IDDeX

Indirect & Direct Evaporative, Direct Expansion

Data Center Hybrid Cooling System

Patent pending

- Data Center Power Usage Effectiveness (PUE) as low as 1.2.
- A complete server room cooling solution all in one package for easy installation.
- Nominal sizes from 25,000 to 100,000 CFM

Energy Efficiency without sacrificing reliability

ELI Energy Labs was GREEN before GREEN was cool

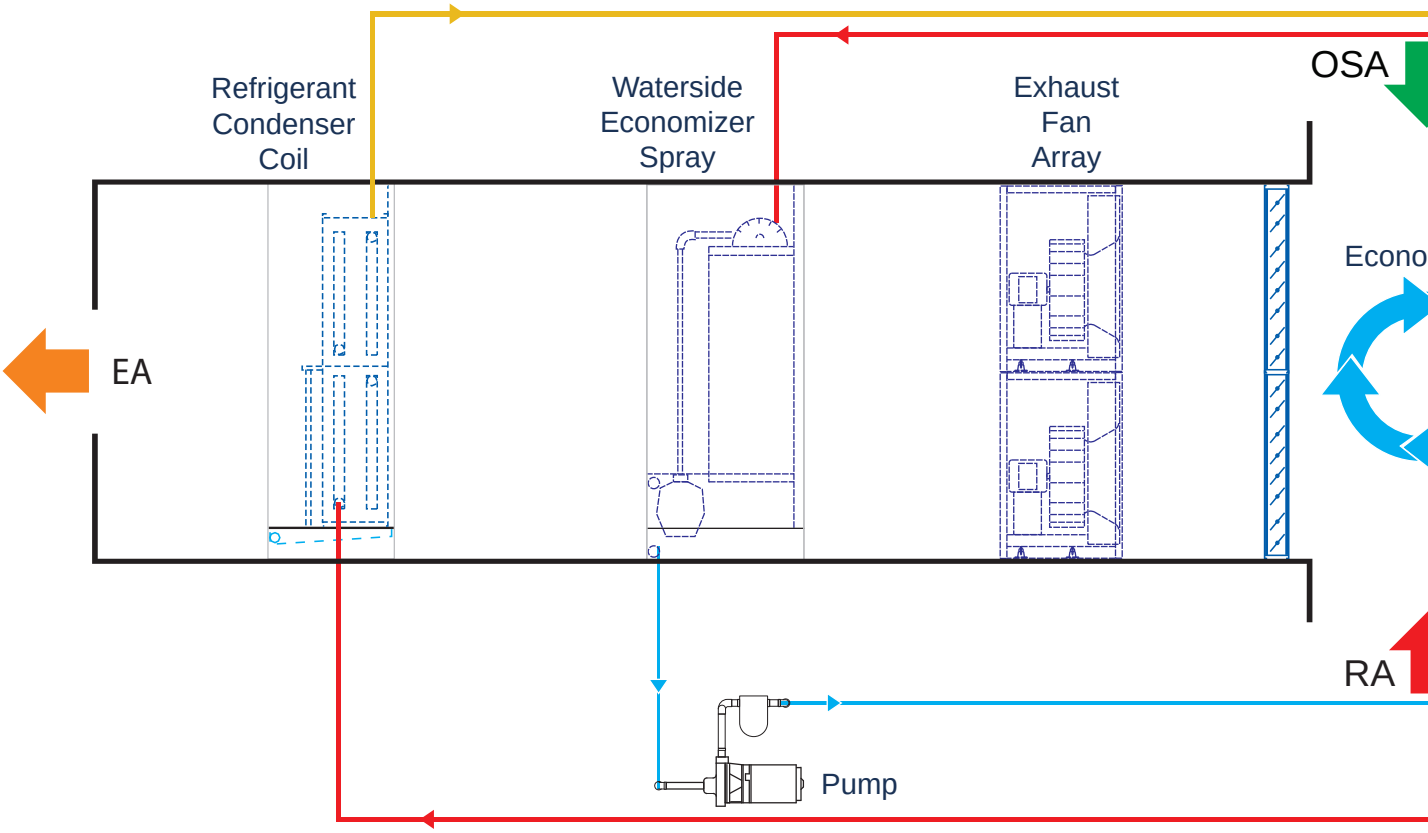
Energy Labs Inc

Recent advances in server technology have greatly increased the watt density of Data Centers making cooling system operating costs more important than ever.

Fortunately, modern computers are designed to operate reliably at temperature and humidity levels much higher than previous recommendations.

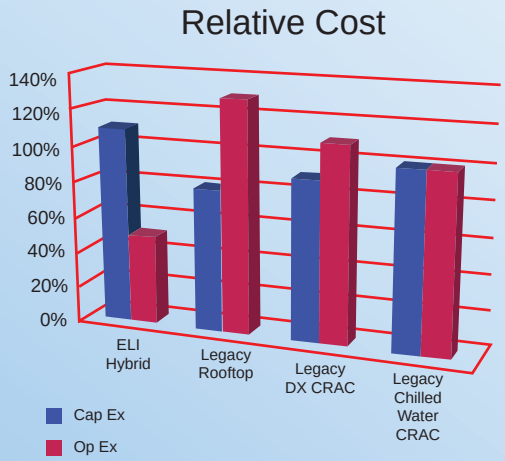
Thanks to the Energy Labs IDDeX unit It is no longer necessary to install expensive to operate and space consuming Legacy systems utilizing Computer Room Air-Conditioning (CRAC) units to achieve proper conditions and insure system reliability. With fewer more efficient IDDeX systems, Operating Expense is reduced to the absolute minimum, below all other types of Data Center systems.

Many combinations of components are available to customize the design for local ambient conditions as well as supply air requirements. Sizes available range from 25,000 CFM up to 150,000 CFM per unit and cooling capacities up to 500 TR.



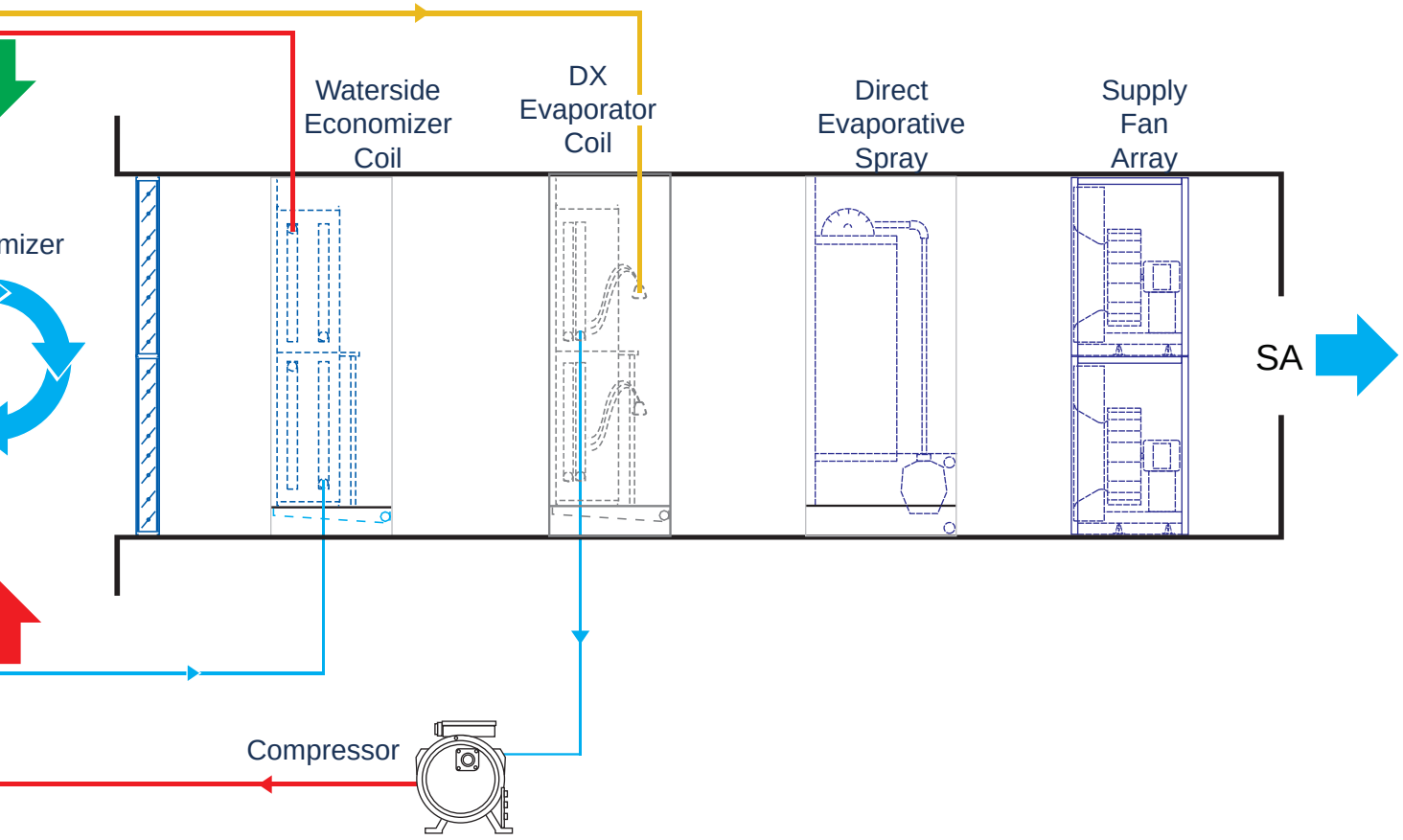
Energy Labs Hybrid Systems allow data center operators to achieve unheard of PUE's in the range of 1.2 and lower in some cases. With all the equipment located outside of the server room, the need for access to under floor areas is eliminated, and server room space previously used for CRAC units is available for revenue generating use. With maintenance activities completely outside the sever room security and contamination risks are greatly reduced as well.

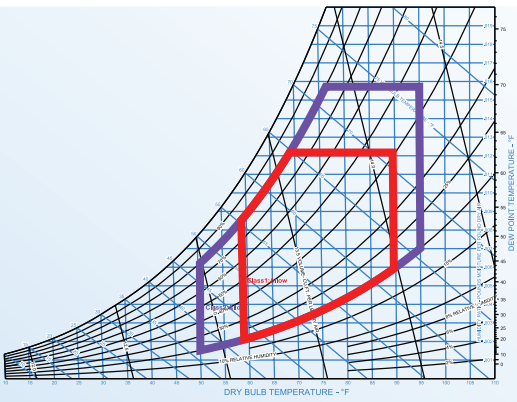
Previous attempts to reduce Cap Ex by utilizing modified commercial grade Legacy rooftop systems have produced disastrous results with energy usage and maintenance costs creating Op Ex far in excess of the Cap Ex saving realized. As a result of the poor performance of these commercial rooftop applications, center operators have felt compelled to continue to utilize Legacy CRAC systems despite high PUE's (typically 2.5) and extremely high maintenance costs.



Requiring a Capital Expenditure only slightly higher than a Legacy CRAC design, the ELI IDDeX system provides the lowest PUE of any available system, making it the right choice for your data center.

World class energy efficiency with no sacrifice in reliability.





Current ASHRAE TC 9.9 standards allow many hours of operation in dryer climates without the use of any mechanical cooling.

As server manufacturers continue to expand the recommended operating envelope these hours should increase even further making your installation of an ELI IDDeX system an even smarter solution.

With the Energy Labs Hybrid system only two envelope penetrations are required for installation of the complete system. The unit can be curb mounted or raised above the roof on structural steel. If required, units with side or top discharge and return can be provided for grade level installation. This avoids potential structural issues on existing buildings and can significantly reduce the need for envelope modification costs offering the possibility of significant Cap Ex savings.

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Data Center Hybrid System Modes of Operation

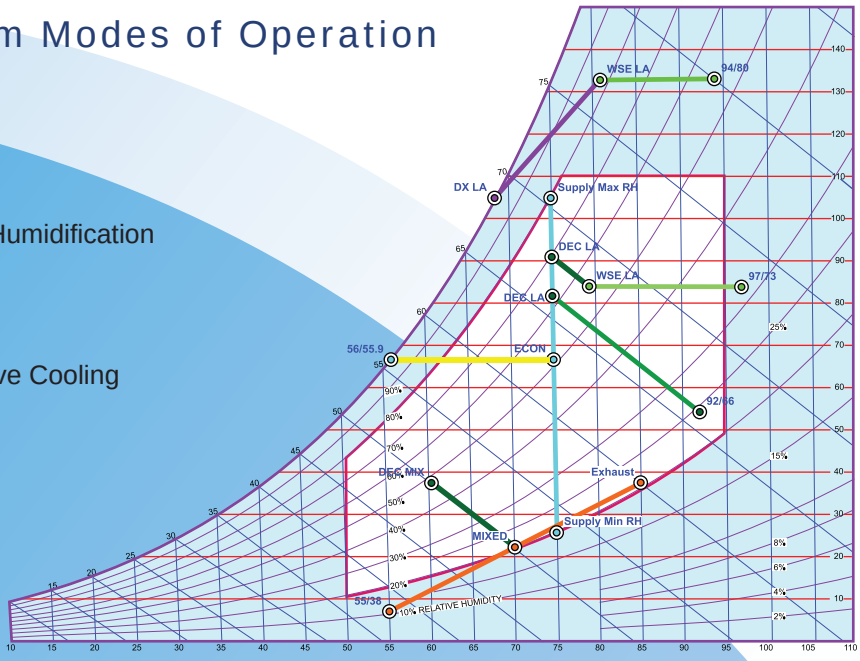
Mode 1
Modulating Outside Air Economizer

Mode 2
Return/Outside Air Mixing and Evaporative Humidification

Mode 3
Direct Evaporative Cooling

Mode 4
Waterside Economizer and Direct Evaporative Cooling

Mode 5
Waterside Economizer and DX Cooling



Unit construction

All Energy Labs Hybrid Systems utilize a perimeter base frame constructed of Structural Steel to insure minimum deflection and maximum unit life.
Cabinet walls and floor are available in a wide variety of materials including Galvanized Steel, Aluminum, and Stainless Steel. Units are guaranteed to have leakage rates below 1% of airflow at design CFM and static pressures up to 1.5 times design.

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For more information including detailed product specifications, and specific requirements for special applications, please contact your local sales representatives.

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