

AQUANOMIX SYMPHONY™

DATA + ANALYTICS
INTELLIGENCE AT YOUR FINGERTIPS



AGGREGATING AND ANALYZING DATA

HEAT EXCHANGE + WATER QUALITY

EMPOWERING YOU TO

DRIVE CAPITAL ASSET PRESERVATION

YOU CAN'T MANAGE WHAT YOU DON'T MEASURE

BENEFITS

- Reduce potential of CapEx failure
- Manage OpEx efficiency
- Benchmark enterprise portfolio
- Validate regulatory compliance
- 7x24 continuous commissioning
- Strengthen sustainability initiatives

UNBIASED, UNCOMPLICATED

Symphony is an independent, insightful third party software built for enterprise managers to better understand the relationship between heat exchange and water quality.

It's straightforward, on a user-friendly dashboard, which means:

You won't have to see this:

$pH_s = (9.3 + A + B) - (C + D)$ where:
 $A = (\log_{10}[TDS] - 1) / 10 = 0.15$
 $B = -13.12 \times \log_{10}(oC + 273) + 34.55 = 2.09$
at 25 °C and 1.09 at 82 °C
 $C = \log_{10}[\text{Ca}^{2+} \text{ as CaCO}_3] - 0.4 = 1.78$
 $D = \log_{10}[\text{alkalinity as CaCO}_3] = 1.53$

SYSTEM BENCHMARKING

The preeminent feature is the Nexus Number™, a single benchmark that aggregates energy efficiency and water quality data. We turn data into intelligence while you track your enterprise portfolio daily.

We even monitor atmospheric data to better understand the relationships driving the Nexus Number™.



QUICK FACTS*

- Typically, the greatest user of energy and water in a commercial or industrial building is the cooling system.
- On average, a neglected or poorly maintained cooling tower can reduce chiller efficiency by 10% to 35% – leading to OpEx cost increase.
- 15% of all unplanned outages in critical facilities and data centers result from water-related issues at an estimated \$500,000 per outage.
- 1/4 inch of scale in a heat exchanger can increase energy consumption up to 40%.

EMPOWERMENT

Empower your enterprise team to make informed decisions about your capital assets with data, not opinion. Waiting for a critical failure is not an option. Take back control.



WHAT THEY'RE SAYING

"Your product focuses on the most important thing: risk." – Risk Management Executive

"Significantly contributes to risk mitigation." – Global Plant Optimization Consultant

"This isn't just for operational; it's business development." – Data Center Executive

RETURN ON ASSET

Symphony can deliver measurable contribution to ROA by maximizing the lifecycle of your chiller plant assets. It provides real-time actionable data analytics that help you succeed in maintaining an operationally efficient and profitable building.

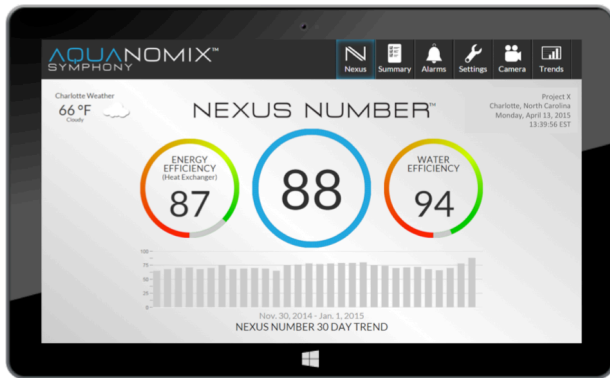
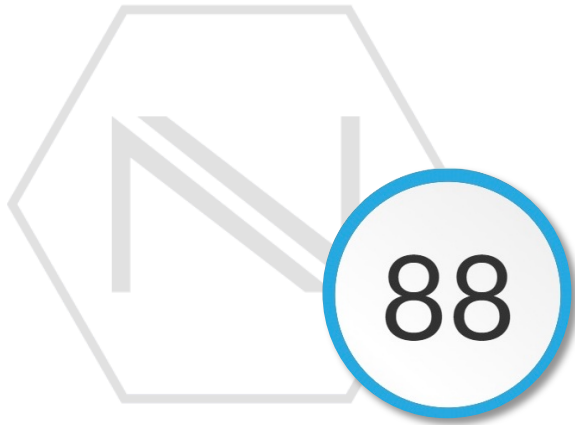
INTELLIGENCE

Monitor, trend, report, and benchmark in real-time, 7x24, from anywhere in the world. Dial down into the most finite of data – or stay high-level with portfolio benchmarking.

It's all there for the taking.

*Sources: Source: Emerson Global Data Center, Data Center World, Waste Reduction Partners, Manufacturers; Trane, York, Carrier, McQuay, ASHRAE Journal, Air-Conditioning and Refrigeration Institute

NEXUS NUMBER™



Symphony™ Homepage

LIKE NO OTHER

The Nexus Number™ is a single benchmark that aggregates energy efficiency and water quality data.

The Key Performance Indicators within the Nexus Number include:

- Water Quality Data
- Water Efficiency Data
- Heat Exchanger Efficiency Data

TECHNOLOGY HIGHLIGHTS

- Benchmarking for risk management professionals, building owners and operators
- Tools for optimizing water + energy usage in evaporative cooling systems
- Open protocol software platform allows for easy system integration
- Continuous commissioning of critical control points
- Cloud-based, 24/7 remote accessibility
- Advanced data analytics for system diagnostics and trending capabilities
- Incorporates atmospheric condition data

BY THE NUMBERS

ANNUALIZED OPERATIONAL SAVINGS		
Energy Cost	\$ 127,500	Year
Water Cost	\$ 75,686	Year
Chemicals	\$ 15,500	Year
HVAC Maintenance	\$ 7,000	Year
Total Cost	\$ 225,686	
Lifecycle	20	Years
Total Lifecycle Cost	\$ 4,513,720	
Projected Operating Savings	3.00%	Year
Annual Operating Savings	\$ 6,770.58	Year

ANNUALIZED CAPITAL SAVINGS		
Lifecycle	20	Years
Chiller Plant Cost (Capital cost)	\$ 1,600,000	
Chiller Plant Cost (per year)	\$ 80,000	Year
Projected Increase in Service Life	5%	
Annual Savings Over Service Life	\$ 4,000	Year

TOTAL ANNUAL SAVINGS: \$10,771 per year

*Assumptions: Chiller Plant Size: 1,000; 20-year Asset Lifecycle; 50% Load; System Efficiency at 0.85KW/Ton; Electrical Cost at \$0.06 KWH; Cycles of Concentration: 5; Cost of Water: \$8.00 per 1,000 gallons; HVAC Maintenance: \$7.00 per Ton; Water Treatment Cost: \$15.50 per Ton. One failure results in \$500,000 loss. Annualized over 20 years is \$25,000.

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CAPITAL ASSET PRESERVATION

The most robust design can be undermined by human error. Mitigate and minimize the probability of a critical asset failure by maximizing the lifecycle of your capital expenditures through the continuous monitoring and benchmarking of your systems.



OPERATIONAL RISK

Symphony's continuous commissioning enhances operational readiness – conveniently viewable at any moment of any day through an online portal or local tablet.



SUSTAINABILITY

The world has a diminishing supply of water. Symphony aims to help any corporation achieve their sustainability goals by enhancing both water quality and energy use in a cooling system – leading to lower costs for both. Our software can help deliver points towards LEED® certification.



REGULATORY COMPLIANCE

Depending on the location of your facility(s), regulations may be in place to optimize and/or minimize water and energy in commercial and industrial buildings. Symphony can help to support compliance of those regulations. Contact us for more information on how.

WHAT'S YOUR NEXUS NUMBER™



AQUANOMIX
P.O. Box 194
Davidson, NC 28036
(704) 402-4373

FIND OUT MORE
Visit www.aquanomix.com,
email sales@aquanomix.com,
or call us at (704) 402-4373.

