

# The Data Centers of the Future Are Here



Elliptical Mobile Solutions ®

The Global Leader in Micro-Modular Data Centers ™

In today's rapidly changing information technology (IT) environment, businesses are looking for solutions to manage their infrastructure, reduce costs, and improve operational efficiencies.

Traditional "brick and mortar" data centers have become overly complex, costly to build, and extremely inefficient. Even containerized data centers, which are an alternative, fail to adequately address space, cost, and energy inefficiencies.

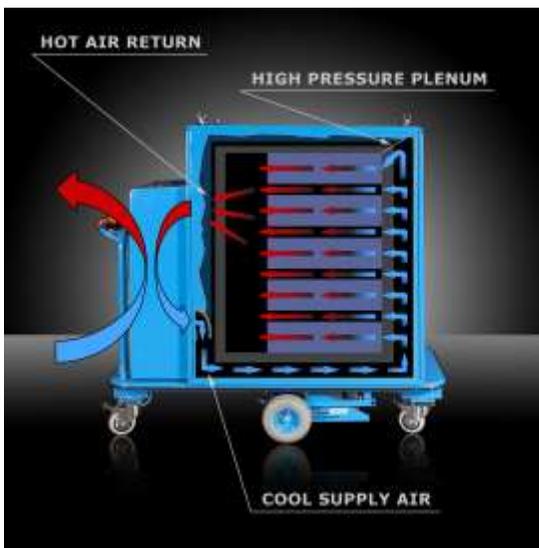
Elliptical Mobile Solutions' Micro-Modular Data Centers™ go to the next level in terms of implementation, management, mobility, energy-efficiency, and cost-effectiveness.

Our "data centers in a box" offer the most advanced IT solutions on the market today.

## ENERGY EFFICIENT

Skyrocketing electrical costs to cool and maintain data centers are among the most critical problems in today's IT world. Elliptical Mobile Solutions' (EMS) patented, **onboard closed loop cooling** confines the hot and cold aisles within the enclosure so that cooling is applied directly to the equipment.

- Manage power consumption, cooling delivery, and temperature set points at the rack level.
- Dramatically reduce your cooling and electrical costs by up to **50%**, compared to a traditional data center.
- Significantly reduce harmful greenhouse gas emissions.



Is your business able to keep up with the rapidly changing Information Technology (IT) Environment?

Would you like to significantly reduce the costs to build, expand, or maintain your data center?

How about reducing the costs to cool your equipment by up to 80% while dramatically decreasing greenhouse gas emissions?

Elliptical Mobile Solutions has the answers.

## HIGH-DENSITY = CAPEX, OPEX SAVINGS

If you plan to build a new data center or are in need of a data center retrofit, our Micro-Modular Data Centers offer a quick and cost-effective solution. Traditional data centers require that the majority of the infrastructure be built upfront and support not only current needs but future demands as well. Our enclosures can be designed, built, fully populated, and delivered within **10 weeks** compared to 5 to 24 months for a traditional data center.

- Reduce the costs to plan, build, and implement your new facility by up to **80%**.
- Have a fully functional data center that is cost, space, and energy-efficient within weeks instead of months or years.

Our industry standard 19-inch racks are fully adjustable and allow you to utilize the latest high-density solutions including powerful blade servers, network, and Telco gear. A choice of customized options enables you to increase server capacity and take advantage of co-location, cloud computing, and virtualization technologies. Our airtight enclosures include onboard cooling, security, and fire-suppression.

- No need for the large room, big iron, HVAC, and raised floors to run your equipment.
- Reduce the footprint of your facility by up to **75%**.
- Save up to **65%** in operating costs.

## SCALABLE

Our Micro-Modular Data Centers are perfectly scalable, providing you with the building blocks to add computing capacity as needed.

- Eliminate the need for 10- to 20-year projections that result in “over” and “under” builds.
- Grow your data center horizontally – from 1 to 100 units – without disrupting existing operations.
- Build as you need and pay as you grow.

## DEPLOYABLE

Our Data Centers can be moved anywhere in the world very quickly and inexpensively. There’s no need for the 20-foot shipping containers and cranes required to move containerized data centers. Our products can be managed and moved by one individual.

Our patented adaptive suspension uses In Motion Engineering™ to eliminate the harmful effects of motion, shock, and vibration.

- Have a data center where you want it, when you want it, and for however long you want it, as long as there are power and network connectivity.
- Reduce the costs to pack, transport, and set-up your new facility by up to **50%**.
- Keep your equipment safe and well protected in any standard or mobile computing environment.

## MOBILE

Our C<sup>3</sup>-S.P.E.A.R. enclosures offer power-assisted mobility, allowing one individual to move up to 1,000 pounds of rack-mounted IT equipment at the push of a button.



- Micro-sized units can fit through any standard-sized door, be loaded onto and off of a standard elevator, and moved to any part of your office, or relocated to new headquarters.
- Our R.A.S.E.R. and R.A.S.E.R. HD can be moved with a pallet jack or forklift.

## Power Assisted Mobility



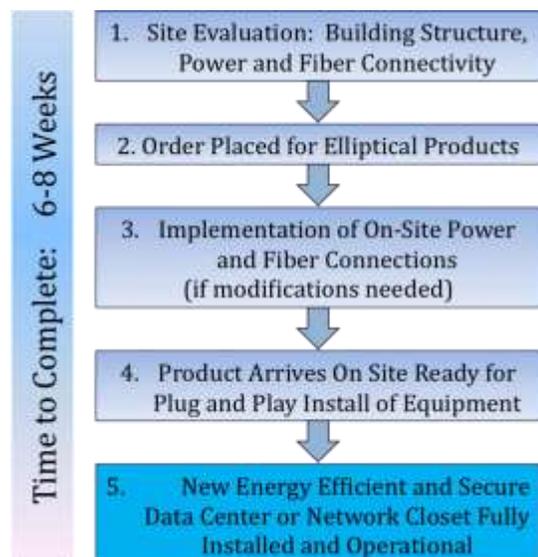
## SUPPORT

Our “First to Market” solutions, backed by our experienced, certified professionals, guarantee you unparalleled support and peace of mind.

- Products feature on-board security and can be remotely monitored.
- EMS enclosures have a one-year warranty and 24/7 technical support.
- Extended warranties are available.

## INSTALLATION

Our enclosures are easy to implement requiring: site survey, powered connectivity and installation



## KEY FEATURES:

- Built-in closed loop cooling can support high temperature water and IT loads from 20 to 80 kW
- Fully redundant cooling system configuration with self-adjusting valves, requires only a mechanical hookup
- Hot swappable and field upgradable Heat exchanger (HX) units can support multiple configurations
- Hot swappable and alarmed fan assemblies assure continuous operations
- Shock and vibration isolation
- Industry standard 19" wide x 42" deep racks are fully adjustable
- Fire protection using Novec 1230
- Smart power distribution units with outlet switching and power monitoring

## APPLICATIONS:

- High Performance Computing
- Easy Cloud Implementation
- Grid Computing
- High-Density Zone
- Data Center Hot Zones

# R.A.S.E.R. HD

The R.A.S.E.R. HD is a 42U, high-density, hyper-efficient Micro-Modular Data Center™ capable of providing redundant cooling for IT loads from 20 to 80 kW.

The enclosure uses pre-engineered closed loop (re-circulated) cooling with zero bypass airflow. This "best practice" method of cooling contains the hot and cold aisles providing one of the greenest IT solutions on the market today with a PUE as low as 1.1.



Deployable outdoors or indoors, the R.A.S.E.R. HD features active fire suppression, electronic security and environmental monitoring. These interfaces make it the most powerful and easy to implement containerized data center product on the market today.

Grouped together or as single units, more than 1000 W/ft<sup>2</sup> density can be achieved with little or no site prep, design or construction.

\*Blade servers sold separately.

# R.A.S.E.R. DX

The R.A.S.E.R. DX is 42U, NEMA 3R (optional NEMA 4) enclosure that can completely replace the building shell portion of a standard data center. The unit can provide the equivalent of up to 130 square feet of high-density, fireproof floor space with 12 kW of closed loop cooling applied directly to the equipment.

Equipped with industry standard 19" racks, the R.A.S.E.R. DX can accommodate the world's most high-tech equipment making it an ideal solution for cloud computing, disaster recovery or data center retrofits and expansions.



The R.A.S.E.R. DX is equipped with optional mission critical venting to protect equipment within the enclosure in the event of a power failure.



The R.A.S.E.R. DX is available with a NEMA 4 environmental package to protect equipment from harsh indoor or outdoor conditions.

## KEY FEATURES:

- Built-in closed loop cooling can support 12 kW of IT
- Mission critical venting available
- Welded and sealed panels provide superior strength and create a NEMA 3R or optional NEMA 4 enclosure that protects equipment from the elements
- Industry standard 19" wide X 42" deep racks are fully adjustable for depth
- Environmental network monitoring available
- Optional Cyberlock Security with multi-tier security and audit trail

## APPLICATIONS:

- New Data Center Build
- Data Center Retrofit or Expansion
- High Performance Computing
- Multi-Tenant Computing
- High-Density Zone
- Disaster Recovery
- Business Continuity

# C<sup>3</sup>-S.P.E.A.R.

## KEY FEATURES:

- Single or dual onboard closed loop cooling
- Self-propelled platform allows one person to move up to 1,000 pounds of equipment up a 6% grade. The relocatable platform can be moved with a pallet jack.
- Industry standard 19" wide X 42" deep racks are fully adjustable for depth
- Self-contained I/O panel provides connectivity to the equipment within the enclosure without allowing access to the sensitive equipment inside
- Access point to I/O panel, front door, and motion systems can be secured by tamperproof CyberLock system

## APPLICATIONS:

- Instant Data Center or Network Closet
- Disaster Recovery
- Remote Office Support
- Re-establish Communications
- Mobile Computing
- Offsite Data Replication
- Emergency Management
- Data Center Expansion or Retrofit

The C<sup>3</sup>-S.P.E.A.R. is a 24U, NEMA 12 or optional NEMA 4 Micro-Modular Data Center that provides from 2.5 kW to 6.0 kW of closed loop cooling directly to the industry's latest high-density equipment with no need for costly infrastructure.

The mobile platform allows one person to move up to 1,000 pounds of electronic equipment at the push of a button. The relocatable platform can be moved with a pallet jack.

The compact and affordable C<sup>3</sup>-S.P.E.A.R. provides the perfect platform for businesses and government agencies requiring a quick and cost-effective turnkey data storage solution or co-location alternative. The enclosure also is available in a ruggedized outdoor platform to deliver high performance computing in remote and nonstandard areas of the world.

**Mobile C<sup>3</sup>-S.P.E.A.R.**



**Relocatable C<sup>3</sup>-S.P.E.A.R.**



**NEMA 4 C<sup>3</sup>-S.P.E.A.R.**



**Ruggedized C<sup>3</sup>-S.P.E.A.R.**



## ABOUT EMS

Founded in 2005, Elliptical Mobile Solutions has invested more than five years developing, testing, and patenting its equipment. Our goal is to provide businesses with the most advanced IT solutions on the market while improving energy, capital, and operational efficiencies.

The R.A.S.E.R. HD, R.A.S.E.R. DX, and C<sup>3</sup>-S.P.E.A.R. have been recognized for breakthroughs in rack-level density and rapid deployment, as well as space, power, and cooling efficiencies.

Headquartered in Chandler, Ariz., EMS has more than 1,000 associates in locations around the globe.



## OUR GREEN MESSAGE

Energy consumption and cooling requirements by today's data centers have become critical considerations.

The data center industry is the fourth largest producer of carbon dioxide emissions, accounting for 3 percent of global pollution, according to the Department of Energy (DOE).

The DOE predicts that if the industry continues at its current pace, 14 new coal plants will need to be built in the next two years in order to support that growth.

Our technology offers the lowest cost per kilowatt of compute capacity in the market place today – as low as **\$5,000/KW**.

Our goal is to move the data center industry from being a huge consumer of electricity to being a small consumer of clean energy.

## OUR STRATEGIC PARTNERS

At EMS, we are committed to partnering with the world's leading technology and business solution providers whose products and services support and complement our own. We offer a program for a limited number of authorized partners who can provide value and loyalty to our customer base in locations throughout the globe. To view all of our partners, please visit our website at: **[www.EllipticalMobileSolutions.com](http://www.EllipticalMobileSolutions.com)**.

“The Micro Data Center strategy built out with the latest (equipment), our most dense server standards and infrastructure would allow us to have 5X the amount of total TCC in less than 10% of the cost and physical footprint.” – **Mike Manos, CTO, AOL**

“Elliptical Mobile Solutions is hardly a household name in the data center world, but don’t bet against it becoming one. The Chandler, Ariz.-based company that started inside a founder’s garage builds one of the world’s smallest data centers and has already secured some big-name customers including, most famously, AOL. While bigger data centers seem to be better for webscale companies such as Google and Facebook, many are happy to grow on a lot smaller scale — about 105 cubic feet at a time.” – **Derrick Harris, Editor, Giga.om**

“HP partners such as EMS are searching for ways to cost-effectively increase efficiency while growing their business and delivering excellent customer service...by leveraging HP solutions available to them through AllianceONE, EMS can focus on enhancing the customer experience while accommodating their own growth.” – **Manoj Suvarna, Director, Global Sales Enablement for Strategic Alliances, HP, Houston, TX**

“This can be seen as a breakthrough in constructing technology centers to store data in Vietnam... In regards to technology and equipment related to building data centers for Internet Service Providers (ISP), the EMS solution allows quick, efficient and flexible deployment.” – **Deputy Minister Le Nam Thang, Ministry of Information and Communication, (“MIC”) Vietnam**

“The implementation of the large and expensive (containerized data center) solutions is still not possible for 90 percent of the business world. A rack-level solution that captures the advantages of containerized computing in a smaller, less expensive footprint is required. Micro (Modular) Containerized Data Centers are a viable answer.” – **The Uptime Institute’s Green IT Symposium, 2009, NYC, NY**

“By providing a drop in place architecture, we found the EMS Cabinet Solution saves both time and money compared with a traditional design. The EMS Solution requires less paper work, planning, and engineering. In addition, the EMS system in most municipalities will only require an electrical design and inspection which means less time to get started and less to worry about when completing the project. Finally, due to the operational efficiencies associated with the EMS Cabinet Solution, clients can realize additional savings on their operating costs once the solution is installed and operational.” – **Rob Nash-Boulden, Director Operations, Data Centers, EDI, Phoenix, AZ**

“The C-S.P.E.A.R. solution will enable the city to have a mobile disaster recovery facility with the ability to relocate it on a moment’s notice in the event of an emergency (and) to get our critical applications on-line and operational in a different location.” – **Kevin Hinderleider, IT Director, City of Avondale, AZ**

“Judicial Members liked the C<sup>3</sup>-S.P.E.A.R. due to its small size and the fact that it’s mobile. The Data Center will provide a secure platform for the Hopi Judicial Tribal Courts’ e-mail database, scanning, digitization, and storage. It provides the perfect solution for our needs.” – **Camelia Dewakuku, Computer Specialist, Hopi Judicial Tribal Courts, Keams Canyon, AZ**

“By using the C<sup>3</sup>-SPEAR we can achieve outstanding performance without having to build a new data center or rent an existing facility.” – **Ladd Vagen, IT Director, City of Flagstaff, AZ**

“IT Members liked EMS’ Micro-Modular Data Centers due to their compact size and mobility. We now have the ability to easily relocate our data center in the event of an emergency or if the forecast calls for severe weather.” – **Jerolyn Tekala, IT Director, Hopi Reservation, Kykotsmovi, AZ**

## Elliptical Mobile Solutions®

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