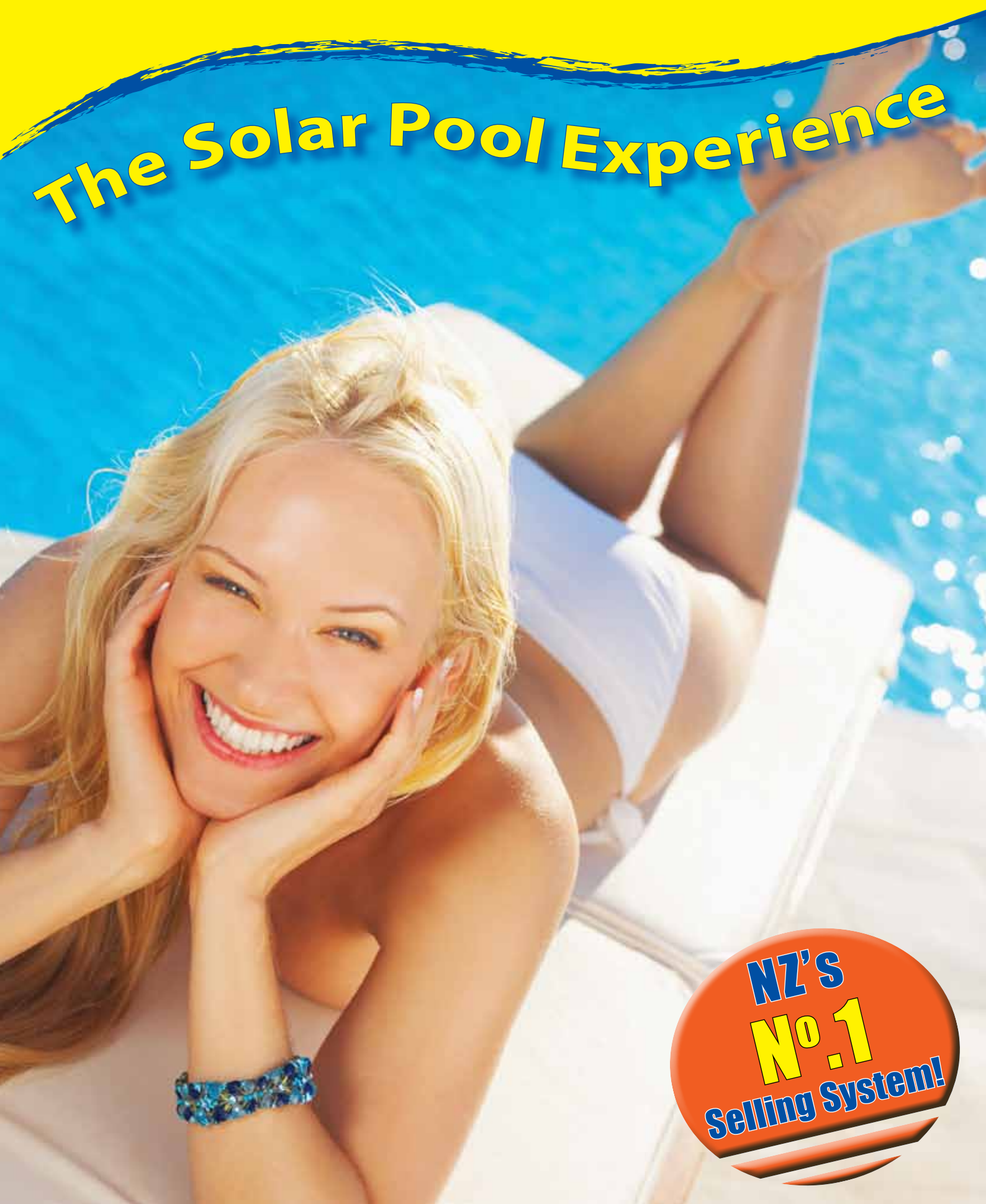


**HELIOCOL**  
SOLAR POOL HEATING. ENGINEERED FOR LIFE.



# The Solar Pool Experience

**NZ'S  
Nº.1  
Selling System!**

# Double your swimming season

## Solar heated swimming pool feels better

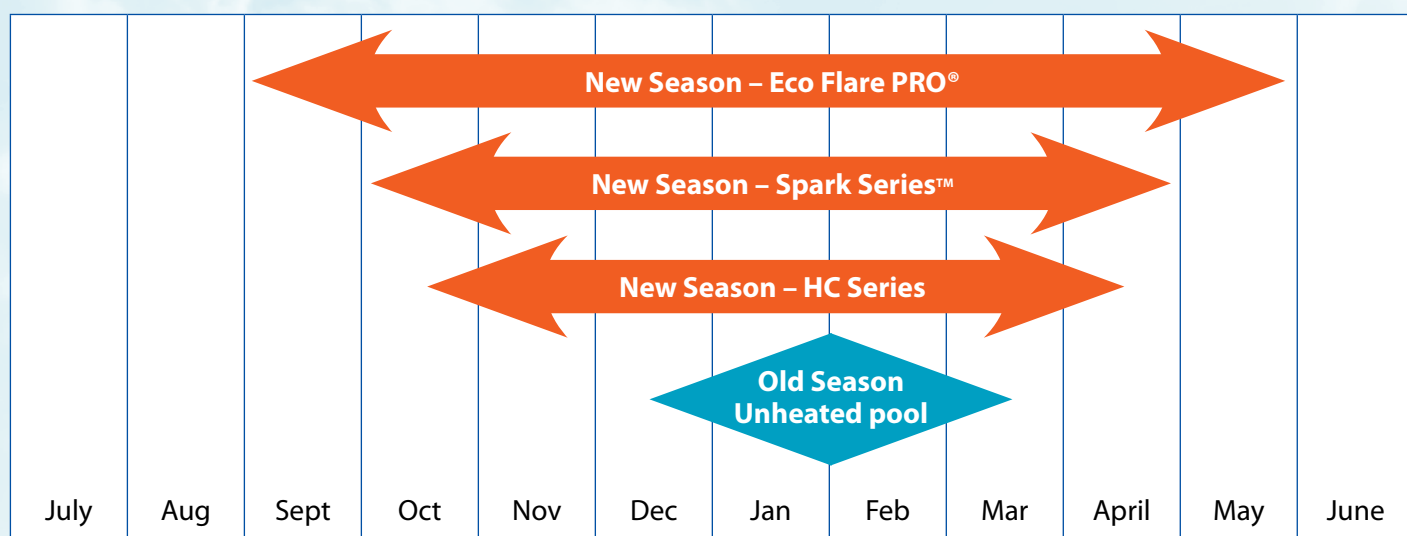
Nothing feels better than a full body plunge into a soothingly warm pool. Warm water wraps around you and relaxes every muscle in your body.

The entire family will enjoy more time in the pool. Think about all the extra months of fun, exercise and sheer relaxation.

A Heliocol Solar Heating system with patented Individual Tube Design™ technology will bring you many years of safe, worry-free comfortable enjoyment in your pool.

## Get the most out of your swimming pool.

Subject to location, seasonal variations and individual comfort needs, the graph below is an example of how swimming seasons have been dramatically extended for hundreds of New Zealand families.



*"Heliocol has kept my pool warm for 12 years now.  
It's the most dependable product I ever bought" Chris Hunt*



**Exercise**



# How does it work?

## Simple Process

Heliocol solar panels are installed on your roof in a sunny position.

Your pool water is pumped through hundreds of tubes in the collectors where it absorbs the sun's heat. This heated water is then returned to the pool for your enjoyment.

## Drain Down Protection

The vacuum valve allows the water to drain down to the pool during periods of low radiation or when the pool reaches your target temperature.

This mechanism prevents the possibility of boiling or frost in the solar collectors.

## Fully Automated, Easy to Use

Simply set the Target Temperature and the Heliocol controller will do the rest...

It is simple to set and adjust for individual needs and comes with a bio-safe winter function.

## Design Options to Suit

### ■ Solar Pump

This is the most common configuration.

The Heliocol controller turns on the solar pump whenever heat is available.

Solar pump is programmed to maximise system performance.

### ■ Motorised Valve:

Heliocol has the lowest pressure drop of all solar panels. It often allows only the existing pool pump to circulate the pool water via the solar array.

The beauty of this configuration is the simplicity and the virtually NIL running costs.

### ■ Combined System

Heliocol can work in conjunction with other heaters such as Gas, Heat Pump or Diesel, with no need for expensive modification or refurbishments.

The Heliocol fully automated combined controller will manage the solar activity and the auxiliary heater to minimise usage of fossil fuels and maximise your comfort.



# Technical Corner

## Heliocol Unique Features

### Over-Molding Injection Technology

One of a kind injection process connects riser tubes to the manifold header, creating a single polymer panel with no leaks.

### Individual Tube Design

Minimises wind effects on the panel and creates extreme mechanical stability.

### Spacer Bars

Prevent warping of the panel over time, as well as prevents abrasion of the riser tubes due to thermal expansion of the panel.

### Modular Structure

Enables fast and firm connection between panels, creating any size absorption area over any type of roof imaginable.

### Cylindric Shape

All parts are rounded, with no sharp angles, in order to avoid stress concentration or the risk of bursting at high pressure.

### Fins

Provide added strength to the unit while preventing differential thermal expansion and distortion of the system.

### Specially Formulated Polymer Material

As tested in authorised laboratories, a unique polymer formula stabilises against sustained ultraviolet radiation, extreme weather and aging.

### Alligator Clamp

Firmly mounts the panel to any roof type with minimum roof penetration.

### Parts & Fittings

All-Polymer parts, creating simple connection between panels and standard plumbing pipes.



Collectors Type		HC-50	HC-40	HC-38	HC-30	HC-15
Length	m	3.85	3.23	2.92	2.31	1.38
Width	m	1.2	1.2	1.2	1.2	1.2
Area	m <sup>2</sup>	4.62	3.85	3.52	2.77	1.65
Weight "Dry"	Kg.	10	8.5	8.2	6.8	3.8
Volume Capacity	Lit.	14.4	12.6	11.4	9.7	7.1
Weight "Wet"	Kg.	24	21	19.6	16.5	10.9
Optimal Flow	Lit./min	20	15	15	12	7



## Flare Series

The development of innovative products never stops at Heliocol

Eco Flare Pro® panel combines the high durability of polypropylene in a glazed panel to provide a great solution where:

- High water temperature demand is 35°C to 50°C
- High wind zones or very cold climate
- There is limited roof space
- Solar energy is required during winter

Eco Flare Pro® is super-light weight and can be tilted to maximise solar gains.

A great application of the Eco Flare Pro® panel is to heat Spa Pools or Lap pools.

Eco Flare Pro®	
Gross area (m <sup>2</sup> )	2.15
Net area (m <sup>2</sup> )	1.85
Length (cm)	215
Width (cm)	100
Height (cm)	9
Weight [empty] (kg)	15
Fluid capacity (litre)	6
Operating pressure (kPa)	500
Test pressure (kPa)	1000





# Spark Series™

The only semi-glazed solar panel.

- Sleek look with seamless connections with binding system suitable for all roofs.
- Recommended for roof pitch >latitude -20°
- Mechanical stability 20°C/25 bar 80°C/20 bar

Collectors Type		Spark 40	Spark 30
Length	m	3.23	2.31
Width	m	1.23	1.23
Area	m <sup>2</sup>	3.85	2.77
Weight "Dry"	Kg	17.0	13.1
Volume Capacity	Lit.	11.7	9.0
No of Binders	#	12	9
Roof Load	Kg/m <sup>2</sup>	7.5	8.0
Optimal Flow	Lit/min	15	12



*Heliocol and Solar Group are proudly sponsoring many community and school pools from Kaitia to Stewart Island*

## Warm Pools for Schools Program

This program involves:

- Assessment of pool energy requirements
- Provide schools with a renewable education program tool to combine with the curriculum
- Lowering costs of existing conventional pool heating
- Assisting schools with project funding.



# Tailored System for Best Results

A few attributes will maintain a longer season at an optimal pool temperature at low cost.

A "100% Extended Season" means a system that will maximise the season for a specific pool at a specific location with particular customer temperature preference.

To achieve "100% Extended Season" the Heliocol Calculator<sup>©</sup> is used by your local Heliocol expert.

## Passive Solar

The sun heating the pool directly without any mechanical assistance.

Passive solar contributes a significant amount of energy to the pool.

Passive solar is maximised when:

- Pool is exposed to the sun with little or no shading
- Darker pool colour, walls and bottom
- Large & shallow pool

## Heat Losses

Before adding heat to the pool, there are many ways to retain the natural heat that is already in the pool.

Some important strategies:

- Pool cover usage to minimise evaporation
- Wind shield to minimise convection
- Pool enclosure to minimise black sky night radiation

## Solar Pool Heating Array Sizing

Heliocol energy output per square meter is one of the highest, therefore requiring a smaller array size.

As a rule of thumb, the size of the solar array should be 100% of the surface area of the pool, for most areas of New Zealand.

However, the array size may need to be smaller or larger depending on the site:

- |                              |                             |
|------------------------------|-----------------------------|
| ■ Geographical Location      | ■ Shade on the roof         |
| ■ Roof orientation and slope | ■ Wind exposure of the roof |
| ■ Roof colour                | ■ Passive solar rate        |
| ■ Roof material type         | ■ Heat losses rate          |

The Heliocol Calculator<sup>©</sup> used by your local Heliocol expert will ensure that the size of the array is optimal for your circumstances, and you receive the best possible outcome for your investment, avoiding under-sizing or over-sizing.



# Heliocol Pays for Itself Fast

Solar Pool Heating is the most cost effective solar system available.

Both small domestic systems up to an Olympic pool type system will return your investment within 1 to 5 years.

## Base Case:

Auckland climate, low wind, no shading, uncovered 40m<sup>2</sup> pool surface area

Season: Mid October – Mid April

Average target pool temp 26°C

Energy required 21,400kWh\* for the season

\* As per RETScreen Analysis, other regions data is available

## Gas Heater

Approx Initial Cost: \$6,900 installed (depending on gas fitting)

Running Costs: Approx \$2,400 per season natural gas

Warranty: approx 3-5 years conditional to chemicals makeup

Warranty Cover: Parts plus limited labour

Operational Life: Moderate (approx 10-15 years)

Pitfalls: Natural gas availability, running costs

Max Output Power: 40kW

Maintenance: Medium to low

## Heat Pump

Approx Initial Cost: \$7,500 installed (depending on electric work)

Running Costs: Approx \$1,800 per season for COP = 4.5

Warranty: approx 1 year for parts and 3-5 years for compressor

Warranty Cover: Parts plus limited labour

Operational Life: Low (approx 7-10 years)

Pitfalls: Slow recovery, noise

Max Output Power: 14kW

Maintenance: Medium to low

## Solar Heating

Approx Initial Cost: \$9,000 installed (depending on roof)

Running Costs: \$0 to \$200 per season

Warranty: 10 year unconditional

Warranty Cover: parts and labour

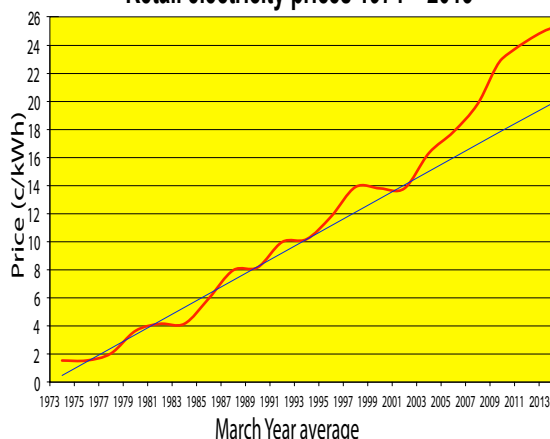
Operational Life: High (approx 20-30 years)

Pitfalls: Roof space, may not cover 100% of season

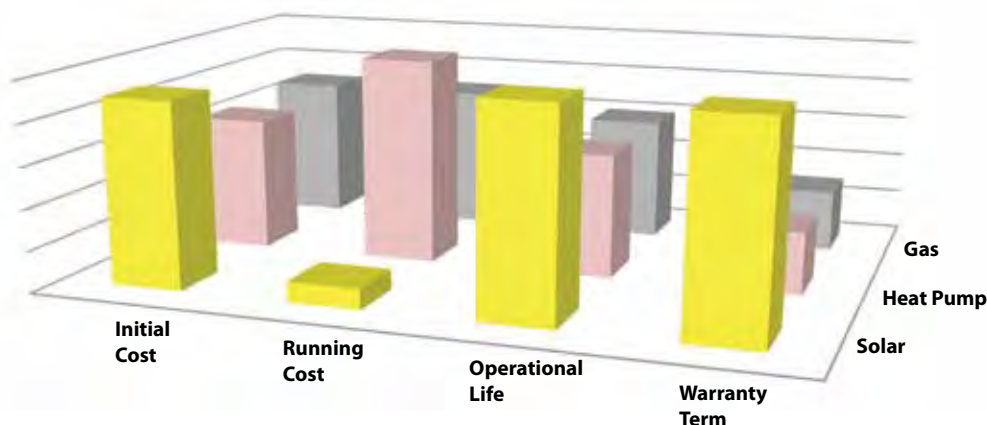
Max Output Power: 28kW

Maintenance: Very low

Retail electricity prices 1974 – 2013



## Case study graph results





# Ultimate Piece of Mind

## Unconditional 10-Year Warranty

Each Heliocol panel is tested under extreme pressure at the fully automated production line.

The panels, the fittings and the fixing system carry an unconditional 10-years warranty.

Heliocol has a unique ceramic compound in the polypropylene mould that allows running salted water & highly chlorinated water at temperature up to 80°C without affecting the durability or the warranty.

Production is environmentally friendly and complies with ISO9001 and ISO14001 requirements.

All other components such as pumps, valves and controllers carry at least a 2-year warranty.

## Compliance with New Zealand Solar Standard NZS2712:2007

Heliocol is the first unglazed panel in New Zealand to comply with NZS2712:2007

This means that the collectors comply with standard:

- Durability
- Water hygiene
- Mechanical Strength
- Stagnation
- Performance

Solar standard compliance is reinforced under the latest building codes.



## As tough as...

Heliocol has been manufactured since 1978. Some of those early systems are still operating today.

A combination of the unique multi riser panel with the special alligator fixing system allows Heliocol to withstand wind forces of up to 190 KMH.

Even large birds or possums will not harm the Heliocol panel array.

## After Sale Service backed up by Solar Group

Solar Group are NZ's leading solar provider since 1986.

Solar Group trains and qualifies solar installers and pool professionals nationwide to ensure high standards of design and installation.

Solar Group registers customer details to maintain regular care and after sale service

Solar Group works closely with EECA, NZ Solar Association and Councils. It facilitates all types of funding, grants and loans to provide customers with the most attractive & affordable solar solutions.



Relaxation

heliocol.co.nz  
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Your Local Heliocol Expert