

Innovating Earth's CO₂ Future



Technical Datasheet Skytree Stratus

TDSEH_v2409041



Product Specifications

All measurements are in metric units.

Skytree Stratus	Electric	Hybrid	Hybrid ^{Thermo Boost}
CO₂ capture per day^{1 2}	Up to 1000 kg	Up to 800 kg	Up to 800 kg
CO₂ purity	90% CO ₂	90% CO ₂	90% CO ₂
CO₂ purification (Optional)	99% CO ₂	99% CO ₂	>99% CO ₂
Airflow	110,000 m ³ per hour	110,000 m ³ per hour	110,000 m ³ per hour
Operational temperature	5°C to 30°C	5°C to 30°C	5°C to 30°C
Storage temperature	-10°C to 40°C	-10°C to 40°C	-10°C to 40°C
Optimum humidity	10-80%	10-80%	10-80%
Process water per day	Up to 1000 L	Up to 800 L	Up to 800 L
Sorbent Lifetime	30 months	30 months	30 months
Height	6.1 m	6.1 m	6.1 m
Width	3.8 m	3.8 m	3.8 m
Depth	8.7 m	8.7 m	8.7 m
Footprint	22 m ²	22 m ²	22 m ²
Min. clearance	10 x 5 m	10 x 5 m	10 x 5 m
Operational weight	22,500 kg	23,500 kg	24,000 kg
Dry weight	20,000 kg	22,000 kg	22,500 kg
Sorbent capacity	1,400 kg	1,000 kg	1,000 kg
Electricity cons.	3.0 kWh per kg CO ₂	1.25 kWh per kg CO ₂	1.75 kWh per kg CO ₂
Thermal energy cons.	n/a	1.76 kWh _{th} per kg CO ₂	0.7 kWh _{th} per kg CO ₂
Peak power	180 kW	60 kW	85 kW
Nominal power	125 kW	45 kW	60 kW
Backup power	10 kW (30 minutes)	10 kW (30 minutes)	10 kW (30 minutes)
Thermal energy input	n/a	Direct input	Thermo Boost
Required water temp.³	n/a	99°C to 105°C	50°C to 99°C
Required water flow	n/a	125 L per min	125 L per min
Noise rating	80 dB	80 dB	80 dB
Uptime	98.6%	98.6%	98.6%
Data connection	Ethernet	Ethernet	Ethernet
Certifications	CE-CB/UL/CSA	CE-CB/UL/CSA	CE-CB/UL/CSA
Max operational altitude	2000 m	2000 m	2000 m

1. CO₂ capture efficiency varies with temperature, humidity, and altitude due to changes in atmospheric conditions.

2. Results are based on tests conducted at 20°C (68°F), 420 ppm CO₂, at sea level.

3. Thermo Boost option is required when water temperature is between 50°C (122°F) and 99°C (210°F).

Product Specifications

All measurements are in imperial units.

Skytree Stratus	Electric	Hybrid	Hybrid Thermo Boost
CO₂ capture per day^{1 2}	Up to 2200 lbs	Up to 1700 lbs	Up to 1700 lbs
CO₂ purity	90% CO ₂	90% CO ₂	90% CO ₂
CO₂ purification (Optional)	99% CO ₂	99% CO ₂	99% CO ₂
Airflow	64,744 CFM	64,744 CFM	64,744 CFM
Operational temperature	41°F to 86°F	41°F to 86°F	41°F to 86°F
Storage temperature	14°F to 104°F	14°F to 104°F	14°F to 104°F
Optimum humidity	10-80%	10-80%	10-80%
Process water per day	Up to 265 gal	Up to 220 gal	Up to 220 gal
Sorbent Lifetime	30 months	30 months	30 months
Height	20 ft	20 ft	20 ft
Width	12.5 ft	12.5 ft	12.5 ft
Depth	28.5 ft	28.5 ft	28.5 ft
Footprint	237 sq ft	237 sq ft	237 sq ft
Min. clearance	33 x 17 ft	33 x 17 ft	33 x 17 ft
Operational weight	49,604 lbs	51,808 lbs	52,910 lbs
Dry weight	44,092 lbs	48,501 lbs	49,604 lbs
Sorbent capacity	3,100 lbs	2,205 lbs	2,205 lbs
Electricity cons.	1.36 kWh per lb CO ₂	0.57 kWh per lb CO ₂	0.79 kWh per lb CO ₂
Thermal energy cons.	n/a	0.80 kWh _{th} per lb CO ₂	0.32 kWh _{th} per lb CO ₂
Peak power	180 kW	60 kW	85 kW
Nominal power	125 kW	45 kW	60 kW
Backup power	10 kW (30 minutes)	10 kW (30 minutes)	10 kW (30 minutes)
Thermal energy input	n/a	Direct input	Thermo Boost
Required water temp.³	n/a	221°F to 221°F	122°F to 221°F
Required water flow	n/a	33 gal per min	33 gal per min
Noise rating	80 dB	80 dB	80 dB
Uptime	98.6%	98.6%	98.6%
Data connection	Ethernet	Ethernet	Ethernet
Certifications	CE-CB/UL/CSA	CE-CB/UL/CSA	CE-CB/UL/CSA
Max operational altitude	6500 ft	6500 ft	6500 ft

1. CO₂ capture efficiency varies with temperature, humidity, and altitude due to changes in atmospheric conditions.

2. Results are based on tests conducted at 20°C (68°F), 420 ppm CO₂, at sea level.

3. Thermo Boost option is required when water temperature is between 50°C (122°F) and 99°C (210°F).

Installation Site Specifications

General requirements

Space allocation	Allocate a space of 5 x 10 meters (17 x 33 feet) for placement
Foundation load capacity	Ensure the foundation can support loads up to 15 kN/m ²
System orientation	Align with the direction of the prevailing wind
Airflow requirements	Provide an unobstructed airflow of 110,000 m ³ per hour
Backup power	
Backup power requirement	10 kW for 30 minutes
Backup power connection	Independent 3 phase power required at rated voltage
Max black out time	2 minutes (System shutdown starts after 2 minutes)
Drain access for wastewater	Access point for wastewater disposal as per local regulations
Required flow rate (Hybrid only)	125L (33 gal) per min
Required temperature (Hybrid only)	Standard: 99°C to 105°C (210°F to 221°F) Thermo Boost: 50°C to 99°C (122°F to 210°F)

Connections required

CO₂ output connection	CO ₂ piping DN50 with PN10 flange at center of unit
Waste water output connection	Wastewater piping DN100 with PN10 flange at center of unit
Data connectivity	Ethernet

Lifting equipment

Single container weight max	10 tonne
Required crane	
1 x Crane	Rated for 20 tonnes with a minimum boom reach of 12m
1 x Crane	Rated for 10 tonnes to raise desorption section vertical
Heavy duty forklift	Rated for 2 tonnes with adjustable tie ins/ forks

Services equipment

Cherry picker	Height of 10m minimum (33 ft)
Required crane	For sorbent, air filters, fans exchanges
1 x Crane	Rated for 20 tonnes with a minimum boom reach of 12m (40 ft)
Heavy duty forklift	Rated for 2 tonnes with adjustable tie ins/ forks
Other	Pressure washer, general slings/ shackles/ lifting equipment

Installations

Airflow requirements	Provide an unobstructed fresh airflow of 110,000 m ³ per hour
Electrical installations	Equipment and cables for local installation are not included
Piping for waste water	Up to 1000L (265 gal) of process water per day

Climate Core options

Skytree Stratus is developed for a temperate climate application. For other climate zones, refer to our Climate core options below to extend the operating range of any system.

Arid climate

Required for climates with an average temperature of 30°C (86°F) to 50°C (122°F) and humidity levels of 10% to 70%.

Tropical climate

Required for climates with an average temperature of 20°C (68°F) to 50°C (122°F) and humidity levels of 50% to 90%.

Polar climate

Required for climates with an average temperature of -35°C (-31°F) to 5°C (41°F) and humidity levels of 50% to 90%.

Electrical grid connection

Skytree Stratus Hybrid

Region	Phase	Voltage	Frequency	Max Amp
EU, UAE, AUS, NZL	3	400V	50 Hz	125A
USA	3	480V	60 Hz	105A
CAN	3	600V	60 Hz	85A
JPN	3	200V	50 Hz	250A
KOR	3	380V	60 Hz	130A

Skytree Stratus Electric

Region	Phase	Voltage	Frequency	Max Amp
EU, UAE, AUS, NZL	3	400V	50 Hz	260A
USA	3	480V	60 Hz	220A
CAN	3	600V	60 Hz	175A
JPN	3	200V	50 Hz	520A
KOR	3	380V	60 Hz	280A

Skytree uptime assurance

Skytree's Uptime Assurance is a comprehensive service and maintenance package ensuring uninterrupted, long term operation of your DAC units.

