Wholesale Diesel Generators

WHOLESALE DIESEL GENERATORS
A DIVISION OF NORTH STAR LOGISTICS LLC
661 Miller's Bluff RD, Surgoinsville, TN 37873
423-220-3500 Ext 2
sales@homegeneratorsnsl.com
www.HomeGeneratorsNSL.com

30KW
CUMMINS
DIESEL GENERATOR

GENERAL INFORMATION & KEY FEATURES

- **Power:** 31 kW / 38 kVA at 60 Hz
- **Engine:** Cummins 4BT3.9-G2
- **Cylinder:** 4-cylinder
- **Cooling:** Water-cooled
- **Displacement:** 3.9 Liter
- **Bore x Stroke:** 102x120 mm
- **Voltage:** Any voltage can be customized
- **Phase:** Single phase or 3-phase options available
- **Operating Speed:** 1500 rpm
- **Noise Level:** 69 db @ 7m
- **Enclosure Type:** Silent IP-65, soundproof and weatherproof customizable enclosure
- **Controller:** DSE GenSet 6110
- **Fuel Tank:** 47 or 160 gallons, extended fuel tank capacity options
- **Dimensions:** L*W*H - 90 x 43 x 70 (in.)
- **Weight:** 2300 lbs.
- **Certifications:** Certified ISO:9001, ISO:17025, ISO:8258, EPA Tier 3, UL2200

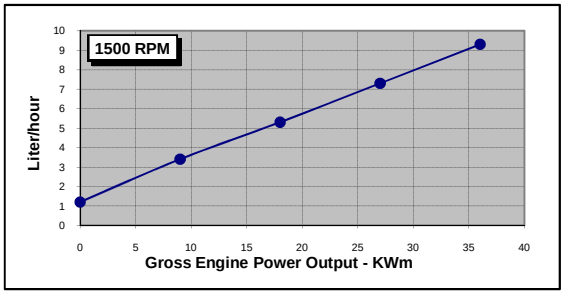
	Cummins Inc. Engine Data sheet	Basic Engine Model: 4BT3.9-G2	Date: November 2008	Page No. 1

Displacement: 3,9liter	Bore: 102mm	Stroke: 120mm
No. of Cylinders: 4	Aspiration: Turbocharged	
Emissions: EURO II & III		

Engine Speed	Standby Power Rating		Prime Power Rating		Continuous Power Rating	
RPM	kWm	BHP	kWm	BHP	kWm	BHP
1500	40	54	36	48	*	*
1800	45	60	40	54	*	*

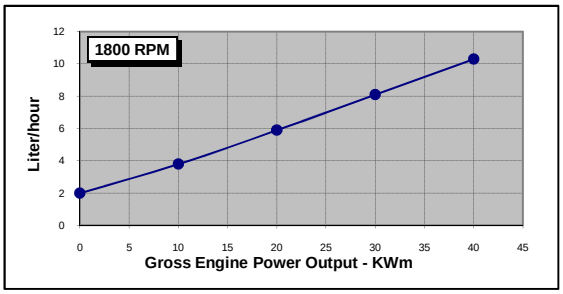
Engine Performance Data @1500 RPM

Output Power			Fuel Consumption	
%	kWm	BHP	kg/ kWm-h	litre/ hour
Standby Power				
100	40	54	0,212	10,3
Prime Power				
100	36	48	0,214	9,3
75	27	26	0,223	7,3
50	18	24	0,244	5,3
25	9	12	0,312	3,4
Continuous Power				
100	*	*	*	*



Engine Performance Data @1800 RPM

Output Power			Fuel Consumption	
%	kWm	BHP	kg/ kWm-h	litre/ hour
Standby Power				
100	45	60	0,219	11,6
Prime Power				
100	40	54	0,219	10,3
75	30,0	40	0,229	8,1
50	20	27	0,251	5,9
25	10	13	0,323	3,8
Continuous Power				
100	*	*	*	*



CONVERSIONS: **(kWm = BHP x 0.746)** **(BHP = Engine kWm x 1.34)**

Data shown above represent gross engine performance capabilities obtained and concerned in accordance with ISO-3046 conditions of 100 Kpa baromatic pressure [110m altitude], 25C air temperature,and relative humidity
of 30%with no.2 diesel or a fuel corresponding to ASTM D2.
The fuel consumption data is based on No.2 diesel fuel weight at 0.85kg/litre.
Power output curves are based on the engine operating with fuel system ,water pump and lubricating oil pump;not include are charging alternator,fan,optional equipment and driven components.

TECHNICAL DATA DEPT. **CERTIFIED WITHIN 5%** **CHIEF ENGINEER**

Cummins Inc.

Engine Data Sheet

ENGINE MODEL: **4BT3.9-G2**

DATA SHEET : DS-4BT3
DATE : November 2008

● Fan to Flywheel

GENERAL ENGINE DATA

Type ……..(Cyles #, Disposition, Cylinders)	In-Line 4 Cycle, Water Cooled
Aspiration……..	Turbocharged
Bore x Stroke……..(mm x mm)	102x120
Displacement……..(liter)	3,9
Compression Ratio……..	16,5:1
Dry Weight	
Fan to Flywheel Engine……..(Kg)	320
Wet Weight	
Fan to Flywheel Engine……..(Kg)	336
Moment of Inertia of Rotating Components……..($kg.m^2$)	0,143
Center of Gravity from Front Face of Block……..(mm)	373
Center of Gravity above Crankshaft Centerline……..(mm)	163

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block …… (N.m)	1356

EXHAUST SYSTEM

Maximum Back Pressure…….. (mm Hg)	76

AIR INDUCTION SYSTEM

Maximum Intake Air Restriction	
• With Dirty Filter Element…… (mmH_2O)	635
• With Normal Duty Air Cleaner and Clean Filter Element ……..(mmH_2O)	254
• With Heavy Duty air Cleaner and Clean Filter Element…….. (mmH_2O)	381

LUBRICATION SYSTEM

Oil Pressure @ Idle Speed ……..(kPa)	207
@ Governed Speed ……..(kPa)	345
Maximum Oil Temperature……..(℃)	121
Oil Capacity With Oil Pan : High-Low…….. (Litre)	9,5-8,5
Total System Capacity (Including Filters)…….. (Litre)	11
Angularity of Oil Pan	
• Front Down……..	40°
• Front Up ……..	40°
• Side to Side……..	40°

FUEL SYSTEM

Type Injection System ……..	BYC A Stanadyne
Maximum Inlet Restriction at Injection Pump…….(mmHg)	102
Maximum Allowable Head on Injector Return Line …….. (mmHg)	254
Fuel Flow to Lift Pump @ 43psi (3kg/cm^2)……..(Litre/hr)	30

COOLING SYSTEM

Coolant Capacity – Engine Only ……..(Litre)	7,2
Maximum coolant Friction Head External to Engine – 1500 rpm……..(kPa)	28
Maximum coolant Friction Head External to Engine – 1800 rpm…….. (kPa)	35
Maximum Static Head of Coolant Above Engine Crank Centerline ……..(m)	14
Standard Thermostat (Modulating) Range…….. (℃)	82-95
Minimum Pressure Cap…….. (kPa)	69
Maximum Top Tank Temperature for Standby / prime Power ……..(℃)	104/100

ELECTRICAL SYSTEM

Cranking Motor Voltage (Positive Engagement)…….. (Volt)	24
Battery Charging System, Negative Ground ……..(Amp)	40
Maximum Allowable Resistance of Cranking Circuit ……..(Ohm)	0,002
Minimum Recommended Battery Capacity	
• Cold Soak @ -12°c……..(0°F CCA)	400

WINDING 06

CONTROL SYSTEM	STANDARD AS480 AVR (SELF EXCITED)
VOLTAGE REGULATION	± 1.0 %
SUSTAINED SHORT CIRCUIT	SELF EXCITED MACHINES DO NOT SUSTAIN A SHORT CIRCUIT CURRENT

CONTROL SYSTEM	AS480 AVR WITH OPTIONAL EXCITATION BOOST SYSTEM (EBS)
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVE (page 7)

INSULATION SYSTEM	CLASS H			
PROTECTION	IP23			
RATED POWER FACTOR	0.8			
STATOR WINDING	SINGLE LAYER CONCENTRIC			
WINDING PITCH	TWO THIRDS			
WINDING LEADS	4			
STATOR WDG. RESISTANCE	0.05 Ohms AT 22°C SERIES CONNECTED			
ROTOR WDG. RESISTANCE	0.99 Ohms at 22°C			
EXCITER STATOR RESISTANCE	22.9 Ohms at 22°C			
EXCITER ROTOR RESISTANCE	0.21 Ohms PER PHASE AT 22°C			
EBS STATOR RESISTANCE	12.9 Ohms at 22°C			
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4,VDE 0875G, VDE 0875N. refer to factory for others			
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%			
MAXIMUM OVERSPEED	2250 Rev/Min			
BEARING DRIVE END	BALL. 6310-2RS (ISO)			
BEARING NON-DRIVE END	BALL. 6306-2RS (ISO)			
	1 BEARING		2 BEARING	
	WITH EBS	WITHOUT EBS	WITH EBS	WITHOUT EBS
WEIGHT COMP. GENERATOR	184 kg	182.3 kg	187 kg	185.3 kg
WEIGHT WOUND STATOR	84 kg	84 kg	84 kg	84 kg
WEIGHT WOUND ROTOR	70.97 kg	69.27 kg	72.68 kg	70.98 kg
WR² INERTIA	0.2758 kgm^2	0.2741 kgm^2	0.2763 kgm^2	0.2746 kgm^2
SHIPPING WEIGHTS in a crate	202 kg	200.3 kg	211 kg	209.3 kg
PACKING CRATE SIZE	85 x 51 x 67 (cm)		85 x 51 x 67 (cm)	
TELEPHONE INTERFERENCE	THF<2%		TIF<50	
COOLING AIR	0.165 m³/sec 340 cfm			

VOLTAGE SERIES	220		230		240	
VOLTAGE PARALLEL	110		115		120	
POWER FACTOR	0.8	1.0	0.8	1.0	0.8	1.0
kVA BASE RATING FOR REACTANCE VALUES	31.3	40.0	32.7	40.0	34.1	40.0
Xd DIR. AXIS SYNCHRONOUS	1.91	2.44	1.83	2.24	1.75	2.05
X'd DIR. AXIS TRANSIENT	0.17	0.22	0.17	0.21	0.16	0.19
X"d DIR. AXIS SUBTRANSIENT	0.13	0.17	0.13	0.16	0.12	0.14
Xq QUAD. AXIS REACTANCE	0.92	1.18	0.88	1.08	0.84	0.99
X"q QUAD. AXIS SUBTRANSIENT	0.21	0.27	0.20	0.24	0.19	0.22
X_L LEAKAGE REACTANCE	0.08	0.10	0.07	0.09	0.07	0.08
X_2 NEGATIVE SEQUENCE	0.16	0.20	0.16	0.20	0.15	0.18
X_0 ZERO SEQUENCE	0.08	0.10	0.07	0.09	0.07	0.08

REACTANCES ARE SATURATED — VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED

T'd TRANSIENT TIME CONST.	0.029 s
T"d SUB-TRANSTIME CONST.	0.007 s
T'do O.C. FIELD TIME CONST.	0.66 s
Ta ARMATURE TIME CONST.	0.007 s
SHORT CIRCUIT RATIO	1/Xd

APPROVED DOCUMENT

PI144J

Winding 06

STAMFORD

60Hz

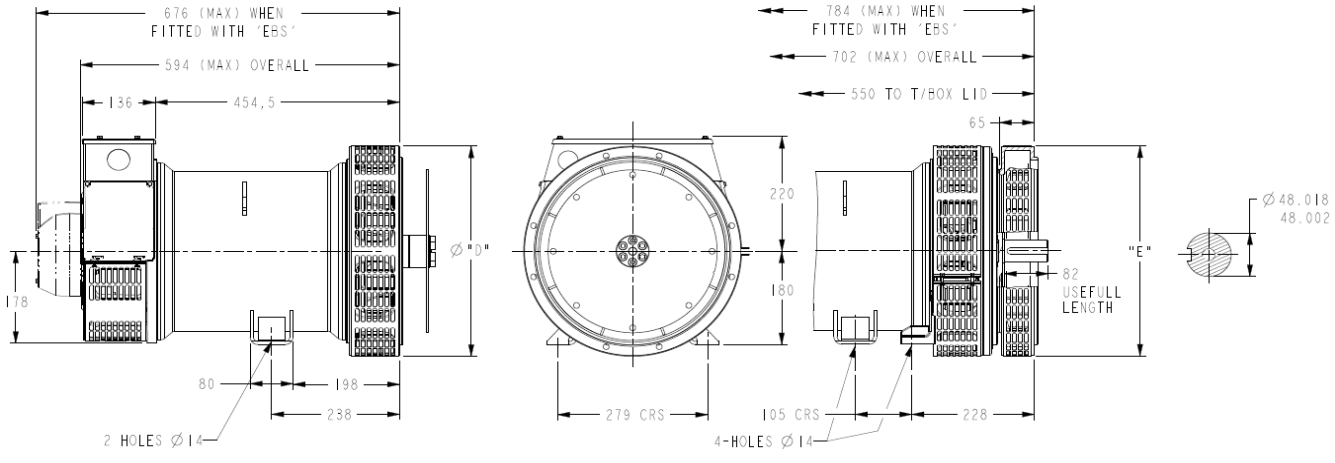
RATINGS

Class - Temp Rise	Cont. F - 105/40°C **0.8pf**			Cont. H - 125/40°C **0.8pf**			Standby - 150/40°C **0.8pf**			Standby - 163/27°C **0.8pf**		
Series (V)	220	230	240	220	230	240	220	230	240	220	230	240
Parallel (V)	110	115	120	110	115	120	110	115	120	110	115	120
kVA	28.6	29.8	31.1	31.3	32.7	34.1	34.5	36.0	37.5	35.2	36.8	38.3
kW	22.9	23.8	24.9	25.0	26.2	27.3	27.6	28.8	30.0	28.2	29.4	30.6
Efficiency (%)	83.1	83.1	83.1	83.0	83.1	83.1	82.9	83.0	83.0	82.9	83.0	83.0
kW Input	27.6	28.6	30.0	30.1	31.5	32.9	33.3	34.7	36.1	34.0	35.4	36.9

Class - Temp Rise	Cont. F - 105/40°C **1.0pf**			Cont. H - 125/40°C **1.0pf**			Standby - 150/40°C **1.0pf**			Standby - 163/27°C **1.0pf**		
Series (V)	220	230	240	220	230	240	220	230	240	220	230	240
Parallel (V)	110	115	120	110	115	120	110	115	120	110	115	120
kVA	36.4	36.4	36.4	40.0	40.0	40.0	43.0	43.0	43.0	44.0	44.0	44.0
kW	36.4	36.4	36.4	40.0	40.0	40.0	43.0	43.0	43.0	44.0	44.0	44.0
Efficiency (%)	86.6	86.8	86.8	86.4	86.6	86.7	86.1	86.4	86.6	86.1	86.3	86.5
kW Input	42.0	41.9	41.9	46.3	46.2	46.1	49.9	49.8	49.7	51.1	51.0	50.9

Avoid ECDCU

DIMENSIONS



COUPLING DISC	
SAE	"AN"
8	62
10	53.8
11.5	39.6

1-BRG ADAPTOR	
SAE	"D"
4	405
3	451
2	489

8-HOLES SPACED AS 12
8-HOLES SPACED AS 12

2-BRG ADAPTOR	
SAE	"E"
5	359
4	406
3	455
2	493

DSEGenset®

DSE6110/20 MKIII

AUTO START & AUTO MAINS (UTILITY) FAILURE CONTROL MODULES

DSE**6110 MKIII**

DSE**6120 MKIII**

KEY FEATURES

- 4-line back-lit LCD text display
- Multiple display languages
- Five-key menu navigation
- LCD alarm indication
- Customisable power-up text and screen images.
- DSENet® expansion compatibility
- Data logging facility
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB communications
- Front panel configuration with PIN protection
- Power save mode
- 3-phase generator sensing and protection
- 3-phase mains (utility) sensing and protection (DSE6120 MKIII only)
- Automatic load transfer control (DSE6120 MKIII only)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- Mains (utility) current and power monitoring (kW, kvar, kVA, pf) (DSE6120 MKIII only)
- kW overload alarm
- Over current protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- 6 configurable DC outputs
- 4 configurable analogue/digital inputs
- Support for 0 V to 10 V & 4 mA to 20 mA sensors
- 8 configurable digital inputs
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Manual and automatic fuel pump control
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel level alarms
- 3 configurable maintenance alarms
- Compatible with a wide range of CAN engines, including Tier 4 engine support
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress
- Configurable CAN read & transmitted information.
- 1 alternative configuration.

KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE6120 MKIII only) for convenience.
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.

RELATED MATERIALS

TITLE	PART NO.
DSE6110 MKIII & DSE6120 MKIII Installation Instructions	053-240
DSE6110 MKIII & DSE6120 MKIII Operator Manual	057-289
DSE6110 MKIII & DSE6120 MKIII Configuration Suite PC Manual	057-290

SPECIFICATIONS

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous
5 V for up to 1 minute

CRANKING DROPOUTS
Able to survive 0 V for 100 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT
260 mA at 12 V, 150 mA at 24 V

MAXIMUM STANDBY CURRENT
145 mA at 12 V, 85 mA at 24 V

CHARGE FAIL/EXCITATION RANGE
0 V to 35 V

GENERATOR & MAINS (UTILITY)

VOLTAGE RANGE
15 V to 415 V AC (Ph to N)
26 V to 719 V AC (Ph to Ph)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICKUP

VOLTAGE RANGE
+/- 0.5 V to 70 V

FREQUENCY RANGE
10,000 Hz (max)

INPUTS

DIGITAL INPUTS A TO H
Negative switching

ANALOGUE INPUTS A & D
Configurable as:
Negative switching digital input
0 V to 10 V sensor
4 mA to 20 mA sensor
Resistive sensor

ANALOGUE INPUTS B & C
Configurable as:
Negative switching digital input
Resistive sensor

OUTPUTS

OUTPUT A & B (FUEL & START)
10 A DC at supply voltage

AUXILIARY OUTPUTS C, D, E, F, G & H
2 A DC at supply voltage

DIMENSIONS

OVERALL
216 mm x 158 mm x 43 mm
8.5” x 6.2” x 1.5”

PANEL CUT-OUT
184 mm x 137 mm
7.2” x 5.3”

MAXIMUM PANEL THICKNESS
8 mm
0.3”

STORAGE TEMPERATURE RANGE
-40°C to +85°C
-40 °F to +185 °F

OPERATING TEMPERATURE RANGE

NON-HEATED DISPLAY VARIANT
-30°C to +70°C
-22 °F to +158 °F

HEATED DISPLAY VARIANT
-40 °C to +70 °C
-40 °F to +158 °F

OPTIONAL PARTS

PART	PART NUMBER
IP65 Gasket	020-521

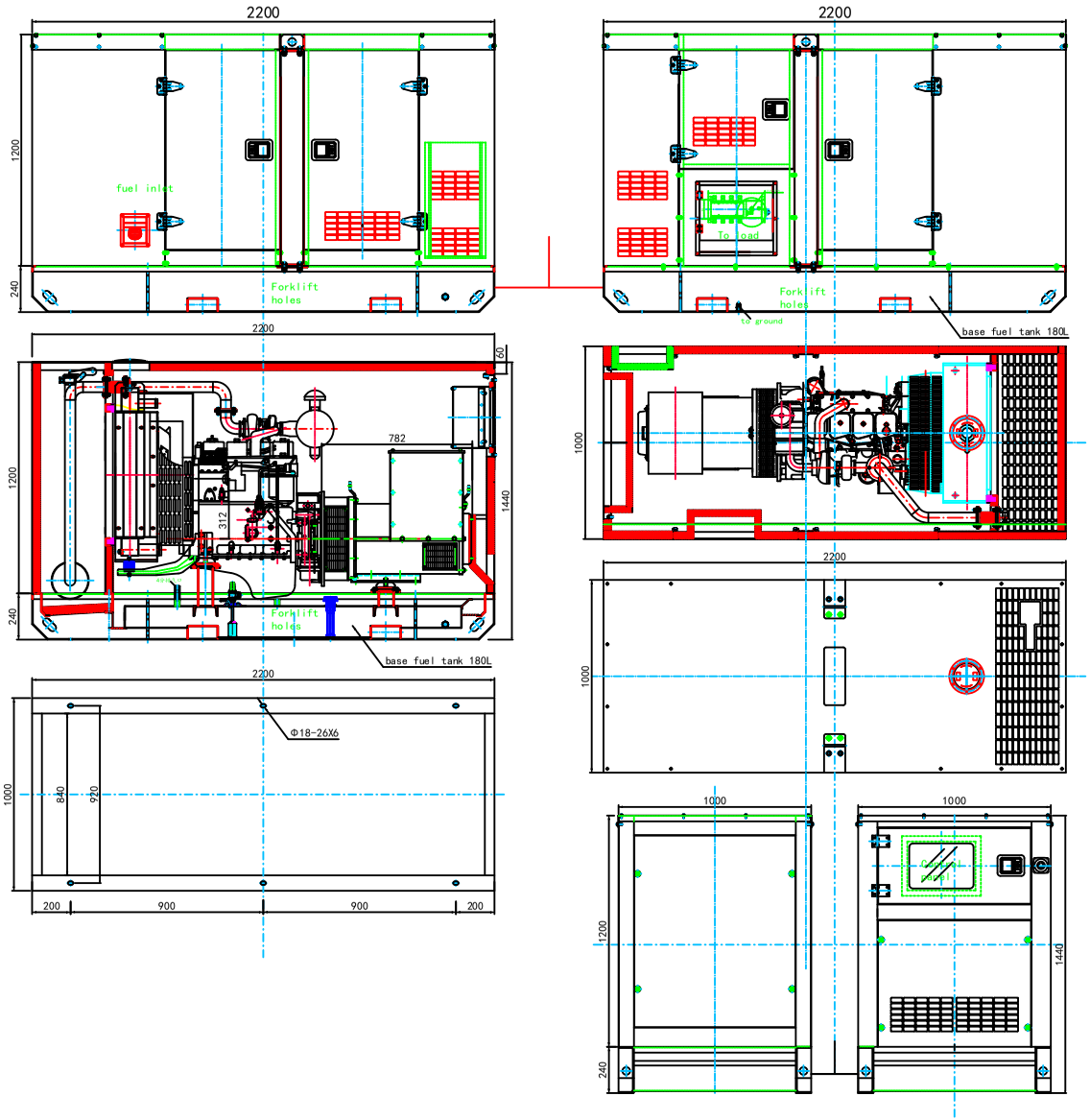
DEEP SEA ELECTRONICS
Highfield House, Hunmanby Industrial Estate, Hunmanby YO14 0PH
TELEPHONE +44 (0) 1723 890099 **FACSIMILE** +44 (0) 1723 893303
EMAIL sales@deepseaplc.com **WEBSITE** www.deepseaplc.com

DEEP SEA ELECTRONICS INC USA
3230 Williams Avenue, Rockford, IL 61101-2668 USA
TELEPHONE +1 (815) 316 8706 **FACSIMILE** +1 (815) 316 8708
EMAIL sales@deepseausa.com **WEBSITE** www.deepseausa.com

Deep Sea Electronics maintains a policy of continuous development and reserves the right to change the details shown on this data sheet without prior notice. The contents are intended for guidance only.

Registered in England & Wales No.01319649
VAT No.316923457

No.： 2022-002131653



This is a design proposal diagram for reference only
There may be slight adjustments during production,
subject to actual conditions

Canopy drawing for 30Kw Diesel Generator