



Image shown may not reflect actual configuration

Cat[®] Energy Storage System (ESS)

Heavy Duty ESS 48V DC

The heavy duty ESS is designed for applications that are subjected to a severe load shedding grid environment. Typical applications include installations where scheduled, rolling regional utility outages occur every 1-2 hours continuously during peak hours and off-hours. The heavy duty system has the ability to meet these extreme demands where reliability, long calendar life, long runtime capability and scalability are desired.

Features

Product Features

- Greater usable capacity – provides up to 100% usable range of state-of-charge (SoC) without compromising cycle life.
- No depth of discharge (DoD) limitation. Energy cells can remain at 0% SoC for extended periods of time with no long-term operating life impact.
- Zinc-air energy storage cells are inherently safe as there is not a mechanism for thermal runaway, providing advanced safety features
- The addition of power cell can be used to provide improved performance during multiple short duration discharge events.
- Suitable for outdoor installation in normal to dusty environments with an IP 55 enclosure.
- Designed for outdoor operation in 0°C to 50°C temperature range with no impact on cell life and no requirement for air conditioning.
- Reduced possibility of theft – cells will not operate when removed and contain no valuable raw materials inside.
- Smart monitoring and balancing at the individual cell level.
- 24/7 site visibility through the Cat[®] telematics suite.

Reliable Power Protection

The Cat energy storage system provides reliable, long-duration uninterruptible power for Telecom BTS and microwave backhaul operations. The energy storage system features long life cycle characteristics.

More Usable Energy Storage

The zinc-air energy cell performance is not adversely affected by deep discharging, long standby conditions, or exposure to high ambient temperature. More usable energy storage means a smaller battery system when compared to other energy storage technologies that have a life cycle impact when repeatedly discharged to low SoC.

Smart Monitoring

Integral to every Cat ESS is a telematics suite that provides superior analytics for tracking local power reliability, ESS performance, remaining life, individual cell health, and operating cost optimization. Essential ESS health data and peripheral site status, such as electrical grid state, diesel generator set status, and overall product readiness, are captured.

Worldwide Product Support

Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries.

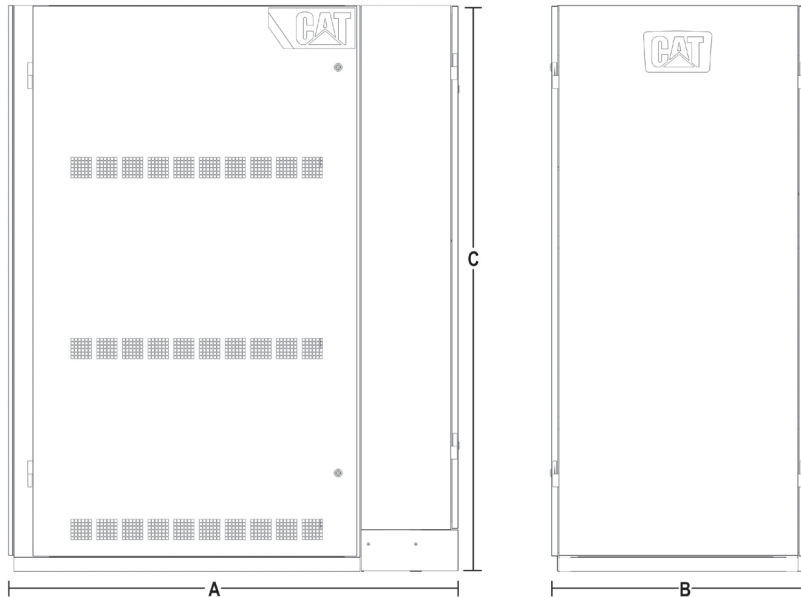
Technical Data

Sales Model	Peak Power	Runtime at Peak Power	Design Power	Runtime at Design Power	Nameplate Energy (E/10)	Max. Charge Power	Charge Time (from full system DoD event)	Ambient Temp Range (Operation)	Ambient Temp Range (Storage)
ES14H3.5 DC HD	3.5 kW	1.00 hr	1.5 kW	8.56 hr	14.0 kWh	4.7 kW	12.6 hr	0°C to 50°C (32°F to 122°F)	-20°C to 50°C (-4°F to 122°F)
ES20H4.25 DC HD	4.25 kW	1.00 hr	2.2 kW	8.11 hr	20.0 kWh	5.9 kW	12.6 hr		
ES27H6.0 DC HD	6.0 kW	1.00 hr	3.0 kW	8.22 hr	27.0 kWh	8.3 kW	12.6 hr		
ES34H7.75 DC HD	7.75 kW	1.00 hr	3.7 kW	8.29 hr	34.0 kWh	10.7 kW	12.6 hr		
ES40H8.5 DC HD	8.5 kW	1.00 hr	4.5 kW	8.11 hr	40.1 kWh	11.9 kW	12.6 hr		

Dimensions

Sales Model	Total System Weight	Length Dim "A"	Width Dim "B"	Height Dim "C"
ES14H3.5 DC HD	884 kg (1949 lbs)	1520 mm (59.8 in)	872 mm (34.3 in)	1850 mm (72.8 in)
ES20H4.25 DC HD	1193 kg (2630 lbs)			
ES27H6.0 DC HD	1661 kg (3662 lbs)	2490 mm (98.0 in)	872 mm (34.3 in)	1850 mm (72.8 in)
ES34H7.75 DC HD	1988 kg (4383 lbs)			
ES40H8.5 DC HD	2297 kg (5064 lbs)			

For reference only. Total system weight includes all energy cells, power cells, and electrolytes. Do not use for installation design. Please contact your local Cat dealer for exact weight and dimensions.



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