

MODEL

# EHR HYBRID 30/60-45D



MOBILE POWER/EHR + T4F HYBRID

30 kVA/60Hz/208VAC/3PH/1800RPM



VOLTAGE VAC	120/208V
RATING	Prime
PHASE	3
PF	0.8
HZ	60
kVA	30
kWh	56.8
AMPS	83
Max Hybrid Output Amps*	183

### Description

HIPOWER® EHR Hybrid generators are an efficient, reliable and versatile source of mobile electrical power. Designed to operate in the most extreme working conditions. All HIPOWER® EHR Hybrid Generators combine an innovative design and the use of high quality materials that provide the user with the most dependable power that you can rely on for non-stop power with easy to operate controls. The EHR Hybrid generator will prevent unnecessary light loading and oversizing by using the inverters and batteries to power the load and the generator as support. The HIPOWER EHR Hybrid generators are designed to optimize energy production, and sustainability, while at the same time reducing total system emissions.

### HIPOWER® Features

**EHR Battery Generator:** Energy Storage and Distribution system. Pure Sine Wave Inverters are able produce clean AC signal to power loads safely. The pre-configured working mode selector allows the EHR Hybrid to be configured for different applications or modes of use, including Plug and Play, Light Load, Peak Shaving, and UPS.

**Controls:** HICORE, smart load management system is a user-friendly interface designed by HIPOWER to simplify operation and allows the user to select the most favorable working mode for any application. **Load Connections:** Cable power outlets, receptacles, lugs and Camlocks.

**ISUZU Diesel Engine:** Tier 4 Final, Long-life, heavy-duty, 4-cycle, direct injection engine for economy of operation and maximum reliability and durability.

**Cooling:** Radiator with belt driven pusher fan.

**Fuel Tank:** Environmentally friendly steel base welded sub-base fuel tank with internal filling system and 110% containment capability for any diesel fuel, coolant or engine oil spills. Easy access for maintenance activities.

**Renewable Energy:** Ready to connect to Plug& Play PV Panels. Includes up to 8 kW MPPT modules so all HIPOWER EHR Hybrid Generators can integrate renewable energies into any working mode, further increasing efficiency.

**Connectivity:** Smartphone App (Remote Configuration, Maintenance & Diagnostics)/ Web Portal/3G/4G Remote Communication, Dual SIM Modem/Router included with EHR Battery Generator

**Transportation and Space Efficiency:** Increased Transportation and Workforce efficiency by having a complete hybrid package on a single trailer. Reduced footprint for hybrid package allowing for more efficient use of space.

### HIPOWER® EHR Hybrid Benefits

- Reduced System Emissions
- Reduced Fuel Consumption
- Reduced Noise Intervals
- Reduced PM and Service Intervals
- Transportation and Space Efficient
- Remote Monitoring and Access
- Increased Load Response
- Improved Load Up-time
- Renewable Integration

\* Max short-term output for hybrid system. Combined output of EHR battery generator and genset.

Codes and Standards Compliances used where applicable



## APPLICATION DATA

### BATTERY GENERATOR SPECIFICATION

Nominal Rated Power - kVA	30
Nominal Energy Storage Capacity - kWh	56.4
Rated Voltage (60 HZ)	120/208V
Maximum Power Input - A	100
Maximum Passthrough - A	100
Operating Temperature - °F	5-122
Protection	Overload, Overheated, Short Circuit

### BATTERIES

Quantity	16
Type	LFP (Lithium Iron Phosphate)
Battery System Voltage - VDC	48
DoD% (Depth of Discharge)	90%
Energy Density - Wh/kg	111
Lifetime (90% DoD) - Cycles	6000
Battery Management System	LFP Batteries with build-in BMS
Maintenance Charge Cycle	1 week

### INVERTER

Quantity	3
Total Nominal Power - kVA	30
Max Charging Current	300

### OVERLOAD CAPACITY

Peak Power of 200% of nominal Power (short circuit)	0.5 Seconds
150% of nominal power where output voltage remains stable	5 Seconds
130% of nominal power where output voltage remains stable	30 Seconds
Start up current of load (3 phase motor)	3x Nominal Current

### RECHARGING/MAINTENANCE TIME

Recharging time	2.45
Maintenance Recharging Time (@ DoD)	14.90

### DISCHARGING AUTONOMY

100% Nominal Power - hrs	1.31
75% Nominal Power - hrs	1.75
50% Nominal Power - hrs	3.12
25% Nominal Power - hrs	5.24

### RENEWABLE ENERGY

MPPT	8 kW
Overcurrent Protections	SPD + MLCB
Connectors	6 Pair 30A - MC4

Codes and Standards Compliances used where applicable



## APPLICATION DATA

### ENGINE SPECIFICATION

Manufacturer	ISUZU
Model	4LE2X
EPA certified	Tier 4 FINAL
Crankshaft speed	1,800 rpm
Type	Diesel, 4-stroke
Injection	Direct
Aspiration	Turbocharged
Number of Cylinders	4
Cylinder arrangement	In-line
Displacement CID (liters)	133 (2.2)
Bore and Stroke ins (mm)	3.3x3.7 (85X 96)
Nominal power	66 hp
Cooling	Liquid
Governor	Electronic
Governor Regulation Class	ISO 8528 Part 1 Class G3
Frequency Regulation	Isochronous
Starting motor & alternator	12 volt
Compression ratio	17.6:1
Air cleaner type	Heavy duty - single cartridge
Exhaust gas flow cu. ft./minute (cu. m. /minute)	191(5.4)
Max. Exhaust temp at full load degrees °F (°C)	896 (480)
Max. permissible back pressure - ins H2O (kPA )	32.1 (8.03)

### COOLING SYSTEM

Engine cooling air flow - cu. ft./min (cu. m/min)	95.8 (2.71)
Alternator cooling flow - cu. ft./min (cu. m/min)	251 (7.05)
Total cooling air flow (engine + alternator + combustion) - cu. ft./min (cu. m/min)	1366 (38)
Total cooling capacity - US gallons (liters)	3.8 (14.1)
Max. Operating Temperature °F (°C)	122 (50)

### LUBRICATION SYSTEM

Oil pan capacity - US gallons (liters)	2.25 (8.39)
Oil pan capacity with filter - US gallons (liters)	2.75 (10.3)
Oil cooler	Liquid
Recommended lubricating oil grade	SAE 10W-40 conventional DH4 (refer to owners manual)
Oil consumption at full load	< 0.1% of fuel consumption
Oil pressure – psi (kPA)	65 (450)

### ENGINE ELECTRICAL SYSTEM

Starting motor voltage	12 volt
Cold Cranking Amps - minimum	53 Amp
Battery charging Alternator	110 Amp
Battery capacity	650 Amps

Codes and Standards Compliances used where applicable



## APPLICATION DATA

### FUEL SYSTEM

Recommended fuel	# 2 - ULSD
Fuel supply line, min. ID mm(in.)	9.5 - (3/8")
Fuel return line, min. ID, mm (in.)	9.5 - (3/8")
Max. lift, fuel pump, type, m (ft)	TBD
Fuel filter	Secondary 8 Microns @ 98% Efficiency

### ALTERNATOR SPECIFICATION

Manufacturer	STAMFORD
Model	UCI224D with PMG
Voltages	120/208V
Alternator Type	Four pole, rotating field
Excitation System	Brushless. PMG-excited
Power factor	0.8
Number of leads	12 leads
Stator Pitch	2/3
Insulation	Class H
Windings – Temperature Rise	Class F (105/40° C)
Enclosure (IEC-34-S)	IP23
Bearing	Single, sealed
Coupling	Flexible disc
Amortisseur windings	Full
Voltage regulation – no load to full load with MX341 AVR	± 1%
TIF	<50
Radio Frequency Emissions compliance	Meets requirements of most industrial and commercial applications
Line harmonics	5% maximum

### STANDARD ACCESSORIES

• Air Filter Restriction Indicator	• Extended Maintenance Interval up to 500 Hrs.
• Leakage Detection Sensor	• Low Coolant Level Sensor
• Battery Switch	• Shunt Trip on MLCB
• Crankcase Ventilation Filter	• Coolant Drain Extension
• Leak Proof Tray	• PMG Excitation on Alternator
• Distribution Panel 400A	• Leakage Detector Sensor
<p>• Distribution power panel - (Camlocks and Receptacle connections)            1 set 400A single pin Camlocks rated 400A with snap covers; color coded Camlocks 3Ph - 5W, 1/4 turn door access with cable trap; auxiliary bus bars with mechanical lugs; 1 single barrel lug per phase; mechanical lugs up to 250MCM cable. Individual Square-D QOU branch breakers; 2 x 20A 125V NEMA5-20 GFCI duplex receptacles; 3 x 50A 125/250V CS6369 twist-lock receptacles &amp; Lexan covers; 1 x15A 125V NEMA 5-15P Shore line connector.</p>	

### OPTIONAL ACCESSORIES

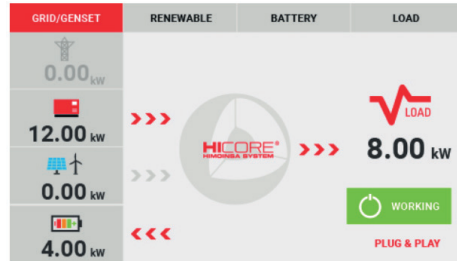
• Battery Blanket	• 3-Way Fuel valve
• Hydronic heater (5 kw)	• Water Jacket Heater
• Oil Pan Heater	• Control Panel Heater
• 6 Amp - 10 Amp battery charger, 12/24V, UL Listed	

Codes and Standards Compliances used where applicable



## CONTROL SYSTEMS STANDARD FEATURES - Generator Digital Control Panel

HIPOWER® HICORE Control Panel: The HICORE digital controller has a 4.3" TFT LCD display and is a comprehensive controller for optimizing multiple power sources via an intelligent load management system. The interface has been designed to provide a guided and simple experience for any operator to select the optimum operation mode for any particular application. In addition, a plug and play mode is offered which allows the EHR Hybrid to automatically decide which is the best operational option at any given moment based on a constant analysis of the load profile and connected sources.



## DISTRIBUTION PANEL VIEW

INPUT/OUTPUT OPTIONS		208/120V/60HZ/3p+N+E
IN	120V 20A Waterproof Receptacle (HBL61CM65)	1
	30A MC4 Connectors	6 Pairs
	400A 4/0 Single Pin Female Camlocks*	L1+L2+L3+N+E
	Two-Wire Remote Start*	1
OUT	120V 20A Waterproof Receptacle (HBL61CM65)	1
	240V 50A Waterproof Receptacle (CS6369)	2
	400A 4/0 Single Pin Female Camlocks	L1+L2+L3+N+E
	Mechanical Lugs	L1+L2+L3+N+E

Every AC Socket includes Circuit Breaker. Power Output protected by Earth Leakage Relay. Domestic Sockets with ELR

\*Sockets used for Hybrid Operation, not available in normal equipment use

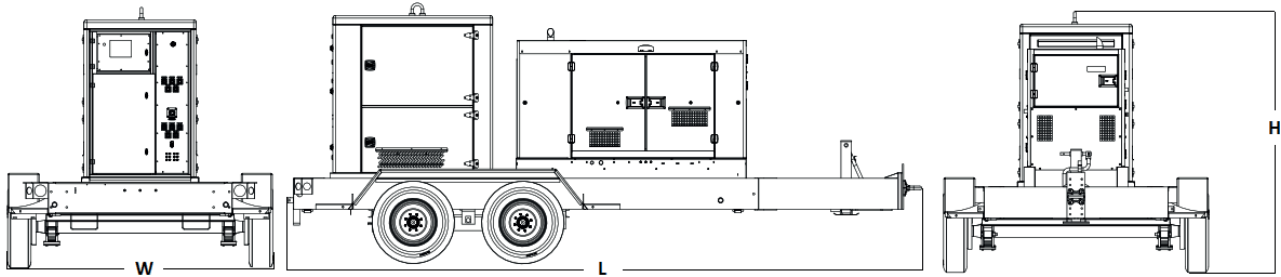


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# DIMENSIONS, WEIGHTS & SOUND LEVELS

## HYBRID SET ON TRAILER

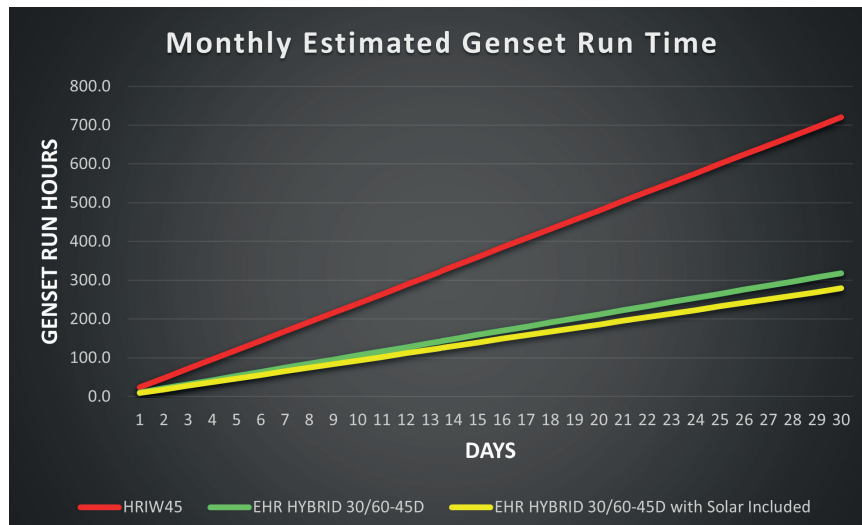


Fuel Tank Data		Generator Data *				
Run Time Hours	Capacity (Gals)	L = Length	W = Width	H = Height	Weight lbs	dBA
41	80	252"	88.1"	100.1"	8200	TBD

\* All measurements are approximate and for estimation purposes only. Weights are without fuel. Sound levels measured at 23ft (7m) and does not account for ambient site conditions  
 \*Dimensions and weights will be determined based on specification chosen. Contact your local HIPOWER Representative for more information

EHR Hybrid Performance	Hybrid Generator	Reduction of Run Hours	Hybrid Generator + Solar **	Reduction of Run Hours
100% load - Expected generator running hrs per day	18.7	22%	17.5	27%
75% load - Expected generator running hrs per day	14.6	39%	13.3	44%
50% load - Expected generator running hrs per day	10.6	56%	9.3	61%
25% load - Expected generator running hrs per day	7.6	68%	5.8	75%

\*\*Solar Production assuming ideal conditions for Kansas producing an average of 35 kWh per day on an 8 kW system. Actual results may vary



\*Actual Results may vary  
 \*Estimated Genset run time based on 50% load of the EHR HYBRID.  
 \*Solar Production assuming ideal conditions for Kansas producing an average of 35 kWh per day on an 8 kW system.

REV-01

Codes and Standards Compliances used where applicable

