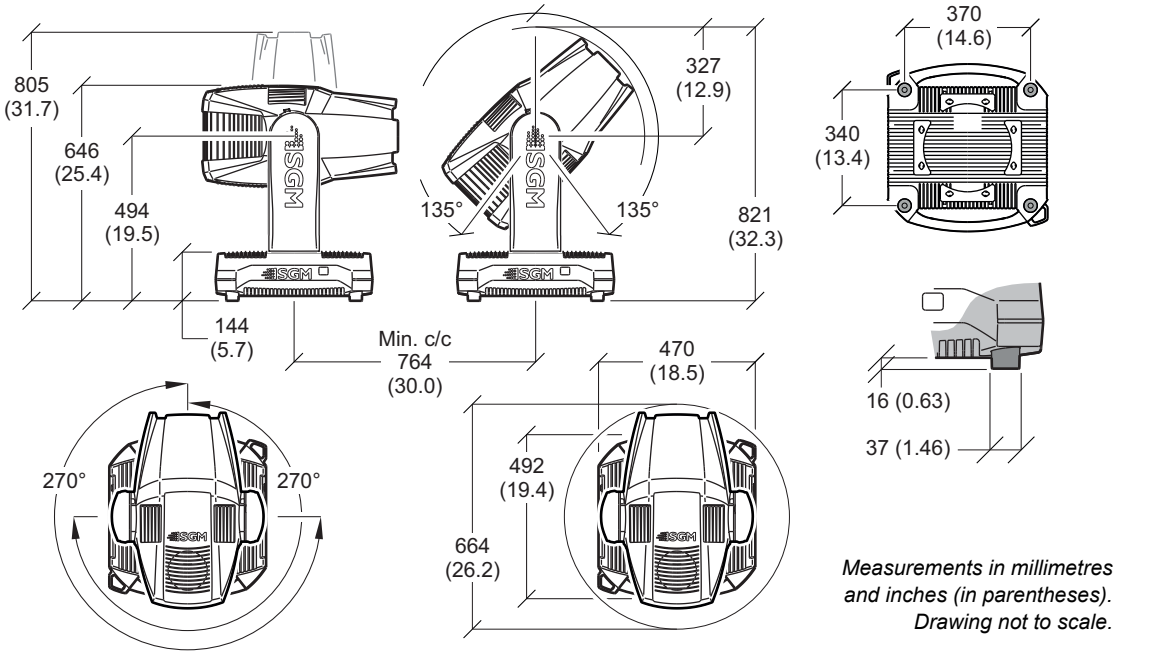
SGM®

G-WASH
MOVING HEAD

Dimensions



Measurements in millimetres and inches (in parentheses). Drawing not to scale.

G-WASH
USER MANUAL

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The original edition of this document is in English.
All other language editions are translations of the original edition.

This edition applies to firmware version 1.80 or later.

Rev. A

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Safety information

WARNING! *Read the safety precautions in this section before unpacking, installing, powering or operating this product.*

The G-Wash is intended for professional use only. It is not suitable for household use. **Impropre a l'usage domestique.**

Review the following safety precautions carefully before installing or operating the fixture. This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved. **Ce produit doit être installé selon le code d'installation pertinent, par une personne qui connaît bien le produit et son fonctionnement ainsi que les risques inhérent.**

Preventing electric shock

WARNING! *Risk of electric shock.*

- Always power off/unplug the fixture before removing covers or dismantling product.
- Ensure that the mains power is off when wiring the fixture to the AC mains supply.
- Ensure that the fixture is electrically connected to earth (ground).
- Do not apply power if the fixture is in any way damaged.
- Do not immerse the fixture in water or liquid.

Preventing burns and fire

WARNING! *Take measures to prevent burns and fire.*

- Install in a location that prevents accidental contact with the fixture.
- Install only in a well-ventilated space.
- Install at least 0.3 m (12 in.) away from objects to be illuminated.
- Install only in accordance with applicable building codes.
- Ensure a minimum clearance of 0.1 m (4 in.) around the cooling fans.
- Do not paint, cover or modify the fixture.
- Keep all flammable materials away from the fixture.
- Allow the fixture to cool for 15 minutes after operation, before touching it.

CAUTION: Exterior surface temperature after 5 min. operation = 55° C (131° F). Steady state = 65° C (149° F)

Avoid personal injury

WARNING! *Take measures to prevent personal injury.*

- Do not look directly at the light source from close range.
- Take precautions to prevent injury when working at height.
- Ensure that the fixture is always securely fastened with suitable hardware.
- For elevated installations, secure the fixture with suitable safety cables, and always comply with relevant load dimensioning, safety standards and requirements.

Overview

The SGM G-Wash is a maintenance free, multi-environmental moving head luminaire.
It is IP-65-rated and can operate in all kinds of weather.

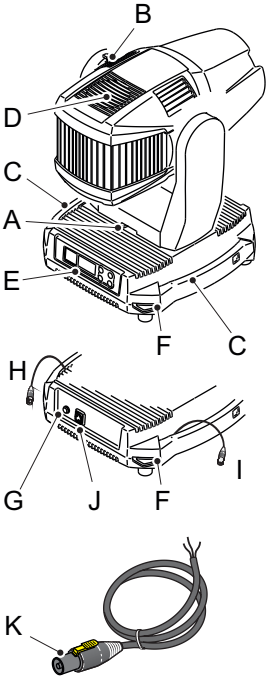
It has a powerful LED light source with high output and a virtually unlimited color palette, a Fresnel lens, optical zoom, elliptical beam shaper and can easily be controlled by wired and wireless DMX.

The fixture also offers RFID / NFC, low power consumption and an expected lifetime of the multiple LED's of 50,000 hours*.

* At 70% of luminous output under the manufacturer's test conditions.

Parts identification and terminology

A : Pan lock
B : Tilt lock
C : Base handle
D : Head fan grill (one of two shown)
E : Display panel
F : Safety wire attachment point
G : Fuse
H : DMX in
I : DMX out
J : Power in
K : Power cord



Preparing for installation

Unpacking

Unpack the fixture and inspect it to ensure that it has not been damaged in transport.

The G-Wash is shipped with:

• User manual.

• One Neutrik TRUE1 power input connector, 2 m (78 in.)

• Two Omega brackets with 1/4-turn fasteners.

Location/application

The fixture is IP-65-rated and designed for use in wet locations. This means that it is protected from:

• Dust; to the degree that dust cannot enter the fixture in sufficient quantities to interfere with its operation.

• Lower pressure jets of water from any direction.

When selecting a location for the fixture, ensure that:

• It is situated away from public thoroughfares and protected from contact with people.

• It is not immersed in water or exposed to high-pressure water jets.

• It has adequate ventilation.

When using the fixture outdoors or in wet locations, ensure that:

• For wireless DMX or standalone operation: That the DMX out cable is properly attached to the DMX in connection.

• For cabled DMX operation: That the DMX out of the last fixture is properly sealed, in accordance with the IP65 requirements.

Transportation

Always use the supplied packaging for transportation and storage.

Release the pan/tilt locks when transporting the fixture.

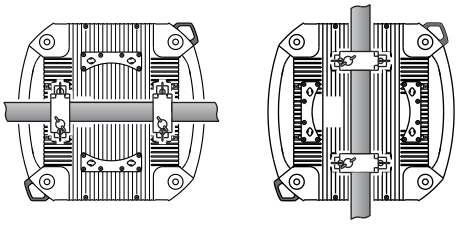
Leaving the pan/tilt locks applied may cause damage to the fixture.

Installation / Rigging

***WARNING!** Always secure elevated fixtures with a safety cable.*

The G-Wash may be installed in any orientation.

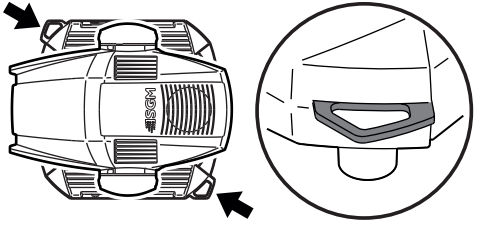
Always use two Omega brackets to rig the fixture. Lock each bracket with both 1/4-turn fasteners. The fasteners are locked only when turned fully clockwise.



Always fasten safety cables between the load-bearing support structure and the attachment points on the fixture. The safety cables must be able to bear at least 10 times the weight of the fixture.

CAUTION:

- Always use two safety wires.
- Min. safety wire gauge = 5 mm.
- Max. safety wire length (free fall) = 30 cm (11 in.)
- Make sure the slack of the safety wire is at a minimum.
- Never use the carrying handles for secondary attachment.



Rigging process

Start the rigging process by blocking the work area below, and make sure the work is performed from a stable platform.

1 Check that the clamps are undamaged and can bear at least 10 times the weight of the fixture. Check that the structure can bear at least 10 times the weight for all installed fixtures, clamps, cables etc.

2 Bolt each clamp securely to an Omega bracket with an M12 / ½" bolt (min. grade 8.8) and lock nut.

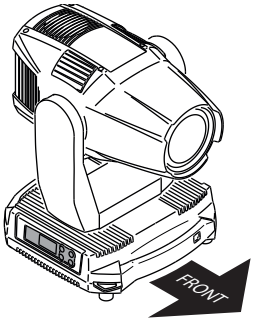
3 Align an Omega bracket with two 1/4-turns in the base. Insert the fasteners into the base and turn both levers a full 1/4-turn clockwise to lock. Install the second Omega bracket.

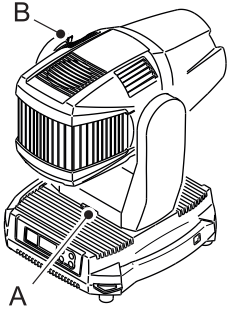
4 Working from a stable platform, hang the fixture on a truss, or other structure and tighten the clamps.

5 Install two safety wires that each can bear at least 10 times the weight of the unit. The attachment points are designed to fit a carbine.

6 Check that the pan/tilt locks are released (A and B). Verify that there are no combustible materials or surfaces to be illuminated within 0.3 m (11 in.) of the fixture.

7 Check that there is no possibility of head or yoke colliding with other fixtures.





Locating the front of the fixture

• When the fixture is standing on the base; the front is to the right when looking at the display.

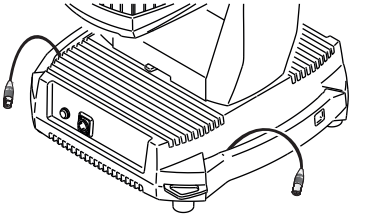
• When the fixture hanging; the front is to the left when looking at the display.

Connecting AC power

The G-Wash can operate on any 100-240V, 50/60 Hz mains power supply.

Connect the fixture to power using a cable with a Neutrik powerCON TRUE1 connector (supplied with the fixture).

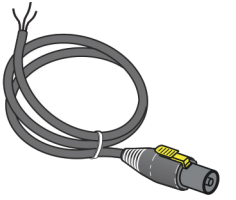
(POI fixtures are supplied with a fixed-chassis mounted, bare-ended power cable for installation in, for example; an weather-resistant junction box.)



Fuse | Power In | DMX Out | DMX In

The fixture must be grounded/ earthed and be able to be isolated from AC power. The AC power supply must incorporate a fuse or circuit breaker for fault protection.

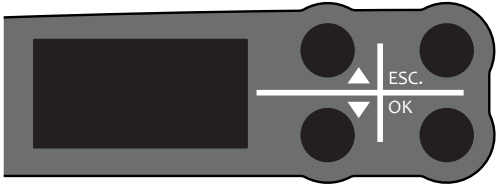
Wire	*Color*	*Symbol*	*Conductor*
	Black	**L**	live
	White	**N**	neutral
	Green	⏚ or ⏚	ground (earth)



Control panel operations

The display panel can be used to configure individual fixture settings, check the fixture's wireless status, firmware version and error messages. When the fixture is powered on, it boots and resets, before displaying the DMX start address.

Using the control panel



- Press the 'UP' / 'DOWN' arrows to set the DMX start address. Confirm by pressing 'OK', cancel by pressing 'ESC'.
- Press the 'OK' button to enter a menu or make a selection.
- Press the arrow buttons to scroll up and down the menus.
- Press the 'ESC' button to take a step back.
- Press the 'UP' and 'DOWN' arrows simultaneously to flip the display orientation.

DMX start address

The DMX start address is the first channel used to receive instructions from the controller. For independent control, each fixture must be assigned its own start address. If you give two fixtures the same address, they will behave identically. Address sharing can be useful for diagnostic purposes and symmetrical control.

Set a DMX address using the arrow buttons. See "Setting the DMX address" on page 21.

Configuring the fixture using an Android device via RFID

The G-Wash can also be configured wireless, via RFID, using the SGM Tool app installed on an Android device that has NFC support*, App available in the Google™ Play Store.
*(ISO 15693 and ISO 18000-3 mode 1 compatible, operating on 13.56 MHz ±7k Hz carrier frequency).

SGM Tool App for Android

The SGM tool application features the ability to, readout product information, setting DMX address, setting DMX mode. All functions can be accessed, changed and stored without having the fixture powered on.

Overview by tabs:

[INFORMATION] Product name, DMX address, DMX mode, Running hours, Serial number
[SET DMX ADDRESS] DMX address, Fixture size (DMX footprint), Fixture type, Fixture mode, Auto increase
First make sure the RFID/NFC is enabled on your device, then open the application and you are ready to scan a fixture.

Getting fixture information using Android and RFID

1. Scan fixture.
2. Informations about the fixture is shown including:
• Product name/type.
• DMX address and DMX mode.
• Running hours and serial number.

Setting a DMX address and mode using Android and RFID

1. Scan fixture or press the menu button on the Android device and choose “Goto DMX addressing”.
2. Go to tab [SET DMX ADDRESS]
3. Select Fixture type, Mode and whichever you want to Auto increase the address for the next fixture
4. When all settings is correct, transfer/store the settings to the fixture by holding the device close to the fixtures RFID, when the screen goes green and a sound is played, the settings is transferred and stored.

Connecting to a DMX control device

The G-Wash is controllable using a DMX control device and it can be connected using either a DMX cable or via the fixture's built-in LumenRadio CRMX wireless receiver system.

If using a cabled DMX system, connect the DMX in cable (with male 5-pin XLR plug) and out cable (with female 5-pin XLR plug) to the DMX data link. Terminate the DMX out cable of the last fixture in the data link. For outdoor installations, use only IP-rated XLR connectors suitable for outdoor use.

Connect both DMX in and DMX out cables in order to maintain the fixture IP65.

At the end of the DMX link use an IP-65 rated DMX terminator.

Configuring the device for DMX control

About DMX

The G-Wash can be controlled using signals sent by a DMX controller on a number of channels (which varies depending on the DMX mode that has been set).

The first channel used to receive data from a DMX control device is known as the DMX start address. Each G-Wash must have a DMX start address set. For example, if a fixture has a DMX address of 10 and it is in 3-channel DMX mode, then it uses channels 10, 11, and 12. The following device in the DMX chain could then be set to a DMX address of 13. If two or more DMX devices of the same type have the same DMX address, then they will mimic each other's behavior. Incorrect settings will result in unpredictable responses to the lighting controller.

Setting the DMX address

The DMX address can be seen on the OLED display. To change the address setting, press the up and down arrows. When the desired address is displayed, press 'OK' to save the setting. For your convenience, the suggested DMX address of the next device is displayed to the right. Note that channel spacing is determined by the DMX mode.

See the "DMX protocols" on page 40 for DMX mode options.

Using stand-alone operation

Stand-alone operation is where the fixture is not connected to a control device, but is preprogrammed with a series of up to 24 scenes, that play continuously in a loop. This program can be set to run by default whenever the fixture is started.

Manual control / Internal sequence editor

The editor offers the ability to adjust all DMX parameters of the fixture. Each scene has its own DMX settings. Each scene has a definable fade-in time, for the transition from the previous scene, and a wait (static) time, each with a fade time up to 4000 seconds and a wait time up to 4000 seconds.

The 24 scenes can be preset directly from the editor using the control panel.

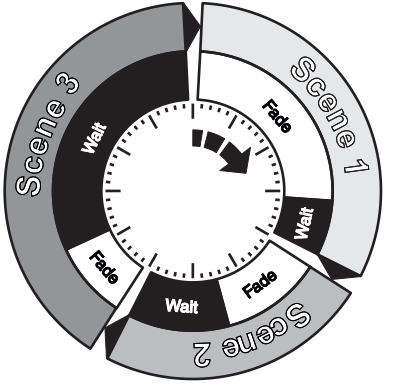
The editor can also capture DMX values from a controller utilizing the control-channel (See “DMX protocols” on page 40) or capture live DMX values directly using the editor on the fixture.

To set a single static scene, set the fade time of scene 2 to 0.0 seconds, this will keep the fixture running scene 1.

To set a sequence of less than 24 scenes, set the fade time of the scene after the last scene to 0.0 seconds, this will keep the fixture looping scene 1 to the scene before the scene with 0.0 seconds fade time.

The copy/paste function offers the ability to create replicas of a previous created scene.

Locating the editor:
• Press OK to enter the menu.
• Navigate to “Manual” and press enter.



Editor

In the manual menu the following options are available:

- Editor
- Run Program
- Stop Program
- Run on power on
- Capture DMX

Using the editor

In the “Editor” menu you have the following options:

- Scene - Press OK and choose a scene (1 to 24) confirm with OK.
- Wait Time - Press OK and set the wait time (0 to 4000 seconds) confirm with OK.
- Fade Time - Press OK and set the fade time of the selected scene (0 to 4000 seconds) confirm with OK.
- Copy Scene - Press OK to copy the selected scene to the clipboard.
- Paste Scene - Press OK to paste copied scene from the clipboard to the selected scene.
- Clear Scene - Press OK to clear the selected scene and set the default settings.
- All the controllable features will be listed below “Clear Scene”.

To change a value of a feature:

- Select the feature to change.
- Press OK and change the value.
- Confirm with OK.

Channels operating in 8 bit mode will allow you to set a value from 0 to 255.
Channels operating in 16 bit mode will allow you to set a value from 0 to 65535.

POI Permanent Outdoor Installation

The G-Wash comes in a special POI version designed for permanent outdoor installation and is IP66-rated.
POI versions are designed for use in maritime and offshore environments, as per the C5-M corrosion-resistance class.

Physical differences

The POI version differs from the standard version by having fixed-chassis power and DMX cables and heavy-duty cable glands. The display, RFID and control panel have been removed.

Configuration

The POI version is configured exclusively via RDM (Remote Device Management).
DMX start address, DMX mode etc. are configured via RDM. See “RDM” on page 26.

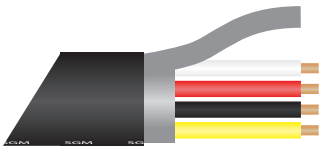
LED indicator

An LED indicator is located next to the power input cable.
This LED indicator has two colors and three stages; on, flashing or off.

- Green static: Fixture is on and receiving DMX.
- Green flashing: Fixture is on and no DMX is received.
- Red flashing: An error message is stored, review via the SGM Service Tool. Contact SGM support for diagnostic help. See “Support hotline” on page 29.
- Off: Fixture is off or indicator LED is set to auto dimming.

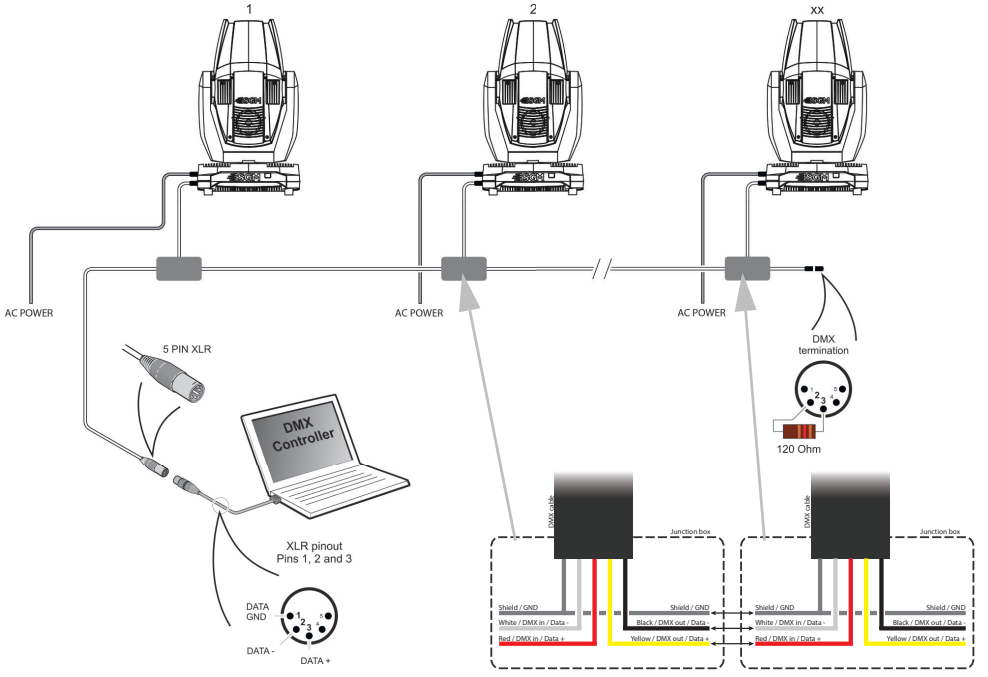
Connecting DMX and AC power

DMX in and DMX out are in the same cable. See description on the right.
Power is wired as the standard version. See “Connecting AC power” on page 17.



Wire	Color	Conductor
	Shield	Ground
	White	DMX IN: Data -
	Red	DMX IN: Data +
	Black	DMX OUT: Data -
	Yellow	DMX OUT: Data +

POI connection diagram



RDM

The G-Wash features support for various RDM functions.
RDM (Remote Device Management) is a protocol enhancement to USITT DMX512 that allows bi-directional communication between the fixtures and the controller over a standard DMX line. This protocol will allow configuration, status monitoring, and management. See the table below for supported RDM functions.

The controller communicates with the fixtures to show only the available options for each RDM function.

PID	Actions Allowed		Name	PID	Actions Allowed		Name
0x00F0	GET	SET	DMX Start Address	0x0080	GET		Device Model Description
0x00E0	GET	SET	DMX Personality / Mode	0x0400	GET	SET	Device Hours
0x00E1	GET		DMX Personality Description	0x0401	GET	SET	Lamp Hours
0x1000	GET	SET	Identify	0x0501	GET	SET	Display Level, 0=OFF, 1 and above=ON
0x1001		SET	Reset Device	0x0500	GET	SET	Display Invert
				0x0090		SET	Factory Defaults
0x0082	GET	SET	Device Label	0x8625	GET	SET	Fan, 0=AUTO, 1=LOW, 2=HIGH, 3=FULL
0x0081	GET		Manufacturer Label				
0x0200	GET		Sensor Definition				
0x0201	GET	SET	Sensor Value				

Sensors

RDM enables various sensor readouts for remote device monitoring.
See the table below for available sensors and sensor types.

Name	Sensor Type	Name	Sensor Type
SMPS PCB	Temperature	CRMX Signal Strength	Other
Pan PCB	Temperature	Humidity Base	Other
Tilt PCB	Temperature	Humidity Head	Other
Effect PCB	Temperature	Fan 1 LED RPM.	Velocity
Base	Temperature	Fan 2 LED RPM.	Velocity
Head	Temperature	Fan Base RPM.	Velocity
Red LED	Temperature	Fan Head RPM.	Velocity
Green LED	Temperature	Fan Zoom RPM.	Velocity
Blue LED	Temperature		
Main PCB	Temperature		

LED refresh rate (Frequency)

About LED refresh rate

When using LED lighting with cameras, flickering can occur due to incompatible frequency settings which means the LEDs and the cameras is not synchronised.

In order to avoid flickering and horizontal banding (rolling shutter) the refresh rate (frequency) can be adjusted in order to achieve flicker-free performance.

Setting the LED refresh rate (Frequency) via DMX

The G-Wash offers the ability to adjust the refresh rate (frequency) of the LEDs via DMX.

By utilizing the 'Control channel' (channel 16 in standard mode, channel 21 in extended mode).
See "DMX protocols" on page 40 for details.
The refresh rate can be set between 100,00 kHz and 1,41 kHz.

It is recommended to have the G-Wash configured to operate the default refresh rate by setting the 'Control channel' to 0 (0%) (factory default settings) by DMX whenever possible to maintain the best possible dimming performance.

The refresh rate settings are only active as long as the value on the 'Control channel' is hold. The value should be stored as a preset or as the default value for the 'Control channel' in the control device.

Be aware that the 'Control channel' is also used for fixture reset functions and DMX capture for the internal sequence editor.

When adjusting a custom value, you want to choose a frequency high enough to avoid flickering and/or horizontal banding (rolling shutter), but low enough to maintain a good dimming performance.

Since there are differences between camera models, exposure settings etc., the optimal refresh rate settings will differ.
In order to achieve the best result, adjust the refresh rate through a preview monitor with a feed from the cameras.

Service

There are no user-serviceable components in the fixture. Do not open the G-Wash, as doing so will likely damage its ingress protection (IP) rating. Consult your SGM dealer if the fixture operates abnormally, is defective or otherwise is in need of service or repair.

Cleaning

To obtain optimal performance, regular cleaning is essential. Cleaning schedules will vary greatly depending on the operating environment, and the installation should therefore be checked at frequent intervals within the first few weeks of operation to see whether cleaning is necessary. This procedure will allow an assessment of cleaning requirements in the particular installation environment. If in doubt, consult your SGM dealer for a suitable cleaning schedule.

Clean the G-Wash using a soft cloth dampened with a solution of water and a mild detergent. Do not use any product that contains solvents, abrasives or caustic agents for cleaning, as they can cause damage to both hardware, cables, connectors, plastic and painted surfaces.

To maintain adequate cooling, fans must be cleaned periodically.

Setting the OLED display saver

By default the OLED display dims down after a short period when the control panel is not in use, but it can also be set to turn off completely. Pressing any key will always turns on the display or restore it to normal brightness. To change the display saver, use the “Settings→Display Off” menu.

NOTE: To avoid the risk of display deterioration caused by long term use in permanent installations, it is recommended to use the “Settings→Display Off” setting.

Support hotline

SGM offers 24/7 technical support hotline. Worldwide: +45 3840 3840. US: +1 877 225-3882. support@sgmlight.com

Upgrading the firmware

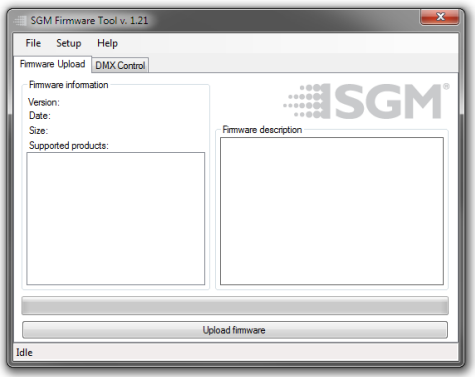
The firmware currently installed on the fixture can be identified in two ways:

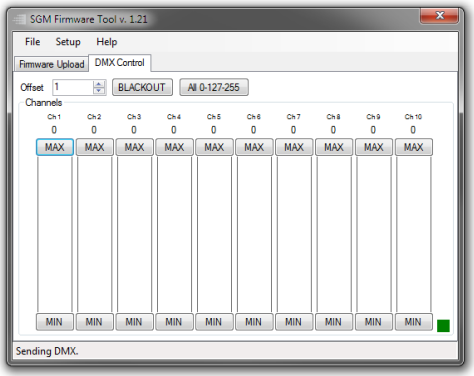
1 When powering on the fixture, the display will show the currently installed firmware.

2 Go to the MENU → INFO → SOFTWARE VERSION.

To perform firmware updates, use a Windows-based personal computer, the SGM Firmware Tool software (available on the SGM website, **www.sgmlight.com**) and a SGM USB 5-Pin-XLR upload cable (available from your SGM dealer).

Additionally, the Firmware Tool software offers a simple DMX controller featuring 512 DMX channels for test purposes.





We recommend that the fixture's firmware is always up-to-date. Visit **www.sgmlight.com** to download the latest firmware.

Control menu

Level 1	Level 2	Level 3	Level 4	Info
DMX MODE	STANDARD			16 Channel
	EXTENDED			21 Channel
INFO	GENRAL INFO	PRODUCT: SN: RDM LABEL: RDM ID:		
	SOFTWARE VERSION	MAIN: SMPS: PAN: TILT: EFFECT:		

Level 1	Level 2	Level 3	Level 4	Info
INFO (continued)	TIMERS	RED GREEN BLUE RUNNING HOURS		D: H: D: H: D: H: D: H:
	DMX VIEW	001 - XX XX XX XX XX ↓ 507 - XX XX XX XX XX		Hz (DMX link speed) XX DMX value
	TEMPERATURES	R: G: B: SMPS PAN: TILT: EFFECT: BASE: HEAD: HUMIDITY B: H:		Degrees Celsius Degrees Celsius Degrees Celsius Degrees Celsius Degrees Celsius Humidity in procent B=Base, H=Head

Level 1	Level 2	Level 3	Level 4	Info
INFO (continued)	SENSORS	DELTA X: DELTA Y: HALL PAN 1: HALL PAN 2: HALL PAN:		
	FANS	LED FAN 1: LED FAN 2: HEAD: BASE: ZOOM:		RPM RPM RPM RPM RPM
	LOG	FIRMWARE V.: BUILD: BUILD: UPTIME: D: H: M: S: (uptime)		 Date Time

Level 1	Level 2	Level 3		Level 4	Info
INFO (continued)	ERRORS	MAINBOARD SMPS PAN TILT EFFECT			Error details
SETTINGS	WIRELESS DMX	LOG OFF			
		STATUS		SIGNAL STRENGHT % CRMX PAIRD: RDM ACTIVE: DMX ACTIVE: CRMX RATE Hz	
		ENABLE			

Level 1	Level 2	Level 3	Level 4	Info
SETTINGS (continued)	DIMMING CURVE	LINEAR GAMMA CORRECTED		( ) / (X) ( ) / (X)
	INVERT PAN			( ) / (X)
	INVERT TILT			( ) / (X)
	SWAP PAN / TILT			( ) / (X)
	FLIP DISPLAY			( ) / (X)
	DISPLAY OFF			( ) / (X)
	FAN MODE	STANDARD SILENT MAX POWER ALWAYS 100%		( ) / (X) ( ) / (X) ( ) / (X) ( ) / (X)

Level 1	Level 2	Level 3	Level 4	Info
SETTINGS (continued)	CALIBRATION	PAN HOME		CALIBRATION ⟶ XXXXX PAN POS XXXX REV. X.XX
		TILT HOME		CALIBRATION ⟶ XXXXX TILT POS XXXX REV. X.XX
		ZOOM		CALIBRATION ⟶ XXXXX
		FOCUS		CALIBRATION ⟶ XXXXX

Level 1	Level 2	Level 3	Level 4	Info
SETTINGS (continued)	SERVICE PIN			0110
	SERVICE MENU	FIXTURE TYPE		
		DEBUG	0 - XX ↓ 54 - XX	
		LINK QUALITY		
		RECALIBRATE SMPS		
	FACTORY DEFAULT			
TEST	OFF			
	AUTOMATED TEST			
	LED TEST			
	DISPLAY TEST			

Level 1	Level 2	Level 3		Level 4	Info
RESET	PAN / TILT				
	EFFECT MODULE				
	ALL				
MANUAL	EDITOR	SCENE		1 ⟶ 24	
		WAIT TIME	Seconds	0 ⟶ 4000	
		FADE TIME	Seconds	0 ⟶ 4000	
		COPY SCENE			
		PASTE SCENE			
		CLEAR SCENE			
		SHUTTER			
		DIMMER			
		RED			
		GREEN			

Level 1	Level 2	Level 3		Level 4	Info
MANUAL (continued)	EDITOR (continued)	BLUE			
		CTC			
		PAN			Center = 32767
		TILT			Center = 32767
		BEAM SHAPER			
		ZOOM			
	RUN PROGRAM				
	STOP PROGRAM				
	RUN ON POWER ON				( ) / (X)
	CAPTURE DMX	SCENE		1 ⟶ 24	
		WAIT TIME	Seconds	0 ⟶ 4000	
		FADE TIME	Seconds	0 ⟶ 4000	
		CAPTURE DMX			

DMX protocols

The G-Wash operates in two different modes, “Standard” and “Extended”.

Standard		*Extended*			
MSB	***LSB***	***MSB***	***LSB***	***Name***	***Default value***
1		1		Shutter	10 (3,9%)
2		2	3	Intensity	0 (0%)
3		4	5	Red	0 (0%)
4		6	7	Green	0 (0%)
5		8	9	Blue	0 (0%)
6		10		CTC	182 (71,3%)
7	8	11	12	Pan	32767 (50%)
9	10	13	14	Tilt	32767 (50%)
11	12	15	16	Beam Shaper	0 (0%)
13		17	18	Zoom	0 (0%)
14		19		Effect Channel	0 (0%)
15		20		Aperture	0 (0%)
16		21		Control Channel	0 (0%)

For detailed DMX protocols, visit www.sgmlight.com

16 Channel Mode (Standard)									
Channel	**Name**	**DMX Value**		**DMX Percentage**		**Description**	**Info**	**Default DMX Value**	**Fader Type**
1	Shutter	0	7	0,0%	2,7%	Closed		10 (3,9%)	Snap
		8	15	3,1%	5,9%	Open 1 ('Pre-heat' enabled)	See note 1		
		16	151	6,3%	59,2%	Strobe	Slow > Fast		
		152	175	59,6%	68,6%	Pulse - Open	Slow > Fast		
		176	199	69,0%	78,0%	Pulse - Close	Slow > Fast		
		200	244	78,4%	95,7%	Strobe - Random	Slow > Fast		
		245	255	96,1%	100,0%	Open 2 ('Pre-heat' disabled)	See note 2		
2	Intensity	0	255	0,0%	100,0%	No light > Maximum light		0 (0%)	Fade

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
3	Red	0	255	0,0%	100,0%	No RED > Maximum RED		0 (0%)	Fade
4	Green	0	255	0,0%	100,0%	No GREEN > Maximum GREEN		0 (0%)	Fade
5	Blue	0	255	0,0%	100,0%	No BLUE > Maximum BLUE		0 (0%)	Fade
6	CTC	0	0	0,0%	0,0%	≈ 5600° K (Default)		182 (71,3%)	Fade
		1	4	0,4%	1,6%	No CTC(RAW)			
		5	5	2,0%	2,0%	≈ 2000° K			
		5	5	2,0%	2,0%	≈ 2000° K			
		15	15	5,9%	5,9%	≈ 2200° K (High Pressure Sodium Lamp)			
		40	40	15,7%	15,7%	≈ 2700° K (Incandescent Lamp)			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
6	CTC	54	54	21,2%	21,2%	≈ 3000° K (Halogen / Tungsten Lamp)		182 (71,3%)	Fade
		65	65	25,5%	25,5%	≈ 3200° K (Warm Metal Halide Lamp)			
		105	105	41,2%	41,2%	≈ 4000° K (Clear Metal Halide Lamp)			
		115	115	45,1%	45,1%	≈ 4200° K (Cool White Fluorescent Lamp)			
		177	177	69,4%	69,4%	≈ 5500° K (Daylight Metal Halide Lamp)			
		216	216	84,7%	84,7%	≈ 6300° K			
		238	238	93,3%	93,3%	≈ 8000° K			
		255	255	100,0%	100,0%	≈ 10,000° K			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
7 8	Pan	0	65535	0,0%	100,0%	-270° to 270°	-270° = Front Lens @ Mains Power Input (Tilt=0)	32767 (50%)	Fade
9 10	Tilt	0	65535	0,0%	100,0%	-120° to 120°	-120° = Front Lens @ Base Front (Pan=32767)	32767 (50%)	Fade
11 12	Beam Shaper	0	511	0,0%	0,8%	Open		0 (%)	Fade
		512	32768	0,8%	50,0%	Index			
		32769	49151	50,0%	75,0%	Continuous Rotation CW	Fast > Slow		
		49152	49152	75,0%	75,0%	No Rotation			
		49153	65535	75,0%	100,0%	Continuous Rotation CCW	Slow > Fast		
13	Zoom	0	255	0,0%	100,0%	Wide > Narrow		128 (50%)	Fade

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
14	Effect Channel	0	4	0,0%	1,6%	No Effect		0 (0%)	Snap
		5	15	2,0%	5,9%	Reserved (No Effect)			
		16	26	6,3%	10,2%	Reserved (No Effect)			
		27	32	10,6%	12,5%	Shutter Black = RED			
		33	38	12,9%	14,9%	Shutter Black = GREEN			
		39	44	15,3%	17,3%	Shutter Black = BLUE			
		45	50	17,6%	19,6%	Shutter Black = WHITE			
		51	56	20,0%	22,0%	Shutter Black = Magenta			
		57	62	22,4%	24,3%	Shutter Black = Yellow			
		63	68	24,7%	26,7%	Shutter Black = Cyan			
		69	255	27,1%	100,0%	Reserved (No Effect)			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
15	Aperture	0	7	0,0%	2,7%	Intensity Optimized	See note 6	0 (0%)	Snap
		8	15	3,1%	5,9%	Projection Optimized			
		16	255	6,3%	100,0%	Reserved (No Function)			
16	Control Channel	0	4	0,0%	1,6%	No Function		0 (0%)	Snap
		5	9	2,0%	3,5%	Full Reset	Hold 3 seconds		
		10	14	3,9%	5,5%	Pan Reset	Hold 3 seconds		
		15	19	5,9%	7,5%	Tilt Reset	Hold 3 seconds		
		20	24	7,8%	9,4%	N/A			
		25	29	9,8%	11,4%	Zoom Reset	Hold 3 seconds		
		30	34	11,8%	13,3%	Sleep Mode	See note 3		

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
16	Control Channel	35	39	13,7%	15,3%	Display Off	Hold 3 seconds	0 (0%)	Snap
		40	44	15,7%	17,3%	Display On	Hold 3 seconds		
		45	115	17,6%	100,0%	LED Frequency (100 kHz - 1,41kHz)	See note 4		
		116	119	45,5%	46,7%	Capture Scene 1	See note 5		
		120	123	47,1%	48,2%	Capture Scene 2			
		124	129	48,6%	49,8%	Capture Scene 3			
		128	131	50,2%	51,4%	Capture Scene 4			
		132	135	51,8%	52,9%	Capture Scene 5			
		136	139	53,3%	54,5%	Capture Scene 6			
		140	143	54,9%	56,1%	Capture Scene 7			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
16	Control Channel	144	147	56,5%	57,6%	Capture Scene 8	See note 5	0 (0%)	Snap
		148	151	58,0%	59,2%	Capture Scene 9			
		152	155	59,6%	60,8%	Capture Scene 10			
		156	159	61,2%	62,4%	Capture Scene 11			
		160	163	62,7%	63,9%	Capture Scene 12			
		164	167	64,3%	65,5%	Capture Scene 13			
		168	171	65,9%	67,1%	Capture Scene 14			
		172	175	67,5%	68,6%	Capture Scene 15			
		176	179	69,0%	70,2%	Capture Scene 16			
		180	183	70,6%	71,8%	Capture Scene 17			
		184	187	72,2%	73,3%	Capture Scene 18			
		188	191	73,7%	74,9%	Capture Scene 19			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
16	Control Channel	192	195	75,3%	76,5%	Capture Scene 20	See note 5	0 (0%)	Snap
		196	199	76,9%	78,0%	Capture Scene 21			
		200	203	78,4%	79,6%	Capture Scene 22			
		204	207	80,0%	81,2%	Capture Scene 23			
		208	211	81,6%	82,7%	Capture Scene 24			
		212	255	83,1%	100,0%	Reserved (No Function)			

Notes

1. 'Pre-heat' enabled = ready for instant operation.
2. 'Pre-heat' disabled = to perform a complete blackout, use 'Open 2'. This will take 400 milliseconds to exit.
3. All other channels must be zero and this has to be held for 30 sec. (fixture will wake up on a full reset).
4. Set LED frequency refresh rate, see seperate documentation for frequencies, see manual for details value must be hold to keep setting (default value 1,41 kHz)
5. Hold for 3 sec to capture scenes for internal program (stand-alone operation) see manual for details.
6. Aperture settings can be set for two scenarios, optimized for maximum output and optimized for highest projection quality.

21 Channel Mode (Extended)									
Channel	**Name**	**DMX Value**		**DMX Percentage**		**Description**	**Info**	**Default DMX Value**	**Fader Type**
1	Shutter	0	7	0,0%	2,7%	Closed		10 (3,9%)	Snap
		8	15	3,1%	5,9%	Open 1 (‘Pre-heat’ enabled)	See note 1		
		16	151	6,3%	59,2%	Strobe	Slow > Fast		
		152	175	59,6%	68,6%	Pulse - Open	Slow > Fast		
		176	199	69,0%	78,0%	Pulse - Close	Slow > Fast		
		200	244	78,4%	95,7%	Strobe - Random	Slow > Fast		
		245	255	96,1%	100,0%	Open 2 (‘Pre-heat’ disabled)	See note 2		
2 3	Intensity	0	255	0,0%	100,0%	No light > Maximum light		0 (0%)	Fade

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
4 5	Red	0	255	0,0%	100,0%	No RED > Maximum RED		0 (0%)	Fade
6 7	Green	0	255	0,0%	100,0%	No GREEN > Maximum GREEN		0 (0%)	Fade
8 9	Blue	0	255	0,0%	100,0%	No BLUE > Maximum BLUE		0 (0%)	Fade
10	CTC	0	0	0,0%	0,0%	≈ 5600° K (Default)	Detailed information, see CTC chart	182 (71,3%)	Fade
		1	4	0,4%	1,6%	No CTC(RAW)			
		5	5	2,0%	2,0%	≈ 2000° K			
		5	5	2,0%	2,0%	≈ 2000° K			
		15	15	5,9%	5,9%	≈ 2200° K (High Pressure Sodium Lamp)			
		40	40	15,7%	15,7%	≈ 2700° K (Incandescent Lamp)			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
10	CTC	54	54	21,2%	21,2%	≈ 3000° K (Halogen / Tungsten Lamp)	Detailed information, see CTC chart	182 (71,3%)	Fade
		65	65	25,5%	25,5%	≈ 3200° K (Warm Metal Halide Lamp)			
		105	105	41,2%	41,2%	≈ 4000° K (Clear Metal Halide Lamp)			
		115	115	45,1%	45,1%	≈ 4200° K (Cool White Fluorescent Lamp)			
		177	177	69,4%	69,4%	≈ 5500° K (Daylight Metal Halide Lamp)			
		216	216	84,7%	84,7%	≈ 6300° K			
		238	238	93,3%	93,3%	≈ 8000° K			
		255	255	100,0%	100,0%	≈ 10,000° K			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
11 12	Pan	0	65535	0,0%	100,0%	-270° to 270°	-270° = Front Lens @ Mains Power Input (Tilt=0)	32767 (50%)	Fade
13 14	Tilt	0	65535	0,0%	100,0%	-120° to 120°	-120° = Front Lens @ Base Front (Pan=32767)	32767 (50%)	Fade
15 16	Beam Shaper	0	511	0,0%	0,8%	Open		0 (%)	Fade
		512	32768	0,8%	50,0%	Index			
		32769	49151	50,0%	75,0%	Continuous Rotation CW	Fast > Slow		
		49152	49152	75,0%	75,0%	No Rotation			
		49153	65535	75,0%	100,0%	Continuous Rotation CCW	Slow > Fast		
17 18	Zoom	0	255	0,0%	100,0%	Wide > Narrow		128 (50%)	Fade

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
19	Effect Channel	0	4	0,0%	1,6%	No Effect		0 (0%)	Snap
		5	15	2,0%	5,9%	Reserved (No Effect)			
		16	26	6,3%	10,2%	Reserved (No Effect)			
		27	32	10,6%	12,5%	Shutter Black = RED			
		33	38	12,9%	14,9%	Shutter Black = GREEN			
		39	44	15,3%	17,3%	Shutter Black = BLUE			
		45	50	17,6%	19,6%	Shutter Black = WHITE			
		51	56	20,0%	22,0%	Shutter Black = Magenta			
		57	62	22,4%	24,3%	Shutter Black = Yellow			
		63	68	24,7%	26,7%	Shutter Black = Cyan			
		69	255	27,1%	100,0%	Reserved (No Effect)			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
20	Aperture	0	7	0,0%	2,7%	Intensity Optimized	See note 6	0 (0%)	Snap
		8	15	3,1%	5,9%	Projection Optimized			
		16	255	6,3%	100,0%	Reserved (No Function)			
21	Control Channel	0	4	0,0%	1,6%	No Function		0 (0%)	Snap
		5	9	2,0%	3,5%	Full Reset	Hold 3 seconds		
		10	14	3,9%	5,5%	Pan Reset	Hold 3 seconds		
		15	19	5,9%	7,5%	Tilt Reset	Hold 3 seconds		
		20	24	7,8%	9,4%	N/A			
		25	29	9,8%	11,4%	Zoom Reset	Hold 3 seconds		
		30	34	11,8%	13,3%	Sleep Mode	See note 3		

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
21	Control Channel	35	39	13,7%	15,3%	Display Off	Hold 3 seconds	0 (0%)	Snap
		40	44	15,7%	17,3%	Display On	Hold 3 seconds		
		45	115	17,6%	100,0%	LED Frequency (100 kHz - 1,41kHz)	See note 4		
		116	119	45,5%	46,7%	Capture Scene 1	See note 5		
		120	123	47,1%	48,2%	Capture Scene 2			
		124	129	48,6%	49,8%	Capture Scene 3			
		128	131	50,2%	51,4%	Capture Scene 4			
		132	135	51,8%	52,9%	Capture Scene 5			
		136	139	53,3%	54,5%	Capture Scene 6			
		140	143	54,9%	56,1%	Capture Scene 7			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
21	Control Channel	144	147	56,5%	57,6%	Capture Scene 8	See note 5	0 (0%)	Snap
		148	151	58,0%	59,2%	Capture Scene 9			
		152	155	59,6%	60,8%	Capture Scene 10			
		156	159	61,2%	62,4%	Capture Scene 11			
		160	163	62,7%	63,9%	Capture Scene 12			
		164	167	64,3%	65,5%	Capture Scene 13			
		168	171	65,9%	67,1%	Capture Scene 14			
		172	175	67,5%	68,6%	Capture Scene 15			
		176	179	69,0%	70,2%	Capture Scene 16			
		180	183	70,6%	71,8%	Capture Scene 17			
		184	187	72,2%	73,3%	Capture Scene 18			
		188	191	73,7%	74,9%	Capture Scene 19			

Channel	Name	DMX Value		DMX Percentage		Description	Info	Default DMX Value	Fader Type
21	Control Channel	192	195	75,3%	76,5%	Capture Scene 20	See note 5	0 (0%)	Snap
		196	199	76,9%	78,0%	Capture Scene 21			
		200	203	78,4%	79,6%	Capture Scene 22			
		204	207	80,0%	81,2%	Capture Scene 23			
		208	211	81,6%	82,7%	Capture Scene 24			
		212	255	83,1%	100,0%	Reserved (No Function)			

Notes

1. 'Pre-heat' enabled = ready for instant operation.
2. 'Pre-heat' disabled = to perform a complete blackout, use 'Open 2'. This will take 400 milliseconds to exit.
3. All other channels must be zero and this has to be held for 30 sec. (fixture will wake up on a full reset).
4. Set LED frequency refresh rate, see seperate documentation for frequencies, see manual for details value must be hold to keep setting (default value 1,41 kHz)
5. Hold for 3 sec to capture scenes for internal program (stand-alone operation) see manual for details.
6. Aperture settings can be set for two scenarios, optimized for maximum output and optimized for highest projection quality.

Full Color Calibration

The G-Wash features full color calibration when you mix colors to ensure uniform colors between products.

Color Temperature Correction

The G-Wash features seamless color temperature correction from 2000 Kelvin to 10000 Kelvin on channel 6 (in 24 channel mode) or channel 10 (in 30 channel mode). Choose a color temperature by setting a DMX value from 5 to 255.
DMX value 0 sets the default color temperature (5600 Kelvin).

The fixture operates in RAW mode, when the DMX value is between 1 and 4.

Effects

Beam shaper

The elliptical beam shaper is fully rotatable and indexable.

Aperture

The two different apertures enables the user to choose, optimized for maximum output or highest projection quality. Controlled via DMX.

High-precision pan and tilt

The G-Wash has a 16-bit pan and tilt control, with a 540° pan and 270° tilt movement with feedback.

Ultra high-speed strobe effect

The ultra high-speed strobe effect (1-50 Hz) introduces instant color control and the possibility to strobe between two or more colors at any speed. Random strobe and pulse effects can be generated with variable speed.

Troubleshooting

Problem	Potential cause(s)	Remedies
Fixture does not respond or appears to be off.	No power to the fixture.	Confirm that the power is switched on, confirm that the cables are plugged in and the TRUE1 connector is inserted and turned to its locked position.
	Main fuse is blown.	Contact SGM support or certified SGM service partner.
Fixture suddenly turned off.	Power was turned off.	Check the power supply, switches and breakers.
Fixture suddenly stopped responding.	The wireless transmitter or connections, was disconnected/tampered with.	Inspect the wireless transmitter and connections or wired connections.
Fixture operates irregularly / abnormal.	DMX address is incorrect.	Inspect and enter the correct DMX address.
	DMX cable polarization is inverted (pin 2 + 3).	Install a phase-inverter or replace cables.
	DMX link is not terminated.	Install a XLR 120ohm DMX termination at the end of the DMX link.
	Corrupted DMX cable.	Replace or repair defective cables and/or connections.
	The fixture operates an internal program.	Go to MENU → MANUAL → STOP PROGRAM
	A corrupted/compromised fixture generates noise/disruptions on the DMX link.	Track and isolate the corrupted/compromised fixture.
Pan, tilt skips/stutters.	Obstacles is within the required clearance of pan/tilt.	Inspect and remove any obstacles constraining free operation of pan/tilt.

Problem	Potential cause(s)	Remedies
Pan/tilt does not reset correctly.	Calibration values are missing.	See calibration in the “Control menu” on page 31. Contact SGM support or certified SGM service partner.

Fixtures and accessories

Included items

Two Omega brackets with 1/4-turn fasteners
2 m power cable with Neutrik TRUE1 power connector (Not POI)
User manual

Ordering information

G-Wash Moving Head, Std, BL ..... Order no: 80021101
G-Wash Moving Head, Std, WH ..... Order no: 80021105
G-Wash Moving Head, Std, CU ..... Order no: 80021109

G-Wash Moving Head, POI, BL ..... Order no: 80021150
G-Wash Moving Head, POI, WH ..... Order no: 80021155
G-Wash Moving Head, POI, CU ..... Order no: 80021159

Lumen Radio CRMX transmitter (DMX only) ..... Order no: 80070229
SGM USB uploader cable ..... Order no: 83062011
2 m power cable with Neutrik TRUE1 power connector ..... Order no: 07860040
Flight case (1 fixture) ..... Order no: 82051008

BL= Black (RAL 9004)
WH = White (RAL 9010)
CU = Custom Color (Any RAL color)

APPROVALS AND CERTIFICATIONS

Conforms to ..... 2014/30/EU: EMC Directive
Conforms to ..... 2014/35/EU: Low Voltage Directive
Conforms to ..... 2011/65/EU: RoHS2 Directive
Conforms to ..... UL Std.1573
Certified to ..... CSA E60598-1:02, Ed: 2
Certified to ..... CSA-E598-2-17-98, Ed: 1

The information in this document is subject to change without notice

User’s notes

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