SEARCHLIGHT SYSTEM BY COLORLIGHT

USER'S MANUAL

CL20, CL25, CL35

ENG

Prerelease.5
2011-02

CONTENT

1. WARNINGS AND INFORMATION

High voltage!
Before opening any part of the searchlight system, make sure all power is switched off!

UV-light! (models -12, -21, -22)
The UV-light used by ColorLight is chosen for most efficient result in marine applications. The wavelengths are below 400 nanometers, thus not visible for the human eye. An intensive radiation is generated from the high luminance of the arch inside the bulb and should not be glared into from close distance. Intentionally ColorLight is allowing a small leakage of white light making the beam vaguely detectable in fog. Avoid quick switch on and switch off as it may shorten the lifetime of the bulb. Allow a couple of minutes cool down period, if possible.

UV-light overheat
CL25 and CL 35 searchlights are designed and built primarily for the marine environment.
UV light generates a lot of heat and we use ambient air as a coolant for our lamp body. For uses other than marine this must be taken into account so that sufficient cooling is available or to adapt the operating time to prevent overheating damage such as cracked UV glass.

Eye safe exposure time for UV

CL25-12, CL35-12: Max 2 minutes at 1 m. Max 4 minutes at 2 m. Max 9 minutes at 4 m. Max 65 minutes at 9 m.

CL25-22, CL35-22: Max 1 minute at 1 m. Max 2 minutes at 2 m. Max 4 minutes at 4 m.
Max 30 minutes at 9 m.

Welding eye glasses are recommended if you for some reasons have to expose your eyes longer periods at those close distances.
We see no reason for such exposure even at service activities. Sunglasses are also good protection.

Bulbs
When changing bulbs be sure to not touch the surface of the bulbs with bare fingers. If inadvertently touched with bare fingers it should be degreased immediately with alcohol and a soft lint free cloth. Be sure to wipe dry the bulb surface afterwards.

Reflectors
The parabolic reflectors developed by ColorLight have an extremely smooth surface to focus the light in wide or narrow beam. Bare fingers should never touch the reflector surface. If inadvertently touched, the reflector surface should immediately be degreased with alcohol and a soft lint free cloth.

Light beam heat damage
This searchlight is build for use on long distances and the high-intensity light from the searchlight can, if set at a narrow beam, cause burn mark on surfaces closer than 1 meter. To avoid that the searchlight is forgotten with the light on, always use the feature “off and park” when not using the searchlight.

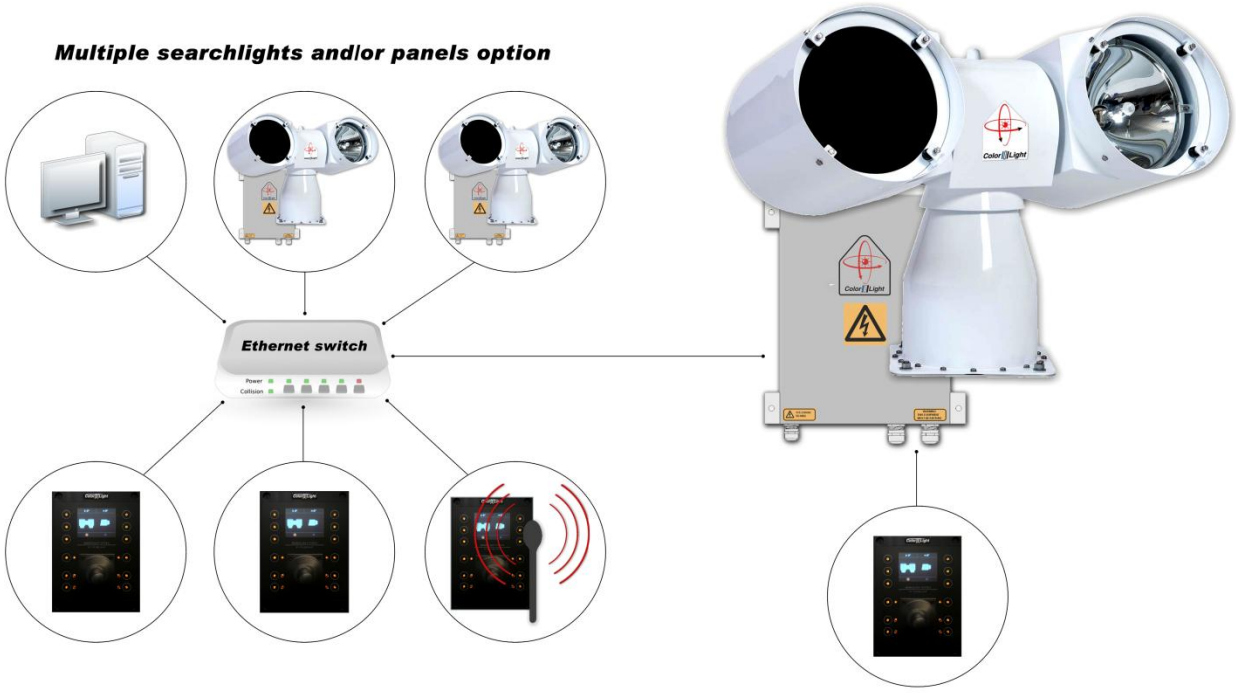
If protection hoods are used over searchlight body the system main power switch in the electric box should be off; this is a precaution to reduce the risk of fire if the hoods are not removed before turning the lights on.

Cleaning
Never wash the searchlight with water under high pressure because this can penetrate through the seals and cause damage to mechanical and electrical components.
Do not use strong solvents such as thinner or acetone to clean the searchlight body or the operator panel.

Deicing
Removal of ice should be done with caution. Physical violence could damage the front glass or the searchlight driving mechanics. Instead turn on the lights and let the heat melt the ice.

Recycling and disposal
The bulbs used for models CL25 and CL35 contain mercury and must be recycled or disposed according to applicable local and national regulations.

2. COLORLIGHT SEARCHLIGHT SYSTEM



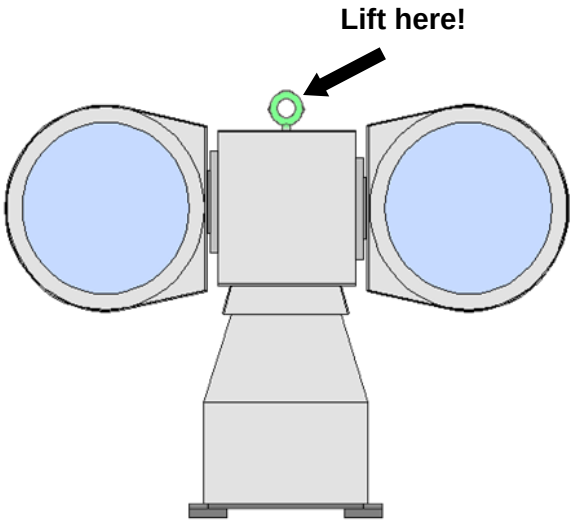
ColorLight has with its newly developed control system for searchlights opened for a flexible and future-proof system in which several searchlight assemblies (CL20, CL25 and CL35) and operator panels can be connected to a dedicated network and communicate via the Ethernet protocol.
Control-computers and navigation equipment are other examples of devices that can be part of this network.
For external communication between the electrical box and its various controllers we use the Ethernet protocol, but for internal communication between the box and searchlight we have chosen to work with CAN bus technology.
CAN (Controller Area Network) is a network standard originally developed for the automotive industry and with only two wires it's possible to transmit a variety of control data and information.

The searchlights drive motors (horizontal and vertical) are of the type brushless servo motors, with excellent performance, long lifetime and high reliability.
The motor drivers are located inside the searchlight and are of an "intelligent" type, which constantly analyzes the motor condition, and if problems arise, such as tripped over current protection; this will be presented as an alarm in the operator panel.

3. INSTALLATION

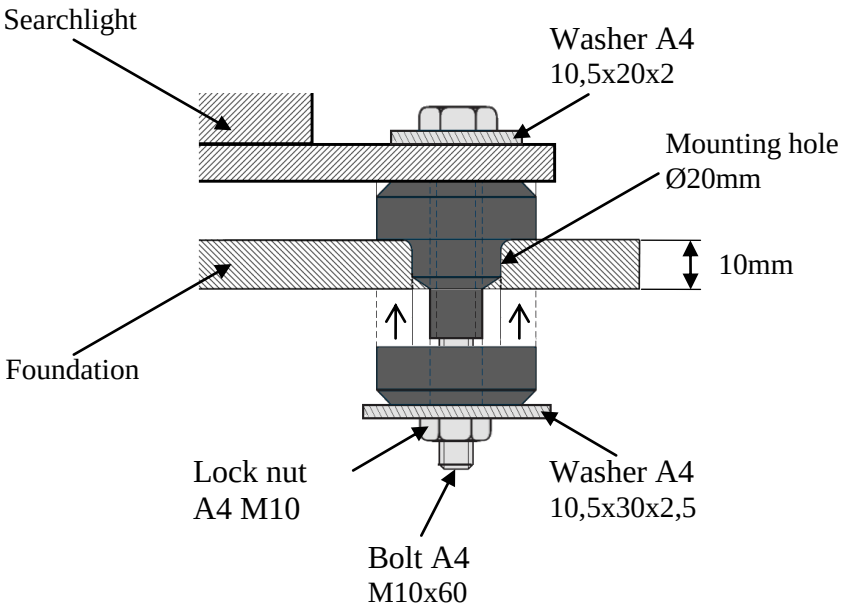
3.1 Physical handling of the searchlight

Lift only the searchlight by the temporary lift loop on top of the center house. Lifting at the lamp houses may damage the construction. After safely fixed the searchlight, remove the lift loop.



3.2 Mounting of the anti-vibration dampers

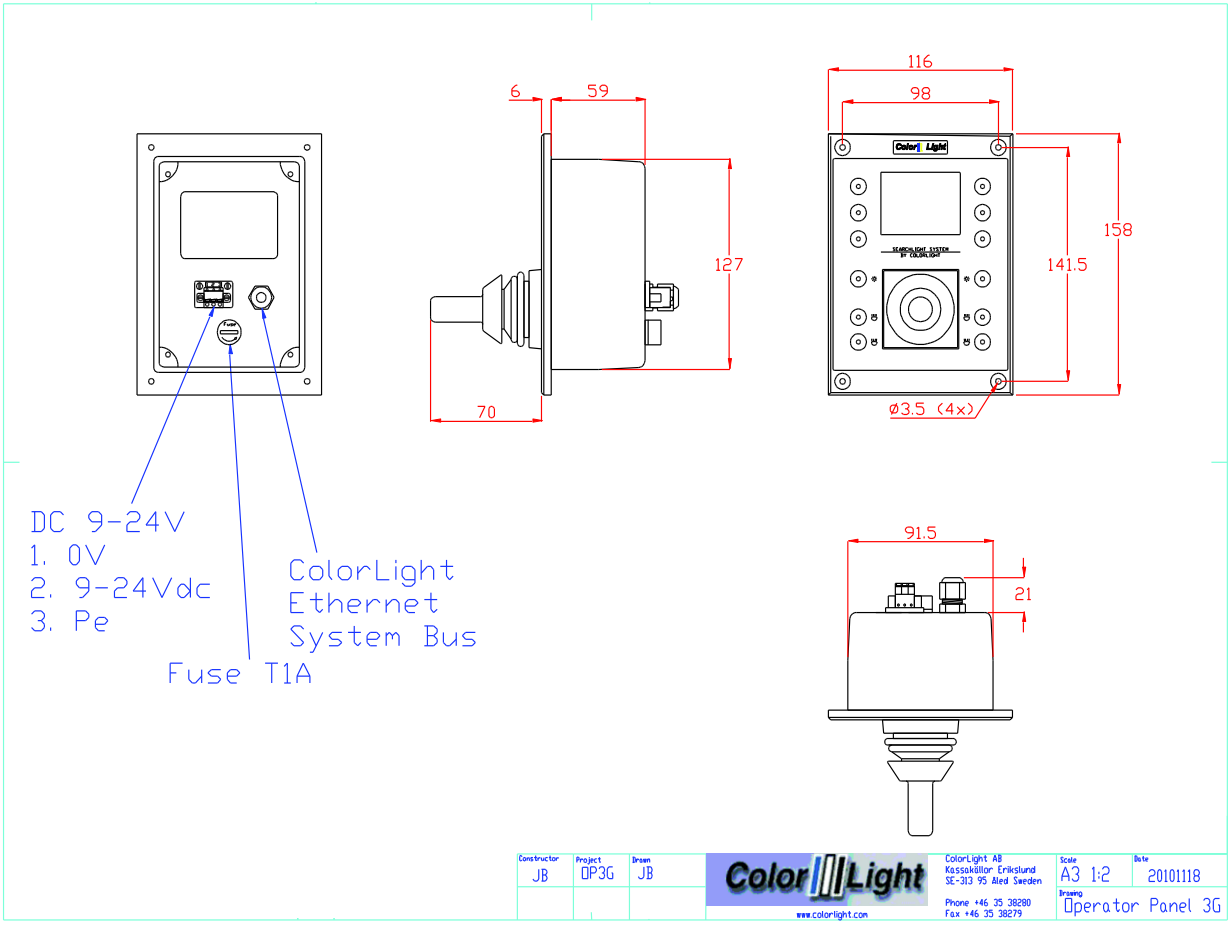
The picture shows how the dampers are mounted to avoid vibrations that can damage the mechanics and shorten the life of the bulbs. Searchlight installation without dampers is not recommended and this can, if problems arise, affect the warranty.



3.3 Specifications and drawings

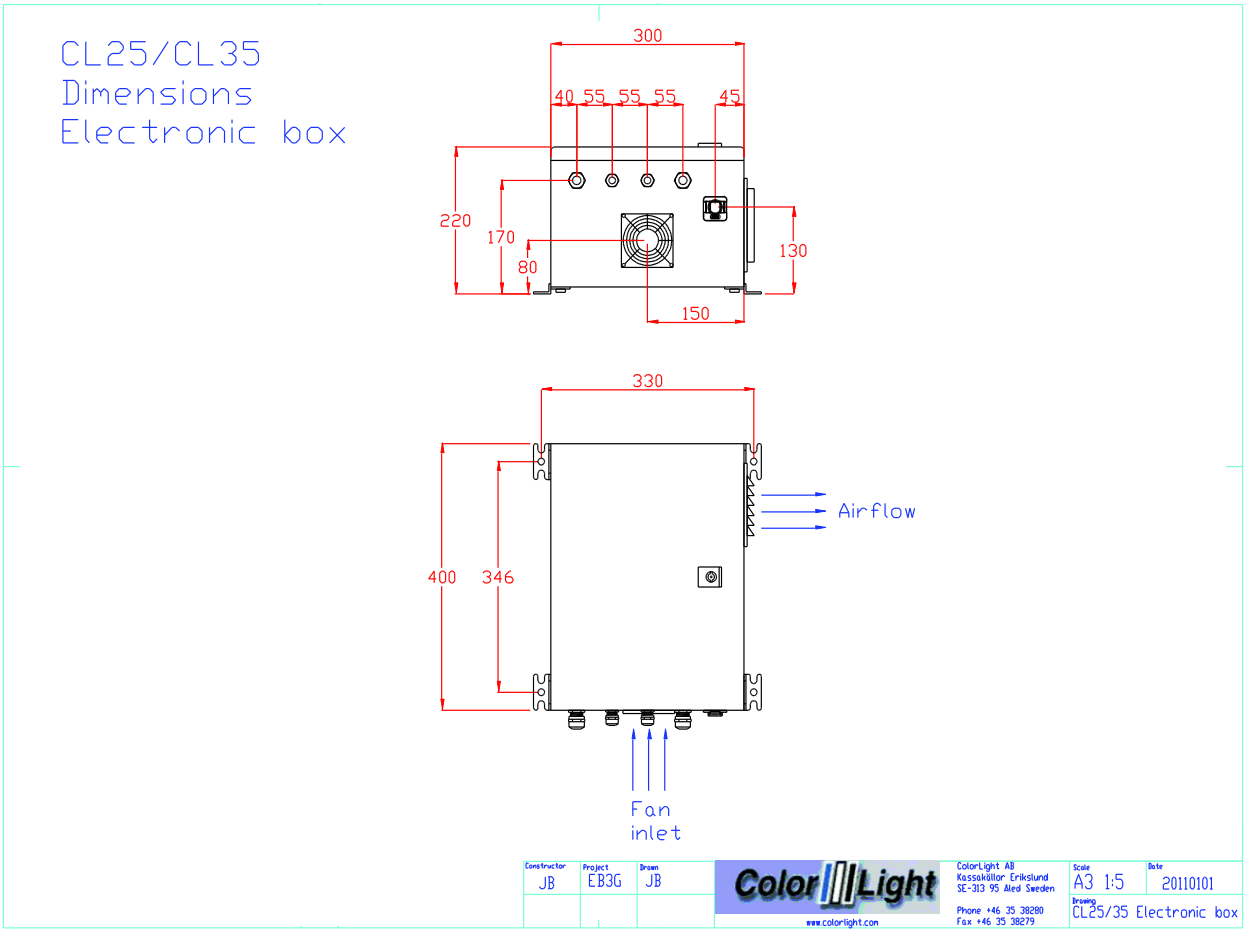
3.3.1 Operator Panel

Operator Panel		**User Interface**	
Size	See drawing "Operator Panel 3G"	Display	2.4" (240 xRGBx320)
Weight (kg)	0,55	Push buttons with led ilumination	12 pcs
Panel	Anodized Aluminum	Communication Protocol:	Ethernet
Enclosure	ABS 2mm	**Environment**	
Gasket (optional)	EPDM	Operational temperature	**********
Overlay	Polyester membrane switch	Storage temperature	**********
Power Supply		Humidity (non-condensing)	*% RH
Input Voltage	9-24 V DC	Protection category	IP21 (standard), IP44 (option)
Current consumption	≈ 150 mA/24V		
Fuse (5x20mm)	T1A		
External PSU (optional)			
Type	Phoenix STEP-PS 2868635		
Input Voltage	100-240V AC (50-60Hz)		
Output Voltage	24V DC (750 mA)		



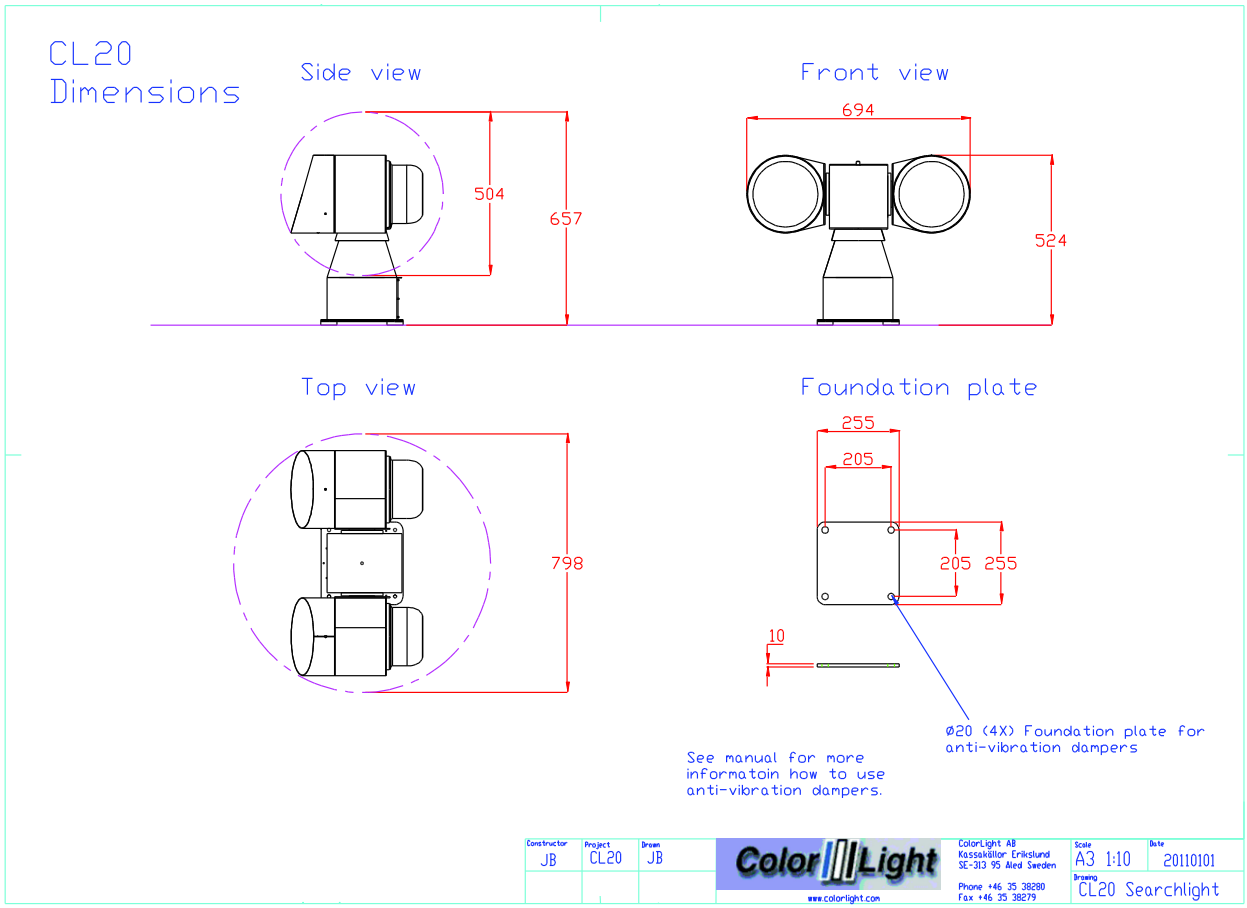
3.3.3 Electrical box

Box details		**User interface**	
Size	See drawing "CL25/35 Electronic box"	Display	2.4" (240 xRGBx320)
Weight (kg)	15	Push buttons with led illumination	12 pcs
Material	Steel	Communication Protocol	Ethernet CP / CAN searchlight
Color	RAL 7035 powder-coated	**Environment**	
Cooling	Fan 80mm	Operational temperature	+0° C till +50° C
Overlay	Polyester membrane switch	Storage temperature	-10° C till +70° C
Power Supply		Humidity (non-condensing)	90% RH
Input Voltage	100-240 V AC	Protection category	IP44
Current consumption	≈ 150 mA/24V		
Fuse (5x20mm)	T1A		
External PSU (optional)			
Type	Phoenix STEP-PS 2868635		
Input Voltage	100-240V AC (50-60Hz)		
Output Voltage	24V DC (750 mA)		



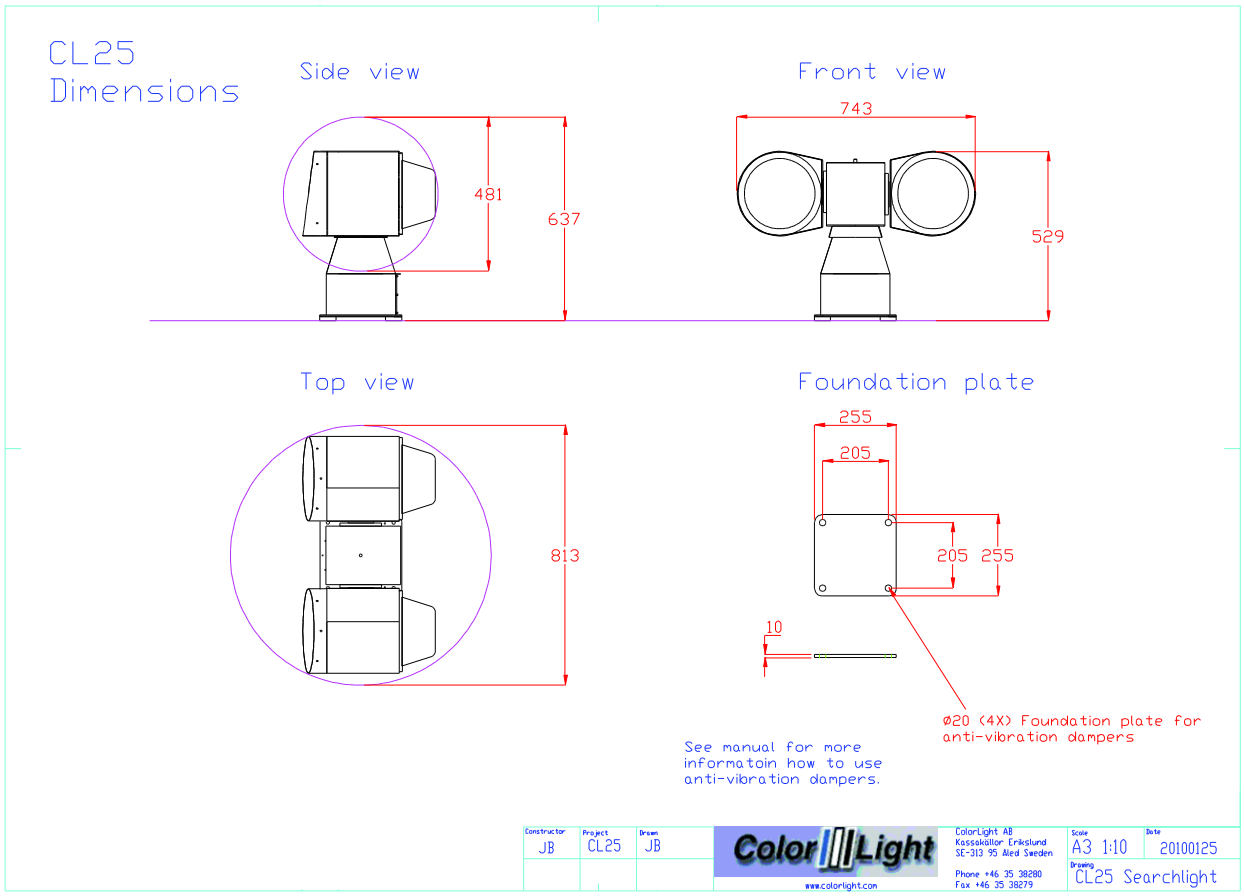
3.3.4 CL20

Operator Panel		**User Interface**	
Size	See drawing "CL20 Searchlight"	Display	2.4" (240 xRGB 320)
Weight (kg)	0.55	Push buttons with led illumination	12 pcs
Panel	Anodized Aluminium	Communication Protocol	Ethernet
Enclosure	ABS 2mm	**Environment**	
Gasket (optional)	EPDM	Operational temperature	-40° C till +50° C
Overlay	Polyester membrane switch	Storage temperature	-10° C till +70° C
Power Supply		Humidity (non condensing)	95% RH
Input Voltage	9-24 V DC	Protection category	IP44
Current consumption	≈ 150 mA/24V		
Fuse (5x20mm)	T1A		
External PSU (optional)			
Type	Phoenix STEP PS 2868835		
Input Voltage	100-240V AC (50-60Hz)		
Output Voltage	24V DC (750 mA)		



3.3.5 CL25

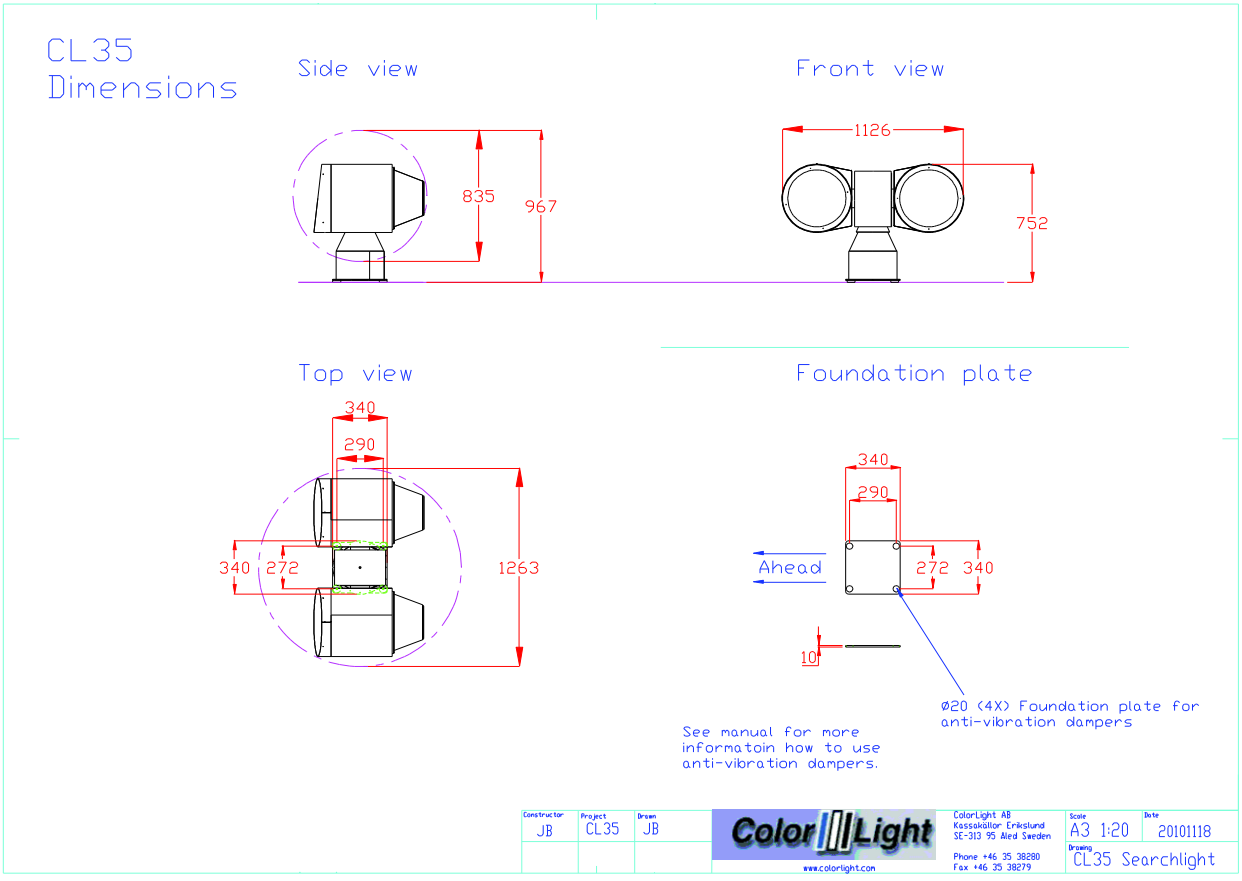
Operator Panel		**User Interface**	
Size	See drawing "Operator Panel 3G"	Display	2.4" (240 xRGB 320)
Weight (kg)	0.55	Push buttons with led illumination	12 pcs
Panel	Anodized Aluminium	Communication Protocol	Ethernet
Enclosure	ABS 2mm	**Environment**	
Gasket (optional)	EPDM	Operational temperature	40° C till +50° C
Overlay	Polyester membrane switch	Storage temperature	10° C till +70° C
Power Supply		Humidity (non condensing)	90% RH
Input Voltage	9-24 V DC	Protection category	IP44
Current consumption	≈ 150 mA/24V		
Fuse (5x20mm)	T1A		
External PSU (optional)			
Type	Phoenix STEP PS 2868835		
Input Voltage	100-240V AC (50-60Hz)		
Output Voltage	24V DC (750 mA)		



The searchlights cable glands are rated IP68 but for extra protection during heavy weather situations it's still recommendable to install the searchlight so the cable exits are facing the stern.
The longer part of the lamp house peak shall be set down. This extra long peak is to reduce disturbing reflections from the foredeck, if any.

3.3.6 CL35

Operator Panel		**User Interface**	
Size	See drawing "Operator Panel 3G"	Display	2.4" (240 xRGB 320)
Weight (kg)	0.55	Push buttons with led illumination	12 pcs
Panel	Anodized Aluminum	Communication Protocol	Ethernet
Enclosure	ABS 2mm	**Environment**	
Gasket (optional)	EPDM	Operational temperature	-40° C till +50° C
Overlay	Polyester membrane switch	Storage temperature	-10° C till +70° C
Power Supply		Humidity (non condensing)	90% RH
Input Voltage	9-24 V DC	Protection category	IP44
Current consumption	≈ 150 mA/24V		
Fuse (5x20mm)	T1A		
External PSU (optional)			
Type	Phoenix STEP PS 2868835		
Input Voltage	100-240V AC (50-60Hz)		
Output Voltage	24V DC (750 mA)		



The searchlights cable glands are rated IP68 but for extra protection during heavy weather situations it's still recommendable to install the searchlight so the cable exits are facing the stern.
The longer part of the lamp house peak shall be set down. This extra long peak is to reduce disturbing reflections from the foredeck, if any.

4. OPERATOR PANEL, OVERVIEW.

Figure 1: The operating panel.

1. "Soft button": the function appears in the display window next to the button.
2. Left lamp on / off.
3. Left focus (the same function as No. 4).
4. Left focus (the same function as No. 3).
5. Right lamp on / off.
6. Right focus (the same function as No 7).
7. Right focus (the same function as No 6).
8. Joystick.
9. Display.

Several sections of the manual refers to the above figures.

5. DISPLAY SYMBOLS AND MESSAGES

Symbol for switched of white light.

Symbol for switched on white light.

Error symbol for white light indicates a problem during switch on or if the bulb breaks down during operation. The operator has three switch-on attempts in a two minute interval without setting the sum alarm output. This symbol is only valid for CL25 and CL35 (CL20 does not have this feature).

Symbol for switched of UV light (black light). Only valid for CL25 and CL35 (CL20 does not have this feature).

Symbol for switched on UV light. Only valid for CL25 and CL35 (CL20 does not have this feature).

Error symbol for UV light indicates a problem during switch on or if the bulb breaks down during operation. The operator has three switch-on attempts in a two minute interval without setting the sum alarm output. This symbol is only valid for CL25 and CL35 (CL20 does not have this feature).

Symbol for any electro-mechanic error. Might be referred as an over voltage or over current for motor drivers. Communication error with motor drivers will result in the same symbol. This error symbol can be reset by simply enter the main menu and select status. Then press “dismiss”. If over current have occurred the problem might be referred as a stucked lamp housing – check for any icing issues. Each axis has its own symbol showing in upper left or right corner of the display.

This symbol indicates that the bulb has less than 200 hours left of expected lifetime. This warning can be chosen by the operator to be shown or not. Please see *11.8.4 Lamp life* for more detailed instruction.
Each bulb has its own symbol showing in the lower left or right corner of the display.

This symbol indicates that the expected lifetime of the bulb now has expired. The only way to reset this symbol is by entering the “Usage Stats” menu at the diagnostic display inside the electrical box. See *12.4 Category 3: Usage Stats*
Certainly this reset should only be done together with a bulb replacement!

This symbol and a similar symbol indicate the direction of the lamp housing both for the vertical axis and for the horizontal axis. The arrows in the shown symbol indicate the elevation angle for the vertical axis according to the horizontal-plane.

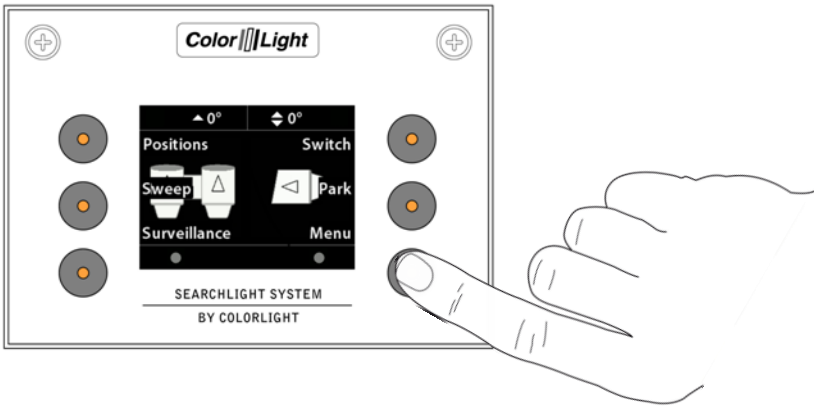
For the horizontal symbol and axis these small arrows indicate if the housing is directed to the left, front, right or back of the centerline.

If the arrows are replaced by question marks then the system needs to be internally calibrated. This is the normal state after power up after a total power loss to the system. The easiest way to do the internal calibration is by simply choose the “Park” in the quick start menu, please see *10.5 Off and park*.

6. ACTIONS AFTER INSTALLATION OR POWER FAILURE

At the first boot after installation or power failure, the searchlight must be synchronized with the control system.

After installation or power failure of the electric box you can use the searchlights main functions like joystick control, light on/off and focus but in order to be able to use positioning functions such as display indicator*, parking position, sweep*, fixed positions* or surveillance*, the searchlight must be synchronized with the control system.



The easiest way to synchronize the system is to enter the quick start menu and select the “Park” function. Now the searchlight will synchronize and then park if a parking position has been set.

If necessary the origin can be set after the steps above to give an accurate readout of the indicator*. To set the origin please see *11.8.6.1 Store origin.*

*Optional function.

7. STARTING SYSTEM

When the system is in sleep the buttons and symbols glows with orange light and the display is totally shut down to save power. Buttons and symbols are always active but dimmed to a lower intensity during sleep.

Pressing any button on the operator panel will activate the system and the display will now show the indicator* image or just the ColorLight logotype. Buttons and symbols are now brighter and both buttons, symbols and display intensity can be adjusted, please see
11.8.1 Backlight brightness.

*Optional function

8. JOYSTICK FUNCTIONS

The joystick (8) moves the searchlight horizontally and vertically. There are no limitations to the movement of the searchlight thanks to the slip ring technology developed by ColorLight.
The more the joystick is moved to its end position the faster the searchlight rotates*.
Searchlight rotation speed can be set, see *11.8.5 Maximum rotation speed.*
The vertical axis reaction according to the joysticks movement can be reversed if decided by operator. To change this reaction please see *11.8.3 Joystick direction*.

The joystick can also be used to navigate in menus containing more than one choice.
Move the joystick up or down to navigate in the menu. In most menus joystick moved to the right will act as “OK” button and moved to the left will go back one step as the “Back” button.

*Optional function

9. SWITCH ON LIGHT

The searchlight is equipped with two bulbs which can be turned on / off separately by pressing (3) to turn on the left light and (6) to turn on the right light. To turn off the light just press the same button again.
In the bottom part of the display there are two sun-symbols that indicates the status of each bulb.

CL25 and CL35

If the system is unable to switch on the bulbs there will be a red exclamation mark over the sun-symbol for the no working bulb. This error might occur if the operator decides to switch on a bulb that recently has been shut off without any time to cool down before the next switch on. Normally wait a few seconds (the longer the better) and try again. The system accepts three turn on attempts (initiated by the operator) in a two minute time interval before the sum-alarm is activated.

If the bulb breaks during operation the sum-alarm will be activated directly. The error symbol with the exclamation mark over the sun-symbol will show again in the display over the corresponding bulb.

There is a bulb warning feature in the system. This warning can be chosen by the operator to be shown or not by switch on or off the function in the settings menu, please see *11.8.4 Lamp life*. This warning feature will show a white triangle symbol when the estimated bulb life left is less than 200 hours. The symbol will be shown at the displays bottom left or right corner according to left or right bulb.

When the expected lifetime is expired the white triangle will change to a red triangle. The only way to reset this symbol is by entering the “lamp life” menu at the diagnostic display inside the electrical box. To get to the correct menu use the three buttons below the display. Under the lamp life menu there are two choices: usage statistics and reset counters. Select reset counters and select the corresponding lamp housing for which the counter should be reset. Certainly this reset should only be done together with a bulb replacement!

10. FOCUS

Pressing the focus buttons (3) or (4) changes the focus for the left lamp house and buttons (6) or (7) changes focus for the right lamp house.
As long as a focus button is pressed the bulb moves in and out which changes the focus of the light.
Release the button when the required focus is found.
Note, pressing (3) and (6) or (4) and (7) at the same time will cause an electric collision which stops the focus from changing. Releasing one of the buttons will continue the focusing of the pressed button. To focus with both lights simultaneously hold (3) and (7) or (4) and (6).

11. QUICK START MENU

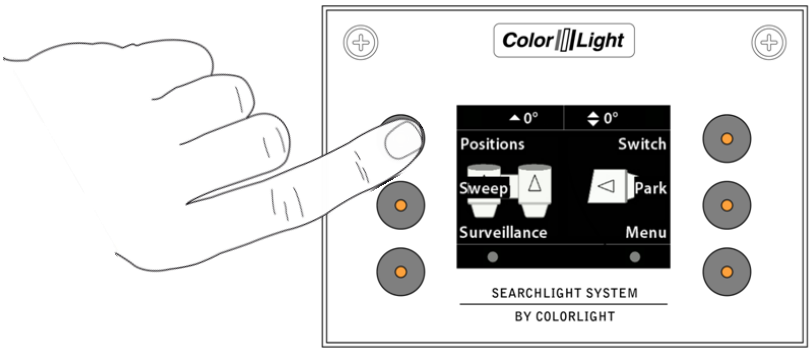
The operator panel features a quick start menu where you can reach some of the searchlights functions.

To open up the quick start menu press any of the quick start menu buttons (1) when showing the logo or indicator page. The quick start menu will close after 5 seconds.

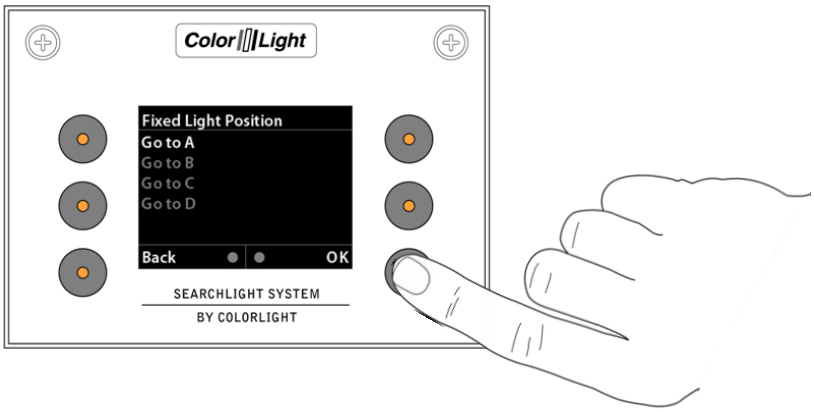
11.1 Fixed positions (optional function)

Fixed position is an option for the ColorLight Searchlight System and can only be accessed if activated.
There are up to four different programmable fixed positions in ColorLights Searchlight System.

11.1.1 Go to fixed position



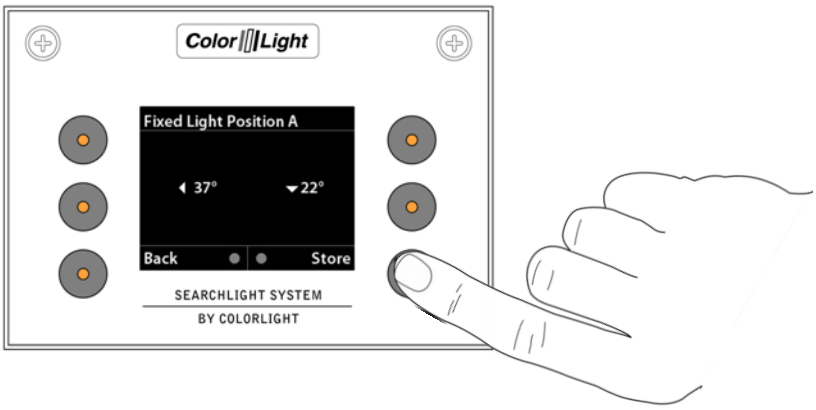
To enter the *"Fixed Light Position"* submenu, open up the quick start menu and press the upper left button "*Positions*".



There are up to four programmable fixed positions that can be programmed, A, B, C and D.
By selecting one of the positions the menu will change and show the current direction of the searchlight in degrees and move the searchlight to the preprogrammed position automatically.

11.1.2 Store fixed position

If no position has been stored or the searchlight is at the stored position then the searchlight will not move.



To store a new or change a fixed position, enter one of the fixed positions in the menu. If there is a preprogrammed fixed position the searchlight will start to move to that position. To take control over the searchlight just move the joystick to abort the movement of the searchlight. Now move the searchlight by using the joystick to the desired position and press “Store”.

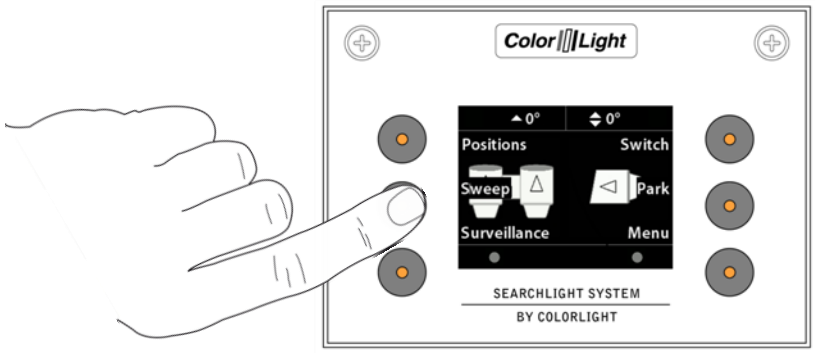
The current position is now stored.

11.2 Sweep (optional function)

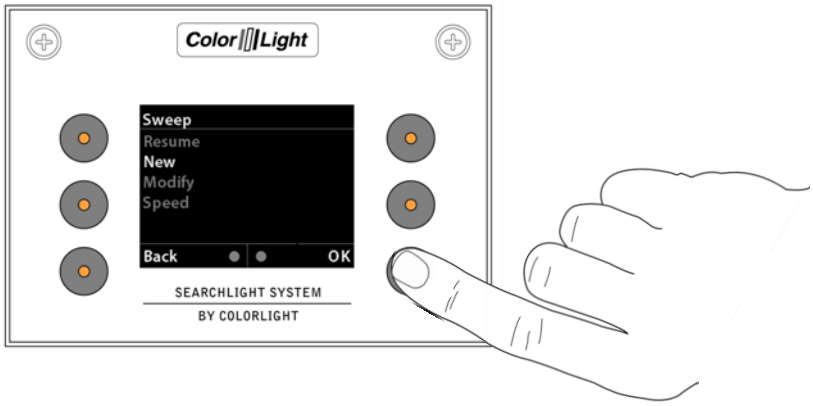
Sweep is an option for the ColorLight Searchlight System and can only be accessed if activated.

A sweep is where the searchlight automatically moves back and forth in the horizontal plane.

11.2.1 New Sweep



To enter the *"Sweep"* submenu, open up the quick start menu and press the left middle button "*Sweep*".

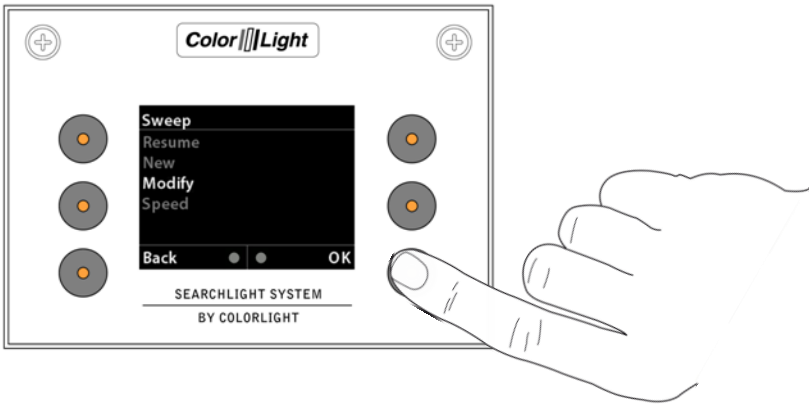


To start a new sweep, navigate down to "*New*" in the "Sweep" menu and press "*OK*".
The default setting for a sweep is a horizontal sweep of 20°.

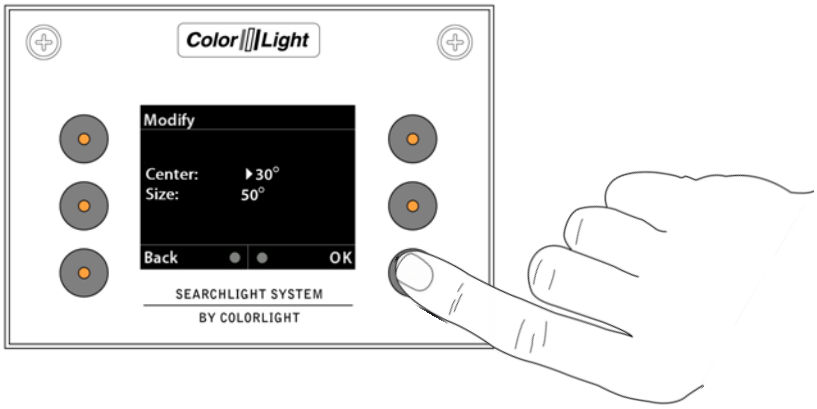
To stop a sweep enter the *"Sweep"* submenu and choose "*Stop*" or just move the searchlight by using the joystick.

To resume the sweep enter the *"Sweep"* submenu and choose "*resume*".

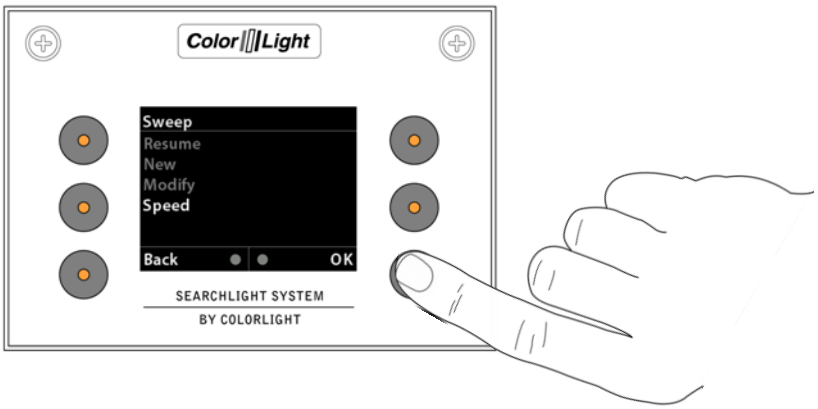
11.2.2 Modify sweep parameters



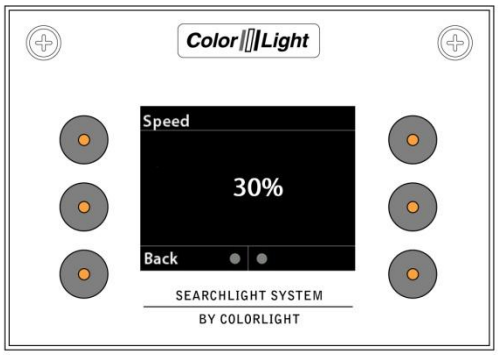
To modify the sweep angle and / or the center of the sweep enter the "*Sweep*" menu and navigate down to "*Modify*", press OK.



In this menu changes to the sweep angle and center of the sweep can be modified in both runtime and stand still.
To change the center line of the horizontal sweep move the joystick to the left or right until the desired center is reached.
To change size of the sweep angle move the joystick up or down.
Press OK to save and update the searchlight with the new values.



The default speed of the sweep is set to 50% of the maximum speed of the searchlight. To change the speed of the sweep enter the "*Sweep*" menu and navigate down to "*Speed*". Press "*OK*" to enter the "*Speed*" submenu.



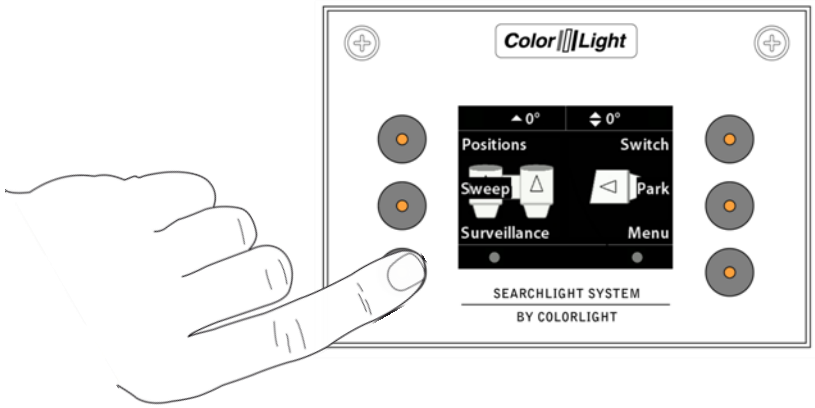
To change the speed move the joystick up or down to desired speed, press "OK" to update the searchlight with the new speed.
Note: If the speed is updated during runtime then the speed will update when the searchlight reaches its next end point.

11.3 Surveillance (optional function)

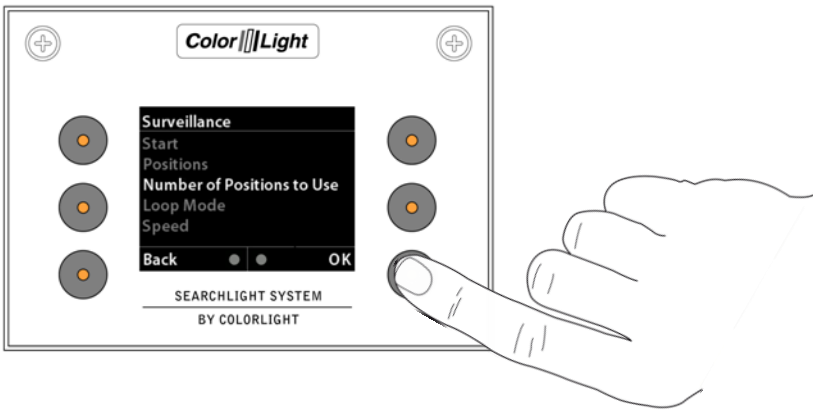
Surveillance is an option for the ColorLight Searchlight System and can only be accessed if activated.
Surveillance is an advanced sweep where up to five points any ware can be set to be surveillanced.

11.3.1 Setting a new surveillance sweep

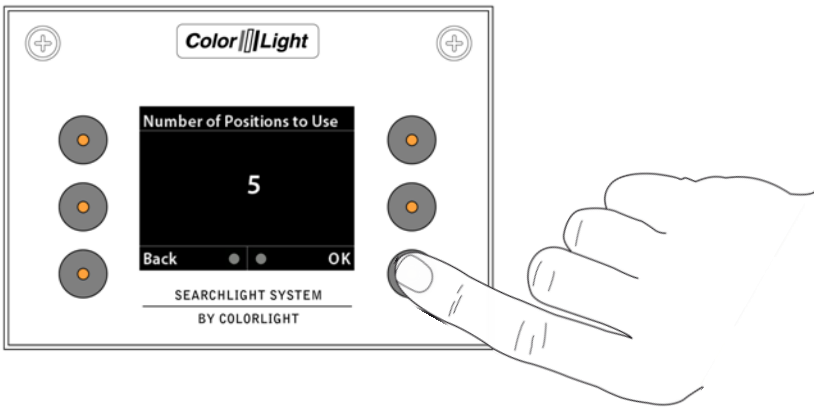
To set a new surveillance sweep the number of positions must first be set.



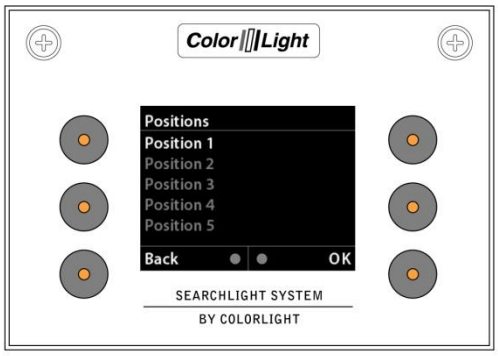
To enter the "S*urveillance*" submenu, open up the quick start menu and press the bottom left button.



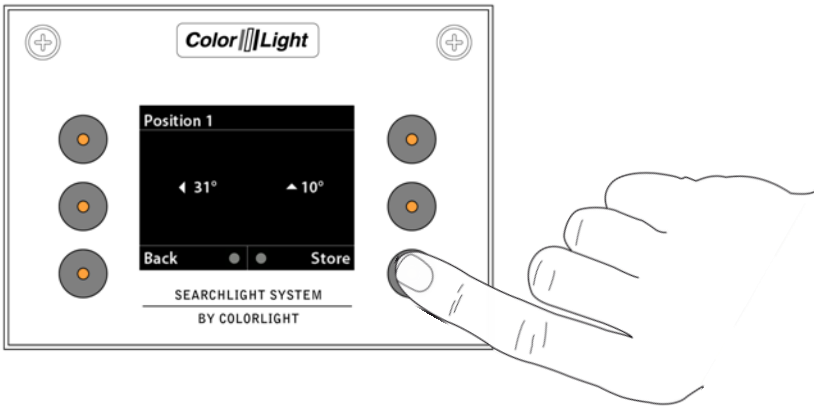
Navigate down to "*Number of Positions to Use*" and press "*OK*".



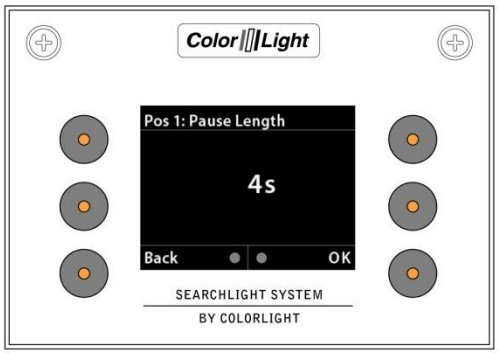
In this menu you can choose from two to five positions to be used in a surveillance sweep.
Press "*OK*" to save and exit back to the "S*urveillance*" submenu.



There are five positions that can be programmed in a surveillance sweep.
To set the positions in a surveillance sweep enter the "*Positions*" menu in the "Surveillance" submenu.



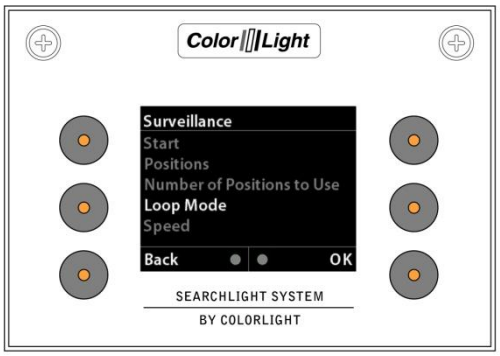
The surveillance sweep will start from position one and then go to position two and so on until the searchlight has come to the number set in "*Number of Positions to Use*".
To set a position enter the desired position then move the searchlight by using the joystick to desired position. Press "*Store*" to store the position.



After pressing "*Store*" a new menu will appear, Pause Length. This is how long the searchlight will stay at this position until starting to move to the next position. Pause length can be set between zero and ten seconds.

Repeat this for the desired number of positions wanted in a surveillance sweep.
When done go back to the "*Surveillance*" submenu by pressing "*Back*". Navigate to "*Start*" and press "*OK*" to start the surveillance sweep.

11.3.2 Changing surveillance settings

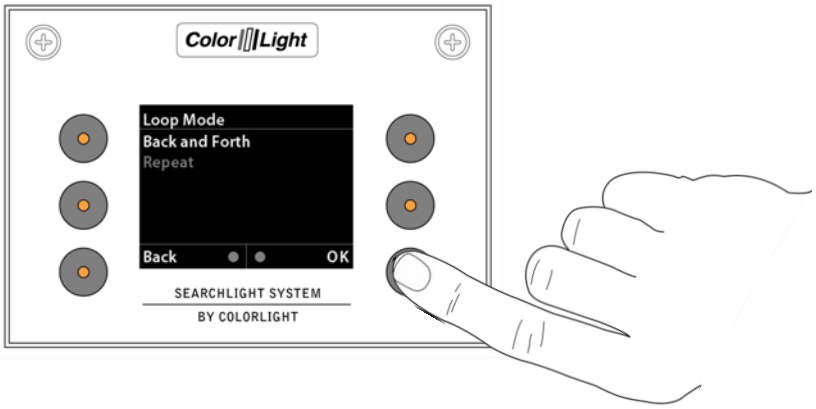


Surveillance has a couple of different settings, "*Loop Mode*" and "*Speed*".
In "*Loop Mode*" there are two choices, "*Back and Forth*" and "*Repeat*".

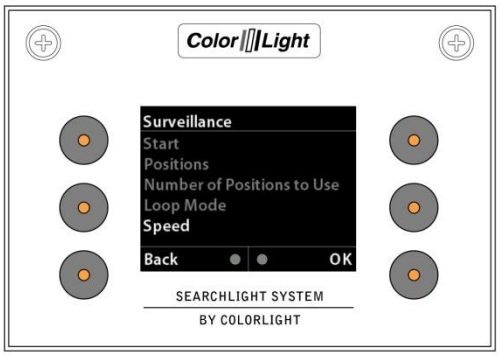
When using "*Back and Forth*" the surveillance sweep will go from position one to two and so on until it comes to the number set in "*Number of Positions to Use*" then it will go back to the previous position.

When using "*Repeat*" the surveillance sweep will go from position one to two and so on until it comes to the number set in "*Number of Positions to Use*" then it will go to position one instead of going to the previous position.

To set "*Back and Forth*" or "*Repeat*" enter the "*Surveillance*" submenu then "*Loop Mode*".

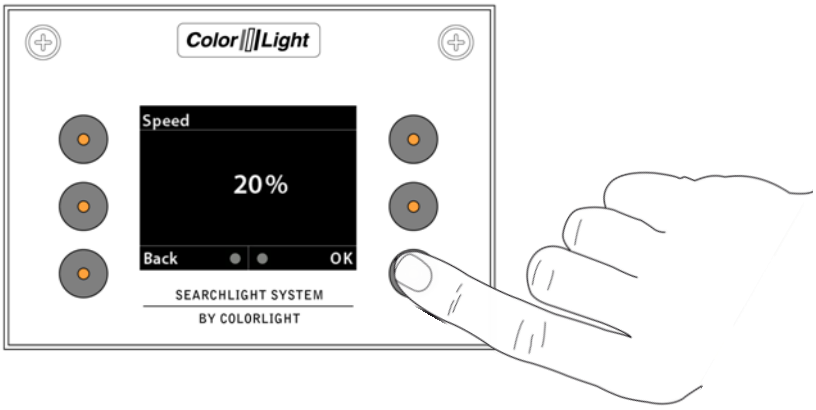


Navigate to the preferred setting and press "*OK*" to save the setting and return to the "Surveillance" menu.



"*Speed*" is where the speed of the rotation of the searchlight is set. Default setting is 50% of maximum speed of the searchlight.

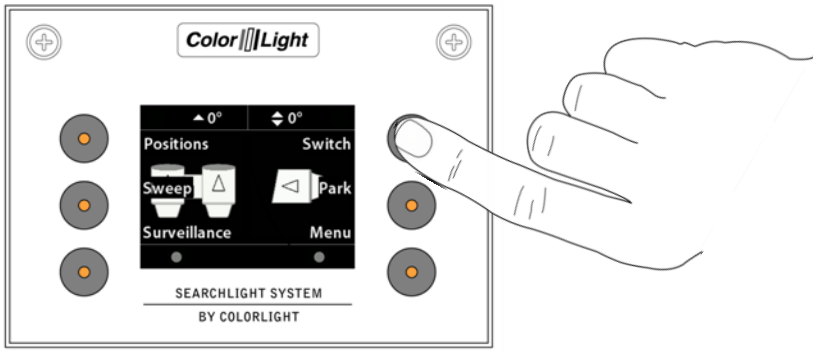
To change the speed of the surveillance sweep enter the "*Surveillance*" submenu then "*Speed*".



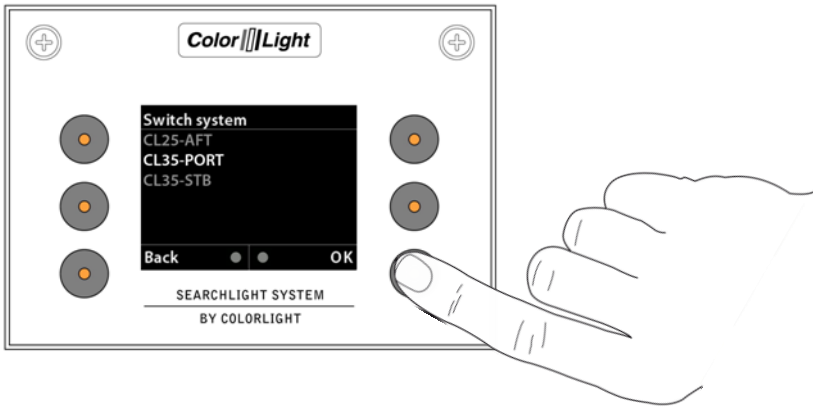
Change the speed by moving the joystick up or down in the speed menu. The speed can be set between 5-100% of the maximum rotation speed.
Note: If the speed is updated during runtime then the speed will update when the searchlight reaches its next surveillance position.

11.4 Switch

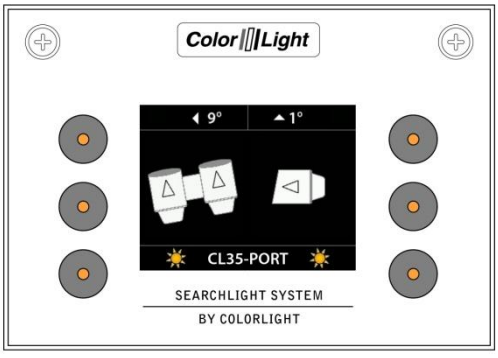
If there are more than one ColorLight Searchlight in the system any operating panel can control any of the connected ColorLight searchlights. Every searchlight should be given a unique name during installation for this to work properly.



To enter the "*Switch*" submenu open up the quick start menu and press the upper right button.

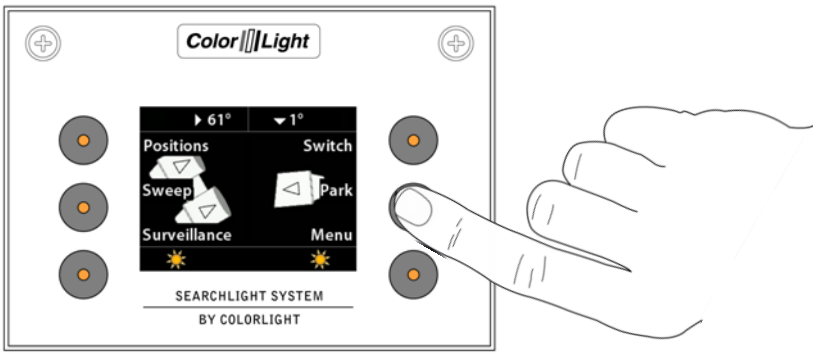


In this menu all the available searchlights should be listed. To change which searchlight being controlled, navigate to the desired searchlight and press "*OK*".



The operating panel should now control the newly selected searchlight which is shown on the indicator page.

11.5 Off and park



By pressing the *"Park"* any lighted lamp will be turned off and the searchlight will automatically look up the preprogrammed parking position, during this time you'll see *"Parking ..."* in the bottom middle of the display.
When parked the operator panel will turn off the display after a few seconds and the LEDs behind the buttons will be dimmed to a lower intensity.

12. MAIN MENU

From the quick start menu, select *"Menu"* to enter the system's main menu.
To navigate the main menu, use the joystick; push the joystick forward/up once to go up a step in the menu and backwards/down to go down one step. Keep holding the joystick up or down will scroll up and down in menus with “autorepeat”.

To confirm your choice use *"OK"* button and to leave the displayed menu, use the button *"Back".* In many menus the joystick can be used as the “OK” button if moved to the right and as the “Back” button if moved to the left.

12.1 Off and Park

Please see *10.5 Off and park* for information regarding this menu choice.

12.2 Switch system

Please see *10.4 Switch* for information regarding this menu choice.

12.3 Light Position

Please see *10.1 Fixed positions* for information regarding this menu choice.

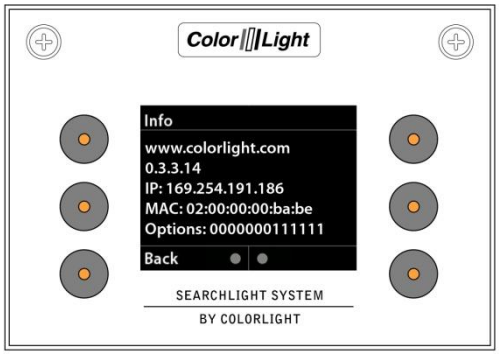
12.4 Sweep

Please see *10.2 Sweep* for information regarding this menu choice.

12.5 Surveillance

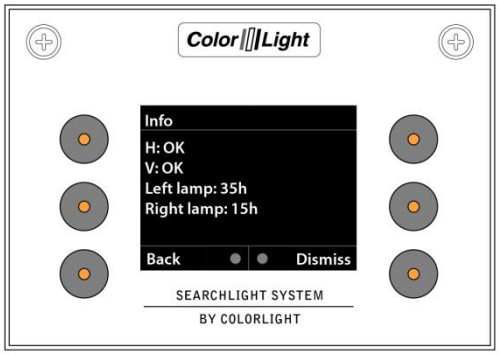
Please see *10.3 Surveillance* for information regarding this menu choice.

12.6 Info



This menu shows information that is very useful to have handy during support from ColorLight if any problems occur or any options should be added to the operator panel after purchase (more about this later under *11.8.6.5 Options setup.*

12.7 Status



This menu will give information of any errors in the system and bulb life counters. Some errors can be reset from this menu by simply press the button marked “Dismiss”.

12.8 Settings

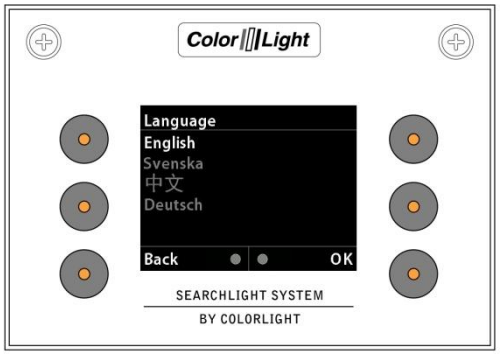
This opens a new menu with six sub menus.

12.8.1 Backlight brightness

Here can the displays brightness and button-LEDs intensity be adjusted by the operator.

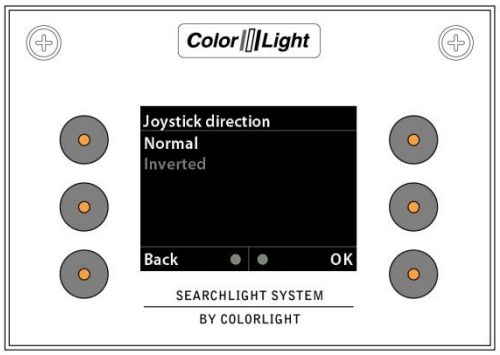
BILD

12.8.2 Language (optional function)



The language in the display can be changed depending on which language sets that are installed in the operator panel. This is an option and different sets of languages can be installed from ColorLight at delivery. This is an option changing upon customer demands and requests, please feel free to call ColorLight to see which different sets that are available.

12.8.3 Joystick direction



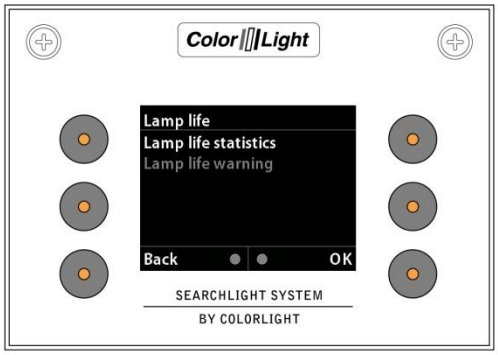
Some operators want to have their joystick to move the lamp housing vertically in the same direction as the joysticks physical direction:

(joystick up=lamp housing moving upwards), this is called “Inverted” in the menu.

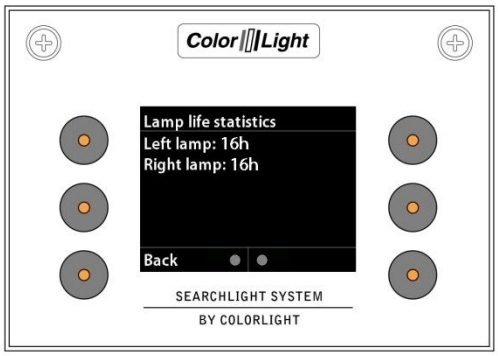
Normally the joystick acts like an aeroplane joystick:

(joystick up=lamp housing moving downwards), this is called “Normal” in the menu.

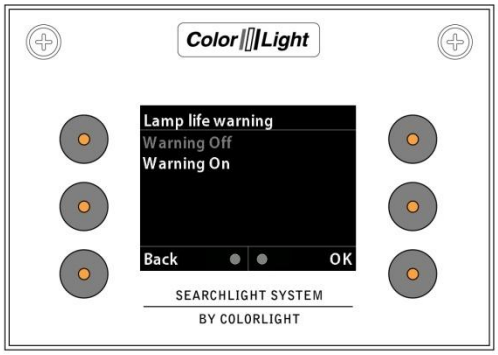
12.8.4 Lamp life



In this menu there are two sub menus, Lamp life statistics and Lamp life warning.



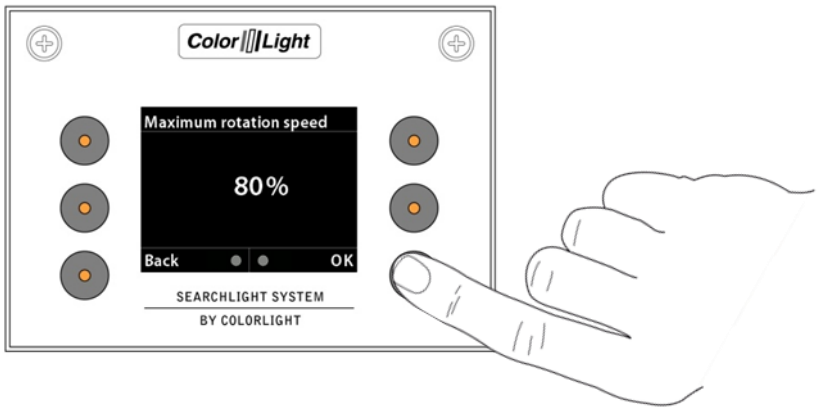
Lamp life statistics menu will show a display similar to the status display in *11.7 Status.* The only difference is that no errors will be presented in this display.



Lamp life warning menu will make it possible for the operator to chose if the lamp life warning feature should be activated or not. See *8 SWITCH ON LIGHT*. The warning is normally enabled when system is shipped from ColorLight.

12.8.5 Maximum rotation speed

This menu gives the operator the opportunity to set the maximum rotationspeed of the system.

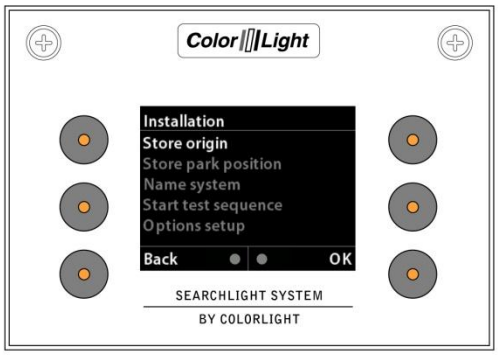


Use the joystick to increase or decrease the speed by moving the joystick up or down.

Don't forget to make an "OK" button push or move the joystick to the right to having the change to take effect in the system.

12.8.6 Installation

In this menu there are five sub menus each described below:



12.8.6.1 Store origin

This menu is used to calibrate the systems indicator* where the “ZERO” point are set for both vertical and horizontal axis.

Before the “Store origin” command is stored it’s necessary that the synchronization between operator panel and electrical box is done properly. The easiest way to do the synchronization is by just turn the system off with the “Park” command, please see *10.5 Off and park.*

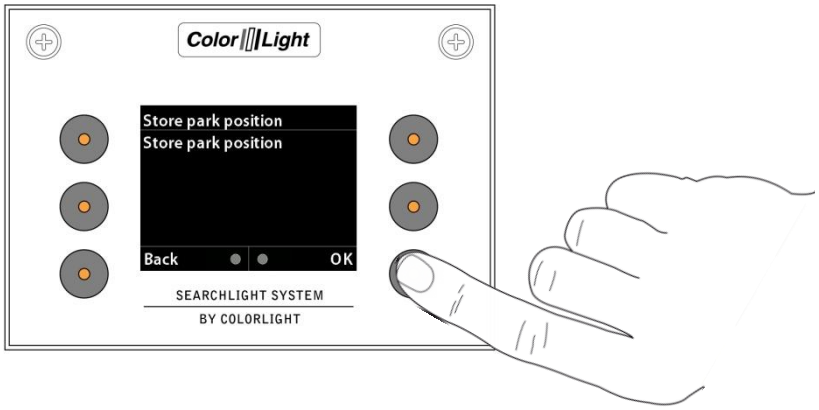
Start the system according to *6 STARTING SYSTEM (normal start).* Now normally the position of the lamp housings should be adjusted to be in level with horizontal plane and in direction straight forward of the vessel and then the “Store origin” can be executed and stored in the right way.

12.8.6.2 Store park position

This menu makes it possible to store a park position in any direction for the lamp housings when the system is selected by the “Park” command.

Before changing the default park position it’s necessary that the synchronization between operator panel and electrical box is done properly. The easiest way to do the synchronization is by just turn the system off with the “Park” command, please see *10.5 Off and park.*

From the default logo screen or display indicator*-screen, move the searchlight to the new desired park position and when satisfied select **menu>settings>Installation** and enter sub menu “Store park position”.

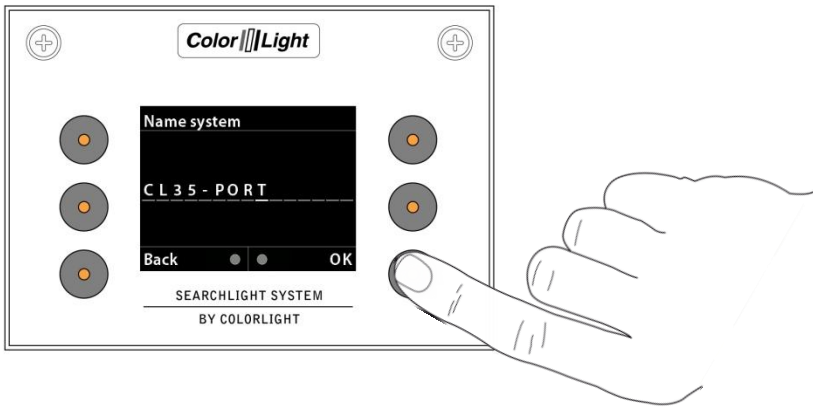


Press “*OK*” to save the new park position and return to the default logo screen or display indicator*-screen

ColorLight recommend that the park position should be approximately 70 degrees down for the vertical axis relatively to the horizontal plane. This recommended parking position is the most effective position to avoid sand, rain, snow etc. to hit the glass in front of the lamps.

12.8.6.3 Name system

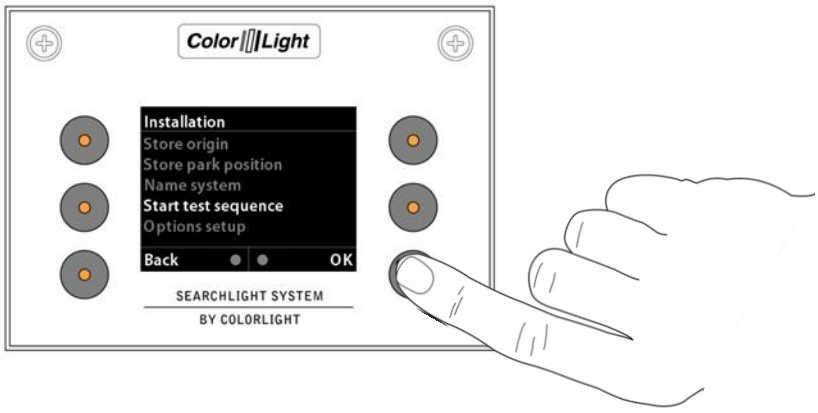
The dedicated ColorLight network can contain several searchlights and operator panels. To make the whole network easy to navigate; each electrical box and its corresponding searchlight can be named to a well known name for the operator.



The name is set by moving the joystick up and down to select correct character. To move to next character in the name the joystick is moved to the right. Finish the name process and save the name by select “OK” by pushing the button at the right bottom corner of the display.

12.8.6.4 Start test sequence

This menu starts a test sequence which tests the movement of the lamp housings and focus for each lamp house one at a time.



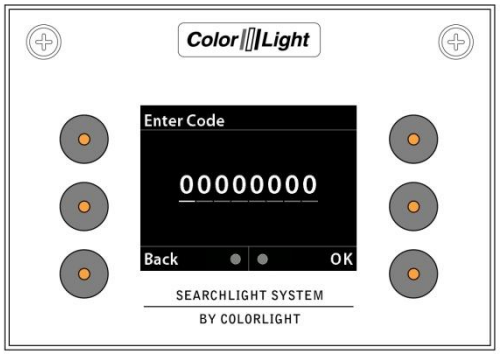
The test sequence will perform as follows:

At test sequence startup the lamp housing will be moved to parking position.
The horizontal axis will be rotated a fully revolution clockwise.
The vertical axis will be rotated a fully revolution clockwise.
The left lamp houses focus motor is activated during 10seconds.
The right lamp houses focus motor is activated during 10secinds.

The whole sequence above will be repeated 5 times before the test sequence is automatically abandoned. Every even time the rotation will be anti clockwise and every odd time the rotation will be clockwise. During the test sequence the operator can switch on and off lights by simply press the button 2 and 5 according to the figure in *3. OPERATOR PANEL, OVERVIEW.* The test sequence can't be abandoned by the operator without switching the main power off to the electrical box.

12.8.6.5 Options setup

This menu is used to install special “codes” to unlock and to get access to special functions.



The code is entered by moving the joystick up and down to select correct character. To move to next character the joystick is moved to the right. Finish the process by select “OK” by pushing the button at the right bottom corner of the display

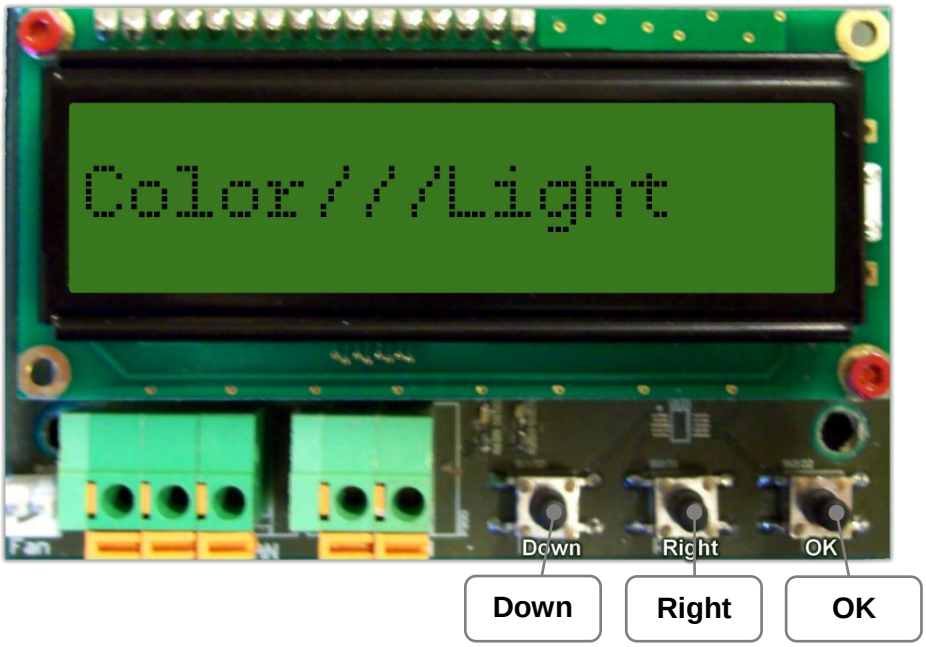
The “codes” are individual for each operator panel. To get access to the “codes” the customer needs to call ColorLight for quotation. ColorLight need the MAC address for the relevant operator panel to be able to get the right code for their customer. Please see *11.6 Info.*

The following options are available and can be directly accessed by entering a code:

Step less joystick speed control
Display indicator
Fixed positions, please see *10.6 Fixed positions*
Sweep (auto sweep horizontal)
Surveillance
Language

13. CABINET CARD MENU SYSTEM

This chapter describes the menu system of the ColorLight Cabinet Card displayed on the on-board LCD.



13.1 Inputs

The user interacts with the menu system using the three buttons, the Down button, the Right button and the OK button.

13.1.1 Down Button

The main function of the Down buttons is to shift between the menu categories. It also has two alternate generic functions.
1. While in submenus listing items of various types the Down button scrolls down in the list.
2. While entering a value of some sort, the Down button decrements that value.

13.1.2 Right Button

The main function of the Right buttons is to shift between the submenus of the selected menu category. It also has two alternate generic functions.
1. While in submenus listing items of various types the Right button scrolls up in the list.
2. While entering a value of some sort, the Right button increments that value.

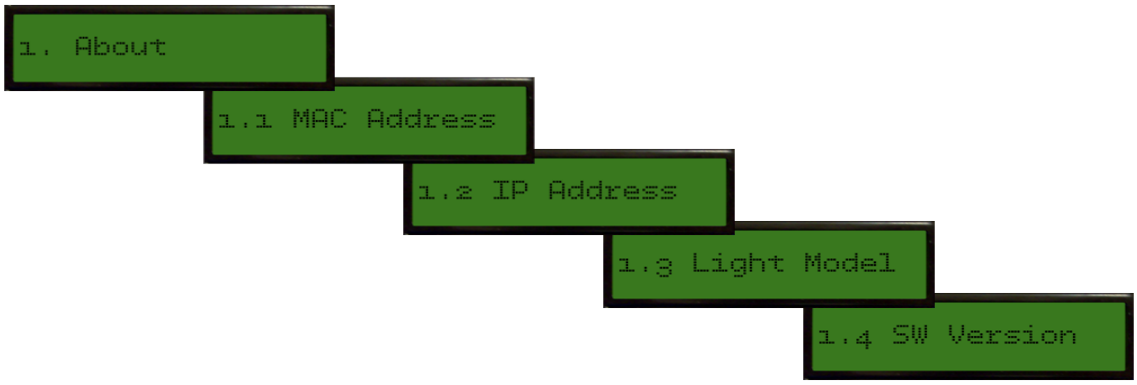
13.1.3 OK Button

The OK button enters and exits submenus.

1. About	1.1 MAC Address	1.2 IP Address	1.3 Light Model	1.4 SW Version
2. Diagnostics	2.1 Start	2.2 View Results		
3. Usage Stats	3.1 Left Light	3.2 Right Light	3.3 Reset Left	3. 4 Reset Right

13.2 Category 1: About

In this chapter all of Category 1 menu items will be explained.



13.2.1 1.1 MAC Address

Displays the MAC address of the Cabinet Card, according to the standard (IEEE 802) in six groups of two hexadecimal digits, separated by colons (':'), in transmission order, e.g. "01:23:45:67:89:ab". One exception from the standard is made, the leftmost colon is missing, due to the 16 character limit of the LCD.

13.2.2 1.2 IP Address

Displays the IPv4 address of the Cabinet Card, in four groups of one to three decimal digits, separated by dots ('.'), e.g. "169.254.17.5".

13.2.3 1.3 Light Model

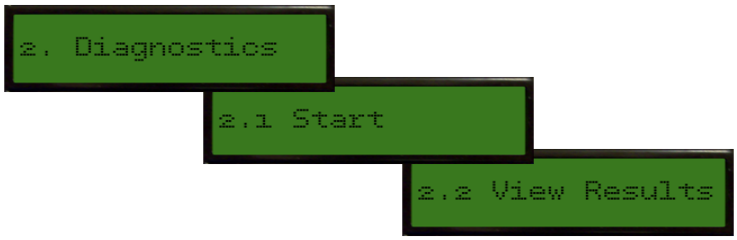
Displays the searchlight model that the Cabinet Card is configured to use, e.g. "Model: CL25-12".

13.2.4 1.4 SW Version

Displays the firmware version of the Cabinet Card, e.g. "0.1.2.3".

13.3 Category 2: Diagnostics (support tool)

In this chapter all of Category 2 menu items will be explained.



13.3.1 2.1 Start

Press the OK button to run the on-board diagnostic test suite to sense the electrical and mechanical condition of the searchlight. (contact Colorlight for help with this feature).

T1. Measurement of voltage and current when the searchlight is in “non operating mode”

T2 (HCW). Measurement of current drawn by the horizontal motor; motor rotates clockwise for 30 seconds.

T3 (HCCW). Measurement of current drawn by the horizontal motor; motor rotates counterclockwise for 30 seconds.

T4 (VCW). Measurement of current drawn by the vertical motor; motor rotates clockwise for 30 seconds.

T5 (VCCW). Measurement of current drawn by the vertical motor; motor rotates counterclockwise for 30 seconds and the value is temporary stored.

T6 (Rfoc). Measurement of current drawn by the right focus motor; runs for 30 seconds.

T7 (Lfoc). Measurement of current drawn by the left focus motor; runs for 30 seconds.

T8 (H MAG). Test of horizontal magnetic sensor; the horizontal motor is running at full speed for a predetermined time and number of triggers is recorded.

T9 (V MAG). Test of vertical magnetic sensor; the vertical motor is running at full speed for a predetermined time and number of triggers is recorded.

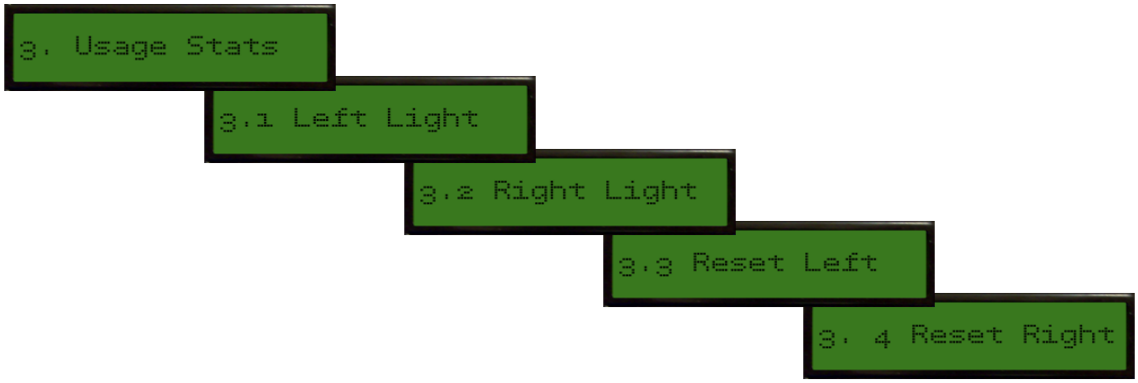
T10 (Lights). Lamp test; both lights should ignite and be lit for 30 seconds.
To avoid burning anything with the bright light the test is performed with both axis rotating in half speed. The result is temporary stored.

13.3.2 2.2 View Results

Displays the result of the last run diagnostics test suite.
Use the Down button to cycle through the tests results.
Use the Right button to cycle through different test result information for the selected test. Only applicable for test “T1” and test “T10”.

13.4 Category 3: Usage Stats

In this chapter all of Category 3 menu items will be explained.



13.4.1 3.1 Left Light

Displays the usage of the left light source in hours:minutes:seconds, e.g. “Left: 1:23:45”.

13.4.2 3.2 Right Light

Displays the usage of the right light source in hours:minutes:seconds, e.g. “Right: 1:23:45”.

13.4.3 3.3 Reset Left

Resets the usage counter of the left light source.
A confirmation message, “If sure press OK”, is displayed upon entering the menu. Press the OK button at this point to reset the counter and exit the menu. Press the Down or Right button to exit the menu without resetting the counter.

13.4.4 3.4 Reset Right

Resets the usage counter of the right light source.
A confirmation message, “If sure press OK”, is displayed upon entering the menu. Press the OK button at this point to reset the counter and exit the menu. Press the Down or Right button to exit the menu without resetting the counter.

14. SYSTEM IDENTIFICATION PAGE

On this page you can find information about your system as it was configured when it left colorlight. In case of system support please mail us the components serialnumbers. Remember to keep this page updated if adding or replacing components like operator panels.

Searchlight ID:

SN LABEL

Electronic box ID:

SN LABEL

INFO LABEL

System extras:

ETHERNET SWITCH LABEL

LABEL

OP/RADIO ID:

SN LABEL 1

SW LABEL 1

SW LABEL 2

SN LABEL 2

Mac ID1 ___:___:___:___:___:___

Mac ID2 ___:___:___:___:___:___

SN LABEL 3

SW LABEL 3

Mac ID3 ___:___:___:___:___:___

System info verified by:

Name:_____

Date: _____

15. SUPPORT

If you have questions about the searchlight and its features, please contact ColorLight technical support worldwide, see www.colorlight.com for contact details.

Or contact ColorLight head office:

Color Light AB
Engineering-Color Light
cl@colorlight.com
Phone: +46 353 8270
Fax: +46 35 38279

If you want to upgrade your system with additional options (see 11.8.6.5), please contact:

ColorLight AB
Kassakällor Erikslund
SE-313 95 Åled
Sweden
Phone: +46 35 38280
Fax: +46 35 38279
www.colorlight.com
info@colorlight.com

Notes: