ASTRALPOOL
the pool brand

FLUIDRA

In October, the pool brand arrives to Southeast Asia



We invite you to an essential training session to keep up to date on leading technolgy for pools.

Training Program:

09.30 - 10.15: Pool MAC
10.15 -10.30: Cooffee break
10.30 - 11.30: Disifection equipment (UV, neolysis, automatic dosing equipment)
11.30 - 12.30: Robots & LED lighting
12.30 - 14.00: Lunch

Thailand
(October 7th)

Grand Sukhumvit Hotel
99 Sukhumvit Soi 6,
Klongtoey, Bangkok, 10110
Bangkok
Registration and contact

Sirinda. 02 7389420

Malaysia
(October 8th)

The Club
1 Club Drive, Bukit Utama,
Bandar Utama, 47800,
Petaling Jaya, Selangor
Registration and contact

Lai Lai. 03 87341030

Indonesia
(October 9th)

Menera Peninsula Hotel
Jl. Let.Jend.S Parman 78
Jakarta 11410
Registration and contact

Cindy. 021 7503650

Singapore
(October 10th)

Village Hotel Changi
1 Netheravon Road
Singapore 508502
Registration and contact

Stephy. 6382 0130

MAC® – $18000 = (owner price)

ASTRALPOOL

FLUIDRA
POOL & WELLNESS



Welcome the new 3.0 pool

www.astralpoolmac.com

reddot design award
honourable mention 2013

Welcome the new 3.0 pool

A premium product for exclusive and unique people



The most highly advanced innovation.

At Fluidra we have created a new maintenance and control concept for your pool: AstralPool Mac®. A revolutionary concept and the only one of its kind in the market. An advance that will revolutionise the pool sector.

MAC®

ASTRALPOOL

A revolution for your pool

Recognised innovation and quality



Innovation

Fluidra launches a unique product in the market, creating a new concept for pools, a veritable world revolution. Winner of the **Reddot 2013** design award which recognised the quality and innovation of the AstralPool Mac®.

reddot design award
honourable mention 2013

MAC®
ASTRALPOOL

A revolution for your pool

Recognised innovation and quality

Advanced Integration

Compact and modular. AstralPool Mac® is designed for the complete physical and chemical pool treatment.



Total Control

Easy to use. Controls all of the pool's parameters (efficiency level, filtration, dosing, temperature) in the most efficient possible way .

Total Pool **Control**

MAC®

ASTRALPOOL

A revolution for your pool

Recognised innovation and quality

Energy efficiency adapted to your pool.

AstralPool Mac® adjusts to your pool. Simply entering your pool's specific parameters (volume of water in m3, number of swimmers, environment, ideal filtering time, etc.), Astralpool Mac® adapts to them, achieving the maximum performance level for energy and water savings. AstralPool Mac® is suitable for pools up to 80m3.



MAC®

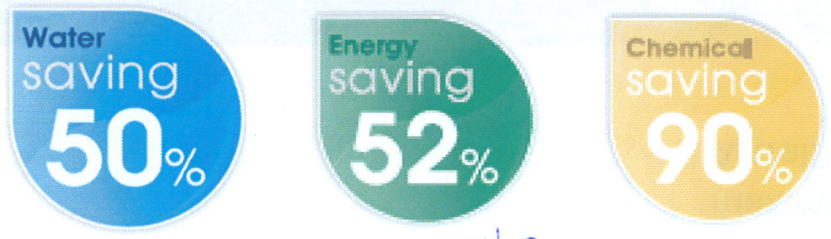
ASTRALPOOL

A revolution for your pool

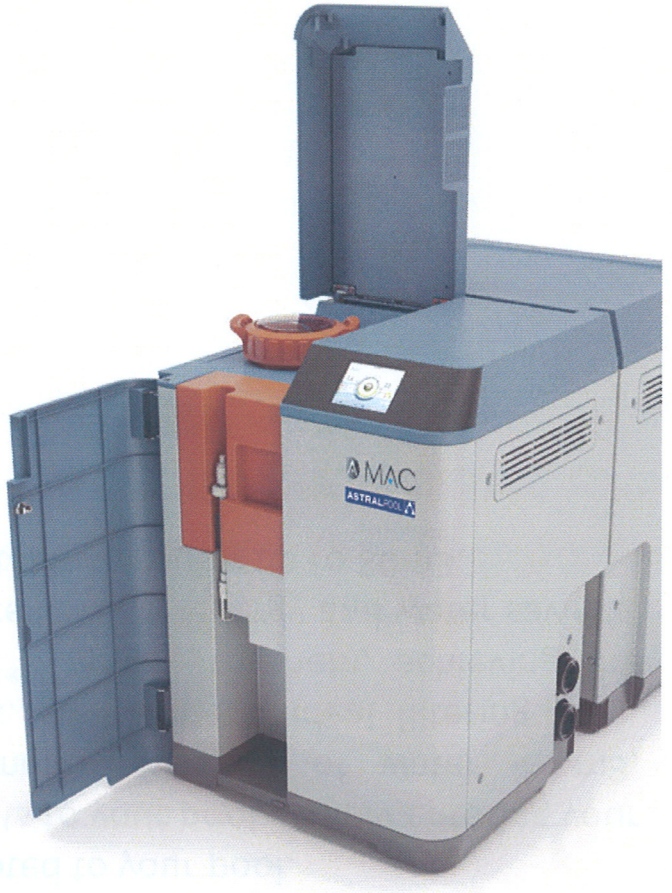
Recognised innovation and quality

Efficiency

AstralPool Mac® guarantees maximum efficiency and saves 50% on energy, 90% on chemicals and 50% backwash water compared to conventionally maintained pools.



- variable speed pump 1.5 hp.
- savip water from backwash.



MAC®

ASTRALPOOL

Total Control

Maximum control for maximum performance

Clorine level

Redox Level (ORP)
Indicates the Redox Level (ORP) of the water compared to the "set point" established as the desired value.

pH level
Indicates the pH level of the water compared to the "set point" established as the desired value.

Level of salt in the water
A green light indicates an ideal level of salt in the water; a red light indicates that the level of salt is low.



Temperature of the water
Indicates the current temperature of your pool. Optionally, a heat pump can be installed, which can also be controlled and adjusted on the unit's screen.

Efficiency level AstralPool Mac®
This indicator shows the efficiency level at which the AstralPool Mac® is working in relation to the parameters entered. This helps you to know if your unit is working as efficiently as possible.

Total Pool Control

MAC®
ASTRALPOOL

Total Control

5” high resolution touch screen



Smart Manager

Exclusive and innovative intelligent software that chooses the specifications and parameters of your pool and AstralPool Mac® automatically adjusts all of the parameters in order to manage the physical and chemical treatment of your pool.



MAC®

ASTRALPOOL

Total Control

complete physical and chemical pool treatment.

- Max. Sound level of pump = 60 dB.

Filtration

Manual or automatic control of the entire filtering process. Capable of backwashing the filter when it needs it and knowing when it needs to work intensively in order to keep the water in perfect condition (automatic water recovery mode). The AstralPool Mac® filtering system works at different speeds for water and power savings of 50%.



Calibrate sensor — once a year.

Dosing

Enjoy crystal clear water with just the right amount of chlorine thanks to the saline electrolysis with ORP control and automatic pH adjustment. AstralPool Mac® helps you reduce the amount of chemicals needed by more than 90%.



Heating (optional)

AstralPool Mac® has a "by-pass" that allows a heat pump to be installed and prevents the water treated by salt electrolysis to pass through the heat pump. It is equipped with Modbus communications that allow you to control the heat pump from the AstralPool Mac® screen.



MAC®

ASTRALPOOL

Remote Control

Control via your Smartphone or tablet with Wi-Fi

Use your Smartphone or tablet with a Wi-Fi connection to manage all of the technical functions and parameters of our AstralPool Mac®, with the possibility of remote control via Wi-Fi. Simplicity, convenience and accessibility define this lifestyle we all desire.





Remote Control **Pool**

MAC®
ASTRALPOOL

MAC®

ASTRALPOOL

- water supply
- discharge.

FLUIDRA
POOL & WELLNESS



Welcome the new 3.0 pool

www.astralpoolmac.com

reddot design award
honourable mention 2013

FLUIDRA

MAKING
WATER
PERFORM

UV & Neolysis

POOL & WELLNESS | WATER TREATMENT | FLUID HANDLING & IRRIGATION | PROJECTS | INDUSTRY

FLUIDRA

Electrolysis, UV & Neolysis

UV LP Private Pool

Heliox UV LP Aisi 316L (10-30m3/hr)

Stainless Steel



UV



UV

UV pH/ORP

Heliox UV LP PE (10-25m3/hr)

polyethylene



UV

UV pH/ORP



UV pH/ORP

UV MP Commercial Pool

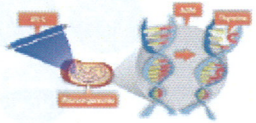
Heliox UV MP (50-675 m3/hr)

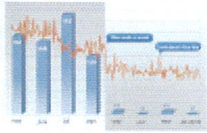




UV-C: mechanism of disinfection and treatment

1. UV-C Radiation → changes DNA:
   - Adjacent thymine dimer formation.
   - Inhibits reproduction (inactivation, cell death).
2. UV-C Radiation → Effective reduction of chloramines
   - Reduces filter washes (dilution chloramines <0,6 ppm).
   - Significant savings in water and operation energy.
3. Limitations:
   - No residual effect (local treatment)
   - Required addtion of residual disinfectant-oxidant (Cl2 / Br2 / H2O2) and pH control.







Electrolysis, UV & Neolysis

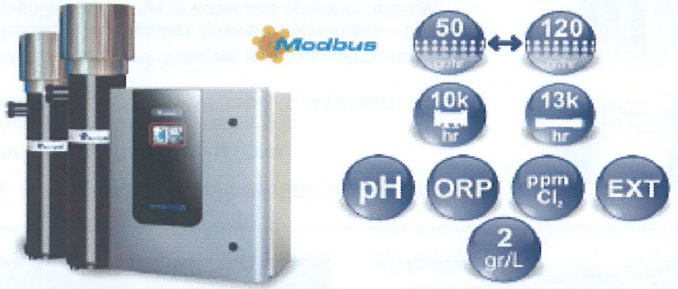
Neolysis Private Pool



UV technology is combined with low concentration salt electrolysis providing an innovative sanitization and water treatment system (residential and public pools) capable of using the most incredible characteristics and advantages of both technologies as well as correcting their respective defects or limitations. This single-system combination provides the following advantages:

- Adding salt (sodium chloride) to pool water is no longer necessary because Neolysis technology uses electrolysis with the "natural" conductivity of the pool (<2grs/L).
- Double sanitization (UV-C + Chlorine in-situ/Anodic oxidation).

Neolysis Commercial Pool



- Increased capacity to eliminate chloramines (UV-C + Cathodic reduction).
- Sustainable technology thanks to water and energy savings. It is no longer necessary to clean filters with the only aim to reduce (dilution) the concentration of chloramines.
- The synergistic treatment is interesting because of its residual effect and oxidative capacity.
- This system enables the addition of salt (NaCl) and chlorinated products (hypochlorite, chlorine tablets, etc.) to be completely avoided.

The most advanced treatment:
+ sustainability + disinfection + safety
+ super water quality + innovation + health

Neolysis Private

Training 2013

Residential pool.
Neolysis.



New!

neolysis
Zero Salt x UV
patent pending

The most advanced treatment of Idegis.
+sustainability +disinfection + safety
+super quality water + innovation + health

neolysis

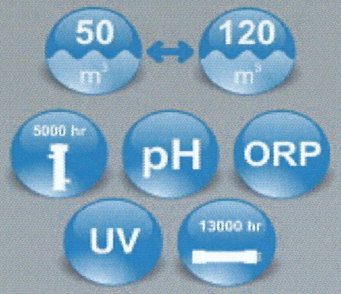
High capacity chloramines reduction
(UV LP + Electrolysis)

Electrodes LS Series
(4.000-5.000hr) and UV Lamps
LP HO (13.000hrs)

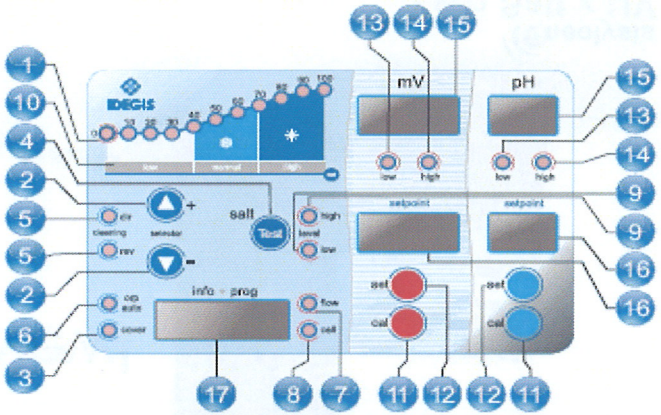
Neolysis. Zero Salt x UV. No salt addition

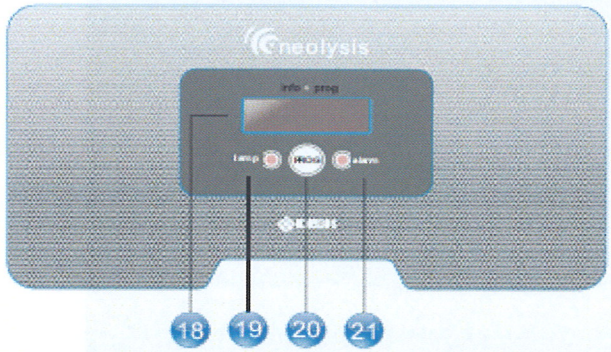
New Process. Patent Pending

Irrigation water quality
Salt under 2gr/L
Dual disinfection: Electrolysis + UV
High quality water



Neolysis Private

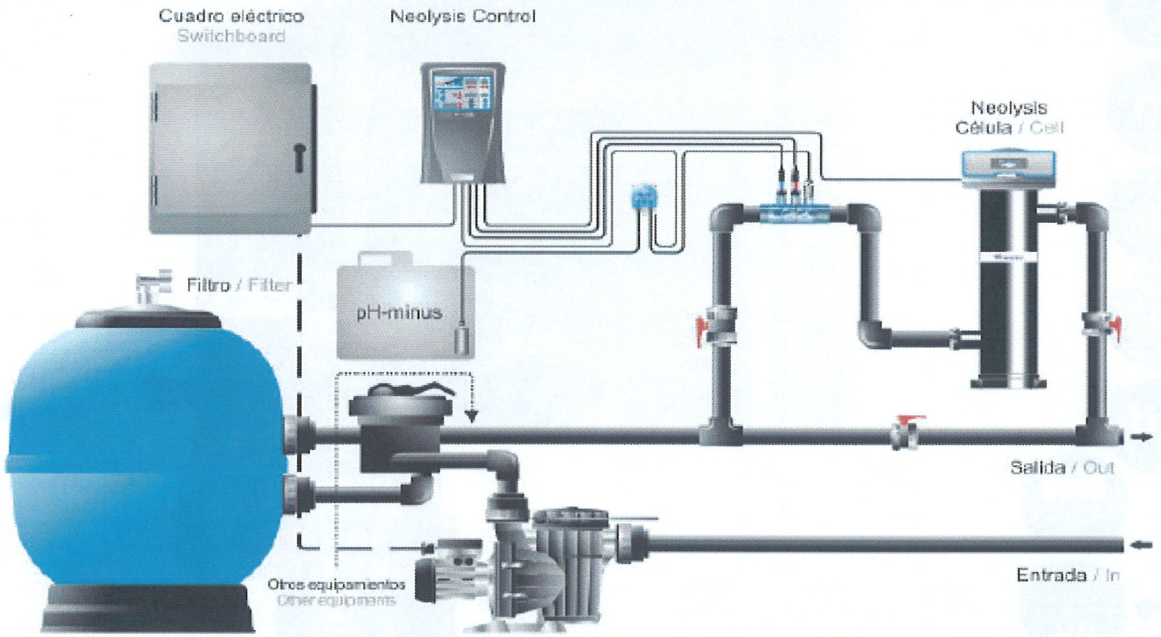




PANELES DESCRIPTIVOS/ PANELS DESCRIPTIONS

1. **Escala de producción (%).**
   Production Scale (%).
2. **Teclas ▲▼ aumentar / disminuir producción.**
   Keys ▲▼ increase / decrease output.
3. **Indicador control cubierta automatica activado**
   Indicator of activated automatic cover control.
4. **Test de salinidad**
   Salinity test
5. **Indicadores auto-limpieza (polaridad directa/inversa).**
   Self-cleaning indicators (direct/reverse polarity).
6. **Indicador control ORP activado (modo auto).**
   Indicator of activated ORP control (auto mode).
7. **Indicador de Alarma de FLUJO**
   Indicator of Flow alarm.
8. **Indicador de alarma de celula pasivada.**
   Indicator of electrode passivation alarm.
9. **Indicadores de salinidad alta y baja.**
   Indicators of high and low salinity.
10. **Escala de salinidad (Cualitativa).**
    Salinity scale (qualitative).
11. **Teclas para modo calibracion (pH y ORP).**
    Keys for calibration mode (pH and ORP).
12. **Tecla para programar el valor de pH/ORP deseado.**
    Key for pH/ORP setpoint programming.
13. **Indicador de alarma pH/ORP bajo (pH <6.5, mV< 650)**
    Indicator of low pH / ORP alarm.
14. **Indicador de alarma pH/ORP alto (pH >8.5, mV> 850)**
    Indicator of high pH / ORP alarm.
15. **Pantalla de indicación del valor de pH/ORP del agua.**
    Display of water pH / ORP
16. **Pantalla de indicación del valor de pH/ORP programado.**
    Display of the pH / ORP setpoint.
17. **Pantalla de información del sistema zero salt electrolisis**
    Display of system information zero salt electrolysis
18. **Pantalla de información del sistema UV**
    Display of system information UV
19. **Alarma de lampara**
    Lamp alarm.
20. **Tecla INFO**
    INFO Key

Neolysis Private Installation Diagram



Neolysis Series

Referencia			Producción	Piscina
AP NEO	AP NEO pH	AP NEO PLUS	Zero Salt Electrolisis + UV	Hasta Up to
AP NEO-12	**AP NEO-12 pH**	**AP NEO-12 +**	12 gr Cl_2/hr + 48W UV	50 m^3
AP NEO-24	**AP NEO-24 pH**	**AP NEO-24 +**	24 gr Cl_2/hr + 56W UV	80 m^3
AP NEO-32	**AP NEO-32 pH**	**AP NEO-32 +**	32 gr Cl_2/hr + 56W UV	120 m^3



AP NEO-12
AP NEO-24
AP NEO-32

AP NEO-12 pH
AP NEO-24 pH
AP NEO-32 pH
(pH control)

AP NEO-12 +
AP NEO-24 +
AP NEO-32 +
(pH/ORP control)

Training 2013

Product range - Commercial pool

ASTRALPOOL

Modbus



neolysis
Zero Salt x UV
patent pending

50 gr/hr ↔ 120 gr/hr

8000 hr | 13000 hr

pH

ORP

ppm Cl_2

UV

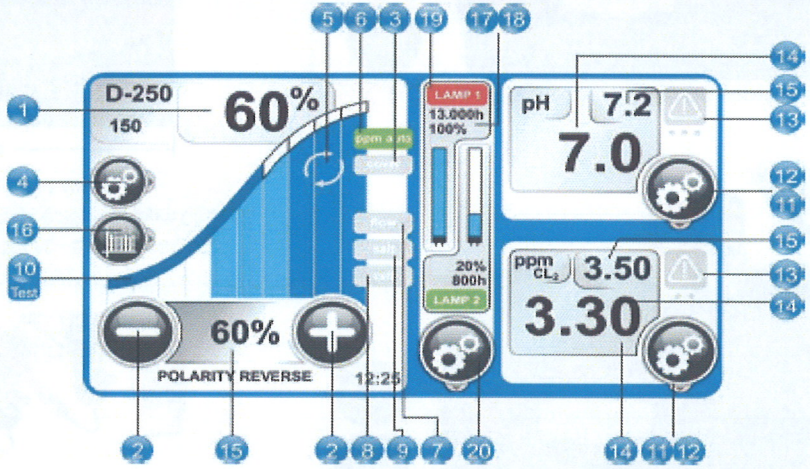
EXT

0,5 – 5 g/L
(recom. 1,5-2 g/L)

Training 2013

Product range - Commercial pool

ASTRALPOOL



Neolysis Series	Referencia-Reference		Producción-Production	Piscina-Pool
	Neolysis	Opción controladores Controllers option	Neolysis	
 AP NEO-50 AP NEO-80 AP NEO-120	AP NEO-50	AP NEO +	50 gr Cl_2/hr + 75W UV	Consulte guía de selección Refer to selection guide
	AP NEO-80	AP NEO PPM +	80 gr Cl_2/hr + 90W UV	
	AP NEO-120	R-040-1F	120 gr Cl_2/hr + 180W UV	

Training 2013

Product range - Commercial pool

ASTRALPOOL

EXT-1 Integrated pH-ORP control extension

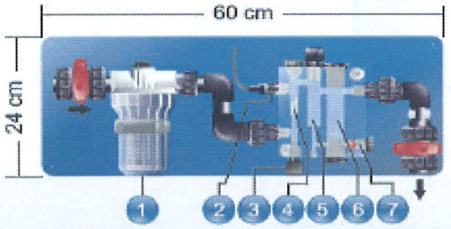
pH

ORP



pH/ORP/ppm Cl_2 Sensors

0.0 - 9.9 (pH) / 0 - 999 mV (ORP) / 0 - 5.0 (ppm Cl_2)
7.0 - 7.8 (pH) / 600 - 850 mV (ORP) / 0.25 - 3.0 (ppm Cl_2)
± 0.1 pH / ± 1 mV (ORP) / ± 0.1 (ppm Cl_2)

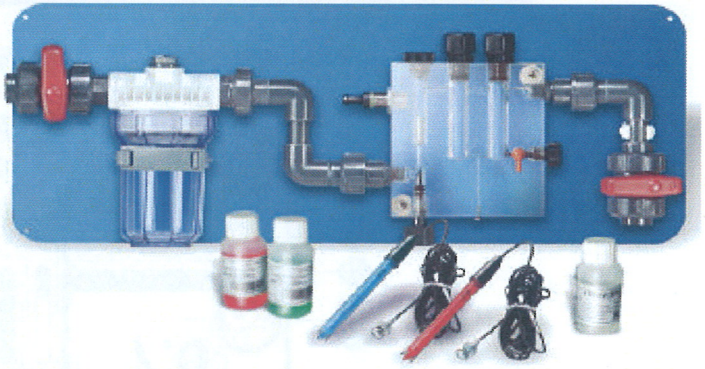


1. **Pre-filtro (80 micras)** / Pre-filter (80 microns)
2. **Sensor caudal inductivo** / Inductive flow sensor
3. **Ajuste caudal** / Flow regulator
4. **Caudalimetro** / Flowmeter **(0-60 L/hr)**
5. **pH portasondas** / pH holder
6. **Cloro ppm portasondas** / Chlorine ppm holder
7. **Toma de muestras** / Sample valve

EXT-1E Integrated pH-ORP control extension + sensor holder kit.

pH

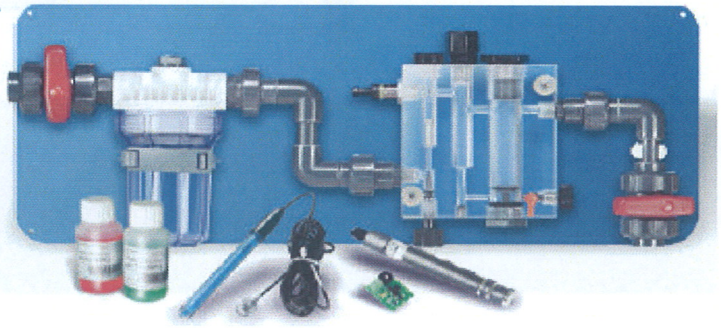
ORP



EXT-2 Integrated pH-chlorine control extension + sensor holder kit.

pH

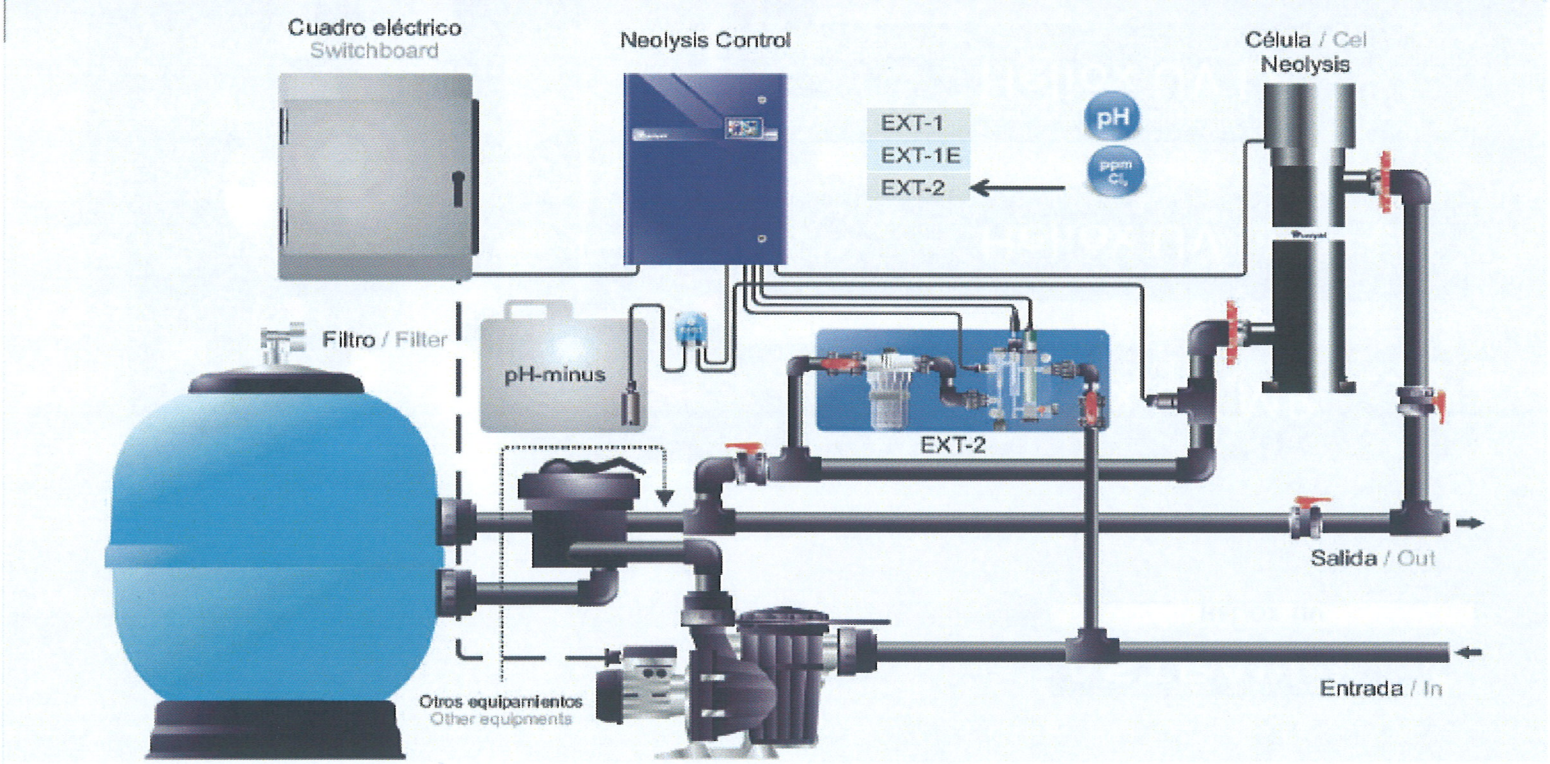
ppm Cl_2

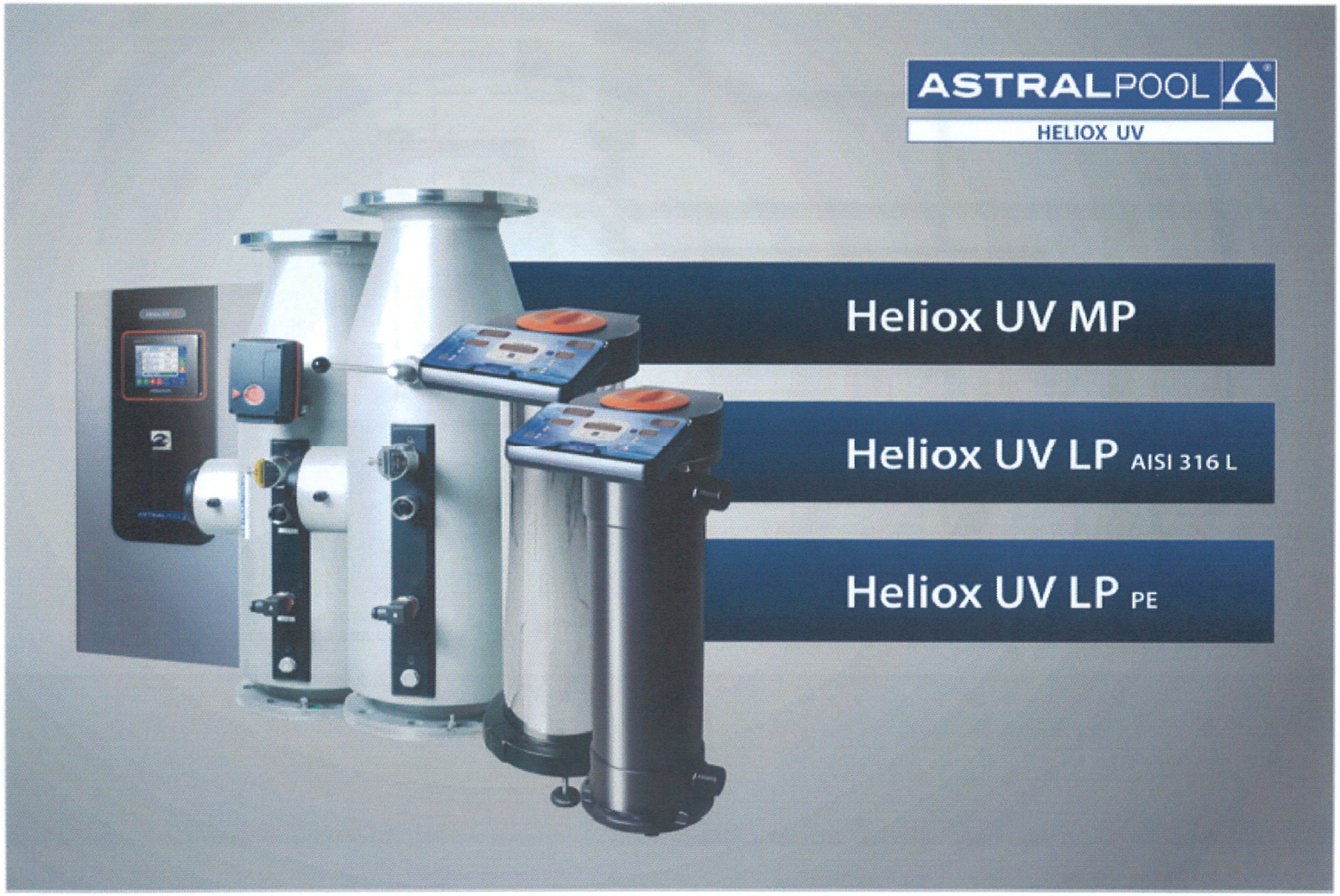


Training 2013

Product range - Commercial pool

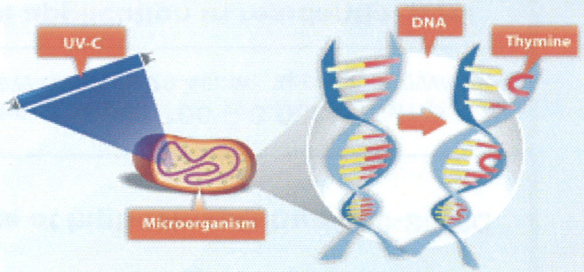
ASTRALPOOL



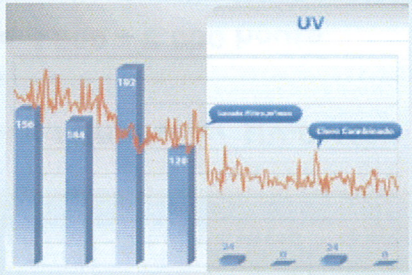

ASTRALPOOL
HELIOX UV
Heliox UV MP
Heliox UV LP AISI 316 L
Heliox UV LP PE

UV-C: mechanism of disinfection and treatment

ASTRALPOOL
HELIOX UV



1. **UV-C Radiation → changes DNA:**
   - Adjacent thymine dimer formation.
   - Inhibits reproduction (inactivation, cell death).



2. **UV-C Radiation → effective reduction of chloramines:**
   - Reduces filter washes (dilution chloramines < 0.6 ppm).
   - Significant savings in water and operation energy.

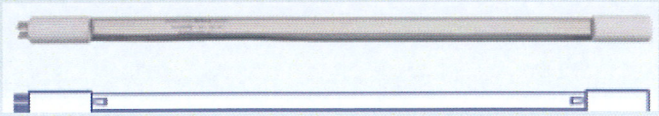
3. **Limitations:**
   - No residual effect (local treatment).
   - Required addition of residual disinfectant-oxidant (Cl_2 / Br_2 / H_20_2) and pH control.



UV-C light generation
Comparison of Mercury vapor lamps

ASTRALPOOL
HELIOX UV

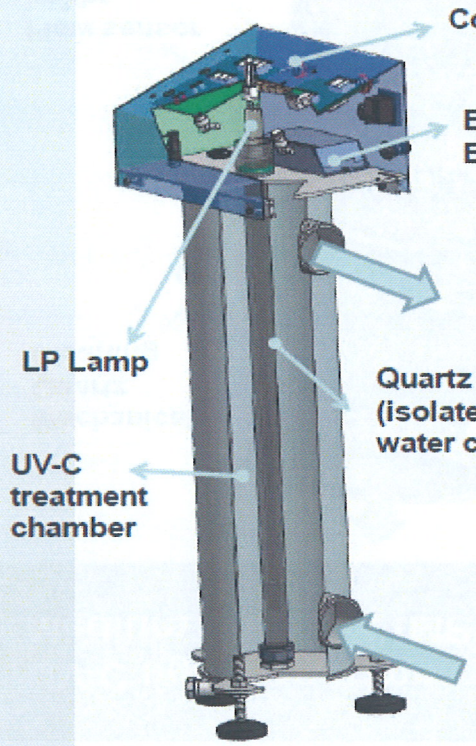
LOW PRESSURE: 0.01 mbar High Output (HO), AMALGAM (AM)	MEDIUM PRESSURE: (1-10 bar)
Monochromatic (254 nm) / UV-C Efficiency 33% (W UV-C/cm: AM > HO)	Polychromatic / Efficiency UV-C 15%
Approx. lifetime: 13.000 hours	Lifetime 4.000 – 8.000 hours
Operate at low temperature approx. 40ºC (Efficiency W UVC a T >40C: AM > HO)	Operate at high temeprature 600-800ºC
Power range: 50 – 110 W /lamp (15 – 40W UV-C), L 50-100cm, approx. 1W/cm	Power range: 700 – 3.000W/lamp (100-450W UV-C), L 20-40cm, approx. 100W/cm
Typical application in residential pool: Flow (1 lamp.) 10-30 m^3/hr. @ 25mJ/cm^2	Typical application in residential pool: Flow (1 lamp): 50-300 m^3/hr @ 60mJ/cm^2

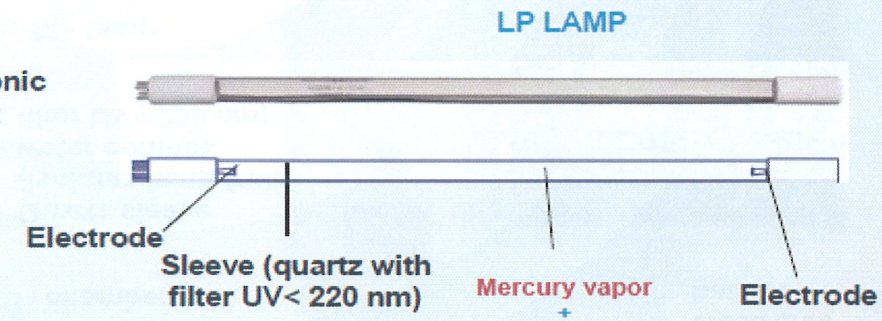


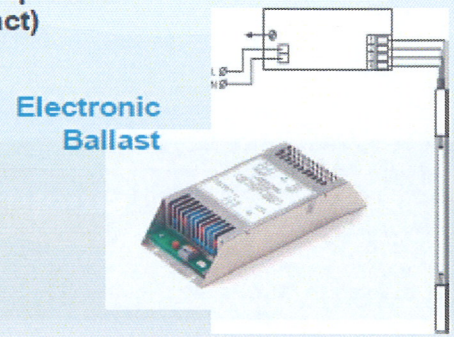


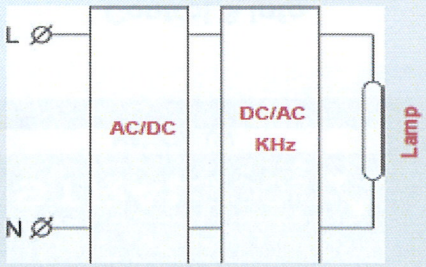
UV-C light generation
Low pressure (LP) systems

ASTRALPOOL
HELIOX UV



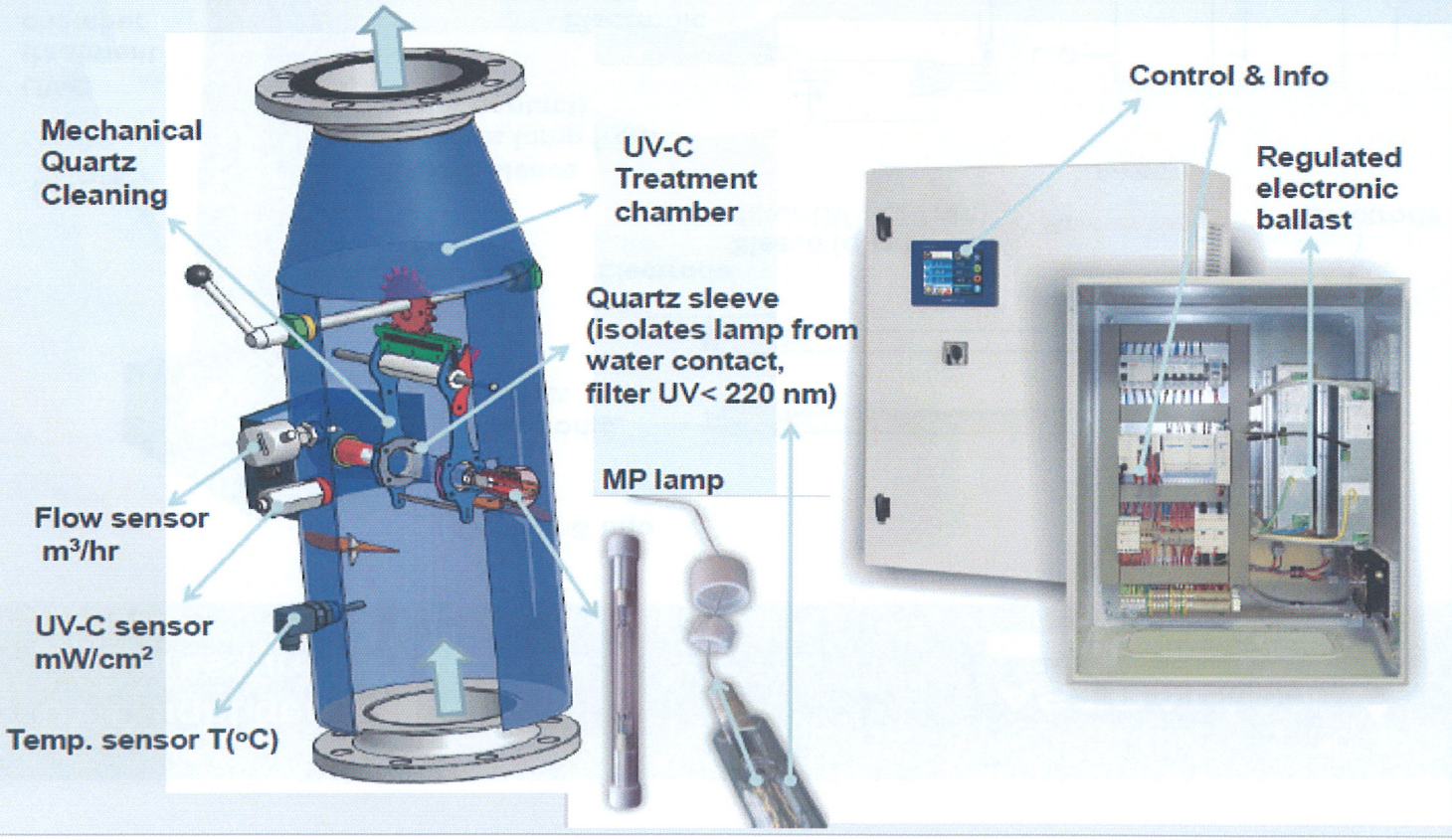






UV-C light generation
Medium pressure (MP) systems

ASTRALPOOL
HELIOX UV



News in Heliox UV LP and MP

ASTRALPOOL
HELIOX UV

Heliox UV LP

- Stainless steel and polyethylene versions
- Double lamp versions (LP30 and LP30+)
- Patented Plastic Case (injection mold)
- Fluidra technology (design and manufacturing)
- Lamp "ON" indicator
- Electronic counter for working time and ignitions (lamp lifetime control)
- Flow-switch (optional, included in LP+ versions)
- Versions with integrated pH&ORP control (integral solution)

Heliox UV MP

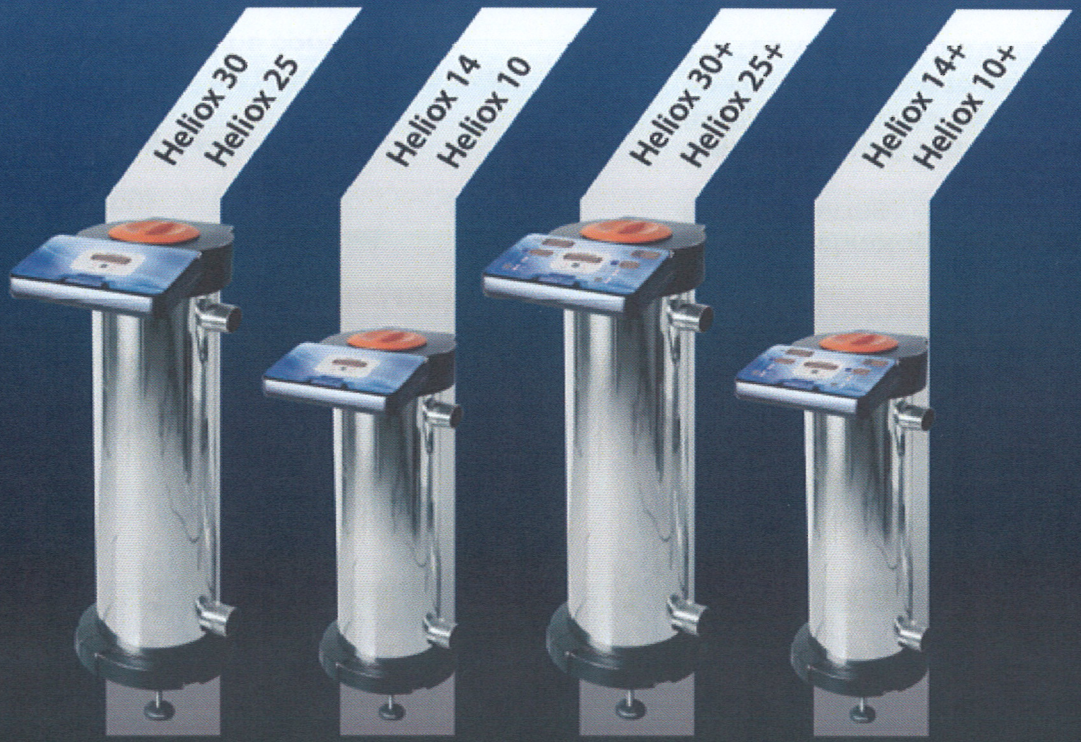
- More compact design (UV reactor)
- Power adjustable between 70 y 100% of nominal, in 1% steps, by self-cooled electronic ballast.
- Fluidra technology (design and manufacturing)
- Calibrated UV-C radiation sensor (mW/cm^2). Precise dose control. Instant power adjustment to process conditions. Energy and lamp lifetime saving.
- Advanced color touch screen. Navigation menu-system for process parameters and files.
- Advanced versions: MODBUS communication and embedded web.
- UL & NSF Certifications

Training 2013

Heliox UV LP AISI 316L

ASTRALPOOL

HELIOX UV LP AISI 316 L

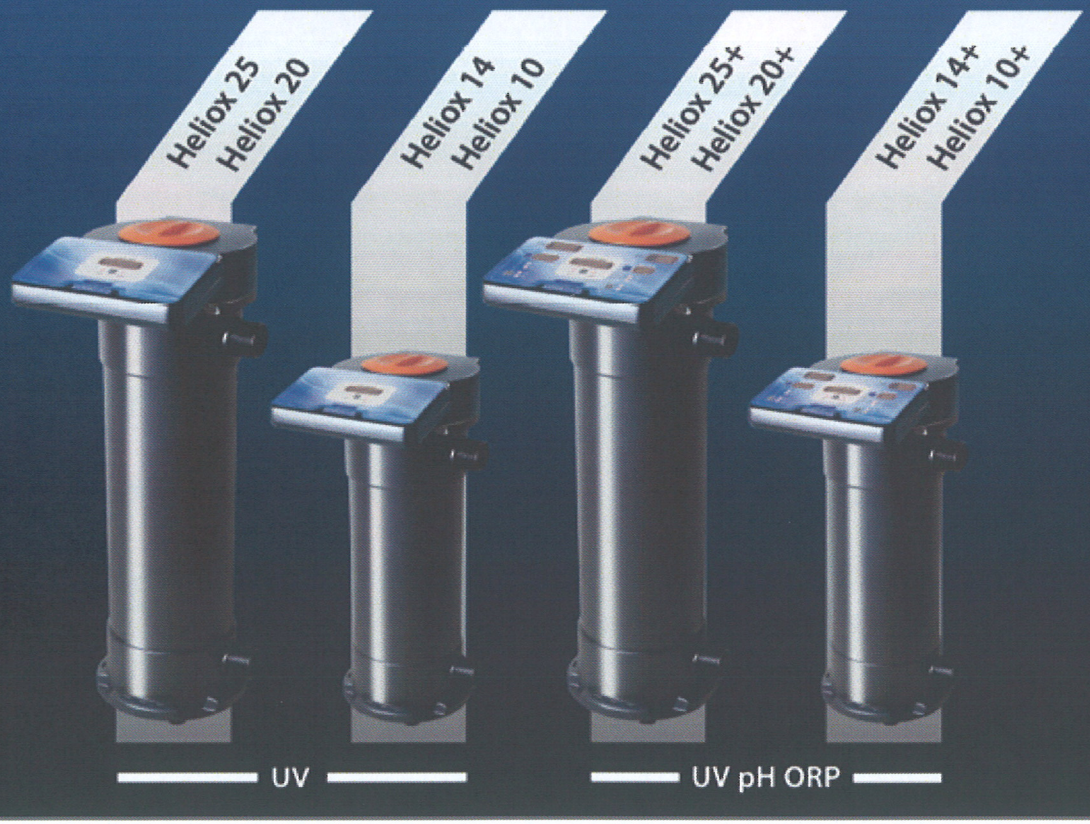


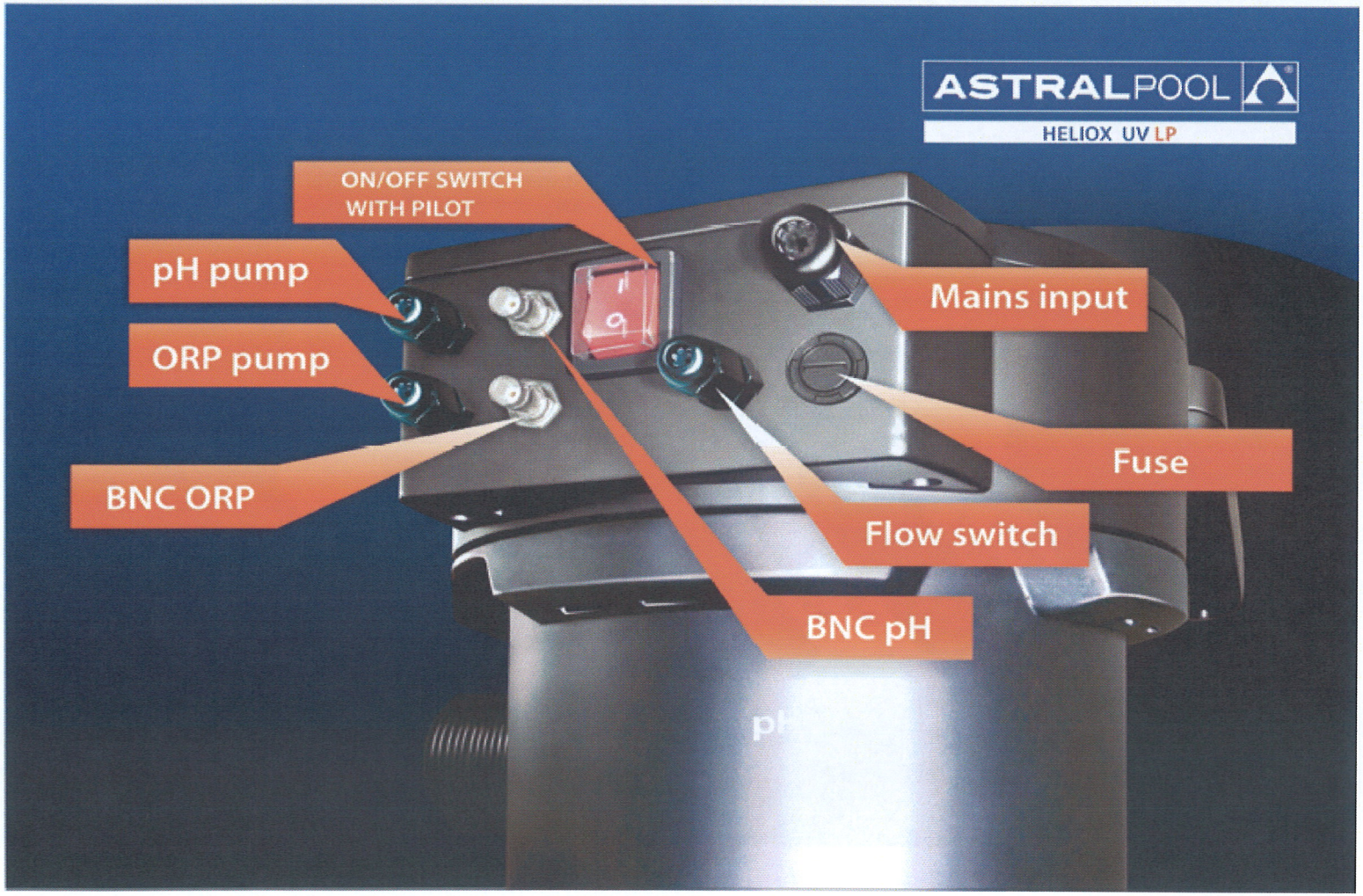
Training 2013

Heliox UV LP PE

ASTRALPOOL

HELIOX UV LP PE



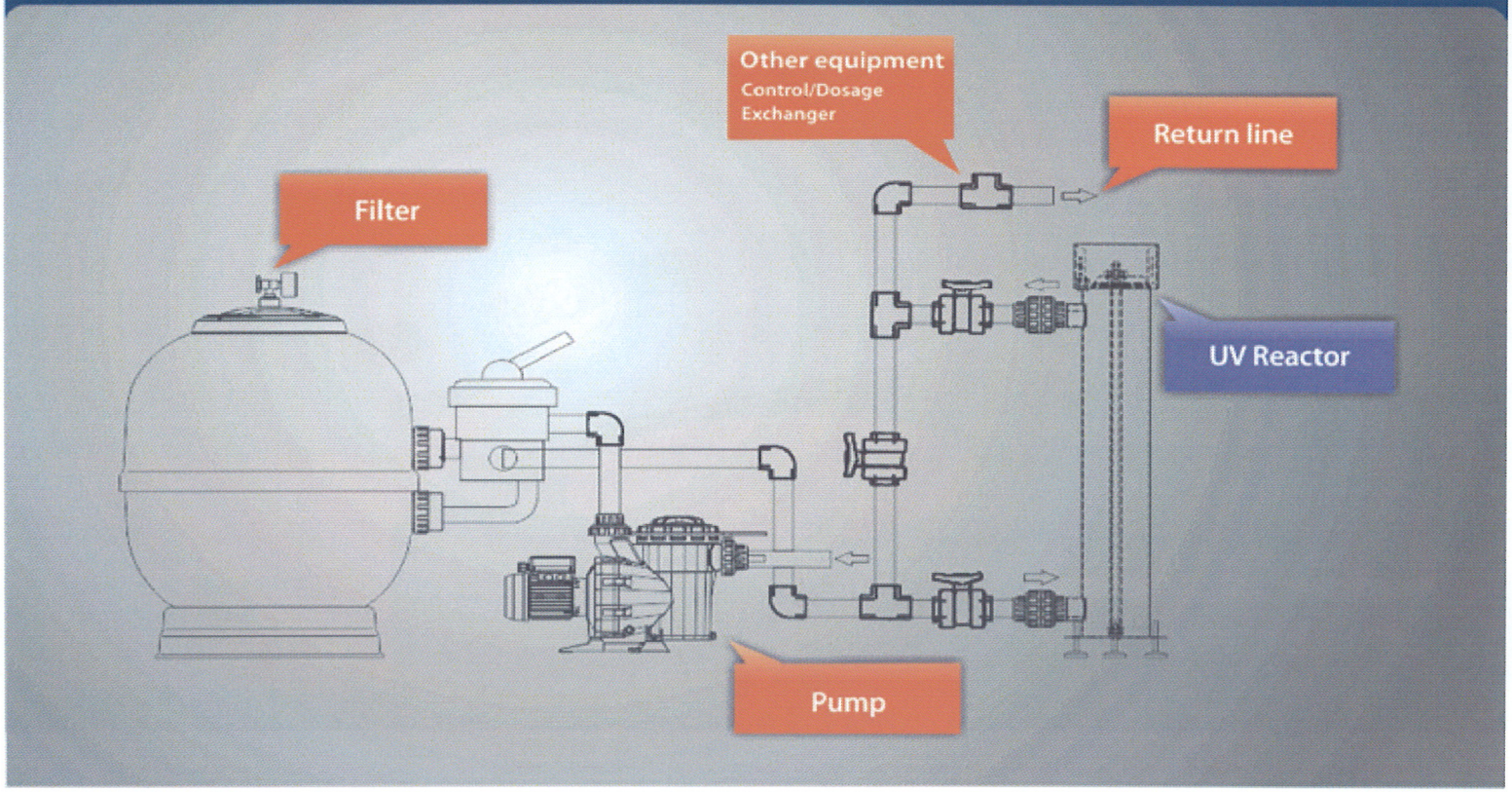

ASTRALPOOL
HELIOX UV LP
ON/OFF SWITCH
WITH PILOT
pH pump
ORP pump
BNC ORP
Mains input
Fuse
Flow switch
BNC pH


UV system info
Total Lamp hours
Total Lamp ignitions
ON Indicator
Alarms
Temperature (optional)
Flow
ASTRALPOOL
HELIOX UV LP
pH Control
pH range: 0.0/9.9
Control range: 7.0/7.8
Config: Acid/Base
Alarms: high/low
Calibration: fast/standard
Control ORP
ORP range: 0/999 mV
Control range: 650/850 mV
Config: Oxidant/Reductor
Alarms: high/low
Calibration: standard

Heliox UV LP system installation

INSTALLATION

ASTRALPOOL
HELIOX UV LP

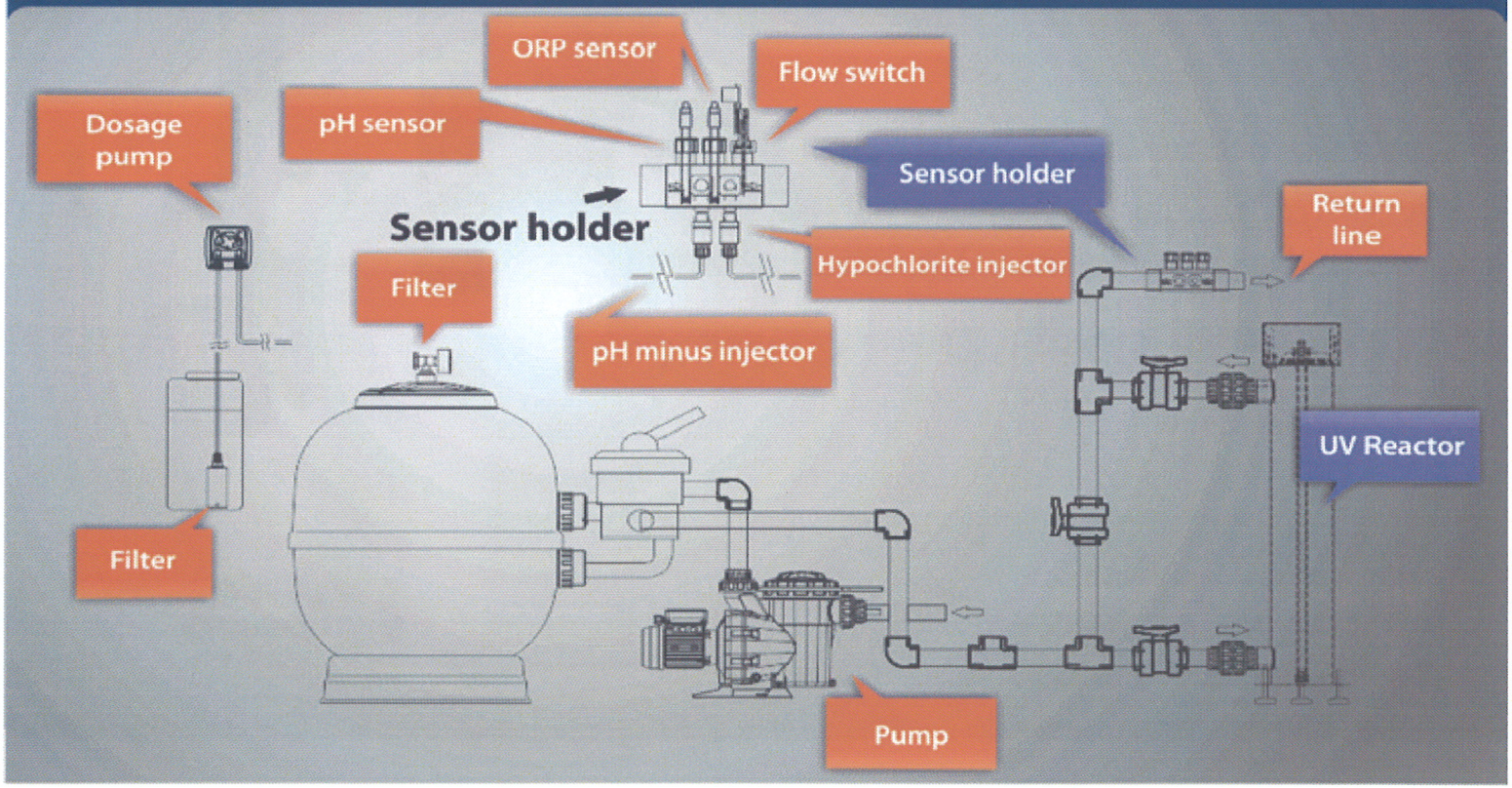


Heliox UV LP+ system installation

INSTALLATION OF VERSIONS WITH INTEGRATED PH/ORP CONTROLLER

ASTRALPOOL

HELIOX UV LP+




ASTRALPOOL
HELIOX UV MP
HELIOX UV MP 50
HELIOX UV MP 80
HELIOX UV MP 140
HELIOX UV MP 300
HELIOX UV MP 450
HELIOX UV MP 675

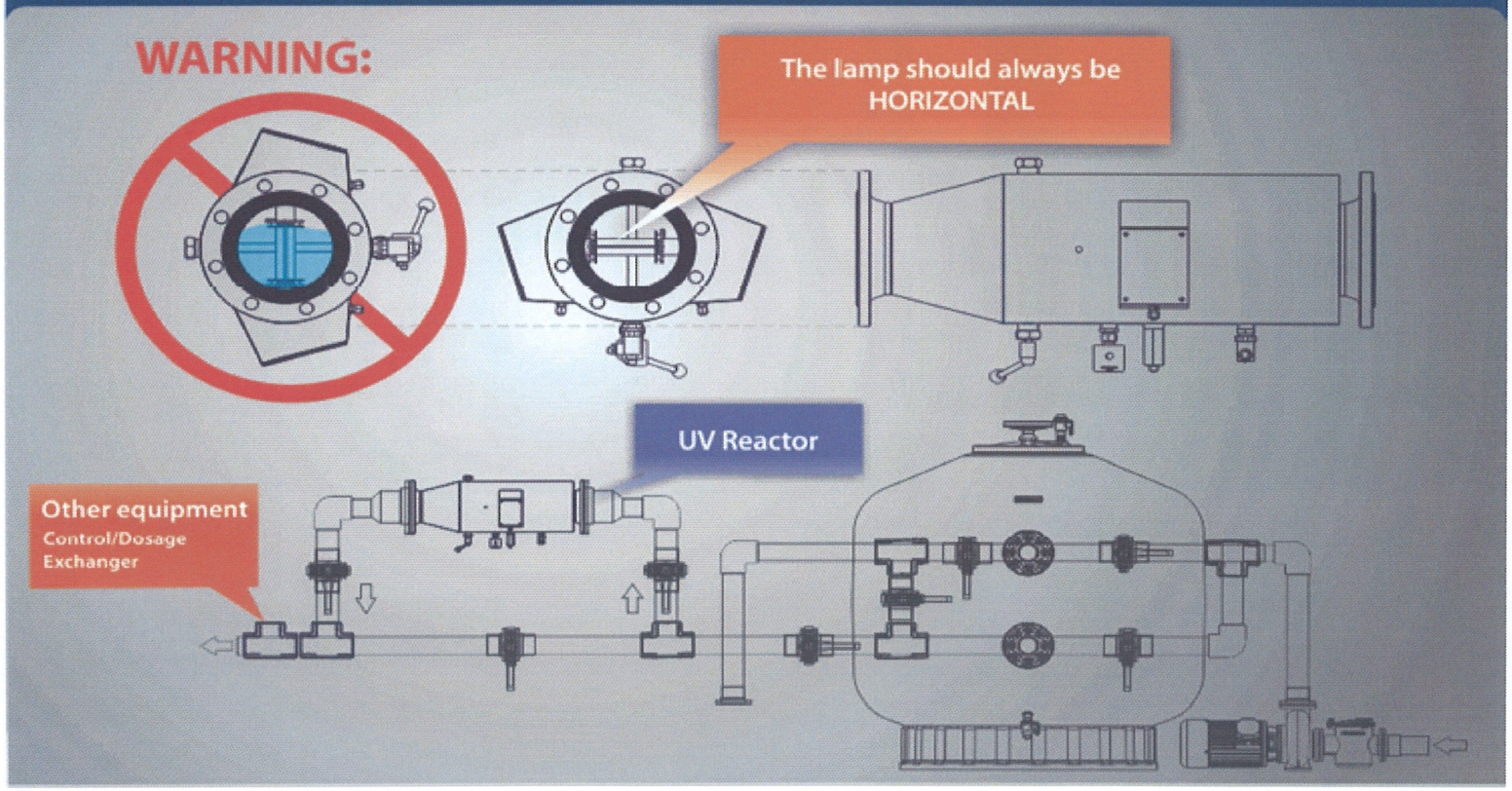

ASTRALPOOL
HELIOX UV MP

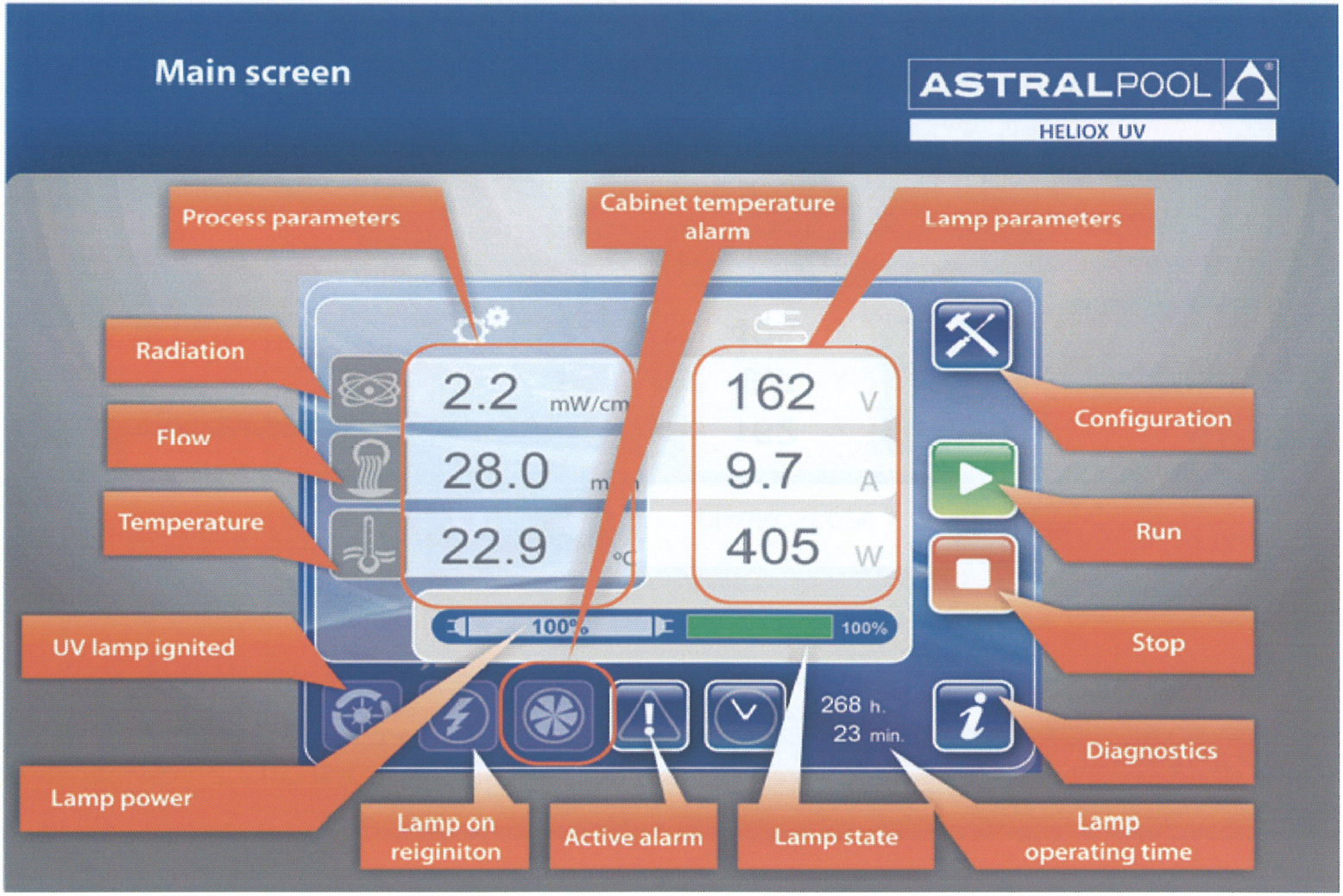
Heliox UV MP system installation

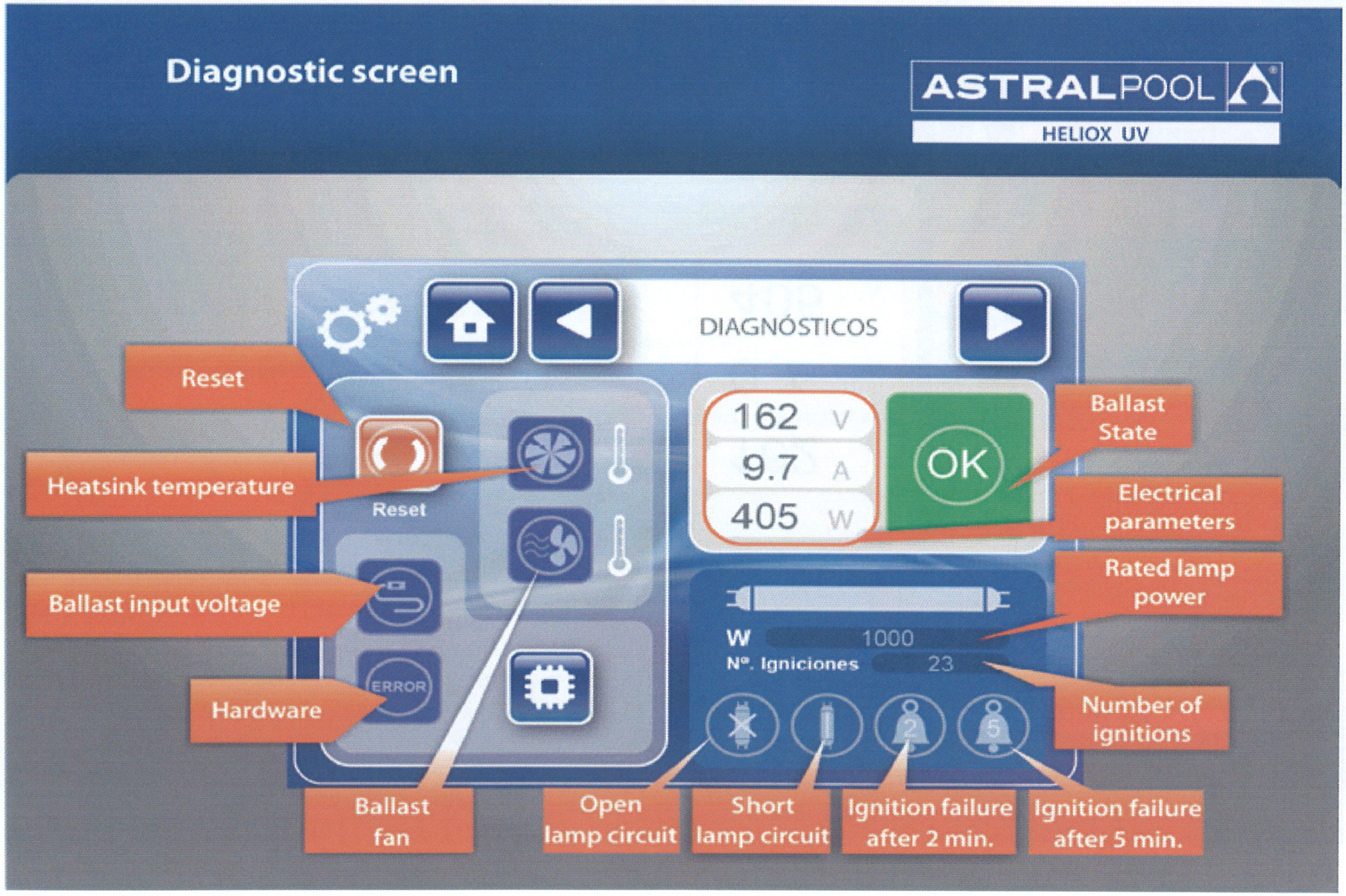
HORIZONTAL INSTALLATION

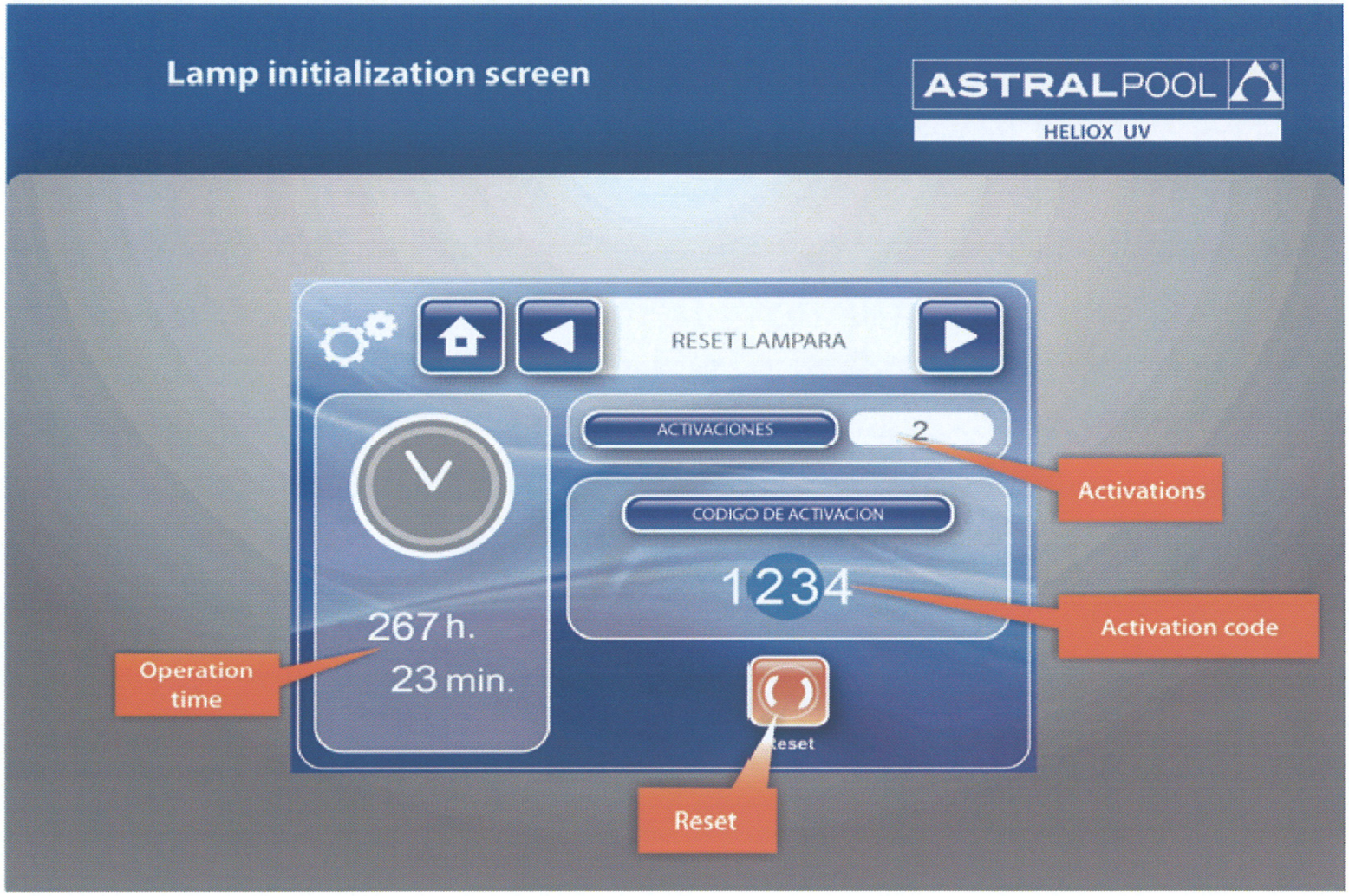
ASTRALPOOL

HELIOX UV MP




Main screen
ASTRALPOOL
HELIOX UV
Process parameters
Cabinet temperature alarm
Lamp parameters
Radiation
Flow
Temperature
2.2 mW/cm
28.0
22.9 °C
162 V
9.7 A
405 W
100%
100%
268 h.
23 min.
Configuration
Run
Stop
Diagnostics
UV lamp ignited
Lamp power
Lamp on reiginiton
Active alarm
Lamp state
Lamp operating time


Diagnostic screen
ASTRALPOOL
HELIOX UV
DIAGNÓSTICOS
Reset
Heatsink temperature
Ballast input voltage
Hardware
Ballast fan
Reset
ERROR
162 V
9.7 A
405 W
OK
Ballast State
Electrical parameters
Rated lamp power
W 1000
Nº. Igniciones 23
Number of ignitions
Open lamp circuit
Short lamp circuit
Ignition failure after 2 min.
Ignition failure after 5 min.


Lamp initialization screen
ASTRALPOOL
HELIOX UV
RESET LAMPARA
ACTIVACIONES
2
CODIGO DE ACTIVACION
1234
267 h.
23 min.
Reset
Activations
Activation code
Operation time
Reset

Screen of active alarms

ASTRALPOOL
HELIOX UV



UV MP Installation - Monitoring data

ASTRALPOOL
HELIOX UV

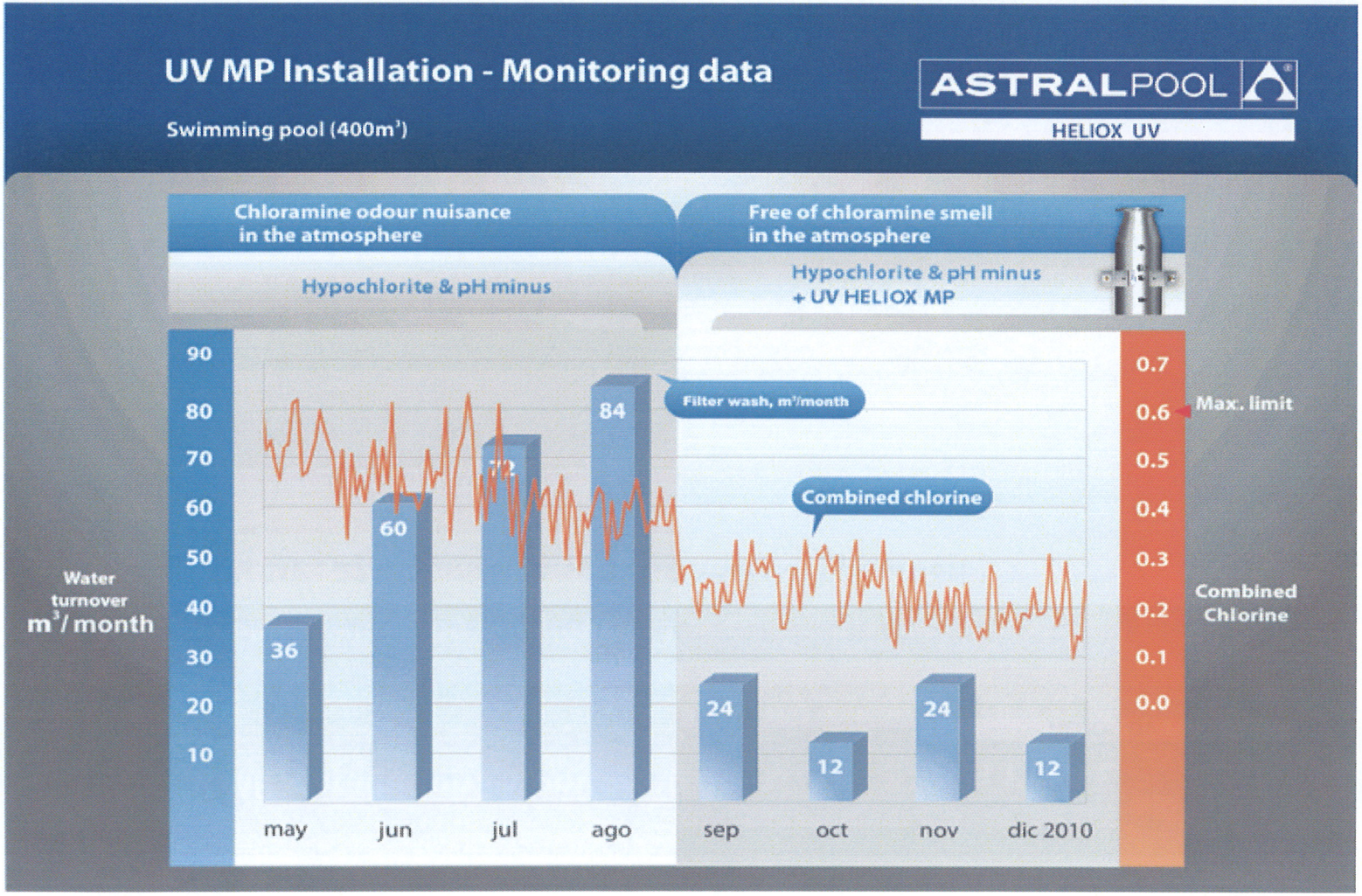
Public Swimming pool (400 m³)

UV MP : 271 ignitions and 2.358 hours of operation

Pool volume	400 m³
Recirculation pumps	2 x 44 m³/h (88 m³/h total)
Filters (diameter)	2 (1800 cm.)
Return line (diameter)	140 mm
Filtration time (hours/day)	18
Water temperature	29ºC
Water consumption per wash	12 m³
Heliox UV MP model installed	MP 80 (1 KW lamp @ 70% : 0.7 KW)
pH control (pHminus)	7.2
Users /day (average)	50

Average savings in filter washes

71%	1.5 m³/day	4.65 €/day	1,697 €/year
			548 m³/year


UV MP Installation - Monitoring data
Swimming pool (400m³)
ASTRALPOOL
HELIOX UV
Chloramine odour nuisance in the atmosphere
Hypochlorite & pH minus
Free of chloramine smell in the atmosphere
Hypochlorite & pH minus + UV HELIOX MP
Water turnover m³/month
90
80
70
60
50
40
30
20
10
36
60
72
84
24
12
24
12
may
jun
jul
ago
sep
oct
nov
dic 2010
Filter wash, m³/month
Combined chlorine
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Max. limit
Combined Chlorine

UV MP Installation - Monitoring data

ASTRALPOOL
HELIOX UV

Leisure pool (100 m³)

UV MP: 194 ignitions and 2.115 hours of operation

Pool volume	100 m³
Recirculation pumps	2 x 98 m³/h (196 m³/h total)
Filters (diameter)	2 (1800 cm.)
Return line (diameter)	200 mm.
Filtration time (hours/day)	18
Water temperature	31ºC
Water consumption per wash	12 m³
Heliox UV MP model	MP 140 (3 KW lamp @ 70% : 2.1 KW)
pH control (pH minus)	7.2
Users / day (average)	60

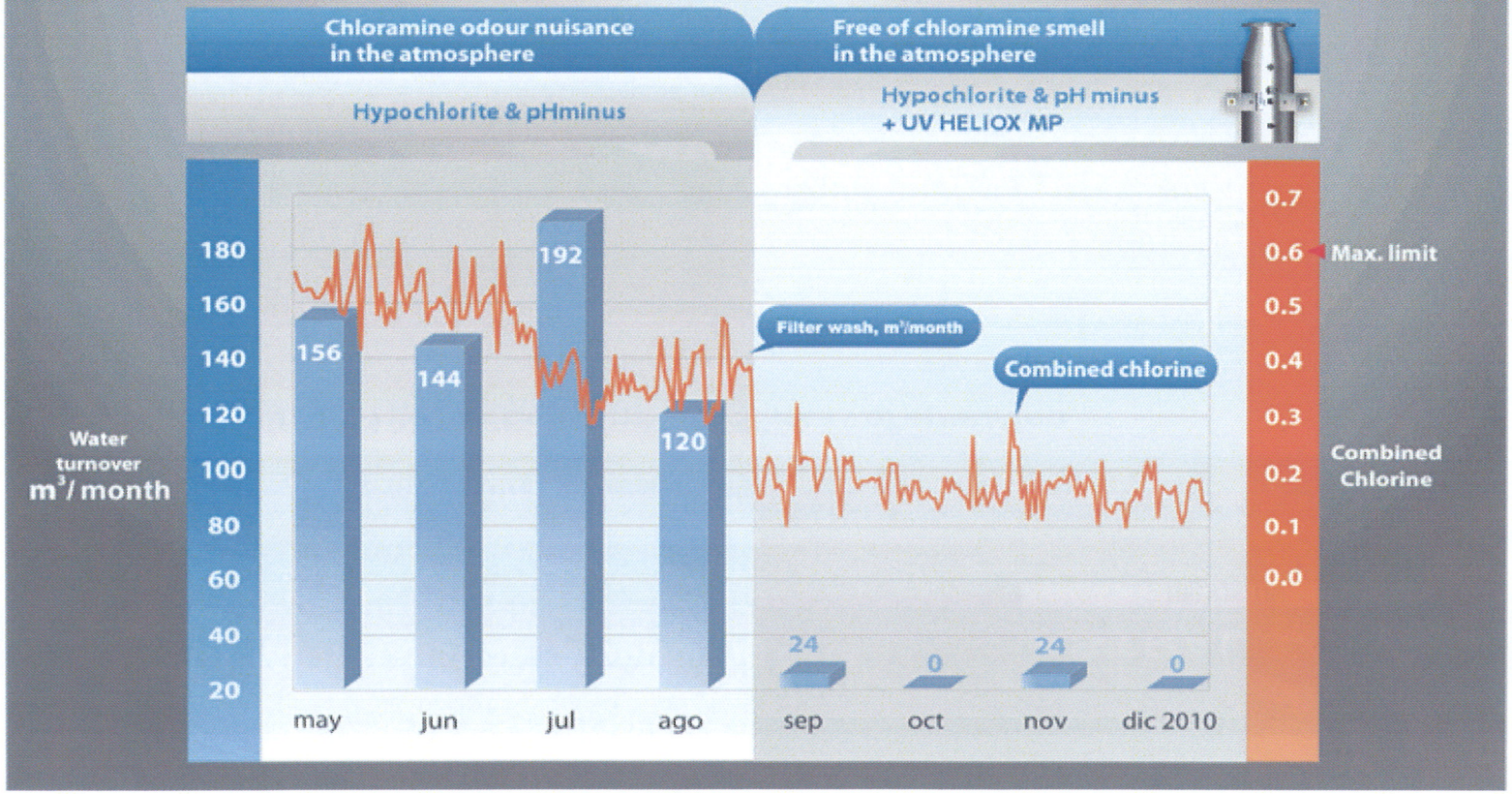
Average savings in filter washes

87%	4.46 m³/day	15.6 €/day	5,697 €/year
			1,628 m³/year

UV MP Installation - Monitoring data

Leisure pool (100m³)

ASTRALPOOL
HELIOX UV



UV LP Installation - Monitoring data

ASTRALPOOL
HELIOX UV

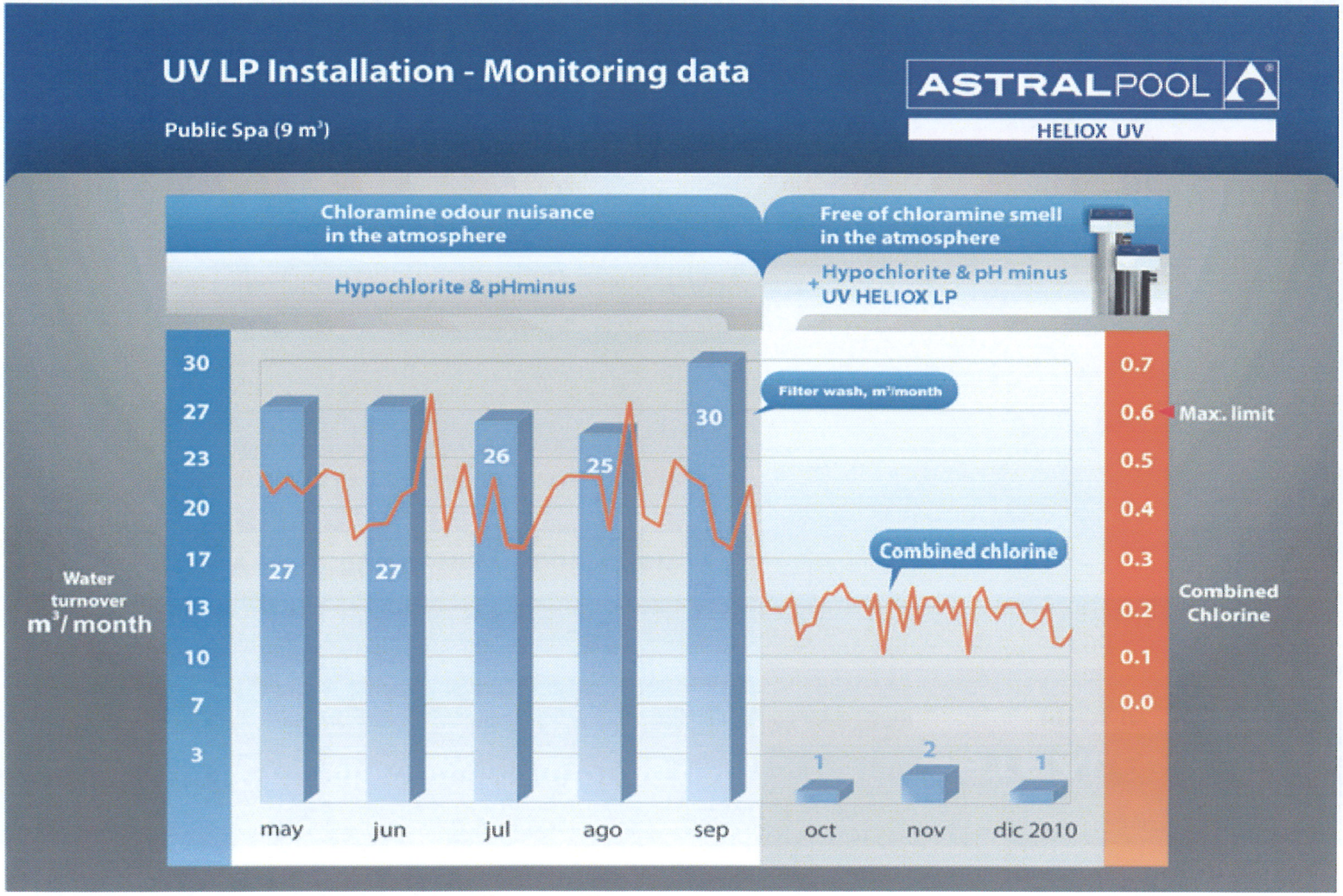
Public Spa (9 m³)

UV LP: 2.086 hours of operation

Pool volume	9 m³
Recirculation pump	14 m³/h
Filter (diameter)	800 mm.
Return line (diameter)	50 mm.
Filtration time (hours/day)	24
Water temperature	34ºC
Water consumption per wash	1 m³
Heliox UV LP model installed	UV LP 14 AISI316 + UV LP 25+ AISI316
pH control (pH minus)	7.2
Users/day (average)	20

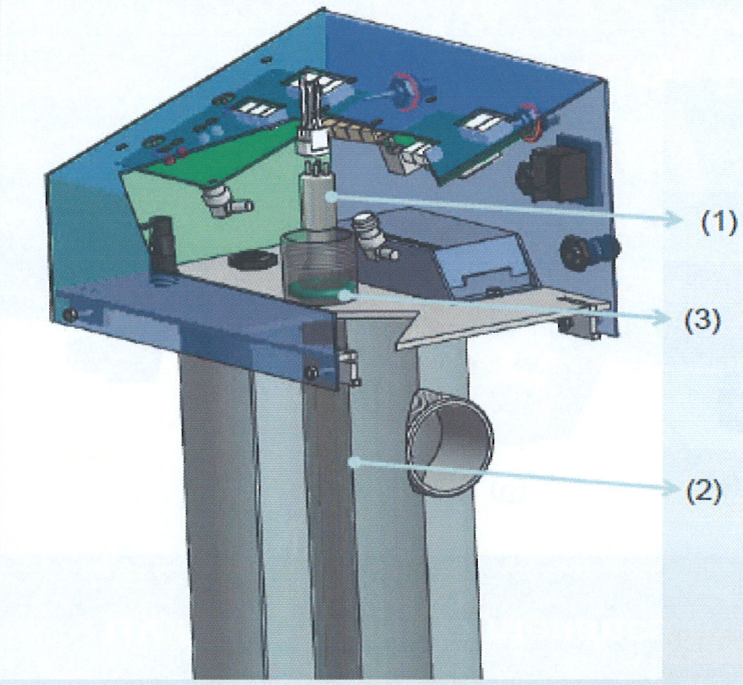
Average savings in filter washes

95%	0.86 m³/day	3.01 €/day	1,099 €/year
			310 m³/year


UV LP Installation - Monitoring data
Public Spa (9 m³)
ASTRALPOOL
HELIOX UV
Chloramine odour nuisance in the atmosphere
Hypochlorite & pHminus
Free of chloramine smell in the atmosphere
+ Hypochlorite & pH minus
UV HELIOX LP
Water turnover m³/ month
30
27
23
20
17
13
10
7
3
27
27
26
25
30
Filter wash, m³/month
Combined chlorine
1
2
1
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Max. limit
Combined Chlorine
may
jun
jul
ago
sep
oct
nov
dic 2010

UV LP – Basic Maintenance

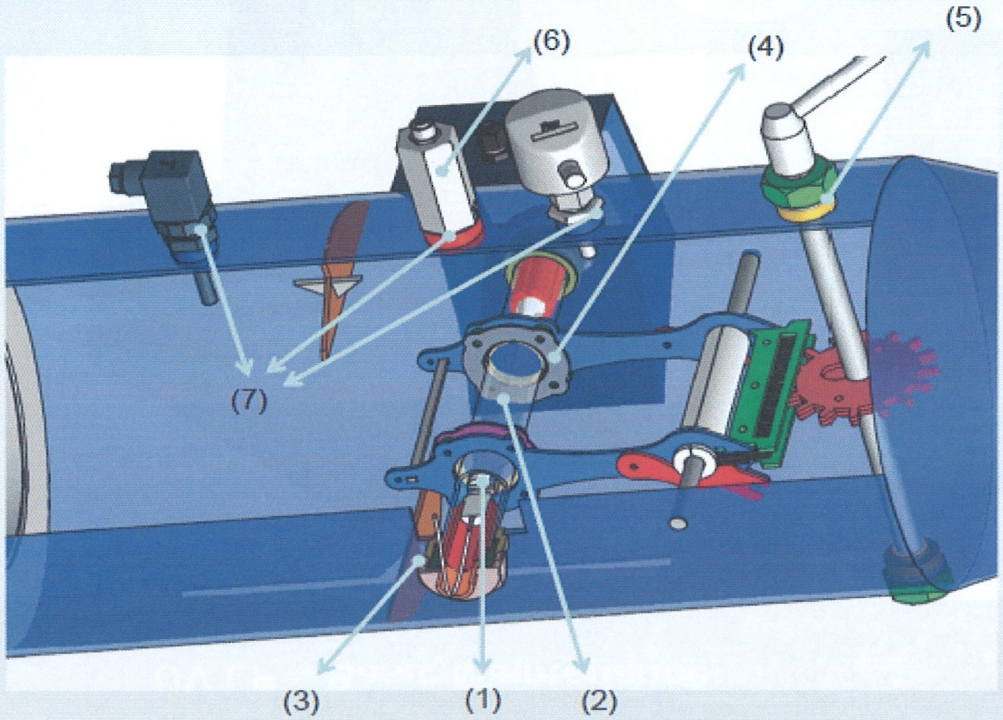
ASTRALPOOL
HELIOX UV



Heliox UV LP	Maintenance
(1) LP lamp	13.000 hrs.
(2) Manual LP quartz sleeve cleaning	1 year, recommended
(3) Sleeve-body seals	13.000 hrs., with each lamp change
(4) pH/ORP sensor calibration (LP+)	1 year

UV MP – Basic Maintenance

ASTRALPOOL
HELIOX UV



Heliox UV MP	Maintenance
(1) MP lamp	8.000 hrs.
(2) MP quartz sleeve	8.000 hrs. (with each lamp change)
(3) O-rings (Sleeve-AISI 316 body)	
(4) Quartz sleeve cleaning system PTFE seal	
(5) Quartz Cleaning system shaft seal	
(6) UVC sensor cleaning	3-6 months
(7)Sensor seals	1 year
(8) Power box fan filter	6 months
(9) pH control @ 7.2	Recommended

FLUIDRA

MAKING
WATER
PERFORM

RolaChem – Dosing System

Callum Ross - AstralPool Australia

POOL & WELLNESS | WATER TREATMENT | FLUID HANDLING & IRRIGATION | PROJECTS | INDUSTRY

RolaChem 9 Series

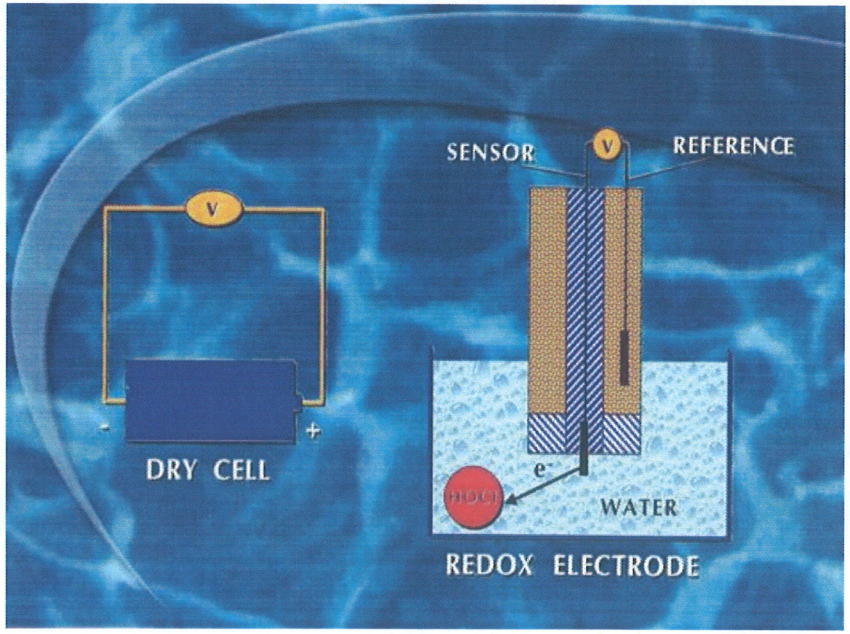
- What is RolaChem?
- The RolaChem 9 Series complete range.
- Application.
- Chlorine and pH
- Features and Benefits.
- Installation

What is RolaChem?

- RolaChem dosing units automatically control the pH and/or sanitiser level in a swimming pool through the use of peristaltic pumps and intelligent sensor probes.
- The control of sanitiser levels in managed through the ORP principle. ORP stands for **O**xidisation **R**eduction **P**otential.
- Standard pool test kits measure the PPM (parts per million) level of sanitiser in the water. This is a quantity of available sanitiser.
- ORP measures the activity of the sanitiser in the water rather than the quantity. ORP is a far more effective way to ensure a healthy and clean pool.
- 650mV ORP is considered safe water by the World Health Organisation.

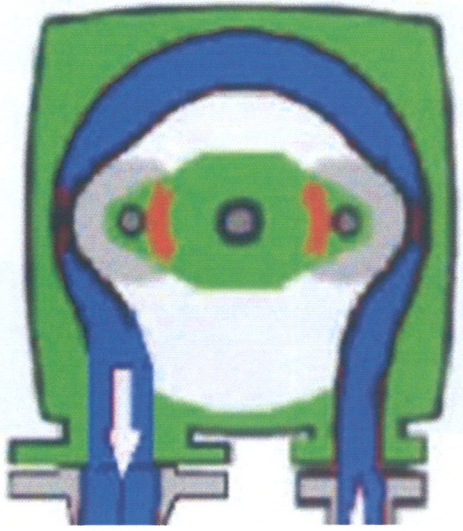
Key Components

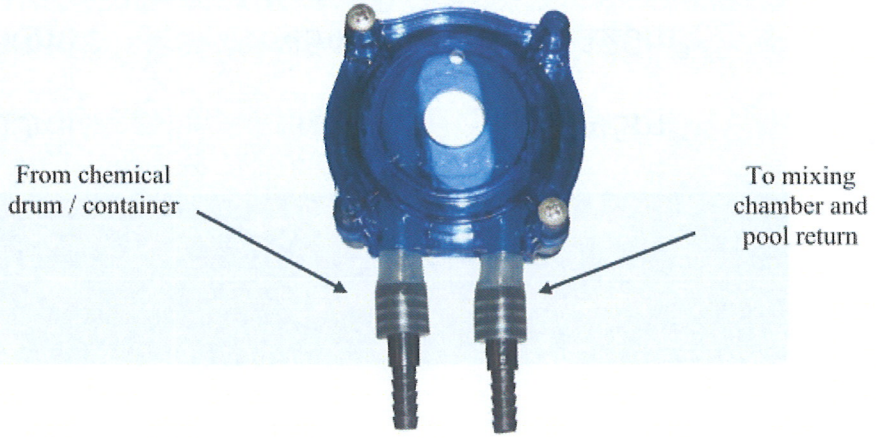
- Operation of an ORP / pH probe
  - Similar to a dry cell battery
  - Measures the electron draw from the titanium wire and compares to the reference



Key Components

- Operation of a peristaltic pump
  - As central “H” block turns, liquid is forced through tube
  - Pump is self priming and does not contact with liquid pumped





Sizing and Selection

Motor Size	Litres Per Hour		Maximum Size Pool	
RPM *	Minimum	Maximum	Chlorine	Acid
1 RPM	20ml	200ml	N/A	$45m^3$
5RPM	100ml	850ml	$45m^3$	$120m^3$
20 RPM	800ml	3,000ml	$120m^3$	$250m^3$
100 RPM	3,000ml	15,000ml	$250m^3$	N/A

* RPM - Revolutions Per Minute

The RolaChem 9 Series Complete Range.

- RolaChem 9 Series RC9
  - A combined ORP and pH management system
- RolaChem 9 Series RO9
  - An ORP only management system
- RolaChem 9 Series RP9
  - A pH only management system

Application - RolaChem 9 Series RC9

- Swimming pools where owners and/or operators want to significantly reduce their physical participation in ORP and pH management
- Consumers that prefer fresh water over salt water
- Ideal for indoor or covered pools as the RC9 will react to changes in environment and bather load and adjust chlorine dosing accordingly
- Ideal for commercial applications that require regular monitoring of water chemistry
- Sized correctly a single unit will manage a 250,000 litre pool

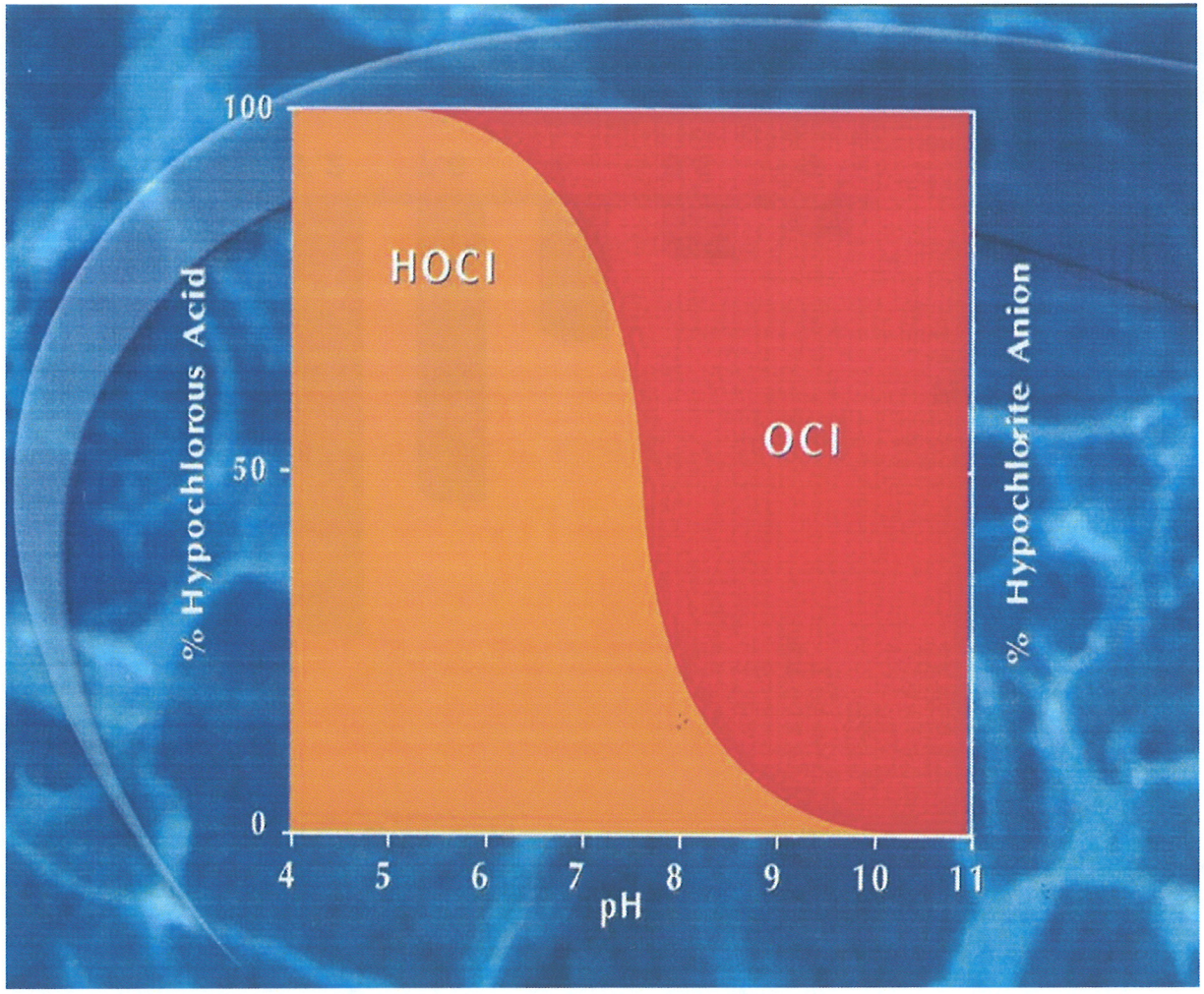
Application - RolaChem 9 Series RO9

- Pool owners with a fresh water preference that do not want to manually dose chlorine
- Ideal for indoor or covered pools. The RO9 will react to changes in environment and bather load and adjust chlorine dosing accordingly
- Ideal for commercial applications that require regular monitoring of water chemistry
- Sized correctly a single unit will manage a 250,000 litre pool

Application - RolaChem 9 Series RP9

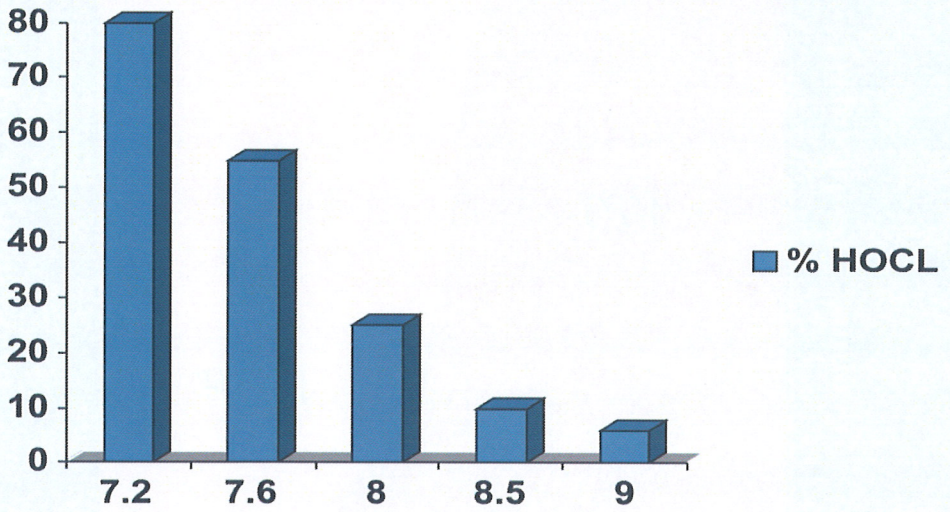
- For pool owners wanting to experience salt water chlorination but reduce their physical participation pH maintenance schedule.
- For those busy consumers without time to check and correct pH
- Ideal for commercial applications that require regular monitoring of water chemistry
- Sized correctly a single unit will operate a 250,000 litre pool

Chlorine – the importance of pH



Chlorine – the importance of pH

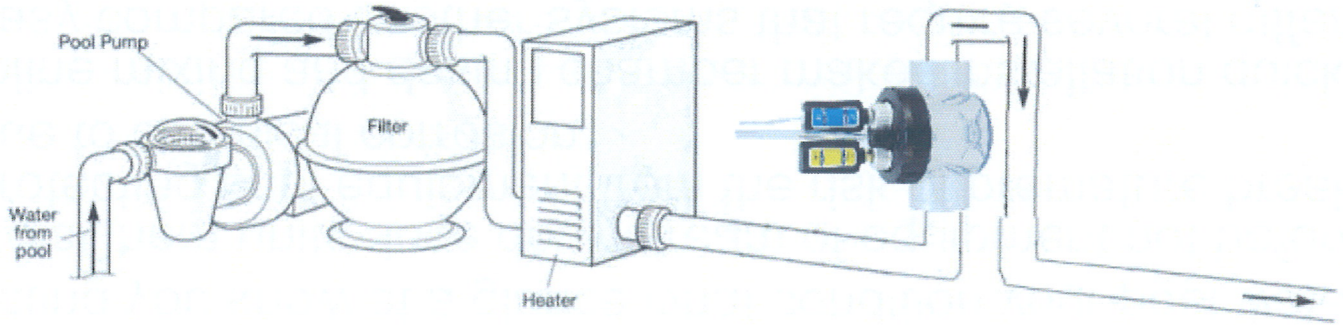
- pH will determine the level of Hyperchlorus acid (good sanitiser) produced.

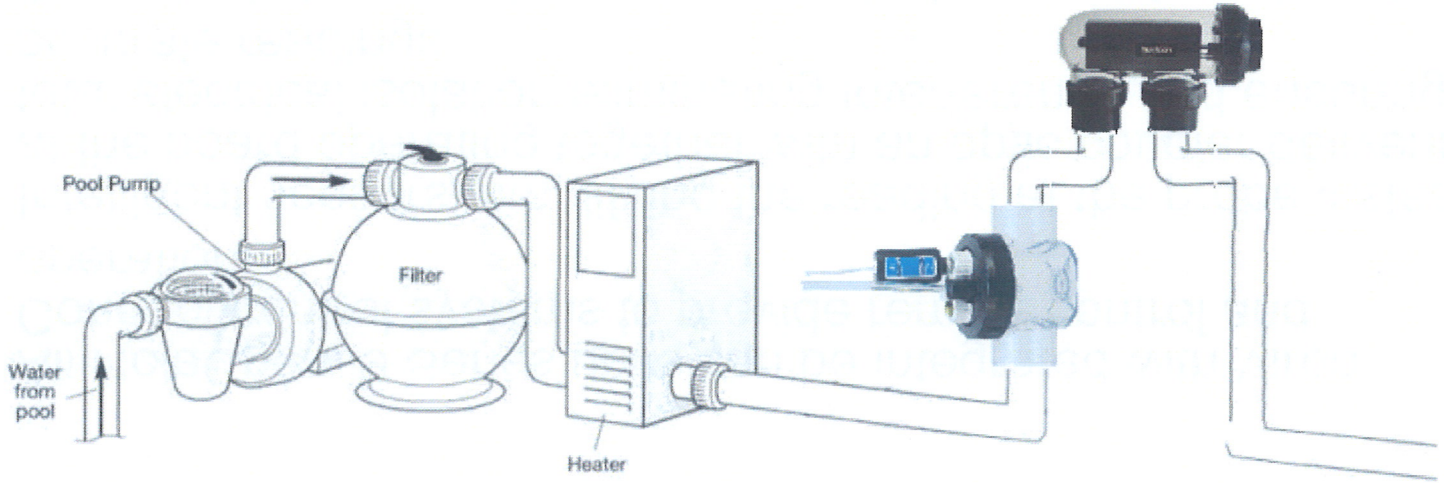


Features and Benefits

- All RolaChem 9 Series units can be integrated with Viron Connect control systems to provide remote control and operation.
- Intelligent sensors, amplifying the reading at the probe instead of at the board operating together with an optic coupler delivering total electrical isolation eliminating interference and ensuring accurate readings.
- Fussy logic learning from previous dosing rates to arrive at set points
- Continuously controls and displays pH and / or ORP levels letting you know at a glance what condition your pool water is in.
- RolaChem units dose downstream of equipment not before, protecting pool equipment from the risk of premature break down due to chemical corrosion.
- Inline mixing and dosing chamber makes installation quick and easy compared to other systems that require several different test and injection points plumbed into the system

Installation





FLUIDRA

MAKING
WATER
PERFORM

Viron eVo Pump

Callum Ross – AstralPool Australia

POOL & WELLNESS | WATER TREATMENT | FLUID HANDLING & IRRIGATION | PROJECTS | INDUSTRY

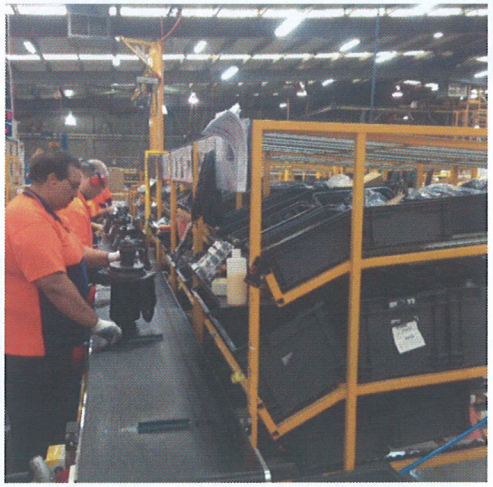
AstralPool Australia





AstralPool Australia









AstralPool Australia













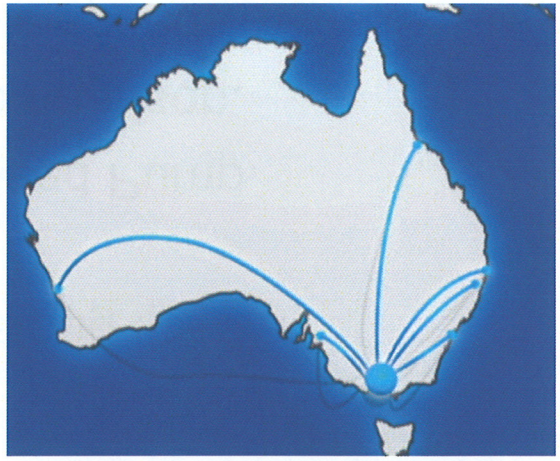
Where do we live?



















Training Overview

- Why variable speed?
- Benefits of operating variable speed pumps
- Viron pump timeline
- What have we learnt along the way?
- Pump affinity laws.
- Viron eVo Variable Speed Pump.
- Competitor product comparison.
- How to use the variable speeds
- Construction and design of the Viron eVo
- A case study in energy efficiency

Why Variable Speed?

- Historical conflicts and compromises with single speed pump use
  - Excessive water flow when filtering
    - Ideal filtration flow rates are 28m3/m2/hour
    - Compromised flow rate is up to 50m3/m2/hour
    - High flow necessary to back wash filter, vacuum pool, operate water features, spa jets
- Resulting in high pressure, poor filtration efficiency, premature wear on filter, plumbing and other components

Filter Model	Surface Area	Max Flow rate
Cantabric 400mm outlet 1 ½"	0.13m²	6.5m³ per/hr
Cantabric 500mm outlet 1 ½"	0.20m²	10m³ per/hr
Cantabric 600mm outlet 1 ½''	0.28m²	14m³ per/hr
Cantabric 750mm outlet 1 ½"	0.44m²	22m³ per/hr
Cantabric 750mm outlet 2"	0.44m²	22m³ per/hr

Why variable speed

- What about a 2 speed pump?
  - 4 pole motor
- 2 speed pumps require a high top speed and flow in order to deliver usable low speed and flow.
  - Low speed will always be half the top speed

Filter Model	Surface Area	Max Flow rate	Top speed on 2 speed pump
Cantabric 400mm outlet 1 ½"	0.13m²	6.5m³ per/hr	8m³ per/hr
Cantabric 500mm outlet 1 ½"	0.20m²	10m³ per/hr	12.4m³ per/hr
Cantabric 600mm outlet 1 ½''	0.28m²	14m³ per/hr	17.4m³ per/hr
Cantabric 750mm outlet 1 ½"	0.44m²	22m³ per/hr	27.3m³ per/hr
Cantabric 750mm outlet 2"	0.44m²	22m³ per/hr	27.3m³ per/hr

Why Variable Speed?

- In a perfect world……
  - Gentle low velocity water flow for filtration
  - Vigorous high velocity water for backwashing
  - High flow for spa jets and water features
  - High flow for vacuuming pool
- Single speed pumps have always forced compromise

Why variable speed

- Commercial filtration – A working example
  - Ideal filtration flow rate is 25m³ per/hr per square metre
  - Ideal backwash flow rate is 40m³ per/hr per square metre.
  - Filtration flow rate is 62% of backwash flow requirements
  - This is achieved in commercial pools by plumbing one pump to two media filters – Isolating one filter whilst backwashing.
- This is where it all began – The first Viron 3 speed pump
  - Using commercial filtration as our guide.
  - We selected 1900 rpm as our first low speed
  - Creating a filtration flow rate that was 67% of the backwash flow.

Why Variable

- Conflicts → Perfect Word → 3 speed solution
- Running the pump at lower speeds created many advantages
  - Low velocity, gentle filtration captures finer debris delivering amazing water clarity
  - High Speed for priming, back wash, vacuum, water features, jets
  - Medium speed for suction cleaners, heat pumps, gentle jet operation
  - Low speed for filtration – 95% of pump operation
  - Significant reduction in heat and friction increases pump life expectancy
  - Filters and plumbing last longer with reduced flow pressures
  - Seals and gaskets last longer with reduced pressures
  - Significantly less noise 6dBa below standard pump
    - 6db is perceived as 75% reduction in noise by human ear

Why Variable Speed Pump Summary

- Perfect flow rate for highest clarity water
- Perfect flow rate for backwash
- Flexible enough for all applications (jets, water features, heaters)
- Lower pressure means longer filter and equipment life
- Lower speed means longer pump life (motor runs cooler, bearings and seals have lower velocity)
- Low noise means less intrusive

The One Benefit we haven't covered

It pays for itself

Proving it - Pump Affinity Laws

- Understanding pump affinity laws will allow you to explain, demonstrate and calculate how a change in motor speed impacts;
  - flow rates against resistance,
  - power consumption and
  - operating costs

1. The change in flow is proportionate (equal) to the change in speed
   - If we halve the speed we halve the flow
2. The change in pressure is equal to the speed change factor squared
   - Operating pressure will be ¼ of the original pressure
3. The change in power consumption is equal to the speed change factor cubed
   - Power consumption will be 1/8 the original consumption

Pump Affinity Laws – Working explanation

- Take a pump with the following characteristics.
  - Motor Speed: 2850 rpm
  - Flow rate: 302 lpm
  - Pressure: 8 metres head
  - Power input: 983 Watts

High speed parameters of the original fixed three speed Viron P300

- We set the low speed at 1900 rpm – a reduction factor of 0.67
  - 1900 ÷ 2850 = 0.67
  - Applying the factor 0.67 to all pump affinity laws we can determine the pumps operating characteristics at the new speed on 1900 rpm.

Pump Affinity Laws – Working explanation

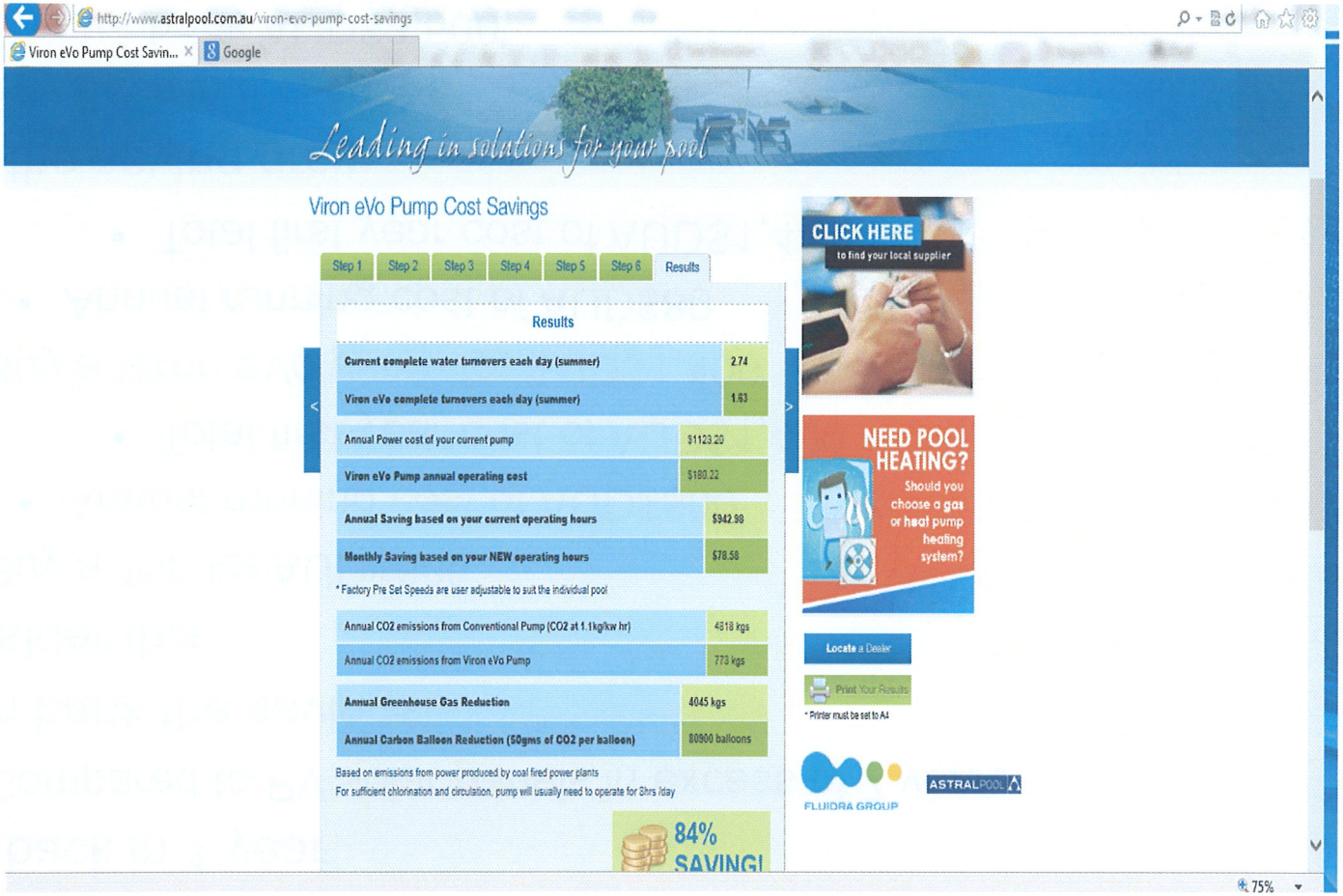
1. The change in flow is proportionate (equal) to the change in speed
   - 302 x 0.67 = 202 lpm
2. The change in pressure is equal to the speed change factor squared
   - 8 x 0.67 x 0.67 = 3.6 metres head
3. The change in power consumption is equal to the speed change factor cubed
   - 983 x 0.67 x 0.67 x 0.67 = 295 Watts

- New low speed operating characteristics
  - Motor Speed: 1900 rpm
  - Flow rate: 202 lpm
  - Pressure: 3.6 metres head
  - Power input: 295 Watts

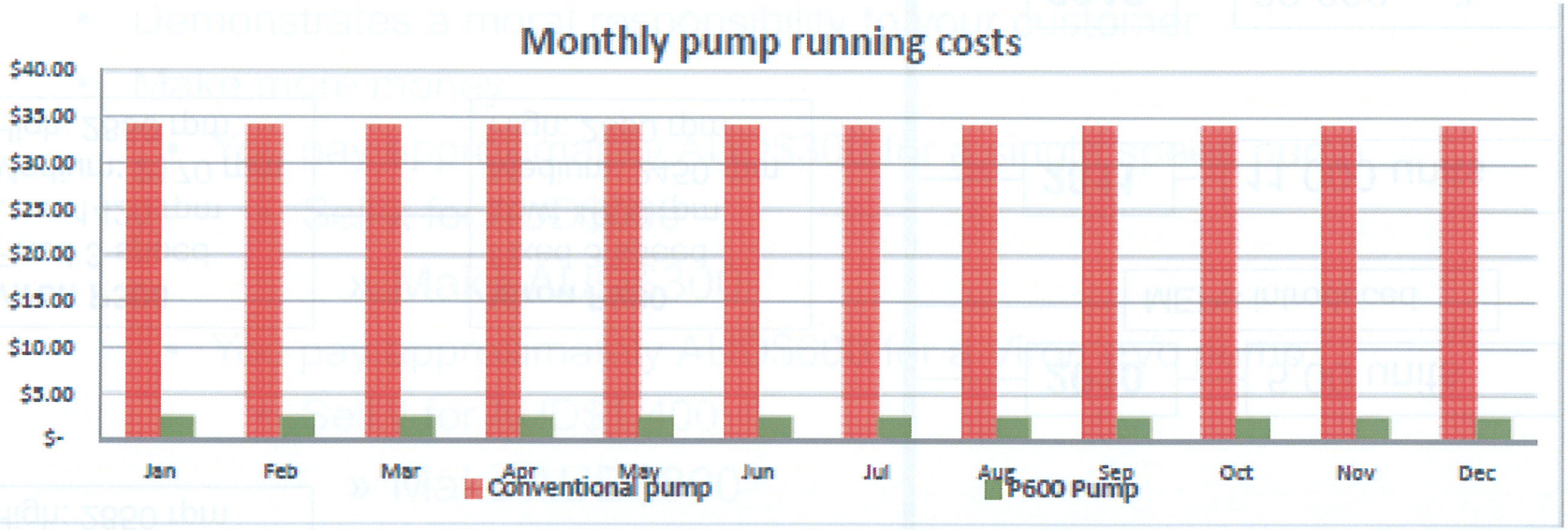
The savings are huge!

- Pay back in 1 year
  - Compared to PV solar panels in excess of 7 years
- Then bank the savings!
- Consider this
  - Buy a 1hp for AUD$600
    - Annual running cost of AUD$800
      - Total first year cost of AUD$1,400
  - Buy a Viron eVo pump for AUD$1,400
    - Annual running cost of AUD$80
      - Total first year cost of AUD$1,480
- And the saving grow
  - Pay back in first year
  - 5 years bank AUD$3,500
  - 10 years bank AUD$7,000

Savings Calculator http://www.astralpool.com.au/viron-evo-pump-cost-savings

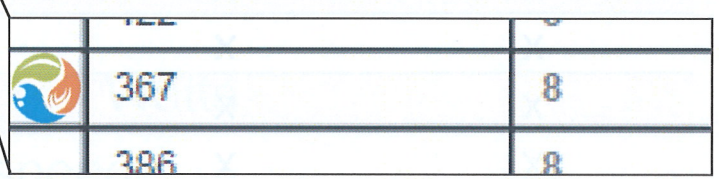


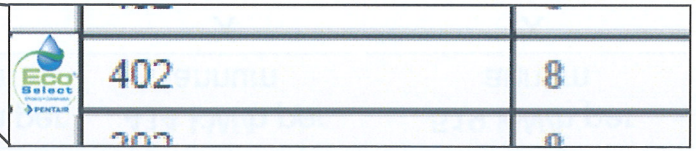
Savings calculator



Brand details			Efficiency details	
Brand	Model Number	Design	Projected Annual Energy Consumption (PAEC) -kWh	Star Rating
Astral	P300 11481	Multi	408	8
Astral	C330 1148108	Multi	722	5.5
Astral	P280 11485	Multi	725	5.5
Astral	VS340 11485-03 Aquatight	Multi	725	5.5
Astral	Platinum	Multi	422	8
Astral	P600 EVO 11553	VSP	367	8
Astral	P280 EVO 11550	VSP	386	8
Astral	Smart VSP 11550-07S	VSP	386	8
Astral	Compass C500	VSP	367	8
Astral	P300 EVO	VSP	374	8
Astral	Viron P320 EVO 11554	VSP	386	8
Balboa	Model 1030017	Single	460	7
Clevaquip	Tristar	Multi	414	8
Clevaquip	Super 2	Multi	457	7
Davey PowerMaster	PMECO	Multi	408	8
Davey PowerMaster	SLSECO	Single	659	6
Davey PowerMaster	SLLECO	Single	654	6
Noria	Duo Energy Smart Pump	Dual	589	6
Pentair	Onga Intelliflo 011014	VSP	396	8
Pentair	Intelliflo VF 011014	VSP	396	8
Pentair	Intelliflo VS-3050	VSP	396	8
Pentair	Intelliflo VS Au Special	VSP	396	8
Pentair	Intelliflo VS+SVRS	VSP	396	8
Pentair	Intellipro VS-3050	VSP	402	8
Pentair	Intellipro VS+SVRS	VSP	402	8
Pentair	Onga Eco800	VSP	392	8
Poolrite	SQ Gemini Twin	Dual	519	7
Reltech	Ecoflo V3	Multi	622	6
Speck	Badu Eco Touch 2	Multi	625	6
Speck	Badu Eco Touch 3	Multi	413	8
Speck	Speck 90-500DS	Dual	625	6
Waterco	Waterco Hydrostorm Eco 100	Multi	589	6
Zodiac	Flo Pro E3	Multi	657	6
Zodiac	Flo Pro E3 (R)	Multi	411	8
Zodiac	Flo Pro ePump WZEP	VSP	447	7

The Viron eVo P600 is the most energy efficient pump on the market





http://www.energyrating.gov.au/products-themes/other/swimming-pool-pumps/voluntary-labelling/

The Australian fixed 3 speed experience

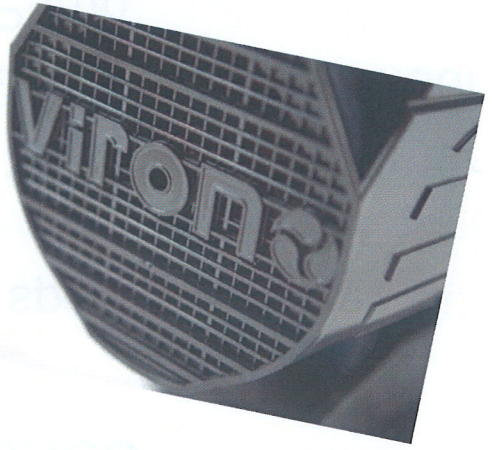
- Started with a variable speed motor limited to 3 speeds – easier to sell and for our trade customers to understand
- Found that we could operate at much less than 200 lpm 12 m3/hour
- Water Clarity peaked at something between 7.2 m3 and 10m3/hour
- Whirlpool's and Forum's raved about the Viron Pump
- Flow best determined by skimming action and chlorinator cell operation

Viron eVo Variable Speed Pump









Viron eVo – Overcoming the barriers

- eVo is AstralPool's evolution in energy efficient products
- Variable Speed
- Design collaboration by AstralPool Australia and our supply partners
- P320 and P600 – right size pump for the right application
- Permanent raw earth magnet design in a rotor and stator design
- Serviceable Motor
- Intuitive and easy to program and operate
- Registered design
- Patent Application

Viron eVo Control – Features and Benefits

- The Viron P600 & P320 eVo incorporates an LCD backlit screen with the following features:
  - In built time clock:
  - Programmable for up to four timer periods each day
  - Timer periods can be disused and 1, 2, 3, or 4 periods selected
  - Different speed (low, medium, high) for each timer period
  - Displays timer and actual RPM of motor and low, medium and high speed can be adjusted to suit your pool
  - Time clock and timer periods can be disabled if connected to an external time clock
  - Can be programmed by a compatible AstralPool remote control or chlorinator to operate at different speeds during different times of the day
  - Enables the priming (start up) speed to be adjustable and the time of the start up speed to be changed from 2 minutes up to 120 minutes

Viron P600 & P320 eVo control panel



High, Medium, Low speeds

LCD Display

On/Off button

Enter to save timers/programs

Speed decrease/increase

Men u

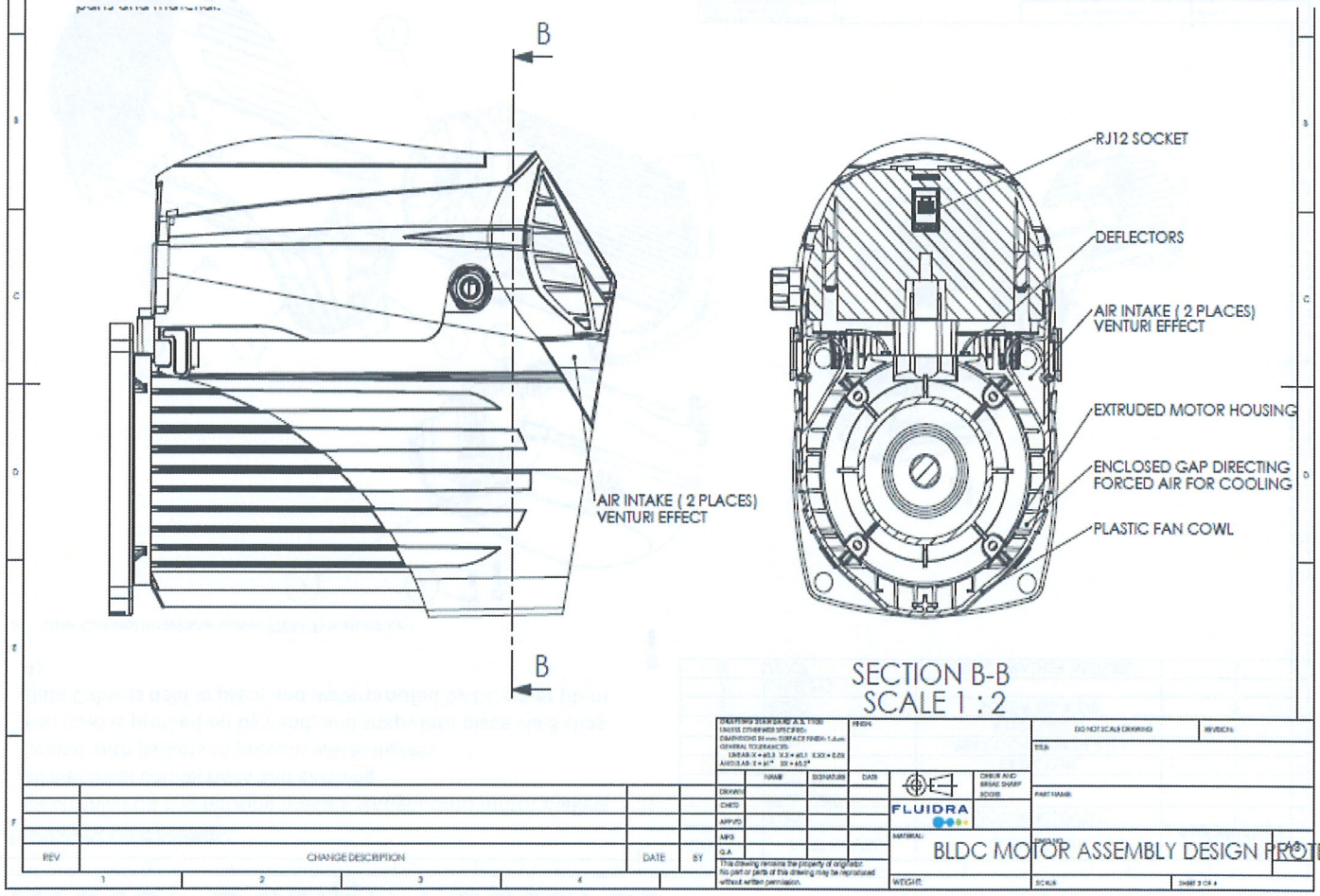
How to use variable speeds

- *Each speed can be tailored to the pool size and filtration system to achieve:*
- Low Speed
  - Suction Cleaner
  - Effective Skimming
  - Fill chlorinator cell
  - Maximum Energy Savings
- Medium Speed
  - Special purpose speed – waterfalls, heater operation, gentle spa jet operation
- High Speed
  - Backwash
  - Vacuum
  - Vigorous jet operation
  - Effective priming

Viron Motor Design Features

Plastic tabs and clips assembly much of the motor meaning plastic housing meaning only 5 screws to disassemble yet still robust and strong construction

Fan cowl surrounds motor forcing cooling air along entire length of motor and electronic heat sink
Deflectors divert forced air to heat sink fins



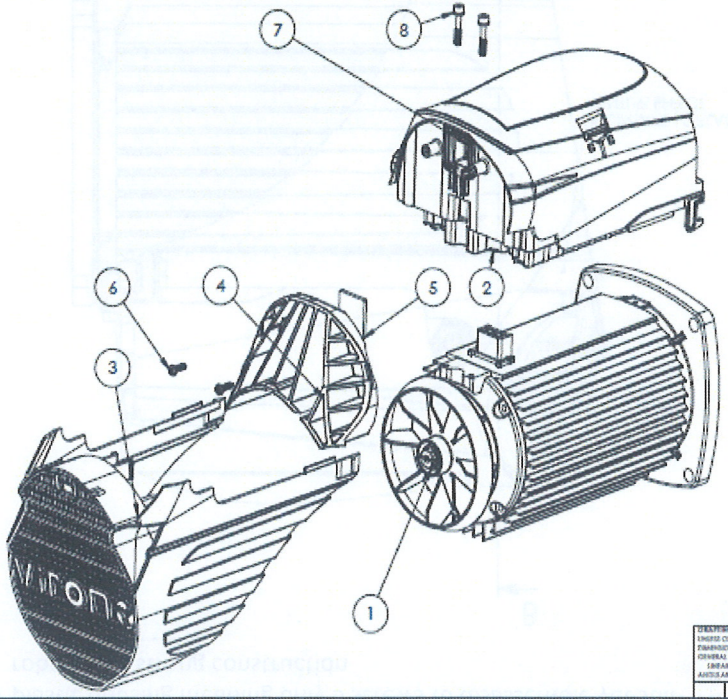
Viron Motor Design Features

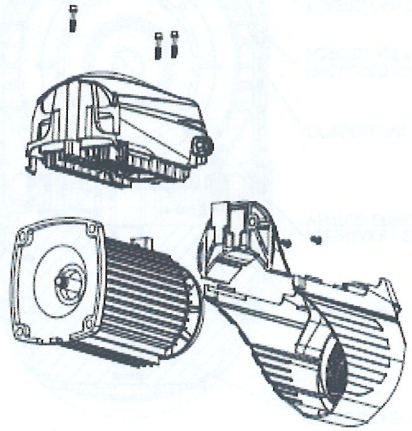
PRODUCTION LINE ASSEMBLY

Electronic PCB and housing presses straight onto motor making all electrical connections and earthing 22)
Sealed with gaskets to prevent water ingress
Fan cowl is pressed on by hand, and snaps into place via 3 clips
Data Cable is held in place and waterproofed by DC cover (item 4)

5. User Control Interface Label (ITEM 7) is stuck on

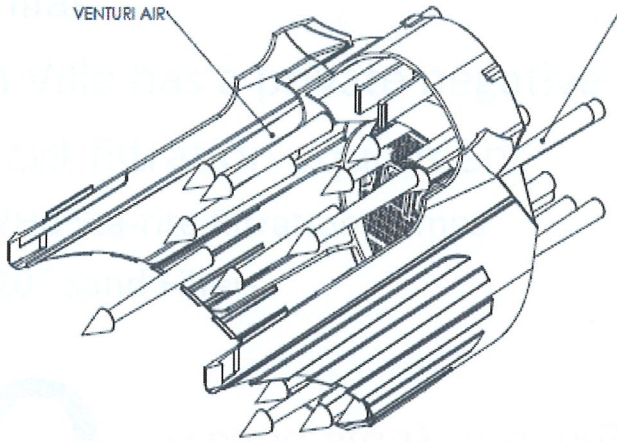
ITEM NO.	PART NUMBER	DESCRIPTION	moter end exploded/QTY.
1	71422	MOTOR ASSEMBLY	1
2	bldc control assembly		1
3	70600	FAN COWL	1
4	70603	REAR COVER WITH RJ12	1
5	70562	RJ12 GASKET	1
6	40240	SCREW 8G X 5/8	2
7	LABEL311		1
8	78707	M5 BOLT WASHER ASSEMBLY	3

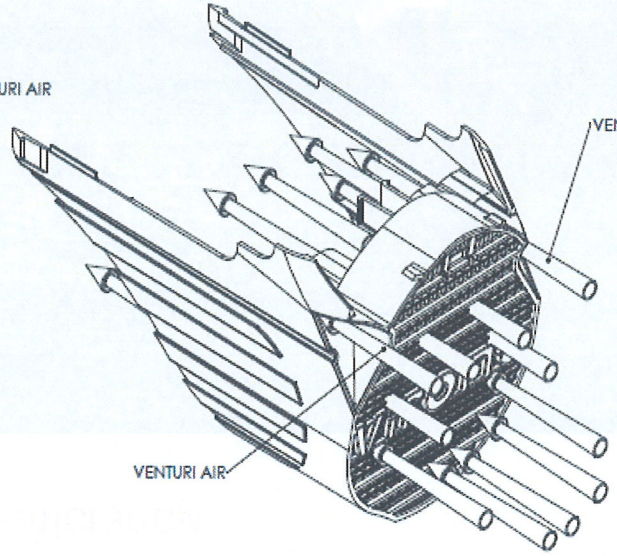




BLDC MOTOR ASSEMBLY DESIGN PROTE

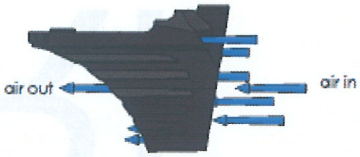
Viron Motor Design Features





- as air is pulled through the fan cowl by the fan additional air is pulled through the 2 inlets due to a venturi effect.
  the extra air flow aids in the cooling of the motor and electrical components through the heat sink.





REV	CHANGE DESCRIPTION	DATE	BY

FLUIDRA

70600 DESIGN PROTECTION

A case study in energy efficiency

- Current swimming pool management difficulties
  - High operating costs
  - Poor circulation caused by attempts to save money by reducing running time
  - Poor filtration caused by poor matching of filter size and water velocity
  - Leaking filters caused by high water velocity
  - Water loss due to inadequate catchment area in negative edge tank and high water velocity

ASTRALPOOL

A case study in energy efficiency

- Current Operating Costs
  - 2Hp Sta-Rite filtration pump
  - Power input of 1900 watts
  - Power cost of $AUD 0.22 per KWh

	Hourly	Daily	Monthly	Annually
Per Villa	$0.42	$3.34	$100.32	$1,220.56
Per Reort	$24.66	$197.30	$5,918.88	$72,013.04
Reduced run time				
Per Villa	$0.42	$1.67	$50.16	$610.28
Per Reort	$24.66	$98.65	$2,959.44	$36,006.52

ASTRALPOOL

A case study in energy efficiency

- Other benefits
  - Achieve correct water velocity
  - 20” filter now reliable and no more leaks
  - Can operate longer each day whilst in use
  - Improved circulation
  - Clearer, cleaner and healthier water
  - Can still vacuum and backwash
  - Taylor speed to reduce water loss over negative edge

ASTRALPOOL

A case study in energy efficiency

- Remember their current swimming pool management difficulties?
  - High operating costs ✓
  - Poor circulation caused by attempts to save money by reducing running time ✓
  - Poor filtration caused by poor matching of filter size and water velocity ✓
  - Leaking filters caused by high water velocity ✓
  - Water loss due to inadequate catchment area in negative edge tank and high water velocity ✓

ASTRALPOOL

FLUIDRA

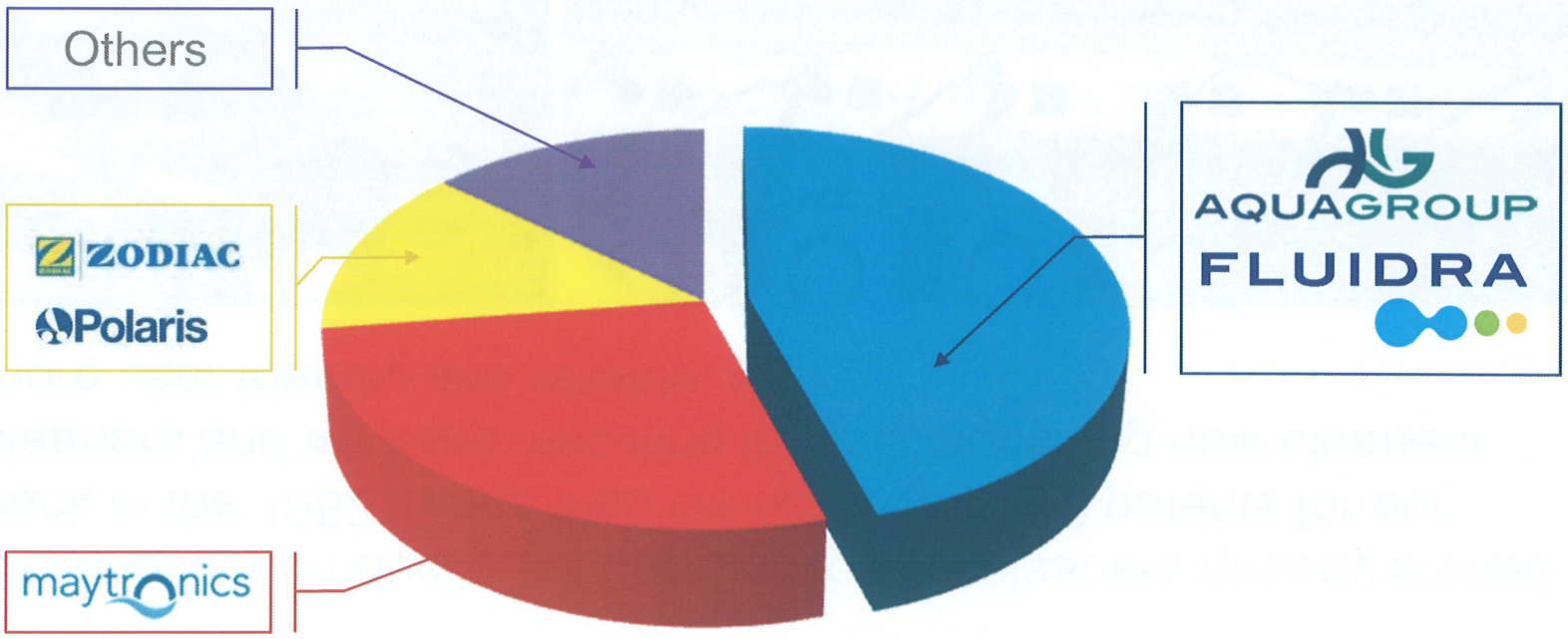
MAKING WATER PERFORM

Automatic Pool Cleaners

POOL & WELLNESS | WATER TREATMENT | FLUID HANDLING & IRRIGATION | PROJECTS | INDUSTRY

Worldwide leaders

- Since the acquisition of the AquaGroup Fluidra has become world #1 in pool cleaners with a sales in 2012 over 100.000 robotic pool cleaners worldwide.



Knowhow

- Experience: production of our robotic pool cleaners already started back in the 1982. Since then we have over 200 patents for our cleaners and we keep investing in R&D launching new cleaners more user friendly and reliable.







Pool cleaners factories

- Factories
  - Spain: hydraulic cleaners
  - Israel: robotic pool cleaners
  - USA: jet cleaners and robotic pool cleaners
  - China: hydraulic cleaners





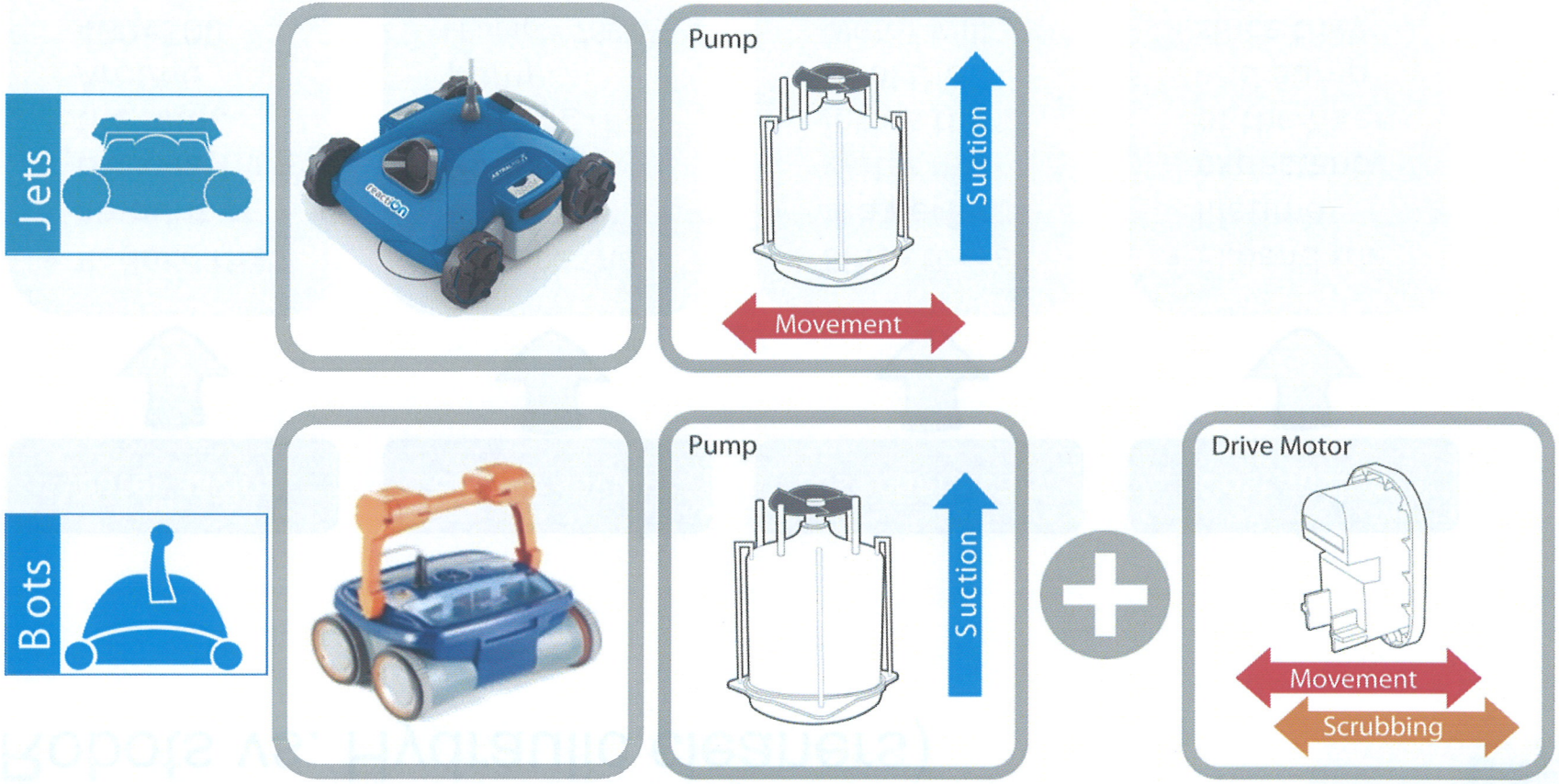
Pool cleaners range

- Thanks to both technologies and our customer approach we have the widest range in the market.



In-house technologies

- Technologies. Fluidra has in-house two different robotic pool cleaners technologies making a unique and widest range in the market.



Robots vs. Hydraulic cleaners)

FLUIDRA

Water saving

- Reduce the amount of backwashing the filter. Around 400≈500 liters each time.

Energy saving

- Reduce the amount of hours running the pump.
  - Pump ≈ 700W
  - Cleaner ≈150W

Less chemicals

- Since there is a perfect water mix inside the pool the water will need less chemicals.

Cost saving

- Expand the lifetime expectancy of the filter and pump since they will be running less hours.

RESIDENTIAL PRODUCT POSITIONING

Design

Performance

Design & ease of use



Best value





Entry level



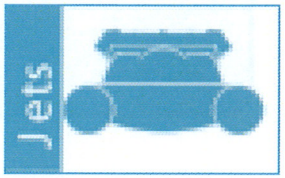
Bottom access

- **Wider range of product families than any other competitor**

reactiOn

Pool cleaning made simple: PLUG&ENJOY

FLUIDRA





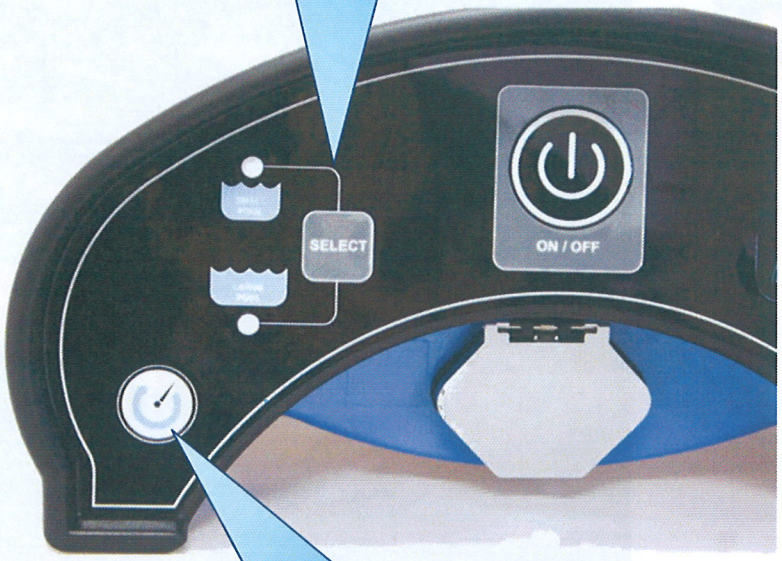
ON / OFF LIGHT TOP ACCESS

- SIMPLE to OPERATE
- EASE to CLEAN: Top Access
- 2 CLEANING PROGRAM OPTIONS
- FINER FILTRATION, 2 types of mesh filter bags
- EXTERNAL TIMER
- MADE in the USA



Floor models (entry level)

Jets

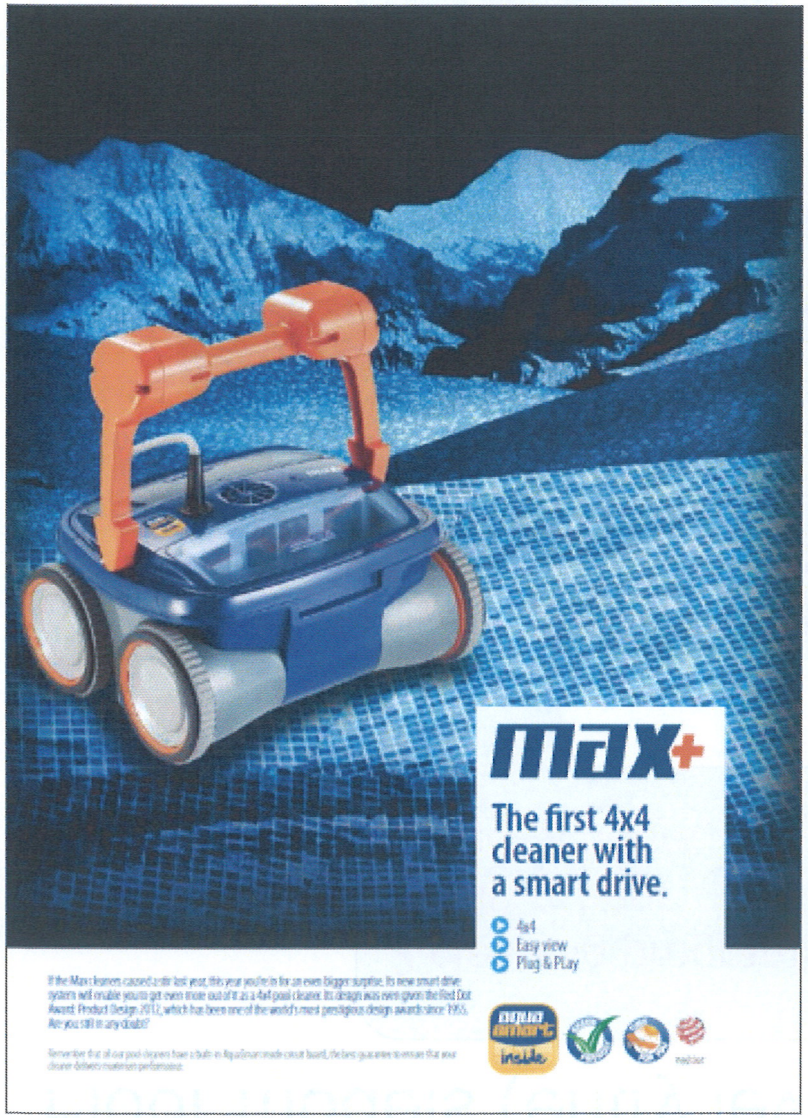


2 cleaning programs:
Small: 1 hour
Large: 2 hours

External timer



Max+. The first AWD with superior intelligence





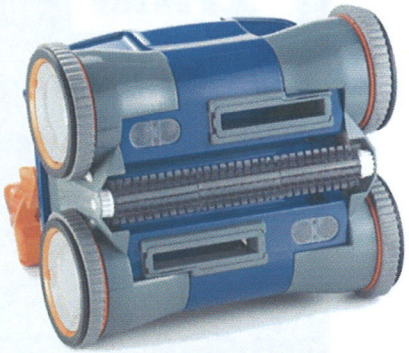
max+3



max+5

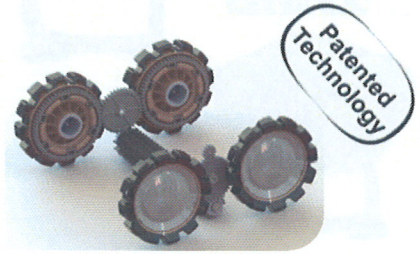
MAX+ robotic cleaners







- AWD technology with only 1 drive motor



- First and only pool cleaner with a red dot design award!

reddot design award

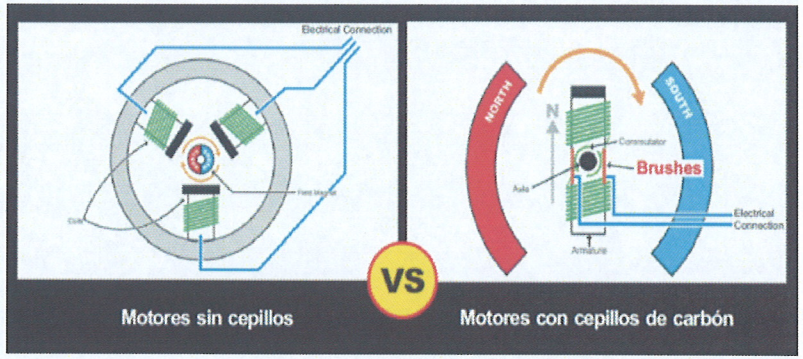
Pulit Advance+. The professional choice



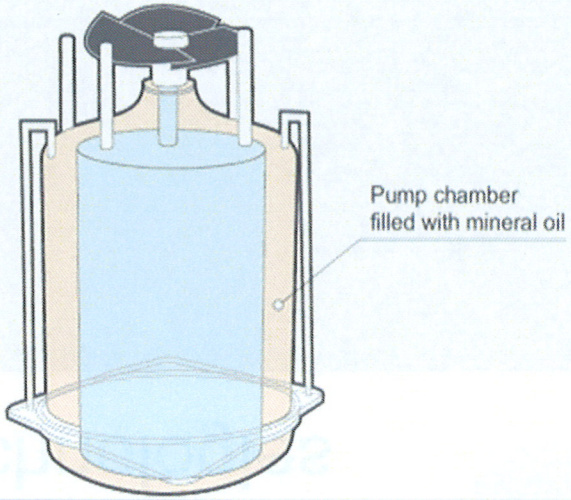


Unique features

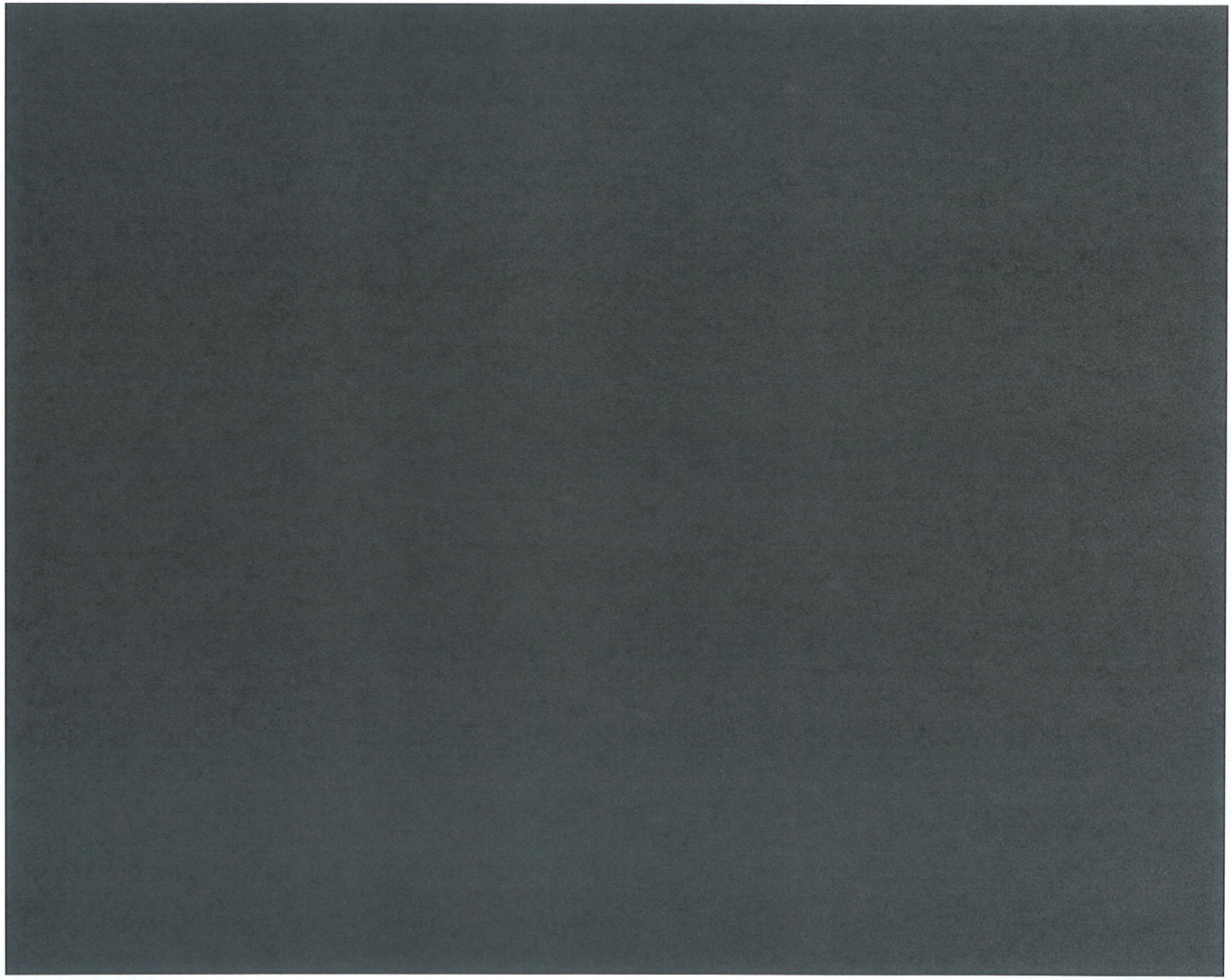
- Brushless motors
  - Estimated lifetime expectancy:
    - Brush: 1,000 ≈1,500 hours
    - Brushless: 2,000 ≈2,500 hours



- Oil cooled pump
  - Improved refrigeration in order to avoid overheating.

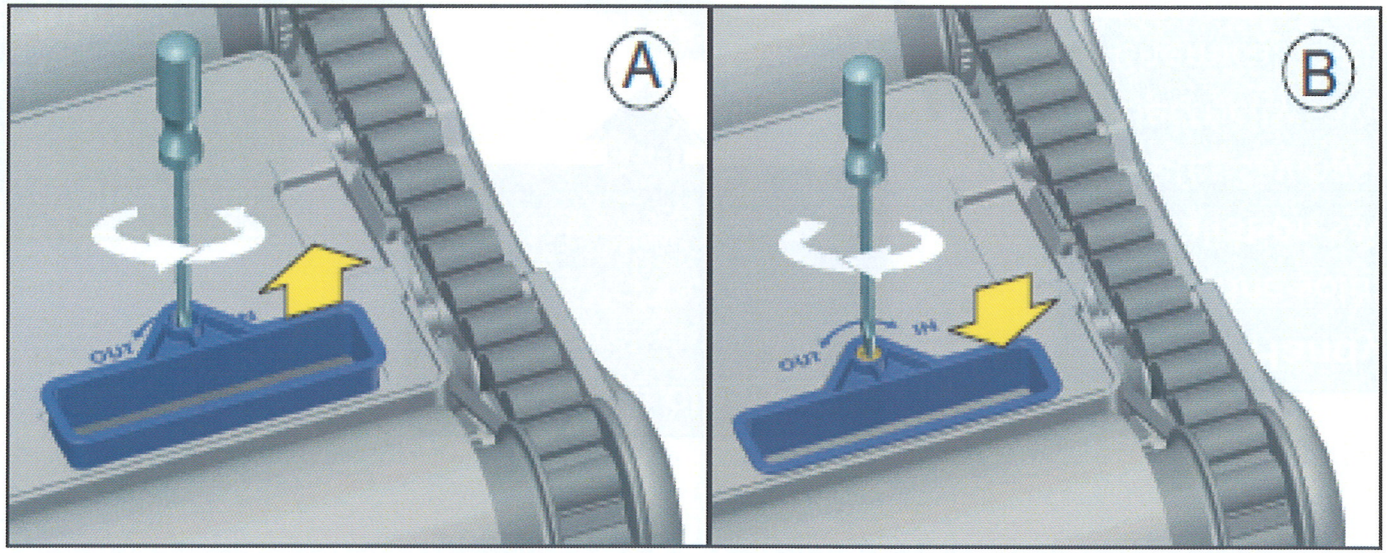


Faster cleaning: patented technologies



Some more unique features

- Patented adjustable water inlets:
  - Increase suction power by 200%.



Coming soon….COBIA 3

- Chlorine On Board Integrated Automation): Floor/wall

Chemical cleaning
- Generates chlorine

Patented Technology

Physical cleaning
- Scrubs
- Large debris baskets

Handy
- All in one solution
- Installation savings
- Water savings
- Electricity savings
- Chemical savings



Plug & Enjoy



FLUIDRA

MAKING WATER PERFORM

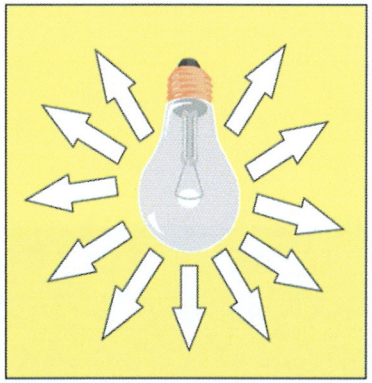
LED Lighting

POOL & WELLNESS | WATER TREATMENT | FLUID HANDLING & IRRIGATION | PROJECTS | INDUSTRY

Basic concepts of illumination

Luminous flux

This is a measurement of the amount of light that the lamp emits. Units: Lumen (lm)



Examples:

Candle: about 12 lumens

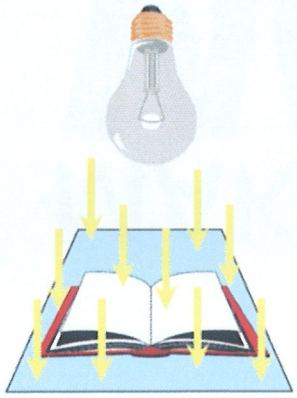
Incandescent lamp of 60W: 840 lumens

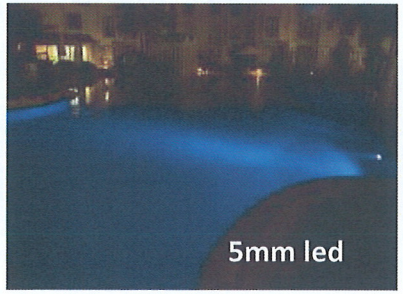
Low spec. LED projector:	**340 lumens**
LumiPlus AstralPool 1.11 white lamp:	**1485 lumens**
LumiPlus AstralPool 2.0 white lamp:	**4320 lumens**

Illumination

Total luminous flux that incident on a surface, per unit area.

Units: Lux (lx) 1 Lux = 1 lm/m^2



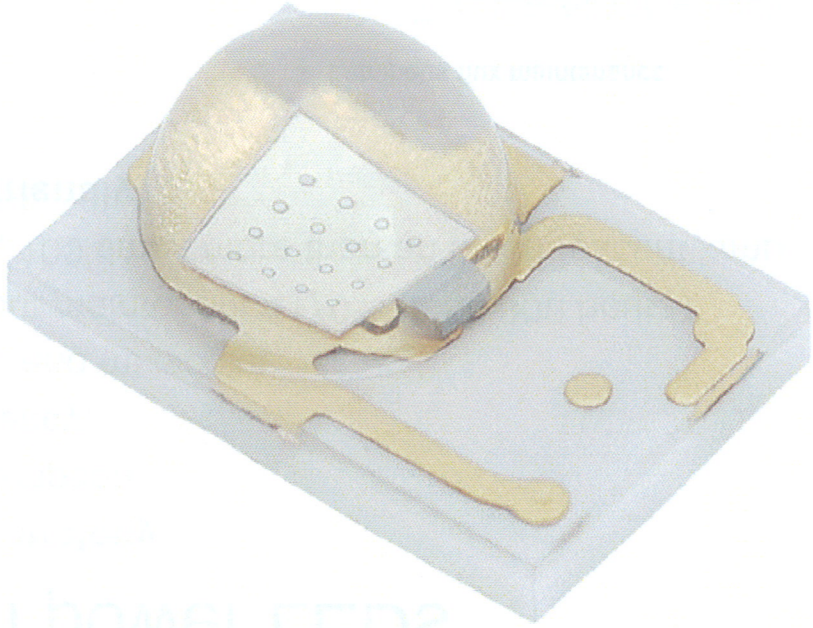




Incorrect use of the information!!

Benefits of high power LEDs

- LED (Light Emitting Diode) is the Lighting technology of the future
- LED is a Semiconductor diode. When an electric current passes through the LED, it emits light. The light color depends on the semiconductor materials used in the construction of the LED
- For lighting we use high Power LEDs of top brand manufacturers: Philips LumiLEDs or Cree.

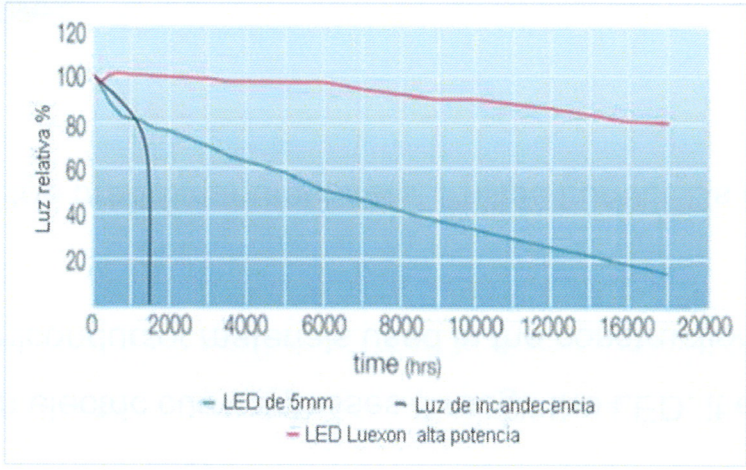


Benefits of high power LEDs

Benefits of LED Technology:

- Low power consumption
- High power efficiency
- Available in white and multicolor
- Good lumen output maintenance (70% at 50.000 hours)
- 100.000 lifespan, 100 times more than an incandescent lamp
- **Environmental friendly**

➢ **Luminous flux maintenance**



5mm 70% - 3.000 hours
50% - 6.000 hours
<40% - 9.000 hours

high power LEDs 90% - 9.000 hours
70% - 50.000 hours

Benefits of high power LEDs

Added Benefits of ASTRALPOOL LED Lights

- It can work outside of water (but only for a short time, for tests, etc.).
- Suitable to replace the majority of PAR56 lamps on the market.
- It can be used with the existing transformers and cables.
- Control with pushbutton, remote control or DMX protocol.

Disadvantages:

- Initial cost

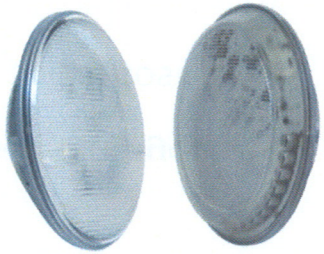


Products range

PAR56 LED LAMPS

- PAR56 remplaced lamps.
- To replace incandescent lamps.

LumiPlus PAR56 1.11



RGB Monocolor

LumiPlus PAR56 2.0



RGB Monocolor

LED PROJECTORS

- They are perfect to replace the entier spotlight for new installations.

STD or Global



RGB, DMX, White

S-LIM



RGB, DMX, White

Mini 2.11 & Micro



RGB, DMX, White

Lineal



RGB, DMX, White

Mini Quadraled 2.11



RGB, DMX, White

Standard for fountains



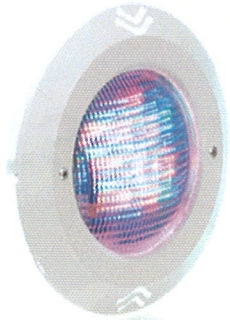
RGB, DMX, White

NEW PRODUCTS 2013

LumiPlus 1.11 RGB PAR56 Wireless

NOUVELTY 2013

- The decrease of prices that has suffered the PAR56 RGB 1.11 range has resulted in a very economical price for the combination of "modulator + antenna", very important in small installations.
- In 2013 we are offering a new product range for small pools (1 or 2 projectors). Where:
  - There are no intermedium devices between the remote control and the led lamp.
  - The modulator and the antenna do not take part of the installation.





- It is a linked product:

.- LumiPlus Control Motion is only operated by LumiPlus 1.11 RGB PAR56

.- KITs are offered according to be necessary only the led lamp or the full spotlight.

KIT 1 1 RGB PAR56 Wireless lamp + 1 LumiPlus Control Motion

KIT 2 2 RGB PAR56 Wireless lamps + 1 LumiPlus Control Motion

KIT 3 1 RGB PAR56 Wireless projector + 1LumiPlus Control Motion

KIT 4 2 RGB PAR56 Wireless projectors + 1 LumiPlus Control Motion

LumiPlus 1.11 RGB PAR56 Wireless

NOUVELTY 2013

Product technical description:

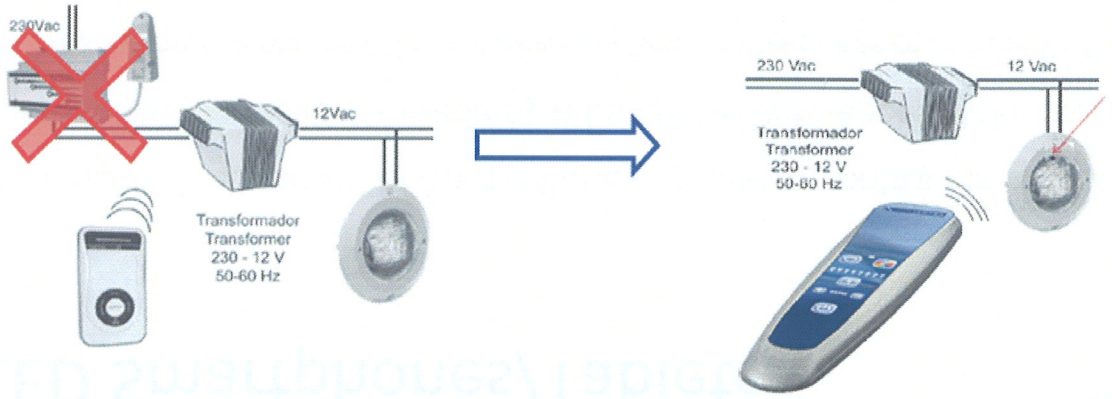
The features are the same that the ones offered in the remote control of the modulator (ON / OFF, speed, color, sequence),.but with certain added value:



Change of color | Push button
movement sensor
12 Colors



Change of sequence | Push button
movement sensor
12 Colors



LumiplusLED Smartphones/Tablets

Product technical description:

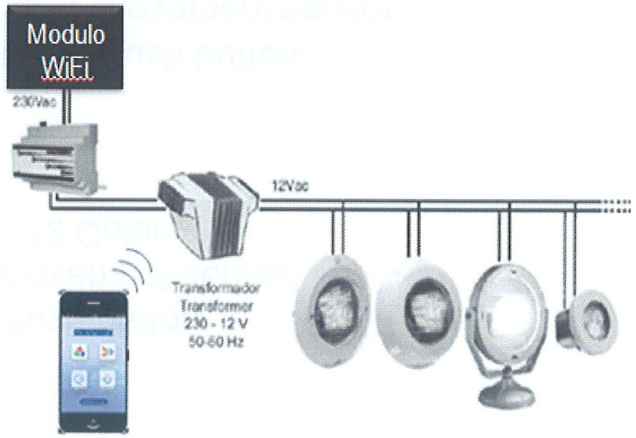
- LumiPlusLED uses the WiFi conection of Smartphone or tablet to control the modulator LumiPlus like a control remote. This connection is made by a LumiPlus WiFi Acces Point module.
- .- The App enables the mobile phone WiFi → It mades a Scan of the points of access WiFi.

  .- Find a SSID knew → Accept the key.

  .- The transmitter element of WiFi is an AccesPoint. There isn't interferences with others SSID of the zone.

- Principal features:

.- Lights' switch on and switch off
.- Colour changing
.- Sequence changing
.- Switch off timer



How download LumiPlusLED? http://itunes.apple.com/app/lumiplusled/id565063360?mt=8

LumiplusLED Smartphones/Tablets

FLUIDRA

NOUVELTY 2013

- Control of the LumiPlus RGB LED projectors trough smartphones or tablets.
- The necessary devices are following:
  Lumiplus wifi acces point module + LumiplusLED Apply
- Avaliable on: AppleStore GooglePlay



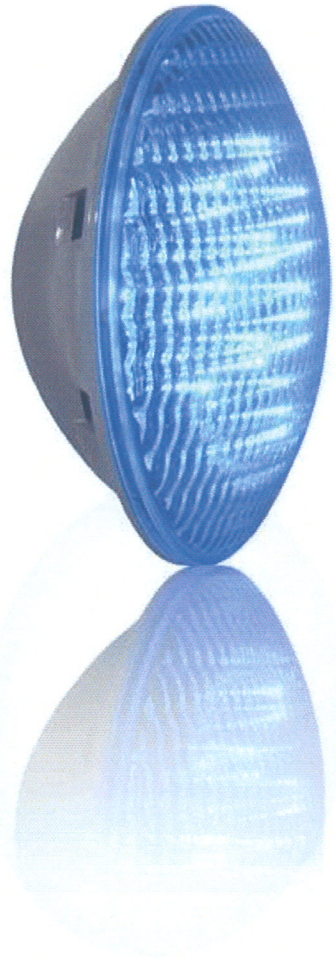


LED Projectors and Lamps 1.11

LED AstralPool Projectors

LED PAR56 1.11 RGB Lamp

- The LumiPlus PAR 56 lamp is compatible with the majority of PAR56 lamps on the market, without the need to change the transformer or the cables.
- Electronic board with 12 LEDs.
- Produced with high quality plastic materials.
- Quality control done for all the production.
- Power Consumption 35W.
- Protection IP68.



LED AstralPool Projectors

LED PAR56 1.11 White Lamp

- The LumiPlus PAR 56 lamp is compatible with the majority of PAR56 lamps on the market, without the need to change the transformer or the cables.
- Electronic board with 9 LEDs.
- Produced with high quality plastic materials.
- Quality control done for all the production.
- Power Consumption 24W.
- Protection IP68.



LED AstralPool Projectors

LumiPlus PAR56 1.11

- Available in White, Multicolor (RGB) and RGB DMX.
- ABS or stainless steel faceplate.

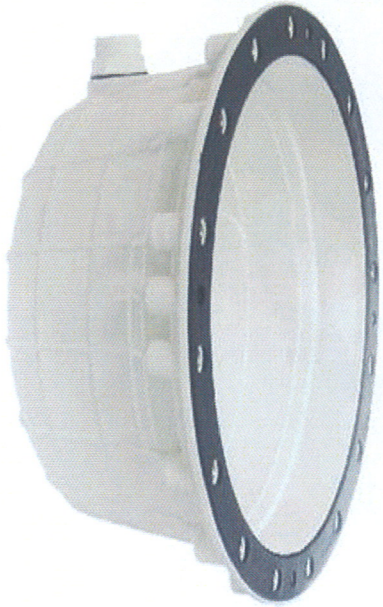


Description	PAR56 1.11 RGB
Rated Voltage	12V
Current Supply	AC
Lamp	PAR56 LED 35W
Protection	Class III IP X8

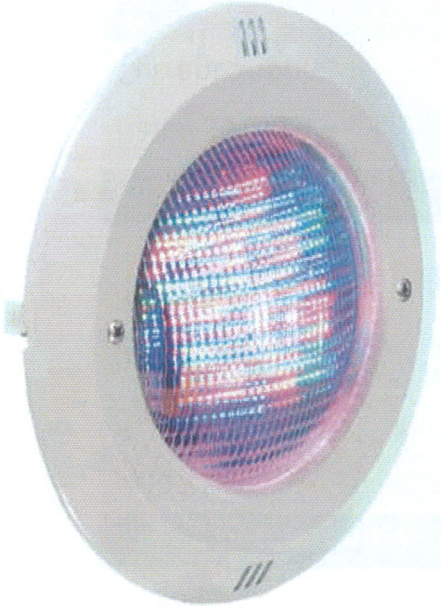
Description	PAR56 1.11 White
Rated Voltage	12V
Current Supply	AC
Lamp	PAR56 LED 24W
Protection	Class III IP X8

LED AstralPool Projectors

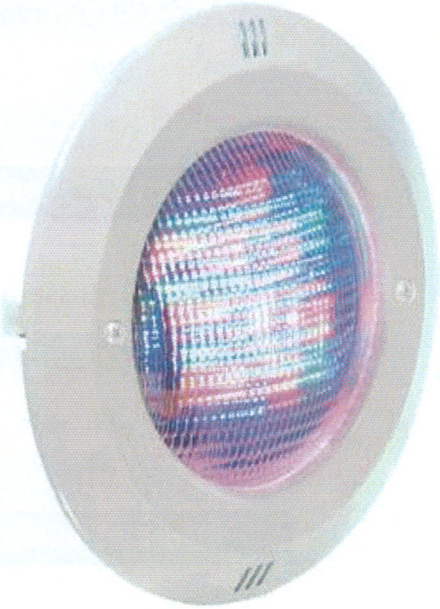
- Differences between STD and Global projectors.



Niche



STD Projectors (with staple)



Global Projector

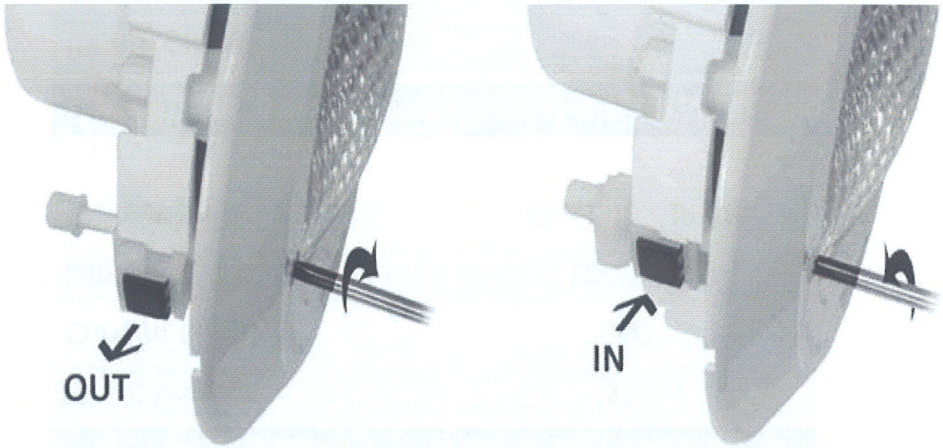
- The niche should be ordered separately.

LED AstralPool Projectors

- Differences between STD and Global projectors.

standard





STD Projector (with staple)

stainless steel

Global Projector (made of plastic)

LED AstralPool Projectors

LumiPlus S-Lim 1.11

- Available in White, Multicolor (RGB) and RGB DMX.
- ABS or stainless steel faceplate.



Description	S- Lim 1.11 RGB
Rated Voltage	12V
Current Supply	AC
Lamp	LED 35W
Protection	Class III IP X8

Description	S- Lim 1.11 White
Rated Voltage	12V
Current Supply	AC
Lamp	LED 24W
Protection	Class III IP X8

LED Projectors and Lamps 2.0

LED AstralPool Projectors

LumiPlus 2.0 and 2.11 Range

- More light, more efficiency.
- High range of LumiPlus products.
- Available in the same actual formats:
  - Lumiplus PAR56 2.0 and Lumiplus S-Lim 2.11,
  - Monocolor, Multicolor (RGB) and RGB DMX.



Description	LumiPlus 2.11
Rated Voltage	12V
Current Supply	AC
Lamp	PAR56 LED 70W
Protection	Class III IP X8

LED AstralPool Projectors

LumiPlus S-Lim 2.11

Available in the same actual formats: Monocolor, Multicolor (RGB) and RGB DMX.
ABS and Stainless steel faceplate.

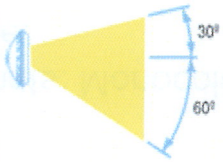
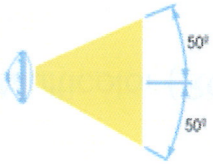
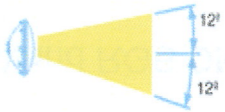
Description	S- Lim 2.11 RGB
Voltage	12V
Current	AC
Led Lamp	LED 70W
Protection	Class III IP X8

Description	S- Lim 2.11 White
Voltage	12V
Current	AC
Led Lamp	LED 70W
Protection	Class III IP X8

- The new optical design of the lens guarantee the maximum illumination inside of the pool, and also avoid the lost of light outside of pool.
- In order to obtain the best results the lamp must be mounted with the words TOP – ARRIBA in the up.

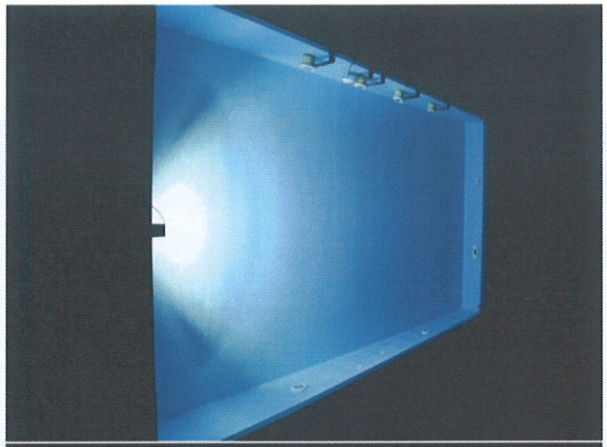


COMPARISON BETWEEN LUMIPLUS (2.0 VS 1.11) & PAR56 INCADESCENT LAMP

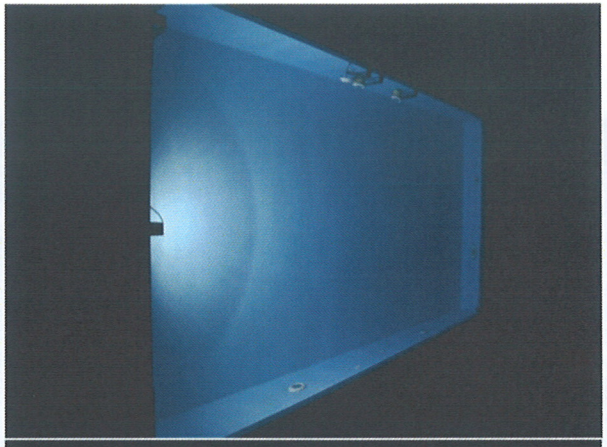
		LumiPlus PAR56 LEDs 2.0 lamp	LumiPlus PAR56 LEDs 1.11 lamp	PAR56 halogen lamp
Lumens	White	4.320 lm	1.485 lm	6.000 lm
	RGB	2.544 lm	1.100 lm	
Consumption	White	70W	24W	300W
	RGB		35W	
Efficiency	White	61,7 lm/W	61,8 lm/W	20 lm/W
	RGB	36,3 lm/W	31,4 lm/W	
Voltage		12V AC	12V AC	12V AC
Life span		100.000h (70% of luminous flux at 50.000h)		1.000h
Colors		12 Colors		Monocolor
DMX		Si	Si	No
Consumption savings*	White	75%	92%	-
	RGB		88%	
Lamps savings *		1 PAR56 2.0 = 50 PAR56 halogen lamps		-
Lenses				
Connection cables		2 x 1,5mm²	2 x 1,5mm²	2 x 6mm²

(*) Compared with PAR56 halogen lamp

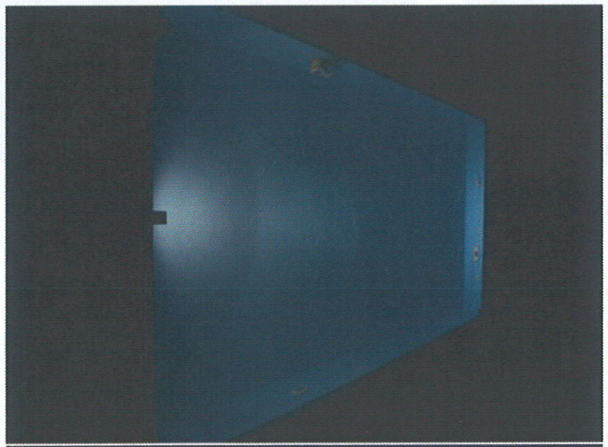
Final Comparison of all projectors



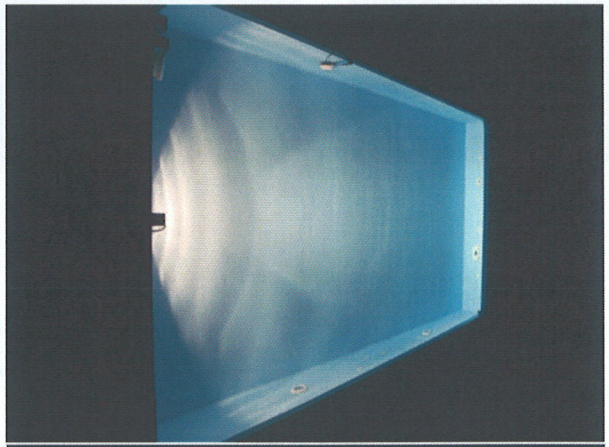
PAR 56 LumiPlus 2.0



PAR 56 LumiPlus 1.11



PAR 56 asiática con LEDs de 5mm

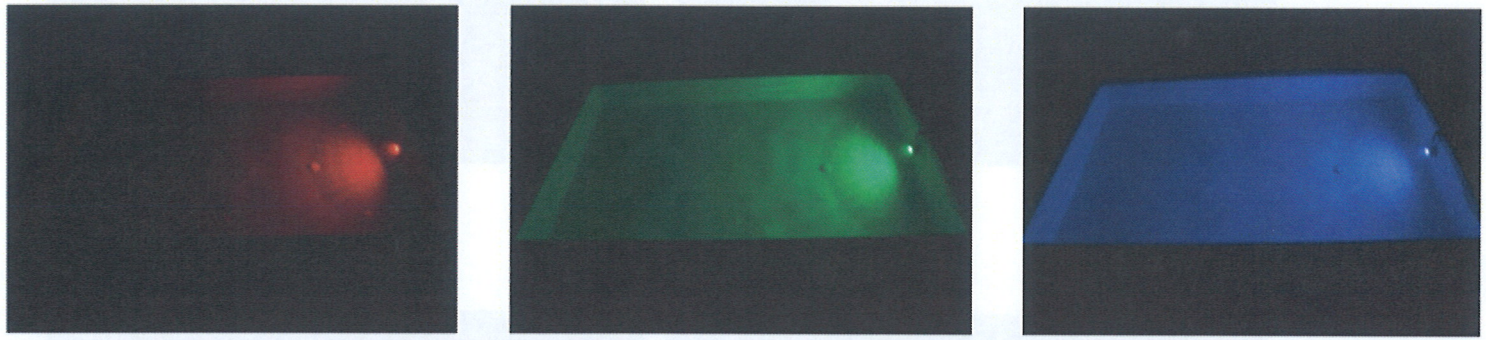


PAR 56 Incandescente 12V – 300W

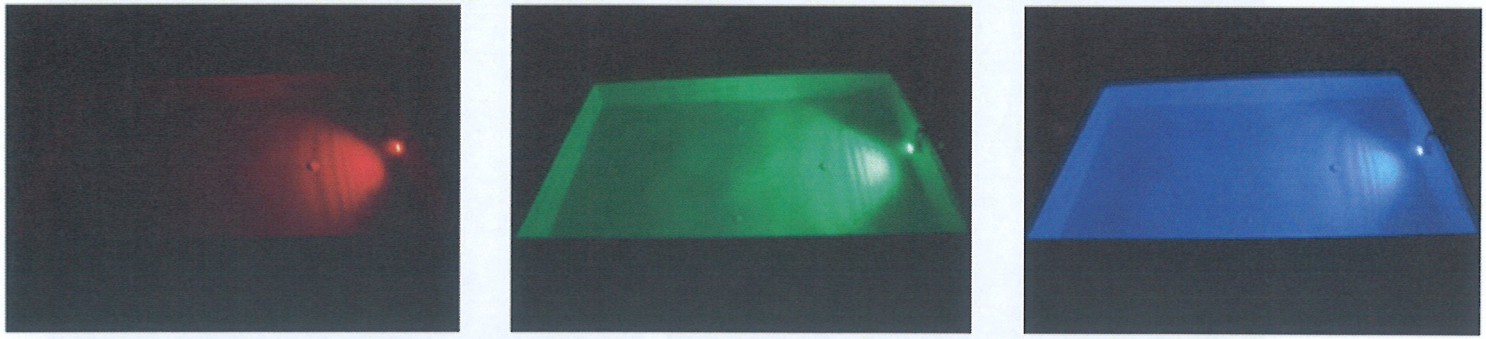
LumiPlus 1.0 VS 2.0 RGB version Comparison

Lumiplus Multicolor – RGB version

LumiPlus 1.0



LumiPlus 2.0



Control Systems

Control Systems Review

IT DEPENDS ON THE TYPE OF LAMP/PROJECTOR

WHITE

IT IS NOT NECESSARY ANY CONTROL SYSTEM.

RGB

ColorPlus ECO

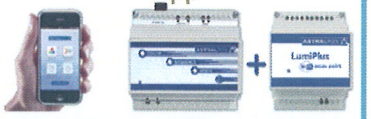


Or

MODULATOR + REMOTE CONTROL



MODULATOR + Lumiplus App



Or

POWER SUPPLY LumiPlus



RGB-DMX

ASTRAL DMX CONTROLLER



Or

TOUCH SCREEN



+

COMPLEMENT DEVICES

POWER SUPPLY DMX



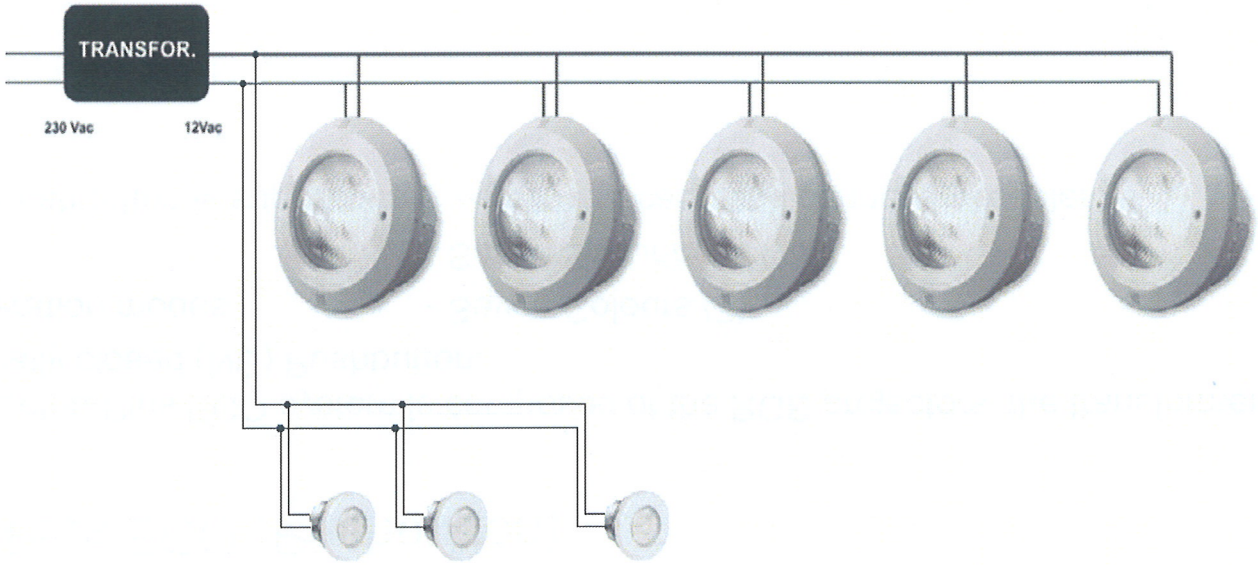
MODULATOR DMX



Control Systems

White LED Lights

- No control is required.
- Just connect the LED Lights directly to 12Vac.
- The same system for PAR56, S-Lim, Mini or Micro LED Projectors.

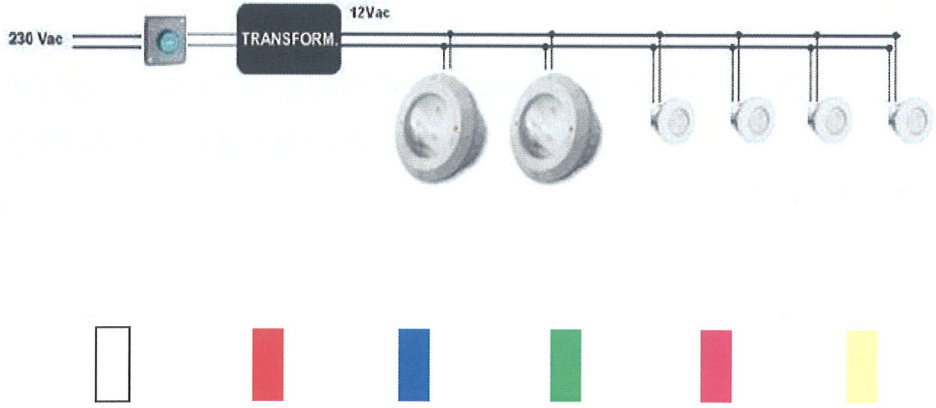


Control Systems

ColourPlus ECO (Pushbutton)

- The ColourPlus ECO system is composed of the RGB projectors, the transformer and a Normally closed (NC) Pushbutton.
- 2 operation modes : - Seven Colours (7)
  - Seven Sequences (7)
- The Pushbutton is supplied in a waterproof case and connection cables.



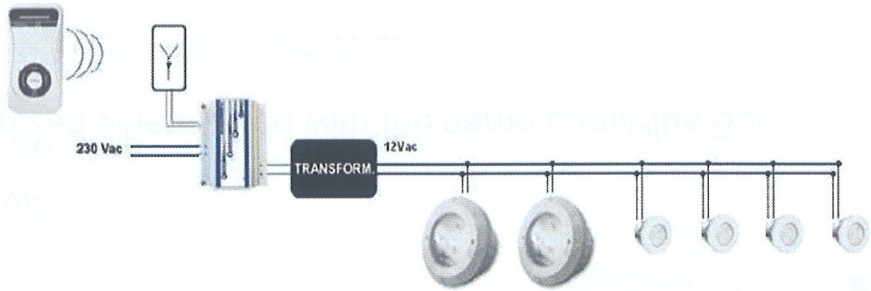


Control Systems

ColourPlus TOP (Modulator – Remote Control)

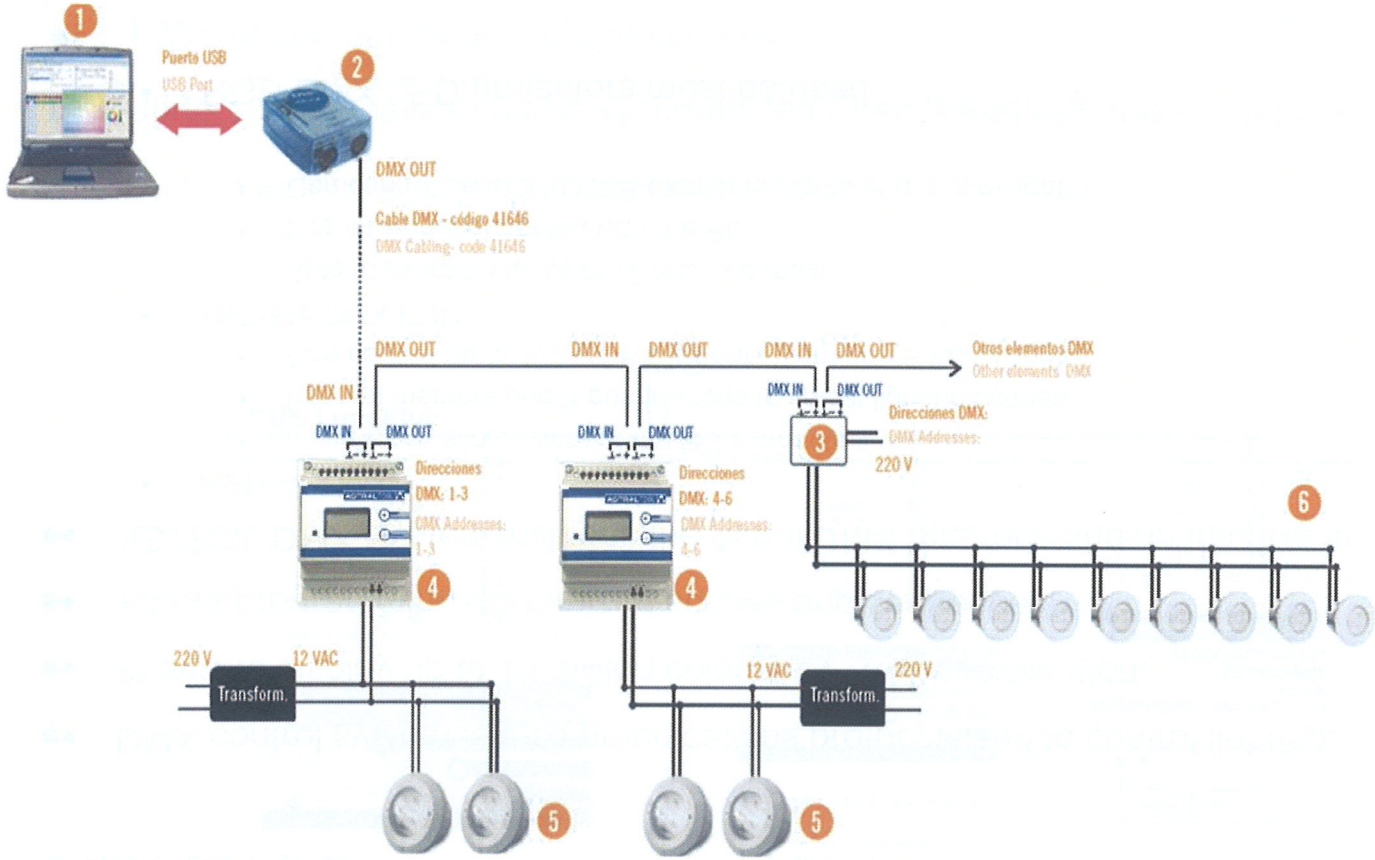
- The ColourPlus TOP system is composed of the RGB projectors, the transformer, the Modulator and optionally a Remote Control.
- The main functions of the modulator are: turn on, turn off, select colour (12), select sequence (8), select speed (8). Time-delay turn off function available in case of using the Remote Control.
- The modulator incorporates an external antenna for remote control.





Control Systems

DMX Control



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THANK YOU