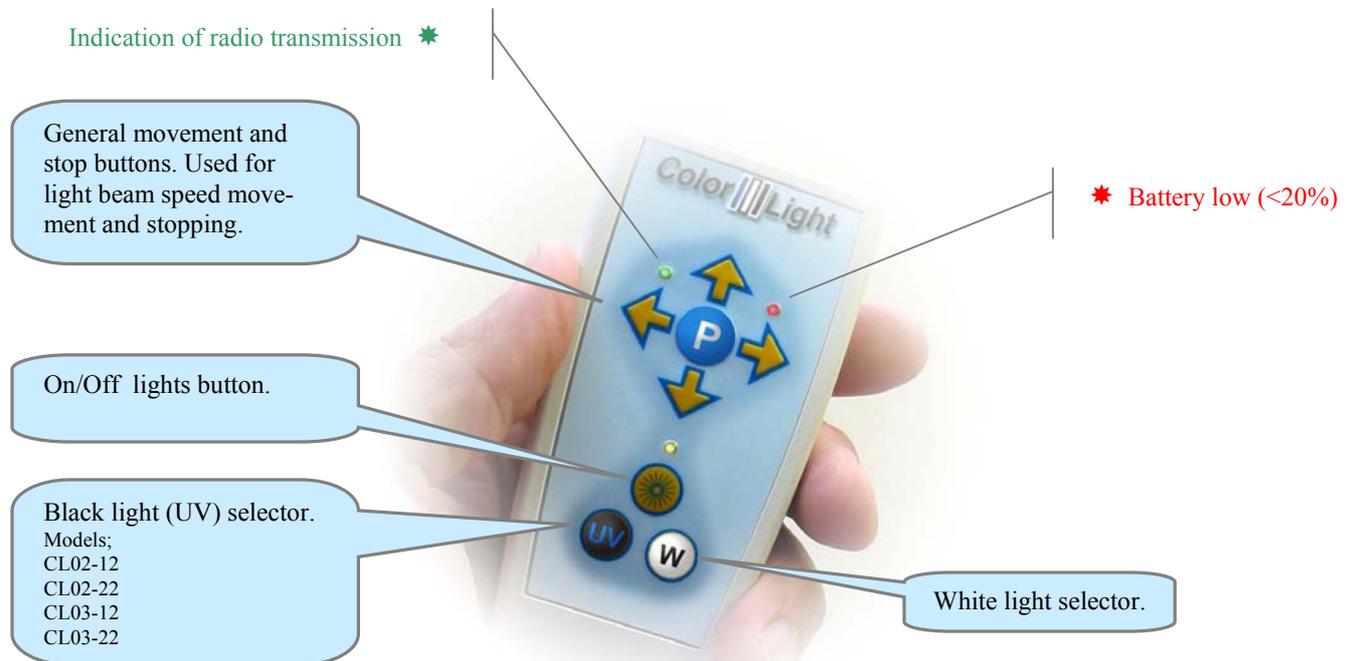# ColorLight, radio control. Operation manual.

The ColorLight searchlight system is operated with one or several wireless remote controls. Each searchlight normally listens and responds only to one unique remote control unit, but a searchlight may also be taught to respond to multiple remote control units. The remote control unit is palm-sized and can easily be kept in a pocket. Belt clips and a wall mounted holder are available. The holder allows the remote control to be placed securely and handily among other communications- and control equipment needed for the operation of the vessel.

The remote control is designed to operate in moist and wet conditions, to withstand heat, coldness and vibration, despite being designed like heavy and bulky military equipment. Despite external antenna, operational ranges is approx. 100-200 meters in free line of sight. Battery life is exceptional trough the use of state of the art. Active non used unit lifetime is 20 years. Battery life with a mean daily use of the searchlight of one hour still yields a battery lifetime of a couple of years. For further details, see the technical specifications.

Manoeuvrings can be made in a joy-stick fashion mode where the speed of the searchlight movement is controlled rather than the movement itself. All the basic functions of the ColorLight searchlight system are easily available to you with this handy remote control in cooperation the joystick connected with wire.

Operation manual, remote control general handling.

Indication of radio transmission ✳

General movement and stop buttons. Used for light beam speed movement and stopping.

✳ Battery low (<20%)

On/Off lights button.

Black light (UV) selector.
Models;
CL02-12
CL02-22
CL03-12
CL03-22

White light selector.

Power; The remote control unit is battery powered, always on, does not have to be charged and is always ready for immediate use. Battery life is several years during normal hourly everyday use. The unit may thus be positioned in the wall mount holder where it is best suited without need for installation of charging power, cables or connectors. When the remaining battery power level goes below 20% capacity, this is indicated with a flashing red ✳ indicator. Battery replacement is done by opening the watertight sealed case with a PZ1 screwdriver. Battery life expectancy, several years, see the technical specifications in page 11.

Buttons; The buttons are sealed and humidity/water tight. The actuation is tactile with both a mechanical sense and also a clicking sound. Thus you clearly feel and hear when you have depressed a button. The transmission of the button information is indicated with the green LED.

Control of lamp and focus; The ColorLight searchlight system can be accessed and controlled from the remote control. Some controls require a double button action, e.g. the switching on or off of the lamps is made in such a way as to minimize the risk of accidental unwanted switching.

W   +   ✳

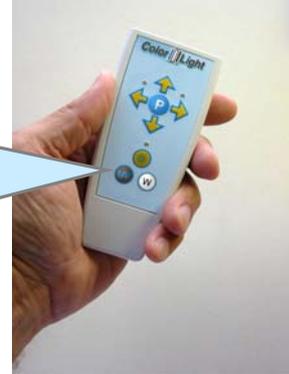Example: Select the white light,   and turn it on or off.

These double button actions are always made in such a way that the first button is depressed and kept depressed while the next button is pressed. Just like Ctrl + Z on a computer

Operation manual, change of focus.

2) Then also press the forward arrow to change the focus (flood/spot) of the lamp. Release the button when focus is as desired.

1) Press the Black light to focus the STB light.

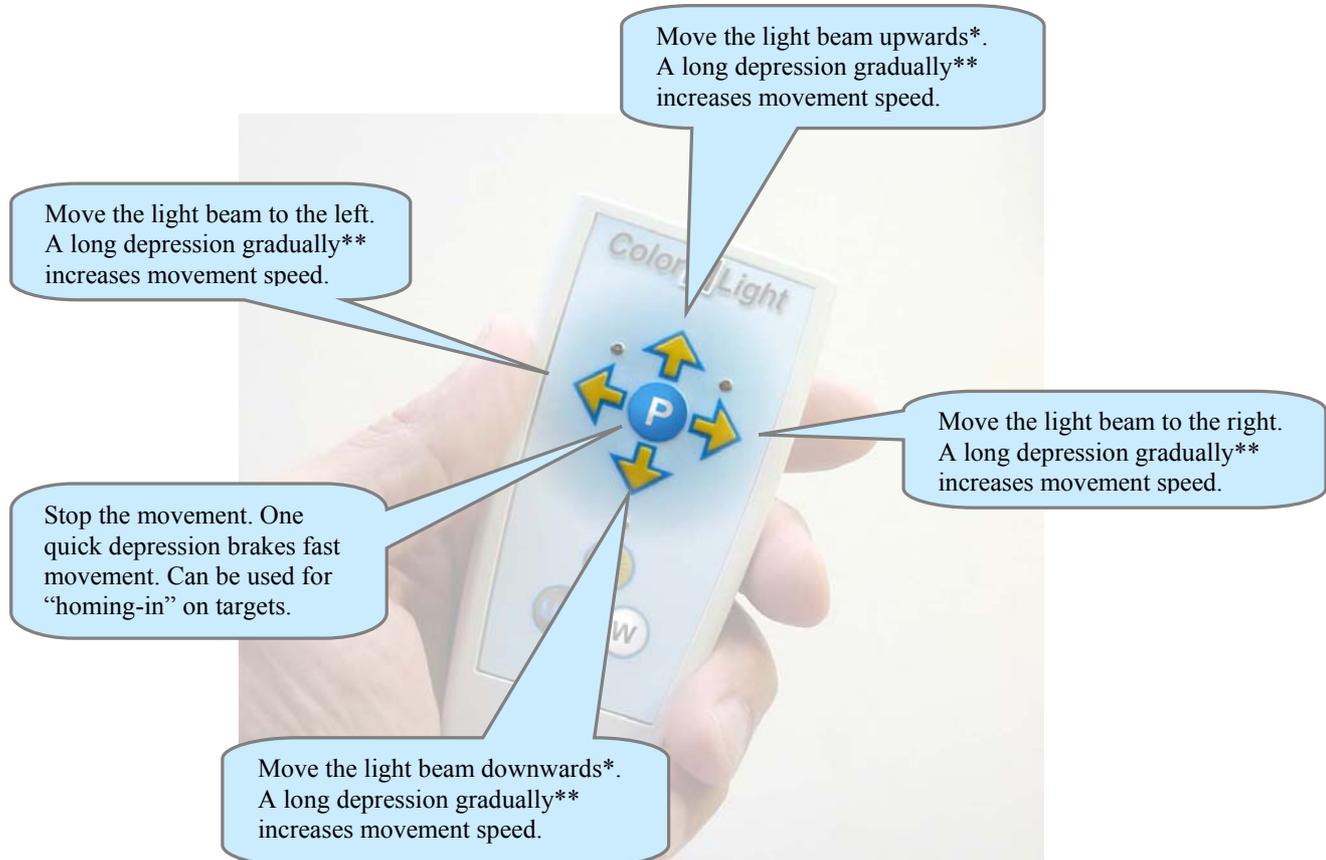**1)** Or press the white light button to focus the port light.
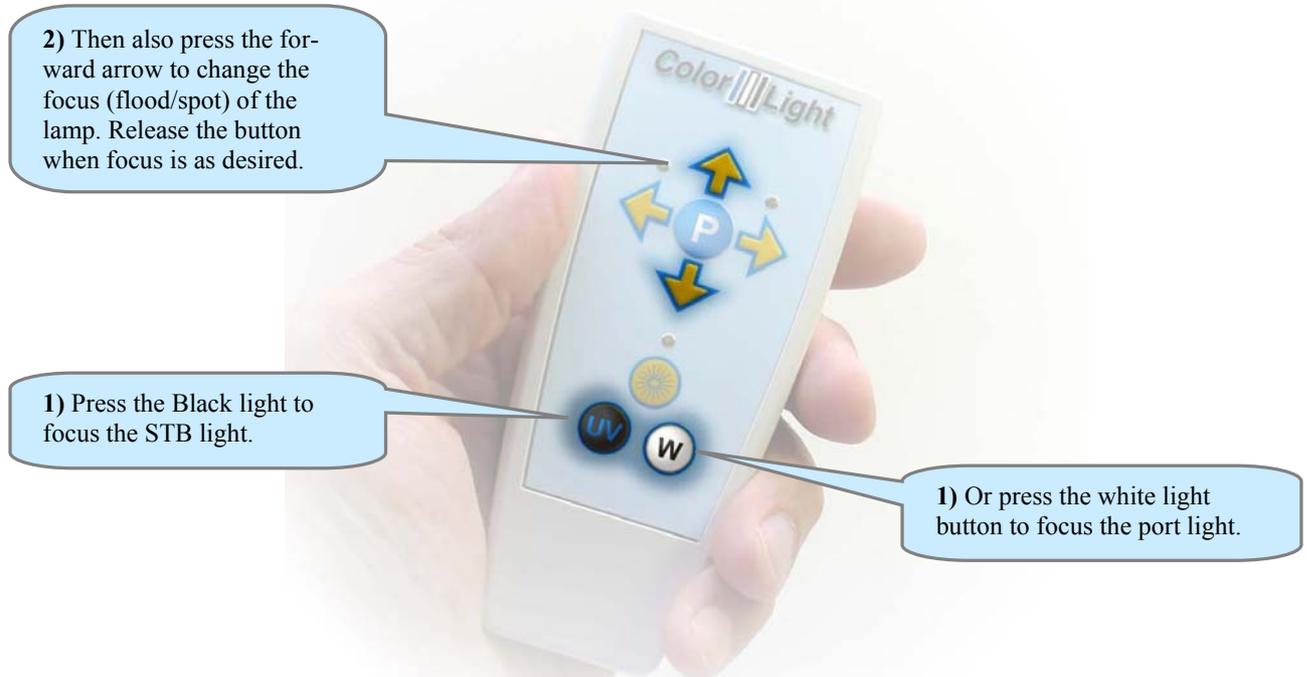
(UV) **+** ⬆ → Focus the STB light.

(W) **+** ⬆ → Focus the port light.

As long as the up arrow button is pressed the bulb moves in and out and the focus is alternated from floodlight to spot. Release the arrow button when the required focus is found.

As a convenient feature, when you adjust the focus, the affected lamp(s) is automatically switched on.

Operation manual, movement.

> Move the light beam upwards*.
> A long depression gradually** increases movement speed.

> Move the light beam to the left.
> A long depression gradually** increases movement speed.

> Move the light beam to the right.
> A long depression gradually** increases movement speed.

> Stop the movement. One quick depression brakes fast movement. Can be used for "homing-in" on targets.

> Move the light beam downwards*.
> A long depression gradually** increases movement speed.

Speed control; When an arrow key is depressed the speed is changed towards that direction. While depressing the key, the speed thus increases**. When the key is released, the speed remains unchanged. Movement can on the other hand be reduced** or stopped by counter-changing the ongoing direction. A quick way to stop the motion, is pressing the P button. This operational mode is advantageous if the vessel is bypassing objects to be lit, or if the vessel is making turns. The searchlight operator is thus in effect relieved of the task of steering contra dictionary to the vessel movement. Also area/sector searches are simplified, relieving the user.

* **Two modes of operating;** Some users prefer to see the up and down arrows in the same way as "dive" and "rise", as in an aircraft. This mode of operation is set as the default mode of operation and can be changed in a couple of seconds on the radio receiver. The selection (also see page 8) is made in the micro-menu;

Select menu 1 by wiggling the thumbwheel ← → until the display shows , ‑1‑ = up/down mode.
Enter the up/down mode by depressing the thumbwheel. (upwards)

Now toggle mode of operation by again wiggling the thumbwheel ← →
o = ⬆ moves the lightbeam down (aircraft dive). o = ⬆ moves the lightbeam up.

Finally select&store the displayed mode by depression of the thumbwheel. You get acknowledge by flashing.

** The acceleration, deceleration, maximum speed is adjustable with the **Agility**-menu, ‑2‑ See page 8.
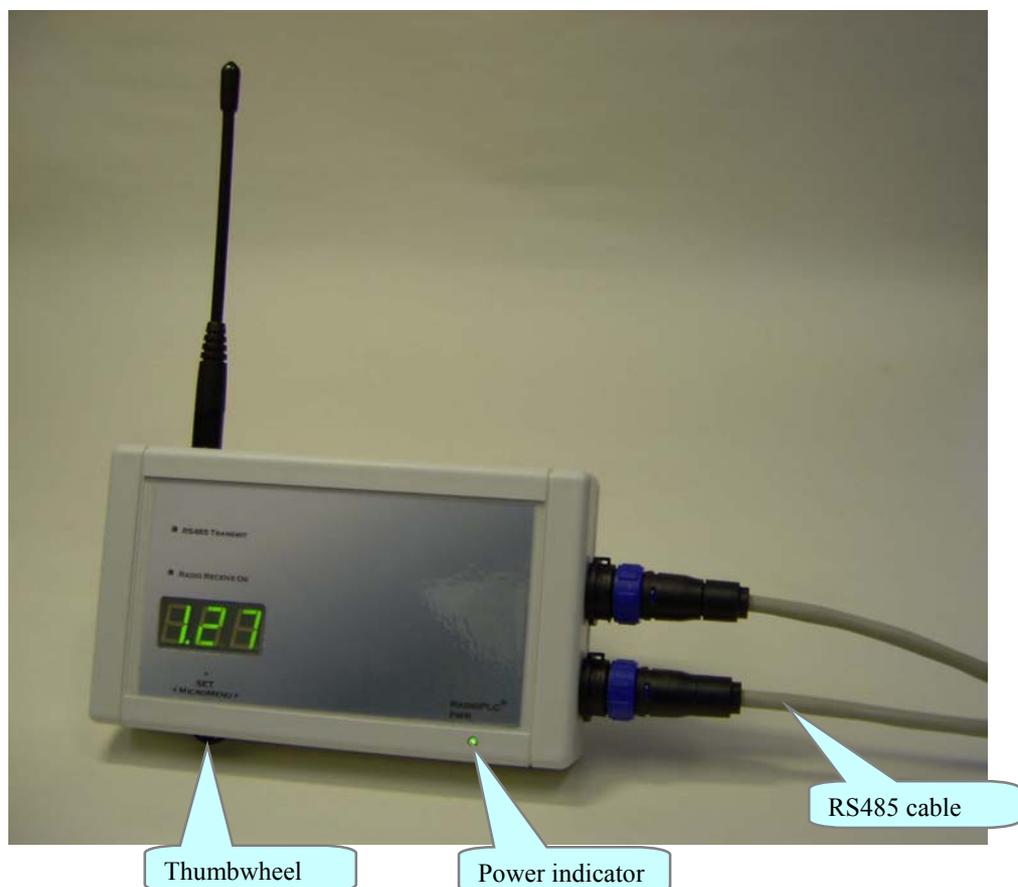
Operation manual, receiver.

Normally, the receiver does not need any attention, so this is a description of mounting, connection, setup and troubleshooting. Select a dry, non vibrating place in the area from where the ColorLight is to be operated. If the receiver has a fitted antenna of its own, as on the picture below, then reserve some free space above the receiver for the antenna. *Note; If it is to be mounted onto a metallic (conducting) wall, then arrange a protruding mounting as to get a distance of 150mm from the wall to the antenna.* Otherwise operational distance will be greatly reduced, due to the conducting wall "shortening" out the radio wawes. On the other hand if mounted at a distance of exactly 150 mm from the wall, radio coverage will be improved by the then cooperating reflections from the wall. Also reserve some free space to the right of it for the connectors.

Mount a 150 mm piece of 35mm DIN-rail horizontally. Click the receiver onto the DIN-rail. Switch off the power to the electrical control box. Connect the receiver to the ColorLight with the supplied RS485 cable terminated with the Bulgin connectors. Either of the two connectors may be used. If more control units are to be connected to the system, continue the cabling from the second of the two connectors. The RS485-cabling should take the form of a daisy-chain, with the last unit having one spare unused connector.

If the receiver is equipped with an antenna of its own, then the installation is complete. If the receiver has a pigtail for connection to an external antenna, then connect the pigtail N-female connector to the antenna coaxial cable N-male connector. The coaxial cable and antenna should have an impedance of 50 ohms and designed for operation at a frequency of 434 MHz.

When all the other installations are complete and the ColorLight is powered, then the receiver also powers up via the RS485 cable. At power on, the display indicates the version of the receiver, e.g. **1.27** .

Thumbwheel

Power indicator

RS485 cable

Operation manual, receiver micro menu.

Under the display, there is a thumbwheel. The thumbwheel may be wiggled to the left and right, thus selecting a value to be displayed/changed. The simple operation is as follows;

1. Wiggle ← → to select a menu.
   `-1-` ……. `-9-` .

2. Depress, ↑ to go into the value.

3. Wiggle ← → to change the value.

4. Depress, ↑ to set the value.
   The value flashes as an acknowledgment.
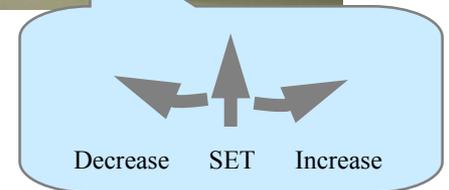
The behaviour of the radio control system may thus be changed easily.

Decrease   SET   Increase

Micro-menu `-1-` , change of **Mode of operation up/down**. Some users prefer to see the up and down arrows in the same way as "dive" and "rise", as in an aircraft.

`o` = ⬆ moves the light beam down (aircraft dive).   `o` = ⬆ moves the light beam up.

Micro-menu `-2-` , change the **Agility** of the ColorLight. Depending upon the type of ship, small/large, and also the experience of the operator, the movement scheme of the ColorLight can be changed from slow/smooth/precision to agile/speedy.

`A – 0` = The agility = 0 = off. Slow smooth high precision movement. For spot searching.

`A – 1` = Agility activated at the lowest level. For large ships and inexperienced users.

`A – 2` = ETC.
                    Intermediate settings
`A – 3` = ETC.

`A – 4` = Agility activated at a high level. For small ships, rapid movements, and experienced users.

`A – 5` = Maximum agility. Lucky Luke, lights away your own shadow, before it grasps the remote control.

Micro-menu `–5–` , initiate the **Radio transmission measurement**. If the quality of the radio transmission need to be checked, a measurement tool can be one-time activated.

`0` = The radio transmission measurement is not activated.

`1` = The radio transmission measurement is activated. The receiver is ready to perform a test.

To do the test, do as follows; Depress and hold the (P) key on the transmitter during 5 seconds. Preferably, move the transmitter quickly around in 0,5-1 meter circles during the transmission to get an averaged result across radio "hot-spots" and "cold-spots", otherwise results may vary, not reflecting actual Tx→Rx quality.

The display counts up, and terminates by flashing the value, that can range between `1` and `100` where 100 is perfect transmission, usable values range down to 40. Values below 40 results in that the searchlight does not always follow your desired maneuvering.

Micro-menu `–8–` , display of **ColorLight mounting, up/down**. This is a factory setting that controls how the ColorLight movement is to be executed versus the physical mounting of the lamp unit.

`_o_` = Lamp unit mounted upright, standing on a surface.

`‾o‾` = Lamp unit mounted upside down, hanging down.

Micro-menu `–9–` , display of **ColorLight product type**. This is a factory setting that controls how the ColorLight is to be handled with respect of size, lamp types, focus, etc.

Display   **Product**

`211` = CL02-11 Halogen/Halogen

`212` = CL02-12 UV/Halogen

`222` = CL02-22 UV/UV

`311` = CL03-11 HMI/HMI

`312` = CL03-12 UV/HMI

`322` = CL03-22 UV/UV