

Spektrum

ADVANCED SPECTRUM ILLUMINATION



SPEKTRUM LED LIGHTING

The Spektrum range of high-output LED lights has been specifically developed by D-D for illuminating home and all captive reef aquariums, providing the power, colour and control required for optimum growth, colour-rendition and fluorescence, making your fish and corals stand out and thrive.

SAFETY INFORMATION

THIS DEVICE AND ITS COMPONENTS ARE FOR INDOOR USE ONLY AND ARE NOT WATERPROOF.

PLEASE READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

CAUTION: When powered on the LEDs will become hot and may cause burns if touched. Placing the unit face down on a surface or close to a surface when in operation will cause damage to the optics invalidating warranty and potential damage the surface. Allow the unit to cool before attempting any maintenance or touching the device.

DO NOT LOOK DIRECTLY AT LEDS WHEN THE UNIT IS RUNNING.

DANGER: To avoid risk of an electric shock care should be taken when handling any electrical device near water. In the case of damage or unit malfunction return the appliance to an authorized service facility or discard the appliance.

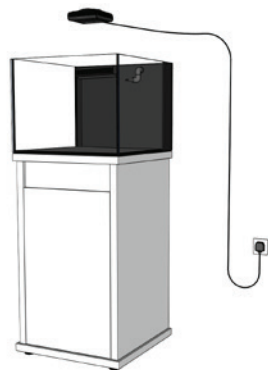
WARNING: To protect against injury, the following safety precautions should be observed:

- Do not operate any appliance that is malfunctioning or has any damage to the unit, power cable or plug.
- This appliance should not be operated by children and close supervision is necessary when used near children.
- To avoid injury, do not contact moving parts.
- Always unplug an appliance from the mains outlet when not in use, when servicing or during maintenance.
- Never pull on any of the power cables. To remove the plug from a mains power socket grasp the plug and pull to disconnect.
- Do not use an appliance for anything other than its intended use.
- The use of third party attachments or components not recommended or sold by the appliance manufacturer may cause unsafe conditions and invalidate warranty.
- Do not install or store the appliance where it will be exposed to the weather or to temperatures below freezing point.
- Make sure the appliance mounted securely and installed properly before operating it.
- Read and observe all the important notices on the appliance.

- An extension cord rated for less amperes or watts than the appliance rating may overheat.
- Care should be taken to arrange power cables so that they do not form a trip hazard, are not under tension and cannot be pulled accidentally.

To avoid the possibility of the appliance, plug or socket getting wet, you should create a '**drip loop**' for each cable connecting an aquarium appliance to a socket. The '**drip loop**' is that part of the cable below the level of the socket, or the connector. Use an extension cable, if necessary, to prevent water travelling along the cable and coming in contact with the socket.

If the plug or socket does get wet, **DO NOT** unplug the cable. Disconnect the fuse or turn off the circuit breaker that supplies power to the appliance before unplugging.



LIMITED WARRANTY

Should any defect in material or workmanship be found within 12 months of the date of purchase D-D The Aquarium Solution Ltd undertakes to repair, or at our discretion, replace the defective part free of charge.

Our policy is one of continual technical improvement and we reserve the right to modify and adjust the specification of our products without prior notification.

UNPACKING

Please check for delivery damage before unpacking. Once opened, inspect the product for any visible damage and check all parts are included. If any defects are found when unpacking, contact your retailer immediately.

Included in the box:

- D-D Spektrum light unit
- 24V Power supply
- UK power lead
- EU power lead
- Fixings bag
- Quick start guide

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MOUNTING THE LIGHT

The Spektrum light should be securely mounted a minimum of 25-30cm above the waters surface in a position that is well ventilated and does not allow it to be splashed. Installation of the unit within an enclosed hood or in a position that exposes it to moisture ingress will cause damage and invalidate warranty. The power supply and cable connections must be housed in a dry location away from water.

For the secure mounting of Spektrum light units above your aquarium the **D-D UTM** and **OTM System** or the **AI HMSSA** can be used. A dedicated **Spektrum Hanging Wire Set** is also available for suspending individual light units.

Please visit the Spektrum product page on our website www.theaquariumsolution.com for more information and to view the mounting guide.

APP DOWNLOAD

To download the **D-D SPEKTRUM** app scan the QR code or visit the **App Store** for IOS devices or the **Google Play** store for Android devices and search for **D-D Spektrum**.



STARTING THE APP

When starting the app for the first time it will ask for permission to allow access to networks, wireless connectivity and location, these will need to be accepted for the connection with a light to be established.

After the app has been downloaded on to your mobile device, open the app and choose the option at the bottom of the page to '**Create Account**'. Enter the details that you would like to use, a valid E-Mail will be needed to retrieve the verification code to complete the account setup. Once your details have been entered tap '**Get**' in the '**Enter Verification Code**' field and the code will be sent to the E-Mail address used for your account setup. Once received enter the code and then choose the '**Save**' button at the bottom of the screen to complete the account registration.

Once this is complete log in to your account to start setting up the lights.

CONNECTING A DEVICE


Before attempting a connection make sure the light is securely mounted in a suitable location, power the light on at the mains socket and wait for the red indicator LED next to the reset button to illuminate. The green indicator LED will remain off at this stage.

NEVER POWER THE LIGHT ON WHEN IT IS FACING DOWN ON OR CLOSE TO A SURFACE AS IT WILL CAUSE DAMAGE TO THE OPTICS.

Once this is done you can connect the light to the app in one of two different ways.

Local Connection

This will allow a light to be linked directly to your mobile device if no suitable Wi-Fi network is available. When using this option you will need to be in the same room as the light to make changes or log in to its settings. Local connection does not allow remote firmware updates or the grouping of lights.

Open the app and log in, choose  **Add Device** at the top right of the **'Home'** page followed by the **'Connect Locally'** button. Tap on the name of the device you would like to add then **'Connect'** to start the process.



When the connection is complete the app will return to the **'Home'** screen and the connected device is shown.


To add further devices repeat the above process.

Wi-Fi Connection

The lights can be connected to a home Wi-Fi network, this will allow remote access to the light settings, firmware updates and the grouping of lights.

Please be aware the lights can only use a 2.4ghz connection, if there is only a 5ghz connection or a public Wi-Fi portal available you will need to use the Local Connection option above.

Make sure the mobile device you are using is connected to the Wi-Fi network you will be using for the light. Open the app and log in, choose  **Add Device** at the top right of the **'Home'** page followed by the **'Connect to WiFi'** button and select the light or one of the lights you would like to connect to by tapping the  symbol next to it.

The Wi-Fi network your mobile device is connected to should be displayed at the top of the page, carefully enter your password for this network and select **'Save'**. Connection will then start with the light you selected, if there are other lights displayed that you want to add to the same group tap the  button associated with them. After the connection with all chosen lights has finished tap the **'OK'** button and then add a group name followed by the **'OK'** button to save.

When complete the app will return to the **'Home'** screen and the connected group shown.


If you do not want to have multiple light units grouped together following the same program choose the **'Skip'** button in the last step.

ADDING LIGHTS TO AN EXISTING GROUP

To add another light unit to an existing group follow the above steps for Wi-Fi connection and select the group you want to add to in the last step.

CREATING A LIGHT GROUP

It is possible to group multiple light units already connected with the app via Wi-Fi. For this function to work two or more lights must be connected that are not already in groups.

In the **'Home'** page of the app, select the  **Add Group** button, enter a name for the new group and then select the lights you want to add to the group by selecting the corresponding check boxes. Once done choose **'Save'**, the app will then return to the **'Home'** page and display the newly created group.

Using the back arrow in the bottom right corner of the **'Add Group'** page will exit the setting without saving any changes.

CONTROLLING A DEVICE

The light can be controlled either manually for a constant setting, or automatically where you can set an automatic lighting schedule.

To control a connected light or group, log in to the app and go to the **'Home'** page, then select the **'Setting'** arrow for the individual light or group you want to control. This will display the main control dashboard.

If the lightbulb icon is not highlighted and displaying **'Light Off'** tap the icon to switch the light on, then follow the manual or automatic setting instructions below.

Manual Control

Manual control allows a light or group, to run constantly with a specific power and colour setting unless power is lost or the setting is changed in the app.

Press the **'Manual Control'** button in the app for two to three seconds to enter the manual controls. In this page you can use the individual sliders to set a power level for each separate colour channel, or alternatively by selecting the **'Colour Temperature Control'** button set an overall colour and power.

The back button in the bottom right of the screen will return you to the previous page.

Automatic Control

This setting will allow a light cycle to be set that will mimic sunrise, sunset and daytime lighting.

Before starting make sure the 'Run Schedule' button is highlighted, then tap the **'Add/Edit Schedule'** button in the app, to enter the schedule settings. In this page you can use a preset lighting schedule or make your own custom settings.

To load an existing schedule choose the **'Preset'** button, there are three factory settings available, simply tap on the one you want to use and then confirm. This will then be saved to the individual light or group.

If you want to create your own custom schedule select the **'Easy Setup'** button. Using the dropdown menus under the graph you can set the time the sunrise starts, sunset ends and the time it takes the light to ramp up and down. The slider bars are then used to set the maximum power setting for each of the LED colour channels. When you have chosen your settings tap **'Save'** in the top right corner.

After you have completed the settings use the back arrow in the bottom right corner to return to the main control dashboard.


The back button in the bottom right of the screen will return you to the **'Home'** page.

ADVANCED AUTOMATIC CONTROL FEATURES

It is possible to add lunar, adjust existing lighting schedules, share and create lighting presets as well as other advanced settings.

Presets

In addition to the factory settings, presets can be created, selected and shared with other Spektrum users.


Creating a Preset – Once a schedule has been created in the **'Add/Edit Schedule'** page it is possible to save it to the presets section of the app. Simply tap the  icon under the schedule graph, enter a name and confirm. A maximum of five user created schedules can be saved in this page.

Loading an Existing Preset – Factory presets can be simply selected by tapping on them and then confirming, for user created settings highlight the check box relevant to the preset you want to use followed by the **'Run Preset'** button and confirm.

Sharing a Preset – Saved presets can be downloaded from the app as a QR code, these can then be shared with other Spektrum users to load on to their own lights or stored in your mobile devices image library for future use. Highlight the check box relevant to the preset you want to create a QR code for and then choose the **'Share Preset'** Button and download. Photo album permissions for the app must be enabled on your mobile device for this function to work.

Importing a Preset – In the **'Presets'** page tap the **'Import Preset'** button, you can then scan a Spektrum QR code with the camera on your mobile device or choose to load a code from saved images. Please be aware that you cannot have two presets of the same name, camera and photo album permissions for the app must be enabled on your mobile device for this function to work.

Deleting a User Created Preset – Hold your finger on the name of the preset you would like to delete for two seconds to get the option to delete.

Changing The Name of a User Created Preset – Tap on the  icon of the user created preset you would like to rename to open the edit popup.

Lunar

The lights have a lunar function that when activated will turn on the Warm White LED of the connected unit(s) during nighttime hours. This will automatically turn on after the lighting schedule ends and off before the lighting schedule starts the next day.


This function is only available if the lights are running a schedule and will not work in manual mode or when the lights are set to 'off'.




To activate the Lunar function tap the 'Lunar' button in the 'Add/Edit Light Schedule' page, turn the toggle switch on and choose a power level for moonlight using the slider bar. The setting will be automatically saved when you exit the page using the return arrow in the bottom right corner.

Editing or Deleting a Schedule


Points on the lighting schedule can be removed or added to make more complex settings. It is only possible to make a change to the settings between the Sunrise start and the Sunset end time, if you want to amend these it will be necessary to use the 'Easy Setup' function to create a new basic schedule.


When making changes to a schedule it may take a couple of seconds for the app page to refresh to the latest setting.

Adding a Schedule Point – Move the time slider bar, located above the graph, in the 'Add/Edit Light Schedule' page to the time you want to add a new schedule point, then tap the  button under the graph. A page will appear that allows you to set each individual colour channel for that time, when done tap save in the top right corner.

Deleting a Schedule Point – Move the time slider bar, located above the graph, in the 'Add/Edit Light Schedule' page to the point you want to delete. Tapping on the  and  arrows next to the time will allow it to snap to specific points. Then use the  button to delete the selected schedule point.

Adjusting an Existing Schedule Point – To adjust an existing schedule point first delete the point you want to change using the steps described above and then use the Adding a Light Schedule Point method to replace it with a new setting.

Undoing the Last Change – The last schedule adjustment using the methods above can be reversed by tapping the  arrow under the graph. This function will not be available if you have exited the in the 'Add/Edit Light Schedule' page.

Clearing a Schedule – To delete the current schedule tap on the  icon under the graph in the 'Add/Edit Light Schedule' page.

Auto Dim

Whilst acclimating new livestock to the aquarium it may be advisable to reduce the power of the lighting, tap on the 'Auto Dim' button in the settings dashboard for the light

or group to reduce the current setting by 50%. To return the lights to normal settings tap the button again. This function is only available when the lights are running a schedule.

Acclimation Mode

This setting allows the power of the current lighting schedule to be reduced and gradually increase to full power over an extended time. Ideal when introducing new corals to the aquarium or when increasing the overall power of the light settings.

To activate this function, press the **'Acclimation Mode'** button for two seconds in the light or group settings dashboard, then turn on the toggle switch and set the **'Power'** and **'Acclimation'** sliders to your desired settings.

Tapping on the **'Acclimation Mode'** button will also turn the function on or off.

This function is only available when the lights are running a schedule.

Fan Speed

As standard the cooling fan on Spektrum lights are automatically controlled by an inbuilt thermostat, activating and deactivating as required.

In humid conditions condensation can form on the heatsink when the lights are exposed to cool temperatures, especially overnight, this condensation can eventually work its way into the light unit and damage the electronics. To prevent this there is an option to set the fan to a constant running mode, the resulting continual airflow over the heatsink will help prevent the formation of water droplets and keep the unit dry. If the light gets hot during operation the fan speed will automatically increase to full power, cooling the light, before returning to the chosen constant running speed.


To change or set the running mode for the fan select the **'Fan Speed'** button in the app located on the light or groups setting dashboard, and change the toggle switches to your preferred setting, the fan speed slider will only work when the **'Constant Running'** mode is selected.

One of these modes must always be enabled as the active cooling is required to keep the lights running properly. If you deactivate one mode the other will automatically activate.

DEVICE DETAILS AND FIRMWARE UPDATE

In the app it is possible to sync the internal clock of the connected Spektrum light unit(s) with your mobile device, update firmware, identify a light, reset a light, and see the device details.

To access these functions, tap on the  icon next to the specific light unit in the **'Home'** page of the app.

Changing the Device Name – It is possible to rename light units associated with the app, use the  icon next to the device name to enter a new name.


Update Firmware – The current firmware is displayed on the 'Device Details' page, to check the firmware of your unit is up to date tap on the '**Update**' button, '**Update Success**' will show if the firmware is current. If an update is available a prompt will show, do not power off the light or disconnect it from the app during the update procedure, updates may take a few minutes to complete, when finished the light will reboot and the app will show the process is complete.

Resetting a Device – Tapping on the '**Reset Device**' button and confirming will reset a light and remove it from the app. To reconnect the light to the app again hold the button on the side of the unit for 5-8 seconds until the green status light flashes before attempting local or Wi-Fi connection.

Sync Time – If the internal clock of the connected Spektrum light unit does not match your mobile device use the '**Sync Time**' button. When multiple light units are connected in a group it is best to sync the time of all the units individually to ensure they follow schedule settings in a uniform manor.

Flash the Light – Spektrum lights all have their own unique serial number which is displayed in the app and on a label attached to the unit itself. Depending on how the lights are mounted it may be difficult to see the identification label on a unit, tapping on the '**Flash the Light**' button will cause the corresponding light to blink brightly three times to aid with easy identification.

APP ACCOUNT SETTINGS

When logged in to the app the account settings can be accessed through the '**Home**' page by tapping on the  icon in the bottom right corner.

Changing the App Language – The text in the app can be displayed in English or German. To change the language, select the dropdown menu from the top of the page and select '**EN**' for English or '**DE**' for German.

Changing the Account E-Mail – To change the email address linked to your app account tap on the current E-Mail displayed, enter the new E-Mail address followed by '**Get**' to receive an authentication code, enter the code and confirm. Please be aware that the code may go to your junk folder.

Logout – To logout of your account simply tap on the '**Logout**' button and confirm.

Delete Account – It is possible to completely delete your app account which will remove its details from the server and all information associated with it such as your light settings, once this is done it cannot be reversed. Tap on '**Delete Account**' followed by



'Get' to receive a verification code to the registered E-Mail address, enter the code and then complete by tapping '**Delete the Account**'. Please be aware that the code may go to your junk folder.

Change Password – If you want to change the password used to log in to your app account, select the '**Change Password**' button, enter the current password followed by the new password and then confirm.

CUSTOMISING THE APP

It is possible to customise the image displayed in the light or groups settings dashboard and edit the group name.

Changing the Display Image – To modify the image in the light or groups settings dashboard tap on the existing image and then select a new one from your mobile devices image library in the pop-up screen. Photo album permissions for the app must be enabled for this function to work.

Changing the Group Name – The name of a group of lights can be modified by tapping on the  icon next to the existing group name in the '**Home**' page or in the settings dashboard for the group. If you have a single device connected its name is displayed and can be modified in the '**Device Details**' or light settings dashboard by selecting the  icon.

MANUALLY RESETTING A LIGHT

Spektrum lights have a manual power and reset button located on the end of the unit. Briefly pressing this button will automatically switch the light to manual running mode, each subsequent press will cycle through the power steps until the light is off. To return to automatic settings it will be necessary to go into the app and activate the schedule in the light or Group settings dashboard.

Holding the button down for 5-8 seconds until the green status light flashes will reset the unit and its network settings.

MAINTENANCE

The Spektrum lights require little maintenance but to keep the unit working and running at full efficiency please follow the steps below:

- Remove any water drops or moisture from the lights immediately with a dry cloth
- Salt splashes or dried salt residue must be removed from the lens using a soft damp cloth, make sure the light is powered off and allowed to cool before doing this.
- Periodically clean dust and debris from the cooling fan and air flow grills to ensure

the unit can cool properly. To perform this, remove the Spektrum light unit from its mounting bracket, rotate the fan cover and lift off to expose the cooling fan, then using a suitable soft brush and Hoover attachment carefully clean any debris from the fan, fan cover and the air flow grills at each end of the unit.



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