



## APPLICATIONS

- High Performance Computing
- Tier 3 or 4 Data Center Builds or Retrofits
- Grid Computing
- High-Density Network Closet
- Future Capacity Requirements
- Data Center Hot Zones

## SAVINGS

(see reverse side for details)

### CapEx

- Reduce the costs to plan, build, and implement your new facility by up to 80% vs. a Traditional Data Center

### OpEx

- Reduce footprint up to 75%
- Reduce cooling and electrical costs up to 50%
- Product can be moved by a pallet jack or forklift - reduce costs to relocate your facility
- Reduce overall operating costs up to 65% by using high temp water, removing the need for chillers

## Time

- Enclosures can be delivered within 8 weeks
- Streamline Supply Chain

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

**Save Money with the most scalable container on the market today**

The **R.A.S.E.R. HD** is a 42U, high-density, hyper-efficient Micro-Modular Data Center capable of cooling IT heat loads from 20 to 40 kW **fully redundant** or up to 80 kW non-redundant using chilled water. Enjoy greater operating expense savings by using high temperature water and removing the chillers from your environment. The R.A.S.E.R. HD is capable of supporting up to 26 kW of IT using 85 degree water.

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.



Deployable **outdoors or indoors**, the R.A.S.E.R. HD features active fire suppression, electronic security, 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/ft2 density can be achieved.**

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

Save Money with the most scalable container on the market today

**Capital Expense Reduction based on a 1MW Data Center\***  
(actual data inclusive of all direct construction costs, indirect cost and design fees)




Scenario	Scenario Description	Shell (sq ft)	Tier	Max KW Per Cabinet	Number of Rasers/Racks	Cost per kW	Total Cost	Capital Savings	% Savings
1	1MW Air-Cooled RASER DX	7,500	2	12Kw	84	\$ 7,647	\$ 7,647,115	\$ 11,952,885	61%
2	1MW RASER HD (Dual 20kW) using 55 degree water (Tier 4 Electrical)	10,000	4	20Kw	50	\$ 13,329	\$ 13,329,235	\$ 6,270,765	32%
3	1MW RASER HD (Dual 20kW) using 55 degree water (Tier 3 Electrical)	10,000	3	20Kw	50	\$ 9,884	\$ 9,884,147	\$ 9,715,853	50%
4	1MW RASER HD (Dual 40kW) using 55 degree water	8,250	4	40Kw	25	\$ 11,851	\$ 11,850,839	\$ 7,749,161	40%
5	1MW RASER HD (Dual 40kW) using 85 degree water	8,250	3	26Kw	38	\$ 12,300	\$ 12,299,884	\$ 7,300,116	37%
6	1MW Stick Build at 5kW rack	18,000	4	5kW	200	\$ 19,600	\$ 19,600,000		

## Assumptions and Scope:

1. Data Center modules to be constructed to mirror the availability and redundancy of the RASER (No overbuilding); 2. Data Center to be located in an existing building single floor (prefer Warehouse); 3. Fire protection for the facility will accommodate densities for people space as RASERs will be equipped with FP; 4. SQft projected are for Data Center and Infrastructure to support. Additional space should be calculated for offices and potential NOC; 5. Real Estate costs are not included nor are any IT hardware costs; 6. Network cabling costs are not included but should be at 15,000 per cabinet; 7. All cabinets are expected to be filled to meet KW capacity; 8. All security costs to fit out a level 6 S.O. configuration are included.

\*All estimates provided by GKKWorks, Ltd., a leading data center design-build firm.

## Operating Expense Reduction based on a 1MW Data Center

Average Efficiency Level	2.5	Electrical Cost / Kwh (in USD)	\$0.13
EMS Product Being Deployed	RASER HD	Total IT Load (in KW)	1,000
Efficiency Level Achieved with EMS Product	1.2		
Energy Consumed Per Hour			
	Current Efficiency Level	EMS Deployed Efficiency Level	
Total IT Load (in KW)	1,000	1,000	
Total Facility Load	2,500	1,200	
Current Energy Output			
	Current Efficiency Level	EMS Deployed Efficiency Level	
Electricity Used Per Year (in KW)	21,900,000	10,512,000	
Annual Power Cost (In USD)	\$2,847,000	\$1,366,560	
Annual Carbon Footprint (In Tons)	13,205	6,339	
Annual EMS Deployed Efficiency Savings			
			
	Kilowatts of Electricity (in KW)	Electricity Costs (in USD)	CO2 Emmissions (in Tons)
Reduction in:			Equivalent to this many fewer cars
1 Year	11,388,000	\$1,480,440	6,867
5 Years	56,940,000	\$7,402,200	34,334
10 Years	113,880,000	\$14,804,400	68,668

## Perfectly Scalable

The R.A.S.E.R. platform allows for perfect scalability of the data center in much smaller increments than are available in traditional builds or with larger container-based solutions. Through the use of modular mechanical and electrical systems available on the market today, the R.A.S.E.R. platform allows the data center to be scaled perfectly to meet IT demand.