



Test Lab Presentation

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SNIA Emerald™ Training

*SNIA Emerald Power Efficiency
Measurement Specification*

Version 2.1

July 20-21, 2015



Agenda

- About Demartek
- SNIA Emerald and EPA ENERGY STAR Data Center Storage
- Use Case example
- Resources



 **Demartek**

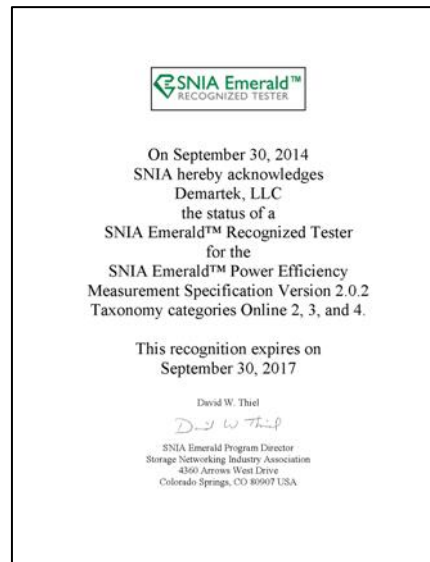
Real-world, Hands-on Research & Analysis

- Computer Industry Analysts with on-site Test Lab in Golden, Colorado, specializing in
 - ◆ Performance testing and reporting for servers and storage
 - ◆ Lab validation testing
 - ◆ Ease of use studies
 - ◆ Deployment guides, solutions guides and reference architectures
 - ◆ Enterprise data center technologies
- Our lab includes enterprise servers, networking and storage (DAS, NAS and SAN)
- We run SNIA Emerald/EPA tests and real-world applications to test servers and storage solutions

Demartek: Industry Recognition



- ISO/IEC 17025:2005 accredited for Electrical Testing
- SNIA Emerald™ Recognized Tester
- EPA-recognized test lab for ENERGY STAR Data Center Storage testing



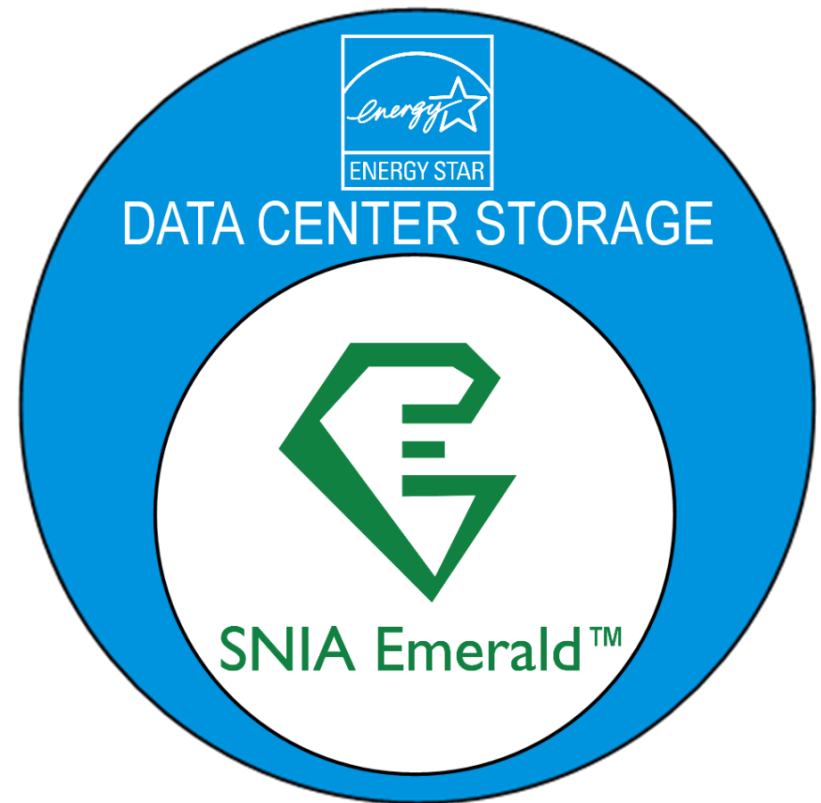
Org. ID	Organization Name	Type of Recognized Body	Lab is a List Body?	Programs	Organization Address	City	State	Country
1125540	Demartek	Accredited Laboratory	N	Data Center Storage	2711 Mosier Street Suite 103	Golden	CO	US



Demartek: Our Environment

- We have a fully provisioned IT test lab with servers, infrastructure and automation.
 - ◆ Ethernet networking (1GbE, 10GbE, 40GbE) switches & adapters
 - ◆ Fibre Channel (8GFC, 16GFC) switches & adapters
- Our staff has the know-how to drive the energy efficiency testing and submit official test results.
- We have power meters and power sources to monitor power and keep input power at specified voltage tolerances.
- We have a climate-controlled lab and temperature and humidity meters to monitor conditions and comply with parameters required by specification.


- Demartek understands:
 - ◆ SNIA Emerald Power Efficiency Measurement Spec 2.0.2
 - ◆ EPA ENERGY STAR Data Center Storage 1.0
 - ◆ The relationship between the two specifications
- Demartek is involved in upcoming specifications
- Demartek helps answer customer questions regarding the specifications.



The Test Process

- Demartek has developed the expertise to help customers navigate the:
 - ◆ SNIA Emerald and EPA ENERGY STAR Data Center Storage testing process
 - ◆ The submission process for EPA ENERGY STAR Data Center Storage.
- Demartek has automated the process to collect performance data, power meter data and temperature sensor data to produce the SNIA Emerald TDR.
- Demartek has performed the testing for several dozen entries that appear on the EPA ENERGY STAR Data Center Storage list.


Online Categories

 Demartek	Connectivity	Storage Protection	No SPOF	Reports Input Power*	Minimum COMs Required	Maximum Supported Configuration
EPA Only		RAID		Yes	Yes (not RAID)	
Online 2	Connected to single or multiple hosts	Optional	Optional	Optional	0	≥ 4
Online 3	Network-connected	Required	Optional	Required	1	≥12
Online 4	Network-connected	Required	Required	Required	1	≥100

* Must be user accessible, not just field engineer feature

Power Supplies



 Demartek®	115v Internal Non-Redundant				230v Internal Redundant			
% of Rated Load	10%	20%	50%	100%	10%	20%	50%	100%
80 PLUS	—	80%	80%	80% PFC.90	—	—	—	—
80 PLUS Bronze	—	82%	85% PFC .90	82%	—	81%	85% PFC .90	81%
80 PLUS Silver	—	85%	88% PFC .90	85%	—	85%	89% PFC .90	85%
80 PLUS Gold	—	87%	90% PFC .90	87%	—	88%	92% PFC .90	88%
80 PLUS Platinum	—	90%	92% PFC .95	89%	—	90%	94% PFC .90	91%
80 PLUS Titanium	90%	92% PFC .95	94%	90%	90%	94% PFC .95	96%	91%

Use Case Example

▶ [Demartek Use Case Example Video](#) (0:05:22)

EPA ENERGY STAR Data Center Storage



➤ *EPA ENERGY STAR Data Center Storage*

certified products:

<https://data.energystar.gov/Government/ENERGY-STAR-Certified-Data-Center-Storage/gqtf-hp7x>

➤ EPA Product Shipment Data

- ◆ SNIA has been appointed as the Storage Shipment Data Aggregator by the EPA

http://www.snia.org/emerald/EPA_Reporting

Demartek Resources

- Demartek Test Lab:
www.demartek.com/TestLab
- Demartek Monthly Newsletter:
www.demartek.com/Newsletter



- Questions?
Call us at +1 (303) 940-7575

