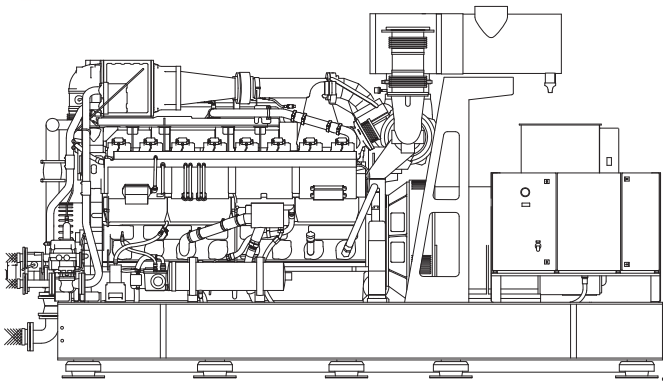
ACG 1200



Fuel Consumption (ISO3046/1)	100% of Rated Load	90% of Rated Load	75% of Rated Load
Fuel Consumption (LHV) ISO3046/1, kW (MMBTU/hr)	2857 (9.76)	2601 (8.88)	2254 (7.7)
Electrical Efficiency ISO3046/1, percent	43.3%	42.8%	41.2%
Thermal Efficiency ISO3046/1, percent	42.0%	41.5%	39.9%

ENGINE

Engine Manufacturer	Cummins
Engine Model	QSK60G
Configuration	V16
Displacement, L (cu.in)	60(3671)
Aspiration	Turbocharqed (1)
Gross Engine Power Output, kWm (hp)	1236(1657)
BMEP, bar (psi)	19.4(281)
Bore, mm (in)	159(6.26)
Stroke, mm (in)	190(7.48)
Rated Speed, rpm	1500
Piston Speed, m/s (ft/min)	9.5(1870)
Compression Ratio	13.7:1
Lube Oil Capacity, L (qt)	380 (400)
Overspeed Limit, rpm	1875
Regenerative Power, kW	N/A
Full Load Lubricating oil consumption, g/kWe-hr (g/hp-hr)	0.15(0.12)

FUEL SYSTEM

Gas supply pressure to engine inlet, bar (psi)	0.2 (2.9)
Minimum Methane Index	70

ENGINE ELECTRICAL SYSTEM(S)

Electric starter voltage, volts	24
Ignition timing, deg before top dead center	20
Minimum battery capacity @ 40 deg.C (104 deg.F), AH	720

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GENSET DIMENSION - OPEN

Genset Length, m (ft)	5.12 (16.8)
Genset Width, m (ft)	2.23 (7.30)
Genset Height, m (ft)	2.77 (9.08)
Genset Weight (wet), kq (lbs)	15450 (33,990)

ENERGY DATA

	100% of Rated Load	90% of Rated Load	75% of Rated Load
Continuous Generator Electrical Output kWe	1200	1080	900
Continuous Shaft Power, kWm (bhp)	1236(1657)	1112(1491)	929(1245)
Total Heat Rejected in LT Circuit, kW (MMBTU/h)	91 (0.31)	85 (0.29)	67 (0.23)
Total Heat Rejected in HT Circuit, kW (MMBTU/h)	546(1.86)	478(1.63)	471 (1.61)
Unburnt, kW (MMBTU/h)	77 (0.26)	71 (0.24)	55(0.19)
Heat Radiated to Ambient, kW (MMBTU/h)	184(0.63)	167(0.57)	146(0.5)
Available Exhaust heat to 105C, kW (MMBTU/h)	672 (2.29)	625(2.13)	660 (2.25)

INTAKE AIR FLOW

	100% of Rated Load	90% of Rated Load	75% of Rated Load
Intake Air Flow Mass, kg/s (Ib/hr)	1.72(13620)	1.56(12360)	1.19(9420)
Intake Air Flow Volume, m3/s @ 0°C (scfm)	1.33(2970)	1.21 (2700)	0.92 (2050)
Maximum inlet restriction (after filter, limit for changing filters), below 35°C ambient temp, mm HG, (in H_20)	20.6(11)	16.6(8.9)	11.6(6.2)
Maximum inlet restriction (after filter, limit for changing filters), above 35°C ambient temp, mm HG, (in H_20)	13.9(7.5)	11.3(6.1)	7.8 (4.2)

EXHAUST AIR FLOW

	100% of Rated Load	90% of Rated Load	75% of Rated Load
Exhaust Gas Flow Mass, kg/s (Ib/hr)	1.78(14100)	1.62(12830)	1.23(9740)
Exhaust Gas Flow Volume, m^3/s (cfm)	3.62 (7660)	3.34 (7070)	2.62 (5550)
Exhaust Temperature After Turbine, °C (°F)	445 (833)	455(851)	479 (894)
Max Exhaust System Back Pressure, mmHG (in H_2O)	28(15)	23(12)	16(9)

CONTİNUOUS RATİNG DEFİNİTİON

Applicable for supplying power continuously to a constant load up to the full output rating for unlimited hours. No sustained overload capability is available for this rating. Consult authorized distributor for rating. (Equivalent to Continuous Power in accordance with IS08528, ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.

Methane Number vs LT Temp - Table C

Methane Number	LT Return Temperature 40 ºC	45 ºC	50 ºC
80			
75			
70			
65			
60			

Methane Number Capability Table B

Load (Percent of Reted)			
100%	90%	75%	50%
70	64	62	0

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ALTERNATOR DATA

Manufacturer	Mecc Alte
Alternator Made and Model	ECO 46-1S/4 A
Frequency (Hz)	50
Power (kVA)	1500
VOLTAGE (V)	400
Phase 3	3
A.V.R.	DER1
Voltage Regulation	(+/-)0.5%
Insulation System	H
Protection	IP23
Rated Power Factor	0.8
WEIGHT COMP. GENERATOR (Kg)	3010
COOLING AIR (m³/min)	135

GENSET DE-RATING

Altitude and Temperature Derate Multiplication Factor

LT & HT Circuit Heat Rejection Calculation Procedure

1. Determine derate multiplier vs. temp derate from Table A.
2. Using the multipliere from #1 above as the percent load factor, determine the heat rejection
3. From table D find the HT and LT circuit multiplier
4. Multiply the result of step 2 by the result of step 3 to obtain the heat rejection at your altitude and temperature.

Barometer		Altitude		Table A								
InHg	mbar	Feet	Meters	Derate Multiplier for all operation modes								
20.7	701	9843	3000	0.75	0.75	0.75	0.75	0.71	0.68	0.61	0.53	-
21.4	723	9022	2750	0.79	0.79	0.79	0.78	0.73	0.70	0.63	0.54	-
22.1	747	8202	2500	0.82	0.82	0.82	0.81	0.76	0.72	0.64	0.55	-
22.8	771	7382	2250	0.86	0.86	0.86	0.84	0.80	0.74	0.65	0.55	-
23.5	795	6562	2000	0.89	0.89	0.89	0.88	0.83	0.78	0.67	0.56	-
24.3	820	5741	1750	0.93	0.93	0.93	0.91	0.86	0.81	0.68	0.56	-
25.0	846	4921	1500	0.96	0.96	0.96	0.94	0.90	0.85	0.69	0.57	-
25.8	872	4101	1250	1.00	1.00	1.00	0.97	0.93	0.89	0.71	0.57	-
26.6	899	3281	1000	1.00	1.00	1.00	1.00	0.97	0.93	0.72	0.58	-
27.4	926	2461	750	1.00	1.00	1.00	1.00	1.00	0.96	0.74	0.58	-
28.3	954	1640	500	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.59	-
29.1	983	820	250	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.59	-
29.5	995	492	150	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.59	-
30.0	1012	0	0	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.59	-
Air Filter Inlet Temperature			°C	0	15	20	25	30	35	40	45	50
			°F	32	59	68	77	86	95	104	113	122

Notes:

1. At ISO3046 reference conditions, altitude 1013 mbar (30in Hg), air inlet temperature 25°C (77°F)
2. Production variation/tolerance +5%

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3. Outlet temperature controlled by thermostat. Inlet temperature for reference only.
4. Inlet temperature controlled by thermostat to 40 °C but is allowed to go to 50°C and ignition timing is retarded resulting in efficiency loss of 0.4 -
5. Power output and efficiency include the effect of Cummins supplied engine driven LT coolant pump
6. At electrical output of 1.0 Power Factor
7. Based on pipeline natural gas with LHV of 33.44mJ/Nm 3 (905 BTU/ft3)
8. Subtract 3 °C ambient temperature capability for each 100 mm (4 in) H 20 back pressure above the information shown on page 2.

Altitude and Ambient Heat Rejection Factor adjustment for HT and LT Circuits

Barometer		Altitude										
InHg	mbar	Feet	Meters	Multiplier for HT & LT Heat Rejection vs Alt & Temp.								
20.7	701	9843	3000	1.06	1.10	1.11	1.13	1.14	1.15	1.17	1.18	1.19
21.4	723	9022	2750	1.05	1.09	1.10	1.12	1.13	1.14	1.15	1.17	1.18
22.1	747	8202	2500	1.04	1.08	1.09	1.10	1.12	1.13	1.14	1.16	1.17
22.8	771	7382	2250	1.03	1.07	1.08	1.09	1.11	1.12	1.13	1.14	1.16
23.5	795	6562	2000	1.02	1.06	1.07	1.08	1.09	1.11	1.12	1.13	1.15
24.3	820	5741	1750	1.01	1.04	1.06	1.07	1.08	1.10	1.11	1.12	1.14
25.0	846	4921	1500	0.99	1.03	1.05	1.06	1.07	1.09	1.10	1.11	1.12
25.8	872	4101	1250	0.98	1.02	1.04	1.05	1.06	1.07	1.09	1.10	1.11
26.6	899	3281	1000	0.97	1.01	1.02	1.04	1.05	1.06	1.08	1.09	1.10
27.4	926	2461	750	0.96	1.00	1.01	1.03	1.04	1.05	1.07	1.08	1.09
28.3	954	1640	500	0.95	0.99	1.00	1.02	1.03	1.04	1.05	1.07	1.08
29.1	983	820	250	0.94	0.98	0.99	1.00	1.02	1.03	1.04	1.06	1.07
29.5	995	492	150	0.94	0.97	0.99	1.00	1.01	1.03	1.04	1.05	1.06
30.0	1012	0	0	0.93	0.97	0.98	0.99	1.01	1.02	1.03	1.05	1.06
Air Filter Inlet Temperature			°C	0	15	20	25	30	35	40	45	50
			°F	32	59	68	77	86	95	104	113	122

Notes:

1. Ambient temperature is the same as air filter inlet temperature and LT inlet temperature is 10°C above ambient or 40°C whichever is higher.
2. Table refers to the capability to run at continuous power level. For short periods of time the genset can run at 5°C higher temperature with reduced efficiency.
3. Subtract 3°C ambient temperature capability for each 100 mm (4 in) H20 back pressure above the information shown on page 2.
4. This generator set is capable of operating for short periods of time under with the LT temperature and/or the fuel methane number outside of the recommended limits with decreased performance. Operation in the green area will result in normal performance. Operation in the yellow area is recommended only for short periods of time and will result in reduced efficiency and shorter spark plug life. Operation in the red area is NOT recommended.

EMISSIONS	100% of Rated Load	90% of Rated Load	75% of Rated Load
NO_x Emissions dry, ppm	183	177	182
NO_x Emissions mg/Nm^3 @ 5% O_2 , (g/hp-h)	500(1)	500(1)	500(1)
THC Emissions wet, ppm	1497	1524	1545
THC Exhaust Emissions, mg/Nm^3@ 5% O_2, (g/hp-h)	1620(3.2)	1640(3.3)	1610(3.4)
NMHC Emissions wet, ppm	225	229	232
NMHC Exhaust Emissions, mg/Nm3 @ 5% O_2, (g/hp-h)	240 (0.5)	250 (0.5)	240 (0.5)
CO Emissions (dry), ppm	484	479	479
CO Emissions Rate, mg/Nm32@ 5% O_2, (g/hp-h)	810(1.6)	790 (1.6)	770 (1.6)
CO_2 Emisions (dry), percent	6.7	6.7	7.0
O_2 Emissions (dry), percent	9.0	9.0	8.5
Particulates PM10, g/hp-h2	<0.03	<0.03	<0.03

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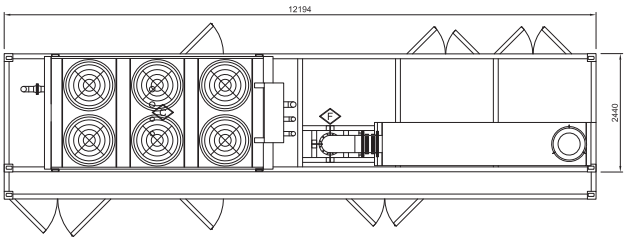
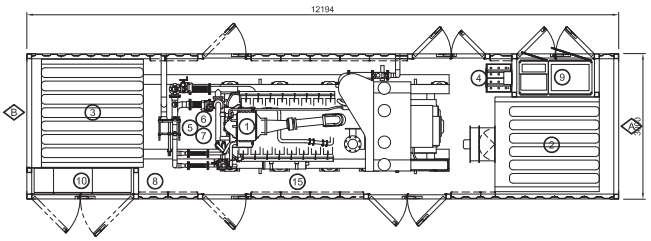
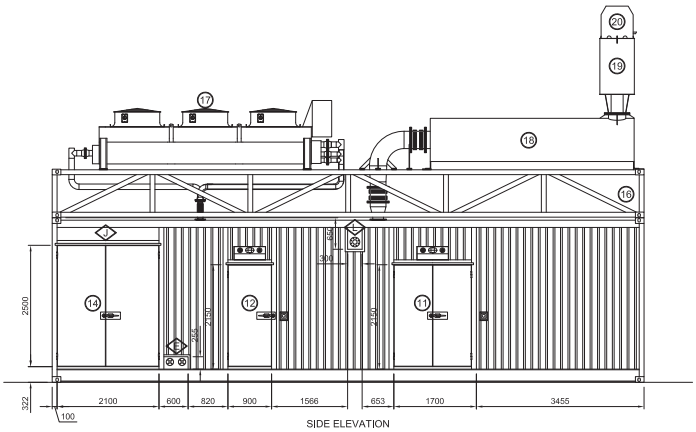
Notes:

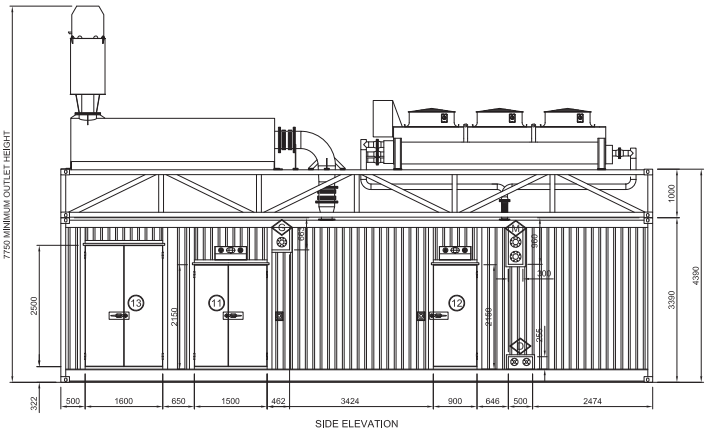
1. Production variation/tolerance +5%
2. Tolerance+/- 15%.
3. NMHC emission are an estimate. Actual NMHC emsisions are a function of the non-methane hydrocarbons in the fuel.
4. Standby (S), Prime (P), Continuous (C) ratings.
5. Maximum rated starting kVA that results in minimum of 90% of rated sustained voltage during starting.







SIDE ELEVATION
SCALE 1:50 @ A1



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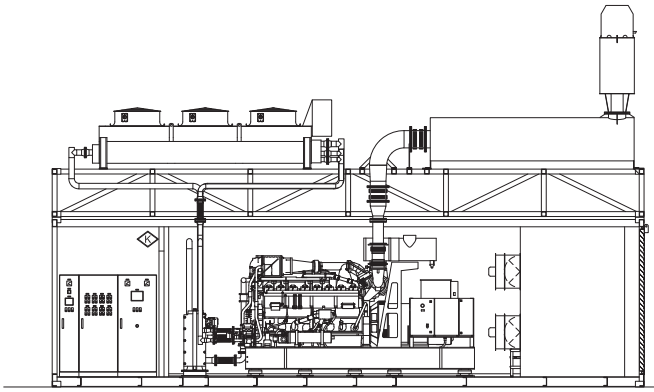
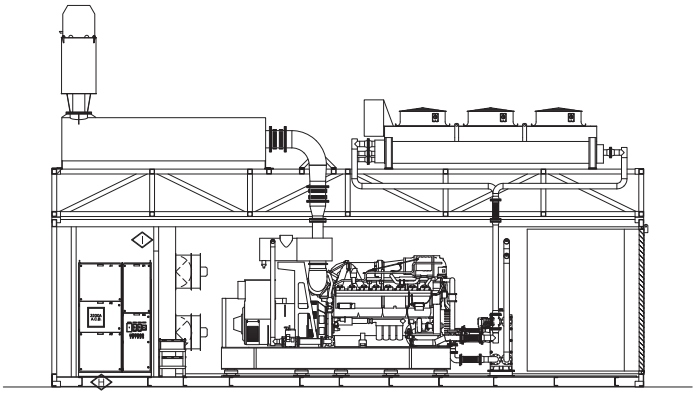


SECTION B - B
SCALE 1:50 @ A1



SECTION A - A
SCALE 1:50 @ A1

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