



the power in UV technology



SPAS



COMPETITION



MUNICIPAL



HOTELS



HYDROTHERAPY

Breathe easy, it's Hanovia UV...



FOOD+BEVERAGE



PHARMACEUTICALS



ELECTRONICS



MARINE



AQUACULTURE



POOLS+LEISURE



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From the smallest private pool to the largest leisure complex, you need to meet regulations for water quality and make sure that your pool users are safe and comfortable in the water.

Chloramines in your pool water can cause unpleasant smells and even allergic reactions. Hanovia UV systems destroy them as well as dangerous waterborne micro-organisms including Cryptosporidium and Giardia. Your pool users will enjoy fresher-smelling, clearer and more hygienic water, while you enjoy the reliability and effectiveness of a highly efficient water treatment system.

## Safety and comfort for everyone in the pool

### A superior solution that guarantees high quality pool water

The benefits of Hanovia's UV treatment system are far-reaching.

#### Health and hygiene

- Destroys chloramines - easily meets statutory combined chlorine levels and typically reduces levels to around 0.5ppm
- Effective against all micro-organisms, including the chlorine-resistant pathogens Cryptosporidium and Giardia
- Improves water clarity
- Treats full recirculating flow

### An energy efficient and environmentally responsible system

- Reduces the need for dilution
- Cuts the use of chemicals and avoids the need for routine shock dosing with chlorine
- Reduces requirement for free chlorine residual
- Creates no hazardous by-products
- Reduces corrosion of steel structures – minimising maintenance costs

### Controlling costs

- Cuts your use of chemicals
- Requires little maintenance
- Reduces energy bills if you use the timer to operate the system only when needed
- Reduces water bills if filters need less rinsing and pools need emptying and refilling less frequently
- Avoids repair and replacement costs from chemical wear and tear on pool fittings

### Attractive pool environment

- Increases bather and employee comfort
- Appeals to new customers and visitors and enhances your reputation
- Competitive advantage compared to other local leisure facilities



“Since UV was installed, chloramine levels are as low as 0.2 ppm, which has significantly improved both water and air quality. TDS levels have also halved since UV was introduced, which means the water is now much clearer. Pool users have really noticed and commented on the improved pool atmosphere. In fact, it actually helps attract more customers.”

BOB ELLIS, ENGINEERING SERVICES MANAGER, ROYAL RUSSELL SCHOOL, UNITED KINGDOM

## How UV works in pools

### Hanovia UV improves pool water in two ways:

#### Reduces chloramines

Chloramines are the unpleasant chemicals formed when chlorine combines with the nitrogenous compounds (uric acid, urea, ammonia, histidine and creatinine) introduced by bathers. They are responsible for eye irritation, headaches, unpleasant odours and occasional skin irritation, particularly in indoor pools. Swimmers, lifeguards, instructors and coaches can all be affected. Chloramines also damage the structure of the pool, corroding structural steel and roof supports.

UV treatment is a high performance alternative to super-chlorination (or “shock” dosing), dilution with fresh water or activated carbon. Low pressure UV lamps are not effective against chloramines. Hanovia’s medium pressure UV lamps break the bonds within chloramine molecules and destroy them. The lamps’ polychromatic spectrum includes the optimum wavelengths for chloramine photolysis.

Monochloramine (NH <sub>2</sub> Cl):	245 nm
Dichloramine (NHCl <sub>2</sub> ):	297 nm
Trichloramine (NCl <sub>3</sub> ):	260 nm and 340 nm

The polychromatic spectrum of Hanovia medium pressure lamps includes all these wavelengths. The monochromatic UV emission of low pressure lamps at 253.7 nm will not be absorbed by dichloramine or trichloramine molecules and no photolysis of these compounds will occur.

#### Disinfects and clears comprehensively

The disinfecting power of Hanovia UV means you can drastically reduce residual chlorine levels to as little as 0.5 ppm. Organic molecules in the pool water are oxidised, for noticeably improved water clarity.

Even chlorine-resistant pathogens like Cryptosporidium and Giardia are effectively treated with UV. Cryptosporidium is responsible for hundreds of thousands of outbreaks of gastric illness every year, with outbreaks often traced back to swimming pools. It is a parasite whose structure makes it resistant to chlorine disinfection. Using Hanovia UV technology you can reduce its presence in your water by 99.99%, according to the United States Environmental Protection Agency.

Eighteen outbreaks of Cryptosporidiosis associated with swimming pools are known to have occurred in the UK between 1989 and 1999. In the USA from 2003 to 2004, Cryptosporidium was responsible for 55.6% of gastroenteritis outbreaks associated with swimming pools.

#### CONTROL SYSTEM

- The Photot II controller is Hanovia’s microprocessor-driven control module
- Menu-driven interface
- Real time display of performance parameters
- Dose computation from fixed or variable flow
- Optional power optimisation ‘Power Switching’ facility
- Automatic on/off timer

#### ARC TUBE

- Up to 6 Arc Tubes per chamber
- Simple to replace
- Hanovia is the only UV systems manufacturer to manufacture its own medium pressure arc tubes, for ultimate quality and performance
- All Hanovia arc tubes are manufactured and tested to international standards.

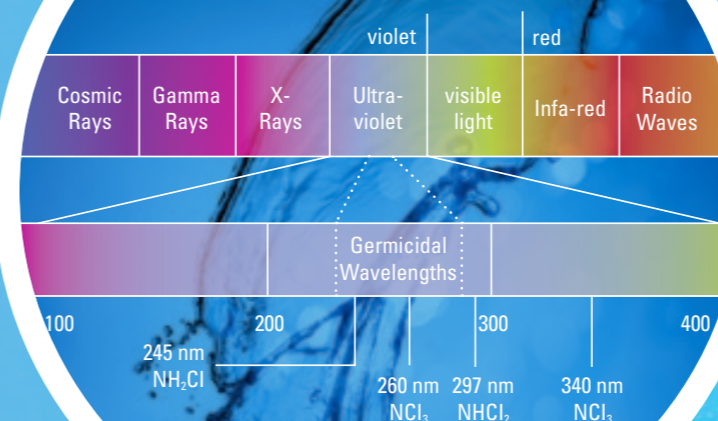
#### MONITOR

- Provides continuous output measurement of each UV lamp in the treatment chamber
- Keeps system running at maximum efficiency
- With any change in process conditions, the system can switch to new power level or initiate a local or remote alarm
- Optional individual monitor for each lamp

#### TREATMENT CHAMBER

- Capacity up to 1,800 m<sup>3</sup> per hour (7,930 gpm) for a single chamber
- 316L stainless steel construction (even higher grades for aggressive water conditions)
- Hydrostatically pressure tested to PED requirements
- Flange connections to suit any pipe size
- Quartz sleeves, mounted axially, house arc tubes and permit replacement of arc tubes without interrupting flow
- Automatic wiper maintains operational efficiency, even for poor quality water
- Optimum hydraulic design for uniform treatment
- Drain valve

#### How UV works



## Spas

Your reputation and success depend on providing a pleasant, relaxing and safe environment for clients who use your pools. Hanovia UV gives you peace of mind that hygiene standards are being met and exceeded and your bathers are enjoying clear and fresh-smelling conditions without irritation from extra chemicals.

## Competition

Water clarity and elimination of micro-organisms is crucial for performance swimmers who need to operate at peak health and fitness levels. Hanovia UV steps up to the mark with systems designed to treat high traffic and large-sized fitness pools.

## Municipal

With a high number of visitors every day, and peak periods of dense occupation, your pool hygiene management system needs to be robust and effective. Managing costs in the public sector is a key focus area too. Hanovia UV can help you save on utilities, supplies and maintenance bills whilst treating high volumes of water effectively.

## Hotels

Your guests demand an attractive environment to unwind in, with the highest quality water, meaning no odours or cloudiness. Exceed their expectations with Hanovia UV, maintaining the highest standards of hygiene and water quality continuously, and reducing the need to suspend facilities for maintenance.

## Hydrotherapy

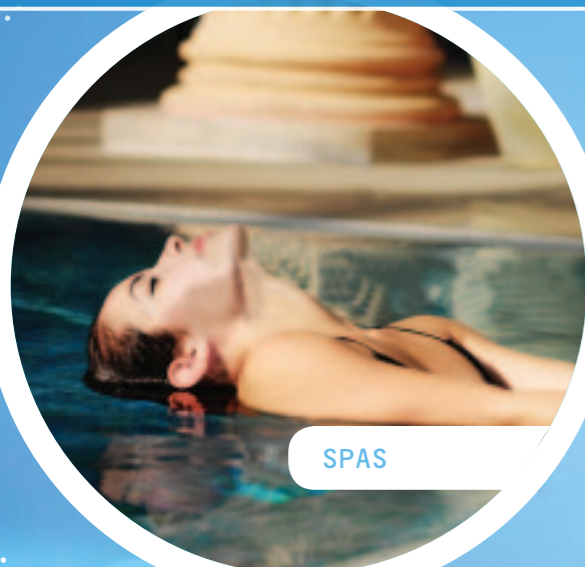
When you're using pool water in a therapeutic or medicinal way to treat patients whose health may already be compromised, it's more vital than ever to destroy water-borne micro-organisms effectively. Hanovia UV provides peace of mind for you and your clients, so they can enjoy the healthful benefits of treatment in a totally hygienic environment.

## Hanovia support and 5-year warranty.

Hanovia systems are designed for long life and reliability, but our commitment to you does not stop when we deliver the system. Hanovia provides global lifetime backup of its products through its world-wide network of offices and distributors, all backed by the technical expertise of the Hanovia Technical Support Centre based in the UK. We also maintain an extensive spares and consumables supply operation ensuring rapid availability of essential parts to keep your system in tip-top operating condition for years to come.

Furthermore, all Hanovia systems are backed by an industry-leading 5-year warranty, giving you total peace of mind. Contact us or your local distributor for full details.

# Trust Hanovia UV for all your pool needs...



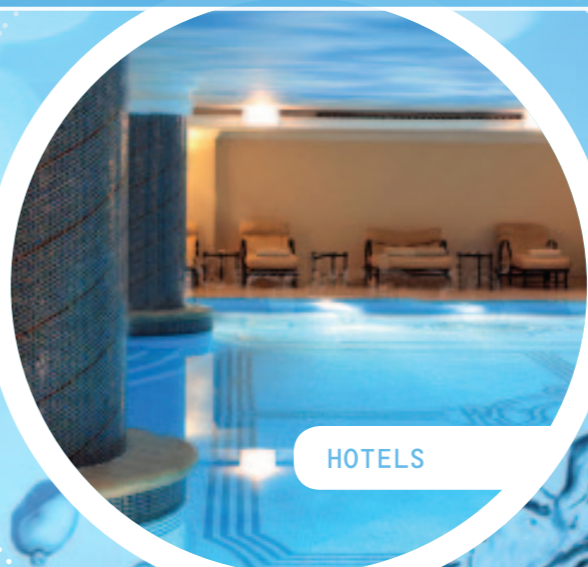
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HYDROTHERAPY

"Since the changeover [from ozone], we are saving at least £4,000 per annum on electricity and almost £4,000 in maintenance costs. Our water bill is also considerably lower as we no longer have to backwash the filter."

STEVE BULL, MAINTENANCE MANAGER, OLYMPIAD LEISURE CENTRE, WILTSHIRE, UK

"Keeping chloramines consistently below the 1 ppm level is nearly impossible without the use of UV, especially when you have a pool that has a very high load and is only 350,000 litres. The Hanovia UV system has been fantastic."

KEITH WEIDNER, STATE SWIM NORWOOD, AUSTRALIA

"On a normal day our six lane, 25 yard pool has a bather load of 360 people, but for eight weeks in the summer this rises to over 750 a day. The Hanovia system has no problem dealing with these loads. It is also virtually maintenance free."

RICHARD SHOULBERG (TRAINER OF OVER 15 OLYMPIC SWIMMERS), GERMANTOWN ACADEMY, PENNSYLVANIA, USA

"With UV, the pool water is much clearer than if we were using chlorine on its own. People often comment on it, and it has even become a bit of a selling point for the pool."

NEIL GALLAGHER, ASSISTANT OPERATIONS MANAGER, COTGRAVE LEISURE CENTRE, NOTTINGHAM, UK