SkyPanel®
S30 / S60 / S120 / S360
C and RP Versions

USER MANUAL

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Revision History

Date	Revision	Changes	Revisor
19-06-16	L03423	Added Light Engine Compensation Mode Added Revision History	mfg
23-01-31	L04006	Describes FW4.4 Several changes and additions	mfg

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Introduction

Thank you for selecting a SkyPanel LED soft light from ARRI. The SkyPanel is a compact, ultra-bright and high-quality LED soft light.

The different models of the SkyPanel emit white light with a fixed color temperature or colored light with adjustable color temperature and adjustable green-magenta point. The light spectrum is optimized for excellent color rendition and fulfills perfect the demands of modern, digital cameras. All models of the SkyPanel can be controlled using the common DMX512-A protocol, Art-Net, sACN or the fixture menu.

Please observe the *SkyPanel Installation and Safety Manual*. The manual is available for free download on the ARRI web site www.arri.com.

NOTICE

This manual describes the C and RP models of the SkyPanel. Please note, that the RP model emits only white light with a fixed color temperature, which is defined by the Phosphor panel used.

Information about Firmware Version 4.4

This user manual covers the firmware version 4.4 of the SkyPanel. Please note the following changes:

Change	Description
On downloading the error log and while controlling the fixture via sACN, a *DMX lost* message appears.	The fixture stops emitting light. During a show, do not execute any maintenance functions or connect USB memory sticks, as this may interrupt the light output.
Art-Net / sACN gateway settings (on/(off) are stored in the DMX preset data..	Conflicts may occur if the same DMX preset is used for several fixtures of a data line.
S360-C only: When upgrading to Firmware Version 4.4, the settings of the CRMX module are reset.	The S360-C must be re-linked to the CRMX transmitter.
The default value for *RGBW COLOR SPACE* has been changed	The default value is now *CALIBRATED COLOR*. Check this setting before using the fixture, to avoid unexpected results.
MASTER/SLAVE has been renamed to *HOST/CLIENT*	
WDMX has been renamed to *CRMX*	

Features

Light Field

The SkyPanel offers the same functionality as a conventional soft light.

Even Light Field

The SkyPanel soft light produces a homogeneous, single-shadow light field, delivering natural results.

Vibrant Colors, Full Spectrum Lighting

True-to-life color rendition is an outstanding feature of the SkyPanel. The fully tunable white light of the SkyPanel can be adjusted for different skin tones, camera sensors and mixed light environments. Full gamut color mixing enables the rendition of all color shades. The extensive gel library offers a wide range of familiar colors at the user’s fingertips.

Cool Light Beam

The SkyPanel does not emit any infrared or UV radiation and thus does not forward heat, making actors feel comfortable in the light beam.

Properties

Accessory Holder

Diffuser plates or an intensifier is placed on the front of the fixture and secured by locking guiding rails or held by four locking pins. Both the diffuser and intensifier of the S360-C are equipped with guiding rails at the front to carry other accessories for shaping the light like a honey comb.

Yoke

The aluminum or carbon fiber yoke provides high strength with minimum weight. The short metal yoke (only S360-C) is the perfect solution when the SkyPanel is mounted in a grid facing downwards.

Tilt-Lock

The high strength tilt-locks on each side of the stirrup provide secure locking. It eliminates movement and slippage and ensures that the SkyPanel will stay where you put it.

Control

All functions of the SkyPanel are controllable through DMX, Art-Net or sACN. The SkyPanel is also fully RDM compatible (via DMX and Art-Net with suitable controllers) and is equipped with an RDM feedback channel for reporting all set parameters including system status.

The SkyPanel S360-C is equipped with an integrated CRMX transceiver for wireless control and RDM communication. All other models of the SkyPanel series can be controlled wireless using a third-party CRMX system.

Fixture Menu

For location applications the SkyPanel is equipped with a fixture menu for manual adjustment of intensity, color temperature, green-magenta point as well as hue and saturation and other parameters.

Control Options

You can set up or control the SkyPanel with the options listed in the table below.

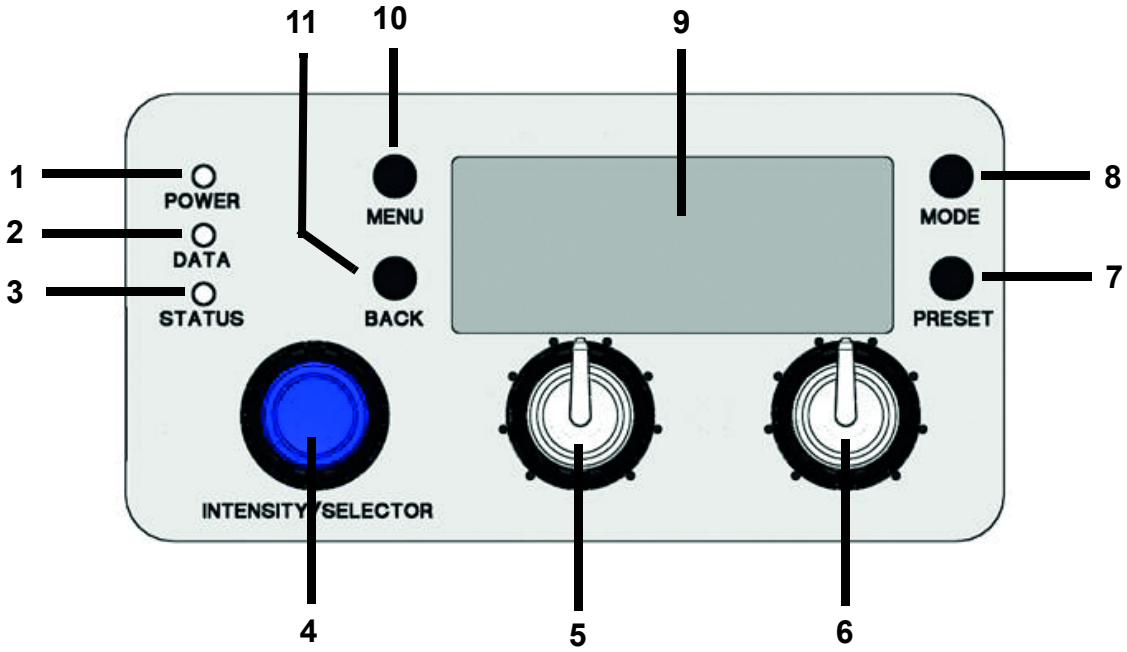
Option	Control	Configuration	Information
Fixture menu	Yes	Yes	page 7
DMX	Yes	Yes	Please see *DMX protocol specification* (free download from www.arri.com)
CRMX (wireless DMX)*	Yes	No	page 28
RDM	No	Yes	page 39
Art-Net and sACN	Yes	No	page 32
ALSM	No	Yes	page 33
Web Portal	No	Yes	page 34
Stellar App	Yes	No	www.arri.com/stellar/

The model S360-C is equipped with an internal CRMX or CRMX2 Transceiver, all other models need to be connected to a wireless CRMX system to gain wireless control.

Fixture Menu

This section describes the fixture menu of the SkyPanel and the SkyPanel remote control. Some options, especially options for saving and loading data, are not available in the remote control fixture menu.

Overview



Features of the Fixture Menu

POWER-LED (1)

Color	Indication
Green	Fixture switched on. No error.
Off / No color	Fixture switched off.

DATA-LED (2)

Color	Indication
Blue	The fixture receives a valid DMX signal.
Blue / green	The fixture receives a valid CRMX (wireless DMX) signal (only S360-C).
Purple	Host mode active
White	Receiving valid Art-Net signal or communicating via RDM, Gateway active
Green	Receiving valid Art-Net signal, Gateway not active
Orange	Receiving valid sACN signal, Gateway active
Cyan	Receiving valid sACN signal, Gateway not active
Red	No communication between fixture menu and controller board.
No light	The fixture receives no valid control signal.

STATUS-LED (3)

Color	Indication
Green	No error. Normal temperature.
Red flashing (0,5s rhythm)*	Warning fixture over temperature (only with fan modes QUIET and HIGH).
Red	Error detected. An error message appears in the display. Calibration data not loaded.

Display Backlight

Color	Indication
Blue or Off	No error, normal condition.
Red	The display lights up red when the STATUS LED lights up red (error message).
Orange	The display lights up orange when the POWER LED lights up red.

Encoder (4)

The encoder (4) has two functions:

- Fixture menu closed: Setting the intensity.
- Fixture menu open: Use the encoder to scroll through the menu, open sub menus and set parameters. Pressing the knob opens sub menus and confirms settings.

Central Rotary Knob (5)

Use the rotary knob to set the color temperature (CCT) or the color hue (HUE). The current function of the rotary knob is shown in the display (9) above the knob.

Right Rotary Knob (6)

Use the rotary knob to set the green/magenta point or the color saturation (SAT) or, dependent on the active color mode, categories or parameters. The current function of the rotary knob is shown in the display (9) above the knob.

PRESET (7)

To call up a light preset

A short press of the PRESET button brings up the list of all available presets. Turn the encoder (4) to select one of 10 factory presets and 10 user definable presets. Press the encoder (4) to activate the preset.

To store a light preset

Use the fixture menu to adjust the settings. Hold PRESET, until the preset save dialog opens. Turn the encoder (4) to select a preset memory slot. Press the encoder (4) to store the preset. Close the dialog with BACK.

To call up a DMX preset

A short simultaneously press of the MENU and PRESET button brings up the list of all available DMX presets. Turn the encoder (4) to select one of 10 DMX presets. Press the encoder (4) twice to activate the preset.

To store a DMX preset

A long (> 3 sec.) simultaneously press of the MENU and PRESET button opens the DMX preset list. Turn the encoder (4) to select one of 10 DMX presets. Select a slot and press the encoder (4) to store the DMX preset. BACK (11) returns to the main screen.

MODE (8)

Press the MODE button short to swap between CCT, HSI, GEL, Source Matching, RGBW mode and x,y mode of the SkyPanel.

Press the MODE button long (> 3 sec.) to activate the extended color control. The extended color control feature is not available in RGBW mode unless RGBW Calibrated Color Space is activated.

DISPLAY (9)

The display shows the current settings and other information during normal operation. Press the MENU button (10) to open or close the fixture menu. Use the encoder (4) and the BACK button (11) to navigate through the fixture menu.

MENU (10)

The MENU button opens the fixture menu. Press MENU when the fixture menu is open to close the menu and abort an action (Escape). Use the encoder (4) to scroll through the menu, open sub menus and set parameters.

Press MENU long to display the menus which are used most.

BACK (11)

The BACK button closes a sub menu and aborts an action (Escape). Compared to the MENU button (10) the BACK button only closes the sub menu, but not the fixture menu.

Press BACK long to display the last used menus.

To lock the fixture menu

- Press the encoder in the home screen for 5 seconds to lock all buttons and knobs. Use the feature to prevent an accidental change of settings.
- The word LOCKED appears on the display when locked.
- Press the encoder in the home screen for 5 seconds again to unlock all buttons and knobs.
- Please find a overview in chapter *Overview of the Fixture Menu on page 35*.

To Set the Operation Mode

Press the MODE button (8) short to switch from CCT to HSI to GEL to Source to RGBW to x,y and back to CCT mode.

In CCT mode the SkyPanel generates white light with optimized color rendition. In HSI mode the SkyPanel generates colored light. If saturation is set very low, the SkyPanel generates white light, but not with optimized color rendition. The GEL mode offers an extensive color gel library. In Source mode the SkyPanel generates the light of traditional light sources. Use the RGBW mode to generate a RGBW color using the control panel. The x,y mode generates a color defined by its x,y coordinates.

Press the MODE button long (> 3 sec.) to activate the extended color control. The extended color control feature is not available in RGBW mode unless RGBW Calibrated Color Space is activated.

SkyPanel Remote

The SkyPanel Remote is connected with an USB cable to a SkyPanel softlight. It is powered by the SkyPanel and does not use a battery. The SkyPanel Remote emulates the SkyPanel fixture menu. Each SkyPanel Remote controls one SkyPanel.

Use multiple SkyPanel softlights in a host / client configuration to control them with one SkyPanel Remote.

The SkyPanel checks the firmware of the SkyPanel Remote every time it is connected. If the firmware version of the SkyPanel Remote is different to the firmware version of the SkyPanel the SkyPanel Remote firmware will be synchronized automatically, no matter if it is an upgrade or downgrade.

Shortcuts

Shortcut	Function
Short press MODE	Change between CCT > HSI > Gel > Source > RGBW > xy >
Long Press MODE	Call up Extended Color Control
Short Press PRESET	Load Light Preset
Long Press PRESET	Save Light Preset
Short Press MENU + PRESET	Save DMX Preset
Long Press MENU + PRESET	Load DMX Preset

Fixture Modes

The SkyPanel offers, depending on the model, up to 31 control modes. Use the 8 bit modes with basic controllers like simple fader consoles.

ARRI recommends the use of the 16 bit modes in combination with controllers supporting 16 bit resolution to obtain best results. The high resolution provides smooth dimming and precise color adjustments.

The coarse / fine modes utilize two channels for most parameters and provide higher resolution compared to the 8 bit modes in combination with controllers that do not support true 16 bit resolution. One channel sets the coarse value between 0 and 255 of the function. Each step is divided in 256 increments using the fine channel. This way it is possible to control the light very precise without using a true 16 bit resolution.

Below is a short overview of the different control modes. Please find a detailed overview of all DMX modes in the document *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI website www.arri.com.

CCT and RGBW

This mode provides control of intensity, color temperature, green/magenta point and individual channels for controlling the red, green, blue and white color (only SkyPanel-C).

CCT

Simple white-only mode. It is used when the number of available channels of the controller is very limited. It provides control of intensity, color temperature and green/magenta point.

CCT & HSI

Provides control of intensity, color temperature, green/magenta point, hue and saturation (HSI = hue, saturation, intensity). In HSI mode (only SkyPanel-C) the color and intensity is very even over the fixtures as it is controlled using color algorithms which take the tolerances of the light engines into account during calculation.

RGBW

Simple mode for controlling the overall intensity and the red, green, blue and white intensity when only a limited number of channels is available. Please find more information about the RGB color space on page 17.

HSI

Simple mode for controlling hue, saturation and intensity when a limited number of channels is available.

GEL

The GEL mode offers an extensive color filter list. The color temperature has two settings, 3.200 K and 5.600 K. The intensity can be controlled as usual.

x,y Coordinates

The x,y mode determines the color displayed by its xy coordinates in the CIE 1931 diagram. Set the x and y coordinate with 8 bit or 16 bit resolution. One channel determines the transition type when fading from one color to another color.

Source Matching

Select from a list of light sources to match that color and spectrum. Source Matching saves a lot of time when you need a specific illumination. Select from 50 different light sources the one which fits best to your demands.

Light Effects

The SkyPanel contains a light effect engine with 13 different light effects. Activating a light effect is very easy. Just activate a light effect via the fixture menu, DMX, Art-Net or sACN and set the parameters to get exactly the effect you need.

Light Engine Control via DMX

The light engines of the SkyPanel can be controlled individually. The control modes CCT & RGBW, HSI and x,y coordinates apply to all light engines of a fixture, but you can set the corresponding parameters of each light engine individually. The S30 has one light engine, the S60 has two, the S120 has four, and the S360-C has twelve light engines.

Please find more information in the *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI web site www.arri.com.

Ultimate DMX Mode

The ultimate DMX mode allows the combination of different control modes. You can select two modes and fade between them. This allows you to quickly select, prepare and crossfade the most suitable control modes for your application.

Please find more information in the *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI web site www.arri.com.

Extended color control

The extended color control allows to intuitively modify the current color. If extended color control is active, eight parameters are added to each control mode (see *Extended Color Control on page 13*).

NOTICE

Depending on the selected mode the channels required for each SkyPanel should be allocated in the controller to provide independent control of all SkyPanels connected to the controller.

User Guide for SkyPanel as Decorative Lights

ARRI lighting products are being applied into an increasing amount of application scenarios.

When used as a decorative light in events, exhibition or live shows, SkyPanels can perform for the eyes of the audience as well as for the camera by using the recommend settings below:

- Use a calibrated color mode such as HSI or CCT mode. RGBW mode can also be used if *RGBW Calibrated Color* is turned on.
- In case low intensity output is needed, ARRI recommends to activate Low End Mode.
- Intensity levels above 1% will yield better results. This applies to all above mentioned modes and all dimming curves.

Functions

To set the Lighting Parameters in CCT Mode

Set the color temperature continuously with the central rotary knob (5). Set the green/magenta point continuously with the right rotary knob (6). The current setting is displayed above the rotary knobs.

To set the Color in HSI Mode

Set the hue continuously with the central rotary knob (5). Set the saturation continuously with the right rotary knob (6). The current setting is displayed above the rotary knobs.

To set the Lighting Parameters in GEL Mode

Use the central rotary knob (5) to set the color temperature 3.200 K or 5.600 K. The right rotary knob (6) offers two options: *Best color* displays the gel with optimized color quality, *Brightest* displays the gel with optimized brightness.

- Press the encoder (4) to open the gel library. Choose the gel manufacturer (Rosco or LEE) with the central rotary knob (5). Use the right rotary knob (6) to activate a gel category as shown in the table below.

Rosco	LEE
Color Correction	Color Correction
CalColor	Color Filters
Storaro Selection	600 Series
Cinelux	Cosmetic
	700 Series

- Turn the encoder (4) to call up a gel from the gel set. Press the encoder to select a gel or press BACK (11) to close the gel set and set the intensity with the encoder (4). Press the encoder (4) again, to re-open the gel set.

To set the Light Source in Source Mode

Activate the source mode and press the encoder to call up a list of the light sources available. Use the right rotary knob (6) to select the category (please see *DMX protocol specification*, which is available for free download for a detailed list). Turn the encoder to select a light source. The SkyPanel calls up the selected light source in real time. Press the encoder to choose the selected light source.

To set the Color in RGBW Mode

The central rotary knob (5) has no function in RGBW mode. Use the right rotary knob (6) to select the functionality of the encoder I/S (4). Dependent on the selection of the right rotary knob, the encoder is used to set the overall intensity of the red, green, blue and white color. Please note the setting *Direct Control* or *RGBW Color Space (see page 17)*. You can store the RGBW color as a preset.

To set the Color in x,y Mode

The x,y mode defines the color using its x,y coordinates. use the right rotary knob (6) to select the functionality of the encoder (4). Dependent on the selection of the right rotary knob, the encoder is used to set the intensity, the x or y coordinate of the color. The range of both the x and y coordinate is 0.0000 to 0.8000.

Extended Color Control

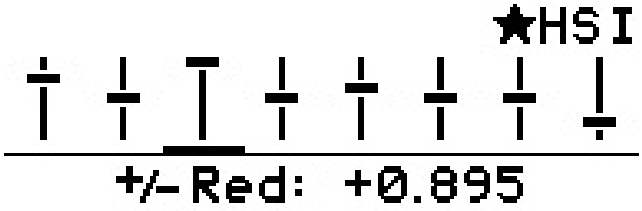
The extended color control allows the modification of the selected color in an intuitive way. It can be used both via the control panel or DMX (see *To Use the Extended Color Control via DMX on page 28*).

To Use the Extended Color Control via the Control Panel

Press the MODE button for approximately 3 sec in the home screen to activate the extended color control. If RGBW direct mode is active, the extended color control is not available. Please activate the calibrated RGBW color mode (see *Calibrated Color Space on page 17*) to be able to activate the extended color control. If the extended color control is active, a short press of the MODE button switches between the operation modes (see *To Set the Operation Mode on page 9).*

If an effect is active, press the MODE button for at least 3 sec to switch between the color mode, the extended color control screen and the effect parameter screen.

The picture below shows the color control screen.



In the upper left and right corner of the display the active special and operation modes are displayed similar to the home screen (in the picture above HSI operation mode).

Each parameter available is shown as a slider. Neutral parameters are indicated with the solid horizontal line at the middle of the bar. The horizontal bar of each slider indicates the value of each parameter. The selected parameter is indicated by a small bar under its slider. The name of the parameter and its value is shown under the sliders in the display.

From left to right, the bars in the extended color control screen stand for the following parameters:.

Description	Parameter	Range
Color temperature	Warmer / Cooler	-1.000 > 0.000 > +1.000
Saturation	Saturate / Desaturate	
Red portion of current color	+ Red / - Red	
Green portion of current color	+ Green / - Green	
Blue portion of current color	+ Blue / - Blue	
Cyan portion of current color	+ Cyan / - Cyan	
Magenta portion of current color	+ Magenta / - Magenta	
Yellow portion of current color	+ Yellow / - Yellow	

Select the parameter using the right rotary knob (6). Set the value of the parameter with the encoder (4). Please note:

- The resolution of the encoder adapts dynamically to the moving speed.
- Clockwise turn increments the value of the parameter.
- Counter-clockwise turn decrements the value of the parameter.
- Double press within 800 ms resets the selected parameter to neutral (0).
- Triple press within 1200 ms resets all parameters to neutral (0).

When changing the operation mode the current values of the parameters are stored and restored when activating the operation mode the next time. After a power cycle, the SkyPanel extended color control parameters are restored for each operation mode.

With activated extended color control:

- A star next to the active operation mode indicates the activated extended color control,
- the parameters are stored with each preset. Presets which contain parameters of the extended color control are marked with a star,
- modifying an extended color control parameters leaves any active preset,
- the calibrated RGBW color space is activated by the SkyPanel when the extended color control is activated via DMX,
- the direct RGBW color space is not available,
- the parameters are applied both to the start and end point of a cross fading,
- the parameters are not applied to lighting effects.

NOTICE

Presets made in Firmware 4.0 or higher will not work on previous firmware versions.

To Set the Brightness in all Operating Modes

Set the brightness in both operating modes continuously with the encoder (4). The setting is dynamic: Turning the encoder fast changes the intensity in coarse steps, turning it slow changes the intensity in fine steps.

To Set the Dimming Curve

The SkyPanel supports four dimming curves. The dimming curves are global: They affect both the intensity control via the fixture menu or DMX, wireless DMX, Art-Net and sACN.

- **Linear:** The intensity changes proportional to the encoder (4) or the channel value.
- **Exponential:** The resolution is high at lower intensity levels and low at higher intensity levels. Use this dimming curve when you need a high resolution at low intensity levels. This is the default setting.
- **Logarithmic:** The resolution is low at lower intensity levels and high at higher intensity levels. Use this dimming curve when you need a high resolution at high intensity levels.
- **S curve:** The resolution is both high at lower and higher intensity levels and low at intensity levels in between. Use this dimming curve, when you need a high resolution at low and high intensity levels.

To set the dimming curve

1. Press the MENU button (10) to open the fixture menu.
2. Turn the encoder, until *Light Control* is selected. Press the encoder to open the menu.
3. Turn the encoder, until *Dimming Curve* is selected. Press the encoder to open the menu.
4. Select the dimming curve by turning the encoder. Press the encoder to confirm the setting.

NOTICE

The dynamic of an effect using the intensity is very low, when you choose a basic intensity value in a flat area of the dimming curve. Choose a different effect or select another dimming curve to create a more dynamic effect.

To Set a Special Control Mode

The SkyPanel supports four special control modes. The special control modes are global: They affect both the intensity control via the fixture menu or DMX, wireless DMX, and Art-Net or sACN.

Stage Mode

Stage Mode is designed for live entertainment and theatrical performances which require completely smooth dimming to zero without intensity drop offs. Some color changes may happen at very low dimming levels.

Stage Mode is not designed for use with motion picture or broadcast cameras as flicker may occur.

Low End Mode

The Low End Mode optimizes the dimmer quality at low intensity levels and enables SkyPanel to generate accurate CCTs with high color rendition and smooth dimming at very low light levels. The Low End Mode can cause flickering when used with cameras shooting at high frame rates.

NOTICE

The Stage Mode can not be used with active Low End mode and vice versa. The warning *Not Available: Low End Mode* or *Not Available: Stage Mode* will be displayed when you try to activate the Stage Mode or Low End mode if the other mode is active. You need to de-activate the other mode before.

Tungsten Mode

The tungsten Mode can mimic the dimming curve and strike on-and-off effect of a traditional tungsten lamp. The CCT warms as the light is dimmed and when the intensity drops to zero quickly there is a short afterglow of warm light. This mode is perfect for mixing the SkyPanel with tungsten sources or for producing a familiar effect.

High Speed Mode

The High Speed mode generates flicker-free light for High Speed shootings. High Speed Mode has been tested up to 25.000 fps and down to 2° shutter angle with no flicker or roll bars. The intensity is fixed in High Speed mode. The only settings are 0% (black out) or 100% (full intensity). In High Speed mode the settings for low end mode, tungsten mode, effects and PWM frequencies are ignored.The operation modes CCT, HSI and GEL are available in High Speed Mode. When modifying a parameter the SkyPanel performs a short black-out when applying the new value. The operation modes SOURCE and RGBW are not available in High Speed Mode.

NOTICE

Effects are de-activated in High Speed mode. When you try to call up an effect in High Speed mode, the warning *Not Possible: High Speed Active* is displayed. When you try to activate the High Speed mode with an effect active, the warning *Not Possible: Effect Active* is displayed. De-activate the effect or the High Speed mode to change the control mode.

To set a special control mode

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Light Control* is selected. Press the encoder to open the menu.

3.Turn the encoder, until *Special Modes* is selected. Press the encoder to open the menu.

4.Select the special mode by turning the encoder. Press the encoder to confirm the setting.

5. Press MENU to close the menu.

Overview of the Special Control Modes

Control Mode	Application	Dimming behavior	Flicker behavior
Stage Mode	Live Audience	Very good very low end range	Will most likely cause flicker
Low End Mode	TV-Studio, Film	Good in low end range	Might cause flicker
Tungsten Mode	Simulation of a tungsten source	Good through whole range	Might cause flicker
Normal Mode (no special control modes active)	Normal dimming	Good through whole range	Unlikely to cause flicker
Highspeed Mode	No dimming	---	Flicker free

Host / Client Mode

In Host / Client mode the client fixtures mimic the host fixture without delay. The host fixture generates a DMX signal on the 5-pin DMX Thru connector.

Connect a maximum of 32 SkyPanels and L-series fixtures to a DMX data link. Choose one SkyPanel to be the host fixture.

NOTICE

There must not be more than one SkyPanel in the data link set to host mode.

Setting more than one fixture to host mode or connecting a DMX controller to the data link causes one or all host fixtures to de-activate the host mode.

To set the Host and Client Fixtures

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Light Control* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *Host / Client Mode* is displayed. Press the encoder to open the menu.

4.Set all fixtures in the data link to *Off* to de-activate host mode. Select *On* on one fixture in the data link to set the fixture as host fixture.

5.Press MENU to close the menu.

All fixtures in the data link will mimic the host fixture automatically and independent from their settings.

Please note when using the Host / Client mode:

- Art-Net and sACN are de-activated on all fixtures in the data link.
- Changing the mode on the host fixture (CCT, HSI, GEL, Source Matching, RGBW) changes the mode on all client fixtures accordingly.
- Activating the extended color control on the host fixture activates the extended color control on client fixtures supporting extended color control.
- The settings DMX protocol version, DMX address, tungsten mode, low end mode, fans and signal loss behavior are changed accordingly to the settings of the host fixture.
- Connect only C version fixtures of one type in a data link.
- L-series fixtures do not support the GEL mode.
- Presets are not available.

Calibrated Color Space

By default, the SkyPanel generates colors in a calibrated color space. The calibrated color space Kodak Pro Photo Color Gamut / ESTA standard E1.54 forces the SkyPanel to generate a calibrated color. The calibrated color space is a global setting and is active in both on-board controls and DMX.

When selecting direct RGBW mode, the color is generated with optimized brightness within the specified tolerances. The color in direct mode will not be calibrated, and there can be minor unit to unit differences.

Use the right rotary knob (6) to select either the red, green, blue or white channel, and then turn the encoder to adjust the selected channel. Turn the right rotary knob further clockwise to select and adjust the white point and green/magenta point of the current color.

To Activate and De-activate the Calibrated Color Space:

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Light Control* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *RGBW Color Space* is displayed. Press the encoder to open the menu.

4.Select *Direct Control* to generate colors with optimized intensity. Select *Calibrated Color* to generate a calibrated color.

5.Press MENU to close the menu.

Frequency Selection

You can change the frequency in the fixture menu. Change the frequency, when you recognize flicker when in the camera picture or by your eyes. The default frequency is the highest frequency. You can change the frequency in 10 steps. Frequency 1 is the highest frequency, while frequency 10 is the lowest frequency setting.

To set the frequency

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Light Control* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *Frequency Selection* is displayed. Press the encoder to open the menu.

4.Select a frequency. Press the encoder to confirm the setting. The frequency is set immediately.

5. Press MENU to close the menu.

To set the Fan Mode

You can set the fan mode to adapt the cooling and noise level to the environment. The table below shows the available options:

Fan Mode	Max. power (only S360-C)	Description
Normal (only S360-C)	1500 W	The fans operate temperature regulated.
Quiet Mode	1200 W	The fans operate constantly at low speed (silent).
Variable	1200 W	The fans operate temperature regulated.
High Temp	1200 W	The fans run at maximum speed.

To set the Fan Mode

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Fan Mode* is displayed. Press the encoder to open the menu.

3.Select the Fan mode by turning the encoder. Press the encoder to confirm the setting.

4.Press MENU to close the menu.

Lighting Effects

The SkyPanel offers an effect library with a wide variety of lighting effects used on set or in a TV studio. The SkyPanel replaces many special effect devices with its unique effect library.

You can call up all effects using the fixture menu or via DMX, Art-Net or sACN. Every effect offers specific parameters. A lighting effect can be stored in a preset slot for quick access at a later point.

To select and activate an effect

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Lighting Effects* is displayed. Press the encoder to open the menu.

3.Select the desired effect by turning the encoder.

4.Press the encoder to start the effect.

5.Set the parameters, as described below.

To stop an effect

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Lighting Effects* is displayed. Press the encoder to open the menu.

3.Select the option *Off*. Press the encoder to confirm.

Start / Stop function of the effect

If an effect is running, press the encoder to stop the effect execution. Press the encoder again to restart the effect from the beginning. While stopped, the SkyPanel performs a black out and a P:<Effect> shows the status in the display. The start / stop function is only available in the effects control screen.

The SkyPanel provides the following effects in DMX modes 22 (8 bit) and 23 (16 bit):

Party

The Party effect calls up the color spectrum or changes the color temperature from warm to cold and vice versa in an endless loop.

Parameters:

• Saturation

• Speed

If you do not need the effect for shooting, you will need it for the party when the movie is done!

Candle

Low flickering of a warm light, slower than fire and less energetic. The light gentle fades in CCT and brightness with periods of static behavior in between. It consists of „flutters“ and static periods.

Parameters:

• CCT range

• Speed

Clouds Passing

Slow variations in intensity and CCT that can be offset. The effect is most useful when using many SkyPanels that are offset to prevent a simultaneous effect on different fixtures.

Parameters:

• Offset

• Passing speed

• Sync

Club Lights

Random colors that pulse, flash and fade.

Parameters:

• Color variety

• Speed

• Sync

Color Chase

Creates a color chasing effect over the surface of the SkyPanel using multiple LED light engines.

Parameters:

• Saturation

• Speed

• Offset

• Sync

Cop Car

Creates an on-board blue and red flashing effect to mimic a police car, an ambulance or a fire brigade. Do not use the effect in public areas without permission.

Parameters

• Color combination

• Flash pattern

Explosion

A bright flash of light with a fast attack and a semi-slow decay.

Parameters:

• Trigger

• Decay

Fire

Creates a flickering fire effect.

Parameters:

• CCT range

• Flicker speed

Fireworks

Bright flashes of color and have a quick start and fade to zero intensity.

Parameters:

• Color combination

• Speed

Fluorescent Flicker

Fluorescent color with static periods and then periods of the light flickering on and off.

Parameters:

- Speed
- Frequency

Light Strobe

Generates a white or colored strobe effect with adjustable speed from 25 flashes / sec to 1 flash / sec.

⚠ DANGER

DANGER! Risk of injury or death through epileptic seizure.

Do not use the effect near stairways, in corridors or near public exits.

Provide advance notice that strobe lighting is in use. Display advisory notices on the set, at the point of ticket sales, on tickets if possible, in the program, and at the entrance(s) to the venue or studio.

Avoid extended periods of continuous flashing, particularly at frequencies of 10 to 20 flashes per second. At flash rates below 5 flashes per second, it is estimated that only 5% of flicker-sensitive persons will be at risk of seizure

Make sure that personnel at the venue are trained in the care of a person who is having an epileptic seizure and able to provide care if necessary.

If strobes are in use and a person has a seizure, switch the strobes off immediately.

Mount strobes as high above head height as practicable.

Parameters:

- CCT
- Green/magenta point
- Cross fade
- Saturation
- Flash speed

Lightning

Creates an on-board flashing lightning effect. Intensity, speed and frequency of flashing can be controlled.

Parameters:

- CCT
- Green/magenta point
- Speed
- Frequency
- Sync

Paparazzi

Effect that mimics a flash bulb or modern camera flash.

Parameters:

- CCT
- Flash type
- Frequency

Process

Fading on and off of white light that moves from one light engine to the next.

Parameters:

- Speed
- Direction

Pulsing

A pulsing or throbbing effect where the color and speed can be set.

Parameters:

• CCT
• Green/magenta point
• Cross fade
• Color
• Saturation
• Frequency
• Span

Television

Creates an on-board TV effect. Cool CCT that changes intensity every few seconds.

Parameters:

• CCT range
• Speed

Welding

Quick bright flashes on different light engines with a fast decay.

Parameters:

• Speed
• Minimum brightness

To Activate and set Effect Parameters with the Fixture Menu

The rotary knobs adjust the effect parameters when an effect is active. For all effects applies:

• The selected effect is displayed in the left top corner of the display.
• The encoder adjusts the intensity.
• Press the encoder to stop the effect (black out).
• Press the encoder again to restart the effect.
• Press MODE long (> 1 sec) to activate the parameters described below (column *Mode*, not available for all effects).
• Press MODE again to close the effect control and regain normal control.

The table below shows the parameters you can adjust with the rotary knobs for each effect:

Effect	Mode	Rotary Knob	Parameter
Party Effect		Central	Saturation
		Right	Speed
Candle		Central	CCT range
		Right	Speed
Clouds Passing		Central	Offset
		Right	Speed
Club Lights		Central	Color range
		Right	Speed
Color Chase		Central	Offset
	X	Central	Saturation
		Right	Speed
Cop Car		Central	Color combination
		Right	Flash pattern
Explosion		Press Encoder	Trigger
		Right	Decay
	X		Color mode
Fire		Central	CCT range
		Right	Speed
Fireworks		Central	Color combination
		Right	Speed
Fluorescent Flicker		Central	Speed
		Right	Frequency
	X		Color mode
Light Strobe	X	Central	Speed
		Central	Normal functionality
		Right	Normal functionality
Lightning		Central	Frequency
	X	Central	CCT range
		Right	Speed
	X	Right	Green-Magenta point
Paparazzi		Central	Frequency
	X	Central	CCT range
		Right	Flash bulb
	X	Right	Green-Magenta point
Process		Central	Speed
		Right	Direction
	X		Color mode
Pulsing		Central	Normal functionality
	X	Central	Span
		Right	Normal functionality
	X	Right	Frequency
Television		Central	CCT range
		Right	Speed
Welding		Central	Speed
		Right	Minimum brightness
	X		Color mode

When changing a parameter of an active effect through the fixture menu or via DMX, the internal effect generator recalculates the effect in real time. The effect can stutter, step or be unsmooth for a short period. Do not change parameters of an active effect if the effect needs to run smooth.

To Set the Display Behavior

You can set the intensity of the background illumination, the contrast, the behavior of the background illumination and the orientation of the display content.

To set the display behavior

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Display Setup* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *Display Illumination* is displayed. Press the encoder to open the menu. Select the desired setting by turning the encoder. Press the encoder to confirm the setting.

4.Turn the encoder, until *Display Brightness* is displayed. Press the encoder to open the menu. Select the desired brightness by turning the encoder. Press the encoder to confirm the setting.

5.Turn the encoder, until *Display Contrast* is displayed. Press the encoder to open the menu. Select the desired contrast by turning the encoder. Press the encoder to confirm the setting.

6.Turn the encoder, until *Display Rotation* is displayed. Press the encoder to open the menu. Select the desired setting by turning the encoder. Press the encoder to confirm the setting.

7.Turn the encoder, until *Error Mode Display* is displayed. Press the encoder to open the menu. Select the desired setting by turning the encoder. Press the encoder to confirm the setting.

Please refer to section *Overview of the Fixture Menu on page 35* for a detailed explanation of the options.

USB Functions

The SkyPanel has a USB A port. The load capacity is 500 mA at 5V voltage. Do not overload the USB-A port. The SkyPanel accepts FAT32 formatted USB 1.0 / 2.0 memory sticks. We recommend the use with memory sticks up to 4GB capacity. Memory sticks with higher capacity might cause inconvenient delays. The following USB functions are available:

• Update the firmware

• Save and load a light preset list

• Save and load a DMX preset list

• Save and load fixture settings

• Save the error and service log

To Update the Firmware

You can update the firmware of the fixture and the SkyPanel remote control via a USB memory stick:

1.Copy the SkyPanel update file to the root of an USB memory stick.

2.Connect the USB memory stick to the USB-A connector of the SkyPanel.

3.After a short time the fixture detects the update file on the USB memory stick.

4.Confirm the update with *Yes*.

5.Wait, until the update is finished and the SkyPanel has rebooted with the new firmware.

6.Remove the USB memory stick.

To Update a SkyPanel Remote

The SkyPanel Remote is automatically up- and downgraded by the SkyPanel connected whenever the firmware versions of the SkyPanel Remote and the SkyPanel are different.

NOTICE

Disconnect all DMX cables from the product before using an USB memory stick. The data transfer between the product and the USB memory stick might be disturbed due to interferences.

Do not remove the USB memory stick during an update or data transfer. The file system might be corrupted. You might need to perform a recovery update to return the fixture to a functional state.

Light Preset Lists

The fixtures light preset list can be saved to an USB memory stick and be uploaded to another SkyPanel.

To Save a Light Preset List

1.Connect an USB memory stick to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn the encoder, until *USB Functions* is selected. Press the encoder to open the menu.

4.Turn the encoder, until *Save Light Presets* is selected. Press the encoder to open the menu.

5.Select *Yes* and press the encoder to confirm the setting. Select *No* to abort saving the light preset list.

6.The light preset list will be saved on the USB memory stick.

Up to 30 light preset lists can be stored in the root directory of the USB memory stick. The file name is **<product serial number>-Presetxx.json**. The SkyPanel is looking for *Presetxx.json* to identify a light preset list on an USB memory stick. Be sure to keep the string when renaming a light preset list. Otherwise the file will not be found by the SkyPanel.

To Load a Light Preset List

1.Connect an USB memory stick with one or more preset lists to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn the encoder, until *USB Functions* is selected. Press the encoder to open the menu.

4.Turn the encoder, until *Load Presets* is selected. Press the encoder to open the list of the preset lists available in the root directory of the USB memory stick.

5.Turn the encoder, to select a preset list.

6.Press the encoder to load the selected preset list. The internal preset list of the SkyPanel will be overwritten by the selected preset list.

7.Press PRESET (7), to load a light preset.

To Save and Load Fixture Settings

The fixtures settings can be saved to an USB memory stick and be uploaded to another SkyPanel. The file contains all fixture settings except the DMX address and IP settings.

To Save the Fixture Settings

1.Connect an USB memory stick to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn the encoder, until *USB Functions* is selected. Press the encoder to open the menu.

4.Turn the encoder, until *Save Fix. Settings* is selected. Press the encoder to open the menu.

5.Select *Yes* and press the encoder to confirm the setting. Select *No* to abort saving the fixture settings.

6.The fixture settings will be saved on the USB memory stick.

Up to 30 fixture settings files can be stored in the root directory of the USB memory stick. The file name is **<product serial number>-Clonexx.json**. The SkyPanel is looking for *Clonexx.json* to identify a fixture settings file on an USB memory stick. Be sure to keep the string when renaming a fixture settings file. Otherwise the file will not be found by the SkyPanel.

To Load Fixture Settings

1.Connect an USB memory stick with one or more fixture settings files to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn the encoder, until *USB Functions* is selected. Press the encoder to open the menu.

4.Turn the encoder, until *Load Fix. Settings* is selected. Press the encoder to open the list of the fixture settings files available in the root directory of the USB memory stick.

5.Turn the encoder, to select a fixture settings file.

6.Press the encoder to load the selected fixture settings. The SkyPanel restarts with the new fixture settings after successful upload.

To Save the Error and Service Log

For diagnosis purpose you might be asked to send the error and service log to the ARRI service. The log files can be downloaded to an USB memory stick.

The file name contains the date, time and serial number of the fixture.

To save the log files

1.Connect an USB memory stick to the USB-A connector of the SkyPanel.
2.Press the MENU button (10) to open the fixture menu.
3.Turn the encoder, until *USB Functions* is selected. Press the encoder to open the menu.
4.Turn the encoder, until *Save Error Log* is selected. Press the encoder to open the menu.
5.Select *Yes* and press the encoder to confirm saving the log files. Select *No* to abort saving the log files.
6.The log files will be saved on the USB memory stick.

To Read out Fixture Settings

1.Press the MENU button (10) to open the fixture menu.
2.Turn the encoder, until *Enabled Functions* is displayed. Press the encoder to open the menu.

Change the status of an option by selecting the option. Press the encoder, to change the status of the option.

To Read out Fixture Information

1.Press the MENU button (10) to open the fixture menu.
2.Turn the encoder, until *Fixture Settings* is displayed. Press the encoder to open the menu.
3.Turn and press the encoder to display fixture information.

Please find a detailed overview of the fixture menu in chapter *Overview of the Fixture Menu on page 35*.

To Perform a Factory Reset

1.Press the MENU button (10) to open the fixture menu.
2.Turn the encoder, until *Factory Reset* is displayed. Press the encoder to open the menu.
3.Turn the encoder to choose the option *Yes* and perform a factory reset. Press BACK (11) to abort.
4.The SkyPanel reboots with its factory settings.

Light Engine Compensation (C-Versions only)

ARRI always tries to offer lampheads of highest quality and performance. LEDs represent a new type of light source that is developing rapidly. This is why different SkyPanels can be equipped with different generations of light engines in one installation. In most cases, newer devices achieve higher final brightness levels due to the further development of LEDs. Light engine compensation is used to adjust the different brightness levels of the devices.

The final brightness of devices with brighter light engines is limited to ensure the same final brightness for all devices in the installation.

The Light Engine compensation influences the following control modes:

• CCT
• HSI
• RGBW calibrated
• Gel Mode
• Source Matching
• x,y Coordinates
• Lighting effects

To Read out Light Engine Information

1.Press the MENU button (10) to open the fixture menu.
2.Turn the encoder, until *Fixture Settings* is displayed. Press the encoder to open the menu.
3.Turn the encoder, until *LE Compensation* is displayed. Press the encoder to open the menu.
4.Select Light Engine Status and press the encoder.

• *LE Gen1 Installed*: The fixture is equipped with Generation 1 Light Engines.
• *LE Gen2 or above installed*: The fixture is equipped with Generation 2 Light Engines.
• *LE Gen Mixed! - Call Service*: The fixture is equipped with drivers or Light Engines of different generations. The fixture doesn‘t work correctly. This message is mostly due to improper repair attempts. Please contact your ARRI service partner.

To Perform a Light Engine Compensation:

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *Fixture Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *LE Compensation* is displayed. Press the encoder to open the menu.

4.Select *Light Engine Compensation State* and press the encoder.

5.Select *ON* to activate Light Engine Compensation, select *Off* (Default setting) to deactivate.
This function is not available for SkyPanels with Light Engine Generation 1.

6.The SkyPanel adjusts output to match with SkyPanel with LE Gen1 installed.

Please find a detailed overview of the fixture menu in chapter *Overview of the Fixture Menu on page 35*.

DMX

Priorities

The fixture can be controlled via DMX, sACN or Art-Net. Please observe the priority rules below when using more than one control method at a time:.

Control Method	Priority
DMX	DMX commands overwrite sACN and Art-Net commands.
sACN	sACN commands overwrite Art-Net commands, but are overwritten by DMX commands.
Art-Net	Art-Net commands are overwritten by sACN and DMX commands.

DMX Address

When you control the SkyPanel using DMX in a DMX data network, you must assign a DMX address to the fixture.

To assign a DMX address

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *DMX Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *DMX Address* is displayed. Press the encoder to open the menu.

4.Select a DMX address. Press the encoder to confirm the setting.

5.Press MENU to close the menu.

DMX Mode

The SkyPanel offer different DMX modes. Please find a detailed overview of all DMX modes in the document *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI website www.arri.com.

To set a DMX Mode

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *DMX Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *DMX Mode* is displayed. Press the encoder to open the menu.

4.Select a DMX mode. Press the encoder to confirm the setting.

5.Press MENU to close the menu.

DMX-Signal-Loss Behavior

You can set the behavior of the fixture when the control signal is lost. The table below shows the available options:

Option	Description
Hold Last Command	The last received DMX values are used until the fixture is switched off or valid DMX data is received again.
Black Out	The fixtures douses to 0% intensity immediately.
Hold 2 Min. Fade Out	The last received DMX values are used for 2 minutes. After 2 minutes the fixture douses to 0% intensity. When valid DMX data is received after less than 2 minutes, these data will be used.

To set the DMX-Signal-Loss Behavior

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *DMX Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *DMX Loss Behavior* is displayed. Press the encoder to open the menu.

4.Select the setting by turning the encoder. Press the encoder to confirm the setting.

5.Press MENU to close the menu.

NOTICE

The setting of the DMX signal loss behavior is part of a DMX preset. Therefore the setting can change when calling up a DMX preset.

DMX Protocol Version

The SkyPanel supports different versions of the DMX protocol. When a channel description is changed or channels are added, a new version of the DMX protocol is published. To ensure compatibility with existing DMX installations, you can set the DMX protocol version that the fixture should use.

To set the DMX Protocol Version

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *DMX Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *DMX Protocol Version* is displayed. Press the encoder to open the menu.

4.Select the setting by turning the encoder. Press the encoder to confirm the setting.

5.Press MENU to close the menu.

To Use the Extended Color Control via DMX

The SkyPanel applies 8 additional parameters to every DMX mode when the extended color control is activated vie the DMX settings menu. Depending on the selected mode, 8 (8-bit modes) or 16 (16-bit modes and Coarse / Fine) additional DMX channels are added per fixture. Please find more information in the *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI website www.arri.com.

NOTICE

The extended color control is not available in LE DMX control modes.

DMX Frame Filter

As a default setting, the SkyPanel checks the integrity of the received control data. If certain parameters of the data stream (e.g. the number of received DMX channels) change, the fixture displays a warning message and checks the data stream again before accepting it as a valid control signal. If the length of the data stream changes repeatedly, the check may cause unexpected behavior of the fixture. Therefore this function can be disabled. The SkyPanel then accepts all received control data without further checking.

To Activate and De-activate the DMX Frame Filter

1.Press the MENU button (10) to open the fixture menu.

2.Turn the encoder, until *DMX Settings* is displayed. Press the encoder to open the menu.

3.Turn the encoder, until *DMX Framefilter* is displayed. Press the encoder to open the menu.

4.Select the setting by turning the encoder. Press the encoder to confirm the setting.

5.Press MENU to close the menu.

Wireless DMX

The SkyPanel S360-C is equipped with a wireless DMX receiver supporting the LumenRadio CRMX and CRMX2 protocol.

If there is no DMX traffic received via a wired interface (DMX-512A, ArtNet or sACN) and wireless DMX is activated via the fixture menu, the SkyPanel S360-C can linked to a wireless DMX transmitter via an RDM discovery command. Once linked successfully, the SkyPanel S360-C processes wireless DMX data and respond to RDM requests only via the wireless link.

The DATA LED on the fixture menu panel fades from blue to green followed by a 2 second fade from green to blue as soon as CRMX is active AND CRMX data is received and processed by the SkyPanel S360-C.

If the CRMX Data State is set to OFF, no wireless DMX and no wireless RDM traffic will be processed.

To Link a SkyPanel S360-C with a Wireless DMX transmitter

1. Press the MENU button (10) to open the fixture menu.
2. Turn the encoder until *DMX Settings* is displayed. Press the encoder to open the menu.
3. Turn the encoder until *CRMX Settings* is displayed. Press the encoder to open the menu.
4. Turn the encoder until *CRMX Connection* is displayed. Press the encoder to open the menu.
   - To enter an 8 digit key press the encoder and enter/change the 8-digit-linking-key by turning the encoder. The digits can be selected using the middle (5) and right (6) rotary knob of the control panel or the next digit can be selected by pressing the encoder. While changing the key, the selected digit is shown in inverse mode. Press the encoder while the cursor is at the most right position to finish entering the 8-digit-linking-key and to proceed to the next step.
   - Select the CRMX mode (CRMX Classic or CRMX2) via the encoder. Press the encoder to confirm your selection and proceed to the next step.
   - Select the Output number via the encoder (Range A...H (CRMX 2); A, C, E, G (CRMX classic)). Press the encoder to confirm your selection and finish the linking procedure.
5. The fixture can now be detected by a CRMX transmitter. Press MENU to close the menu.

To Unlink a SkyPanel S360-C from a Wireless DMX transmitter

1. Press the MENU button (10) to open the fixture menu.
2. Turn the encoder until *DMX Settings* is displayed. Press the encoder to open the menu.
3. Turn the encoder until C*RMX Settings* is displayed. Press the encoder to open the menu.
4. Turn the encoder until *CRMX Data State* is displayed. Press the encoder to open the menu.
5. Select the setting *Off* by pressing the the encoder.
6. The fixture is now unlinked from the transmitter. Press MENU to close the menu.

As soon as DMX or RDM traffic is detected via the other interfaces, any wireless DMX or RDM data will be ignored and the SkyPanel S360-C processes the wired DMX/RDM traffic.

NOTICE

Please find a detailed overview of all DMX modes in the document *SkyPanel DMX Protocol Specification* which is available for free download on the ARRI website www.arri.com.

DMX Presets

The SkyPanel supports 10 user-defined DMX presets. Each DMX preset contains the following parameters:

- DMX Adress
- DMX Mode
- DMX ECC Channels
- CRMX Data State
- Artnet / sACN State
- Merge mode
- Art-Net universe (if applicable - Not visible for sACN)
- sACN universe (if applicable - Not visible for Artnet)
- Art-Net Net (if applicable - Not visible for sACN)
- Art-Net Subnet (if applicable - Not visible for sACN)
- DMX Gateway
- DMX Loss Behavior
- DMX Frame filter
- DMX Protocol version
- RDM State

To save a DMX Preset List

Press MENU (10) and PRESET (7) long and simultaneously to save a DMX preset list independent from the current page shown on the display. Turn and press the encoder to save the DMX preset list in the desired slot.

To activate a DMX Preset List

Press MENU (10) and PRESET (7) short and simultaneously to open the DMX preset list independent from the current shown page on the display. Turn an double-press the encoder to activate a DMX preset list.

NOTICE

If Host / Client Mode was active: Loading a DMX Preset disables the host/client mode as the user expects the new settings.

To Save and Load DMX Preset List from / to a USB Memory Drive

The fixtures DMX preset list can be saved to an USB memory stick and be uploaded to another SkyPanel.

To Save a DMX Preset List

1.Connect an USB memory stick to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn and press the encoder, until *USB Functions -> DMX Presets -> Save DMX Preset* is selected. Press the encoder to open the menu.

4.Select the DMX preset list and *Yes*. Press the encoder to confirm the setting. Select *No* to abort saving the DMX preset.

5.The DMX preset list will be saved on the USB memory stick.

Up to 10 DMX presets can be stored in the root directory of the USB memory stick. The file name is **<text>-DMXPres<No>.json**. The SkyPanel is looking for this string to identify a DMX preset file on an USB memory stick. Be sure to keep the string when renaming a DMX preset file. Otherwise the file will not be found by the SkyPanel.

To Load a DMX Preset List

1.Connect an USB memory stick to the USB-A connector of the SkyPanel.

2.Press the MENU button (10) to open the fixture menu.

3.Turn and press the encoder, until *USB Functions -> DMX Presets -> Load DMX Preset* is selected. Press the encoder to open the menu.

4.Select the DMX preset list and *Yes*. Press the encoder to confirm the setting. Select *No* to abort loading the DMX preset list.

5.The DMX preset list will be loaded in the fixture. It overwrites the existing DMX preset list of the fixture.

DMX Monitor

When valid control data is received, the SkyPanel automatically opens page one of the DMX monitor in the display. The top right corner will say *DMX*, and the top left corner will note any special settings such as **RGBW cal.** or *Low End Mode*, when they are active.

In addition, there is a second page on the display that shows various values and parameters of the fixture. DMX values are not listed here, instead, aspects such as intensity and CCT are written as plain text. This is a useful function for troubleshooting in a control network.

Rotating the encoder switches between the pages. The length of page two will change depending on what mode and values are being sent.

Information displayed on page one:

• DMX mode and description

• DMX address and channels used

• DMX footprint size

Information displayed on page two

The information displayed on page two of the DMX monitor is dependent on the active DMX mode:

DMX mode utilizing...	Information
All DMX modes	Intensity
Cross-fade, if active	X-Fade (cross-fade) *Note: If the X-Fade is at 0 or 255, only the active color control information will be displayed.*
CCT	CCT +/- Green
RGBW	Red Green Blue White
HSI	Hue Sat
Gels	(Base) CCT Color Match Brand Cat. (Category) Name No. (Gel Number) X-Trans (Transition Type)
XY	x Value y Value X-Trans (Transition Type)
Source matching	Cat. (Category) Source
Effects	Effect

Up to 7 additional parameter can be displayed, depending on which effect is active. See the *DMX Protocol Specification* document for more information.

Individual Light Engine control modes do not display their color information on the DMX Monitor screen.

Networking

Art-Net and sACN

From firmware version 2.0 the SkyPanel supports Art-Net. Art-Net is a network protocol to control devices.

Here is a brief explanation of some basic terms being used by Art-Net. For more detailed information, please visit the web site of the Art-Net developers: www.artisticlicence.com.

The SkyPanel is capable of processing Art-Net for up to ten universes with one sender and three universes with two senders.

Generals rules of thumb:

• Maximum of 4 universes of Art-Net Art-DMX unless you really have to,

• All universes of sACN.

Please find more information about sACN in the standard ANSI E1.31. Please observe all information given there to set up a proper network.

Art-Net IP Address

When setting the IP address manually, please take care the address is in the range 2.0.0.1 to 2.255.255.255 (Network switch off) or 10.0.0.1 to 10.255.255.255 (Network switch on). Any other range is not according to the Art-Net standard and problems might occur.

Art-Net Net

A group of 16 consecutive Sub-Nets or 256 consecutive Universes is referred to as a net. There are 128 Nets in total.

Sub-Net

A group of 16 consecutive universes is referred to as a sub-net. (Not to be confused with the subnet mask).

Universe

A single DMX512 frame of 512 channels is referred to as a Universe.

Art-Net Merge Mode

The Art-Net protocol allows multiple nodes or controllers to transmit ArtDmx data to the same universe.Merging is limited to two sources. If there are additional sources, merging will be de-activated.

The Merger can act as an LTP or HTP merger (LTP = Latest Takes Precedence, HTP = Highest Takes Precedence).

Art-Net Gateway

With enabled Art-Net gateway the SkyPanel makes all 512 channels of the used universe available at its DMX connectors.

The menu *Art-Net Settings* contains all parameters to set up a SkyPanel in an Art-Net network. Please find a detailed description in the chapter *Features of the Fixture Menu on page 7*.

The Art-Net gateway is RDM capable. All RDM compatible devices in a network can be detected by the integrated RDM controller. RDM management over Art-Net is supported.

Network Settings

The *Network Settings* menu contains various parameters for setting up the SkyPanel in a network.

Link

Shows whether the SkyPanel is connected to a network.

IP

When the SkyPanel is connected to a network, the display shows its IP address.

Mode

Sets the IP mode. In DHCP mode, the IP address, gateway, DNS1 and DNS2 are automatically assigned to the fixture by the network. You should use this mode if possible.

The parameters *Art-Net 2.x.x.x.x* and *Art-Net 10.x.x.x* are used to set up the fixture in an Art-Net network. *Manual* enables the assignment of a fixed IP address.

Mask

Shows the network mask.

Gateway

Shows the gateway address.

DNS1 / DNS2

DNS addresses of the fixture.

MAC

Shows the MAC address of the fixture.

BONJ

The SkyPanel can be found automatically in a network via the Bonjour application. Activate or deactivate Bonjour In the BONJ menu. You can also set the status via RDM or the Web Portal.

If Bonjour is disabled, the fixture cannot be automatically detected by ARRI Lighting Service Manager.

MDNS

Displays the MDNS address of the fixture (ID and serial number of the device).

ARRI Lighting Service Manager

Please find information about the features and the functionality of the ARRI Lighting Service Manager in the user manual for the ARRI Lighting Service Manager. You can download it with the ARRI Lighting Service Manager software-bundle from the ARRI web site www.arri.com/lightingsoftware free of charge.

SkyPanel Web Portal

The SkyPanel provides a web page accessible via http, when connected to a network. Type in the IP address of the SkyPanel in your web browser to open the web portal and change the settings listed below. The web portal can also be found by using a Bonjour service to discover the fixture and open the web portal without needing to know the IP address.

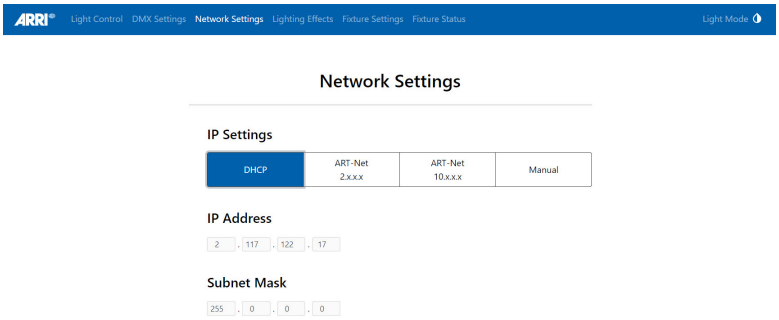
The web portal features:

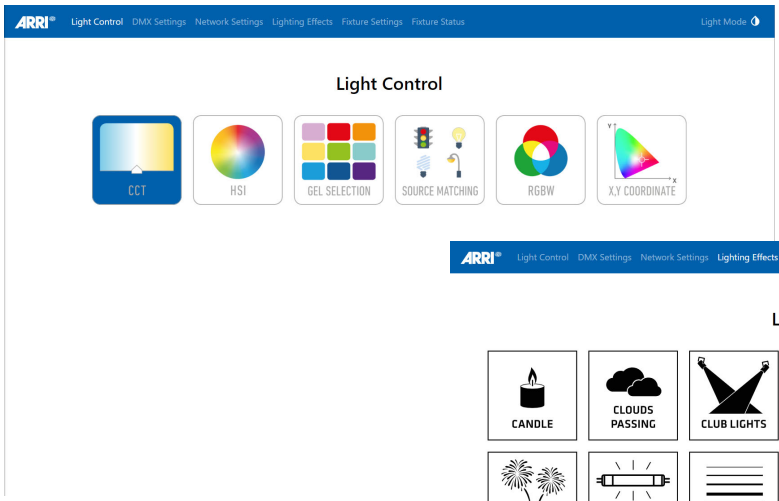
- Select the control mode
- Activate and deactivate lighting effects
- Read and modify DMX settings
- Read and modify network settings
- Read and modify fixture settings
- Read the fixture state
- DMX Monitor

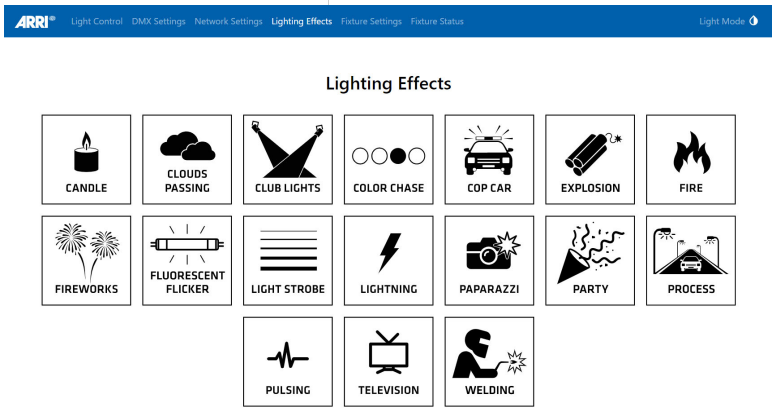
NOTICE

Always use the latest version of your web browser. Earlier versions might not be compatible to the web portal of the SkyPanel. The following browsers has been tested successful with the ARRI web portal: Safari, Chrome, Firefox, Opera, IE 11.

Please do not access the web portal during a show. The data exchange with the web portal might cause delayed reaction and cause unexpected behavior of the fixture.







Overview of the Fixture Menu

From Firmware-Version 4.4

Open and close the fixture menu the MENU button. BACK closes a sub menu and aborts an action.

Turn the encoder to scroll. Press the encoder to select an item

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
DMX Settings	DMX Address	**001** - 512		Start address
	DMX Mode	**P1** - P31		DMX Mode
	DMX Loss Behavior	**Hold Last Command**		Fixture holds the last received control values
		Black Out		Fixture douses the dimmer
		Hold 2 Min Fade Out		Hold the last received values for 2 min. then douse
	DMX Protocol Version	Version 3.4		Version of the DMX protocol
		Version 4.0		
		Version 4.1		
		Version 4.2		
		Version 4.3		
		Version 4.4		
	Ext. Color Control	**Off**		DMX Extended color control not active
		On		DMX Extended color control active
	RDM State	**On**		RDM communication active
		Off		RDM communication not active
	DMX Frame Filter	Off		DMX Frame Filter not active
		On		DMX Frame Filter active
	CRMX Settings (only S360-C)	CRMX Data State	**Off**	CRMX deactivated
			On	CRMX activated
		CRMX Connection	Linking Key	Enter Linking Key with Encoder, middle and right rotary knob. Press encoder on most right position to proceed to next screen.
			CRMX Mode	Enter CRMX mode (Classic or CRMX2). Press encoder to proceed to next screen.
			CRMX Output	Enter CRMX Output. Press encoder to establish CRMX connection.
Fan Mode	**Normal (only S360-C)**			Fans temperature regulated
	Quiet Mode			Fan speed low
	Variable			Fans temperature regulated
	High Temp			Fan speed high
Light Mode	**CCT**			White light, color temperature and green / magenta correction adjustable
	HSI			Colored light, hue and saturation adjustable
	Gel			GEL mode, gel library available, color temperature 3.200 K or 5.600 K
	Source Matching			The SkyPanel emulates a specific light source.
	RGBW			Color mixing in RGBW mode.
	x,y Coord.			Setting the color via its x,y coordinates

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
Light Control	Dimming Curve	**Exponential**		Exponential dimming curve
		Linear		Linear dimming curve
		Logarithmic		Logarithmic dimming curve
		„S“ Curve		Combination of exponential and logarithmic dimming curve
	Special Modes	Low End Mode	**Off**	Flicker free light
			On	Optimized dimming at low intensity levels
		Stage Mode	**Off**	Stage Mode OFF
			On	Stage Mode active
		Tungsten Mode	**Off**	Color temperature optimized when dimming
			On	Emulates the behavior of a tungsten light
		High Speed Mode	**Off**	Highspeed mode OFF
			On	Highspeed mode ON
Light Control (cont.)	Host/Client Mode	**Off**		Host/Client Mode OFF
		On		Host/Client Mode active
	RGBW Color Space	**Calibrated Color**		The RGBW color is calibrated (optimized hue)
		Direct Control		The color is mixed in RGBW mode direct (optimized brightness).
	Frequency Selection	**Default**		Default frequency (highest frequency)
		Frequency 1		Adjusted frequency
		Frequency 2		
		Frequency 3		
		Frequency 4		
		Frequency 5		
		Frequency 6		
		Frequency 7		
		Frequency 8		
		Frequency 9		
		Frequency 10		
Lighting Effects	**Off**			No stand alone effect
	Party Effect			Party mode
	Candle			Candle
	Clouds Passing			Clouds passing
	Club Lights			Club light
	Color Chase			Color chase
	Cop Car			Cop car
	Explosion			Explosion effect
	Fire			Fire
	Fireworks			Fireworks
	Fluorescent Flicker			Fluorescent Flicker
	Light Strobe			Light strobe
	Lightning			Lightning
	Paparazzi			Paparazzi
	Process			Process light
	Pulsing			Pulsing
	Television			Television
	Welding			Welding light

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
Display Setup	Display Illumination	**Always On**		Display illumination always on
		Off After 10 Sec.		Display illumination douses 10 sec. after last menu action
	Display Brightness	0 - **10**		Brightness of the display illumination
	Display Contrast	01 - **03** - 10		Contrast of the display content
	Display Orientation	**Normal**		No rotation of the display content
		Upside-Down		Display content 180° rotated
	Display Error Mode	**Normal**		Show error codes, switch status LED and display illumination to red.
		Hidden		Show error codes. Status LEDs and display illumination off.
USB Functions	Light Presets	Save Light Presets	No	Store light preset list to an USB memory stick (see page 24)
			Yes	
		Load Light Presets	[List]	Load light preset list from an USB memory stick. Select light preset list with the encoder (see page 24)
	DMX Presets	Save DMX Presets	No	Store DMX preset list to an USB memory stick (see page 24)
			Yes	
		Load DMX Presets	No	Load DMX preset list from an USB memory stick. Select preset list with the encoder (see page 24)
			Yes	
	Fixture Settings	Save Fix. Settings	No	Store fixture settings to an USB memory stick (see page 30)
			Yes	
		Load Fix. Settings	[List]	Load fixture settings from an USB memory stick. Select fixture settings with the encoder (see page 30)
	Save Error Log			Store error and service log to an USB memory stick (see page 24)
Art-Net & sACN	Art-Net/sACN State	**Automatic**		Accepts both protocols.
		Art-Net Only		Accepts Art-Net only
		sACN Only		Accepts sACN only
		Off		Accepts no network protocol
	Art-Net Net	**0** - 127		Select Art-Net net
	Art-Net Subnet	**0** - 15		Select Art-Net subnet in Art-Net net
	Art-Net Universe	**0** - 15		Select Art-Net universe in Art-Net subnet
	Merge Mode	**Latest Takes Precedence**		Select Merge-Mode „LTP“ (Last Take Precedence)
		Highest Takes Precedence		Select Merge-Mode „HTP“ (High Take Precedence)
	Gateway	**On**		Gateway disabled
		Off		Gateway enabled
	sACN Universe	**1** ... 65000		sACN universe
	IP Mode -->			Shortcut to Network settings -> Mode (see below)

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
Network Settings	Link	Connection OK		Connection established
		No Connection		No connection
	IP	AAA.BBB.CCC.DDD		The fixtures IP address (assigned via DHCP, if active) If manual mode is active: AAA = 10, 172 or 192 BBB = 0 - 255, 16 - 31 or 168 CCC = 0 - 255 DDD = 0 - 255 If changed, the IP mode is automatically set to „Manual“
	Mode	**DHCP**		Use DHCP mode
		Art-Net 2.B.C.D		Use Art-Net net 2.B.C.D
		Art-Net 10.B.C.D		Use Art-Net net 10.B.C.D
		Manual		Jumps to „IP Address“
	Mask	255.255.255.0		Cannot be changed via the fixture menu.
	GW	x.x.x.x		Cannot be changed via the fixture menu.
	DNS1	x.x.x.x		Cannot be changed via the fixture menu.
	DNS2	x.x.x.x		Cannot be changed via the fixture menu.
	MAC	XX:XX:XX:XX:XX:XX		MAC address
	BONJ	**On**		Bonjour State
		Off		
	MDNS	Sxx-xxxxxxx-xxxx		Serial number
Enabled Menu	Fan Mode			Shows the settings of each option. Press I/S to change the setting of the selected option.
	Dimm. Curve			
	Low End			
	Stage Mode			
	Tungsten			
	RGBW C-Space			
	High Speed			
	Frequency			
	Host/Client			
	Effect			
	Art-Net/sACN			
	DMX Ext. Col.			
	RDM State			
	Gateway			
	IP Mode			
	Bonjour			
	USB Mode			
Fixture Info	Fixture Status	System Ready		No error
		Power Data Status -> Clear		Error message (see „Safety and Installation manual“)
	Light Engine Temp.	xx.x °C xx.x °F		Recent light engine temperature
	Hour Counter	xxh - Light Engine yyh - System		Working hours of the light engines and of the system since production of the fixture
	Battery Status	x.y V		Recent voltage of an external battery
	Fixture Serial No.	L1.xxxxxxx-xxx		The fixtures serial number
	Firmware Versions	FW: x.xx.xx.xxxx CP: x.xx.xx.xxxx		Main firmware version and display firmware version

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
Fixture Settings	Low Battery Warning (not S360-C)			Low battery warning treshold
	USB Mode	**Normal**		USB port powered
		Service		USB port not powered. **Do not change this setting unless being asked by ARRI service. Risk of damage!**
	LE Compensation	Light Engine Status		Shows the installed LE generation
		LE Compensation State (not available for fixtures with LE Gen1 installed)	On	Light Engine Compensation active
			Off	Light Engine Compensation not active
Factory Reset	**No**			Abort action
	Yes			Load factory settings

RDM Commands

Please find a complete overview of all supported RDM commands for free download on the ARRI website www.arri.com.

Error Codes

Code	Error	Remedy
E.003	Controller over temperature. STATUS LED lit up red.	Let the SkyPanel cool down.Turn the dimmer knob to „0“ or send an intensity value „0“ via DMX to activate the light engine again.
E.004	Light engine over temperature	See E.003
E.005	Missing LED supply.	The LED power supply is faulty. Contact the ARRI service.
E.006	Calibration data of light engine faulty or EEPROM error.	WARNING: Loss of calibration data. This error can only be fixed by re-calibrating the light engine. Please contact the ARRI service.
E.007	Invalid PWM value calculation	Notice: The SkyPanel can be used on. This message is more a notification than an error.
E.008	Invalid values during calculation	See E.007
E.009	Invalid values during calculation	See E.007
E.010	Fan error. The fan speed deviates or the fan doesn’t run at all.	All mechanical tests or repairs may only be carried out by a trained service technician.
E.011	Fixture menu module not be detected.	If the fixture menu is working, error E.011 can be ignored. However, if the fixture menu remains dark (no LED lights up) we recommend to contact the ARRI service. They can then carry out detailed analyses.
E.012	Temperature sensor(s) are defective or deviation within NTC values too high.	One or more temperature sensors are defective or the deviation within the individual NTCs or BNTCs exceeds the variation tolerance of 12° C / 54° F.
E.013	Calibration data faulty.	WARNING: Loss of calibration data. Fixture needs to be re-calibrated.
E.014	Watchdog error	Notice: The SkyPanel can be used on. This message is more a notification than an error.
E.015	LED channel faulty	Notice: The SkyPanel can be used on. This message is more a notification than an error.
E.016	Boost over temperature	Let the SkyPanel cool down. Turn the dimmer knob to „0“ or send an intensity value „0“ via DMX to activate the light engine again.
E.018	PWM driver not found	Switch the SkyPanel off and on again. If the problem persists, please contact the ARRI service.
E.019	Diffuser removed	The diffusor was removed. The protection circuit is active (only RP-version).
E.020	Update with errors	This will be seen if the update process has detected an error during the update.
E.021	Flash init error. No filesystem mounted.	This will happen if the flash disc has a problem with its file system.
E.022	Missing Boost	Switch the SkyPanel off and on again. If the problem persists, please contact the ARRI service.
E.023	12V Missing	The 12V power is missing during startup. Please contact the ARRI service.
E.024	5V Missing	The 5V power is missing during startup. Please contact the ARRI service.
E.025	DMX Data Collision	The fixture detected data on the data line when trying to send data as a gateway or host fixture. It deactivates the gateway and/or host/client mode to avoid further data collision.
E.026	USB Drive not Mountable	USB stick can not be mounted. Remove the USB stick, wait some seconds and reconnect it. If the problem persists, try another USB stick.
E.027	S360-C Client missing	S360-C Client controller not detected. Power cycle the S360-C. If the problem persists, please contact your ARRI service partner.
E.028	Light Engine Missing	One or more light engines not detected. Increase the intensity a little to identify the light engine not working. Check the cable connection of the light engine. If the problem persists, please contact your ARRI service partner.
E.029	DMX JSON Configuration missing or error by loading	Configuration error. Perform a firmware update.
E.030	New / Old error, only old or new SPD2 and LE allowed	Certain revisions of drivers and light engines are not compatible. Please let the component revisions be checked by your ARRI service partner.
E.031	Problem by Setting Fixture Factory Default	Factory default load error. Default data corrupted. Perform a firmware update or contact your ARRI service partner.

Code	Error	Remedy
E.032	RDM UID list full	Too many active RDM transmitters in the data line (there must be no more than 50 transmitters in an RDM line).
E.033	DMX frame to short	Incomplete DMX packet detected. The received values are ignored.

Equations for Calculation CCT and X,Y Values

To calculate the CCT value

8 bit

$$DMX_{Value} = \frac{CCT_{Value} - 2800}{28.235}$$

$$CCT_{Value} = (DMX_{Value} \times 28.235) + 2800$$

16 bit

$$DMX_{Value} = \frac{CCT_{Value} - 2800}{0.109865}$$

$$CCT_{Value} = (DMX_{Value} \times 0.109865) + 2800$$

To calculate the x,y coordinate

8 bit

$$DMX_{x-Value} = \frac{x_{Coordinate} \times 255}{0.8}$$

$$DMX_{y-Value} = \frac{y_{Coordinate} \times 255}{0.8}$$

16 bit

$$DMX_{x-Value} = \frac{x_{Coordinate} \times 65535}{0.8}$$

$$DMX_{y-Value} = \frac{y_{Coordinate} \times 65535}{0.8}$$

Courtesy of Red Star
redstarpictures.com