



Image shown may not reflect actual configuration.

## Cat<sup>®</sup> ETS150

Up to 150 kWh Energy Storage Capacity  
48 VDC 24 kW Output (Continuous)  
VAC 150 W – 2.5 kW Output (optional)

The Cat ETS150 unit is a compact hybrid energy system designed for telecom and other DC voltage applications. It integrates with multiple energy sources such as solar power, electrical utility/grid (where available) and generator set. This will enable ETS150 to utilize the stored energy when the renewable source or electrical utility/grid is unavailable or not sufficient to meet the site load.

## FEATURES

### Reliable, Modular and Compact

The ETS system allows easy installation of solar power controllers, rectifiers, inverters, batteries, protection and communication hardware in a single robust cabinet. The cabinet is engineered with a modular configuration to allow field installation of additional hardware to manage growth of in-site energy requirements.

### Power Integration

The ETS unit is designed to integrate solar power generating system with any available grid, battery and a standby diesel generator set where required. The IP55 rated outdoor cabinet contains both power control and distribution equipment with space for suitable batteries to store the generated energy for use when grid and solar power are insufficient or unavailable.

### System Controller

The System Controller manages system parameters and allows real time remote access to all system data. The controller can store system data and provides a touch screen interface for ease of installation and servicing operations.

### Solar Charge Controller

Maximum Power Point Tracking (MPPT) controllers are designed to maximize energy extraction, conversion and minimize inefficiency through heat losses. The ETS system has space to mount multiple charge controllers and could be upgraded on site based on the requirements.

### Rectification (AC to DC Conversion)

The ETS system has space for multiple rectifier shelves for holding a rectifier control module and rectifiers. The number of rectifier modules can be changed in the field if the generator set needs to be upgraded for future load demands.

### Energy Storage

- Advanced lithium-ion batteries provide energy density, high discharge/recharge efficiency and long life cycle.
- Additional batteries can be field fitted if site energy demands increase or usage patterns change.
- Remote monitoring of battery condition and performance.

### Applications

- Mobile Telecommunication base station towers.
- Remote locations with limited or no grid connection.
- High uptime requirements with limited maintenance.

### Mode of Operation

- Batteries are charged from solar power (and grid where available).
- Batteries are discharged when solar power (and grid) is unavailable or when the site load exceeds solar power.
- Generator set charges batteries if solar and grid are unavailable, and batteries are discharged.
- Solar array, batteries and generator set are sized to suit the power demands and available space on site and can be optimized to minimize CAPEX, OPEX and emissions depending on application requirements.


### Standard Equipment

- Photovoltaic System Controller with touchscreen HMI, remote control and monitoring communication.
- Solar MPPT Charge Controllers (sized to application).
- Rectifier Modules (AC-DC) (sized to application).
- Inverter Module (DC-AC) (optional).
- Energy storage batteries (sized to application).
- 4G GSM modem and MODBUS connectivity.

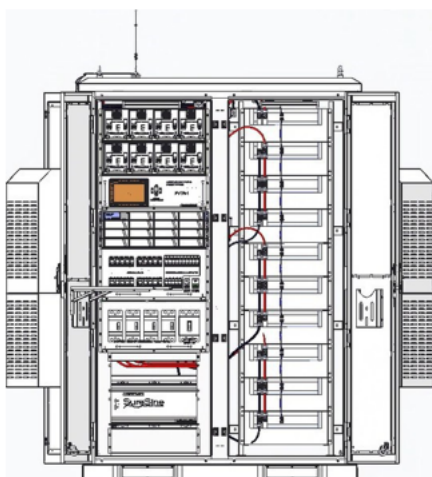
## Product Rating

The Cat® ETS150 cabinet house contains the renewable energy controller, converters and storage system with a number of batteries and support equipment.

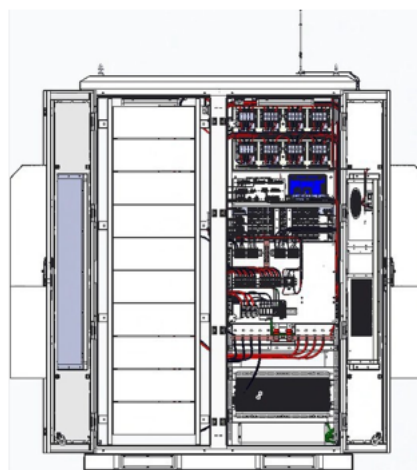
The ETS can be installed and operated in combination with generator set, utility/grid, solar photo-voltaic and storage system for increased energy capacity and discharge duration.

Total Energy Capacity	Power Rating	Energy Time Shift
150 kWh (Max.)	3.2 kW – 45 kW (AC input) 33.6 kW (Max. DC input)	ETS150 

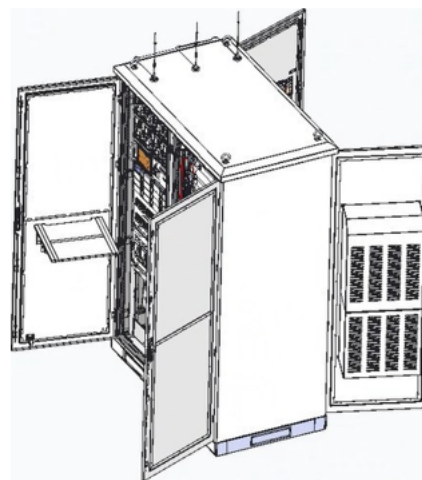
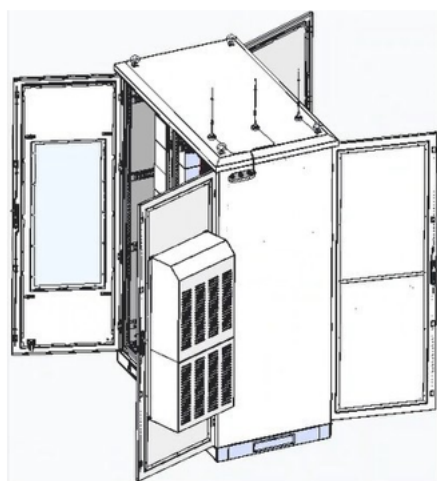
## ETS Power Cabinet Views



Front View

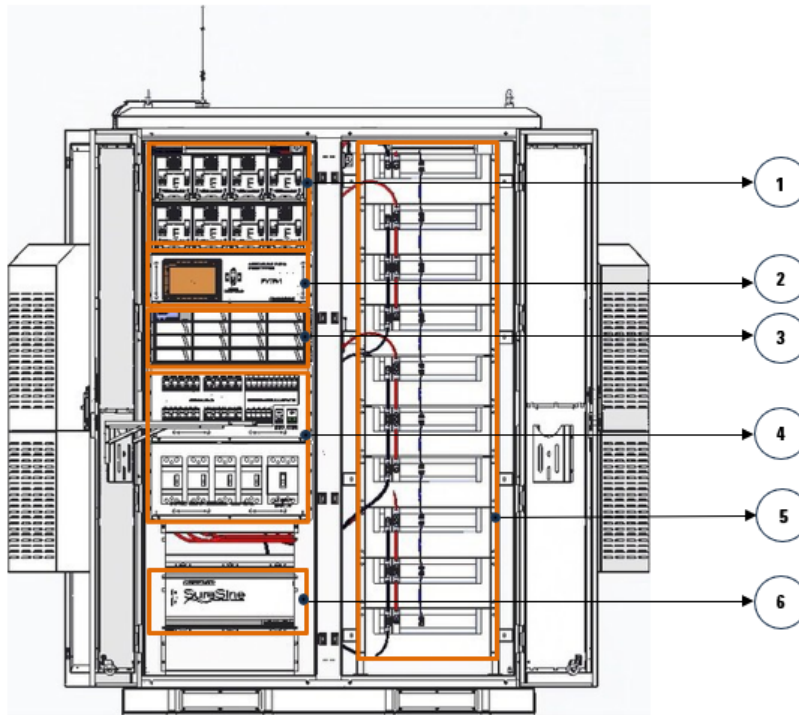


Rear View



Side Views

**ETS Power Cabinet – Parts Identification**



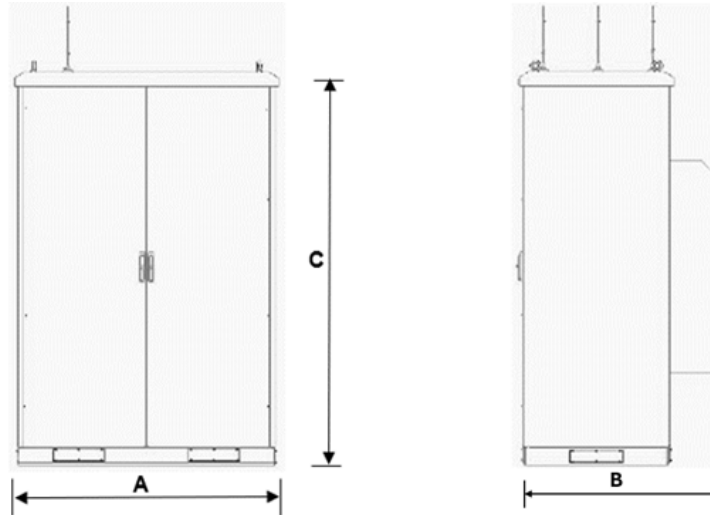
1. MPPT Controller assembly
2. HMI Touchscreen
3. Rectifier Assembly
4. Circuit Breakers and Switches
5. Battery Assembly Rack
6. Inverter Assembly

## ETS Power Cabinet View

Model	ETS150	
<b>Module</b>		
Energy Rating	kWh (Max.)	50
	kW (AC Input)	3.2 – 45
	kW (DC Input)	33.6 (Max.)
	kW (DC Output)	24 (Continuous)#
Output Voltage and Frequency	VDC	48 V
	VAC 1-Phase	230V / 50 Hz (optional) 120 / 127 / 220V / 60 Hz (optional)
Genset Input	VAC 1-Phase VAC 3-Phase	220 – 240V / 60 Hz (optional) 380 – 480V / 60 Hz (optional)
	VAC 1-Phase VAC 3-Phase	220 – 240V / 50 Hz (optional) 380 – 415V / 50 Hz (optional)
Operating Temperature Capability	°C	-20 to +45
Storage Temperature Capability	°C	-40 to +70
Enclosure Protection		IP56
E-Stop		Yes
<b>Solar PV Controller/MPPT</b>		
Battery Current	Max.	60 Amps
Nominal Output Power @ 48 VDC	Max.	3200 Watts
Number of MPPTs	Min. – Max.	1 – 8 Units
<b>Rectifier Control Module</b>		
Nominal Output Voltage	VDC	54
Power Limit	Watt	2900
Number of Rectifier Control Modules	Min. – Max.	1 Unit
Number of Rectifier Modules	Min. – Max.	1 – 15 Units
<b>Battery Rating*</b>	Ah	250
	Ah	300
Number of Battery Racks	Qty.	1 – 10
Energy Type		Li-Ion
Battery Chemistry		NMC
Type		High Energy
<b>HMI Controller model</b>	<b>Touch Screen, Android OS</b>	
<b>Options</b>		
Remote Monitoring		Yes
Air Conditioner		Yes
Thermo-Hydrometer		Yes
Smoke Alarm		Yes
Water Immersion Sensor		Yes
Cabinet Door Limit Switch Sensor		Yes
Battery Anti-Theft Sensor		Yes
PV Panel Anti-Theft		Yes
Automatic Transfer Switch (ATS)		Yes
Battery Expansion Cabinet		Yes
PV Combiner Box		Yes
Communications Protocols**		Ethernet and RS485

\* Battery not included in the ETS cabinet. \*\* Please refer the equipment cut sheets to find more information on communications ports.  
# 110% DC overload 26.4 kW – 10 Minutes (Max.) # 120% DC overload 28.8 kW – 5 Minutes (Max.)

## Weights and Dimensions



Model	Length "A" mm (in)	Width "B" mm (in)	Height "C" mm (in)	Weight* kg (lb)
ETS150	1458 (57.4)	1100 (43.3)	2211 (87)	715 (1576.3)

**Note:** Do not use for installation design. See general dimension drawings for detail.

\* ETS weight considered without batteries.

## Applicable Codes and Standards

- EN 61326 – 1 : 2013
- EN 61326 – 2 : 2013
- EN 61010 – 1 : 2010 + A1 : 2019

**Note:** Codes may not be available in all model configurations.

Please consult your local Cat Dealer for availability.

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