

**STANDBY**                    **40-60 kW**  
**PRIME**                        **36-54.6 kW**  
**60 Hz**

Model	Standby kW (kVA)	Prime kW (kVA)
D40-4	40 (50)	36 (45)
D40-4S	40 (40)	36 (36)
D50-4	50 (62.5)	45 (56.3)
D50-4S	50 (50)	45 (45)
D60-4	60 (75)	54.6 (68.2)

All models are Tier II EPA Approved, Emissions certified.

## GeneratorJoe



### FEATURES

#### GENERATOR SET

- Complete system designed and built at ISO 9001 certified facilities
- Factory tested to design specifications at full load conditions

#### ENGINE

- Governor, mechanical
- Electrical system, 12 VDC
- Cartridge type filters
- Battery rack and cables
- Coolant and lube drains piped to edge of base

#### GENERATOR

- Insulation system, class H
- Drip proof generator air intake (NEMA 2, IP23)
- Electrical design in accordance with BS5000 Part 99, IEC60034-1, EN61000-6, NEMA MG-1.33

#### CONTROL SYSTEM

- EMCP 3.1 digital control panel
- Vibration isolated NEMA 1 enclosure with lockable hinged door
- DC and AC wiring harnesses

#### MOUNTING ARRANGEMENT

- Heavy-duty fabricated steel base with lifting points
- Anti-vibration pads to ensure vibration isolation
- Complete OSHA guarding
- Stub-up pipe ready for connection to silencer pipework
- Flexible fuel lines terminated at skid base with NPT connections

#### COOLING SYSTEM

- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50° C (122° F)

#### CIRCUIT BREAKER

- UL/CSA listed
- 3-pole with solid neutral
- NEMA 1 steel enclosure, vibration isolated
- Electrical stub-up area directly below circuit breaker

#### AUTOMATIC VOLTAGE REGULATOR

- Voltage within ± 0.5% 3-phase and ± 1.0% single phase at steady state from no load to full load
- Provides fast recovery from transient load changes

#### EQUIPMENT FINISH

- All electroplated hardware
- Anticorrosive paint protection
- High gloss polyurethane paint for durability and scuff resistance

#### QUALITY STANDARDS

- BS4999, BS5000, BS5514, IEC60034, EN61000-6, NEMA MG-1.33, NFPA 110 (with optional equipment)

#### DOCUMENTATION

- Operation and maintenance manuals provided
- Wiring diagrams included

#### WARRANTY

- All equipment carries full manufacturer's warranty

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**OPTIONAL EQUIPMENT\***

**ENCLOSURE**

- B Series weather protective enclosure (includes internal silencer system)
  - Panel viewing window
  - External emergency stop push button
- Sound attenuated enclosure (includes internal silencer system)
- Super sound attenuated enclosure (includes internal silencer system)

**SILENCER SYSTEM – OPEN UNIT**

- Level 1 silencer
- Level 2 silencer
- Level 3 silencer
- Mounting kit
- Through-wall installation kits

**ENGINE**

- Electronic governor
- Battery heater
- Lube oil drain pump
- Lube oil sump heater

**CIRCUIT BREAKER**

- Auxiliary voltfree contacts
- Shunt trip (100 + amp breakers)

**MOUNTING ACCESSORIES**

- Seismic (zone 4) vibration isolators

**GENERATOR**

- Anti-condensation heater
- AREP excitation system (D40-4, D50-4, D60-4)
- Generator upgrade 1 size (D40-4, D50-4, D60-4)
- Permanent magnet generator

**CONTROL SYSTEM**

- No control system
- EMCP 3.2 digital control panel

**FUEL SYSTEM**

- Single-walled steel fuel tank
- UL listed closed top-diked skid-mounted fuel tank base (24-hour capacity) with fuel alarm (low level/leak detected)
- Critical high fuel alarm
- Low fuel level alarm and shutdown

**REMOTE ANNUNCIATORS**

- Remote annunciator panel (supplied loose)

**COOLING SYSTEM**

- Coolant heater
- Low coolant temperature alarm
- Low coolant level shutdown
- Radiator transition flange

**MISCELLANEOUS ACCESSORIES**

- Toolkit
- Additional operator's manual pack
- Special enclosure color
- UL listing
- CSA certification
- French or Spanish language labels

**EXTENDED SERVICE CONTRACTS**

- Extended service coverage available

**TESTING**

- Factory witness test (restricted to 6 hours – full load, 1.0 pf)

\* Some options may not be available on all models. Not all options are listed.



**GeneratorJoe**

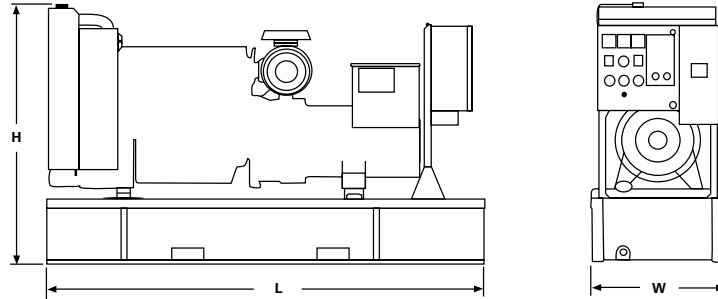
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**STANDBY**  
**PRIME**  
**60 Hz**

**40 - 60 kW**  
**36 - 54.6 kW**



### GENERATOR SET DIMENSIONS AND WEIGHTS



Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)*
D40-4	2208 (86.9)	1000 (39.4)	1252 (49.3)	870 (1914)
D40-4S	2208 (86.9)	1000 (39.4)	1252 (49.3)	870 (1914)
D50-4	2208 (86.9)	1000 (39.4)	1252 (49.3)	905 (1991)
D50-4S	2208 (86.9)	1000 (39.4)	1252 (49.3)	885 (1947)
D60-4	2208 (86.9)	1000 (39.4)	1252 (49.3)	955 (2101)

**NOTE:** General configuration not to be used for installation. See specific dimensional drawings for detail. Dimensions and weights shown are for the open skid configuration.

\*Includes oil and coolant



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**SPECIFICATIONS**



**GENERATOR**

Voltage regulation .....  $\pm 0.5\%$  3PH and  $\pm 1\%$  single PH  
 at steady state from no load to full load  
 Frequency .....  $\pm 0.8\%$  for constant load,  
 no load to full load  
 Waveform distortion ..... THD < 4%, at no load  
 Radio interference ..... Compliance with EN61000-6  
 Telephone interference..... TIF < 50, THF < 2%  
 Overspeed limit ..... 2250 rpm  
 Insulation..... Class H  
 Temperature rise ..... Within Class H limits  
 Available voltages ..... 1-phase – 120/240,  
 115/230, 110/220  
 3-phase – 277/480, 120/240,  
 127/220, 120/208  
 Deration ..... Consult factory for available outputs  
 Ratings ..... At 30° C (86° F), 152.4 m (500 ft), 60%  
 humidity, 1.0 pf (1-phase), 0.8 pf (3-phase)



**ENGINE**

Manufacturer ..... Caterpillar  
 Type ..... 4-cycle  
 Aspiration ..... Natural/turbo  
 Stroke – mm (in) ..... 127 (5.0)  
 Piston speed – m/sec (ft/sec)..... 7.62 (25.0)  
 Engine speed – rpm ..... 1800  
 Air cleaner type ..... Dry, replaceable paper  
 element type with restriction indicator

**D40-4, D40-4S – C4.4**

Cylinder configuration ..... In-line 4  
 Displacement – L (cu in)..... 4.4 (269)  
 Bore – mm (in) ..... 105 (4.13)  
 Compression ratio ..... 19.3:1  
 Governor  
 Type ..... Mechanical and electrical  
 Class ..... G2 and G3  
 Max power at rated rpm – kW (hp)  
 Standby ..... 49 (65.6)  
 Prime..... 43.5 (58.2)  
 BMEP – kPa (psi)  
 Standby..... 749 (108.6)  
 Prime ..... 638 (92.5)  
 Regenerative power – kW (hp) ..... 10.7 (14.3)

**D50-4, D50-4S, D60-4 – C4.4**

Cylinder configuration ..... In-line 4  
 Displacement – L (cu in) ..... 4.4 (269)  
 Bore – mm (in)..... 105 (4.13)  
 Compression ratio ..... 18.2:1  
 Governor  
 Type ..... Mechanical and electrical  
 Class ..... G2 and G3  
 Max power at rated rpm – kW (hp)  
 Standby..... 70.5 (94.5)  
 Prime ..... 63.5 (85.1)  
 BMEP – kPa (psi)  
 Standby..... 1070 (155)  
 Prime..... 960 (139.2)  
 Regenerative power – kW (hp) ..... 13.7 (18.3)



**CONTROL PANEL**

- Heavy duty sheet steel enclosure with lockable hinged door
- Vibration isolated from generating set
- LCD display
- AC metering
- DC metering
- Fail to start shutdown
- Low oil pressure shutdown
- High engine temperature
- Low/high battery voltage
- Underspeed/overspeed
- Loss of engine speed detection
- 2 spare fault channels
- 20 event fault log
- 2 LED status indicators
- Lockdown emergency stop push button

**RATING DEFINITIONS AND CONDITIONS**

**Standby** – Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator is peak rated (as defined in ISO8528-3).

**Prime** – Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and the generator set can supply 10 percent overload power for 1 hour in 12 hours.



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**D40-4 (3-Phase)**

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating	kW	kVA	40	50	36	45
<b>Lubricating System</b>						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CF-4						
Total oil capacity	L	U.S. gal	7.0	1.85	7.0	1.85
Oil pan	L	U.S. gal	5.5	1.45	5.5	1.45
<b>Fuel System</b>						
Generator set fuel consumption						
100% load	L/hr	gal/hr	11.6	3.1	10.5	2.8
75% load	L/hr	gal/hr	8.9	2.3	8.1	2.1
50% load	L/hr	gal/hr	6.3	1.7	5.8	1.5
<b>Engine Electrical System</b>						
Voltage/ground: 12/negative						
Battery charging generator ampere rating						
	amps		45		45	
<b>Cooling System</b>						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.8	3.37	12.8	3.37
Maximum coolant static head	m H <sub>2</sub> O	ft H <sub>2</sub> O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	6	10.8	6	10.8
Heat rejected to coolant at rated power	kW	Btu/min	28.3	1,610	25.6	1,456
Total heat radiated to room at rated power	kW	Btu/min	13.8	785	13.8	785
Radiator fan load	kW	hp	1.0	1.34	1.0	1.34
<b>Air Requirements</b>						
Combustion air flow	m <sup>3</sup> /min	cfm	3.59	127	3.60	127
Maximum air cleaner restriction	kPa	in H <sub>2</sub> O	6.6	26.5	6.6	26.5
Radiator cooling air (zero restriction)	m <sup>3</sup> /min	cfm	121	4,280	121	4,280
Generator cooling air	m <sup>3</sup> /min	cfm	19.2	678	19.2	678
Allowable air flow restriction (after radiator)	kPa	in H <sub>2</sub> O	0.12	0.5	0.12	0.5
Cooling airflow (@ rated speed)						
Rate with restriction	m <sup>3</sup> /min	cfm	97.8	3,453	97.8	3,453
<b>Exhaust System</b>						
Maximum allowable backpressure						
Exhaust flow at rated kW	kPa	in Hg	15	4.43	15	4.43
Exhaust temperature at rated kW – Dry exhaust	m <sup>3</sup> /min	cfm	9.58	338	8.80	311
	°C	°F	629	1,164	560	1,040
<b>Generator Set Noise Rating*</b>						
(without attenuation) at 1 m (3 ft)						
	dB(A)		93.5		93.3	

Generator Technical Data		277/480V	127/220V 120/208V	120/240V	347/600V
<b>Motor Starting Capability:</b> (kVA)					
(30% voltage dip)					
Self excited		98	84	76	98
AREP excited		128	110	100	128
PMG		128	110	100	128
<b>Full Load Efficiencies:</b>					
Standby		88.9	88.4	87.8	88.9
Prime		89.2	88.8	88.5	89.2
<b>Reactances (per unit):</b>					
X <sub>d</sub>		2.65	3.16	3.53	2.65
X' <sub>d</sub>		0.12	0.14	0.16	0.12
X'' <sub>d</sub>		0.059	0.070	0.078	0.059
X <sub>q</sub>		1.59	1.89	2.12	1.59
X'' <sub>q</sub>		0.073	0.087	0.098	0.073
X <sub>2</sub>		0.066	0.078	0.087	0.066
X <sub>0</sub>		0.004	0.005	0.006	0.004
<b>Time Constants:</b>					
	t' <sub>d</sub>	t' <sub>d</sub>	t' <sub>do</sub>	t <sub>a</sub>	
	50 ms	5 ms	1131 ms	8 ms	

\* dB(A) levels are for guidance only



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**D40-4S (1-Phase)**

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
<b>Power Rating</b>	kW	kVA	40	40	36	36
<b>Lubricating System</b> Type: full pressure Oil filter: spin-on, full flow Oil cooler: watercooled Oil type required: API CF-4 Total oil capacity Oil pan	L L	U.S. gal U.S. gal	7.0 5.5	1.85 1.45	7.0 5.5	1.85 1.45
<b>Fuel System</b> Generator set fuel consumption 100% load 75% load 50% load	L/hr L/hr L/hr	gal/hr gal/hr gal/hr	12.0 9.3 6.6	3.2 2.5 1.8	10.9 8.5 6.1	2.9 2.2 1.6
<b>Engine Electrical System</b> Voltage/ground: 12/negative Battery charging generator ampere rating	amps		45		45	
<b>Cooling System</b> Water pump type: centrifugal Radiator system capacity incl. engine Maximum coolant static head Coolant flow rate Minimum temperature to engine Temperature rise across engine Heat rejected to coolant at rated power Total heat radiated to room at rated power Radiator fan load	L m H <sub>2</sub> O L/hr °C °C kW kW kW	U.S. gal ft H <sub>2</sub> O U.S. gal/hr °F °F Btu/min Btu/min hp	12.8 10.2 11 640 70 6 29.8 15.5 1.0	3.37 33.5 3,075 158 10.8 1,695 882 1.34	12.8 10.2 11 640 70 6 27.1 15.6 1.0	3.37 33.5 3,075 158 10.8 1,541 887 1.34
<b>Air Requirements</b> Combustion air flow Maximum air cleaner restriction Radiator cooling air (zero restriction) Generator cooling air Allowable air flow restriction (after radiator) Cooling airflow (@ rated speed) Rate with restriction	m <sup>3</sup> /min kPa m <sup>3</sup> /min m <sup>3</sup> /min kPa m <sup>3</sup> /min	cfm in H <sub>2</sub> O cfm cfm in H <sub>2</sub> O cfm	3.58 6.6 121 19.2 0.12 97.8	126 26.5 4,280 678 0.5 3,453	3.59 6.6 121 19.2 0.12 97.8	127 26.5 4,280 678 0.5 3,453
<b>Exhaust System</b> Maximum allowable backpressure Exhaust flow at rated kW Exhaust temperature at rated kW – Dry exhaust	kPa m <sup>3</sup> /min °C	in Hg cfm °F	15 9.58 629	4.43 338 1,164	15 8.80 560	4.43 311 1,040
<b>Generator Set Noise Rating*</b> (without attenuation) at 1 m (3 ft)	dB(A)		93.5		93.3	

Generator Technical Data		120/240V	115/230V	110/220V
<b>Motor Starting Capability:</b> (kVA) (30% voltage dip)	Self excited	70	65	60
	PMG	70	65	60
<b>Full Load Efficiencies:</b>	Standby	84.6	83.7	82.7
	Prime	84.6	83.7	82.7
<b>Reactances (per unit):</b> Reactances shown are applicable to the standby rating.	X <sub>d</sub>	2.35	2.56	2.79
	X' <sub>d</sub>	0.22	0.24	0.26
	X <sup>n</sup> <sub>d</sub>	0.111	0.121	0.132
	X <sub>q</sub>	1.41	1.53	1.68
	X <sup>n</sup> <sub>q</sub>	0.140	0.152	0.166
<b>Time Constants:</b>	t' <sub>d</sub>	80 ms	t'' <sub>d</sub>	7 ms
			t' <sub>do</sub>	1131 ms
			t <sub>a</sub>	12 ms

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**D50-4 (3-Phase)**

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Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
<b>Power Rating</b>	kW	kVA	50	62.5	45	56.3
<b>Lubricating System</b> Type: full pressure Oil filter: spin-on, full flow Oil cooler: watercooled Oil type required: API CF-4 Total oil capacity Oil pan	L L	U.S. gal U.S. gal	7.0 5.5	1.85 1.45	7.0 5.5	1.85 1.45
<b>Fuel System</b> Generator set fuel consumption 100% load 75% load 50% load	L/hr L/hr L/hr	gal/hr gal/hr gal/hr	16.0 11.7 9.3	4.2 3.1 2.4	14.1 10.8 9.0	3.7 2.9 2.4
<b>Engine Electrical System</b> Voltage/ground: 12/negative Battery charging generator ampere rating	amps		45		45	
<b>Cooling System</b> Water pump type: centrifugal Radiator system capacity incl. engine Maximum coolant static head Coolant flow rate Minimum temperature to engine Temperature rise across engine Heat rejected to coolant at rated power Total heat radiated to room at rated power Radiator fan load	L m H <sub>2</sub> O L/hr °C °C kW kW kW	U.S. gal ft H <sub>2</sub> O U.S. gal/hr °F °F Btu/min Btu/min hp	13.1 10.2 11 640 70 6 47.7 19.8 2.8	8.22 33.5 3,075 158 10.8 2,713 1,126 3.75	13.1 10.2 11 640 70 6 42.3 16.6 2.8	8.22 33.5 3,075 158 10.8 2,406 944 3.75
<b>Air Requirements</b> Combustion air flow Maximum air cleaner restriction Radiator cooling air (zero restriction) Generator cooling air Allowable air flow restriction (after radiator) Cooling airflow (@ rated speed) Rate with restriction	m <sup>3</sup> /min kPa m <sup>3</sup> /min m <sup>3</sup> /min kPa m <sup>3</sup> /min	cfm in H <sub>2</sub> O cfm cfm in H <sub>2</sub> O cfm	5.29 8.0 143 19.2 0.12 134	187 32.1 5,042 678 0.5 4,724	5.26 8.0 143 19.2 0.12 134	186 32.1 5,042 678 0.5 4,724
<b>Exhaust System</b> Maximum allowable backpressure Exhaust flow at rated kW Exhaust temperature at rated kW – Dry exhaust	kPa m <sup>3</sup> /min °C	in Hg cfm °F	15 13.8 594	4.43 487.1 1,108	15 13.1 544	4.43 462.4 1,015
<b>Generator Set Noise Rating*</b> (without attenuation) at 1 m (3 ft)	dB(A)		91.7		91.8	

Generator Technical Data		277/480V	127/220V 120/208V	120/240V	347/600V			
<b>Motor Starting Capability:</b> (kVA) (30% voltage dip)	Self excited	115	99	90	115			
	AREP excited	150	130	118	150			
	PMG	150	130	118	150			
<b>Full Load Efficiencies:</b>	Standby	88.9	88.5	87.9	88.9			
	Prime	89.3	88.8	88.4	89.3			
<b>Reactances (per unit):</b>  Reactances shown are applicable to the standby rating.	X <sub>d</sub>	2.86	3.41	3.81	2.86			
	X <sub>d</sub> <sup>'</sup>	0.12	0.14	0.16	0.12			
	X <sub>d</sub> <sup>''</sup>	0.061	0.073	0.081	0.061			
	X <sub>q</sub>	1.72	2.04	2.29	1.72			
	X <sub>q</sub> <sup>'</sup>	0.076	0.090	0.101	0.076			
	X <sub>2</sub>	0.068	0.081	0.091	0.068			
	X <sub>0</sub>	0.005	0.006	0.007	0.005			
<b>Time Constants:</b>	t <sub>d</sub> <sup>'</sup>	50 ms	t <sub>d</sub> <sup>''</sup>	5 ms	t <sub>do</sub> <sup>'</sup>	1171 ms	t <sub>a</sub>	8 ms

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**GeneratorJoe**

**STANDBY**  
**PRIME**  
**60 Hz**

**40 - 60 kW**  
**36 - 54.6 kW**



**D50-4S (1-Phase)**

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
<b>Power Rating</b>	kW	kVA	50	50	45	45
<b>Lubricating System</b>						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CF-4						
Total oil capacity	L	U.S. gal	7.0	1.85	7.0	1.85
Oil pan	L	U.S. gal	5.5	1.45	5.5	1.45
<b>Fuel System</b>						
Generator set fuel consumption						
100% load	L/hr	gal/hr	16.9	4.5	14.7	3.9
75% load	L/hr	gal/hr	12.3	3.3	11.3	3.0
50% load	L/hr	gal/hr	9.5	2.5	9.2	2.4
<b>Engine Electrical System</b>						
Voltage/ground: 12/negative						
Battery charging generator ampere rating						
			amps		45	
<b>Cooling System</b>						
Water pump type: centrifugal						
Radiator system capacity incl. engine						
Maximum coolant static head	L	U.S. gal	13.1	8.22	13.1	8.22
Coolant flow rate	m H <sub>2</sub> O	ft H <sub>2</sub> O	10.2	33.5	10.2	33.5
Minimum temperature to engine	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Temperature rise across engine	°C	°F	70	158	70	158
Heat rejected to coolant at rated power	°C	°F	6	10.8	6	10.8
Total heat radiated to room at rated power	kW	Btu/min	51.8	2,946	45.4	2,582
Radiator fan load	kW	Btu/min	25.0	1,422	20.8	1,183
	kW	hp	2.8	3.75	2.8	3.75
<b>Air Requirements</b>						
Combustion air flow	m <sup>3</sup> /min	cfm	5.32	188	5.28	186
Maximum air cleaner restriction	kPa	in H <sub>2</sub> O	8.0	32.1	8.0	32.1
Radiator cooling air (zero restriction)	m <sup>3</sup> /min	cfm	143	5,042	143	5,042
Generator cooling air	m <sup>3</sup> /min	cfm	19.2	678	19.2	678
Allowable air flow restriction (after radiator)	kPa	in H <sub>2</sub> O	0.12	0.5	0.12	0.5
Cooling airflow (@ rated speed)						
Rate with restriction	m <sup>3</sup> /min	cfm	134	4,724	134	4,724
<b>Exhaust System</b>						
Maximum allowable backpressure	kPa	in Hg	15	4.43	15	4.43
Exhaust flow at rated kW	m <sup>3</sup> /min	cfm	13.8	487.1	13.1	462.4
Exhaust temperature at rated kW – Dry exhaust	°C	°F	594	1,108	544	1,015
<b>Generator Set Noise Rating*</b>						
(without attenuation) at 1 m (3 ft)						
			dB(A)		91.7	
					91.8	

Generator Technical Data		120/240V	115/230V	110/220V
<b>Motor Starting Capability: (kVA)</b>				
(30% voltage dip)		70	65	60
Self excited PMG		70	65	60
<b>Full Load Efficiencies:</b>				
Standby		83.7	82.7	81.6
Prime		84.6	83.7	82.7
<b>Reactances (per unit):</b>				
X <sub>d</sub>		2.93	3.19	3.49
Reactances shown are applicable to the standby rating.		X' <sub>d</sub> 0.28	0.30	0.33
		X <sup>n</sup> <sub>d</sub> 0.139	0.151	0.165
		X <sub>q</sub> 1.76	1.92	2.10
		X <sup>n</sup> <sub>q</sub> 0.174	0.190	0.208
<b>Time Constants:</b>				
		t' <sub>d</sub> 80 ms	t <sup>n</sup> <sub>d</sub> 7 ms	t' <sub>do</sub> 1131 ms
				t <sub>a</sub> 12 ms

\* dB(A) levels are for guidance only



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**D60-4 (3-Phase)**

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
<b>Power Rating</b>	kW	kVA	60	75	54.6	68.2
<b>Lubricating System</b> Type: full pressure Oil filter: spin-on, full flow Oil cooler: watercooled Oil type required: API CF-4 Total oil capacity Oil pan	L L	U.S. gal U.S. gal	7.0 5.5	1.85 1.45	7.0 5.5	1.85 1.45
<b>Fuel System</b> Generator set fuel consumption 100% load 75% load 50% load	L/hr L/hr L/hr	gal/hr gal/hr gal/hr	19.7 13.7 10.0	5.2 3.6 2.6	17.2 12.4 9.6	4.5 3.3 2.5
<b>Engine Electrical System</b> Voltage/ground: 12/negative Battery charging generator ampere rating	amps		45		45	
<b>Cooling System</b> Water pump type: centrifugal Radiator system capacity incl. engine Maximum coolant static head Coolant flow rate Minimum temperature to engine Temperature rise across engine Heat rejected to coolant at rated power Total heat radiated to room at rated power Radiator fan load	L m H <sub>2</sub> O L/hr °C °C kW kW kW	U.S. gal ft H <sub>2</sub> O U.S. gal/hr °F °F Btu/min Btu/min hp	13.1 10.2 11 640 70 6 57.0 23.5 2.8	8.22 33.5 3,075 158 10.8 3,242 1,337 3.75	13.1 10.2 11 640 70 6 51.1 20.3 2.8	8.22 33.5 3,075 158 10.8 2,907 1,155 3.75
<b>Air Requirements</b> Combustion air flow Maximum air cleaner restriction Radiator cooling air (zero restriction) Generator cooling air Allowable air flow restriction (after radiator) Cooling airflow (@ rated speed) Rate with restriction	m <sup>3</sup> /min kPa m <sup>3</sup> /min m <sup>3</sup> /min kPa m <sup>3</sup> /min	cfm in H <sub>2</sub> O cfm cfm in H <sub>2</sub> O cfm	5.35 8.0 143 19.2 0.12 134	189 32.1 5,042 678 0.5 4,724	5.31 8.0 143 19.2 0.12 134	187 32.1 5,042 678 0.5 4,724
<b>Exhaust System</b> Maximum allowable backpressure Exhaust flow at rated kW Exhaust temperature at rated kW – Dry exhaust	kPa m <sup>3</sup> /min °C	in Hg cfm °F	15 13.8 594	4.43 487.1 1,108	15 13.1 544	4.43 462.4 1,015
<b>Generator Set Noise Rating*</b> (without attenuation) at 1 m (3 ft)	dB(A)		91.5		91.6	

Generator Technical Data		277/480V	127/220V 120/208V	120/240V	347/600V			
<b>Motor Starting Capability:</b> (kVA) (30% voltage dip)	Self excited	163	140	127	163			
	AREP excited	212	184	167	212			
	PMG	212	184	167	212			
<b>Full Load Efficiencies:</b>	Standby	90.8	90.3	89.7	90.8			
	Prime	91.0	90.5	90.1	91.0			
<b>Reactances (per unit):</b>  Reactances shown are applicable to the standby rating.	X <sub>d</sub>	2.76	3.28	3.67	2.76			
	X' <sub>d</sub>	0.10	0.12	0.14	0.10			
	X'' <sub>d</sub>	0.051	0.061	0.068	0.051			
	X <sub>q</sub>	1.66	1.97	2.20	1.66			
	X'' <sub>q</sub>	0.063	0.075	0.084	0.063			
	X <sub>2</sub>	0.057	0.068	0.076	0.057			
	X <sub>0</sub>	0.005	0.006	0.006	0.005			
<b>Time Constants:</b>	t' <sub>d</sub>	50 ms	t' <sub>d</sub>	5 ms	t' <sub>do</sub>	1354 ms	t <sub>a</sub>	8 ms

\* dB(A) levels are for guidance only



**GeneratorJoe**

**STANDBY**  
**PRIME**  
**60 Hz**

**40 - 60 kW**  
**36 - 54.6 kW**

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