HashRaQ MAX

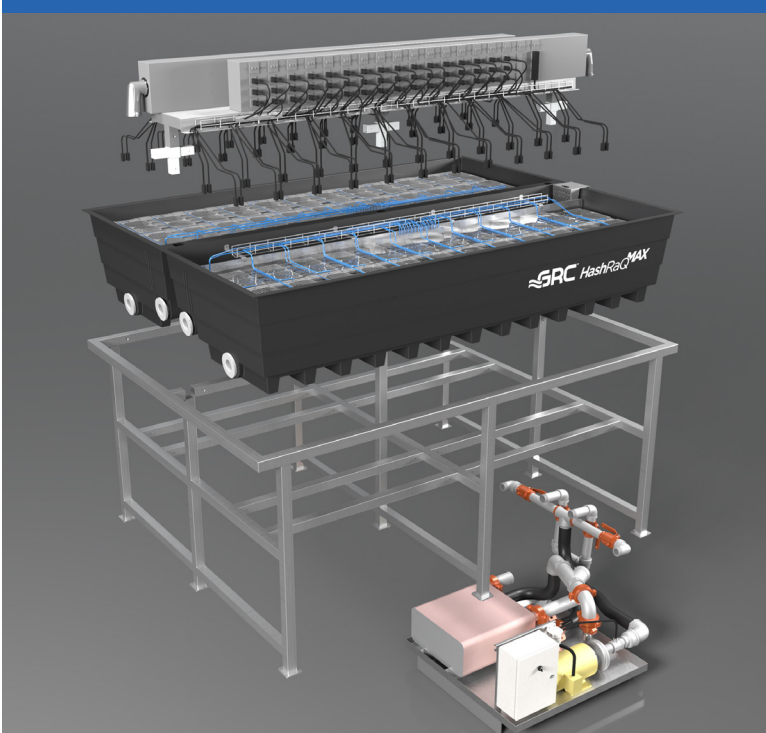**GRC** — THE IMMERSION COOLING AUTHORITY®

Take Your Blockchain Performance to the MAX

The ROI-Focused HashRaQ MAX Is Engineered with Reliability in Mind.

The HashRaQ MAX Unpacked

Designed specifically for crypto mining, the HashRaQ® MAX is a next-gen immersion cooling system that tackles extreme heat loads. Its high-performance cooling distribution unit (CDU) makes it extremely efficient, by sizing the heat exchanger for dry coolers.
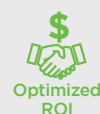
You'll experience excellent density and performance with minimal infrastructure requirements, along with lower supplemental expenses such as electrical, plumbing, networking, and shipping.

The system has been rigorously vetted for maximum reliability:

- CFD (computational flow dynamics) modeling
- Balanced and adequate coolant flow verification
- Benchmarking of miners to verify system specs
- Fluid compatibility studies over many IT systems
- Reliable and consistent supply chain

Smart engineering makes the HashRaQ MAX a true workhorse that delivers maximum performance coupled with exceptional value.

- Powerful, efficient, and affordable
- Reduces miner and cooling power use[1]
- Cools up to 288 kW per CDU
- pPUE of <1.02[2]
- Supports overclocking of over 6 kW/miner
- 48 Bitmain S19 miner capacity
- Remote monitoring
- Long service life/Recyclable at end of life
- ElectroSafe® coolant protects miners from contaminants

Optimized ROI	Maximum Reliability	Quick Deployment	Self Contained
Location Flexibility	Supports High Density	Compact Footprint	Eco-Friendly/ Sustainable

[1] Accomplished through removal of fans.
[2] General specification with 288 kW load.

Explore Next-Era Crypto Mining with the HashRaQ MAX

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HashRaQ^{MAX}

General Product Specifications

Number of Immersion-Cooled Racks	2
Total Miner Capacity	48 Bitmain S19 miners
Number of CDUs per Double-Capacity Rack	1 [3]
Total Cooling Capacity	
Chiller-Free Water: 40°C (104°F)	288 kW [4]
Over-Clocking Capability	6 kW/miner [5]
pPUE [6]	<1.02
Standard PDU Details	
Quantity	Four
Outlets	24 C19 each
Architecture	Basic
Circuit Breaker Amps	160A each
Alternate PDUs Available	
Overall Dimensions (L x W x H)	2.85 m x 1.97 m x 1.55 m (9.4 ft x 6.5 ft x 5.1 ft)
Estimated Component Weights	
Racks, CDU, and Stand	227 kg (500 lbs)
Coolant	860 kg (1894 lbs)
Estimated Weight When Commissioned [7]	1950 kg (4300 lbs)

Power and Water

Final Heat Rejection Options	Flexible options can include:
	Adiabatic/evaporative cooling tower
	Dry cooler [8]
Water Requirements	Maximum particulate size 0.8 mm [9]
	Input temperature
	40°C (104°F)
	Recirculating flow
	29.5 m³/hr (130 gpm)
	6 to 9°C dT (10 to 15°F dT)
	Connection
	73.0 mm (2.5") male Victaulic
CDU Power Requirements	1x 3PH 460VAC 60hz, max power consumption 3.7kW
PDU Power Requirements	4x 160A 415Y/240VAC [10]

Monitoring and Reporting

Platform	IoT with Modbus TCP/IP for BMS interface
Alerting	Alerts via DCIM platform
DCIM/BMS Integration Protocols	Modbus
Measurements and Fault Detection	Operating temperatures of coolant and water
	Coolant pressure
	Coolant levels

Site Requirements

Client provides	Access to power and recirculating water [11]
	Secondary containment
	Level surface (slab or raised floor) with slope <1/650
	Standard data center fire suppression as required
Operating Environment	Ambient temperature 5 to 45°C (40 to 113°F)

Delivery and Installation

Lead Time	Typically ships within 12 weeks after receipt of purchase order.
Shipping Terms	Ex-Works
On-site Installation and Training [12]	One business day per unit

Warranty

Includes 90-day limited warranty against defects in material and workmanship with limited support. Annual monitoring plans	Other plans available for additional cost:
	Full year limited warranties and support plans
	Annual maintenance plans

[3] An additional spare CDU available for additional cost.
[4] CDU is designed for up to 288 kW (6 kW per miner). Actual cooling capacity will depend on end user's specified level of overclocking, as well as final heat rejection system.
[5] Over-clocking greater than 6 kW/miner may require colder/chilled water.
[6] General specification assuming 6 kW/miner. Values will change if end user utilizes less over-clocking.
[7] Includes coolant, mining equipment, cables, and cords. Actual weight depends on configuration.
[8] System cooling performance dependent on climate.
[9] Failures resulting from particulates exceeding 0.8mm or poor water quality will void warranty.
[10] One input power feed per PDU.
[11] GRC and HTS can assist in heat rejection design/implementation.
[12] Installation applies to installing the rack in the data center space only and does not include installation of digital asset mining equipment.