

## Features:

- Excitation system: self-excited (AREP and PMG are optional)
- ATS (automatic transfer switch) receptacle
- Lockable battery isolator switch
- Stainless galvanized zinc plates with strong corrosion resistance
- Vibration isolators between the engine/alternator and base frame
- Integrated wiring design
- Base fuel tank for at least 8 hours running
- Equipped with an industrial muffler
- Engine oil pump
- 50 C radiator
- Top lifting and steel base frame with forklift holes
- Drainage for fuel tank
- Complete protection functions and safety labels
- IP54 (soundproof sets), IP56 (control system)
- Water jacket preheater, oil heater and double air cleaner, etc. are available.



### Output Ratings

Generating Set Model	Prime	Standby
<b>X1020C6/S</b>	1159kVA/927kW	1275kVA/1020kW

Ratings at 0.8 power factor.

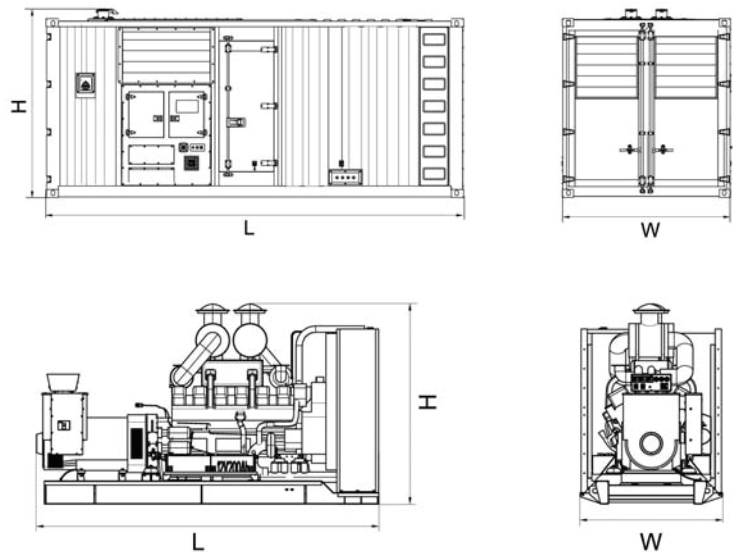
### Ratings and Performance Data

<b>Engine Make &amp; Model:</b>	KTA38-G4	
<b>Alternator Model:</b>	LVI634E	
<b>Alternator Brand:</b>	STAMFORD	
<b>Control System:</b>	PLC-8610 / PLC-7420	
<b>Noise Level@7m:</b>	74.2	
<b>Frequency &amp; Phase:</b>	60Hz & 3PH	
<b>Engine Speed: RPM</b>	1800	
<b>Structure Type:</b>	X1020C6	A
	X1020C6S	C
<b>Fuel Tank Capacity: L</b>	X1020C6	1300
	X1020C6S	1250
<b>Fuel Consumption: l/hr (100% Load)</b>	Prime	245
	Standby	271

### Dimensions and Weights

Generating Set Model	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb)
<b>X1020C6</b>	4412	2060	2404	7411
<b>X1020C6S</b>	6060	2400	2600	12804

Dry = With Lube Oil      Wet = With Lube Oil and Coolant



Also available in the following voltages: 415/240V-380/220V-220/127V-200/115V;

ESP: Standby Power Standby duty, operation under variable load, without over load;

PRP: Prime Power-Continuous duty operation, under variable load 24/24h-10% over load permissible 1 hour/12 hours;

The data is only for your reference but not for use of sales.

M: Mechanical speed governor, E/ECU: Electronic speed governor;

NA: Naturally aspirated, TC: Turbocharged, TCA: Turbocharged and air-air aftercooled, TCW: Water-cooled Turbocharged;

The weights are approximate and without fuel.

## Engine model: KTA38-G4

### GENERAL ENGINE DATA

Type .....	4-Cycle; 60° Vee; 12-Cylinder Diesel	
Aspiration .....	Turbocharged and Aftercooled	
Bore x Stroke .....	6.25 x 6.25 (159 x 159)	
Displacement .....	2300 (37.8)	
Compression Ratio .....	13.9 : 1	
<b>Dry Weight</b>		
Fan to Flywheel Engine .....	— lb (kg)	9482 (4300)
Heat Exchanger Cooled Engine .....	— lb (kg)	9923 (4500)
<b>Wet Weight</b>		
Fan to Flywheel Engine .....	— lb (kg)	10002 (4536)
Heat Exchanger Cooled Engine .....	— lb (kg)	10602 (4808)
<b>Moment of Inertia of Rotating Components</b>		
• with FW 6001 Flywheel .....	— lb <sub>m</sub> • ft <sup>2</sup> (kg • m <sup>2</sup> )	248 (10.4)
• with FW 6011 Flywheel .....	— lb <sub>m</sub> • ft <sup>2</sup> (kg • m <sup>2</sup> )	493 (20.8)
Center of Gravity from Rear Face of Flywheel Housing (FH 6024) .....	— in (mm)	38.6 (980)
Center of Gravity above Crankshaft Centerline .....	— in (mm)	11.0 (279)
Maximum Static Loading at Rear Main Bearing .....	— lb (kg)	2000 (908)

### ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Block .....	— lb • ft (N • m)	4500 (6100)
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### EXHAUST SYSTEM

Maximum Back Pressure .....	— in Hg (mm Hg)	3 (76)
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### AIR INDUCTION SYSTEM

<b>Maximum Intake Air Restriction</b>		
• with Dirty Filter Element .....	— in H <sub>2</sub> O (mm H <sub>2</sub> O)	25 (635)
• with Normal Duty Air Cleaner and Clean Filter Element .....	— in H <sub>2</sub> O (mm H <sub>2</sub> O)	10 (254)
• with Heavy Duty Air Cleaner and Clean Filter Element .....	— in H <sub>2</sub> O (mm H <sub>2</sub> O)	15 (381)

### COOLING SYSTEM

Coolant Capacity — Engine Only .....	— US gal (liter)	32.7 (124)
— with HX 6076 Heat Exchanger .....	— US gal (liter)	52.7 (199)
Maximum Coolant Friction Head External to Engine — 1800 rpm .....	— psi (kPa)	10 (69)
— 1500 rpm .....	— psi (kPa)	N/A
Maximum Static Head of Coolant Above Engine Crank Centerline .....	— ft (m)	60 (18.3)
Standard Thermostat (Modulating) Range .....	— °F (°C)	180 - 200 (82 - 93)
Minimum Pressure Cap .....	— psi (kPa)	10 (69)
Maximum Top Tank Temperature for Standby / Prime Power .....	— °F (°C)	220 / 212 (104 / 100)
Minimum Raw Water Flow @ 90°F to HX 6076 Heat Exchanger .....	— US gpm (liter / min)	108 (409)
Maximum Raw Water Inlet Pressure at HX 6076 Heat Exchanger .....	— psi (kPa)	50 (345)

### LUBRICATION SYSTEM

Oil Pressure @ Idle Speed .....	— psi (kPa)	20 (138)
@ Governed Speed .....	— psi (kPa)	45 - 65 (310 - 448)
Maximum Oil Temperature .....	— °F (°C)	250 (121)
Oil Capacity with OP 6023 Oil Pan : High - Low .....	— US gal (liter)	30 - 23 (114 - 87)
Total System Capacity (Including Bypass Filter) .....	— US gal (liter)	35.7 (135)
Angularity of OP 6023 Oil Pan — Front Down .....		30°
— Front Up .....		30°
— Side to Side .....		30°

## Engine model: KTA38-G4

### FUEL SYSTEM

Type Injection System.....		Direct Injection Cummins PT
Maximum Restriction at PT Fuel Injection Pump — with Clean Fuel Filter..... — in Hg (mm Hg)	4.0	(102)
— with Dirty Fuel Filter..... — in Hg (mm Hg)	8.0	(203)
Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head)..... — in Hg (mm Hg)	6.5	(165)
Maximum Fuel Flow to Injection Pump..... — US gph (liter / hr)	134	(507)

### ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement)..... — volt		24
Battery Charging System, Negative Ground..... — ampere		35
Maximum Allowable Resistance of Cranking Circuit..... — ohm		0.002
Minimum Recommended Battery Capacity		
• Cold Soak @ 50 °F (10 °C) and Above..... — °F CCA		1200
• Cold Soak @ 32 °F to 50 °F (0 °C to 10 °C)..... — °F CCA		1280
• Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C)..... — °F CCA		1800

### PERFORMANCE DATA

All data is based on:

- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
- Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
- ISO 3046, Part 1, Standard Reference Conditions of:
 

Barometric pressure	: 100 kPa (29.53 in Hg)	Air Temperature	: 25°C (77°F)
Altitude	: 110 m (361 ft)	Relative Humidity	: 30%

Steady State Stability Band at any Constant Load .....	— %	+/- 0.25
Estimated Free Field Sound Pressure Level of a Typical Generator Set; Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); [1800 RPM] .....	— dBA	92
Exhaust Noise at 1 m Horizontally from Centerline of Exhaust Pipe Outlet Upwards at 45° [1800 RPM] .....	— dBA	N.A.

Governed Engine Speed..... — rpm  
 Engine Idle Speed..... — rpm  
 Gross Engine Power Output..... — BHP (kW<sub>m</sub>)  
 Brake Mean Effective Pressure..... — psi (kPa)  
 Piston Speed..... — ft / min (m / s)  
 Friction Horsepower..... — HP (kW<sub>m</sub>)  
 Engine Water Flow at Stated Friction Head External to Engine:  
 • 4 psi Friction Head..... — US gpm (liter / s)  
 • Maximum Friction Head..... — US gpm (liter / s)

#### Engine Data with Dry Type Exhaust Manifold

Intake Air Flow..... — cfm (liter / s)  
 Exhaust Gas Temperature..... — °F (°C)  
 Exhaust Gas Flow..... — cfm (liter / s)  
 Air to Fuel Ratio..... — air : fuel  
 Radiated Heat to Ambient..... — BTU / min (kW<sub>m</sub>)  
 Heat Rejection to Coolant..... — BTU / min (kW<sub>m</sub>)  
 Heat Rejection to Exhaust..... — BTU / min (kW<sub>m</sub>)

STANDBY		PRIME POWER	
60 hz	50 hz	60 hz	50 hz
1800	1800	1800	1800
725 - 775	725 - 775	725 - 775	725 - 775
1490 (1112)	1350 (1007)	1350 (1007)	1350 (1007)
285 (1965)	258 (1779)	258 (1779)	258 (1779)
1875 (9.5)	1875 (9.5)	1875 (9.5)	1875 (9.5)
170 (127)	170 (127)	170 (127)	170 (127)
390 (24.6)	Not Applicable for 50 Hz Operation	390 (24.6)	Not Applicable for 50 Hz Operation
340 (21.4)		340 (21.4)	
3040 (1435)		2880 (1359)	
975 (524)		930 (499)	
8405 (3967)		7715 (3641)	
26.4 : 1		27.7 : 1	
9275 (163)		8420 (148)	
38740 (681)		35100 (617)	
43365 (762)		39510 (694)	

## Alternator model: LVI634E

CONTROL SYSTEM SER.3	SEPARATELY EXCITED BY P.M.G.							
A.V.R.	MX341	MX321						
VOLTAGE REGULATION	± 1.0 %	± 0.5 %	With 4% Engine Governing					
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)							
INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER LAP							
WINDING PITCH	TWO THIRDS							
WINDING LEADS	6							
STATOR WDG. RESISTANCE (L-L)	0.0024 Ohms PER PHASE AT 22°C STAR CONNECTED							
ROTOR WDG. RESISTANCE	1.92 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 BALANCED LINEAR LOAD < 5.0%							
MAXIMUM OVERSPEED	2250 Rev/Min							
BEARING DRIVE END	BALL. 6228 (ISO)							
BEARING NON-DRIVE END	BALL. 6319 (ISO)							
	1 BEARING				2 BEARING			
WEIGHT COMP. GENERATOR	2394 kg				2395 kg			
WEIGHT WOUND STATOR	1021 kg				1021 kg			
WEIGHT WOUND ROTOR	885 kg				841 kg			
WR <sup>2</sup> INERTIA	20.611 kgm <sup>2</sup>				20.068 kgm <sup>2</sup>			
SHIPPING WEIGHTS in a crate	2601 kg				2622 kg			
PACKING CRATE SIZE	194 x 92 x 147 (cm)				194 x 92 x 147 (cm)			
	50 Hz				60 Hz			
TELEPHONE INTERFERENCE	THF<2%				TIF<50			
COOLING AIR	2.18 m <sup>3</sup> /sec 4619 cfm				2.63 m <sup>3</sup> /sec 5573 cfm			
VOLTAGE STAR (Y)	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
kVA BASE RATING FOR REACTANCE VALUES	950	1000	1000	910	1083	1145	1197	1250
X <sub>d</sub> DIR. AXIS SYNCHRONOUS	2.62	2.49	2.31	1.87	2.99	2.82	2.70	2.59
X' <sub>d</sub> DIR. AXIS TRANSIENT	0.13	0.13	0.12	0.10	0.15	0.14	0.14	0.13
X'' <sub>d</sub> DIR. AXIS SUBTRANSIENT	0.10	0.09	0.08	0.07	0.11	0.10	0.10	0.10
X <sub>q</sub> QUAD. AXIS REACTANCE	2.18	2.07	1.92	1.56	2.49	2.35	2.25	2.16
X'' <sub>q</sub> QUAD. AXIS SUBTRANSIENT	0.25	0.24	0.22	0.18	0.28	0.27	0.26	0.25
X <sub>L</sub> LEAKAGE REACTANCE	0.06	0.06	0.06	0.05	0.07	0.07	0.07	0.06
X <sub>2</sub> NEGATIVE SEQUENCE	0.17	0.16	0.15	0.12	0.20	0.19	0.18	0.17
X <sub>0</sub> ZERO SEQUENCE	0.03	0.03	0.02	0.02	0.03	0.03	0.03	0.03
REACTANCES ARE SATURATED				VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED				
T' <sub>d</sub> TRANSIENT TIME CONST.	0.097 s							
T'' <sub>d</sub> SUB-TRANSTIME CONST.	0.014 s							
T' <sub>do</sub> O.C. FIELD TIME CONST.	3.18 s							
T <sub>a</sub> ARMATURE TIME CONST.	0.034 s							
SHORT CIRCUIT RATIO	1/X <sub>d</sub>							