



St. Landry Parish Sheriff
1592 E. Prudhomme Lane
Opelousas, La.

September 15, 2014

Attention: Sheriff Bobby Guidroz
Reference: Sheriff's Office Generator Bid

Dear Sir:

KDM Sales & Service, Inc. is pleased to offer the following equipment quotation in complete accordance with the bid documents and including the following:

One (1) Blue Star Power Systems model PSI 150 standby natural gas fueled generator rated 150 KW at 120/208 volts, 3 phase, 4 wire, 60 hertz, and 1800 rpm. This unit will be complete with the following accessories:

- Standard two year warranty
- EPA certified engine as specified
- Marathon model 431CSL6206 oversized alternator with SKVA output as specified
- Battery, rack, cables, and battery charger as specified
- Engine safeties and generator meters as specified.
- Mainline circuit breaker mounted, 600 amps-100% rated with shunt trip as specified.
- Engine block heater, 1500 watts at 120 volts.
- Remote annunciator as specified.
- Level 3 sound attenuated weather protective housing with critical type exhaust, stainless steel flex connector, and rain cap mounted as specified. Housing provides for a resulting noise level of 76 dBA @ 7 meters and is wind rated to 150 mph as specified.
- Oil and antifreeze.
- Field test and system checkout as specified.

Total price for this equipment is \$ 42,952.00 f.o.b. jobsite, plus applicable tax. Delivery will be made by commercial motor freight, KDM Sales & Service Inc. is not responsible for removing this equipment from the truck.

The above price does not include installation, electrical hook-up, natural gas fuel piping, natural gas regulator, automatic or manual transfer switch or items not specified.

KDM's standard terms and conditions of sale apply. This quotation is firm for 30 days.

Thank you for the opportunity to submit this proposal.

Sincerely,

KDM Sales & Service

A handwritten signature in black ink, appearing to read 'David Oliver', is written over the printed name.

David Oliver

Generator Sales Engineer

Phone: (225) 755-0021



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2014 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990



OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Power Solutions International, Inc.
(U.S. Manufacturer or Importer)

Certificate Number: EPSIB8.80EMT-021

Effective Date:
12/09/2013

Expiration Date:
12/31/2014

Byron J. Bunker, Division Director
Compliance Division

Issue Date:
12/09/2013

Revision Date:
N/A

Manufacturer: Power Solutions International, Inc.

Engine Family: EPSIB8.80EMT

Certificate Number: EPSIB8.80EMT-021

Certification Type: Stationary (Part 60)

Fuel : Natural Gas (CNG/LNG)
LPG/Propane

Emission Standards : NOx (g/HP-hr) : 2

VOC (g/HP-hr) : 1

CO (g/HP-hr) : 4NMHC + NOx (g/kW-hr) : 2.7

HC + NOx (g/kW-hr) : 2.7

CO (g/kW-hr) : 4.4

Emergency Use Only : Y

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

BLUE STAR

Power Systems Inc.

Gaseous Product Line

208-600 Volt

PS150-01

60 Hz / 1800 RPM

150 kWe

Standby

Ratings

	240V	208V	240V	480V	600V
Phase	1	3	3	3	3
PF	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Generator Model	431CSL6206	431CSL6202	431CSL6202	431CSL6202	431CSL6240
Connection	12 LEAD ZIG-ZAG	12 LEAD WYE	12 LEAD DELTA	12 LEAD WYE	4 LEAD WYE
kWe Nat (LP)	150 (125)	150 (125)	150 (125)	150 (125)	150 (125)
AMPS Nat (LP)	625 (521)	521 (434)	452 (376)	226 (188)	181 (151)
Temp Rise	130°C / 27°C	130°C / 27°C	130°C / 27°C	130°C / 27°C	130°C / 27°C

Standard Equipment

Engine

- ▶ Radiator Cooled Unit Mounted (50°C)
- ▶ Blower Fan & Fan Drive
- ▶ Starter & Alternator
- ▶ Oil Pump & Filter
- ▶ Oil Drain Extension w/Valve
- ▶ Governor - Electronic Isochronous
- ▶ 12V Battery System & Cables
- ▶ SAE Flywheel & Housing
- ▶ Air Cleaner (Dry Single Stage)
- ▶ Flexible Fuel Connector
- ▶ EPA Certified

Generator

- ▶ Brushless Single Bearing
- ▶ Automatic Voltage Regulator
- ▶ ± 1% Voltage Regulation
- ▶ 4 Pole, Rotating Field
- ▶ ~~130°C Standby Temperature Rise~~
- ▶ 100% of Rated Load - One Step
- ▶ 5% Maximum Harmonic Content
- ▶ NEMA MG 1, IEEE and ANSI standards compliance for temperature rise

- 80°C temperature rise

Additional

- ▶ Microprocessor Based Digital Control
- ▶ Base - Formed Steel
- ▶ Main Line Circuit Breaker Mounted & Wired
- ▶ Catalyst/Silencer Mounted
- ▶ Battery Charger **10 Amp**
- ▶ Jacket Water Heater -20°F 1500W 120V w/Isolation Valves
- ▶ Vibration Isolation Mounts
- ▶ Radiator Duct Flange (OPU Only)
- ▶ Single Source Supplier
- ▶ 2YR / 2000HR Standby Warranty
- ▶ Standard Colors - White / Tan / Gray

- Remote Annunciator

Gaseous Product Line

150 kW_e



Application Data

Engine

Manufacturer:	PSI	Displacement - Cu. In. (lit):	535 (8.80)
Model:	8.8LTCAC	Bore - in. (cm) x Stroke - in. (cm):	4.35 (11.0) x 4.50 (11.4)
Type:	4-Cycle	Compression Ratio:	10.1 : 1
Aspiration:	Turbo Charged, CAC	Rated RPM:	1800
Cylinder Arrangement:	8 Cylinder Vee	Max HP Stby (kW _m):	241 (179)

Exhaust System

Gas Temp. (Stack): °F (°C)	1,350 (732)
Gas Volume at Stack Temp: CFM (m ³ /min)	1,125 (31.8)
Maximum Allowable Exhaust Restriction: in. H ₂ O (kPa)	40.8 (10.2)

Cooling System

Ambient Capacity of Radiator: °F (°C)	122 (50)
Maximum Allowable Static Pressure on Rad. Exhaust: in. H ₂ O (kPa)	0.5 (0.12)
Water Pump Flow Rate: Gpm (lit/min)	33.0 (125)
Heat Rejection to Coolant: BTUM (kW)	7,390 (129)
Heat Rejection to CAC: BTUM (kW)	642 (11.2)
Heat Radiated to Ambient: BTUM (kW)	1,921 (33.6)

Air Requirements

Aspirating: CFM (m ³ /min)	371 (10.5)
Air Flow Required for Rad. Cooled Unit: CFM (m ³ /min)	12,000 (340)
Air Flow Required for Heat Exchanger/Rem. Rad. CFM (m ³ /min)	N/A

Fuel Consumption

	Natural Gas	LP
At 100% of Power Rating: ft ³ /hr (m ³ /hr)	1,965 (55.6)	713 (20.2)
At 75% of Power Rating: ft ³ /hr (m ³ /hr)	1,529 (43.3)	547 (15.5)
At 50% of Power Rating: ft ³ /hr (m ³ /hr)	1102 (31.2)	399 (11.3)
Fuel Inlet Size: NPT	1.5"	1.5"
Fuel Pressure Required: in. H ₂ O (kPa)	11 (2.7)	11 (2.7)

Fluids Capacity

Total Oil System: gal (lit)	2.25 (9.0)
Engine Jacket Water Capacity: gal (lit)	3.54 (13.4)
System Coolant Capacity: gal (lit)	5.56 (21.2)



All calculations based on natural gas fuel.

Deration Factors: Temperature: Derate 3% per 10°F (5°C) above 77°F (25°C) air inlet temperature. | Altitude: Derate 3% per 1000 feet (305 m) above 1200 feet (366 m).

Gaseous Product Line

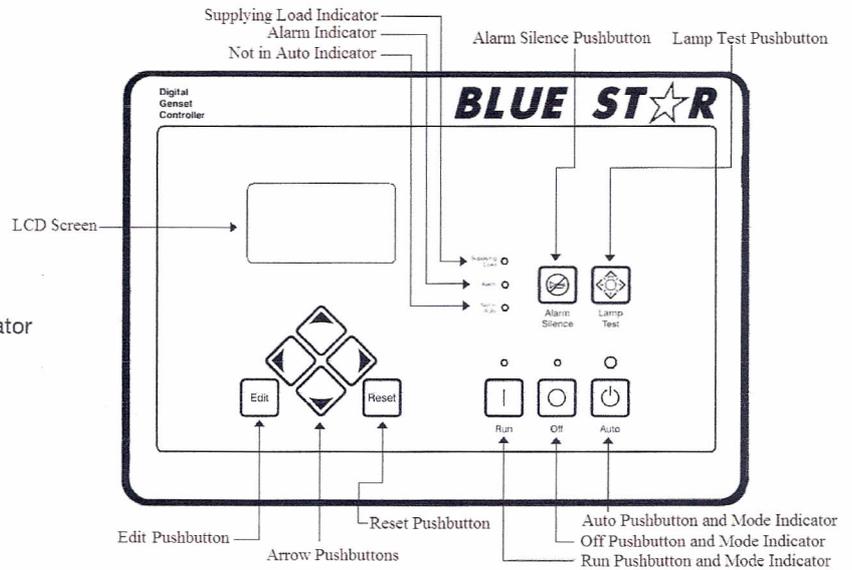
150 kWe



DGC-2020 Control Panel

Standard Features

- ▶ Digital Metering
- ▶ Engine Parameters
- ▶ Generator Protection Functions
- ▶ Engine Protection
- ▶ CAN Bus ECU Communications
- ▶ Windows-Based Software
- ▶ Multilingual Capability
- ▶ Remote Communications to RDP-110 Remote Annunciator
- ▶ 16 Programmable Contact Inputs
- ▶ Up to 15 Contact Outputs (7 standard)
- ▶ UL Recognized, CSA Certified, CE Approved
- ▶ Event Recording
- ▶ IP 54 Front Panel Rating with Integrated Gasket
- ▶ NFPA 110 Level 1 Compatible

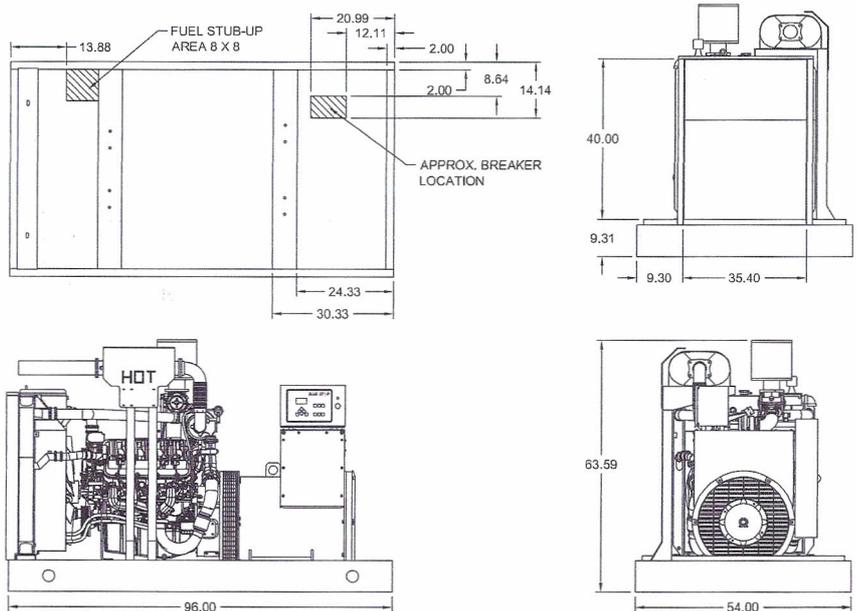


Weights / Dimensions / Sound Data

	L x W x H	Weight lbs
OPU	96 x 54 x 64 in	2975
Level 1	96 x 54 x 76 in	3475
Level 2	96 x 54 x 104 in	3950
Level 3	136 x 54 x 96 in	4250

Height measured from bottom of base to exhaust stack.

	No Load	Full Load
OPU	85 dBA	88 dBA
Level 1	83 dBA	86 dBA
Level 2	78 dBA	80 dBA
Level 3	73 dBA	76 dBA



Drawings based on standard open power 480 volt standby generator. Lengths may vary with other voltages. Subject to change without notice. Sound data as measured at 23 feet (7 meters) in accordance with ISO 8528-10 at standby rating.

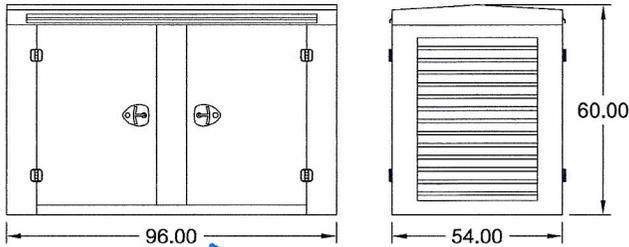
Gaseous Product Line

150 kWe

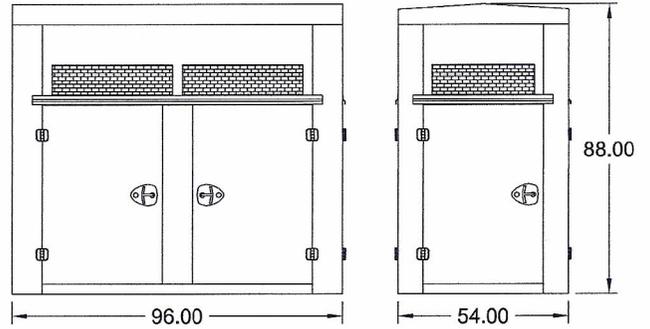


Optional Enclosures

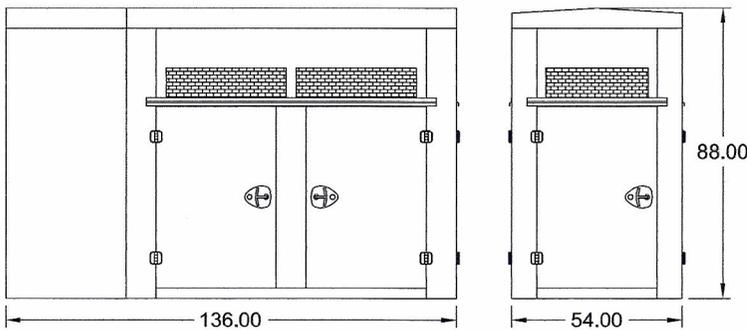
Level 1 Enclosure (WPE)



Level 2 Enclosure (WPF)



Level 3 Enclosure (SAE)



*Level 1 enclosures are 100 MPH Wind Rated as standard (up to 150 MPH available).

**Level 2 & 3 enclosures are 150 MPH Wind Rated as standard.

***Enclosure height does not include unit base or exhaust stack.

*All specification sheet dimensions are represented in inches.

**All enclosures are based on the standard standby unit configuration. Any deviation can change dimensions.

***Level 1 enclosure not UL listed.

Materials and specifications subject to change without notice.

Distributed By:



Blue Star Power Systems, Inc.

52146 Ember Rd, Lake Crystal, MN 56055

Phone + 1 507 726 2508

www.bluestarps.com

MAGNAPLUS®

MARATHON ELECTRIC SYNCHRONOUS AC GENERATOR TYPICAL DYNAMIC CHARACTERISTICS

Base Model 431CSL6206/431PSL6206

Date: 3/28/13

kW (kVA)	1800 RPM			60 Hertz			12 Leads		
	3 Phase			0.8 Power Factor			Dripproof or Open Enclosure		
	Class B		Class F				Class H		
Voltage*	80° C ① Continuous	90° C ① Lloyds	95° C ① ABS	105° C ② British Standard	105° C ① Continuous	130° C ① Standby	125° C ② British Standard	125° C ① Continuous	150° C ① Standby
240/480	165 (206)	180 (225)	186 (233)	200 (250)	200 (250)	215 (269)	205 (256)	211 (264)	225 (281)
230/460	170 (213)	185 (231)	190 (238)	200 (250)	200 (250)	220 (275)	205 (256)	215 (269)	225 (281)
220/440	172 (215)	185 (231)	191 (239)	200 (250)	200 (250)	220 (275)	205 (256)	212 (265)	226 (283)
208/416	170 (213)	180 (225)	183 (229)	191 (239)	191 (239)	210 (263)	197 (246)	202 (253)	217 (271)
190/380	156 (195)	165 (206)	170 (213)	176 (220)	176 (220)	191 (239)	182 (228)	185 (231)	200 (250)

① Rise by resistance method, Mil-Std-705, Method 680.1b.

② Rating per BS 5000.

Submittal Data: 240/480 Volts*, 269 kVA, 1800 RPM, 60 Hz, 3 Phase					
Mil-Std-705B			Mil-Std-705B		
Method	Description	Value	Method	Description	Value
301.1b	Insulation Resistance	> 1.5 Meg	505.3b	Overspeed	2250 RPM
302.1a	High Potential Test		507.1c	Phase Sequence CCW-ODE	ABC
	Main Stator	2000 Volts	508.1c	Voltage Balance, L-L or L-N	0.2%
	Main Rotor	1500 Volts	601.4a	L-L Harmonic Maximum - Total (Distortion Factor)	5.0%
	Exciter Stator	1500 Volts	601.4a	L-L Harmonic Maximum - Single	3.0%
	Exciter Rotor	1500 Volts	601.1c	Deviation Factor	5.0%
	PMG Stator	1500 Volts**	---	TIF (1960 Weightings)	<50
401.1a	Stator Resistance, Line to Line		625.1c	Mechanical Strength (High Wye Connection, Sustained 3 Phase Short Circuit Current) ⁽³⁾	< 300%
	High Wye Connection	0.0371 Ohms	652.1a	Shaft Current	< 0.1 ma
	Rotor Resistance	0.679 Ohms	652.1a	Main Stator Capacitance to Ground	0.011 mfd
	Exciter Stator	18.5 Ohms	Additional Prototype Mil-Std Methods are Available on Request.		
	Exciter Rotor	0.116 Ohms	--	Generator Frame	431
	PMG Stator	2.1 Ohms**	--	Type Ext. Voltage Regulated, Brushless	
410.1a	No Load Exciter Field Amps at 480 Volts Line to Line	0.68 A DC	--	Insulation	Class H
420.1a	Short Circuit Ratio	0.493	--	Coupling - Single Bearing	Flexible
421.1a	Xd Synchronous Reactance	2.976 pu	--	Amortisseur Windings	Full
422.1a	X2 Negative Sequence Reactance	0.202 pu	--	Cooling Air Volume	1200 CFM
423.1a	X0 Zero Sequence Reactance	0.04 pu	--	Exciter	Rotating
425.1a	X'd Transient Reactance	0.152 pu	--	Voltage Regulator	SE350***
426.1a	X"d Subtransient Reactance	0.148 pu	--	Voltage Regulation	1%***
--	Xq Quadrature Synchronous Reactance	1.284 pu	--	Sensing	1 Phase***
427.1a	T'd Transient Short Circuit Time Constant	0.061 sec.			
428.1a	T'd Subtransient Short Circuit Time Constant	0.019 sec.			
430.1a	T'do Transient Open Circuit Time Constant	1.02 sec.			
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.019 sec.			

(3) Excitation support system or PMG required to sustain short circuit currents.

* Voltage refers to wye (star) connection, unless otherwise specified.

**Not supplied as standard equipment.

***DVR®2000E+ voltage regulator supplied with PMG option. DVR®2000E+ voltage regulation 1/4%, 1 or 3 Phase sensing.

www.marathonelectric.com

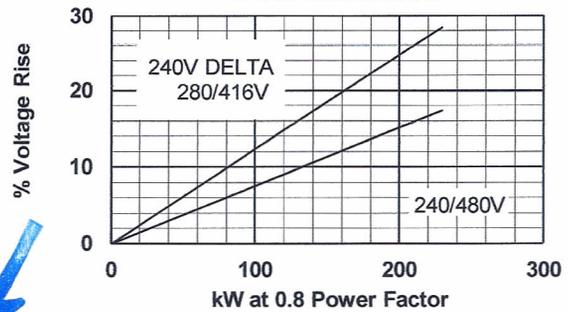
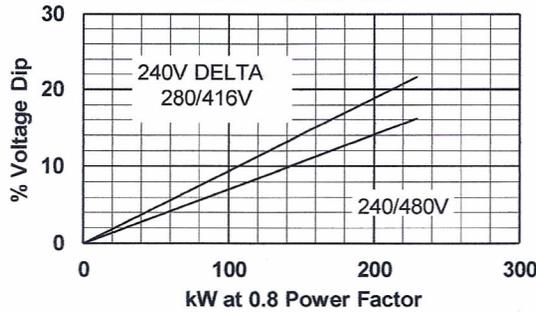
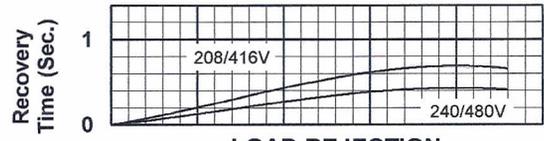
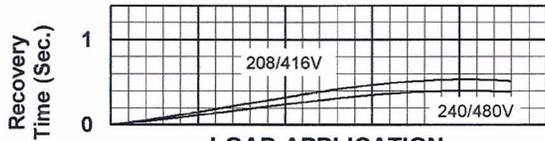
MAGNAPLUS[®]

MARATHON ELECTRIC SYNCHRONOUS AC GENERATOR TYPICAL DYNAMIC CHARACTERISTICS

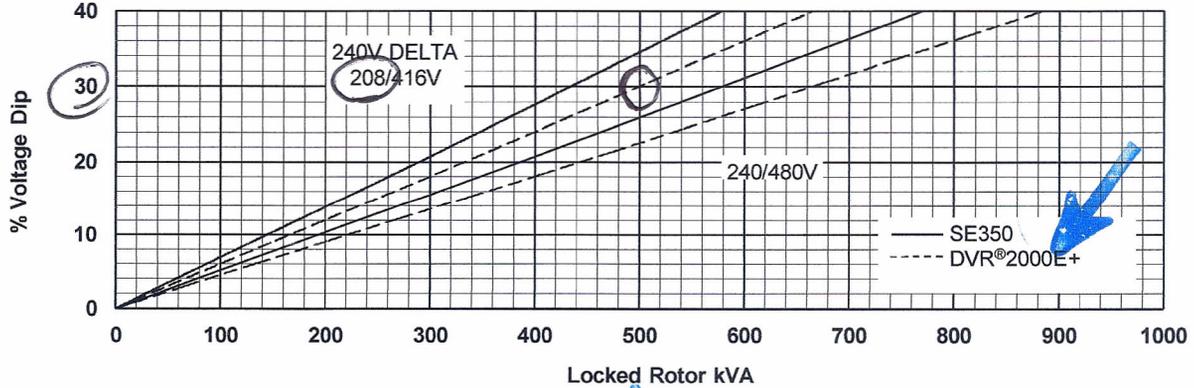
Base Model 431CSL6206/431PSL6206

Date: 3/28/13

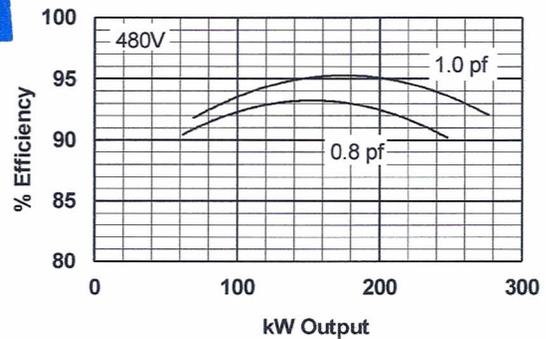
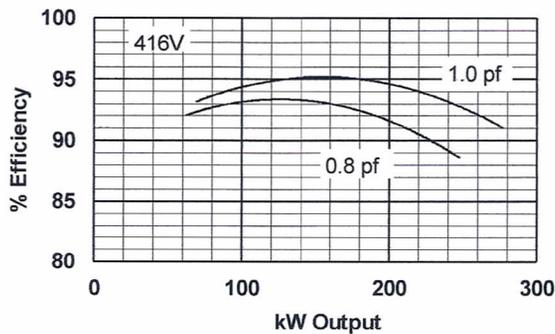
60 HERTZ



TYPICAL MOTOR STARTING CHARACTERISTICS



TYPICAL GENERATOR EFFICIENCY



Voltage refers to wye (star) connection, unless otherwise specified.

www.marathonelectric.com

Gen-Set Enclosures



Blue Star gen-set enclosures are specifically designed for optimal protection against the elements. They are designed to protect the entire system from even the most extreme environments, and to reduce sound levels to most specified requirements. Blue Star's vast flexibility allows the design of standard enclosures to meet most specifications or requirements. All standard enclosure models are constructed of 14 gauge steel and feature a pitched roof for increased structural integrity and superior watershed. All enclosures feature a rugged UL listed powder coat finish as standard for a long lasting and durable finish in standard white, tan or gray. Custom colors are available as specified.

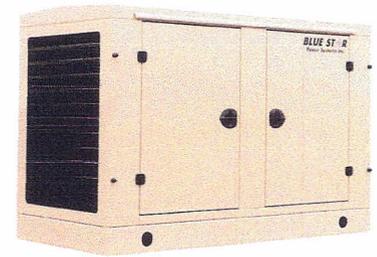
Enclosure Design Features

- ▶ UL 2200 Listed models available
- ▶ Level 2 & 3 enclosures are 150 MPH wind rated through 600 kWe
- ▶ Lockable gasketed doors with draw down latches and Stainless Steel hinges
- ▶ All Stainless Steel fasteners
- ▶ UL listed extreme-wear powder coat finish
- ▶ Pitched roof for high structural integrity and superior watershed
- ▶ Above-door drip guards
- ▶ Optimal airflow means no cooling system de-rates
- ▶ Internally mounted exhaust silencers standard up to 600 kWe
- ▶ Sound attenuation options
- ▶ Stainless Steel and Aluminum enclosure options

Level 1

Weather Protective Enclosure (WPE)

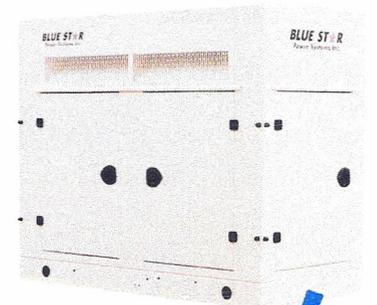
Blue Star Level 1 enclosures have the rugged construction and weather protection required for most outdoor environments. These enclosures will effectively protect the gen-set through high wind (100 MPH), rain, and other weather conditions. Weather protective enclosures feature standard hinged lockable doors, a pitched roof to prevent water accumulation, and an extreme-wear UL listed powder coat finish.



Level 2

Weather Proof Enclosure (WPF)

Blue Star Level 2 enclosures feature complete weather proofing for any environment. These enclosures have all of the great features of the Level 1 enclosure, plus: dual side air intake baffles, a rear door, and offers the complete unit UL 2200 listing. The superior design of these enclosures offer an even lower dBA rating, but sound attenuation options are also available to further reduce sound levels.



Level 3

Sound Attenuated Enclosure (SAE)

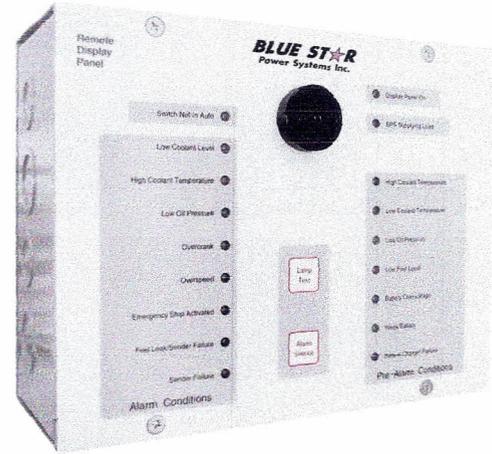
Blue Star Level 3 enclosures feature the same great weather proofing and standard features as the Level 2 enclosure models, but with a greater emphasis on reducing sound levels. Standard Level 3 features include high performance 1.5" type D sound attenuating foam, a separate front exhaust chamber and dual side air intake baffles to ensure that your system runs exceptionally quiet. These features make this enclosure among the best in the industry for noise reduction and quality.



Remote Annunciator



The RDP-110 is a powerful remote display to match Blue Star's DGC-2020 control panel. It may be powered from the engine starting batteries at 12 or 24VDC or an AC source at 120VAC. The RDP-110 uses RS-485 communications between itself and the DGC to reduce the number of wires required to activate all the alarms to four. The RS-485 communications can be used on remote displays up to 4000 feet away from the DGC. The RDP-110 has 18 LEDs to indicate Alarms, Pre-Alarms and operating conditions of the emergency standby generator system. It has an audible alarm horn rated at 80db (from a distance of two feet). The RDP-110 also comes complete with a conduit box for easy installation. The RDP-110 is available in two mounting configurations: surface and semi-flush mount.



Standard Features

- ▶ Annunciation of 16 alarms and pre-alarms as detected by the DGC
- ▶ Annunciation of 2 status indicators
- ▶ Audible alarm horn
- ▶ Lamp Test and Alarm Silence switches
- ▶ Power supply inputs for 12, 24VDC or 120VAC (at the RDP-110 location)
- ▶ RS-485 communications
- ▶ Two mounting configurations
- ▶ Conduit box included
- ▶ Designed for use in harsh environments
- ▶ UL recognized & CSA certified

Specifications

Power Input

- ▶ DC Voltage: 8-32VDC (2W max.)
- ▶ AC Voltage: 84-144VAC (5VA max.)

Communications Port

- ▶ RS-485 interface with DGC

Isolation

- ▶ 1800VDC for one minute between chassis ground and AC voltage input. 700VDC for one minute between any of the following groups:
 - Chassis ground
 - Battery and RS-485 terminals
 - AC voltage inputs

Operating Range

- ▶ Up to 4000 ft. from the DGC
- ▶ Recommended Wire - Belden 9463

RFI (Radio Frequency Interference)

- ▶ Type tested using a 5W handheld transceiver operating at random frequencies centered around 144MHz and 440MHz with the antenna located within six inches of the device in both vertical and horizontal planes

Environmental and Physical

- ▶ Operating temperature: -40°F to +158°F
- ▶ Storage temperature: -40°F to +185°F
- ▶ Salt Fog: Qualified to ASTM 117B-1989
- ▶ Vibration: The device withstands 2g in each of three mutually perpendicular planes, swept over the range of 10 - 500Hz for a total of six sweeps, 15 minutes each sweep, without structural damage or degradation of performance
- ▶ Shock: 15g
- ▶ Weight: 6.5 pounds (3 kilograms)