

# USER MANUAL



## Water-Resistant Spotlamp (AL7-W-Series)

**Manual Version:**

**3.4.21**

**Release Date:**

**May. 15<sup>th</sup>, 2012**

Astera LED Technology GmbH

Address : Nahestrasse 68-70, 55593 Rüdeshheim an der Nahe, Germany Tel.: +49(0)6536-355361 Email: sales@astera-led.com

# 1 Table of Contents

<b>1</b>	<b>Table of Contents</b> .....	<b>2</b>
<b>2</b>	<b>Safety</b> .....	<b>3</b>
<b>3</b>	<b>Specifications:</b> .....	<b>4</b>
<b>4</b>	<b>Quick Start</b> .....	<b>5</b>
4.1	Advantages .....	5
4.2	Overview .....	6
4.2	LCD Display .....	6
4.3	Buttons .....	7
4.4	Technical Data.....	8
<b>5</b>	<b>Advanced Operation</b> .....	<b>9</b>
5.1	Targeting Lamps.....	9
5.2	Stretching Programs.....	10
5.3	DMX Operation .....	10
<b>6</b>	<b>Settings of the MENU</b> .....	<b>11</b>
<b>7</b>	<b>Troubleshooting</b> .....	<b>15</b>
<b>8</b>	<b>Disposal</b> .....	<b>16</b>
<b>9</b>	<b>Appendix : Overview of Programs</b> .....	<b>17</b>

## 2 Safety



Before you operate the unit, read this manual carefully. Make sure to keep the manual, in case you need to consult this manual again or you give the unit to another person. Always make sure to include this manual if you hand out the unit to another person. Keep in mind that this manual cannot address all possible dangers and environments. Please use your own caution when operating.



Only qualified personnel may repair this product. Don't open the case.



Do not operate the unit in areas where the high temperature condition or outdoors. It will cause abnormal function or damage the product.



The Li-ion is built in, please avoid bumping or plunging, it will cause FIRE or EXPLOSION. Never store the battery when fully drained. Always recharge immediately when empty.



Make sure to fully charge all AL7-W units before storing them. Partially charged batteries will lose capacity.

### **3 Specifications:**

- a) Wireless spot lamp, for Indoor and outdoor use**
- b) Extra bright 3W LED chips with 25degree lenses**
- c) Displays more than 16 million colors.**
- d) Low power consumption**
- e) Controllable by wireless Remote control ARC2, wireless DMX transmitter ART3 and can also get controllable via DMX512 cable connection**
- f) Build in Controller, the light effects also can get programmed directly via the integrated keyboard and LCD display**
- g) 8-24 hours operation time without recharging the battery.**
- h) Up to 300 meter operation distance of the remote control**
- i) RGB LEDs combined with white LEDs for a better color mixing and color appearance.**

## 4 Quick Start

This rugged spotlamp is made for uncomplicated event illumination and for decorative lighting. Due to its integrated battery and wireless module it can be quickly set up. The AL7-W can be used as standalone unit that is controlled with its integrated control pad or with the ARC2 Remote Control. For a larger setup, the AL7-W can be grouped and paired with other Astera wireless lamps and can be integrated into DMX setups.

To start the AL7, hold first and fourth button for 3 seconds. To power the unit off, press the same buttons shortly.

The AL7-W can display basic programs (light effects) which can later be customized with different colors, speed, fade, brightness etc. To change the displayed program press the PROG button, select a program with + and – and confirm with ENTER. To Change colors of a program press the COLOR button, then use + and – to select any of the 4 color channels you want to change, select a color and confirm with ENTER. To change speed and brightness, press the respective buttons, select a value and confirm with ENTER. These functions are only possible when at the main navigation and NOT when inside the menu.

It is also possible, to synchronize several units, and to spread programs over more than 1 unit. So for example the RAINBOW effect will be stretched over two or more units.

The AL7-W is suitable for shopping window, house, party, hotel, display room...Illuminating walls, curtains and objects in the room.

**Most advanced functions can be found inside the menu (see Chapter 6)**

### 4.1 Advantages

**Wireless design** --- The AL7-W is easy for installation due to its integrated battery and RF receiver.

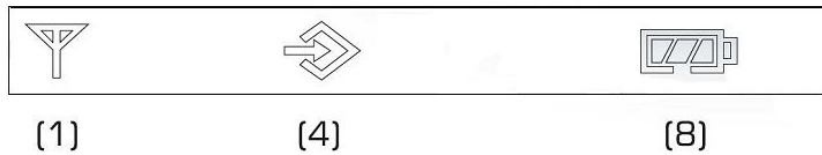
**Smart programming** --- The AL7-W not only displays complex color-changing programs but also gives you the possibility to use your own customized colors for these programs. The AL7-W can be used as a standalone unit or grouped and paired with other Astera lamps and be controlled with an ARC2 RF Remote Control.

**Energy saving design** --- Low working voltage, low power consumption and additional white LEDs helps to save up to 80% energy so it can reach a maximum operation time of up to 24 hours.

## 4.2 Overview



## 4.2 LCD Display



(1) - Receiving (on controller units only)

(4) -Settings are stored in the internal memory.  
(this will be shown via a short blinking of this symbol )

(8) - Battery status

## 4.3 Buttons

**First button:** Go back one level.  
**MENU/COLOR** If pressed >1 second: enter menu.  
For details on the menu, see Chapter 6

---

**Second Button** -Change the speed of the light effect. A time between 0.09  
**/SPEED** seconds and 9 minutes 11 seconds can be set. It reflects the  
duration of the selected program.

When in the menu: Navigate and adjust values

---

**Third Button** The brightness of the LEDs can be changed from 0%-100% in  
**+/BRIGHT** 10% intervals by pressing the +/- buttons.

When in the menu: Navigate and adjust values

---

**Fourth Button** Change program (color transitions).

**ENTER/PROG**

When in the menu: Choose menu item, save edited value or  
start sending a value.

---

**Fifth Button** To turn the unit on, hold button for 3 seconds

**ON/OFF**

To turn the unit off, press button shortly

---

## 4.4 Technical Data

<b>Light Sources</b>	
<i>Light Sources</i>	<i>SMD LED chips with 25 degree beam angle</i>
<i>Amount or LEDs</i>	<i>AL7-WXL: 18 (12xRGB, 6xW) AL7-WXXL: 36 (24xRGB, 12xW)</i>
<i>total LED Power</i>	<i>ALW-WXL: 54W AL7-WXXL: 108W</i>
<b>Power Supply</b>	
<i>Power supply unit</i>	<i>External power supply shipping with the AL7-W</i>
<i>Input power of charger</i>	<i>AC 100-240V, 50/60Hz</i>
<i>Output power of charger</i>	<i>AL7-WXL: DC 28V, 2.5A AL7-WXXL: DC48V, 2A</i>
<i>Battery type</i>	<i>Lithium Nickel Mangan Cobalt</i>
<i>Battery operational time</i>	<i>8 – 24h (depending on selected colors, brightness, programs)</i>
<b>Wireless Module</b>	
<i>Available remote contro</i>	<i>RF(radio frequency), IR(infra-red)</i>
<i>Range</i>	<i>IR: up to 5m RF: 50m up to 300m</i>
<i>RF Frequency</i>	<i>Europe: 868.000 MHz – 869.750 MHz US: 902MHz – 928 Mhz</i>
<b>Housing</b>	
<i>Material</i>	<i>metal housing and clear PMMA cover</i>
<i>Size</i>	<i>L180mm x H280mm x W170mm (L7.1" x H11.0" x W6.7")</i>
<i>Weight</i>	<i>AL7-WXL: 5100g (11.2b) AL7-WXXL: 6200g (13.7lb)</i>
<b>Environmental Requirements</b>	
<i>Operational Temperature</i>	<i>0 ~ 50 °C work temperature</i>
<i>Environment</i>	<i>Indoor and Outdoor (splash-proof, IP54)</i>



## 5 Advanced Operation

The AL7-W offers a wide range of advanced settings for professional users. Many options like Strobe lighting, group-building, color calibration etc can found in the menu and are discussed in Chapter 6. Other advanced functions can only be operated with the ARC2 Remote Control.

As there are numerous settings, it is recommended to reset each unit as well as the remote controller to its Factory Default settings before they are set-up (again). This can be done by entering the menu (hold first key key for one second) and go to **FACTORY RESET**, and confirm with **YES**.

### 5.1 Targeting Lamps

There are several ways to control only a selection of units, rather than all units at once. The functions are launched with the ARC2 Remote Control but can be prepared at the AL7-W itself.

#### Target Lamps by GROUPS

Each lamp can be set to belong to one of four groups (G1, G2, G3 or G4). Then each groups can be controlled individually, or groups can be linked together. If groups are linked, the program pattern stretches over them. New lamps or reset lamps are set to group 1

*Groups can be set in the menu under AUTO SETTINGS > GROUPS*

#### Target lamps by SET

Lamps can be assigned to one of 255 possible set-addresses. Also, more than one lamp can be assigned to one set #. In practice, usually a set of lamps will be assigned one set #. Each of these sets can be controlled individually.

*Groups can be set in the menu under AUTO SETTINGS > SET SIZE and POS IN SET*

#### Target lamps by TAPPING THEM

Select this option with the ARC2 Remote Control and confirm the selection with the AL7-W's ENTER button

#### Target lamps by TYPE

If you want to use the ARC2 to address all AL7-WXL or AL7-WXXL units in range, select this option.

#### Target lamps by SERIAL NUMBER

To use the ARC2 Remote Control to target one specific unit, select this function.

*You can check a unit's serial number under INFO > SERIAL*

## 5.2 *Stretching Programs*

Chain addressing, Group addressing and Set addressing can each stretch the displayed programs over several units of lamps. For example, if two lamps are assigned into a set, the rainbow effect will stretch over both lamps.

In order to stretch the programs correctly, it is necessary to determine how many units should be connected. If for example a wall has to be illuminated with 8 AL7-W, the SET SIZE (or CHAIN SIZE) can be set to 4 so that the lamps can display a color chaser or full rainbow. For Groups, this value does not have to be set but is determined automatically.

When planning to address several units quickly, it is recommended to program them in 1 Group or Set. A set has the advantage that it can also become part of a Group or Chain, and take 1 position of this Group or Chain while still remaining to be individually addressable.

To create a chain, enter the MENU select AUTO SETTINGS then CHAIN SIZE and POS IN CHAIN. For building Groups and Sets, refer to chapter 5.1 or the ARC2 manual.

## 5.3 *DMX Operation*

All Wireless Astera products can alternatively be controlled by wireless DMX or standard wired XLR DMX. This type also have this two functions.

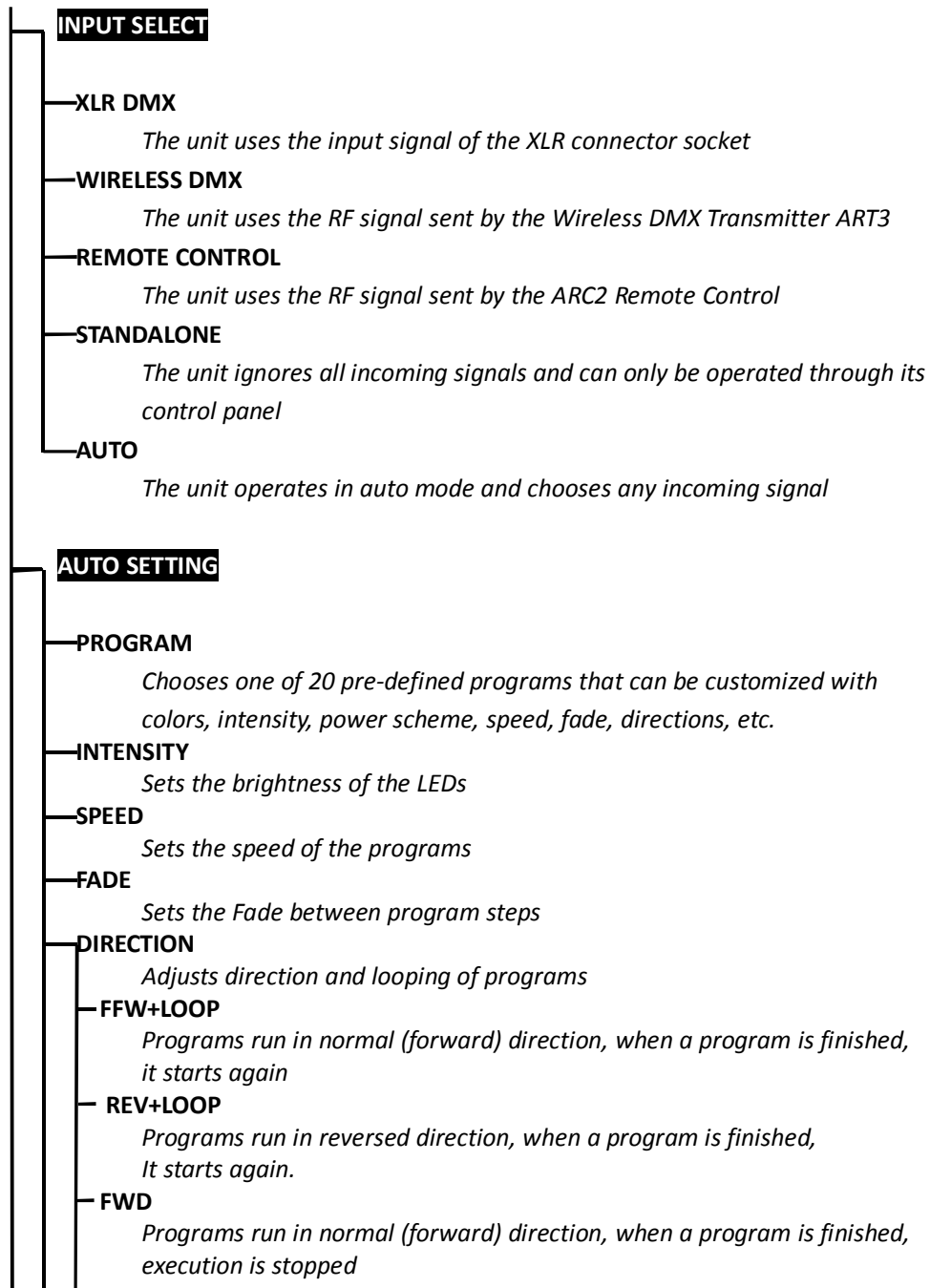
Hold down **MENU** for 1 second, display **INPUT SELECT**, then use the second button to select the input signal :DMX/WIRELESS DMX

When units are controlled by WIRELESS DMX, they can be setup to offer different number of channels features to suit almost any application:

1. Normal mode: every pixel can be controlled by three or four DMX channels, RGB and optionally S(stroboscope).
2. Effect mode: the build in effect engine that is usually controlled by the remote control can also be used with WIRELESS DMX. In this mode, the four user colors can either be controlled by three DMX channels each, RGB, or by only one channel by color. Then a set predefined set of colors can be accessed: "Index Colors", this might be useful as a scanner profile with 4 "gobo-wheels" can be defined in a light control desk.

## 6 Settings of the MENU

*Hold the first key for 1 second to enter the menu. When in the menu, use the 4 buttons to navigate through the menu. While the system is waiting for a selection you cannot go up one level.*



- REV**  
*Programs run in reversed direction, when a program is finished, it stops*
- CHASER**  
*Set different color chasers*
- CHASER SPEED**  
*Sets the speed of the color chaser*
- GROUPS**  
*Assigns the lamp to 1 of 4 groups so they can easily targeted*
- OFFSET**  
*Offset defines where the LOCAL GROUP starts. Usually this is set automatically by the lamp, depending how many other lamps are in a group.*
- CHAIN SIZE**  
*Choose how long the chain should become (see Chapter 5.2)*
- PCS IN CHAIN**  
*Choose the position the unit should take in the chain (see Chapter 5.2)*
- SET SIZE**  
*Choose how long the set should become (see Chapter 5.2)*
- POS IN SET**  
*Choose the position the unit should take in the set (see Chapter 5.2)*
- USER COLORS**  
*Settle RGB colors and the brightness.*
- SOUND TRIG**  
*Enable Sound trig or disable.*

## **DMX SETTINGS**

- DMX ADDRESS**  
*Sets the DMX-address*
- CHANNELS**  
*Sets the amount of channels that is used to control 1 unit. 1 RGB channel means that all LEDs have the same color.*
- DMX TAB**  
*Several different DMX tables can be chosen*
  - RGB S RGB S..**  
*For each pixel there are three channels RGB and one channel stroboscope.*
  - RGB RGB S S ..**  
*For each pixel there are three channels RGB and one channel stroboscope.*
  - EFFECT MODE FIX**  
*The 4 user colors are controlled by one channel per color (generates basic colors)*
  - EFFECT MODE RGB**  
*The 4 user colors are controlled by three DMX channels each.*
- STROBE**  
*Sets a series of strobe effects*
  - SINGLE**  
*One DMX channel is supplied for the control of the stroboscope function and all pixels will strobe identical. When using this setting, DMX TAB should not be set to RGB S*

RGB S..

**MULTIPLE**

*For each pixel, the stroboscope can be controlled individually.*

**OFF**

*Stroboscope is turned off globally.*

*One DMX channel is supplied for the control of the stroboscope function and all pixels will strobe Identical.*

*When using this setting, DMX TAB should not be selected.*

**DMX FAIL**

*This model is capable of detecting a loss of AC power (if plugged in).*

*It might be desirable to make the unit react on those conditions:*

**HOLD**

*The output keeps unchanged, the last received DMX frame is displayed.*

**EMERGENCY LIGHT**

*LEDs turn white until AC power is restored.*

**BLACKOUT**

*LEDs turn dark in case of AC power loss.*

**AUTO PROGRAM**

*plays the program specified in AUTO SETTINGS > PROGRAMS*

**GERNERAL SETTINGS**

**LED POWER**

*Three different power schemes can be set to optimize the playback*

**MAXIMUM RUNTIME**

*the lamps are less bright but the battery will last up to 24 hours*

**NORMAL**

*the lamps are normal brightness and the battery will last at least 8 hours*

**HIGH BRIGHTNESS**

*The lamps are set to a brightness that is stronger than usual but will drain the battery quickly*

**BELONGS TO SET**

*Assigns the lamp to 1 of 255 sets so they can easily targeted*

**WHITE CORRECTION**

*turns the white correction on or off*

**WHITE CALIB RED**

*adds or reduces the amount of red when displaying white light*

**WHITE CALIB GREE**

*adds or reduces the amount of green when displaying white light*

**WHITE CALIB BLUE**

*adds or reduces the amount of blue when displaying white light*

**AC FAILURE**

*sets the behaviour when no AC signal is detected (power outage etc)*

**Emergency Light**

*If no AC signal is detected, the light turns white*

**NO ACTION**

*The playback continues as before*

**BLACKOUT**

*If no AC signal is detected, all lights are turned off*

**CONTRAST**

*sets the contrast of the display between 1 and 48*

**INFO**

**SERIAL**

*shows the serial number of the unit*

**FIRMWARE VERSION**

*shows the firmware version of the unit*

**HOURS**

*shows the number of hours the unit has been played (P) and charged (C)*

**RF LINK**

*an advanced function for testing the signal strength together with the ARC2*

**RADIO PIN**

*The Radio Pin makes it possible for different customers to operate their lamps at the same place without influencing other lamps. The 4-digit pin can be set to a unique value and paired with selected lamps. To activate the radio pin, choose a pin on lamps and remote control, then press PAIR WITH LAMPS.*

**FACTORY RESET**

*Resets all settings of the menu to its factory defaults.*

*Confirm with fourth button or abort with the first button*

## 7 Troubleshooting

<b>Faulty condition</b>	<b>Cause</b>	<b>Troubleshooting</b>
The display of a unit is showing BLACKOUT, and there is no light output.	Either the unit is set to BLACKOUT mode, or DMX-FAILURE/AC FAILURE is set to BLACKOUT and one of these conditions persist.	Press SEND button or change PROGRAM.
No LED light when the unit is switched on	Due to the vast number of settings, one can not always predict behavior of the units, if setup was already done earlier.	Set the brightness to other value.
Units behave incorrectly	Due to the vast number of settings, one can not always predict behavior of the units, if setup was already done earlier.	Do FACTORY RESET on units and/or remote control.
Couldn't turn on the system	Maybe the battery is run out.	Plug the AC input, and put the system charge 1 hour more, then can turn ON
Units will go out of battery after only 6 hours of operation.	The AL7-W may last only 8 hours with COLD WHITE, if the LED POWER is set to NORMAL. For HIGH BRIGHTNESS the run time may be shorter than 8 hours.	Adjust LED POWER and/or see manual of the unit.
DMX cable is plugged in but the LEDs don't react according to the DMXsignal, and the LCD does not display DMX LINK OK.	The DMX signal is not received	Change another XLR cable, and make sure there is no problem on the DMX signal output device.
Unit is not charging when I connect it to the charger.	If the unit is on and charging at the same time it can get very hot. When reaching 50°C internal temperature the charging process is shut off to prevent damaging the battery.	You only have to wait. Once the charging process is shut off, the battery will cool down within 20-30 minutes and once the temperature reaches about 40°C charging will resume.
When connected with the charger, the units go shortly on, than off, then on, then off but refuse to charge the battery.	The battery is completely empty and not strong enough to light up and charge units at the same time.	While the LEDs are on, switch off the unit by pressing its power button. Charging it for 30mins will give it enough battery power to light up and charge at the same time.

## 8 Disposal

Follow local ordinances and/or regulations for disposal!



### ***PACKAGING:***

The unit is shipped in protective packaging.  
This packaging can be recycled!



### ***UNIT:***

Don't throw the unit into the garbage at the end of its lifetime.  
Make sure to dispose is according to your local ordinances and/or regulations, to avoid polluting the environment!



### ***BATTERIES:***

Don't throw empty batteries into the garbage!

Bring them to a collecting point for used batteries!



## 9 Appendix : Overview of Programs

<i>Name</i>	<i>Light Effect</i>	<i>Used colors</i>
<b>ONE COLOR STATIC</b>	All pixels show the same color	C1
<b>TWO COLOR STATIC</b>	Same as <b>ONE COLOR STATIC</b> , but not all	C1 C2
<b>THREE COLOR STATIC</b>	pixels show the same color, they are	C1 C2 C3
<b>FOUR COLOR STATIC</b>	divided into 2, 3 or 4 parts.	C1 C2 C3 C4
<b>ONE COLOR FADE</b>	All pixels show the same color, but the color changes between all four <b>USER COLORS</b> .	C1 C2 C3 C4
<b>TWO COLOR FADE</b>	Same as <b>ONE COLOR FADE</b> , but not all	C1 C2 C3 C4
<b>THREE COLOR FADE</b>	pixels show the same color, they are	C1 C2 C3 C4
<b>FOUR COLOR FADE</b>	divided into 2, 3 or 4 parts.	C1 C2 C3 C4
<b>SIMPLE RUNNING</b>	All pixels have C1 color, except one, that is running over them with C2.	C1 C2
<b>DOUBLE RUNNING</b>	Same as <b>SIMPLE RUNNING</b> , but two pixels are running over the background, in opposite directions.	C1 C2
<b>TWO COL RUNNING</b>	Same as <b>DOUBLE RUNNING</b> , but the two pixels are of different color.	C1 C2 C3
<b>FLAG RUNNING</b>	A "flag" consisting of three color stripes is running over the background.	C1 C2 C3 C4
<b>DOUBLE FLAG RUNNING</b>	Same as <b>FLAG RUNNING</b> , but two flags are running in opposite directions.	C1 C2 C3 C4
<b>SPIRAL 4 COLORS</b>	The color of all pixels is changing pixel by pixel from one color to the next. If the geometry of the unit allows it, the direction is circular.	C1 C2 C3 C4
<b>SPIRAL 2 COLORS</b>	Same as <b>SPIRAL 4 COLORS</b> , but the movement starts at both and in opposite directions, and moves back after all pixels are changed.	C1 C2
<b>RAINBOW</b>	A moving rainbow is shown on the units.	none
<b>FIRE</b>	A flickering fire-like effect is displayed. C1 is the background color, randomly pixels flash and flicker with C2.	C1 C2
<b>ROTOR</b>	The rotor programs are much like the <b>FADE</b> programs, but if the units are of tower-like shape, then a clockwise running rotor can be seen.	C1 C2 C3 C4
<b>ROTOR SPLIT 2</b>	Same as <b>ROTOR</b> , but two rotors in opposite directions are running.	C1 C2 C3 C4
<b>ROTOR SPLIT 4</b>	Same as <b>ROTOR</b> , but four rotors in opposite directions are running.	C1 C2 C3 C4

This instruction manual is part of the device and persons operating the device must have access to it at any time. Safety precautions mentioned in the instruction manual have to be observed. If the device is being sold, this instruction manual has to be included.

#### **Translations**

If the device is being sold, this instruction manual has to be translated into the national language of the destination country. If discrepancies occur in the translated text, the original instruction manual has to be used to solve them for the manufacturer has to be contacted.

©2012, Astera Led Technology GmbH  
All rights reserved  
Rüdesheim an der Nahe, Germany