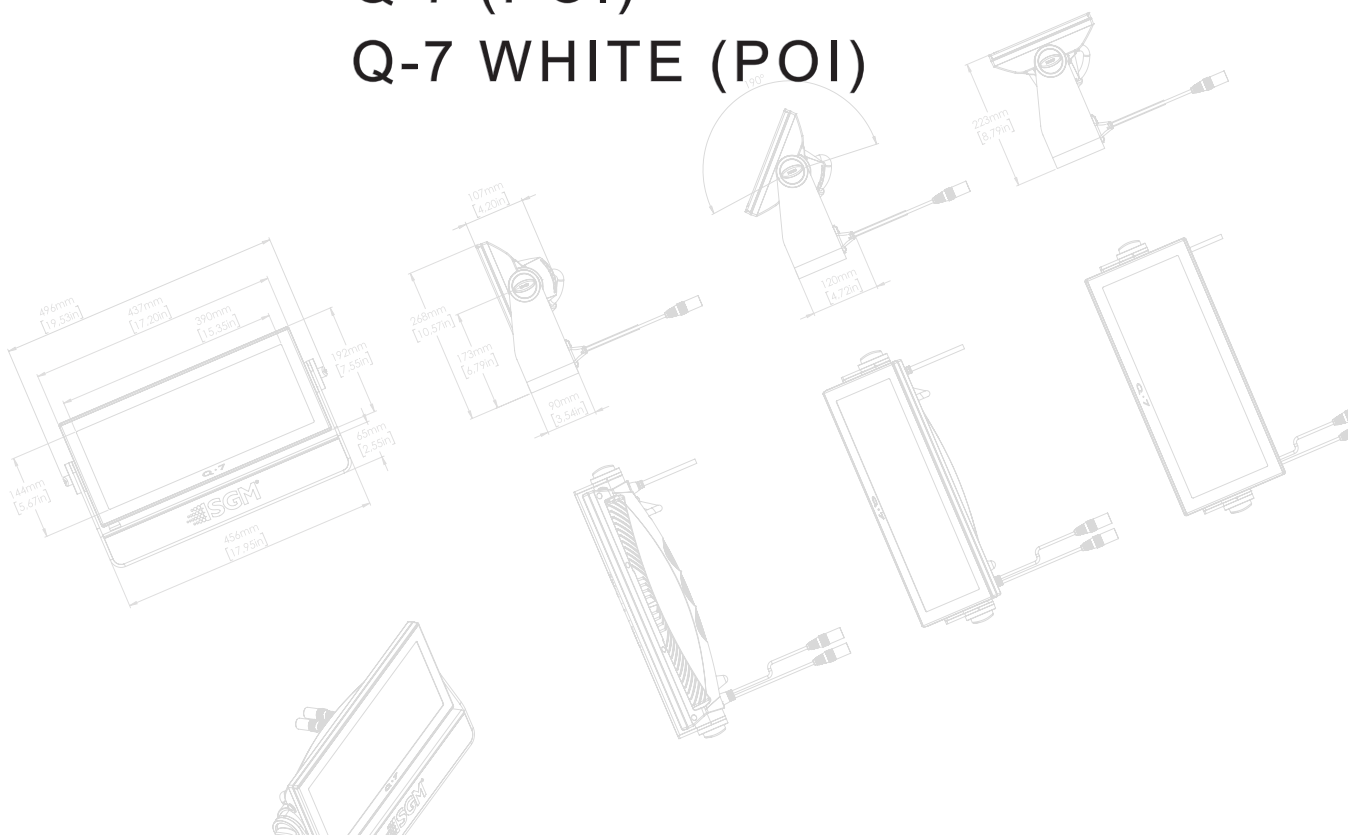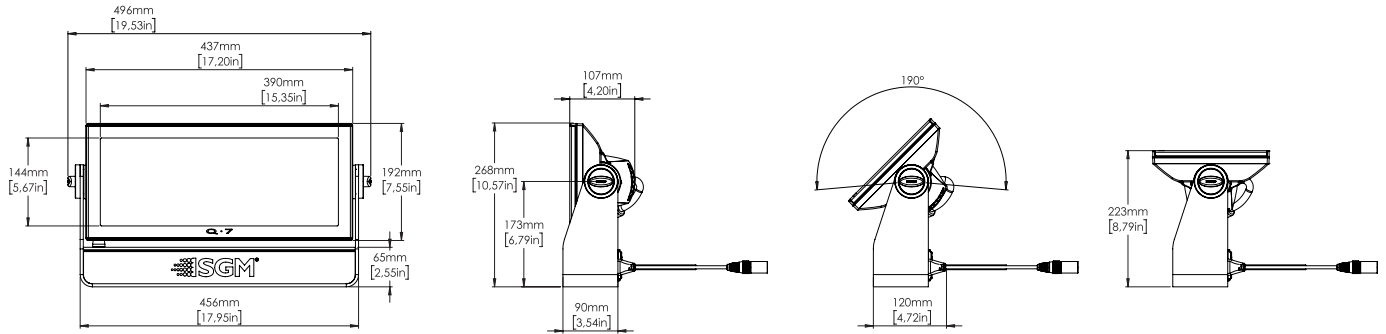# USER
MANUAL

SGM®

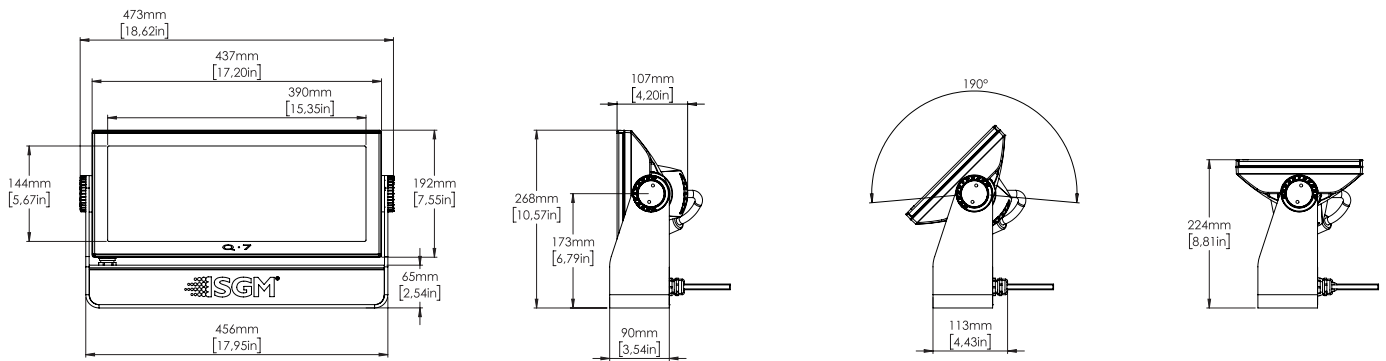# Q-SERIES
Q-7 (POI)
Q-7 WHITE (POI)

Q-7 Series dimensions

Q-7 / Q-7 W

Q-7 POI / Q-7 W POI

All dimensions in millimeters and inches. Drawing not to scale.

**This manual covers installation, use, and maintenance of the SGM Q-7 Series.
A digital version is available at www.sgmlight.com or upon request via support@sgmlight.com.**

Q-7 SERIES
USER MANUAL REV. E

This edition applies to firmware version 3.10 or later.

English edition

Contents

Safety information

WARNING!

Read the following safety precautions carefully before unpacking, installing, powering, or operating the device.

SGM luminaries are intended for professional use only. They are not suitable for household use.
Les luminaires SGM sont impropre à l'usage domestique. Uniquement à usage professionnel.
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.

DANGER! Risk of electric shock. Do not open the device.

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

WARNING! Take measures to prevent burns and fire.

- Install in a location that prevents accidental contact with the device.
- 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 0.3 m (12 in.) around the cooling fans.
- Do not paint, cover, or modify the device, and do not filter or mask the light.
- Keep all flammable materials well away from the device.
- Allow the device to cool for 15 minutes after operation before touching it

CAUTION: Exterior surface temperature after 5 min. operation = 45 °C (113 °F). Steady state = 68 °C (154 °F).

WARNING! Take measures to prevent personal injury.

- Do not look directly at the light source from close range.
- Take precautions when working at height to prevent injury due to falls.
- For Permanent Outdoor Installations (POI), ensure that the fixture is securely fastened to a load-bearing surface with suitable corrosion-resistant hardware.
- For a temporary installation with clamps, ensure that the quarter-turn fasteners are turned fully and secured with a suitable safety cable. The standard safety wire cable must be approved for a safe working load (SWL) of 10 times the weight of the fixture, made of a grade AISI 316 steel, and it must have a minimum gauge of 4 mm.
- For elevated installations, secure the fixture with suitable safety cables, and always comply with relevant load dimensioning, safety standards, and requirements.
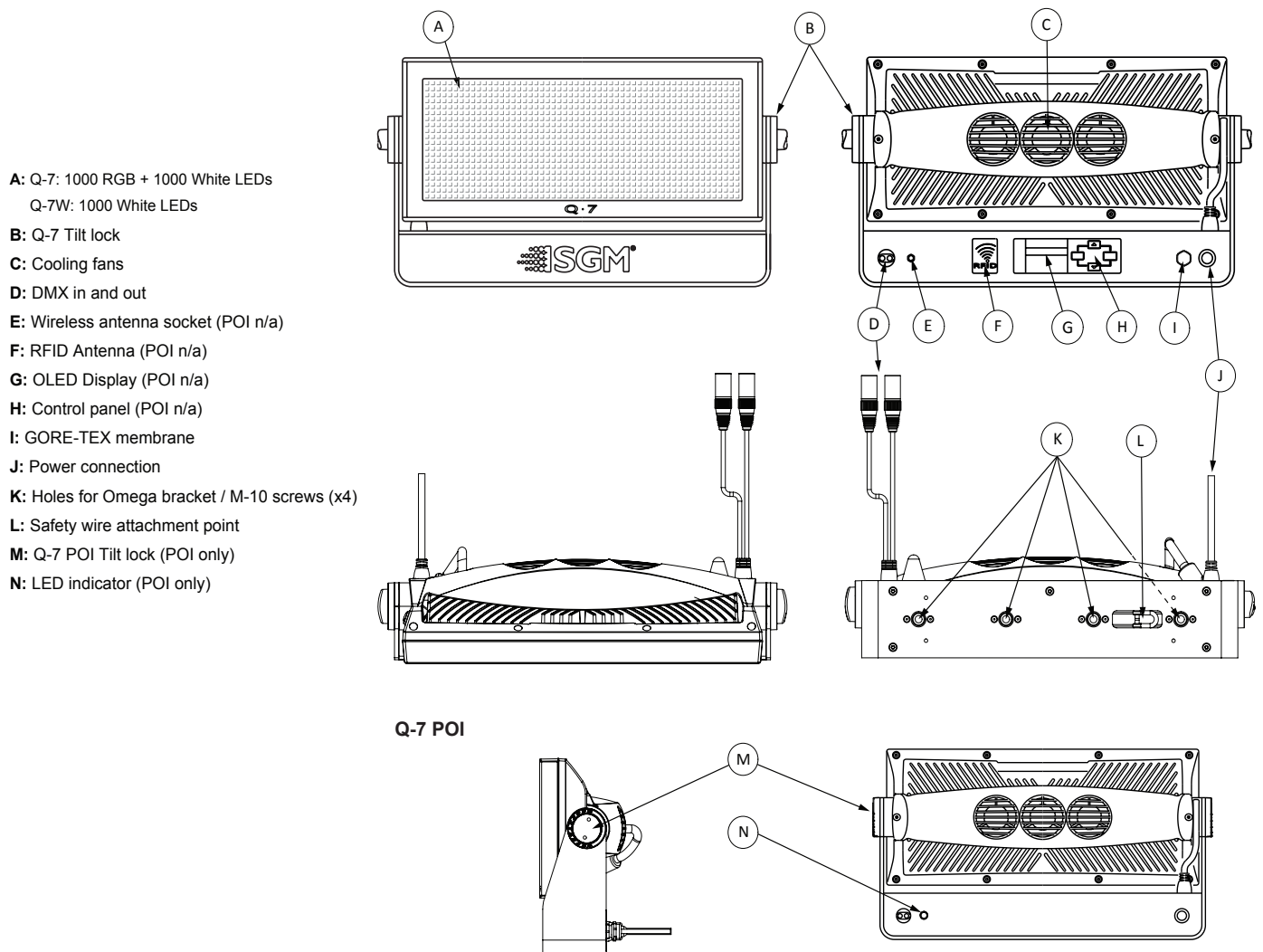
Overview

The Q-7 Series is an IP65/IP66-rated LED flood light with a small footprint and high output, designed for multiple applications, including when wireless operation is essential (POI n.a.).

Q-7 Series features:

- A flood light, weighing only 8.1 kg/17.9 lbs.
- Multi-environmental luminaire due to its IP65/IP66-rating that enable operation in all kinds of environmental settings and in temperatures from -40 °C to 50 °C.
- 2000 high-power RGBW (Q-7) / 1000 high-power cool white LEDs (Q-7W), with an expected lifetime of 50,000 hours*.
- Low power consumption.
- Diming and color mixing (Q-7/Q-7 POI only).
- Adjustable color temperature correction (CTC) from 2000K to 10000 (Q-7/Q-7 POI only). The Q-7W/Q-7W POI has a fixed 5700K color temperature.
- Programmable standalone programs.
- Fully RDM implemented, compliant with the USITT DMX512 standard.
- Powerful high-speed strobe.
- Continouus output and LED Frequency control.
- Optional accessories, such as barndoors, color frames, anti-glare shields, etc.
- Built-in wireless DMX (standard only).
- Corrosion classified C5-M (marine) for coastal and offshore areas with high salinity (POI only).

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

Parts identification and terminology

A: Q-7: 1000 RGB + 1000 White LEDs
    Q-7W: 1000 White LEDs

B: Q-7 Tilt lock

C: Cooling fans

D: DMX in and out

E: Wireless antenna socket (POI n/a)

F: RFID Antenna (POI n/a)

G: OLED Display (POI n/a)

H: Control panel (POI n/a)

I: GORE-TEX membrane

J: Power connection

K: Holes for Omega bracket / M-10 screws (x4)

L: Safety wire attachment point

M: Q-7 POI Tilt lock (POI only)

N: LED indicator (POI only)

Q-7 POI

Illustrations might vary from recieved products.
This is subject to change without notice.

Figure 1: Parts identification and terminology

Preparing for installation

Unpacking

Unpack the device and inspect it to ensure that it has not been damaged during transport.

The Q-7 Series are shipped with:

- 2 x Omega brackets with 1/4-turn fasteners (standard only).
- 1 x Mounting bracket with fasteners (standard only).
- 1 x Omni / CRMX™ Antenna (standard only).
- 1 x Spanner with magnet (POI only).
- 4 x M-10 screws (POI Only).
- Safety information leaflet.

Location / application

The standard fixture is IP65-rated and is designed for both indoor and outdoor events. This means that it is protected from:

- Dust, to the degree that dust cannot enter the fixture in sufficient quantities as to interfere with its operation.
- Lower pressure jets of water from any direction.

The POI fixture is IP66-rated and designed for use in outdoor installations. This means that it is protected from:

- Dust, to the degree that dust cannot enter the device in sufficient quantities as to interfere with its operation.
- High pressure water jets of water from any direction.

When selecting a location for the device, ensure that:

- It is situated away from public thoroughfares and protected from contact with people.
- It has adequate ventilation.
- It is not immersed in water.

When using standard fixtures outdoors or in wet locations, ensure that:

- **For wireless DMX or standalone operation,** the DMX out cable is properly attached to the DMX-in connection.
- **For cabled DMX operation,** the DMX out of the last fixture is terminated with a 120 Ohm resistor between pin 2 and 3 (according to the RS485 standard), or properly sealed, in accordance with the ingress protection (IP) requirements. Note that it can be connected a maximum of 32 fixtures to the same DMX link.

Transportation

Always use the supplied packaging or suitable flight case for transportation and storage.
Never carry the fixture by connected cables or wires.

Installing / rigging the Q-7 Series

The Q-7 Series may be installed in any orientation, on the ceiling or on a wall surface.

When installed horizontally with a downward beam-angle, water, moist, or grime can potentially pool in the fan wells. Under normal operation the moisture will evaporate.

In locations with high rainfall, you may wish to fabricate a rain shield above the fixture, or modify the position and orientation of the fixture to minimize pooling.

All SGM luminaries have locking points in the base for installation and rigging. In both standard and POI fixtures, the distance between the points from center to center is always 106 mm. While the base of the Q-7 standard fixture include 1/4 turn fasteners camlocks to mount the omega brackets, the POI products come with M-10 nuts for M-10 screws.

Always use the supplied omega brackets to rig a standard Q-7. Lock the bracket with the 1/4-turn fasteners.

N.B.: The 1/4-turn fasteners are only locked when turned fully clockwise.

106 mm
[4,2in]

Ø 18 mm
[0,7in]

Figure 2: Q-7 Series locking points

Depending on the structure, please use appropriate and secure methods for mounting the Omega brackets.

PLEASE NOTE!!

The supplied omega brackets are not rated for POI (Permanent Outdoor Installation C5-M rated material). See more about "Installation and rigging the Q-7 POI" on page 20.
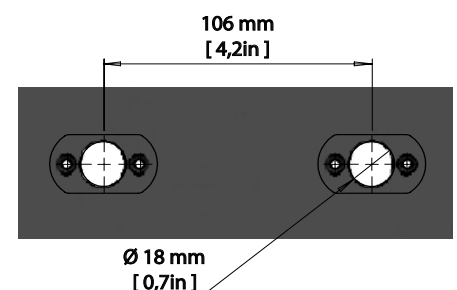
Rigging process using the SGM Omega brackets

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

Figure 3: Installing the Q-7

1. Check that the clamp/bracket is 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 of all installed fixtures, lamps, cables etc.

2. Bolt the clamp/bracket securely to the omega bracket with a M12/ ½ bolt (min. grade 8.8 C5M) and a lock nut.

3. Align the omega bracket with the Q-7 Series base. For standard Omega Bracket, insert the fasteners into the Q-7 Series base bracket, and turn both levers a full 1/4 turn clockwise to lock. When using the POI Omega Bracket, insert the included M-10 screws through the bracket holes and tighten them with a M-10 key until they are fully attached to the base.

4. Working from a stable platform, hang the fixture on a truss or other structure. Tighten the clamp/bracket.

5. Install a safety wire that can bear at least 10 times the weight of the fixture. The safety wire attachment point is designed to fit a carabiner AISI316 grade.

6. Verify that there are no combustible materials, cables, or surfaces to be illuminated within 0.3 m (12 in.) of the fixture.

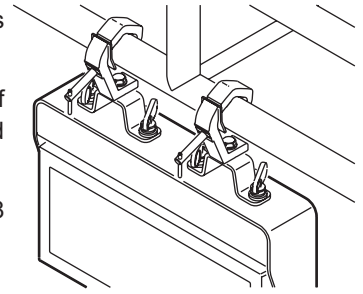7. Check that there is no risk of the head/yoke colliding with other fixtures or structures.

WARNING! Always secure an elevated fixture with a safety wire

Fasten a safety wire (not shown) between the load-bearing support structure and the safety wire attachment point on the device. The safety cable (not included in the package) must:
- Bear at least 10 times the weight of the device (SWL).
- Have a minimum gauge of 4 mm.
- Have a maximum length (free fall) = 30 cm (12 in.).

CAUTION!!
- **Always use a safety wire of a grade AISI 316 steel.**
- **Make sure the slack of the safety wire is at a minimum.**
- **Never use the yoke for secondary attachment.**

Figure 4: Safety wire attachment point

Q-7 Mounting bracket

The standard Q-7 includes a mounting bracket with fasteners that can be attached to the fixture. The four rubber push-in bumpers prevent the fixture from sliding while operating, and protect delicate surfaces from scratching.

When installing the fixture indoors on the ground or on a wall, remove the four rubber push-in bumpers from the mounting bracket. Then securely fasten the fixture on the ground/wall by using 4 x 6 mm (1/4 in.) fasteners on the resulting holes.

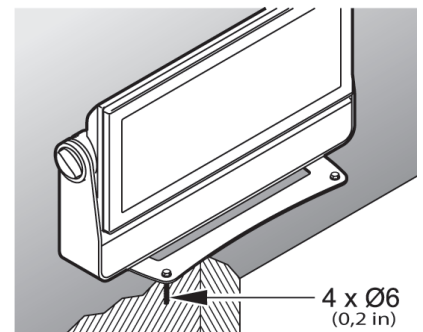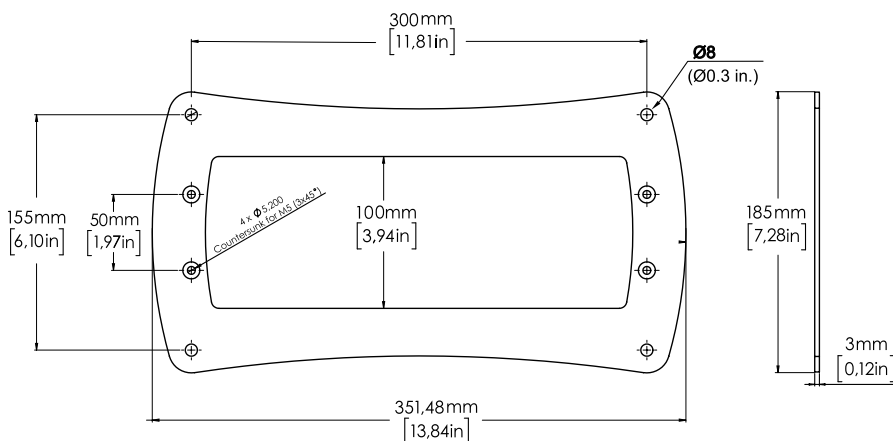**Please note this item is not intended for permanent outdoor installation.**

Figure 5: Q-7 mounting bracket

Tilt lock

The fixture can be tilted from 0° - 190°.

In Q-7 standard versions, there is no need for any special tools to adjust the tilt angle.
Follow the steps below for adjusting the tilt in standard Q-7:

1. Loosen the two tilt screws (one on each side) by turning them counter-clockwise.
2. Tilt the fixture to the angle desired and hold it.
3. Lock the position by re-tightening both tilt lock screws clockwise.

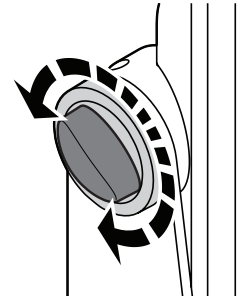If you feel resistance when tilting the fixture, you might not have loosened the tilt screws enough.

Figure 6: Q-7 Standard tilt lock

CAUTION!!

If the fixture has been operating, always allow it to cool for 15 minutes before handling.

NOTE: In POI versions, SGM provides a POI Spanner with a pig-nose key for tilt adjustment. Either use the large or the small pig-nose key, depending on the type of fixture. See page 20 to know more about the tilt lock in Q-7 POI.

Connecting AC power

The Q-7 Series can operate on any 208–240 V, 50/60 Hz AC mains power supply, and it draws approximately 2A at full power.

Connect the fixture to AC power by mounting a power connector to the bare ended mains cable. 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.

The power cable color coding is given in figure 7:

- Connect the black wire to live
- Connect the white wire to neutral
- Connect the green/yellow wire to ground (earth)

Wire	Color	Symbol	Conductor
▬	Black	L	live
▬	White	N	neutral
▬	green/yellow	$\perp$ or $\texttextcircled{\perp}$	ground (earth)

Figure 7: Connecting AC Power

For a temporary outdoor installation the mains cable must be fitted with a grounded connector intended for exterior use.

For permanent installations, have a qualified electrician to wire the mains cable directly to a suitable branch circuit. The junction's ingress protection (IP) rating must be suitable for the location. Always use a junction box with a proper IP class suitable for the environment.

When installing standard type C circuit breakers there will be no limitations due to the fixture in-rush current.

Due to the nominal current of the fixture, ensure that no more than:

- 4 fixtures are connected through the same type C, 10A circuit breaker.
- 7 fixtures are connected through the same type C, 16A circuit breaker.

For assistance with alternative configurations, contact your SGM representative.

NOTE: In POI versions, the power is wired as the standard versions by mounting a power connector to the bare ended mains cable. Please refer to pages 20-21 for connecting AC power in POI fixtures.

After connecting the Q-7 to power, run the on-board test by selecting the option "TEST→ AUTOMATED TEST" in the menu, to ensure that the fixture and each LED are functioning correctly. POI versions have to be tested through RDM.

CAUTION!!
Do not open the fixture to replace the supplied power cable.
Do not connect the fixture to an electrical dimmer system, as doing so may cause damage.

Configuring the device

The Q-7 Series can be set up by using the control panel and OLED multi-line display at the base of the fixture or through RDM.

Please note: In POI versions there is no display mounted in the fixture. The adjustments are made through RDM. See page 19 for more information.

The OLED display is the human interface of the fixture as it displays the current status and menu of the fixture. The display panel can be used to configure individual fixture settings, check the fixture's wireless status, confirm the firmware version, and read error messages. The complete list of the menu and all commands available are listed in "Control Menu" on page 15-16.

Before turning on the Q-7, make sure the power cable is properly connected. After powering the fixture, the display shows the currently selected operating mode, the DMX start address and other information.

Navigate through the menus and options using the arrow buttons, and select items using the ENTER button.

Figure 8: Q-7 OLED display and control panel

Using the display panel

- Press the 'ENTER' button to access the menu or make a selection.
- Press the arrow buttons to scroll up and down in the menus.
- Press the 'ESC' button to take a step back in the menu.
- UP + DOWN arrows simultaneously = flip the display upside-down.
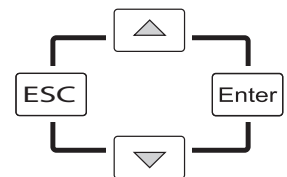
Figure 9: Control panel

Display

A - Operational mode

B - DMX address

C - External data indicator

D - External data protocol
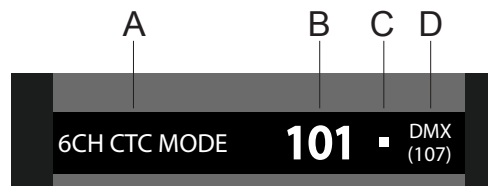
Figure 10: OLED display

Operational mode (A)

Displays the current mode (quick color, stand-alone, or DMX mode). The fixture is set by default to be controlled in DMX mode.

DMX Address (B)

Displays the current DMX address. The DMX address is altered directly from this view.

External data indicator (C)

The DMX signal indicator will flash when the DMX control is active.

External data protocol (D)

Shows the current input type / external data protocol (CRMX™ or DMX).
- When 'DMX' is displayed: the fixture responds to data received through cabled DMX.
- When 'CRMX' is displayed: the fixture responds to data received through wireless DMX.

The next available DMX address will show below, depending on the fixture's DMX footprint.

Error Indicator

If any errors are detected, the message 'ERR' will be flashing in the display for easy detection.
To read the error message, select ENTER → INFO → ERRORS in the menu.

Connecting to a DMX control device

The Q-7 Series is controllable using a DMX control device, and it can be connected using either a DMX cable, or via the fixture's built-in CRMX wireless receiver system.

When using a cabled DMX system, connect the DMX-In cable (with male 5-pin XLR plug) to the input connector and DMX-Out cable (with female 5-pin XLR plug) to the output, both located on the rear of the fixture's base. For outdoor installations, use only IP-rated XLR connectors suitable for outdoor use. Terminate the DMX out cable of the last fixture in the data link with a 120 ohm DMX termination.

In standard fixtures, if using a wireless DMX system, remember to connect or cover any unused DMX-In and DMX-Out connectors in order to maintain the fixtures' IP rating.

NOTE: SGM fixtures provide a passive DMX Thru signal as DMX Out, instead of an active output signal.

For POI versions, please refer to page 20-21 to see how to connect DMX and AC power.

Enabling the wireless cone antenna receiver (POI n.a.)

The wireless cone antenna is factory mounted and is recommended for short-range wireless operation. For long range wireless operation, the CRMX™ wireless receiver is recommended (see below).

Before you enable the wireless cone antenna, ensure that there is no DMX cable connected to the fixture.

Go to SETTINGS → WIRELESS DMX → ENABLE in the menu to enable wireless DMX, and to SETTINGS → WIRELESS DMX→ WIRELESS LED STATUS to confirm that a data connection has been established. The wireless cone antenna operates at a frequency of 2.4 GHz, so ensure that the DMX transmitter is configured to operate in this range.
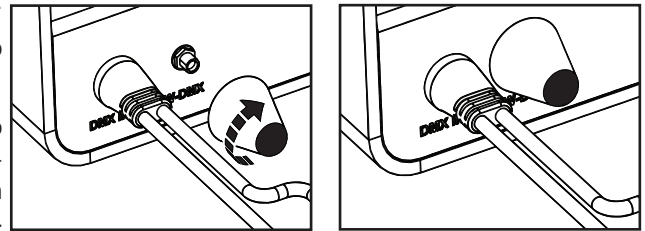
Figure 11: Q-7 Cone Antenna

The cone antenna has to be connected to the fixture when using cabled DMX connection, or when CRMX™ antenna isn't connected, to maintain IP rating.

Attaching the CRMX™ wireless receiver (POI n.a.)

The CRMX™ wireless receiver (antenna) is an included accessory and is recommended for long-range wireless operation.

Before you connect the wireless receiver, ensure that there is no DMX cable connected to the fixture. For long-range operation, replace the factory default cone antenna with the supplied wireless CRMX™ antenna to the connector on the back of the fixture.
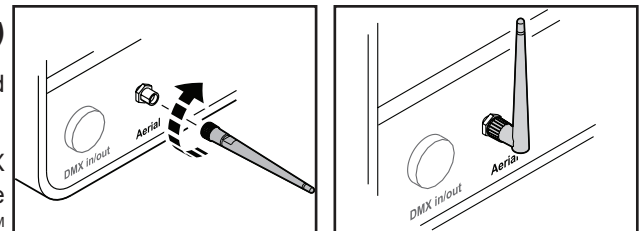
Figure 12: CRMX™ Wireless receiver

Go to SETTINGS → WIRELESS DMX → ENABLE menu to activate wireless DMX, and to SETTINGS → WIRELESS DMX → WIRELESS LED STATUS" to confirm that a data connection has been established.

CRMX™ operates at a frequency of 2.4 GHz, so ensure that the DMX transmitter is configured to operate in this range.

Connecting a wireless transmitter (POI n.a.)

The standard Q-7 Series is designed to look for wireless transmitters in 'connect' state, when this option is not yet enabled.

To connect the standard Q-7 Series to a wireless transmitter:

- Log off the currently paired wireless transmitter - see below "Disconnecting a wireless transmitter" .
- Press the connect button on the wireless transmitter.
- Confirm that the fixture has paired with the wireless transmitter.

Disconnecting a wireless transmitter (POI n.a.)

To disconnect the fixture from the currently paired wireless transmitter go to SETTINGS → WIRELESS DMX → LOG OFF, or press ESC+DOWN → "Press 'ENTER' to unpair CRMX"

Signal priority

The Q-7 Series can be paired to an active wireless transmitter simultaneously as being connected to cabled DMX.

The fixture will prioritize cabled DMX over wireless DMX. See "External data protocol" on page 9, to confirm the active input type of the fixture.

Configuring the device for DMX control

About DMX

The Q-7 Series can be controlled using signals sent by a DMX controller on a number of DMX channels.

DMX is the USITT DMX512-A standard, based on the RS-485 standard. The signal is sent as DMX data from a console (or a controller) to the fixtures via a shielded twisted pair cable designed for RS-485 devices.

The cables can be daisy chained between the fixtures, and up to 32 fixtures can be connected on the same DMX link. Up to 300 m. (1000ft.) of cable is achievable with high quality DMX cables. All DMX links must be terminated by connecting a DMX termination plug to the last fixture´s 5 pin DMX out connector.

PLEASE NOTE:

- **Standard microphone cable is not suitable for transmitting DMX.**
- **Up to 32 fixtures can be linked to the same DMX chain. Additional fixtures will overload the link.**

DMX Start address

The Q-7 Series can be operated in different DMX modes. For any of the modes, the first channel used to receive data from a DMX control device is known as the DMX start address.

For independent control, each Q-7 Series must be assigned its own DMX start address. For example, if the first Q-7 Series is set in 6-channel DMX mode, and have a DMX address of 101, it will use the channels 101, 102, 103, 104, 105 and 106 (101+6=107 >> 107). Therefore, the following Q-7 in the DMX chain should then be set to a DMX address of 107, as the first fixture uses all the first 6 DMX channels, including channel 106.

If two or more Q-7s have the same DMX start address, they will behave identically. Incorrect settings will result in unpredictable responses from the lighting controller. Address sharing can be useful for diagnostic purposes and symmetrical control.

Set/edit DMX address

The DMX address is shown on the OLED display in the control panel. To change the address setting, press the up and down arrows. When the desired address is displayed, press ENTER to save the setting. For your convenience, the next available DMX address is displayed to the right.

Note that channel spacing is determined by the number of channels of the DMX mode. See "Configuring the device" on page 9 for instructions on using the display panel.
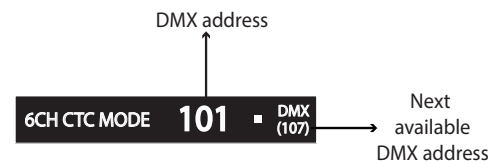
Figure 13: Set/edit DMX address

The Q-7 Series also offers the option to set the DMX address through RDM. See "RDM" on page 17.

NOTE: the POI versions are only addressable via RDM. See "POI Permanent Outdoor Installation" on page 19.

Setting the DMX mode

When selecting ENTER → MODE → SELECT MODE in the menu, it is possible to chose the DMX mode that provides the fixture the controls that you require. Confirm the chosen mode by pressing 'Enter'.

DMX charts

The Q-7 Series operates in different DMX modes. Each DMX mode has its own DMX chart. All DMX charts are available for download at www.sgmlight.com under the respective product, or upon request via support@sgmlight.com.

Master/Slave configuration

A Q-7 Series fixtures can be set to operate as master fixture to another Q-7 Series fixture (which then becomes a slave fixture), or an entire group of Q-7 fixtures (which then becomes slave fixtures). The assigned slave fixture(s) will mimic the settings of the master fixture.

Go to MANUAL→ MASTER / SLAVE menu to set your fixture as master fixture or slave fixture.

Full Color Calibration and Color Temperature Correction (Q-7 only)

Most DMX channels: possibility to choose between raw or white-calibrated color (6500K default) via the Control Menu (SETTINGS → WHITE CALIBRATED).

RGB DMX modes: features full color calibration (irrespective of current color setting) when 2 or 3 colors are mixed, to ensure uniform color mixing between products. Adjusting 1 color does not activate full color calibration.

RGB + CTC DMX modes: features full color calibration (irrespective of current color setting) when 2 or 3 colors are mixed, to ensure uniform color mixing between products. Adjusting 1 color does not activate full color calibration. This mode allows you to adjust the white color temperature step less from 2000K to 10000K (when RGB is at 100%).

Enabling the CTC channel (DMX value above 5) sets the white reference, of which any color will mix towards, example:

1. CTC is set to 182 / 71,3% = 5600K (default value).

2. Green + Blue at 100% = Cyan.

3. Red is added/faded to 100% = Cyan will fade to 5600K white.

Note: if you want to be able to mix raw RGB colors without full color calibration, select a RGBW mode and disregard the white color.

Setting a static color manually

The Q-7 can be configured to display a predefined and static color (or white color depending on the Q-7 model).
To set up a static color go to MANUAL → QUICK COLOR in the menu.

Note that, once the MANUAL → QUICK COLOR settings are changed, the fixture will be set, by default, to automatically start in quick color mode whenever it is powered on. This can be reset through the menu SETTINGS → STARTUP MODE → SELECT STARTUP MODE.

The current quick color program can always be stopped by going to:
ENTER → MANUAL → STOP PROGRAM

See "Control menu" on page 15-16 for detailed information about the manual menu.

Please note: In POI versions, configuring the fixtures can only be done through RDM.

Using standalone operation

Standalone operation is not running when the fixture is connected to a control device, but when it is pre-programmed with a series of up to 24 scenes, playing continuously in a loop. Up to three standalone programs can be defined and run from the menus, and one of the programs can be set to run by default whenever the fixture is powered on.

Each of the three available stand-alone programs contains 24 user-definable scenes with its own RGB (or white) and shutter settings.

Each scene has a definable fade-in time for the transition from one color (or white) to the next, and a wait (static) time of up to 999 minutes and 59 seconds.

To program a standalone program, go to MANUAL → EDITOR in the menu.

The standalone mode of the fixture's startup is enabled by selecting:
ENTER → SETTINGS → STARTUP MODE → SELECT STARTUP MODE → STANDALONE.

To select the fixture's startup program, press:
ENTER → SETTINGS → STARTUP MODE → STARTUP PROGRAM.
The chosen program will run its length cyclically whenever the fixture is powered on.

To run an internal program, go to:
ENTER → MANUAL → RUN PROGRAM.

To stop an active internal program, go to:
ENTER → MANUAL → STOP PROGRAM.

Figure 14: Standalone operation

See "Control menu" on for detailed information about the manual menu.

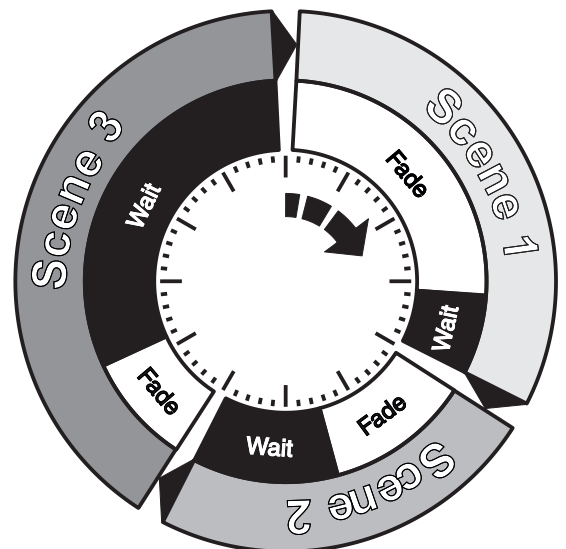**Please note: In POI versions, configuring the fixtures can only be done through RDM.**

Fixture personality settings

Setting the dimming curve

The setting of the dimming curve will determine the fixture's behaviour, when changing the light intensity between 0% - 100%.

Linear control provides uniform adjustment throughout the control action, whereas gamma corrected dimming provides finer control at low light levels, where the eye is more sensitive to change. By default, the Q-7 Series uses gamma corrected dimming. For a uniform response, set all fixtures to the same dimming curve. To set the dimming curve, go to SETTINGS → DIMMING CURVE in the menu.

In POI versions, the dimming curve needs to be set through RDM.

Flipping the OLED display (POI n.a.)

If the fixture is installed hanging upside down, it might be useful to flip the display so that it is easier to read.

To flip the display, press ENTER and select SETTINGS → FLIP DISPLAY, or press the up and down buttons on the control panel at the same time.

Setting the OLED display saver (POI n.a.)

By default the OLED display dims down after a short period when the control panel is not in use. It can also be set to turn off completely, ideal when a pitch-black environment is required. Pressing any key will always turn on the display or restore it to normal brightness. To configure the display settings, go to SETTINGS → DISPLAY SAVER.

NOTE: To avoid the risk of display deterioration caused by long term usage, it is recommended to select the setting → DISPLAY OFF.

Setting the fan mode

For operating environments where low-noise is a requirement, or where the fixture will be operating in high temperatures, it is possible to adjust the default fan speed by going to SETTINGS → FAN MODE in the menu.

NOTE: In POI version, the fan mode adjustment is possible through RDM.

Setting the LED refresh rate (Frequency)

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 Q-7 Series offers the ability to adjust the refresh rate (frequency) in order to achieve flicker-free performance.

In the Q-7 menu, go to SETTINGS → REFRESH RATE. Here you are able to set the refresh rate (frequency) of the LEDs to be:

- Dimmer optimized (low frequency), flicker can occur on cameras / highest dimming resolution.
- High frequency optimized (low dimming resolution), flicker is unlikely to occur / low dimming resolution.
- Custom value, from 0,2 kHz to 72,0 kHz. Adjust to a custom frequency.

It is recommended to have the Q-7 configured to run "Dimmer optimized" whenever possible to maintain the best possible dimming performance. Does flicker or horizontal banding occur, it is likely because the Q-7 is set to "Dimmer optimized" or a low custom value. To avoid these phenomenons set the refresh rate to "High frequency optimized" or adjust the refresh rate to a custom value above 0,544929 kHz (value of "Dimmer optimized"). When adjusting a custom value, you want to choose a frequency high enough to avoid flickering and/or horizontal banding, 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.

Factory Default

When restoring the Q-7 Series to the factory defaults, the following settings will be set:

- DMX address = 1
- Dimming curve = Linear
- DMX mode = Default mode (6 channel)
- Startup mode = DMX
- Screen saver = Off
- Flip screen = Off
- Fan mode = Standard
- Led frequency = Dimming optimized
- Master slave = Disabled
- White calibrated = Disabled
- RDM device label set to = Fixture type name
- Internal programs = Cleared

Q-7 / Q-7W Control menu

Level 1	Level 2	Level 3	Level 4	Function
MODE	Select Mode	-	-	Select DMX mode.
INFO	Product Type	-	-	Display product type.
	Firmware Version	-	-	Display installed firmware version.
	Serial Number	-	-	Display SGM serial#.
	RDM ID	-	-	Display RDM ID (unique RDM ID for identification).
	DMX View	-	-	Display recieved DMX levels.
	Temperatures MB: LED:	-	-	Display fixture temperatures (Mainboard and LED panel).
	Power On Time	-	-	Display fixtures total power on time.
	Power On time Resettable	-	-	Display fixtures power on time (can be reset. i.e. for service use).
	LED On Time	-	-	Display LED (R, G, B, W) total power on time.
	LED On Time Resettable	-	-	Display LED (R, G, B, W) power on time (can be reset. i.e. for service use).
	Log	-	-	Display recorded operating data and error codes/ Display burn-in times.
	Debug	-	-	Service use only.
SETTINGS	Wireless DMX	Enable		Press enter to enable wireless DMX operation.
		Disable		Press enter to disable wireless DMX operation.
		Wireless DMX Out Enable		Press enter to enable wireless DMX out operation (recieved Wireless DMX is trasmitted to cabled DMX Out).
		Wireless DMX Out Disable		Press enter to disable wireless DMX out operation.
		Press enter to Log Off Wireless		Send log off command to the CRMX system.
		Signal Strength		Check wireless signal strengh
	Startup Mode	Select Startup Mode		Default operating mode when fixture is powered on: 1. Quick Color 2. Stand-alone 3. DMX (factory default)
		Startup Program		Stand-alone program 1, 2 or 3. Only used if the startup mode is set to "stand-alone". Program 1 is default.
	Dimming Curve	Linear		Provide equal resolution dimming from 0-100%.
		Gamma Corrected		Provide high-resolution dimming at low levels.
	White Calibrated (Q-7 only)	Calibrated		Enable white calibrated color.
		Raw		Enable raw color.
	Flip Display	Disable	[X] / [ ]	Select normal control panel display.
		Enable	[X] / [ ]	Flip control panel display.
	Display Saver	Display Dim		Dim the OLED display when the control panel is not in use.
		Display Off		Turn off the OLED display when the control panel is not in use.
	Fan Mode	Standard	[X] / [ ]	Adjust fan speed relative to internal fixture temperature.
		Silent	[X] / [ ]	Low fan speed for quiet operation.
		Max Power	[X] / [ ]	High fan speed for maximum cooling effect.
		Always Full Power	[X] / [ ]	Always high fan speed with no adjustment.
	Minivalues	Red (Q-7)	0 → 8000	Adjust default minimum setting (0-8000). Service use only.
		Green (Q-7)	0 → 8000	
		Blue (Q-7)	0 → 8000	
		White (Q-7)	0 → 8000	
		Line 1 (Q-7 W)	-	
		Line 2 (Q-7 W)	-	
		Line 3 (Q-7 W)	-	
		Line 4 (Q-7 W)	-	
	RFID Write	Enable	-	Enable the RFID write for the SGM Tool.
		Disable	-	Enable the RFID write for the SGM Tool.

Q-7 / Q-7W Control menu

Level 1	Level 2	Level 3	Level 4	Function
SETTINGS (continued)	Refresh Rate	Dimming optimized	-	Set the LED's to a dimmer optimized default. (factory default). See "Setting the LED refresh rate (Frequency)" on page 13 for details.
		High frequency optimized	-	Set the LED's to a high frequency optimized default. See "Setting the LED refresh rate (Frequency)" on page 13 for details.
		Custom value frequency	-	Set a custom frequency (refresh rate) for the LED's. See "Setting the LED refresh rate (Frequency)" on page 13 for details.
	Factory Default	-	-	Reset the fixture to factory default settings.
	Service Pin	-	-	Contact your SGM dealer or SGM support to request the service pin. Service use only.
	Service Menu	-	-	Only accessible when service pin has been entered. Service use only.
MANUAL	Quick Color	Red (Q-7)	1 → 255	Press enter to set fixture to static quick color startup mode (red mix).
		Green (Q-7)	1 → 255	Press enter to set fixture to static quick color startup mode (green mix).
		Blue (Q-7)	1 → 255	Press enter to set fixture to static quick color startup mode (blue mix).
		White (Q-7 / Q-7 W)	1 → 255	Press enter to set fixture to static quick color startup mode (white mix).
	Run Program	1, 2 or 3	-	Select program (1, 2 or 3) to run internal sequence.
	Stop Program	-	-	Stop current running internal sequence or Quick Color.
	Master/Slave	Master Slave	-	Set fixture to operate as Master or Slave fixture.
		Master master	-	
	Editor	Program	1 → 3	Currently selected program (1, 2 or 3).
		Scene	1 → 24	Currently selected scene (1-24).
		Red (Q-7)	1 → 255	Red value in currently selected scene (0-255).
		Green (Q-7)	1 → 255	Green value in currently selected scene (0-255).
		Blue (Q-7)	1 → 255	Blue value in currently selected scene (0-255).
		White (Q-7 / Q-7 W)	1 → 255	White value in currently selected scene (0-255).
		Shutter	1 → 255	Shutter setting in currently selected scene (0-255) - according to latest DMX chart.
		Fade Time (Min.)	1 → 999	Fade-in (transition) time to current scene in min. (0-999).
		Fade Time (Sec.)	1 → 59	Fade-in (transition) time to current scene in sec. (0-59).
		Wait Time (Min.)	1 → 999	Wait (static) time in current scene in min. (0-999).
		Wait Time (Sec.)	1 → 59	Wait (static) time in current scene in sec. (0-59).
TEST	OFF	-	-	Stop test sequence execution.
	Automated Test	-	-	Initiate a self-test sequence.
	Burn-in Test (30min.) Burn in times:	-	-	Service use only.
	Display Test	-	-	Service use only.

RDM

Supported RDM functions

The Q-7 Series 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.

An RDM controller is needed to get control over the supported parameters. See the tables below for supported RDM functions.

RDM functions

PID	Actions allowed	Name
0x0080	GET	Device Model Description
0x0081	GET	Manufacturer Label
0x0082	GET / SET	Device label
0x0090	SET	Factory Defaults
0x1000	GET / SET	Identify
0x00F0	GET / SET	DMX Start Address
0x00E0	GET	DMX Personality
0x00E1	GET	DMX Personality Description
0x0200	GET	Sensor Definition
0x0201	GET / SET	Sensor Value
0x0400	GET / SET	Device Hours
0x0401	GET / SET	Lamp Hours
0x0500	GET / SET	Display Invert (POI n.a.)
0x0501	GET / SET	Display Level, 0=OFF, 1 and above=ON (POI n.a.)

PID	Actions allowed	Name
0x1001	SET	Reset Device
0x8620	GET / SET	Refresh Rate, 0= Standard, 1= High Frequency
0x8623	GET / SET	Dimming Curve, 0=Raw, 1=Gamma Corrected
0x8625	GET / SET	FAN 0=AUTO 1=LOW 2=HIGH 3=FULL
0x8626	SET	CRMX Log Off
0x8628	GET / SET	Dim Mode, 0=Standard, 1=Max Power
0x8629	GET / SET	Invert Pixel Order, 0=Standard, 1=Invert
0x8631	GET / SET	Battery Extension, 0=Disable, 24=24 hour
0x8060	GET	SGM Serial numberq

Please note: *The RDM controller communicates with the fixtures to show only the available options for each RDM function. The table is subject to change without notice.*

Sensors

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

Please note: *The RDM controller communicates with the fixtures to show only the available sensors for this fixture. The table is subject to change without notice.*

Name	Sensor Type
SMPS PCB	Temperature
Pan PCB	Temperature
Tilt PCB	Temperature
Effect PCB	Temperature
Base	Temperature
Head	Temperature
Red LED	Temperature
Green LED	Temperature
Blue LED	Temperature
White LED	Temperature
Led Left	Temperature
Led Right	Temperature
Angle Sensor 1	Other
Angle Sensor 2	Other

Name	Sensor Type
CRMX Signal Strength	Other
Wireless Paired	Other
Humidity	Other
Humidity Base	Other
Humidity Head	Other
Fan 1 LED RPM	Velocity
Fan 2 LED RPM	Velocity
Fan Base RPM	Velocity
Fan Head RPM	Velocity
Fan Zoom RPM	Velocity
AC Power Connected	Contacts
Battery PCT (percentage)	Other
Battery Charging	Contacts
Battery Voltage	Voltage

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.
	Main fuse is blown.	Contact a certified SGM service partner, or support@sgmlight.com.
Fixture suddenly turned off.	Power was turned off.	Check the power supply, switches and breakers.
Fixture suddenly stopped responding.	The wireless transmitter or connections were disconnected/tampered with.	Inspect the wireless transmitter and connections.
	DMX cables were disconnected.	Inspect DMX cables.
Fixture operates irregularly / abnormal.	DMX address or DMX mode is incorrect.	Inspect and enter the correct DMX address or mode.
	DMX cable polarization is inverted (pin 2 + 3).	Install a phase-inverter to reverse the polarity, 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 fixture generates noise/disruptions on the DMX link.	Track and isolate the corrupted fixture.
"Firmware not loaded" in display	The RFD is malfuntioning.	Contact your local SGM dealer or support@sgmlight.com.
Color is uneven in low output	The minimum values is out of calibration.	Contact your local SGM dealer or support@sgmlight.com.
	The SGM Calibration Data set has been lost.	Contact your local SGM dealer or support@sgmlight.com.

POI Permanent Outdoor Installation

The SGM POI versions are designed for permanent outdoor installation and are IP66-rated or higher. 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 and control panel have been removed.

Configuration

The Q-7 POI Series does not include a display, therefore it has to be configured through RDM (Remote Device Management). See "RDM" on page 17 for more information.

In POI versions, the DMX address and DMX mode can only be set through RDM. When addressing through USB powered DMX / RDM devices, ensure DMX link is terminated, and keep a short cable length as far as possible.

Regarding the DMX modes for POI, they are the same as the standard Q-7 Series. Visit www.sgmlight.com to see all DMX charts available under the respective product, or upon request via support@sgmlight.com.

PLEASE NOTE!!

Remote Device Management (RDM) requires a correct DMX cabled installation and termination.

When setting addresses through RDM and using USB dongles, disable the USB selective suspend to ensure a proper voltage on the DMX link. If any lag or trouble occurs when addressing, decrease the cable length range to <12 m. and only address one fixture at a time.

LED Indicator

The LED indicator is located next to the DMX input cable, and shows the current status of the fixture.

The LED indicator has two different colors and three possible stages: static, flashing, or off.

- **Static green:** fixture is powered and receiving DMX signal.
- **Flashing green:** fixture is powered on without receiving DMX signal.
- **Static/flashing red:** an error message is stored; review via the SGM RDM Addressing Tool, reboot the fixture, or contact SGM support for diagnostic help.
- **Off:** fixture is off or indicator LED is set to auto dimming (set via RDM).

Figure 15: Q-7 POI LED indicator

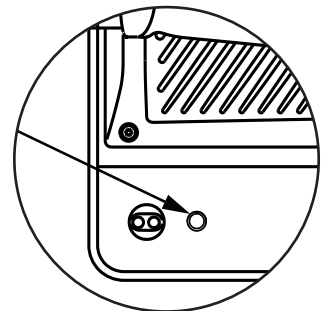## SGM Addressing Tool

SGM provides a Windows software tool designed to allow the user to address and configure the fixtures through RDM. Changing the settings is done in the exact same way as it is in the display.

This tool is available for download at www.sgmlight.com, and has to be used with the SGM USB 5-Pin-XLR Uploader cable (available from your SGM dealer).
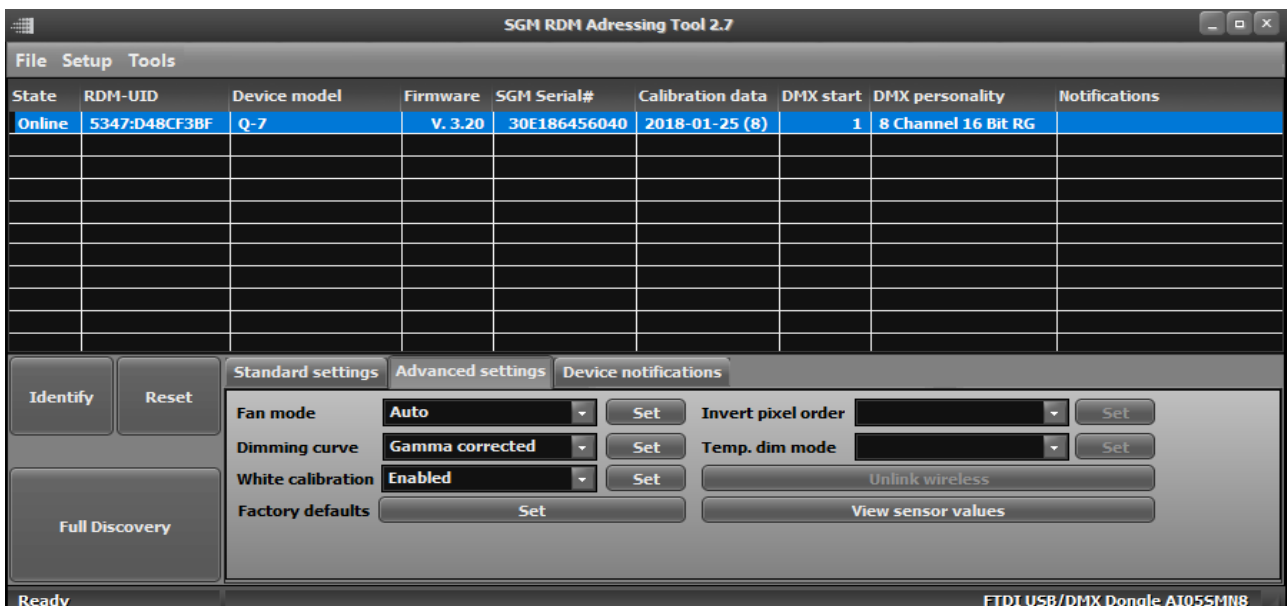

Figure 16: SGM Addressing tool

POI Spanner

The Q-7 POI includes a spanner with two types of pig-nose keys used for tilt adjustment in POI fixtures. Depending on the type of fixture, either use the large or the small pig-nose keys.

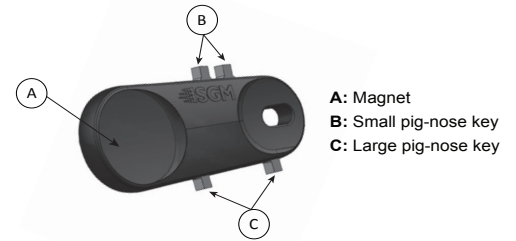In Q-7 POI Series the largest pig-nose key is used for tilt adjustment.

A: Magnet
B: Small pig-nose key
C: Large pig-nose key

Figure 17: POI Spanner

POI Tilt lock

The tilt angle in POI fixtures may be adjusted by using the large pig-nose key provided in the spanner.

To adjust the tilt angle in Q-7 POI take the following steps:

1. Make sure the fixture is cooled down before handling.
2. Take the spanner and turn both tilt lock screws (one on each side) counter-clockwise by using the large pig-nose key. Screws are loosened by turning counter-clockwise.
3. Tilt the fixture to the angle desired and hold it.
4. Lock the position by tightening the tilt lock screws clockwise with the same pig-nose key.
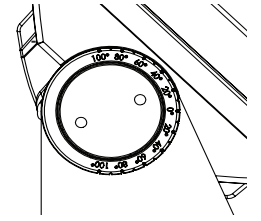

Figure 18: Q-7 POI Tilt lock

Installation and rigging the Q-7 POI

While the base of the standard products include 1/4 turn fasteners camlocks for omega brackets, the base of POI products come with M-10 nuts for M-10 screws. The M-10 screws are included in the package in the same amount as the number of M-10 nuts of the base.

The Q-7 POI has four M-10 nuts in the base that can be used for installation and rigging. The SGM Omega bracket (not included) or a customized bracket is needed to install the fixture. Consider the dimensions below of the Q-7 POI base for customized mounting brackets purposes.

The SGM POI Omega bracket suited for M-10 holes can be ordered as an accessory. Contact your local SGM dealer for further information on correct POI rated mounting.
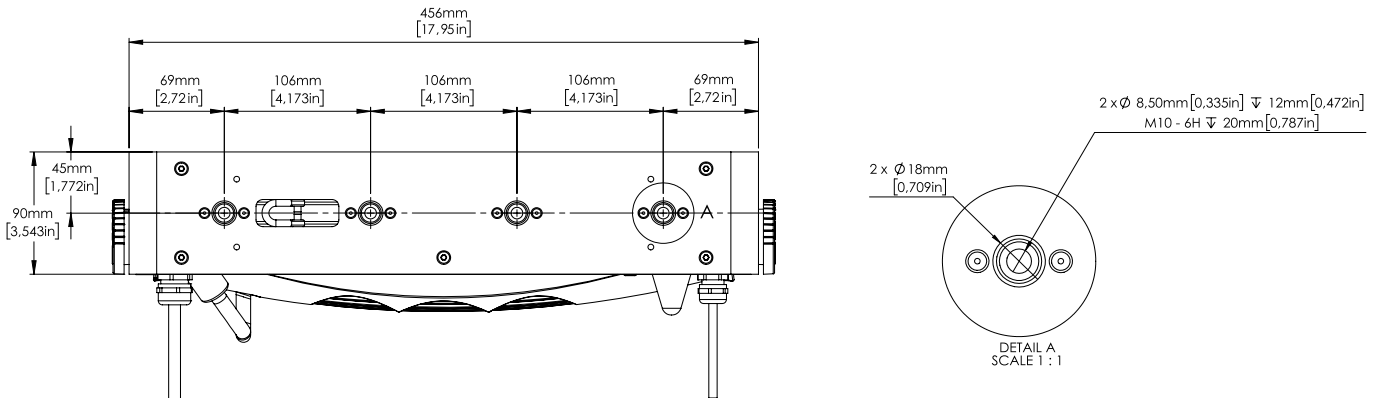
Figure 19: Q-7 POI base with dimensions

Connecting DMX and AC power in POI

DMX in and DMX out are in the same cable. See more in figure 19 about the SGM POI DMX cable.

The power is wired as the standard version. See "Connecting AC power" on page 8.

For permanent installations, have a qualified electrician wire the mains cable directly to a suitable branch circuit. The junction's ingress protection (IP) rating must be suitable for the location.
For a temporary installation, the mains cable may be fitted with a grounded connector intended for exterior use.

PLEASE NOTE!!

- **Standard microphone cable are not suitable for transmitting DMX.**
- **Up to 32 fixtures can be on the same DMX link. Additional fixtures will overload the link.**
- **The last fixture must always be fitted with a DMX termination plug to the fixtures DMX out.**
- **SGM fixtures provide a passive DMX Thru signal as DMX Out, instead of an active output signal.**

Q-7 POI connection diagram

SGM POI DMX Cable

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

Figure 20: Connecting DMX and AC Power in Q-7 POI

Accessories

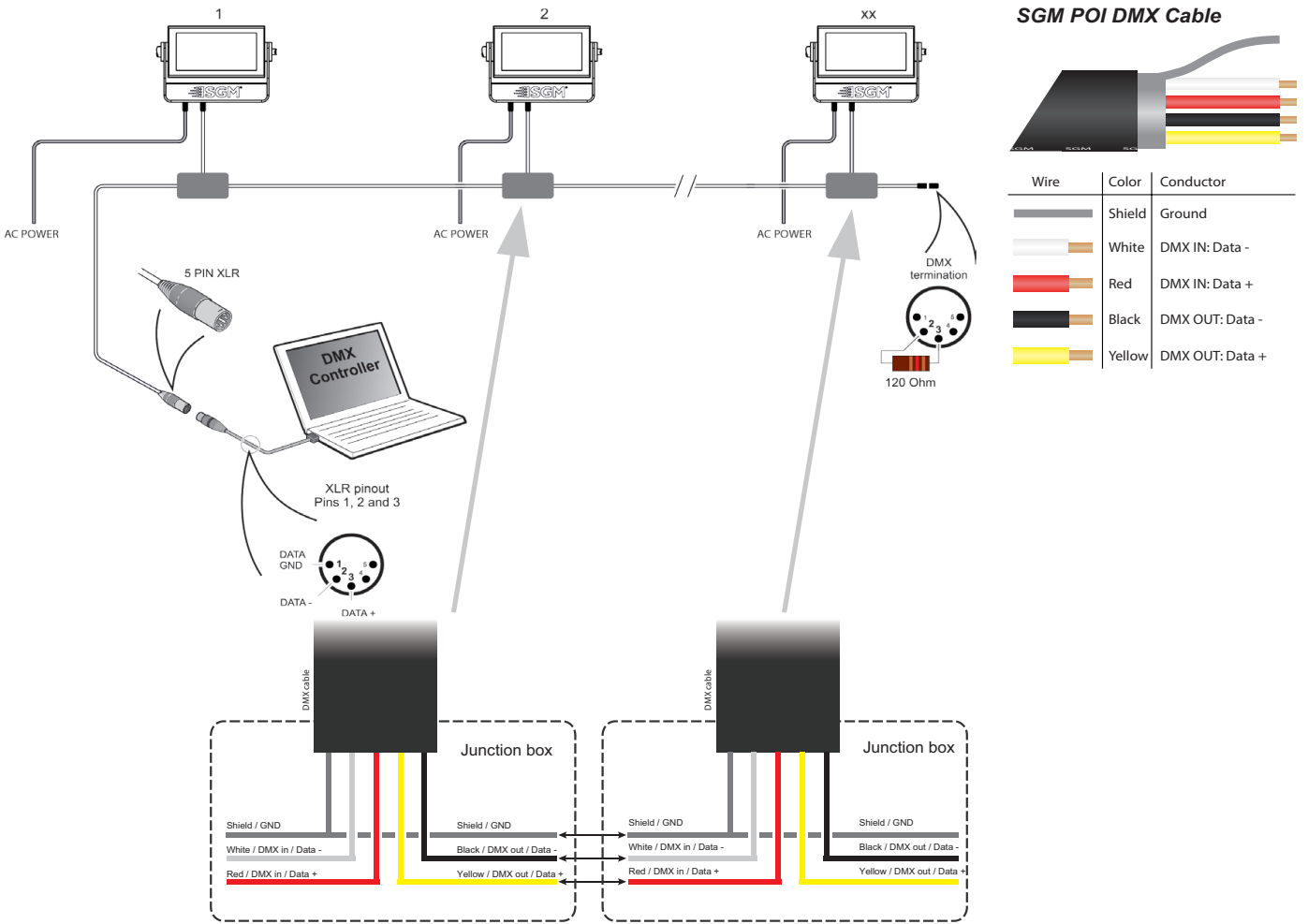The Q-7 Series can be used with various accessories such as barndoors, color frame, and anti-glare shields.
To get to know all the available Q-7 Series accessories, see www.sgmlight.com, or contact your local SGM dealer.

Accessory holder

The Accessory holder is a mandatory base for holding Barndoors and Color frames to the Q-7 Series fixture. It is a clip-on accessory that includes a safety wire to be attached to the bracket of the fixture, and a knob on the side to allow the sliding of barndoors, color frames or rigid diffusion filters.

Figure 21: Q-7 Series Accessory holder

Barndoors

The Q-7 Series have 4-way and 8-way barndoors. The difference between the two types is that the 8-way barndoors give an extra control when cutting the light, by extending the width of the eight adjustable flaps.

The barndoors are designed and intended to be mounted on the fixture without the use of any tools. It is only required the use of the accessory holder, where the barndoors will slide and fit in, by releasing the locking knob in the side of the accessory holder.

The Q-7 Series barndoors are also compatible with the use of color frame and diffusion filters.
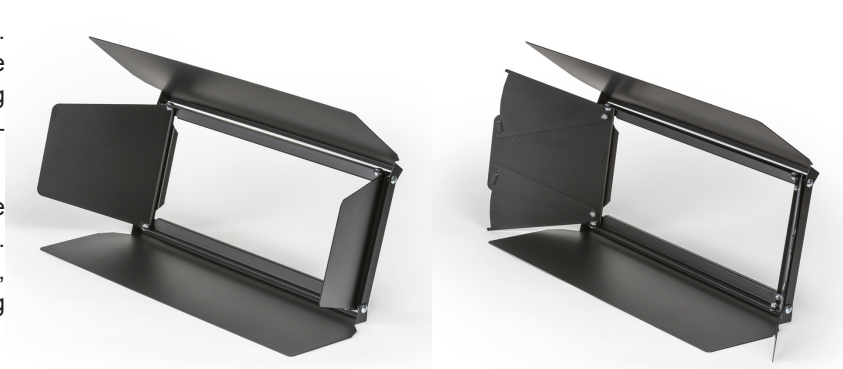
Figure 22: Q-7 Series Barndoors

Floorstand

The Q-7 Series have available an optional floorstand, ideal when there is a frequent need of changing the position of the fixture between hanging and standing.

The Q-7 floorstand it is easy to mount or remove, simply by the use of 1/4 turn fasteners.

Figure 23: Q-7 Series Floorstand

PLEASE NOTE!!
The accessory holder, the barndoors and the floorstand are not intended for permanent outdoor installations.

Anti-glare shields

The Q-7 Series feature two different types of optional anti-glare shields:

- **Full anti-glare shield** - covers the full fixture's opening
- **Half anti-glare shield** - covers half of the fixture's opening

Using the anti glare shields will remove any unwanted discomfortable glare and reflections.

The anti glare shields are easily mounted by removing the two tilt lock bolts, one in each side of the fixture. Refit the anti glare shield in position and screw both tilt locks bolts again.

Note: This accessory is suitable for both permanent outdoor and indoor installations.

Figure 24: Q-7 Series Anti-glare shields

For further information and other possibilities see www.sgmlight.com or contact your local SGM dealer.

Maintenance

SGM Uploader cable

The SGM USB to DMX cable is an accessory used mainly to update the fixture with the latest SGM firmware. See below how to update the fixture with the latest firmware.
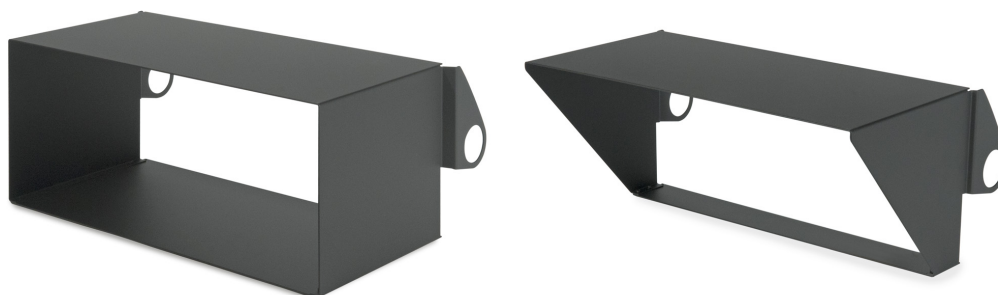
The SGM Uploader cable is also used for controlling the DMX values channel by channel through the Firmware Uploader Tool software (available for download at www.sgmlight.com).

Figure 29: SGM Uploader cable

Upgrading the firmware

The firmware installed in the fixture can be identified in different ways:

- When powering on the fixture, the display shows the current installed firmware version (only standard).

- Go to MENU → INFO → FIRMWARE VERSION (only standard).

- Through RDM.

We recommend that the fixture's firmware is always up-to-date. The latest firmware version is available for download under the respective product at www.sgmlight.com.

To update your Q-7 Series with the latest firmware, use an SGM USB 5-Pin-XLR uploader cable, and a Windows-based computer with the SGM Firmware Tool software installed (available for download at www.sgmlight.com).
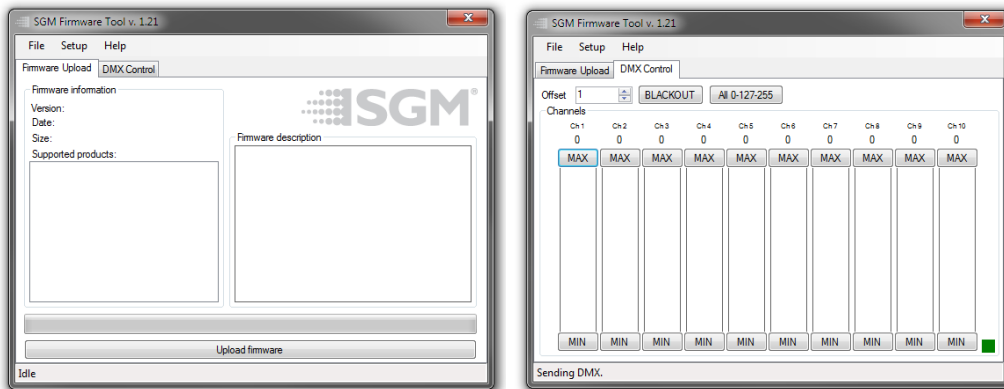
Figure 30: SGM Firmware tool

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

SGM Vacuum Test kit

The Vacuum Test Kit is an accessory suitable for all SGM IP-rated fixtures, made for testing the IP validity after having reassembled the fixture.

In order to ensure the IP-rating of the Q-7 Series, it's highly recommended that the fixture is always vacuum tested after installing or swapping any part that might compromise the IP-rating, e.g., swapping the front lens.

SGM disclaims liability for any damage occasioned by the non-use, or inability to use, the vacuum test kit after reassembling the fixture.

Figure 31: SGM Vacuum Test Kit

Cleaning

SGM luminaires with IP65 or IP66-rating do not need any cleaning procedures inside the fixture. However, cleaning the front lens may be needed to achieve the maximum light output after exposure to dust, sand, or dirt. Exterior housing can also be cleaned to get a better look. To maintain adequate cooling, fans must be cleaned periodically.

Whenever necessary, clean the Q-7 Series using a soft cloth dampened with a solution of water and a mild detergent. Do not use products that contain solvents, abrasives, or caustic agents for cleaning, as they can cause damage to hardware, cables, and connectors.

The level of cleaning required will vary greatly depending on the operating environment and installation. Therefore, it is recommended to do frequent check-ups the first few weeks of operation to see how often cleaning is necessary.

Ordering Information

The Q-7 Series has different variants and can be used with a variety of accessories.
Contact your local SGM dealer to get the latest pricing and news about available fixtures and accessories.

Please note: the list below is subject to change without notice.

Q-7 Series fixtures

Q-7 Color Flood, Std, BL / WH.. P/N: 80030524 / 80030561

Q-7 Color Flood, POI, BL / WH.. P/N: 80030800 / 80030850

Q-7 W White Flood, Std, BL / WH.. P/N: 80030525 / 80030563

The Q-7 Series can be ordered in any RAL color and can be customized into POI version. Contact your local SGM dealer for ordering customized color housings or for more information.

Q-7 Series accessories

Omega bracket w/Q-bolt,, BL / WH.. P/N: 83060602 / 83061206
Omega bracket POI with M10 Screws, BL / WH..P/N: 83060623 / 83060624
SGM USB uploader cable...P/N: 83062011
BCC-2 Dual bracket...P/N: 83060603
BCC-4 Quad bracket...P/N: 83060604
Floorstand for i-5/P-5/Q-7 Series..P/N: 83060610
Accessory Holder X-5 & Q-7 Series...P/N: 83061123
Barndoor 4-way, i-5/P-5/Q-7 Series...P/N: 83061120
Barndoor 8-way, i-5/P-5/Q-7 Series...P/N: 83061121
Color frame, P-5 & Q-7 Series...P/N: 83061122
Half Anti-Glare Shield, P-5, Q-7, i-5 Series, BL / WH..P/N: 83061161 / 83061180
Full Anti-Glare Shield, P-5, Q-7, i-5 Series, BL / WH..P/N: 83061165 / 83061181
Flightcase for 4 pcs of PQI-5/7, non-stackable.. P/N: 82051501
Flight case for 4 pcs of i-5/P-5/Q-7 incl. barndoors... P/N: 82051502
SGM Vacuum test-kit... P/N: 83061136

Barndoor 4-way, Barndoor 8-way, or Color Frame requires one Accessory Holder (Item No. 83061123) per fixture.

Support hotline

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

Approvals and certifications

Conforms to	*2014/35/EU: Low Voltage Directive*
Conforms to	*2014/30/EU: EMC Directive*
Conforms to	*2011/65/EU: RoHS2 Directive*
Conforms to	*ANSI/UL Std. 1573*
Certified to	*CSA Std. C22.2 No. 166*

CE ETL LISTED c US Intertek 4008543 RoHS

The information in this document is subject to chance without notice. For the latest information, visit www.sgmlight.com.

User Notes

User Notes

SGM Light A/S
Sommervej 23
8210 Aarhus V
Denmark
Tel: +45 70 20 74 00
info@sgmlight.com
www.sgmlight.com