front of the status and "You can continue to operate as normal, but auto-size is not supported on this panel." while hovering over it.

In case auto size correction is required, contact the local Signify organization for support.

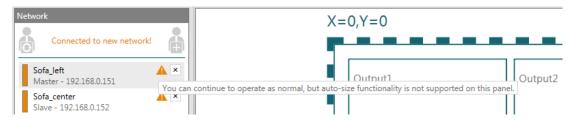


Figure 10: Missing the factory initialization information

#### 3.6.2.7 Identify a panel

After the assignment of each panel to a network configuration at the physical installation, verify if each panel is assigned with a correct network configuration such that the panels are viewed in the correct way both in the Content manager and at the installed wall.

1 Click **Identify**. The selected panel displays the pattern as below. The left top corner is red. If not, then the rotation of the panel is not correct.

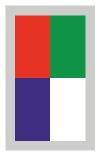


Figure 11: Identify image

Click the identify icon again to go back to the panel normal play mode. Otherwise the panel remains in the *Identify* mode.

2 Click **Edit** to update all panel settings.

	General	Identify	Edit	Display		Network	
	Name	Panel1		Rotation	0° • 90° 180° 270°	DHCP	On
	Location	192.168.0.171		Mode	Player 🔻		
	Port	80		Remote	Connected		
Surface Configurator	Role	Master	*				
[1234]							

Figure 12: Content Manager - Identify panel

Since in the software, two panels are drawn to represent an "**oversized**" panel (panels > 4.32 m (14.2 ft)), use the *ldentify* function to make sure that the correct network configurations are assigned to these two panels.



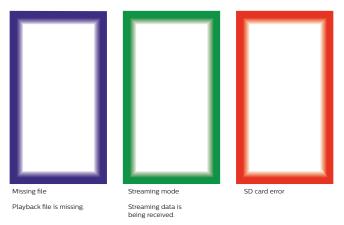


Figure 13: Panel indicator images

#### 3.6.2.8 Additional features

- The playback orientation can be rotated in the administrator section of the control page. Refer to the *Content Manager Quick Reference Guide* for information.
- After a rotation of the panel, re-discover the network and click 👔 to update the new settings
- To access the control page for a panel, click **Z**. The Content Manager opens the control panel of the page in the default browser.

# 3.6.3 Start a new project

1 Run the Content Manager software and in the *File* menu, select **New project**.

#### **3.6.3.1** To open an existing project stored at the computer 1 Select File, Open project.

2 Select and double-click the project to open.

#### 3.6.3.2 Default project

A project can be saved, including the .lcp and .lsc files as the default project. These files can always be reused to create a new project or new playlists.

- Create the default project: Select File, Save Project as Default Project.
- Open a default project: Select File, Open Default Project.

# ➡ Note

The project file contains the location of the imported video files and information on playlists. In case the imported video files are moved or deleted, the Content Manager cannot locate the video file.

# ?

This icon is used in the library as the thumbnail for a missing video file. Select File, Import content to import the video files again, or double click at the missing content icons.

# 3.7 Function navigation

The Content Manager contains four functions:

- Surface Configurator
- Playlist Editor
- Content Converter
- Uploader

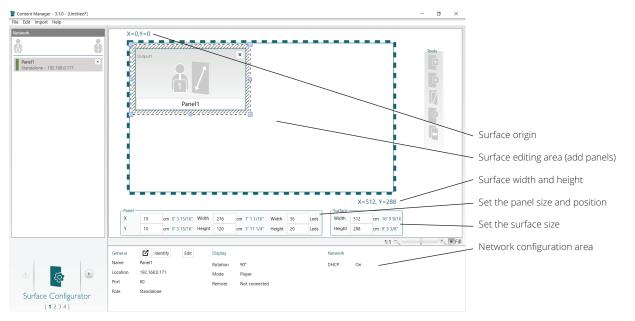


Figure 14: Content Manager Tools

Switch between these functions with • or • , or directly with a click on one of the four numbers [1 2 3 4].

# 3.7.1 Shortcuts

Most basic Windows shortcuts like Ctrl-N, Ctrl-C, F12, etcetera, are available to provide quick edit features. The functionalities of the functions change when used in a different function, for instance in the Surface Configurator **Delete** deletes a selected panel and in the playlist editor a selected playlist is deleted. Ctrl + G is an exception and is used to quickly select the Pack & Go function, to compress the project.



# 3.7.2 Surface Configurator

Figure 15: Surface Configurator

#### 3.7.2.1 Configure a surface

When the application starts, the Surface Configurator function is selected.

- 1 To open an existing surface configuration stored at the computer select Import, Surface.
- 2 Select a configuration file (files with a .lsc extension).
- 3 Select **Open**.

When the surface has already been configured but not stored at the computer, it is possible to import the surface configuration directly from the installation select **Import**, **Surface from Installation**.

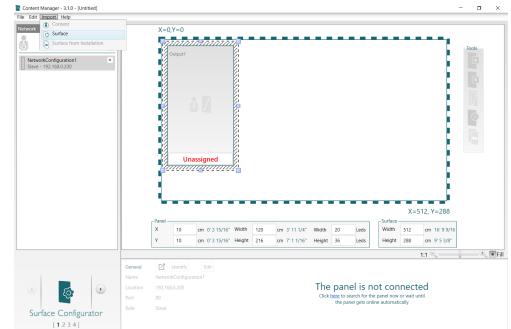


Figure 16: Import Surface

Then select and double-click the surface configuration file (\*.lsc) to import. During the creation of a new surface configuration, the next options are available:

- 1 Modify the width and height in the surface info fields to define the surface size.
- 2 To add a panel, click add panel on the toolbar.
- 3 To delete a panel, click delete panel on the toolbar.
- 4 Multiple panel selection: press the **<Ctrl>** key and use the main mouse button to select multiple panels. For the selected multiple panels, it is possible to:
  - a Edit the width or height of the panels at the "information box" to change the size of all panels at the same time.
  - b Align the panel in X or Y axes. If a value is typed in the Y field, the selected panels are aligned in the y axis. If a value is typed in the X field, the selected panels are aligned in the x axis.
  - c Use the " $\rightarrow$ ", " $\leftarrow$ ", " $\downarrow$ ", and " $\uparrow$ "keys to move the selected panels.

# 🖨 Notes

- The largest Luminous Textile is 6480 mm × 1200 mm (21.3 × 3.9 ft). However, the maximum panel size supported by one panel player is a panel with a length of 4320 mm (14.2 ft). This means if the panel is larger than this size, it requires two panel players to support it. Therefore, two panels must be drawn that positioned exactly next to each other without any gap in between to logically depict the oversized panel.
- The sizes of the different panels representing a panel larger than 4320 mm × 1200 mm (14.2 × 3.9 ft) must be provided by the application engineer.
- When connected to the network, the two panels must be detected with their correct size by the Content Manager software. Click to identify the correct panel in the project within the installation. In this way, the two panel sizes can be found and configured correctly in the software.

# 3.7.3 Library window

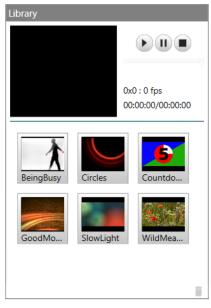


Figure 17: Library window.

To import your own video files to the Content Manager library:

- 1 Select Import, Import Content.
- 2 Select one or multiple video files, then click **Open**.

Select a video to preview it. The basic information of that video file like resolution in pixels, frame rate (fps), the name and the duration is displayed then. It is possible to look for an individual frame as well. Standard six demo videos are available in the library of the Content Manager.

## **⊖** Note

A network configuration is saved in the project file only if the configuration is assigned to a panel.

 View the info of a Luminous Textile: select a panel and hover the mouse over the panel; an info box appears, the "output1" indicates the output directory, where the converted content (\*.lcf) is saved for this panel.

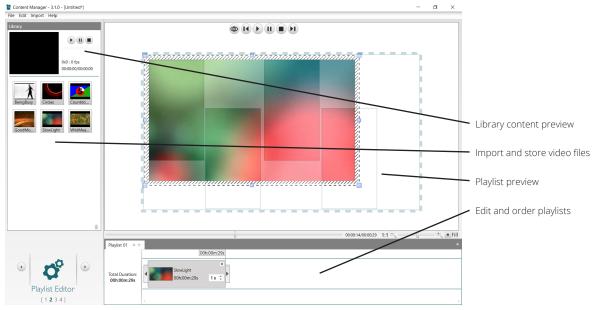
# B Note

Control port: for HTTP connection. The default is 80. Upload Port: for FTP connection. The default is 21.

## Important

For multiple panels:

- It is not possible to assign multiple panels to the same configuration.
- The combination of IP address and control port or IP address and upload port must be unique.
- These configuration rules are checked by the software.
- There is only one master per network. The Content Manager does not check this. Make sure that only one master is in the panel network.



# 3.7.4 Playlist editor

Figure 18: Playlist Editor

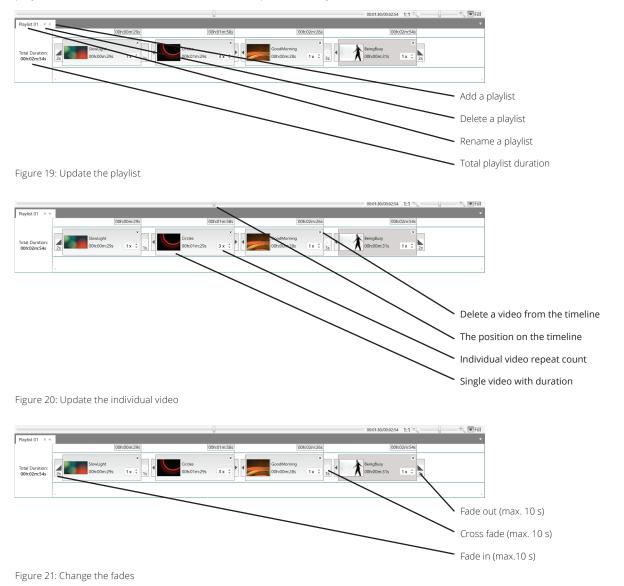
A playlist is a collection of videos that can be played in a specific order and that can be alternated with fadings. To create a playlist the videos can be dragged from the library to the timeline one by one.

The next options are available:

- Reposition a video: select a video, drag it to the new position on the timeline and then drop it.
- Copy and paste a video to another place at the timeline.
- Change the name of a playlist: double-click the name of a playlist that must be changed. Type the new name then press the **Return** key.
- Add/delete a playlist.
- Add a fade in option: only possible at the start of a video.
- Add a fade out option: only possible at the end of a video.
- Add a crossfade option between two videos. When the cross-fade option is set for one of the two videos the crossfade option is not available for the other video anymore.
- Map the video to the panels. It is possible to change the virtual frame size or move it around to decide which frame part are mapped to a panel. To align with the panels, double-click the virtual video frame. The tool auto aligns the frame with the panels. See Figure 18.

# 3.7.5 Timeline

A video clip can be dragged from the library to the timeline to create the playlists. A video file at the timeline can be repeated many times.



Note For fade in/out and crossfade: If the duration of the content is less than 10 s, the maximum fade time is the half of the imported content time.

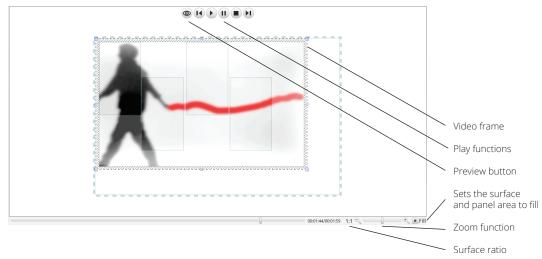
# 🔂 Tip

Seek a frame. Once a running playlist is paused, use the seek bar to seek a specific frame. The seek bar is located above the timeline.

# 3.7.6 View or preview a playlist

After a creation is finished, review the playlists and verify at the panels. Use view, preview, or zoom in/out on a playlist to test.

- Zoom in/out, view the playlist
- 1:1 set the view ratio to 1:1
- Fill: fill the view area
- Preview: Click the **Preview** icon to toggle the preview mode.



#### ➡ Note

This is only a simulation. It looks different on a panel with its ambient light.

# B Note

The preview content that is shown in the work area is not an exact representation of the content that is played at the Luminous Textile installation. It simulates the content as close as possible to resemble what the end results looks like at the panels. The simulation can be different. This depends on the choice of textile, environment ambient lighting conditions, etcetera. Figure 22: Preview

#### Preview

Toggle between the normal view mode and preview mode with the button. This provides a simulation of the content when it is played at the installed panels.

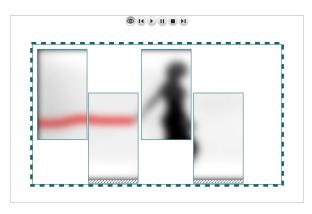


Figure 23: Preview simulation

# 3.7.7 Content Converter

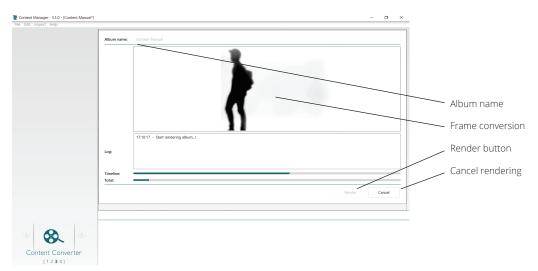


Figure 24: Content Converter

When the playlist is completed, the content must be rendered to the format used by the Luminous Textile. Select the Content Converter function. First set the album name. The set album name is also the name that is visible in the playback window of the user interface. Click **Render** to convert the, created content and playlists. To rename the playlists, see section 3.7.4 Playlist editor. The default name is "Content".

# 3.7.8 Uploader

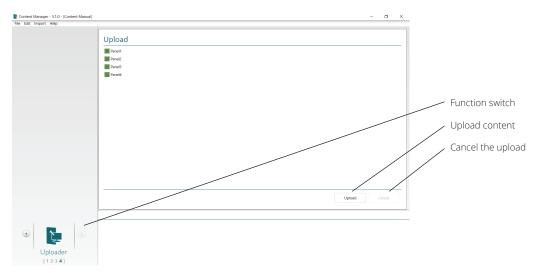


Figure 25: Uploader

Once the surface configuration is created, content and playback schedule files must be uploaded to the panels. Select the **Uploader** function and choose which file to upload to the panels. Before the **Upload** button is clicked, make sure that:

- The computer is correctly connected to the network of the Luminous Textile installation.
- The status of panels is green in the Surface Configurator.

Content Manager - 3.1.0 - (Content Manual)		U X
File Edit Import Help		
	Upload	
	Panel1	
	Panel2	
	Panel3	
	Pane4	
	Uploading ×	
	Optional finished successfully.	
	Would you like to go to the master panel?	
	Yes No	
	Upload G	ancel
0 5 0		
• Dploader		
opioader		
[1234]		

Figure 26: Successful upload

#### 3.7.8.1 Pack & Go

To share or send the project to other users, select **File**, **Pack & Go**, or press **Ctrl+G**.

The Content Manager compresses all used content files, .lcp, .lsc, and .lcf files into one single file so that it can be sent to or shared with another user. In the pop-up window, it is possible set the options to not include all Unused inventory items into the Pack & Go files.

Name:	demo panel
Name:	demo panel
Location:	C:\Users\310214335\Documents\Content Manage
Remove unused content:	
Compress package:	
	Pack Cancel

Figure 27: Pack & Go

## 3.7.9 System information

To retrieve the version of Content Manager, select Help, About.

# **4** Web user interface

Each Luminous Textile has an integrated webserver which allows for control and configuration of the Luminous Textile with a standard web-browser on your PC or mobile system via a user-friendly web interface.

Use the Content Manager Software or the DiscoverMe app to find the IP addresses of the Luminous Textile. Simply discover the network and click the "open control page" icon from the Content Manager software or type the IP address of a Luminous Textile in a browser to open the page and browse to the required page to adjust settings. As the firmware update is done via the Content Manager Software too, ensure to use version 3.x version of the software.

➡ Note See the Content Manager Software chapter for more information about the use of the software.

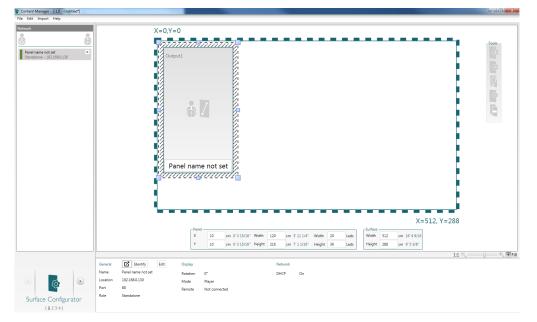


Figure 28 Content Manager Software, surface configurator

# 4.1 Control

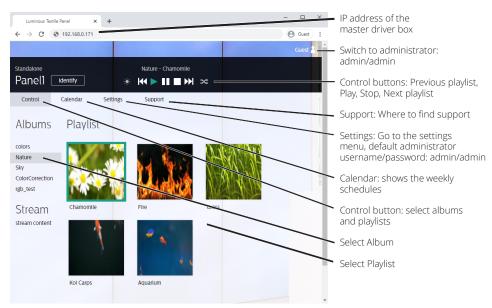
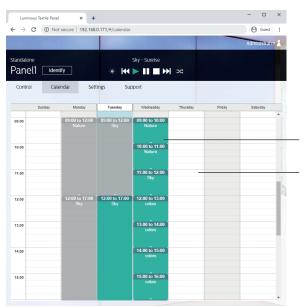


Figure 29 Default setup with Luminous Textiles

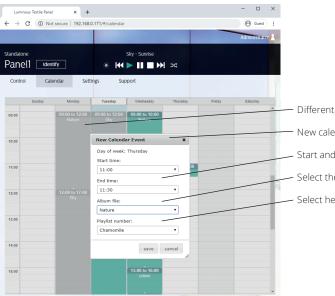
# 4.2 Calendar page



Double click any existing calendar entry to open and edit it

Double click a free area on the calendar to create a new Calendar Event

Figure 30: Calendar



- Different programmed calendar events

New calendar event, opens while clicking on a time frame

Start and End time of that switching window

- Select the album you want to play

Select here the playlist of the album

Figure 31: New Calendar Event

# 4.3 Settings menu

# 4.3.1 Info

#### 4.3.1.1 Panel status

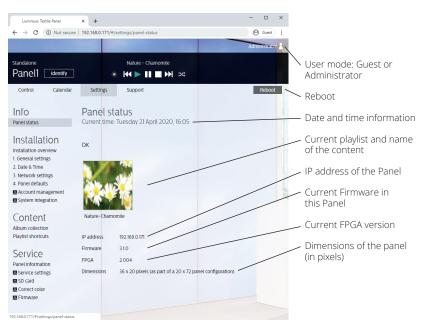
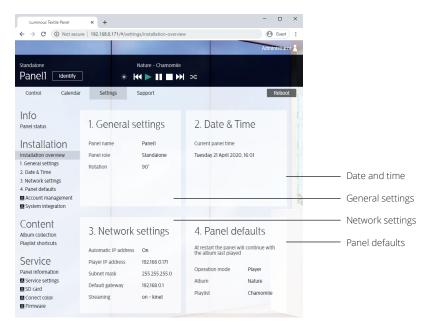


Figure 32: Panel status

# 4.3.2 Installation



➡ Note When logged in as a guest, the Account management and the Correct color pages are not visible.

Figure 33: The four Installation overview sections

#### 4.3.2.1 General settings

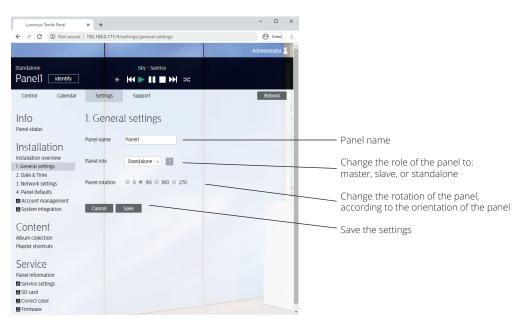


Figure 34: General settings

#### 4.3.2.2 The date and time setting page

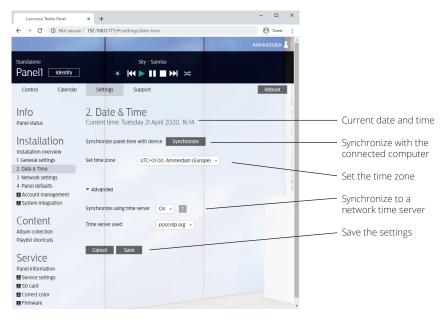


Figure 35: Date & Time

#### 4.3.2.3 Network settings page

Luminous Textile Panel	× +	- 🗆 X	
← → C ① Not secure	192.168.0.171/#/settings/network-settings	(e) Guest	
		Administrator 🙎 🏛	
Standalone Panel1 Identify	Sky - Sunrise ☀ 🕶 ► 💵 ■ 🍽 🗢		
Control Calendar	Settings Support	Reboot	
Info Panel status	3. Network settings		
Installation	Obtain IP address automatically Off • Player IP address 10.11.11.10		<ul> <li>Select DHCP or fixed IP address</li> </ul>
1. General settings 2. Date & Time 3. Network settings	Subnet mask 255.0.0.0 Default gateway		
4. Panel defaults Account management System Integration	Streaming settings	and the second se	<ul> <li>Select player or streamer mode</li> </ul>
Content Album collection Playlist shortcuts	Enable streaming On + Protocol KINet +		<ul> <li>Select the Streaming mode protocol</li> </ul>
Service Panel information Service settings SD card Correct color Firmware	Cancel Save		— Save the settings

Figure 36: Network settings

## 4.3.2.4 Panel defaults

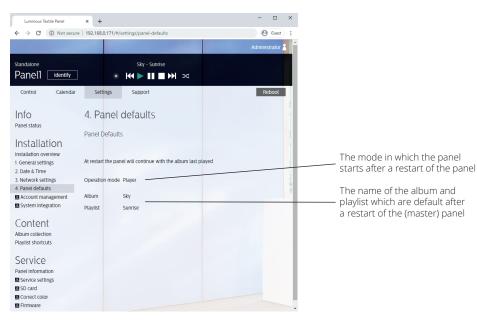


Figure 37: Panel defaults

#### 4.3.2.5 Account management

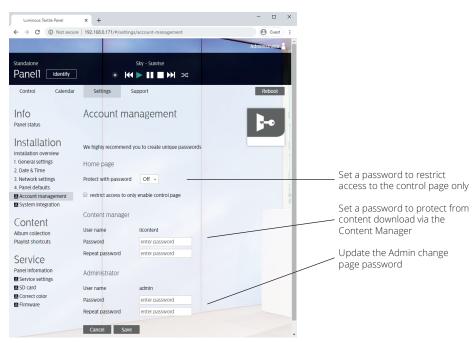


Figure 38: Account management

### 4.3.2.6 System integration

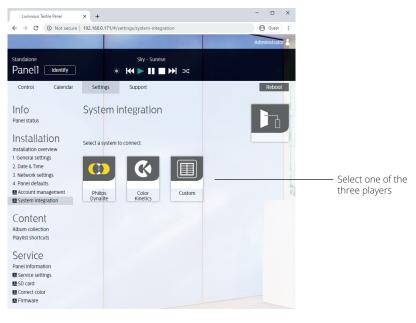


Figure 39: System integration

4.3.2.6.1 System integration Philips Dynalite

Luminous Textile Panel	× +			-		×	
← → C ① Not secure	192.168.0.171/#/setting:	(oustem-integration/dums	lite	0	Guest		
V / O O Not secure	152.100.0.171)#7setting.	y system - integration, dyne	inte		CUCK		
				Administ	trator_	3	
Standalone		Sky – Sunrise					
Panel1 Identify	* 🖊						
				_		- 1	
Control Calendar	Settings S	upport		Rel	boot	11	
Info	< Philips Dy	nalite					
Panel status							
	Set connection details a	ind view the commands	for the Philips	Dynalite syste	<u> </u>		
Installation	Frankla Dhilling Domailte						
Installation overview	Enable Philips Dynalite	No *				1	——— Select Yes, to connect a
1. General settings						1	Philips Dynalite device
2. Date & Time	Cancel Save						
3. Network settings	Cancer Save				_	1	Save or Cancel the
4. Panel defaults						1	
Account management							new settings
System Integration	Command mapping	g				E.	
Content	This table lists the comr created in 'Content > Pla	- nands and the linked pla	ylist shortcut	s. The playlist shortcuts c	an be	T	The list of commands
Genteente	created in Content - Pia	tylist shortcuts.				- 1	and linked playlist
Album collection Playlist shortcuts	Command	Shortcut/command	Album	Playlist		- 1	shortcuts. Create in
Pidylist shortcuts	Off					- 1	Content, Playlist
Service	Increase brightness	Brightness +10%				- 1	shortcuts
0011100	Decrease brighness Fade to level	Brightness -10%				- 1	SHOLLCULS
Panel information	Preset 1	Shortcut 1	Nature	Chamomile		- 1	
Service settings	Preset 2	Shortcut 2	Nature	Grass			
SD card	Preset 3	Shortcut 3	Nature	Koi Carps			
Correct color	Preset 4	Shortcut 4	colors	Blue Waves		- 1	
Firmware	Preset 5	Shortcut 5	colors	Green Waves			
	Preset 6	Shortcut 6	colors	Red Waves			
	Preset 7	Shortcut 7	Sky	Sunrise			
	Preset 8	Shortcut 8	Sky	Clouds1			
						*	

Figure 40: System integration, Philips Dynalite

# 4.3.2.6.2 System integration Color Kinetics

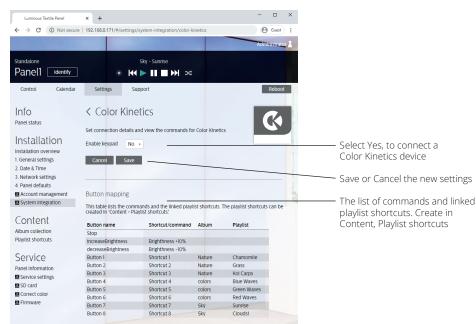


Figure 41: System integration, Color Kinetics

	4.3.2.6.3	System	integration	custom	system
--	-----------	--------	-------------	--------	--------

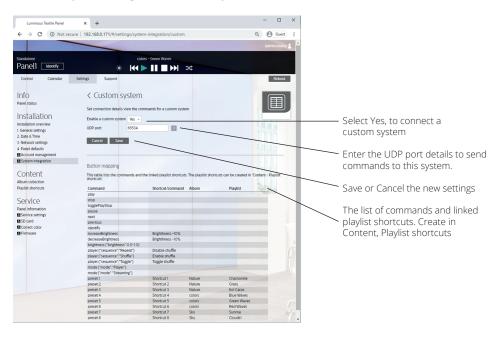


Figure 42: System integration, Custom system

# 4.3.3 Content

#### 4.3.3.1 Album collection

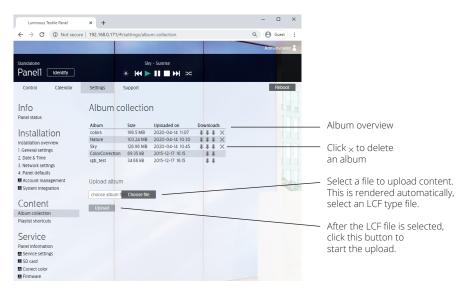


Figure 43: Album collection

#### 4.3.3.2 Playlist shortcuts

Luminous Textile Panel	× +					- 0	×	
← → C ① Not s	ecure   192.168.0.1	71/#/settings/pre	esets		Q	Guest	:	
					-	Administr	stor 🛓	
Standalone Panel1 Identify			Sky - Sunrise					
Control Calendar	Settings Sup			~		Reb		
control calendar	Jennigs Jub	POR				Heb	NOK	
Info	Playlist	shortcuts						
Panel status	i taytist	Shoreaus						
Installation Installation overview 1. General settings 2. Date & Time	Playlist shorter Shortcut name	uts are used to facilitar Album	te system integration. Ad Playlist	the required shortcut	in the table below.			
3. Network settings 4. Panel defaults	Shortcut 1	Nature	+ Chamo	nile v			-	
Account management	Shortcut 2	Nature	+ Grass	٠				<ul> <li>Overview of the shortcuts</li> </ul>
System Integration	Shortcut 3	Nature	+ Koi Car	i5 т		Rev		
Content	Shortcut 4	colors	+ Blue W	ves v				used with system integration
Album collection	Shortcut 5	colors	+ Green V	/aves v				devices
Playlist shortcuts	Shortcut 6	colors	+ Red Wa	res v				
Service	Shortcut 7	Sky	* Sunrise	×				<ul> <li>Click × to delete a shortcut</li> </ul>
Panel information	Shortcut 8	Sky	+ Clouds	*	×			,,
텔 Service settings 텔 SD card 텔 Correct color 텔 Firmware	Add	-					f	<ul> <li>Click Add to create a new shortcut</li> </ul>
	Cancel	Save						

Figure 44: Playlist shortcuts

# 4.3.4 Service

#### 4.3.4.1 Panel information

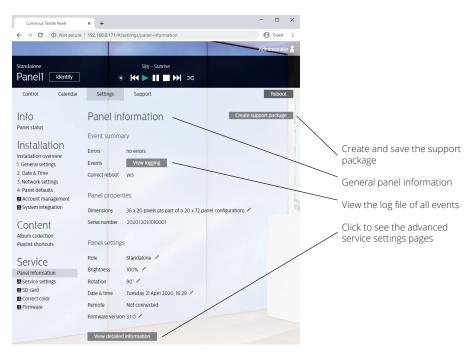


Figure 45: Panel information

#### 4.3.4.2 System logs

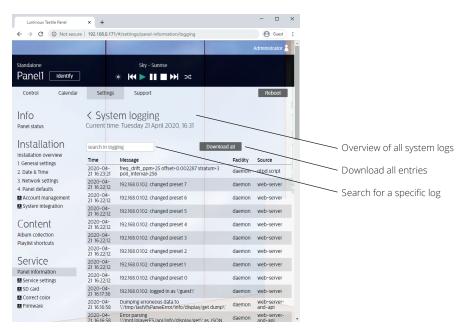


Figure 46: System logs

### 4.4.3.3 Advanced service settings

4.3.4.3.1 Operations view

Luminous Textile Panel	× +		- 🗆 ×
$\leftrightarrow$ $\rightarrow$ C (1) Not secure	192.168.0.171/#/	settings/panel-information/advanced/operation	🕒 Guest 🚦
			Administrator 2
Standalone		Sky – Sunrise	
Panel1 Identify		∈ ₩ ▶ Ⅲ ■ ₩ ∞	
Control Calendar	Settings	Support	Reboot
Info Panel status		nced service settings me: Tuesday 21 April 2020, 16:35	
Installation	Operation	Status System Panel	Driverbox
1. General settings 2. Date & Time	Statistics		
3. Network settings 4. Panel defaults	CPU up-time	5d 19h 42m 42s	
Account management	LED up-time	1d 3h 53m 39s	
System integration	Correct reboot	yes	
Content	Soft reboots	1	
Album collection Playlist shortcuts	Hard reboots	4	
Service			
Panel information			
Service settings			
SD card Correct color			
Eirmware			



#### 4.3.4.3.2 Status view

Luminous Textile Panel	× +				-		×
← → C ① Not secure	192.168.0.171/#/	settings/panel-informati	on/advanced/statu	s	Θ	Guest	:
			and the second second		Admir	nistrato	12
Standalone		Sky - Sunrise					
Panel1 Identify	*	<ul> <li>Image: Image: Ima</li></ul>	₩ ≫				
Control Calendar	Settings	Support				Reboot	
Info Panel status		ICEC SERVICE					
Installation	Operation	Status	System	Panel	Drivert	хос	
1. General settings 2. Date & Time	Status		Network				
3. Network settings	State	Play	DHCP	On			
<ol> <li>Panel defaults</li> <li>Account management</li> </ol>	Album	Sky.lcf	Player IP address	5 192.168.0.171			
System integration	Playlist #	0	Player broadcast	192.168.0.255			
Content	Role	Standalone	Default gateway	192.168.0.1			
Album collection	Mode	Player					
Playlist shortcuts	Brightness	100%	Streaming				
	Used LUT	Lumapanel.0.90.lut	Ports	5			
Service	Status	ок					
Panel information	SD card status		Remote				
O Service settings SD card O Correct color O Firmware	The SD card is w	orking correctly (0)	Remote	Not connected			

Figure 48: Advanced service settings, Status

#### 4.3.4.3.3 System view

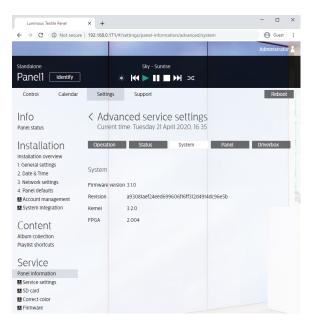


Figure 49: Advanced service settings, System

4.3.4.3.4 Panel view

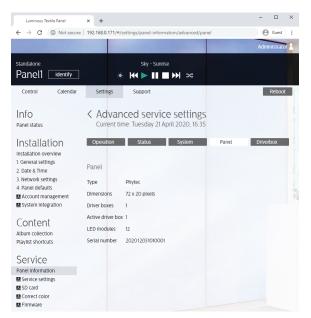


Figure 50: Advanced service settings, Panel

#### 4.3.4.3.5 Driverbox view

Luminous Textile Panel	× +			- 🗆 ×
← → C ① Not secure	192.168.0.171/#	/settings/panel-informa	tion/advanced/driverbox	🕒 Guest 🚦
			Section Section	Administrator 🔒
Standalone		Sky - Sunrise		
Panel1 Identify		* 14 🕨 💵 🗖	₩ ≫	
Control Calendar	Settings	Support		Reboot
Info Panel status		nced service ime: Tuesday 21 Ap		
Installation	Operation	Status	System Panel	Driverbox
Installation overview				
1. General settings	Driverbox		LED modules	
2. Date & Time 3. Network settings	Differbox		EED modules	
4. Panel defaults	Dimensions	20 x 36 pixels	Serial no. module 1	
Account management	Serial	202012031010001		
System integration	CPU Serial	C74914		
<u> </u>	MAC Address	20:CD:39:DC:93:C7		
Content	PCB Serial	1525054779480017		
Album collection	FPGA ID			
Playlist shortcuts				
Service	3E-46-21-24-8	0-50-F4-00		
Panel information	LED modules	1		
Service settings				
SD card				
Correct color				
Firmware				

Figure 51: Advanced service settings, Driverbox

#### 4.3.4.4 Service settings

Luminous Textile Panel	× +	- 🗆 ×	
← → C ③ Not set	ure   192.168.0.171/#/settings/service-settings	Q 🕒 Guest 🚦	
		Administrator 2	
Standalone Panel1 Identify	Sky - Sunrise		
Control Calendar	Settings Support	Reboot	
Info	Service settings		<ul> <li>Lookup tables</li> </ul>
Panel status	0	10	
Installation			<ul> <li>Create and load</li> </ul>
Installation overview	Important: changing settings on this page may result in <u>papel display</u> failures!		lookup tables
1. General settings 2. Date & Time	Lookup tables		
3. Network settings	Lookup table Size Uploaded on		
4. Panel defaults	Lumapanel.0.180.lut 4.1 kB 2018-02-26 11:38 Lumapanel.0.270.lut 4.1 kB 2018-02-26 11:38	1111	Select to enter panel
Account management System integration	Lumapanel.0.90.lut 4.1kB 2018-02-25 11:38		dimensions or retrieve
System megation	Lumapanel.lut 41.kB 2018-02-26 11:38		panel dimensions
Content	Create lookup files		
Album collection	Create lookup files	1111	<ul> <li>Select Metric or</li> </ul>
Playlist shortcuts	Manually input panel dimensions     Retrieve panel dimensions	Real	
Service	Width 720 - 2 Length 720 - 2 View in m	im v	Imperial measurements
Panel information	Create		
Service settings	Create		<ul> <li>Create and save the new</li> </ul>
Correct color			dimensions to the panel
E Firmware	Upload fpga firmware		dimensions to the parter
	choose bit file Choose file		
	Unload		firmware file
	opuau		IIIIIware lie
	Reset to factory settings		
	heart to ractory actings		<ul> <li>Upload the FPGA</li> </ul>
	Warning: resetting to factory settings has a permanent effect and requires a reboot Albums, play	lists and calendar entries	firmware file
	are not affected, but all other settings will be lost.		
	Reset settings		<ul> <li>Reset to factory settings</li> </ul>
			Reser to ractory settings

Figure 52: Service settings

#### 4.3.4.5 SD card settings

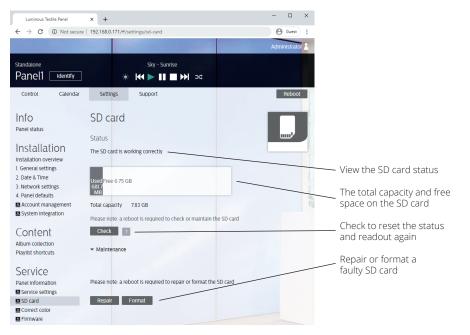


Figure 53: SD card

#### 4.3.4.6 Color settings

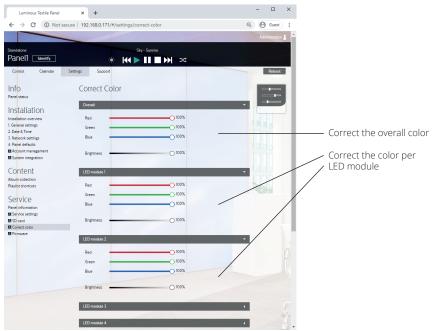


Figure 54: Correct Color

Correct the overall color settings or RGB Light Engine module settings here, this for instance if an RGB Light Engine has been replaced with a new one.

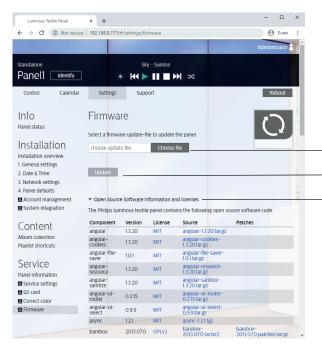
#### **⊖** Note

An update takes approximately three to four minutes. A pop-up is displayed with a progress bar.

#### Important

Do not unplug a panel from the mains during the update. This can very rarely lead to a system failure. If this happens, contact the local Signify support organization.

#### 4.3.4.7 Firmware update



Select a the firmware update file

Save to the panel

List of used Open Source software and licenses

Figure 55: Firmware

# 5 Trigger the on-board playback system

# 5.1 Default control

See the Luminous Textile User Guide for more details on the use of the DiscoverMe app or the web interface.

- Use the Content Manager software to discover the Luminous Textiles on the network.
- Use a web browser to browse to the IP address of the master. Use a web browser on a PC, tablet or smartphone.
- The free *DiscoverMe LTP* app on a smart device on the same network.
- The HTTP API
- UDP commands

# 5.2 HTTP API

The built-in web interface uses HTTP requests to control the Luminous Textiles. These requests can be used by any device to interact with the Luminous Textiles.

The supported messages are equal to the common commands available via

#### Home, select Playlist Home, select Album

#### Control buttons, Previous playlist, Play, Stop, Next playlist

Settings, Control, Advanced Controls (operation mode only)

Settings, Control, General Settings (brightness only)

Settings, Control buttons, Previous playlist, Play, Stop, Pause, Identify, Next playlist

The syntax to recall those actions can be found in the next section:

B Note

- Many control systems require to work with a known IP address of the Luminous Textile. It is therefore advised to use a fixed IP address (or DHCP reservation) when an integrated solution is created.
- After the physical connection, from one DHCP server to another, is changed, a reboot of the Luminous Textile is required.
- The Album name is entered in the Content Converter section of the Content Manager software

## 5.2.1 Login

#### Methods:

#### POST /api/auth/login Description: Login to the Luminous Textile. Body arguments:

Name	Туре	Description	Mandatory
username	String	The name of the user that wants to login	Yes
Password	String	The password of the user	Yes

Response:

Name	Туре	Description
accessToken	String	The session token that is used to authenticate future requests
account	Object	Account details
account.name	String	Full name of the user associated with the account
account.can	Object	The activities that this account can perform
account.can.controllPlayer	Boolean	True if account is capable of controlling content playback
account.can.manageContent	Boolean	True if account is allowed to upload/download content
account.can.changeSettings	Boolean	True if account is allowed to change settings
account.can.manageAccounts	Boolean	True if account is allowed to change/add accounts

#### 5.2.2 Playback control methods

#### 5.2.2.1 Play

PUT /api/control/play Description: Start playback. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

#### Response:

<null> on success, "error" string on failure.

#### 5.2.2.2 Stop

PUT /api/control/stop Description: Stop playback. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

#### Response:

<null> on success, "error" string on failure.

#### 5.2.2.3 Toggle Play-Stop

PUT /api/control/togglePlayStop Description: Start playback if stopped and stop playback if playing. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

#### Response:

<null> on success, "error" string on failure.

#### 5.2.2.4 Pause

PUT /api/control/pause

Description: Pause or resume playback. Cookies:

# Name Description accessToken The access token value that is returned by a successful login

Response:

<null> on success, "error" string on failure.

#### 5.2.2.5 Next

PUT /api/control/next Description: Play next video of current album. Cookies:

	Cookie	2S:	
Name	Des	cription	
accessToke	n The	access token value that is returned by a successfu	ul login
	Respo <nu< td=""><td>nse: ull&gt; on success, "error" string on failure.</td><td></td></nu<>	nse: ull> on success, "error" string on failure.	
5.2.2.6 Pr			
PUT		rol/previous	
	Descri		
	Cookie	y previous video in the current album. es:	
Name	Des	cription	
accessToke	n The	access token value that is returned by a successfu	ul login
<b>5.2.2.7 Pl</b> a PUT Name	ayback m 7api/cont Descri Set Cookie	rol/player iption: playback mode. es:	
		cription	
accessToke	n Ine	access token value that is returned by a successfu	ui iogin
	Body a	arguments:	
Name	Туре	Description	Mandatory
sequence	String	"Shuffle" – play album videos in random order. "Repeat" – play videos in sequential order, repeating the album after the last video.	Yes
		"Toggle" – toggle playback mode	

Response:

'null> on success, "error" string on failure.

#### 5.2.2.8 Play an album with a specified playlist

PUT /api/control/album/<album\_id>/<video\_id> Description: Play an album starting at a specified video. Path arguments:

Name	Description	Mandatory
<album_id></album_id>	The identifier associated with the album. Refer to GET /	Yes
	api/info/albums for a list of album ids	
<video_nr></video_nr>	The index number of the video (starting at 0)	No

Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

Response:

<null> on success, "error" string on failure.

#### 5.2.2.9 Start a preset

PUT /api/control/preset Description: Start a preset Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

Body arguments:

name String The preset name that must be started. Refer Yes to GET api/config/presets	Name	Туре	Description	Mandatory
1 81	name	String	1	Yes

Response:

<null> on success, "error" string on failure.

#### 5.2.2.10 Set player mode

PUT /api/control/mode Description:

Set the player mode. Cookies:

Name	Des	scription	
accessToken	The	e access token value that is returned by a succes	sful login
	Body	arguments:	
Name	Type	Description	Mandator

Name	Туре	Description	Mandatory
mode	String	Luminous Textile playout mode:	Yes
		"Player", Play albums	
		"Streaming", Play content streamed over	
		network connection (ART-NET, kiNET)	

Response:

<null> on success, "error" string on failure.

#### 5.2.2.11 Display test image

PUT /api/control/identify Description: Display a test image on the Luminous Textile. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

Response:

<null> on success, "error" string on failure.

#### 5.2.3 Brightness control

#### 5.2.3.1 Increase brightness

PUT /api/control/increaseBrightness Description: Increase the brightness of the Luminous Textile with 10% increments. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

Response:

<null> on success, "error" string on failure.

#### 5.2.3.2 Decrease brightness

PUT /api/control/decreaseBrightness Description: Decrease the brightness of the Luminous Textile with 10% increments. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login

Response:

<null> on success, "error" string on failure.

#### 5.2.3.3 Set brightness

PUT /api/control/brightness

Description:

Set the brightness of the Luminous Textile as a fraction of 1 (where 1 = 100% brightness and 0 = 0% brightness). Cookies:

Name	Descr	iption	
accessToker	ר The ac	cess token value that is returned by a succ	cessful login
	Body ar	guments:	
Name	Туре	Description	Mandatory
Brightness	Number	Brightness value in the range [1,0]	Yes

Response:

<null> on success, "error" string on failure.

## 5.2.4 Info

#### 5.2.4.1 General info

#### Methods:

GET /api/info	/general
Descr	iption:
Ret	trieve general information about the Luminous Textile.
Cooki	es:

Name	Description
accessToken	The access token value that is returned by a successful login

#### Response:

Name	Туре	Description
album	Object	The album that is currently playing
album.name	String	Name of the album
album.id	String	Identification string associated with the album
album.playlist	Object	The video that is currently playing
album.playlist.id	Number	Index of the video within the album
album.playlist.name	String	Name of the video
album.playlist.thumbnail	String	Video thumbnail image file
errors	Array of Strings	List of error messages that have occurred since the last request
mode	String	Player mode (Refer to PUT /api/control/mode)
name	String	Luminous Textile name
player	Object	Playout order
player.sequence	String	Playout order (Refer to PUT /api/control/ player)
rebootRequired	Boolean	Indicates that the Luminous Textile needs to reboot
revision	String	Software revision
role	String	Luminous Textile control mode. Standalone/ Master/Slave
state	String	Player status. Play/Stop/Pause
status	String	Luminous Textile status
streaming	Object	
streaming.enabled	Boolean	Indicates whether ART-NET/kiNET streams are allowed
dateTime	String	The current time of the Luminous Textile

#### 5.2.4.2 Display info

#### GET /api/info/display

Description: Retrieve general information about the Luminous Textile. Cookies:

Name	Description
accessToken	The access token value that is returned by a successful login
	Response:

Name	Туре	Description
brightness	Number	The Luminous Textile brightness in the range [1,0]
crossfadeTime	Number	The duration of the fade transition between videos (in seconds)

#### 5.2.4.3 Album info

GET /api/info/albums Description: Retrieve general information about the Luminous Textile. Cookies:

Name	Descript	ion					
accessToken	accessToken The access token value that is returned by a successful lo						
	Response: An array o fields:	f album objects where each object contains the next					
Name	Туре	Description					
id	String	The identification string that is associated with this					
		album					
Name	String	The name of the album					

#### B Note

- Many control systems require to work with a known IP address of the Luminous Textile. It is therefore advised to use a fixed IP address (or DHCP reservation) when an integrated solution is created.
- After the physical connection, from one DHCP server to another, is changed, a reboot of a Luminous Textile is required.
- The Album name is entered in the Content Converter section of the Content Manager software.

#### **⊜** Note

- The communication is handled via a UDP broadcast from the gateway on its subnet, ensure that the Luminous Textile and gateway share the same subnet.
- Contact your local Signify Dynalite support for questions about the Dynalite system.

## 5.3 UDP commands

Many control systems can only output simple UDP commands, instead of the complicated interaction required for a REST interface.

The Luminous Textile must be configured to accept UDP commands:

- Navigate to Settings, System Integration, Custom
- Set Enable a custom system to Yes
- Enter an UDP port number (above 1023).
- Press the **Save** button to save the settings

The messages that a Luminous Textile accepts are displayed on the Custom System Integration page. If playlist shortcuts are configured (**Settings**, **Playlist Shortcuts**) then they are also listed in the table. See section 4.3.2.6.3 System integration custom system.

# 5.4 Philips Dynalite Dynet commands

The Dynet protocol is an advanced protocol that can control many products for office and retail lighting, like user interfaces, switches, panels, motion and heat sensors, touch screens. Recall presets to an area, to control a Luminous Textile, where the presets correspond to playlists.

A Philips Dynalite ethernet gateway (PDEG) is required to control the Luminous Textile.

Note that integration takes place with the Dynalite Dynet commands (ethernet based), not with the RS-485 based Dynalite protocol.

Dynalite equipment, including the PDEG, must be configured before use. It does not integrate with a Luminous Textile 'out of the box'. A Luminous Textile listens to a subset that contains some logical messages for a specified area.

As both systems can be freely configured, please note the area and port number in the project documentation for future use.

Gateway configuration: UDP mode

Port number: 0 to 65535

Area number: 0 to 255

On the Luminous Textile, these parameters can be specified at

#### Applications, Lighting integration app, Dynalite settings

A Dynet command is standard sequence of 8 bytes that is send to the system.

A standard sequence looks like this:

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Sync code	Area code	Data 1	Opcode	Data 2	Preset bank	Join command	Checksum

• Byte 1 is the Start code of the command for this system and is always a typical "1C" message. This indicates that logical addressing is used.

- Byte 2 is the area in both the Luminous Textile and Dynalite system, note only one area can be used.
- Byte 3 (Data 1) and byte 5 (Data 2) are irrelevant for most commands in this system and only used for setting an area to a specific dim level.
- Byte 4 is together with the preset bank byte 6, the opcode with the actual command.
- Byte 7 is a bit switch which can be used to filter out selected channels. It is not used for Luminous Textile.
- Byte 8 is a checksum.

Description	Command description	Dynet command	Data 1a	Opcode	Data 2 a	Preset banka
Stop the playlist in current album (player mode only)	Stop	Off	XX	04	XX	XX
Decrease intensity with 10% (player mode only)	Dim Down	Decrement	XX	05	XX	XX
Increase intensity with 10% (player mode only)	Dim Up	Increment	XX	06	XX	XX
Set area to dim level	Intensity	Area to level	level	79	00	00
Start to play playlist 0 in the current albumb	Playlist 0	Preset 1	XX	00	XX	00
Start to play playlist 1 in the current albumb	Playlist 1	Preset 2	XX	01	XX	00
:						
Start to play playlist 7 in the current albumb	Playlist 7	Preset 8	XX	0D	XX	00
Start to play playlist 8 in the current albumb	Playlist 8	Preset 9	XX	00	XX	01
Start to play playlist 9 in the current albumb	Playlist 9	Preset10	XX	01	XX	01
:						
Start to play playlist 15 in the current albumb	Playlist 15	Preset 16	XX	0D	XX	01
Start to play playlist 16 in the current albumb	Playlist 16	Preset 17	XX	00	XX	02

#### B Note

- a xx defines an ignored byte for this command.
- b If no such playlist exists, a Luminous Textile ignores the command. Note that playlist
  0 is the first playlist in the file (player mode only).

# 6 Integration via streaming protocols

Luminous Textile can be used in a **streaming mode**. In this case the Luminous Textile reacts to "DMX over Ethernet" messages for pixel precise control. The protocols supported are Art-Net and KiNET, those are further explained in next sections.

A Luminous Textile can be activated to listen to incoming messages if the operation mode is changed to **Streaming**.

This can be done via de settings page: **Settings, Control, Advanced Controls**.

It can also be set via an external trigger, see section 5.2 HTTP API.

Luminous Textile supports to be used with the on-board playback system or streaming input at different moments in time. The switch between the two operating modes can take up to ten seconds. During these ten seconds the visual output of the Luminous Textiles might look disturbed.

Change of operation mode on the master Luminous Textile automatically changes the operation mode of all slave Luminous Textiles in the system. If the start-up operation mode must be **streaming**, save it as default. **Settings**, **Control, Save as default settings**.

# 6.1 Art-Net and KiNET

### 6.1.1 Introduction

The Art-Net protocol is developed by Artistic Licence and published in the public domain.

Visit http://www.artisticlicence.com for more details. As the protocol is available in the public domain, a wide range of companies produces Art-Net compatible controllers.

The KiNET protocol is developed by Color Kinetics (now Color Kinetics). It is a proprietary protocol.

Contact https://www.colorkinetics.com/global/contact-us for information on licensing. Luminous Textile supports the KiNET v2, the 'port out' version.

Luminous Textile supports Art-Net 3 standard (at maximum 50 fps). Luminous Textile is compatible with controllers that supply Art-Net version 1, 2,3 or 4.

#### B Note

The "Save as default" action only applies to the specific Luminous Textile the "save as default" action is performed on. If for a multi Luminous Textile installation "Streaming" must be the default setting, this action must be performed on all individual Luminous Textiles.

#### 6.1.2 Limitations

- The name and IP address of a Luminous Textile can only be set on the Luminous Textile itself or via the content manager software.
- An attempt to change the name via a third-party device or software might cause to lose the connection with the Luminous Textile. A reboot of the Luminous Textile and the third-party device or software might be required to get the Luminous Textile discovered again.
- The maximum supported frame rate is 50 fps.
- On the by Luminous Textile used universes and subnets no Art-Net data intended for other devices is allowed.
- Luminous Textiles are discovered both in streaming and player mode, regardless of KiNET or Art-Net mode.
- Latency is less than two frames.

#### 6.1.3 DMX table

Luminous Textile is controlled per pixel. In the DMX software nodes are identical to pixels. For every node, three DMX channels are used, one intensity value for each RGB color:

- First channel, Red
- Second channel, Green
- Third channel, Blue

The brightness level on a Luminous Textile itself can be used for master intensity. This means that even for low light outputs, the full resolution can be used.

Use either **Settings, Control, General Settings, Brightness level** or an external trigger via HTTP API or UDP command, see section 5.2 HTTP API.

#### 6.1.3.1 Mapping order

The order of the nodes follows the standard reading order. From left to right, top to bottom, node 1, node 2, etc. This continues for a complete number of lines to fill a universe (maximum 170 nodes).

After this the first node (on the left of the Luminous Textile) is again the first node in the next universe. This continues until the complete Luminous Textile is filled. The last universe might be identical to the previous universe or contain a smaller number of lines.

If a Luminous Textile is used in landscape, check that the rotation of that Luminous Textile on the settings page is properly set. Navigate to **Settings**, **Control, General Settings, Panel orientation**. Change of the orientation of the Luminous Textile results often in different layout of universes as the number of nodes per line is different if a Luminous Textile is placed in portrait compared to landscape mode or vice versa.

This ensures the height (h) and width (w) of this Luminous Textile are consistent with the physical installation. The height and width of a Luminous Textiles can be found by dividing the physical dimension of the Luminous Textiles (in mm) by 60, or by looking it up in **Settings, LTP info, status, panel** width and **Settings, LTP info, status, panel height**. Visually the Luminous Textile is patched like in Figure 2:

- (w) = width in nodes(or Luminous Textile width in mm / 60)
- (h) = height in nodes (or Luminous Textile height in mm / 60)
- (a) = number of rows within a "full" port (depending on (w))
- (b) = number of rows in the Luminous Textiles last port (depending on (h))

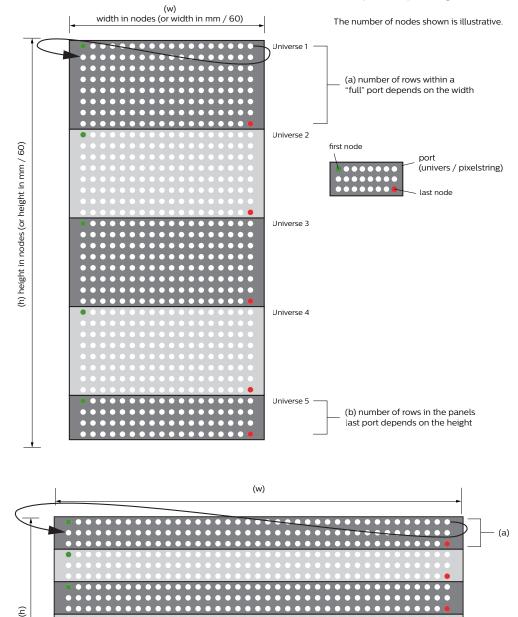


Figure 56 Visual representation of the patching.

- a Depends on the width of the Luminous textile and can be found in the table Universes per Luminous Textile.
- b Is calculated by taking (h) and subtracting (a) until this ends up at a number equal or between 0 and (a)-1.

(b)

#### Luminous Textile width versus lines per port

W	12	13	14	15	16, 17	18	19 to 21	22 to 24	25 to 28	29 to 34	35 to 42	43 to 56	57
а	14	13	12	11	10	9	8	7	6	5	4	3	2

#### 6.1.3.2 Mapping examples

#### Example 1

Luminous Textile dimension 2280 mm height by 1200 mm width (portrait installation)

Define width and height.

#### Option 1, read from settings

Navigate to the settings, LTP info page and find the information under system.

# Settings, LTP info, status, panel\_width ${\rm or}$ Settings, LTP info, status, panel\_height

#### Option 2, calculate

- 1 w = width in nodes (or width in mm / 60) (w) = 1200/60 = 20 nodes h = height in nodes (or height in mm / 60) (h) = 2280/60 = 38 nodes
- Lookup a in the table Luminous Textile width versus lines per port.w = 20 gives a = 8.
- 3 Calculate b Subtract a from h until this ends up at a number equal or between 0 and a - 1.

b = h - a - a - ... (until  $0 \le b \le (a-1)$ )

b = 38 - 8 - 8 - 8 - 8 = 6

This Luminous Textile has 4 ports of each 8  $\times$  20 nodes, and the 5th port of 6  $\times$  20 nodes.

#### Example 2

Luminous Textile dimension 1020 mm height by 1800 mm width (landscape installation)

Ensure the Luminous Textile orientation is set to 90°.

#### Settings, Control, General Settings, Panel orientation.

Define width and height.

**Option 1, read from settings** Navigate to the settings, LTP info page and find the information under system.

# Settings, LTP info, status, panel\_width or Settings, LTP info, status, panel\_height.

#### Option 2, calculate

- 1 w = width in nodes (or width in mm / 60) (w) = 1800/60 = 30 nodes h = height in nodes (or height in mm / 60) (h) = 1020/60 = 17 nodes
- 2 Lookup a in the table *Luminous Textile width versus lines per port.* for example,

w = 30 gives a = 5.

3 Calculate b Subtract a from h until this ends up at a number equal or between 0 and a - 1.

b = h - a - a - ... (until  $0 \le b \le (a-1)$ )

b = 17 - 5 - 5 - 5 = 2

This Luminous Textile has 3 ports of each 5  $\times$  30 nodes, and the 4th port of 2  $\times$  30 nodes.

#### Universes per Luminous Textile

W	12	13	14	15	16, 17	18	19 to 21	22 to 24	25 to 28	29 to 34	35 to 42	43 to 56	57 to 72
а	14	12	12	11	10	9	8	7	6	5	4	3	2
Н													
12	1	1	1	2	2	2	2	2	2	3	3	4	6
13	1	1	2	2	2	2	2	2	3	3	4	5	7
14	1	2	2	2	2	2	2	2	3	3	4	5	7
15	2	2	2	2	2	2	2	3	3	3	4	5	8
16	2	2	2	2	2	2	2	3	3	4	4	6	8
17, 18	2	2	2	2	2	2	3	3	3	4	5	6	9
19, 20	2	2	2	2	2	3	3	3	4	4	5	7	10
21, 22	2	2	2	2	3	3	3						
23, 24	2	2	2	3	3	3	3						
25, 26	2	2	3	3	3	3	4						
27	2	3	3	3	3	3	4						
28	2	3	3	3	3	4	4						
29, 30	3	3	3	3	3	4	4						
31, 32	3	3	3	3	4	4	4						
33	3	3	3	3	4	4	5						
34 to 36	3	3	3	4	4	4	5						
37 to 40	3	3	4	4	4	5	5						
41, 42	3	4	4	4	5	5	6						
43, 44	4	4	4	4	5	5	6						
45	4	4	4	5	5	5	6						
46 to 48	4	4	4	5	5	6	6						
49, 50	4	4	5	5	5	6	7						
51, 52	4	4	5	5	6	6	7						
53, 54	4	5	5	5	6	6	7						
55	4	5	5	5	6	7	7						
56	4	5	5	6	6	7	7						
57 to 60	5	5	5	6	6	7	8						
61 to 63	5	5	6	6	7	7	8						
64	5	5	6	6	7	8	8						
65	5	5	6	6	7	8	9						
66	5	6	6	6	7	8	9						
67 to 70	5	6	6	7	7	8	9						
71, 72	6	6	6	7	8	8	9						

Typically, a Luminous Textile requires multiple universes. See the table for the number of universes required per Luminous Textile.

In the given examples the width and height can go up to 72 nodes since a panel can be used in as well portrait as landscape mode. The maximum number of nodes per driver box is 72, since a panel with a length more than 4.32 m (14.2 ft) uses two driverboxes which are addressed separately.

#### ➡ Note

- The first universe is universe 00. All universes are automatically incremented to the total number of universes the Luminous Textile uses.
- All universes in one (binding) IP address are always in the same net / subnet.
- If required, the last universes in a subnet might be left unused. The address range jumps to the next subnet with universe 00, to continue for this binding IP address.
- All nodes in each universe start from DMX address 001.

#### 6.1.3.3 Mode selection, Address selection and IP address binding

To activate streaming set the Luminous Textile to streaming mode.

#### Settings, Control, Advanced Controls

It can also be set via an external trigger, see section 5.2 HTTP API.

To activate Art-Net as the streaming protocol set the Luminous Textile to streaming mode and after that select Art-Net.

#### Applications, Lighting integration app, Streaming settings

After the change of the streaming protocol save the settings.

The Art-Net specification has a limit of maximum four universes per IP address. To give a device the ability to receive more than four universes bind IP addresses are introduced to the standard. As Luminous Textile can use up to ten universes, it requires two bind IP addresses (additional to the IP address of the Luminous Textile).

Fill in valid values for the bind IP addresses, ensure the IP addresses that are available on the network. Since these binding IP addresses just receive data, no additional settings like subnet settings are required.

#### Applications, Lighting integration app, Art-Net Settings

After the change of the Art-Net Settings save the settings.

The start universe for a Luminous Textile can also be set here.

As the Luminous Textile uses Art-Net 3 there are three fields to set, **Net**, **Subnet** and **Universe**.

#### 6.1.3.4 Test and troubleshoot

If the image appears upside down, the orientation is not correct. Change the Luminous Textile orientation 180°.

If the image appears scrambled, check the orientation as well since this can appear with a 90° or 270° rotation.

#### Settings, Control, General Settings, Panel orientation

Testing is optional but advised as this is an easy way to check the installation.

#### 6.1.3.5 Artistic Licence

Artistic Licence offers a free software tool to "DMX Workshop" This software tool allows checking if Luminous Textiles are correctly setup. Additionally, it provides some tests to output data to specific channels to verify the setup.

Download and install the software https://artisticlicence.com/product/dmx-workshop/

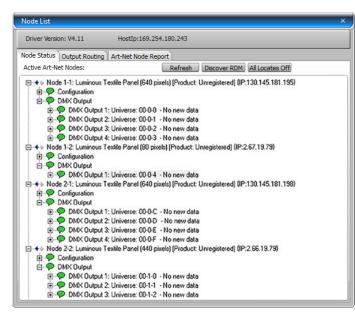
Check the tutorials section at this web page to get started.

Open the software and select the correct network interface. A window similar to Figure 55 is displayed.



Figure 57 DMX-Workshop menu

Click the button node list and click refresh. Unfold where necessary. All connected Luminous Textiles are discovered by the software (both Luminous Textile IP and populated binding IPs) and the universe it is set to. See Figure 56.



➡ Note Luminous Textiles are discovered both in streaming and player mode, regardless of KiNET or Art-Net mode.

Figure 58 DMX-Workshop node list.

If required, the "Dynamic" function under the Transmit DMX can be used to control the installation. See Figure 15.

Transmit d	ynamic DMX51	2	/
Mode: - Single Group Group Group Group		Speed O · · · ·	
Start	End		1
1 💐	512 🔷		
Output:	• On ings (Pipe 1)		
Protocol	Art-Net Autom	atic	
	2.0.0.100		
Universe	1		
	1 🤝		
Sync			

Figure 59 DMX-Workshop transmit dynamic DMX.

For more information about DMX workshop visit www.artisticlicence.com

# **7** Default settings

Description	Setting
Player mode	Standalone
Orientation	0°
Network	DHCP ON
Dynalite settings, port number	Empty
Dynalite settings, area	Empty
Color Kinetics Keypad settings, port number	6041
Color Kinetics remote Keypad settings, port number	6041
DHCP OFF	
Static IP address	10.11.11.10
Subnet mask	Empty, 255.0.0.0 is used
Gateway	Empty
Operation	
Streaming protocol	KINET
Streaming protocol	
Default Art-Net address	
• Net	0
• Subnet	0
• Universe	0
Binding IP address 1	2.66.19.79
Binding IP address 2	2.66.19.80



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