

WORLD'S MOST POWERFUL
RGB LED LIGHTING SYSTEM

AQUAPAIN



5300 LUMEN

**3 CHANNEL LEDLAMP WITH
ISOLATED DMX INTERFACE**

COMPACT DESIGN



CABLE
POWER
& DMX

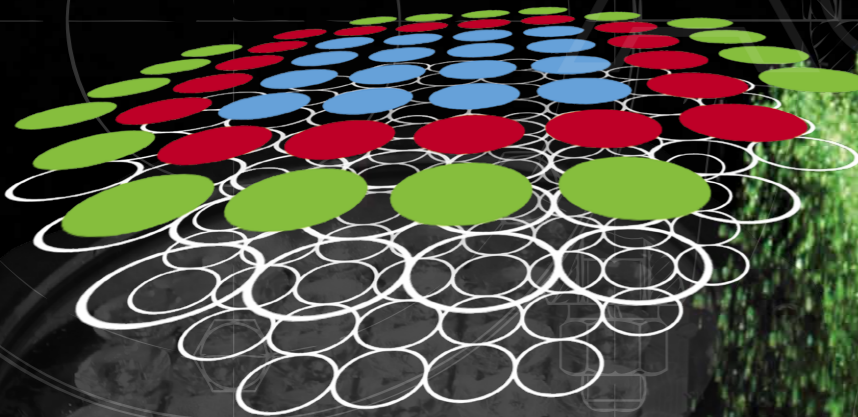
POWER
SUPPLY
230V
110V

OUT
PUT
48V



DMX

USB



FRESH AND
SALT WATER

THIN POWER
WIRES

HIGH
LUX

RUGGED
DESIGN

Aquapaint is the most powerful LED lighting system for underwater applications. The system is the result of many years of experience in water shows, lighting, entertainment and involved technologies. The rugged lamp, with its fully watertight enclosure made of solid brass, uses the best power LED's available today, ensuring the highest possible luminous flux per watt. Together with a versatile 3 channel LED driver, an optimum combination is formed, that offers a safe and robust lighting solution for even the most demanding situations.

The Aquapaint LED lamp

The Aquapaint LED lamp is designed for underwater use. The body of the enclosure is made of corrosion free solid brass. The front screen is made of high impact resistant glass, sealed with a silicon rubber gasket. The metal cable glands and the high quality neoprene cable are enduring and watertight. As a result, the ingress protection rate is IP68, allowing the lamp to stay submerged. Effective cooling is provided by the water surrounding the enclosure. An integrated sensor monitors the temperature of the lamp continuously.

The latest generation power LEDs from Philips Lumileds, the Luxeon Rebel series, are applied in the Aquapaint LED lamp, offering the best efficacy, color, light output and lifetime available on today's market. The red, green and blue LEDs are placed concentric to mix well and form a balanced blend of colors. Instead of RGB, other LED combinations can be installed, for example LEDs of different white shades.

The radiation angle depends on the applied LED lenses. Available angles are from 5° to 20°.

The Aquapaint LED Driver

The Aquapaint LED driver is optimised for use with the Aquapaint LED lamp. It offers

3 switch mode constant current sources.

The LED brightness is controlled by real DC current regulation, instead of using pulse width modulation (PWM). The brightness is regulated in a smooth way even when varying between low values, like traditional lamps. This results in a flicker free LED regulation, and makes the driver also suitable for situations where photo or video is involved.

The DMX interface is ESD protected and isolated to 3kV, eliminating ground potential problems. An on-board termination resistor can be connected as desired. A 2-way interface is available as option. The DMX addresses and many other parameters are programmed by software, making the device fully solid state and suitable for sealed or encapsulated constructions.

By using the latest switch mode power technology, heat dissipation is reduced to less than 5% of the output power. Sufficient cooling is provided through conduction via contact of the metal bottom of the driver with the applied (sealed) metal enclosure or other base construction. The LED driver is usually located near the LED lamp and is therefore properly sealed and/or encapsulated to meet the required IP rate.

A wide input voltage range makes the LED driver suitable for the use with long cables. Applying a higher input voltage not only lowers the current and thus the voltage drop in the power cable, it also gives a better margin to allow voltage drop effects in long cables. As a result of this, a cable with only 1mm Cu conductors can drive an Aquapaint lamp at full power over more than 100 meters length.

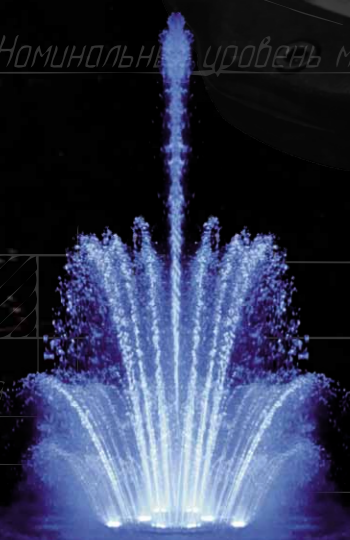
Safety is an important issue where water and electricity are involved, and it has been a major factor in the design of the Aquapaint system. For this reason, the 230/110v power supplies are separated from the LED drivers, to be located in a suitable accommodation away from the water. Only voltages below 50 volt (considered safe according to most safety standards) are applied to the 'wet' parts: the cable, the driver and the lamp, making the system intrinsically safe.

The Aquapaint LED driver does not only control the LED currents for the 3 channels, it also monitors the temperature of the lamp and the temperature of the driver itself, and checks the output voltages to prevent short circuits or overvoltages. The parameters involved with these monitor functions and the actions to be taken at certain thresholds, can be programmed by means of the software tool.

The software tool for the Aquapaint system is used to configure the LED driver and to test the system. Before installation and/or sealing, the LED driver can be fully configured via USB. After installation, most parameters can still be accessed via DMX communication. Also, some helpful test functions are available to find and even change a driver's DMX address, using its unique serial number. The software tool is only available for Windows PC.

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Номинальная пропускная способность



Technical specifications Aquapaint LED lamp

LED type:	Luxeon Rebel
red leds:	18
green leds:	18
blue leds:	16
temperature sensor:	NTC 10k Ω
luminous flux per color R/G/B:	1260 / 3600 / 448 *
total luminous flux:	5300 lm
total power consumption:	118 Watt
radiation angle:	5° to 20° (depends on applied led lenses)
lamp body material:	brass
front screen material:	high impact resistant glass
gaskets:	silicon rubber
ingress protection:	IP68
size:	Ø 260 x 55 mm / Ø 10,2 x 2,1 inch
weight:	7,5 kg / 16,5 lbs

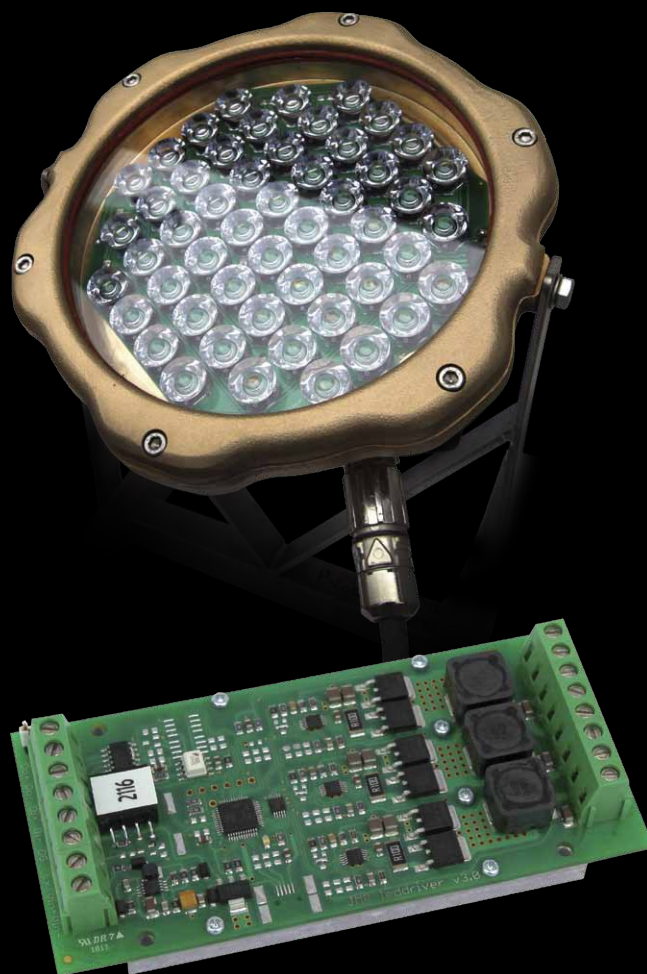


Only 2,1 inch high

(* luminous flux is related to human eye sensitivity to colors. Efficacy of blue leds is relatively higher than lum. flux values may suggest).

Technical specifications Aquapaint LED driver

interfaces:	USB, isolated DMX
led driver type:	switch mode, step down, constant current
microcontroller type:	ARM
input voltage:	24,48 volt DC
input voltage - output voltage:	2..30 volt (at maximum load)
maximum output current:	3 x 2A
common output leds:	0 volt (ground)
efficiency:	> 95%
advised cooling capacity:	Rth < 2°C/W
dimming resolution:	256 steps
dimming regulation:	DC (no PWM)
dimming curve:	lineair or logarithmic
monitoring functions:	driver and lamp temperature, output under/overvoltage
DMX interface isolation:	> 3kV
DMX protocol:	DMX-512
DMX channels:	5 (channel 1, 2, 3, color mix, master brightness)
size:	120 x 56 x 23 mm / 0,5 x 2,2 x 0,9 inch (bare PCB size, without enclosure)



The Aquapaint LED system consists of the following parts: waterproof, high power RGB LED lamp 5300 lumen at 118 watts. waterproof, high power 3 channel LED driver with isolated DMX interface power supply providing a safe system voltage combined cable for both power and DMX

