Blue Diamond Machinery

Battery Box Standalone BESS

Silent. Sustainable. Scalable.

OVERVIEW

Battery Box is Blue Diamond Machinery's proprietary standalone Battery Energy Storage System (BESS) designed to deliver clean, silent, and reliable off-grid power. Built for Australia's harshest conditions and engineered in-house at our Clean Energy Hub, Battery Box provides plug-and-play power for mining, construction, events, and remote locations.

It is more than a battery – it's an intelligent energy solution designed to cut emissions, reduce fuel costs, and eliminate light-load generator runtime.

KEY BENEFITS

- Zero noise and zero emissions during battery-only operation
- Reduces generator runtime by up to 85% in hybrid applications
- Significant diesel and CO_2 savings
- Handles variable site loads with smooth power delivery
- Portable, fast to deploy, and easy to operate
- Fully integrated with solar input and ONE Intelligent Energy platform
- Seamlessly integrates with existing solar arrays or generators – no complex install required

WHAT MAKES BATTERY BOX DIFFERENT?

- In-House Engineered: Designed and assembled at our Clean Energy & Engineering Hub in Henderson, WA
- ONE Ready: Integrated with ONE – Intelligent Energy for live monitoring, control, fault detection, and ESG reporting
- Overwatch Supported: Includes Overwatch 24/7 monitoring – our team proactively responds to alerts and keeps your system running
- Standalone or Hybrid: Works independently in island mode or combined with generators and solar
- Fleet Compatible: Use as a single unit or scale up by daisy-chaining multiple systems
- Smart Controls: Includes auto genset start/stop (ATS), ECO controller, and integrated BMS
- Designed for Harsh Conditions: Wide operating temperature range, mine-spec compliant, rugged skid base, and weatherproof housing

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USE CASES

- Remote construction camp runs silently overnight, no generator noise
- Daytime solar charges Battery Box while powering tools onsite
- During peak demand, Battery Box supplements generator to reduce runtime
- Portable solution for events, emergency power, or noise-restricted zones

TECHNICAL FEATURES

- LiFePO4 battery chemistry: safe, stable, long life
- Integrated inverter/charger for seamless switchover
- Solar MPPT controller onboard
- MPPT specs (typical): 5800W, 100A charge, 99% efficiency
- IP54 weather resistance, heavy-duty skid for transport
- Quick-connect power and comms ports
- ONE platform integration for live fuel, CO_2, runtime, load data

EXAMPLE LOAD PROFILE

Typical Site:

10kW daytime, 5kW overnight → Battery Box + 2 solar pods = 70% runtime reduction

PERFORMANCE METRICS (MODEL DEPENDENT)

- Storage: 45 to 150+ kWh
- Output: 10 to 30+ kW continuous
- Peak output up to 150%
- Up to 85% runtime reduction when hybridised with solar/genset

SUSTAINABILITY IMPACT

Battery Box supports ESG reporting, ISO compliance, and Net Zero initiatives:

- Tracks fuel saved and CO_2 emissions abated
- Delivers silent power for night operations or sensitive sites
- Enables hybrid systems that reduce environmental impact without performance compromise

WHY CHOOSE BATTERY BOX?

- ✓ Made and supported in Australia
- ✓ Developed for local conditions and regulatory compliance
- ✓ Integrated with Blue Diamond's remote support, ONE platform & Overwatch 24/7 monitoring
- ✓ Monitor multiple units across sites via ONE – ideal for fleet operators
- ✓ Backed by national field service and parts network

From single units to multi-unit fleet deployments, Battery Box is the scalable, intelligent alternative to traditional generators.

Model: 90 kVA

Model: 150 kVA

Contact us for specs, custom integrations, and hire or purchase options:

info@bluedm.com.au 1300 998 647 www.bluedm.com.au

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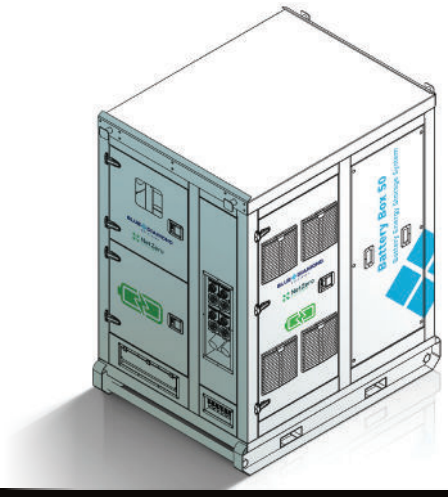
Battery Box 50 - 100

Battery Box standalone range -

High efficiency battery storage power systems. Efficient. Adaptable. Sustainable.
The Battery Box standalone range is designed to deliver optimal power solutions for construction and mining environments, maximising fuel savings and minimising emissions.

Includes access to ONE Intelligent Energy -

a fleet management platform designed to use advanced analytics to reduce OPEX and achieve sustainability targets.



General	
Model	ABE 50/100
Rated Output Power	50kW
Maximum Apparent Power	63kVA
Maximum Active Power	63kW
Rated Voltage	3P4W+PE, 415 Vac
Rated frequency	50 Hz
Power Factor	Listed: 0.8~1 leading or lagging Actual:0.1~1 leading or lagging
Overload Capacity	110%~120%:10min; 120%~130%:1min 130%~150%:200ms
Ingress Protection	IP54
Operating Temerature	-20 to +50oC
Sound Level	75dBA

Battery	
Battery Type	LiFePO4
Battery Module Quantity	20 units
Nominal Battery Energy	102.4kWh
Nominal Capacity	100Ah
Nominal Voltage	512V
Operating Vol. Range	448-576V
Nominal Power Output	61KW
Max. Power Output	102.4kW
Recommend Charging Current	50A
Recommend Discharging Current	50A

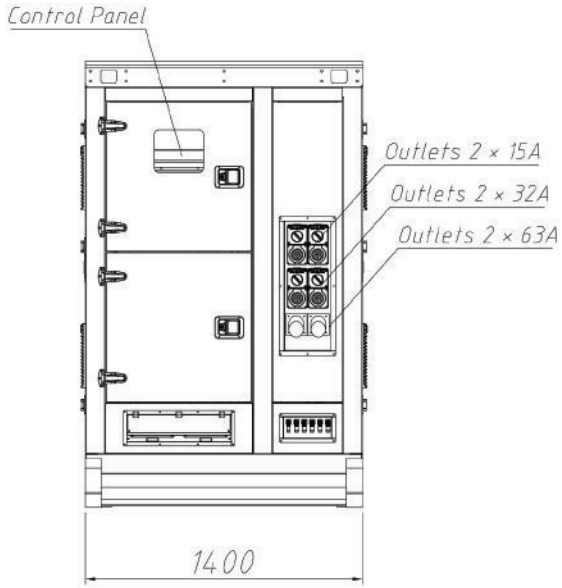
AC Charge	
Rated Power	40kW
Input standard	Three-phase + PE
Input rated voltage	415V
Input voltage range	323~456Vac
Input current	≤80A
Input frequency	45~65Hz
Input inrush current	≤ 150% of rated input current
Maximum quiescent voltage	600Vac
Three-phase unbalance	>15% protection, ≤12% recovery
Output voltage range	50-1000Vdc
Output current range	0-133.3A
Voltage regulation accuracy	≤±0.5%
Flow stabilisation accuracy	≤±1%
Voltage Ripple Factor	≤±1%
Power-on overchargevoltage	≤±1%
Current slow start	3-10s

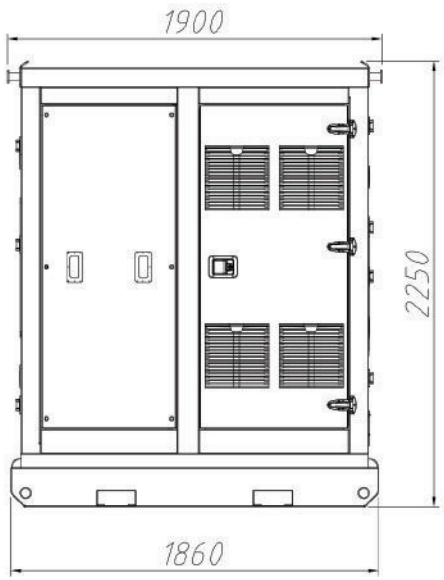
PV Charger	
Rated Power	45kW
Maximum PV Input Voltage	830V
Start-up Voltage	250V
MPPT Voltage Range	200~750 (430~750 @full load) V
Number of MPPT	3
Maximum Input Current of each MPPT	35A/35A/35A
Maximum Output Voltage	830V
Working Voltage Range	430V-830V
Rated Output Current	65A
Maximum Output Current	75A

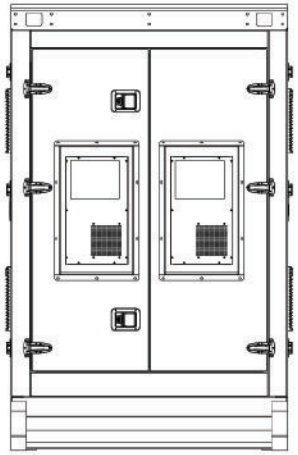
STS	
Rated power	100kVA
Rated voltage	Three-phase: 380VAC/400VAC/480VAC
Rated frequency	50Hz/60Hz
Rated input current	145A
Parallel and off-grid switching time	<30ms

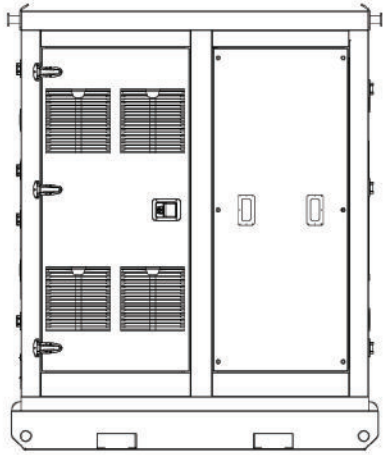
AC Cooling	
Model	MC06HDNC1A
Quantity	2
Airflow path	Upper outlet, bottom return
Material	Sheet Steel
Rated voltage	230V, 50Hz
Cooling capacity L35/L35	0.6kW
Heating capacity Tu=10℃	0.5kW
Rated cooling current	1.15A
Max. operation current	2.3A
Rated power consumption L35/L35	0.24kW
Energy efficiency ratio L35/L35	2.5 EER
Refrigerant	R134a
Working ambient temperature range	-40˚C ~ 55˚C
Setting temperature range	15˚C ~ 50˚C
Internal airflow	120m³/h

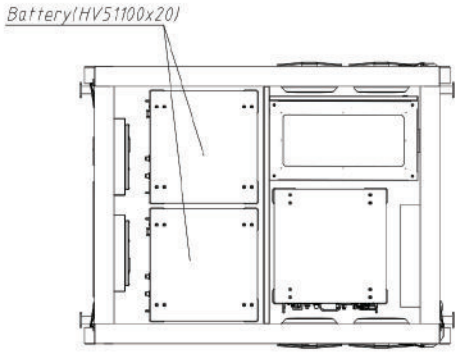
Overall	
Dimensions (LxWxH)	1900x1460x2250 mm
Weight	2400 Kg
Lift Points	Forlift Pockets, Lift & Drag Skid

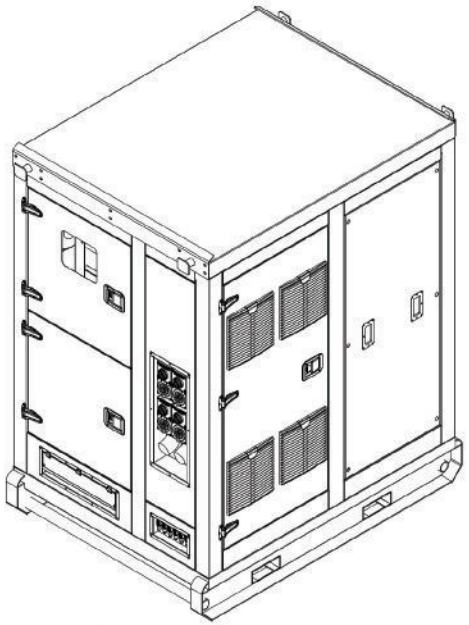


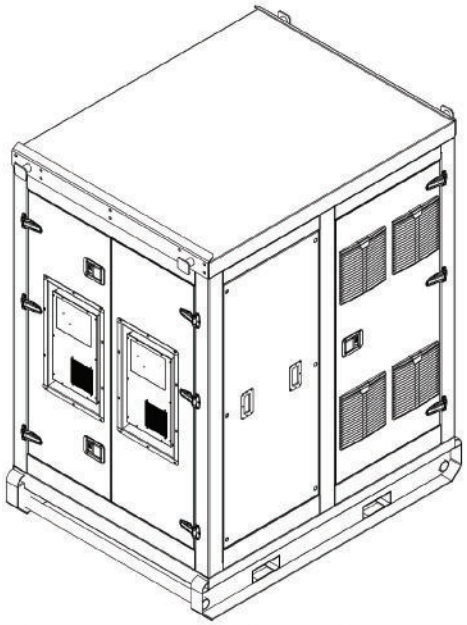












Dimension : 1900mm x1460mm x2250mm

Dry Weight : 2400KG

DRAFT ONLY

Draft design only, may have changes when manufacturing

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ORDER CODE:				2024	DATE	NAME	SIGNITURE	PART NAME: GA	
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				DEPARTMENT: Engineering					
				BLUE DIAMOND MACHINERY				PART NO.:	LOCATION: A3
								DRAWING NO.:	
SIGN	VARIATION	DATE	NAME	FOUNDATION : BLUE DIAMOND				REVISION NO.: V1	

Battery Box 90 - 120

Battery Box standalone range -

High efficiency battery storage power systems. Efficient. Adaptable. Sustainable.
The Battery Box standalone range is designed to deliver optimal power solutions for construction and mining environments, maximising fuel savings and minimising emissions.

Includes access to ONE Intelligent Energy -

a fleet management platform designed to use advanced analytics to reduce OPEX and achieve sustainability targets.

General	
Model	ABE90/120
Rated Output Power	90kW
Maximum Apparent Power	112kVA
Maximum Active Power	112kW
Rated Voltage	3P4W+PE, 415 Vac
Rated frequency	50 Hz
Power Factor	Listed: 0.8~1 leading or lagging Actual:0.1~1 leading or lagging
Overload Capacity	110%~120%:10min; 120%~130%:1min 130%~150%:200ms
Ingress Protection	IP54
Operating Temerature	-20 to +50oC
Sound Level	75dBA

Battery	
Battery Type	LiFePO4
Battery Module Quantity	24 units
Nominal Battery Energy	122.8kWh
Nominal Capacity	100Ah
Nominal Voltage	410V
Operating Vol. Range	358-461V
Nominal Power Output	61KW
Max. Power Output	122.8kW
Recommend Charging Current	50A
Recommend Discharging Current	50A

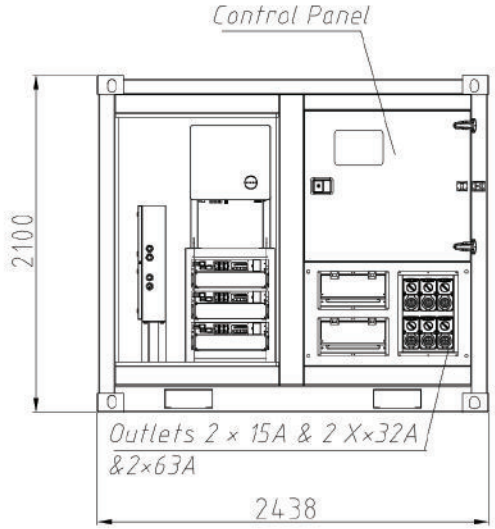
AC Charge	
Rated Power	40kW
Input standard	Three-phase + PE
Input rated voltage	415V
Input voltage range	323~456Vac
Input current	≤80A
Input frequency	45~65Hz
Input inrush current	≤ 150% of rated input current
Maximum quiescent voltage	600Vac
Three-phase unbalance	>15% protection, ≤12% recovery
Output voltage range	50-1000Vdc
Output current range	0-133.3A
Voltage regulation accuracy	≤±0.5%
Flow stabilisation accuracy	≤±1%
Voltage Ripple Factor	≤±1%
Power-on overchargevoltage	≤±1%
Current slow start	3-10s

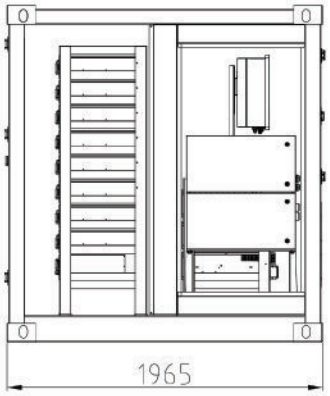
PV Charger	
Rated Power	45kW
Maximum PV Input Voltage	830V
Start-up Voltage	250V
MPPT Voltage Range	200~750 (430~750 @full load) V
Number of MPPT	3
Maximum Input Current of each MPPT	35A/35A/35A
Maximum Output Voltage	830V
Working Voltage Range	430V-830V
Rated Output Current	65A
Maximum Output Current	75A

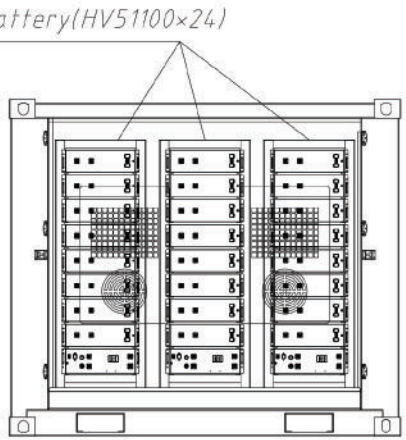
STS	
Rated power	100kVA
Rated voltage	Three-phase: 380VAC/400VAC/480VAC
Rated frequency	50Hz/60Hz
Rated input current	145A
Parallel and off-grid switching time	<30ms

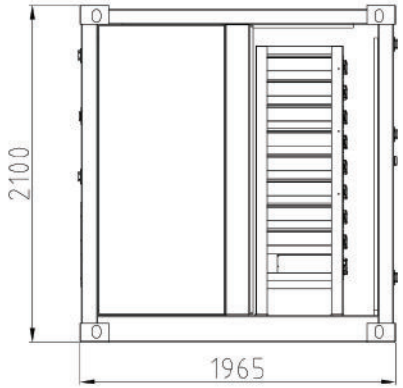
AC Cooling	
Model	MC15HDNC1B
Quantity	2
Airflow path	Upper outlet, bottom return
Material	Sheet Steel
Rated voltage	230V 50Hz
Cooling capacity L35/L35	1.5kW
Heating capacity Tu=10℃	1kW
Rated cooling current	2.9A
Max. operation current	5A
Rated power consumption L35/L35	0.6kW
Energy efficiency ratio L35/L35	2.5 EER
Refrigerant	R134a
Working ambient temperature range	-40˚C ~ 55˚C
Setting temperature range	15˚C ~ 50˚C
Internal airflow	380m³/h

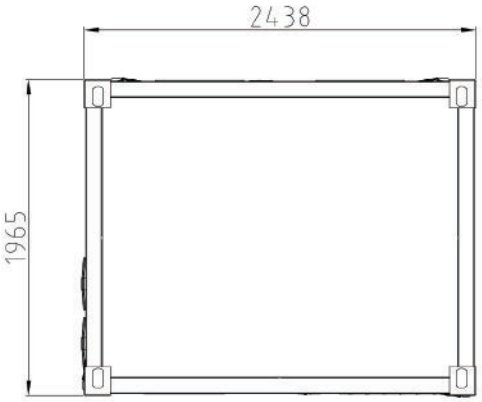
Overall	
Dimensions (LxWxH)	2438x1965x2100 mm
Weight	3600 Kg
Lift Points	Forlift Pockets, Lift & Drag Skid

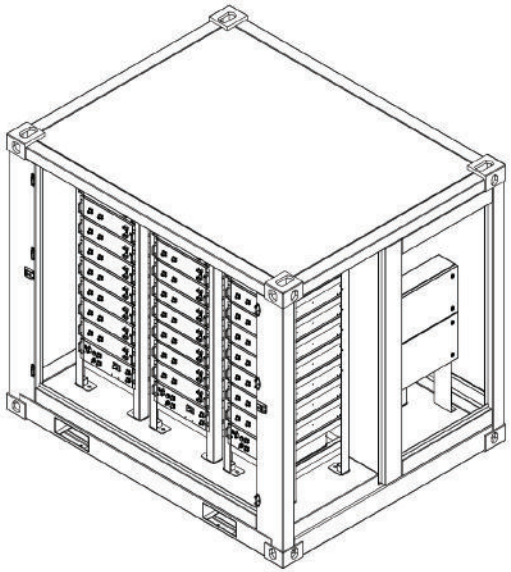


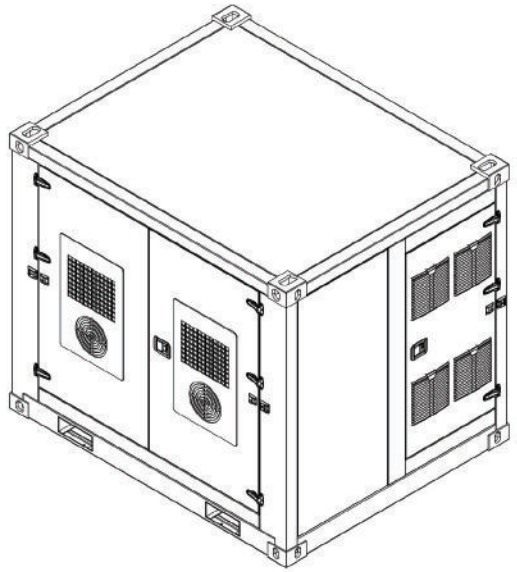












Dimension : 2438mm x1965mm x2100mm

Dry Weight : 3500KG

DRAFT ONLY

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				CONTROLED BY	08/08	SUN		
				APPROVED BY	08/08	LIANG		
				DEPARTMENT: Engineering				PART NO.: / LOCATION: A3
				BLUE DIAMOND MACHINERY				DRAWING NO.:
SIGN	VARIATION	DATE	NAME	FOUNDATION : BLUE DIAMOND				REVISION NO.: V1	

Battery Box 150 - 200

Battery Box standalone range -

High efficiency battery storage power systems. Efficient. Adaptable. Sustainable.
The Battery Box standalone range is designed to deliver optimal power solutions for construction and mining environments, maximising fuel savings and minimising emissions.

Includes access to ONE Intelligent Energy -

a fleet management platform designed to use advanced analytics to reduce OPEX and achieve sustainability targets.

General	
Model	ABE150/200
Rated Output Power	150kW
Maximum Apparent Power	188kVA
Maximum Active Power	188kW
Rated Voltage	3P4W+PE, 415 Vac
Rated frequency	50 Hz
Power Factor	Listed: 0.8~1 leading or lagging Actual:0.1~1 leading or lagging
Overload Capacity	110%~120%:10min; 120%~130%:1min 130%~150%:200ms
Ingress Protection	IP54
Operating Temerature	-20 to +50oC
Sound Level	75dBA

Battery	
Battery Type	LiFePO4
Battery Module Quantity	40 units
Nominal Battery Energy	204.8kWh
Nominal Capacity	100Ah
Nominal Voltage	410V
Operating Vol. Range	358-461V
Nominal Power Output	102.4KW
Max. Power Output	204.8kW
Recommend Charging Current	50A
Recommend Discharging Current	50A

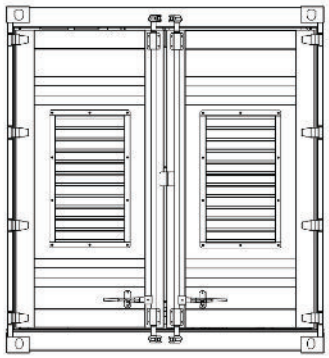
AC Charge	
Rated Power	40kW
Input standard	Three-phase + PE
Input rated voltage	415V
Input voltage range	323~456Vac
Input current	≤80A
Input frequency	45~65Hz
Input inrush current	≤ 150% of rated input current
Maximum quiescent voltage	600Vac
Three-phase unbalance	>15% protection, ≤12% recovery
Output voltage range	50-1000Vdc
Output current range	0-133.3A
Voltage regulation accuracy	≤±0.5%
Flow stabilisation accuracy	≤±1%
Voltage Ripple Factor	≤±1%
Power-on overchargevoltage	≤±1%
Current slow start	3-10s

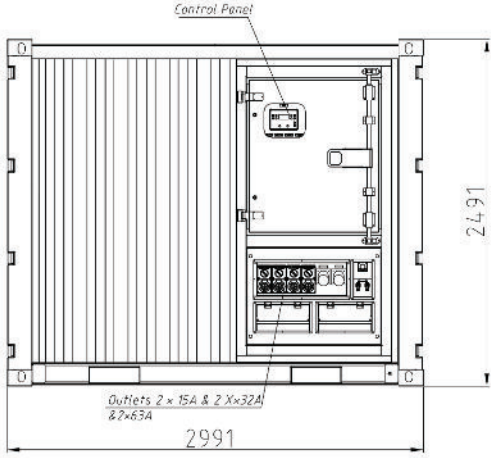
PV Charger	
Rated Power	45kW
Maximum PV Input Voltage	830V
Start-up Voltage	250V
MPPT Voltage Range	200~750 (430~750 @full load) V
Number of MPPT	3
Maximum Input Current of each MPPT	35A/35A/35A
Maximum Output Voltage	830V
Working Voltage Range	430V-830V
Rated Output Current	65A
Maximum Output Current	75A

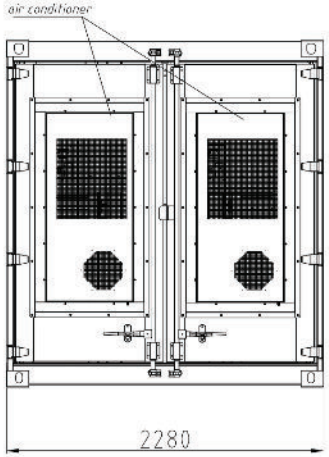
STS	
Rated power	100kVA
Rated voltage	Three-phase: 380VAC/400VAC/480VAC
Rated frequency	50Hz/60Hz
Rated input current	145A
Parallel and off-grid switching time	<30ms

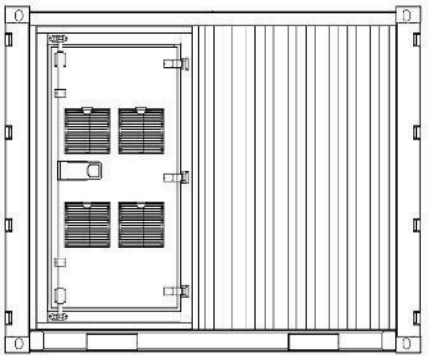
AC Cooling	
Model	MC50HDNC1A
Quantity	2
Airflow path	Upper outlet, bottom return
Material	Sheet Steel
Rated voltage	230V, 50Hz
Cooling capacity L35/L35	5kW
Heating capacity Tu=10℃	3kW
Rated cooling current	8.5A
Max. operation current	17A
Rated power consumption L35/L35	1.85kW
Energy efficiency ratio L35/L35	2.7 EER
Refrigerant	R134a
Working ambient temperature range	-40˚C ~ 55˚C
Setting temperature range	15˚C ~ 50˚C
Internal airflow	1400
HVAC Cooling	50 Degree Ambient

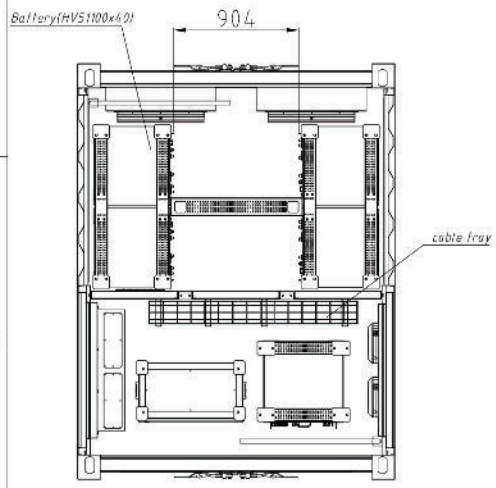
Overall	
Dimensions (LxWxH)	2991x2280x2491 mm
Weight	6100 Kg
Lift Points	Forlift Pockets, Lift & Drag Skid

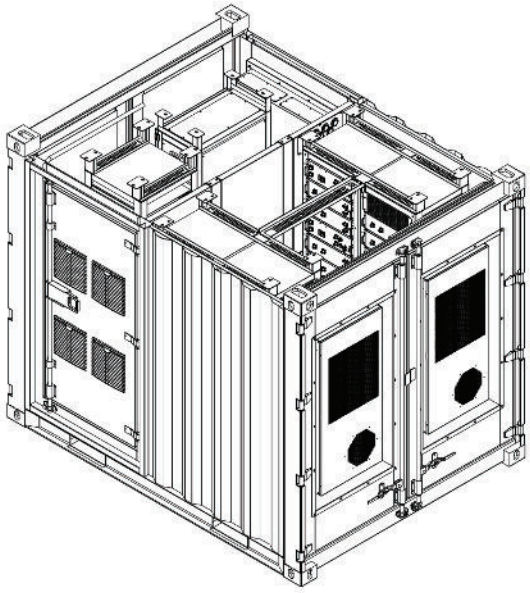


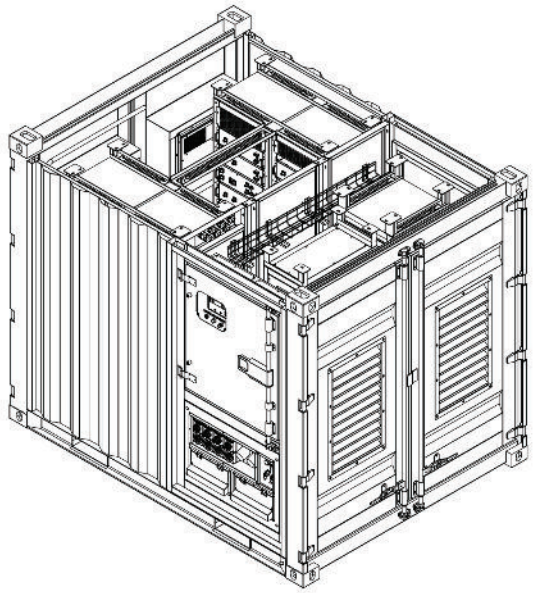












Dimension : 2991mm x2280mm x2491mm

Dry Weight : 6100KG

DRAFT ONLY

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			LOCHKED BY	25/02	SUN		USED FOR: APG-BESS 150/200		
			APPROVED BY	25/02	LIANG				
			DEPARTMENT: Engineering				PART NO.:	LOCATION:	A3
			BLUE DIAMOND MACHINERY				DRAWING NO.:		
SIGN	VARIATION	DATE	NAME	FOUNDATION	BLUE DIAMOND		REVISION NO. V1		