Fisher Scientific

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Highlighting innovative design features
and useful application information for
Thermo Scientific™ Recirculating Chillers and Bath Circulators

smart notes

design and innovation ▶ water conservation

Q&A

With the rising cost of municipal water supply and sewer disposal, along with corporate initiatives and municipal laws aimed at reducing water usage, how will the cost of purchasing and running a recirculating chiller or bath circulator affect my bottom line?

First calculate the annual water usage and the cost of purchasing and disposing of that water. Then calculate the cost of purchasing and operating a chiller or circulator. Depending on what you pay for water, sewer and electricity in your community, you may be surprised how little a chiller or circulator actually costs. In fact, you may discover that using a chiller or circulator may save you money and pay for itself over time.

Why recirculating chillers are cost effective?

The rising cost of water

According to a Guardian article[1] from 2013, the cost of water has risen 80% in the last decade. Chart 1 to the right shows the cost of water and sewerage per cubic meter (m^3) paid by users of South West Water.

For graphs 1 & 2 below an average cost for water and sewerage of £4.7151 was calculated based on paragraph 13.15 of South West Water "Charges Scheme 2014 – 2015"[2], for a large water consumer using 180,000 m^3/year at a total cost of over £739,000! Standing charges and annual surface water drainage site charge were not included in the average as they would have to be paid whether a recirculating chiller was used or not.

A. A modest application using 15 l/min that runs 8 hours/day, 5 days/week, 50 weeks a year will equate to an annual water cost in Exeter of £8,487!

B. A top of the line Thermo Scientific™ ThermoFlex™ 2500 Recirculating Chiller with a cooling capacity of 2200W @ 20°C has a selling price of about £4624

C. Based on water usage alone this chiller would pay for itself in about 27 weeks.

D. Running the ThermoFlex 2500 at full load calculates to an annual cost of £535.39 based on an electrical cost of £0.103 per kW/h[3]

E. Factoring this expense in with the water savings, the first year of use pays for the chiller and still saves £3328, the second year savings is £7952!

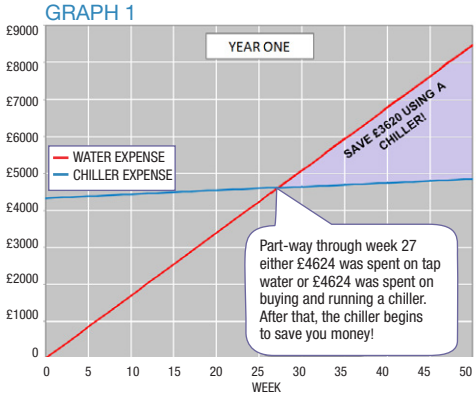
NOTE: bath circulators can be used for applications requiring 1000W or less of cooling and can provide similar subsequent annual savings.

CHART 1

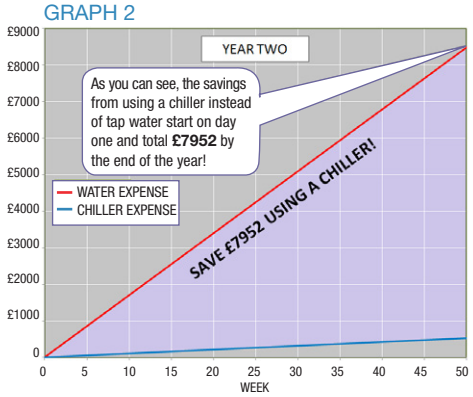
EXETER 2014 WATER AND SEWER RATES[2]	
Volume charge per cubic metre	**£**
Water	
Basic rate tariff	2.0494
HW1 tariff	1.6178
HW2 tariff	1.1613
HW3 tariff	0.9431
Sewerage	
Basic rate tariff (foul drainage only)	3.1889
HS1 tariff	2.9848
HS2 tariff	2.8215
Annual surface water drainage site charge	28,120.00
Basic rate foul and surface water sewerage tariff – for customers not paying a large user sewerage tariff and who discharge both foul and surface water to sewers	3.4701

Why pour money down the drain?

GRAPH 1



GRAPH 2



Summary

Many companies are looking for ways to lower their impact on the environment. One way to achieve this goal is to use less water. Whether your company is in an area that prohibits the use of tap water for cooling purposes or not, a Thermo Scientific recirculating chiller or Thermo Scientific bath circulator can have the added benefit of lowering costs associated with cooling water and improve your bottom line.

[1]http://www.theguardian.com/money/2013/feb/09/rising-water-bills-profits
[2]http://www.southwestwater.co.uk/media/pdf/a/0/Charges_2014-2015_Complete__Amend_0914.pdf
[3]http://www.ukpower.co.uk/home_energy/tariffs-per-unit-kwh

Learn more at www.thermoscientific.com/tc

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