PILLER
Power Systems

ACTIVE POWER

CLEANSOURCE® HD675 UPS

40%
TCO Savings

12x
Less Likely to Fail

9x
Less Carbon Emissions

60Hz | 675 kW | 480V | Flywheel Technology

CLEANSOURCE® HD675 UPS

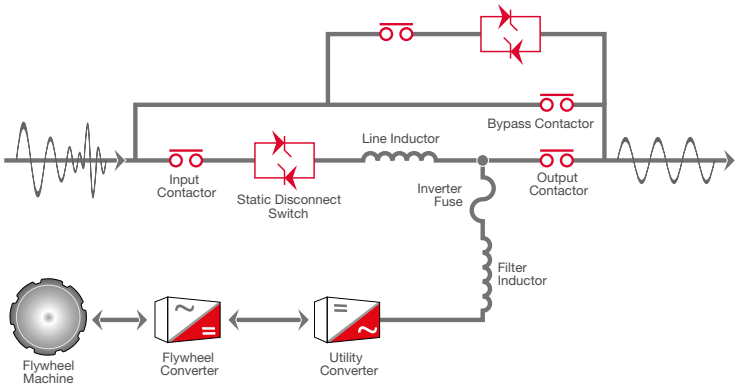
Overview

Active Power's CLEANSOURCE® HD675 delivers 40% TCO savings, is 12 times less likely to fail, and reduces your impact on the environment by 90%. Based on a field-proven design, our flywheel UPS is a perfect fit for today's mission critical applications in data centers, health care facilities, and industrial and manufacturing sites.

Parallel Online Architecture

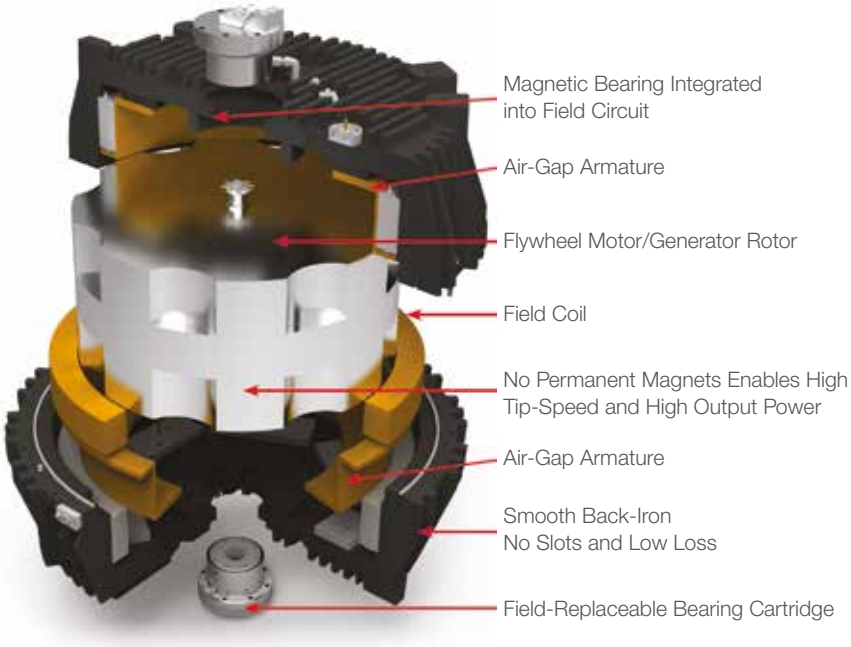
The CLEANSOURCE® HD675 is rated at 750 kVA / 675 kW. Up to 7 UPS systems can be paralleled for redundancy or capacity, supporting over 4.725 MW of backup power in a single paralleled system.

Active Power's Parallel Online Architecture provides excellent isolation between input and output, while delivering a clean sinusoidal waveform to critical loads. CLEANSOURCE® HD675 UPS is able to protect against all 9 IEEE power disturbances, such as voltage fluctuations, harmonics and complete power outage.



Flywheel Technology

- Stores 10.5 MJ of energy
- Up to 1 minute of runtime (load dependent)
- Wide ambient temperature range – 0ºC – 40ºC
- High density, high efficiency design



High density, high efficiency design

Key Benefits and Features

- Up to 98% efficient
- Half the space of legacy battery based UPS
- Lower installation costs
- Less heat rejection
- Lower cooling requirements
- Lower maintenance and service
- Cost-effective installation
- Generator compatibility
- 20-year design life

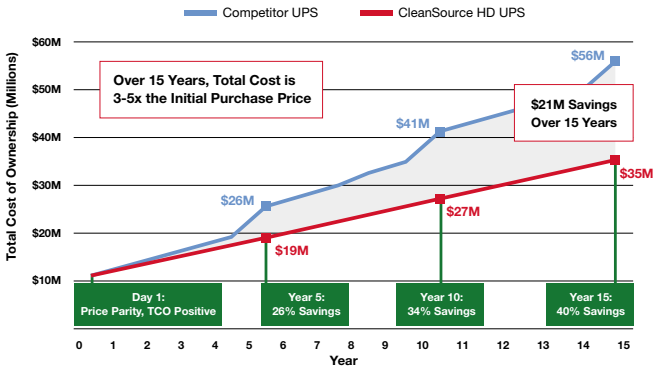
Service and Maintainance

Active Power has designed the CLEANSOURCE® HD675 with ease of maintenance in mind to ensure your critical power infrastructure operates with the utmost reliability. CLEANSOURCE® HD675 requires one simple and non-invasive annual maintenance. A streamlined maintenance schedule both restores your UPS to factory-like condition and reduces downtime during its operating life, thereby improving the availability of your operation.

40% TCO Savings

CleanSource® HD675 combines a competitive initial cost with lower ongoing operational expense – up to 40% lower than traditional UPS over 15 years. The result is a dramatic TCO benefit for your application, with net savings to you from day 1 of operation.

- Superior energy efficiency – over 96% efficient at 40% load
- Reduced cooling needs – no need for dedicated cooling for batteries
- Lower maintenance requirements – routine annual check-up and bearing change every third year
- No battery changes – integrated flywheel with 20 year life



12x Less Likely to Fail

Proven to be 12 times less likely to fail than a battery based system, the integrated flywheel energy storage of the CleanSource® HD675 UPS makes it inherently reliable, delivering predictable, consistent back up power. The flywheel is constantly spinning, storing kinetic energy and ready to assume the load in case of a power outage. By contrast, battery failures are the leading cause of UPS load loss and system downtime.

> "With a dynamic electromechanical system like CleanSource® HD, demand failures are highly unlikely. With the flywheel spinning, any changed affecting system health are detected and repairable prior to an outage occuring. Conversely, a battery based system is an electrochemical process and exhibits non-detectable failures even with monitoring and routine maintenance."
>
> **Steve Fairfax | President, MTechnology, Inc.**

9x Less Carbon Emissions

CleanSource® HD675 UPS is the smart and responsible choice for the environment, saving thousands of tons of carbon from being emitted. The integrated flywheel permanent energy storage uses up to 90% less embedded carbon to manufacture versus lead-acid batteries. CleanSource® UPS high efficiency and lower cooling requirements contribute to lower power consumption and reducing operational carbon emissions by 40% over the life the product. In comparison to lead-acid batteries, flywheels last up to 20 years, are not toxic, take up 50% less space and require less maintenance.

Product Specifications CleanSource® HD675 UPS

RATING		
Maximum kVA		750
Maximum kW		675
OUTPUT		
Voltage		480 VAC 3-phase, 3-wire plus ground
Voltage regulation	Steady state	+/-1 % for +/-10 % input
	Flywheel mode	+/-1 % steady state
	Transient	+/-1 % within 50 mSec for 100 % load step
Voltage distortion[1]		<1% linear loads and <5% for 100% non-linear loads
Inverter		PWM with IGBT switching
Frequency		60Hz (mains synchronized) (normal operation +/- 0.2 % free running)
Load Power Factor Range		0.7 lagging / 0.9 leading without derating
Slew Rate		Adjustable from 0.2Hz/second to 3.0Hz/second
Current - Nominal (480 VAC)		903A
Overload Capability-Mains Operation		Cont.: 105% 10 min: <110% 5 min: <125% 1 min: <150% 10s: <200% Immediate: >200%
UPS Efficiency[2]		96.5% @ 50% load up to 98% @ 100% load
INPUT		
Voltage[3]		480 VAC 3-phase, 3-wire plus ground
Voltage Range		+10% / -15% (programmable)
Frequency		60 Hz +/- 10% maximum (programmable) +/- 3% (default)
Power Factor		0.99 at rated load and nominal voltage
Harmonic Current Distortion	Linear Load	<2% at 100% load
	Non-Linear Load[1]	<5% at 100% load
Current - Nominal (480 VAC)		846A
Current - Maximum		1050A
Surge Withstand		Meets IEEE 587/ANSI C62.41
Walk-In		1 to 15 seconds (programmable)
Internal Backfeed Protection		Yes
ENERGY STORAGE		
Type		Integrated Steel Flywheel spinning at 7,700 RPM
Flywheel Runtime (% Load)		100%: 15s 75%: 20s 50%: 29s 25%: 59s
Flywheel Recharge Time		< 2 min (nominal) at 175kW 3 min (programmable) at 100kW

[1] EN 62040-3
[2] DC energy storage offline
[3] From grounded wye source
[4] Design per UL891
[5] 100% load (675kW)

GENERAL DATA		
Parallel Capability		Yes, up to 7 systems = 4.725MW
Internal Static Bypass		Included
Control Panel		10-inch Color Touchscreen Graphical Display
Withstand Capability[4]		65kA
Remote Monitoring		Yes (optional)
External Customer Contacts		8 Input and 8 Outputs (programmable)
ENVIRONMENTAL		
Audible Noise		<83 dBA at 1 meter
Temperature	Operating	32 to 104° F (0 to 40°C)
	Storage	-13 to 158° F (-25 to 70°C)
Humidity		5% to 95% (non-condensing)
Altitude[4]		Up to 3,000 feet (914 meter) 1.2°C derating for every 1000ft above 3000ft
Emissions and Immunity		FCC Class A, Subpart J of Part 15/ EN 62040-2
Heat Rejection - Online[5]		19.10kW / 65,210 BTU/h
PHYSICAL DATA		
Height		80 in (2,032 mm)
Width		132 in (3,353 mm)
Depth		39 in (991 mm)
Weight		10,971 lbs (4,976 kg)
Cable Entry		Top or Bottom
Safety		UL 1778 listed. CUL CAN/CSA 22.2 No. 107.1

ADDITIONAL OPTIONS
4-wire Input
Dual Input
High Resistance Ground (HRG)
Remote SNMP / MODBUS Monitoring
CSView - Real-time Monitoring
GenSTART - Generator Start Power
Remote EPO
Floorstand Kit
Remote Status Panel
SYSTEM FEATURES
Online and Fault-Tolerant UPS
Predictable Flywheel Energy Storage
20-year Design Life
Wide Operating Temperature Range
Quick Recharge Time
Low Maintenance and Service
Comprehensive Service and Support
Multi-vendor Generator and Switchgear Compatibility
Simple and Cost Effective Installation
No Hazardous Waste Material
Field Proven Reliability

c UL us LISTED

ACTIVEPOWER

PILLER Power Systems

www.activepower.com