

# SkyPanel®

## S30 / S60 / S120 / S360

### C and RP Versions

USER MANUAL

L5.0019845

05 / 2018



© 2018 Arnold & Richter Cine Technik GmbH & Co. Betriebs KG.

All rights reserved. Information subject to change without notice. ARRI and all affiliated companies disclaim liability for any injury, damage, direct or indirect loss, consequential or economic loss or any other loss occasioned by the use of, inability to use or reliance on the information contained in this document.

No part of this document may be used for distribution, reproduction, transmission, transcription, storage in a data retrieval system, or translated into any language in any form by any means without the prior written permission of ARRI®. If you are downloading files from our web pages for your personal use, make sure to check for updated versions. ARRI® cannot take any liability whatsoever for downloaded files, as technical data are subject to change without notice.

Art-Net™ Designed by and Copyright Artistic Licence Holdings Ltd.

ARRI, ARRI ARRI, the ARRI Logo, ARRIMAX, ARRISUN, EB, EBB, L-Series, MAX Technology, M-Series, POCKETPAR, True Blue, SkyPanel, SKYPANEL, T 12 and T 24 are registered trademarks of Arnold & Richter Cine Technik GmbH & Co. Betriebs KG.

# Content

<b>Content</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>5</b>
Features .....	5
Properties .....	5
<b>Fixture Menu</b> .....	<b>7</b>
Overview .....	7
Features of the Fixture Menu .....	7
POWER-LED (1) .....	7
DATA-LED (2) .....	7
STATUS-LED (3) .....	8
INTENSITY/SELECTOR (I/S, 4) .....	8
Central Rotary Knob (5) .....	8
Right Rotary Knob (6) .....	8
PRESET (7) .....	8
MODE (8) .....	8
DISPLAY (9) .....	8
MENU (10) .....	9
BACK (11) .....	9
To lock the fixture menu .....	9
To Set the Operation Mode .....	9
SkyPanel Remote .....	9
<b>Fixture Modes</b> .....	<b>10</b>
CCT and RGBW .....	10
CCT .....	10
CCT & HSI .....	10
RGBW .....	10
HSI .....	10
GEL .....	10
xy Coordinates .....	10
Source Matching .....	10
Light Effects .....	11
Light Engine Control via DMX .....	11
Ultimate DMX Mode .....	11
Extended color control .....	11
<b>Functions</b> .....	<b>12</b>
To set the Lighting Parameters in CCT Mode .....	12
To set the Color in HSI Mode .....	12
To set the Lighting Parameters in GEL Mode .....	12
To set the Light Source in Source Mode .....	12
To set the Color in RGBW Mode .....	12
To set the Color in X,Y Mode .....	12
Extended Color Control .....	12
To Use the Extended Color Control via DMX .....	13
To Use the Extended Color Control via the Control Panel .....	13
To Set the Brightness in all Operating Modes .....	14
To Set the Dimming Curve .....	14
To Set a Special Control Mode .....	14

Stage Mode .....	14
Low End Mode .....	15
Tungsten Mode .....	15
High Speed Mode .....	15
Overview of the Special Control Modes .....	15
Master/Slave Mode .....	16
Calibrated RGBW Color Space .....	16
Frequency Selection .....	16
To set the Fan Mode .....	17
Lighting Effects .....	17
To Activate and set Effect Parameters with the Fixture Menu .....	20
To Set the Display Behavior .....	22
USB Functions .....	22
Preset Lists .....	22
To Save and Load Fixture Settings .....	23
To Save the Error and Service Log .....	23
To Read out Fixture Settings .....	23
To Read out Fixture Information .....	24
To Perform a Factory Reset .....	24
<b>DMX .....</b>	<b>25</b>
DMX Address .....	25
DMX Mode .....	25
DMX-Signal-Loss Behavior .....	25
Wireless DMX .....	26
<b>Networking .....</b>	<b>27</b>
Art-Net and sACN .....	27
Art-Net IP Address .....	27
Art-Net Net .....	27
Sub-Net .....	27
Universe .....	27
Art-Net Merge Mode .....	27
Art-Net Gateway .....	27
Network Settings .....	27
ARRI Lighting Service Manager .....	28
SkyPanel Web Portal .....	29
<b>Overview of the Fixture Menu .....</b>	<b>30</b>
<b>RDM Commands .....</b>	<b>34</b>
<b>Error Codes .....</b>	<b>37</b>
<b>Overview of Typical CCT Values as DMX Values .....</b>	<b>38</b>

# 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. It is much more efficient than a soft light with a conventional light source.

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 perfectly 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](http://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. The color temperature is defined by the Phosphor panel used.

## Features

### Light Field

The SkyPanel offers the same functionality as a conventional softlight.

### Even Light Field

The SkyPanel softlight 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 (from firmware version 2.0) 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 when using the SkyLink system, which is available as an accessory.

## 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

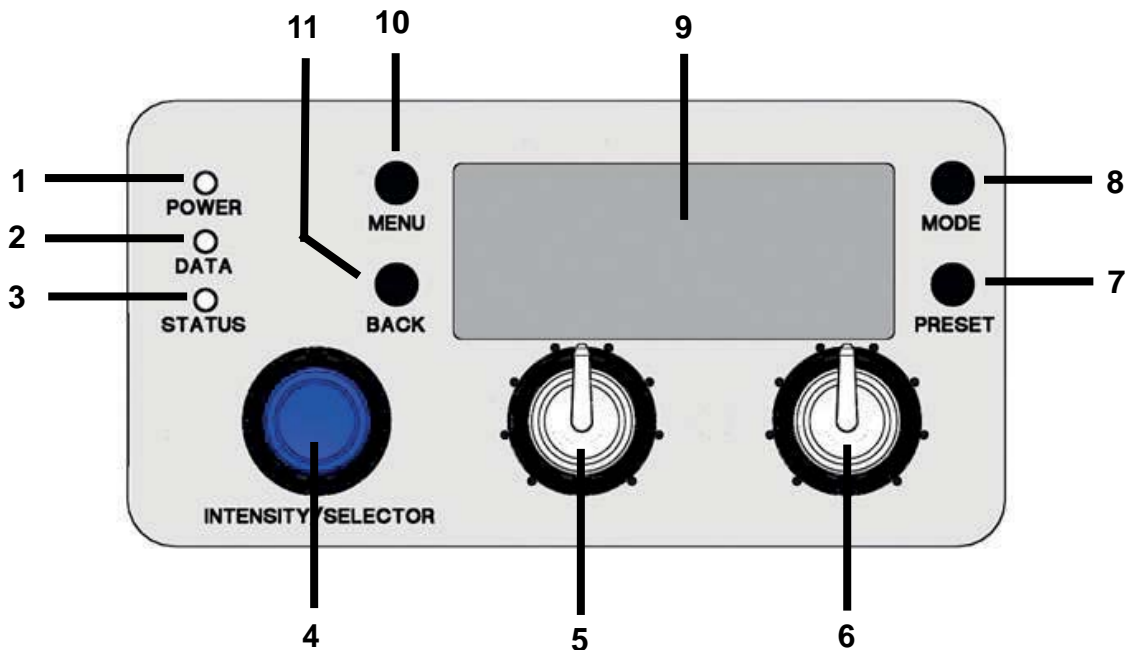
Option	Control	Configuration	Information
Fixture menu	Yes	Yes	page 6
DMX	Yes	No	Please see „DMX protocol specification (free download from <a href="http://www.arri.com">www.arri.com</a> )
CRMX (WDMX)*	Yes	No	page 26
RDM	No	Yes	page 35
Art-Net and sACN	Yes	No	page 11
ALSM	No	Yes	page 27
Web Portal	No	Yes	page 29

*The model S360-C is equipped with an internal CRMX Transceiver, all other models need to be connected to the SkyLink system (accessory) 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.
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 (WDMX) signal (only S360-C).
Purple	Master mode active
White	Receiving valid Art-Net signal, 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 LOW and High Speed).
Red*	Fixture over temperature.
Change from red to green *	Fixture normal temperature.
Red flashing (0,25s Rhythm) *	Calibration data not loaded.
<i>*Display lights up red when STATUS-LED is lit red</i>	

## INTENSITY/SELECTOR (I/S, 4)

The INTENSITY/SELECTOR encoder I/S has two functions:

- Fixture menu closed: Setting the intensity.
- Fixture menu open: Use I/S 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 preset**

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

### **To store a preset**

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

## 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 (4) to open or close the fixture menu. Use I/S (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 I/S (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 I/S 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 I/S in the home screen for 5 seconds again to unlock all buttons and knobs.
- Please find an overview in chapter “Overview of the Fixture Menu” on page 30.

## 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 master / slave 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 up- or downgrade.

# Fixture Modes

The SkyPanel offers, depending on the model, up to 31 control modes. Use the 8 bit modes with basic controllers like dimmer 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](http://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 16.

## 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.

## xy Coordinates

The xy 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 has twelve light engines.

## 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.

## 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 12).

### 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.

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

## To set the Light Source in Source Mode

Activate the source mode and press I/S 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 I/S to select a light source. The SkyPanel calls up the selected light source in real time. Press I/S 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, I/S 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 16). 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 I/S (4). Dependent on the selection of the right rotary knob, I/S 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.

## To Use the Extended Color Control via DMX

The SkyPanel applies 8 additional channels to every DMX mode when the extended color control is activated via the DMX settings menu. Please find more information in the „SkyPanel DMX Protocol Specification V4.4“ which is available for free download on the ARRI web site [www.arri.com](http://www.arri.com).

**NOTICE**

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

## 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 RGBW Color Space” on page 16) 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 I/S (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.

#### NOTE

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

## To Set the Brightness in all Operating Modes

Set the brightness in both operating modes continuously with the encoder I/S (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, WDMX, Art-Net and sACN.

- **Linear:** The intensity changes proportional to the encoder I/S (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 I/S, until „Light Control“ is selected. Press I/S to open the menu.
3. Turn I/S, until „Dimming Curve“ is selected. Press I/S to open the menu.
4. Select the dimming curve by turning I/S. Press I/S 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, WDMX, 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 after-glow 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 I/S, until „Light Control“ is selected. Press I/S to open the menu.
3. Turn I/S, until „Special Modes“ is selected. Press I/S to open the menu.
4. Select the special mode by turning I/S. Press I/S 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

## Master/Slave Mode

In Master/Slave mode the slave fixtures mimic the master fixture without delay. The master 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 master fixture.

### NOTICE

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

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

#### **To set the Master and Slave Fixtures**

1. Press the MENU button (10) to open the fixture menu.
2. Turn I/S, until „Light Control“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „Master/Slave Mode“ is displayed. Press I/S to open the menu.
4. Set all fixtures in the data link to „Off“ to de-activate master mode. Select „On“ on one fixture in the data link to set the fixture as master fixture.
5. Press MENU to close the menu.

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

Please note when using the master/slave mode:

- Art-Net and sACN are de-activated on all fixtures in the data link.
- Changing the mode on the master fixture (CCT, HSI, GEL, Source Matching, RGBW) changes the mode on all slave fixtures accordingly.
- Activating the extended color control on the master fixture activates the extended color control on slave 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 master 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 RGBW Color Space

When using RGBW mode, the SkyPanel by default does not generate colors in a calibrated color space. The color is generated with optimized brightness within the specified tolerances. You can activate the calibrated color space Kodak Pro Photo Color Gamut / ESTA standard E1.54 to force 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.

Use the right rotary knob (6) to adjust the portion of the red, green and blue color of the current color. Turn the knob further to set the white point and green-magenta point of the current color.

#### **To Activate and De-activate the Calibrated RGBW Color Space:**

1. Press the MENU button (10) to open the fixture menu.
2. Turn I/S, until „Light Control“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „RGBW Color Space“ is displayed. Press I/S 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 I/S, until „Light Control“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „Frequency Selection“ is displayed. Press I/S to open the menu.
4. Select a frequency. Press I/S 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
<b>Normal (only S360-C)</b>	1500 W	The fans operate temperature regulated.
<b>Quiet Mode</b>	1200 W	The fans operate constantly at low speed (silent).
<b>Variable</b>	1200 W	The fans operate temperature regulated.
<b>High Temp</b>	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 I/S, until „Fan Mode“ is displayed. Press I/S to open the menu.
3. Select the Fan mode by turning I/S. Press I/S 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 I/S, until „Lighting Effects“ is displayed. Press I/S to open the menu.
3. Select the desired effect by turning I/S.
4. Press I/S 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 I/S, until „Lighting Effects“ is displayed. Press I/S to open the menu.
3. Select the option „Off“. Press I/S to confirm.

**Start / Stop function of the effect**

If an effect is running, press I/S to stop the effect execution. Press I/S 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 gently 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 Sky-Panels 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.
- Intensity / Selector adjusts the intensity.
- Press I/S to stop the effect (black out).
- Press I/S 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
<b>Candle</b>		Central	CCT range
		Right	Speed
<b>Clouds Passing</b>		Central	Offset
		Right	Speed
<b>Club Lights</b>		Central	Color range
		Right	Speed
<b>Color Chase</b>		Central	Offset
	X	Central	Saturation
		Right	Speed
<b>Cop Car</b>		Central	Color combination
		Right	Flash pattern
<b>Explosion</b>		I/S	Trigger
		Right	Decay
	X		Color mode
<b>Fire</b>		Central	CCT range
		Right	Speed
<b>Fireworks</b>		Central	Color combination
		Right	Speed
<b>Fluorescent Flicker</b>		Central	Speed
		Right	Frequency
	X		Color mode
<b>Light Strobe</b>	X	Central	Speed
		Central	Normal functionality
		Right	Normal functionality
<b>Lightning</b>		Central	Frequency
	X	Central	CCT range
		Right	Speed
	X	Right	Green-Magenta point
<b>Paparazzi</b>		Central	Frequency
	X	Central	CCT range
		Right	Flash bulb
	X	Right	Green-Magenta point
<b>Process</b>		Central	Speed
		Right	Direction
	X		Color mode
<b>Pulsing</b>		Central	Normal functionality
	X	Central	Span
		Right	Normal functionality
	X	Right	Frequency
<b>Television</b>		Central	CCT range
		Right	Speed
<b>Welding</b>		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 I/S, until „Display Setup“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „Display Illumination“ is displayed. Press I/S to open the menu. Select the desired setting by turning I/S. Press I/S to confirm the setting.
4. Turn I/S, until „Display Brightness“ is displayed. Press I/S to open the menu. Select the desired brightness by turning I/S. Press I/S to confirm the setting.
5. Turn I/S, until „Display Contrast“ is displayed. Press I/S to open the menu. Select the desired contrast by turning I/S. Press I/S to confirm the setting.
6. Turn I/S, until „Display Rotation“ is displayed. Press I/S to open the menu. Select the desired setting by turning I/S. Press I/S to confirm the setting.
7. Turn I/S, until „Error Mode Display“ is displayed. Press I/S to open the menu. Select the desired setting by turning I/S. Press I/S to confirm the setting.

Please refer to section “Overview of the Fixture Menu” on page 30 for a detailed explanation of the options.

## USB Functions

### **To Update the Firmware**

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.

The USB-A port can power small USB devices. The maximum current is 500 mA @ 5V. Do not overload the USB-A port.

## Preset Lists

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

### **To Save a 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 I/S, until „USB Functions“ is selected. Press I/S to open the menu.
4. Turn I/S, until „Save Presets“ is selected. Press I/S to open the menu.
5. Select „Yes“ and press I/S to confirm the setting. Select „No“ to abort saving the preset list.
6. The preset list will be saved on the USB memory stick.

Up to 30 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 preset list on an USB memory stick. Be sure to keep the string when renaming a preset list. Otherwise the file will not be found by the SkyPanel.

#### **To Load a 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 I/S, until „USB Functions“ is selected. Press I/S to open the menu.
4. Turn I/S, until „Load Presets“ is selected. Press I/S to open the list of the preset lists available in the root directory of the USB memory stick.
5. Turn I/S, to select a preset list.
6. Press I/S to load the selected preset list. The internal preset list of the SkyPanel will be overwritten by the selected preset list.

## **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 I/S, until „USB Functions“ is selected. Press I/S to open the menu.
4. Turn I/S, until „Save Fix. Settings“ is selected. Press I/S to open the menu.
5. Select „Yes“ and press I/S 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 Sky-Panel.
2. Press the MENU button (10) to open the fixture menu.
3. Turn I/S, until „USB Functions“ is selected. Press I/S to open the menu.
4. Turn I/S, until „Load Fix. Settings“ is selected. Press I/S to open the list of the fixture settings files available in the root directory of the USB memory stick.
5. Turn I/S, to select a fixture settings file.
6. Press I/S 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 I/S, until „USB Functions“ is selected. Press I/S to open the menu.
4. Turn I/S, until „Save Error Log“ is selected. Press I/S to open the menu.
5. Select „Yes“ and press I/S 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 I/S, until „Enabled Functions“ is displayed. Press I/S to open the menu.

Change the status of an option by selecting the option. Press I/S, 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 I/S, until „Fixture Settings“ is displayed. Press I/S to open the menu.
3. Turn and press I/S to display fixture information.

Please find a detailed overview of the fixture menu in chapter “Overview of the Fixture Menu” on page 30.

## To Perform a Factory Reset

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



## 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 I/S, until „DMX Settings“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „DMX Address“ is displayed. Press I/S to open the menu.
4. Select a DMX address. Press I/S 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](http://www.arri.com).

### **To set a DMX Mode**

1. Press the MENU button (10) to open the fixture menu.
2. Turn I/S, until „DMX Settings“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „DMX Mode“ is displayed. Press I/S to open the menu.
4. Select a DMX mode. Press I/S 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
<b>Hold Last Command</b>	The last received DMX values are used until the fixture is switched off or valid DMX data is received again.
<b>Black Out</b>	The fixtures douses to 0% intensity immediately.
<b>Hold 2 Min. Fade Out</b>	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 I/S, until „DMX Settings“ is displayed. Press I/S to open the menu.
3. Turn I/S, until „DMX Loss Behavior“ is displayed. Press I/S to open the menu.
4. Select the setting by turning I/S. Press I/S 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 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 be linked to a wireless DMX transmitter via an RDM discovery command. Once linked successfully, the SkyPanel S360-C processes wireless DMX data and responds 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 (WDMX) is active AND CRMX data is received and processed by the SkyPanel S360-C.

If the WDMX Data State is set to OFF, no wireless DMX and no wireless RDM traffic will be processed. However, „Unlinking“ and Linking is still possible in State OFF.

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

1. Press the MENU button (10) to open the fixture menu.
2. Turn I/S until „DMX Settings“ is displayed. Press I/S to open the menu.
3. Turn I/S until „WDMX Settings“ is displayed. Press I/S to open the menu.
4. Turn I/S until „WDMX State“ is displayed. Press I/S to open the menu.
5. Select the setting „ON“ by pressing the I/S.
6. The fixture can now be detected by a WDMX 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 I/S until „DMX Settings“ is displayed. Press I/S to open the menu.
3. Turn I/S until „WDMX Settings“ is displayed. Press I/S to open the menu.
4. Turn I/S until „WDMX Connection Unlink“ is displayed. Press I/S to open the menu.
5. Select the setting „Yes“ by pressing the I/S.
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.

## 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](http://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.

General 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, any additional sources will be ignored by the Node.

## 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.

## 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](http://www.arri.com/lightingsoftware) free of charge.

## SkyPanel Web Portal

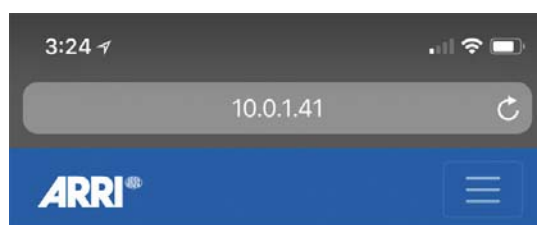
The SkyPanel provides a web page accessible via http, when connected to a network. Type in the IP address of the SkyPanel in your web browser to open the web portal and change the settings listed below. The web portal can also be found by using a Bonjour service to discover the fixture and open the web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

The web portal features:

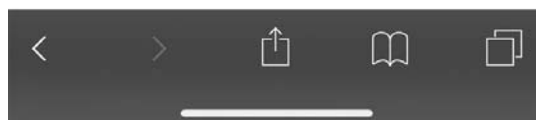
- Select the control mode
- Activate and deactivate lighting effects
- Read and modify DMX settings
- Read and modify network settings
- Read and modify fixture settings
- Read the fixture state
- DMX Monitor

### NOTICE

Always use the latest version of your web browser. Earlier versions might not be compatible to the web portal of the SkyPanel.



## Light Control



# Overview of the Fixture Menu

From Firmware-Version 4.0

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

Turn INTENSITY / SELECTOR to scroll. Press INTENSITY / SELECTOR 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	<b>Hold Last Command</b>		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		
	Ext. Color Control	<b>Off</b>		DMX Extended color control not active
		On		DMX Extended color control active
	RDM State	<b>On</b>		RDM communication active
Off		RDM communication not active		
WDMX Settings (only S360-C)	WDMX State	On	WDMX activated	
		<b>Off</b>	WDMX deactivated	
	Connection	Unlink	Link (NO) or Unlink (YES) fixture	
Fan Mode	<b>Normal (only S360-C)</b>		Fans temperature regulated	
	Quiet Mode		Fan speed low	
	<b>Variable</b>		Fans temperature regulated	
	High Temp		Fan speed high	
Light Mode	<b>CCT</b>		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	
Light Control	Dimming Curve	<b>Exponential</b>		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	<b>Off</b>	Flicker free light
			On	Optimized dimming at low intensity levels
		Stage Mode	<b>Off</b>	Stage mode OFF
			On	Stage mode active
		Tungsten Mode	<b>Off</b>	Color temperature optimized when dimming
			On	Emulates the behavior of a tungsten light
		High Speed Mode	<b>Off</b>	Highspeed mode OFF
			On	Highspeed mode ON

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)	
Light Control (cont.)	Master/ Slave Mode	<b>Off</b>		Master/Slave Mode OFF	
		On		Master/Slave Mode active	
	RGBW Color Space	<b>Direct Control</b>			The color is mixed in RGBW mode direct (optimized brightness).
		Calibrated Color			The RGBW color is calibrated (optimized hue)
	Frequency Selection	<b>Default</b>			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	<b>Off</b>			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		
Display Setup	Display Illumination	<b>Always On</b>		Display illumination always on	
		Off After 10 Sec.		Display illumination douses 10 sec. after last menu action	
	Display Brightness	0 - <b>10</b>		Brightness of the display illumination	
	Display Contrast	01 - <b>03</b> - 10		Contrast of the display content	
	Display Rotation	<b>Normal</b>		No rotation of the display content	
		Upside-Down		Display content 180° rotated	
	Display Error Mode	<b>Normal</b>		Show error codes, switch status LED and display illumination to red.	
Hidden			Show error codes. Status LEDs and display illumination off.		

Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
USB Functions	Light Presets	Save Light Pre-sets	No Yes	Store preset list to an USB memory stick (see page 22)
		Load Light Pre-sets	[List]	Load preset list from an USB memory stick. Select preset list with Intensity / Selector (see page 22)
	Fixture Settings	Save Fix. Settings	No Yes	Store fixture settings to an USB memory stick (see page 23)
		Load Fix. Settings	[List]	Load fixture settings from an USB memory stick. Select fixture settings with Intensity / Selector (see page 23)
	Save Error Log			Store error and service log to an USB memory stick (see page 23)
Art-Net & sACN	Art-Net/sACN State	<b>Automatic</b>		Accepts both protocols.
		Art-Net Only		Accepts Art-Net only
		sACN Only		Accepts sACN only
		Off		Accepts no network protocol
	Art-Net Net	<b>0</b> - 127		Select Art-Net net
	Art-Net Subnet	<b>0</b> - 15		Select Art-Net subnet in Art-Net net
	Art-Net Universe	<b>0</b> - 15		Select Art-Net universe in Art-Net subnet
	Merge Mode	<b>LTP</b>		Select Merge-Mode „LTP“ (Last Take Precedence)
		HTP		Select Merge-Mode „HTP“ (High Take Precedence)
	Gateway	<b>On</b>		Gateway disabled
		Off		Gateway enabled
sACN Universe	<b>1</b> ... 65000		sACN universe	
IP Mode -->			Shortcut to menu „Fixture Settings“.	
Network Settings	Link	Connection OK		Connection established
		<b>No Connection</b>		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	<b>DHCP</b>		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	<b>On</b>		Bonjour State
Off				
MDNS	Sxx-xxxxxxx-xxxx		Serial number	



Level 1	Level 2	Level 3	Level 4	Explanation (default setting = bold)
Enabled Menu	Fan Mode			Shows the settings of each option. Press I/S to change the setting of the selected option.
	Dim. Curve			
	Low End			
	Stage Mode			
	Tungsten			
	RGBW C-Space			
	High Speed			
	Frequency			
	Master/Slave			
	Effect			
	Art-Net/sACN			
	RDM			
	Gateway			
	Bonjour			
USB Mode				
Fixture Info	Fixture Status	System Ready		No error
		<error message>		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.xxxxxx-xxx	The fixtures serial number	
Fixture Settings	Low. Batt.			Low battery warning treshold
	USB Mode	<b>Normal</b>		USB port powered
		Service		USB port not powered. <b>Do not change this setting unless being asked by ARRI service. Risk of damage!</b>
Factory Reset	<b>No</b>			Abort action
	Yes			Load factory settings

# RDM Commands

From Firmware 3.2.

Command	Description	GET	SET
Discover Unique Branch	Searches RDM device	X	X
Discover Mute	Mutes the RDM device, no response messages	X	X
Discover Unmute	Activates device for response messages	X	X
Supported Parameters	Shows a list of all supported RDM commands	X	
Parameter Description	Shows a list of commands that are not standard RDM commands, mostly commands from manufacturer.	X	
Device Info	Get: RDM protocol version Model ID Product category Main software version ID DMX foot print, DMX personality Sub device count Sender count	X	
Software Version Label	Shows the software version string from main, e.g. Main 1.66.1 Yes 16 2012 19:10:26	X	
DMX Start Address	DMX address	X	X
Identify Sevice	Identify Flag -> physically fl ash the light, Sky-Panel-C flashes Blue and all other White	X	X

## RDM Command Extensions

Command	Description	GET	SET
Status Message	Display of actual warning / error message of the fixture.	X	
Status ID Description	Detailed description of each warning / status report.	X	
Device Label	Generate an informative label for each fixture. It can be utilized to identify the rack number of a dimmer or to determine the position of a fixture	X	X
Product Detail ID List	This parameter is utilized to retrieve technical details of a fixture.	X	
Device Model Description	A text description for the model type of the fixture.	X	
Manufacturer Label	Shows „ARRI Lighting“ an	X	
Boot Software Version ID	PrBO Version 2.03.00	X	
Boot Software Version Label	Shows text from PrBo Bootloader	X	
DMX Personality	DMX mode	X	X
DMX Personality Description	Displays a text description of a DMX mode	X	
Slot Info	Shows a description for each DMX channel in use	X	
Slot Description	Shows a text description for each DMX channel	X	
Default Slot Value	Shows the default DMX channel value	X	
Sensor Definition	Shows the definition of a specific sensor	X	
Sensor Value	Shows the actual sensor value	X	
Device Hours	Shows the actual device hours of the fixture	X	
Lamp Hours	Shows the actual lamp hours of the fixture	X	
Factory Defaults	This command deletes all user parameters and sets the fixture to factory default	X	X
Reset Device	Performs a reboot.	X	X

Command	Description	GET	SET
Display Invert	Rotates the display content 180° (only MKII)	X	X
Display Level	Set the display contrast (only MKII)	X	X
Real Time Clock	Get / set time and date (only L10 and SkyPanel)	X	X
Queued Message	Get / set message	X	X
Curve	Get / set dimming curve (only SkyPanel)	X	
Curve Description	Get / set curve description	X	
List Interfaces Interface Label Interface Hardware Address Type1 IPV4 Current Address IPV4 DHCP Mode IPV4 Static Address Interface Release DHCP IPV4 Default Route DNS IPV4 Name Server DNS Hostname Interface Apply Configuration	only SkyPanel	X	X

## Manufacturer Commands

Command	Description	GET	SET
RDM Fan Mode 0x8001	Get / set fan mode Fan Low = 1 Fan HI45 = 2 Fan Vari = 3	X	X
RDM Status LED 0x8002	Get / set status LED and display illumination on = 0 off = 1	X	X
RDM DMX Signal Lost Mode 0x8005	Get / set DMX signal lost behavior Hold = 1 Hold 2 min / fade out = 2 Blackout = 3	X	X
RDM DMX Protocol version 0x8004	Get / set DMX protocol version V3.4 = 1 V4.0 = 2 V4.1 = 3 V4.2 = 4 V4.3 = 5	X	X
RDM Display contrast 0x8005	Get / set display contrast (only MKII) less = 0 high = 10	X	X
RDM Dim Curve 0x8006	Get / set dimming curve Dim Curve Exponential = 1 Dim Curve Linear = 2 Dim Curve Logarithmic = 3 Dim Curve S-Curve = 4	X	X
RDM Tungsten Mode 0x8007	Get / set Tungsten mode off = 0 on = 1	X	X
RDM Low End Mode 0x8008	Get / set low end dimming mode off = 0 on = 1	X	X
RDM Stage Mode 0x8017	Get / set stage dimming mode off = 0 on = 1	X	X

Command	Description	GET	SET
RDM IP DHCP 0x8009	Get / set DHCP off = 0 on = 1	X	X
RDM IP Address 0x800A	Get / set IP address	X	X
RDM IP Subnet 0x800B	Get / set subnet mask	X	X
RDM IP Gateway 0x800C	Get / set Gateway address	X	X
RDM IP DNS1 0x800D	Get / set DNS1 address	X	X
RDM IP DNS2 0x800E	not used		
RDM Error Mode Display 0x800F	Get / set error mode display (only MKII) normal = 0 hidden = 1	X	X
RDM RGBW PLASA Mode 0x810	Get / set calibrated color space (PLASA mode) off = 0 on = 1	X	X
RDM Frequency 0x8011	Get / set PWM frequency Frequency setting off = 0 Frequency 1 = 1 Frequency 2 = 2 Frequency 3 = 3 Frequency 4 = 4 Frequency 5 = 5 Frequency 6 = 6 Frequency 7 = 7 Frequency 8 = 8 Frequency 9 = 9 Frequency 10 = 10	X	X
RDM High Speed Mode 0x8012	Get / set high speed mode off = 0 on = 1	X	X
RDM Service RDM 0x8013	Get / set RDM service off = 0 on = 1	X	X

# 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. Please 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 diffuser 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	DMX Data collision (Master / Slave)
E.026	USB Drive not Mountable	USB stick can not be mounted.
E.027	S360 Slave missing	S360 Slave controller not detected.
E.028	Light Engine Missing	One or more light engines not detected.
E.029	DMX JSON Configuration missing or error by loading	Configuration error
E.030	New / Old error, only old or new SPD2 and LE allowed	Old and new components mixed in one fixture.
E.031	Problem by Setting Fixture Factory Default	Factory default load error.

# Overview of Typical CCT Values as DMX Values

CCT value	DMX value (8 bit)			DMX value (16 bit)		
Sky-Panel			C			C
3.200 K			14			3.670
5.600 K			99			25.493
6.000 K			113			29.098
6.500 K			131			33.685

**Equations for calculation**

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

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

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



**ARRI** 