



Fuel Consumption (ISO3046/1)	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Fuel Consumption (LHV) ISO3046/1, kW (MMBTU/hr) ^{1,2,3,4}	2985 (10.19)	2718 (9.28)	2312 (7.9)	1662 (5.68)
Mechanical Efficiency ISO3046/1, percent ^{1,2,4}	40.1%	39.6%	38.9%	36.5%
Electrical Efficiency ISO3046/1, percent ^{1,2,3,4}	38.9%	38.4%	37.6%	34.9%

Engine Data

Engine Manufacturer	Cummins
Engine Model	QSK60G – V16
Fuel Type	Natural Gas (Pipeline)
Displacement, L (cu.in)	60.3 (3683)
Aspiration	Turbocharged ¹
Gross Engine Power Output, kWm (hp)	1196 (1603)
Compression Ratio	11.4:1
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)
Lube Oil Capacity, L (qt)	380 (401)
Overspeed limit, rpm	2070
Full Load Lubricating oil consumption, g/kWe-hr (g/hp-hr)	0.15 (0.11)
Electric starter voltage, volts	24
Min. Battery Capacity@40°C (104°F), AH	450

Fuel System

Gas supply pressure to engine inlet, bar (psi) ⁴	0.20 (2.9)
Min. Methane Index	69

Methane Number Capability

Load (Percent of Reted)			
100%	90%	75%	50%
61	53	44	38

* Technical drawing has given as a reference, Aksa reserves the right to make change in the model, technical specifications, color, equipment, accessories and images without prior notice.



Genset Dimensions – Open

Genset Length, m (ft) ⁵	5.0 (16.39)
Genset Width, m (ft) ⁵	2.33 (7.64)
Genset Height, m (ft) ⁵	2.97 (9.75)
Genset Weight (wet), kg (lbs) ⁵	13924 (30697)

Notes:

1. At ISO3046 reference conditions, altitude 1013 mbar (30 in Hg), air inlet temperature 25°C (77°F).
2. According to ISO 3046/I with fuel consumption tolerance of +5% -0%.
3. With air intake at 25°C (77°F). Tolerance $\pm 5^\circ\text{F}$.
4. Tested using pipeline natural gas with LHV of 33.44 MJ/Nm³ (905 BTU/ft³).
5. Weights and set dimensions represent a generator set with its standard features only.

Energy Data

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Continuous Shaft Power, kWm (bhp) ^{1,2}	1196 (1603)	1076 (1443)	900 (1206)	607 (813)
Continuous Generator Electrical Output kWe@1.0pf ¹	1160	1044	870	580
Total Heat Rejected in LT Circuit, kW (MMBTU/h) ³	121 (0.41)	112 (0.38)	99 (0.34)	77 (0.26)
Total Heat Rejected in HT Circuit, kW (MMBTU/h) ³	677 (2.31)	613 (2.09)	516 (1.76)	385 (1.31)
Unburnt, kW (MMBTU/h) ⁴	69 (0.24)	64 (0.22)	53 (0.18)	39 (0.13)
Heat Radiated to Ambient, kW (MMBTU/h) ⁴	161 (0.55)	152 (0.52)	136 (0.46)	113 (0.39)
Available Exhaust heat to 105C, kW (MMBTU/h) ³	755 (2.57)	698 (2.38)	605 (2.07)	440 (1.50)

Intake Air Flow

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Intake Air Flow Mass, kg/s (lb/hr) ⁵	1.87 (14803)	1.69 (13389)	1.42 (11212)	0.98 (7786)
Intake Air Flow Volume, m ³ /s @ 0°C (scfm) ⁵	1.45 (3228)	1.31 (2919)	1.09 (2445)	0.76 (1698)

Exhaust Air Flow

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
Exhaust Gas Flow Mass, kg/s (lb/hr) ⁵	1.94 (15329)	1.75 (13867)	1.47 (11618)	1.02 (8074)
Exhaust Gas Flow Volume, m ³ /s (cfm) ⁵	4.07 (8615)	3.72 (7880)	3.17 (6718)	2.25 (4774)
Exhaust Temperature After Turbine, °C (°F) ⁶	469 (877)	478 (892)	491 (915)	508 (946)
Max Exhaust System Back Pressure, mmHG (inH ₂ O) ^{6,7}	37.3 (20.0)	37.3 (20.0)	37.3 (20.0)	37.3 (20.0)

HT Cooling Circuit

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
HT Circuit Engine Coolant Volume, l (gal)	181 (48)	181 (48)	181 (48)	181 (48)
HT Coolant Flow @ Max Ext Restriction, m ³ /h (gal/min)	70 (310)	70 (310)	70 (310)	70 (310)
Max HT Engine Coolant Inlet Temp, °C (°F) Reference ⁸	80 (176)	80 (176)	80 (176)	80 (176)
HT Coolant Outlet Temp, °C (°F) ⁸	90 (194)	90 (194)	90 (194)	90 (194)
Max Pressure Drop in External HT Circuit, bar (psig)	1.0 (15)	1.0 (15)	1.0 (15)	1.0 (15)
HT Circuit Maximum Pressure, bar (psig)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)
Min Static Head, bar (psig)	0.5 (7)	0.5 (7)	0.5 (7)	0.5 (7)

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LT Cooling Circuit

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
LT Circuit Engine Coolant Volume, l (gal)	34 (9)	34 (9)	34 (9)	34 (9)
LT Coolant Flow @ Max Ext Restriction, m ³ /h (gal/min)	22.7 (100)	22.7 (100)	22.7 (100)	22.7 (100)
Max LT Coolant Inlet Temperature °C (°F) ⁹	40 (104)	40 (104)	40 (104)	40 (111)
LT Coolant Outlet Temperature °C (°F) ⁹	44 (111)	54 (111)	54 (111)	54 (129)
Max Pressure Drop in External LT Circuit, bar (psig)	1.0 (15)	1.0 (15)	1.0 (15)	1.0 (15)
LT Circuit Max Pressure, bar (psig)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)
Min Static Head, bar (psig)	0.5- (7)	0.5- (7)	0.5- (7)	0.5- (7)

Emissions

	100% of Rated Load	90% of Rated Load	75% of Rated Load	50% of Rated Load
NO _x emissions, mg/Nm ³ @ 5% O ₂ (g/hp-h) ⁷	489 (1.06)	475 (1.04)	505 (1.13)	483 (1.15)
CO Emissions Rate mg/Nm ³ @5%O ₂ (g/hp-h) ⁸	676 (1.47)	671 (1.47)	650 (1.45)	633 (1.51)
THC Exhaust Emissions, mg/Nm ³ @ 5% O ₂ , (g/hp-h) ⁸	1330 (2.91)	1352 (2.99)	1316 (2.97)	1371 (3.29)

Alternator Data ¹⁰

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
Weight comp. Generator (kg)	3010
Cooling Air (m ³ /min)	135

Notes:

1. With engine driven coolant pump.
2. At ISO3046 reference conditions, altitude 1013 mbar (30 in Hg), air inlet temperature 25°C (77°F).
3. Production variation/tolerance ±10%.
4. Tolerance +/- 15%.
5. According to ISO 3046/I with fuel consumption tolerance of +5% -0%.
6. With air intake at 25°C (77°F). Tolerance ± 5°F
7. Exhaust system back pressure is a rated load and will decrease at lower loads.
8. Outlet temperature controlled by thermostat, inlet temperature for reference only.
9. Inlet temperature controlled by thermostat, outlet temperature for reference only.
10. Continuous (C)



Barometer		Altitude		Table A *									Temperature & Altitude Derate		
In Hg	mbar	Feet	Meter	Derate Multiplier with Grid Parallel Operation									1. Determine derate multiplier vs. temperature and altitude in Table A or B depending upon your operating condition. 2. Assumes the LT return temperature is 10°C above the air filter inlet with a maximum LT temperature of 50°C. 3. If the LT temperature exceeds 50 deg C, consult factory for recommendations. 4. Altitude is based upon SAE standard ambient pressure vs. altitude. For low barometric conditions add 150m (500 ft) to site altitude.		
20.7	701	9843	3000	0.79	0.74	0.69	0.63	0.58	-	-	-	-			-
21.4	723	9022	2750	0.83	0.78	0.73	0.68	0.63	0.52	-	-	-			-
22.1	747	8202	2500	0.88	0.82	0.77	0.72	0.67	0.57	-	-	-			-
22.8	771	7382	2250	0.92	0.87	0.82	0.77	0.71	0.61	0.51	-	-			-
23.5	795	6562	2000	0.96	0.91	0.86	0.81	0.76	0.65	0.55	-	-			-
24.3	820	5741	1750	1.00	0.96	0.90	0.85	0.80	0.70	0.59	-	-			-
25.0	846	4921	1500	1.00	1.00	0.95	0.90	0.85	0.74	0.64	0.53	-			-
25.8	872	4101	1250	1.00	1.00	0.99	0.94	0.89	0.79	0.68	0.58	-			-
26.6	899	3281	1000	1.00	1.00	1.00	0.99	0.93	0.83	0.73	0.62	0.52			-
27.4	926	2461	750	1.00	1.00	1.00	1.00	0.98	0.87	0.77	0.67	0.56			-
28.3	954	1640	500	1.00	1.00	1.00	1.00	1.00	0.92	0.81	0.71	0.60			-
29.1	983	820	250	1.00	1.00	1.00	1.00	1.00	0.96	0.86	0.75	0.65			-
29.5	995	492	150	1.00	1.00	1.00	1.00	1.00	0.98	0.87	0.77	0.67	-		
30.0	1012	0	0	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.80	0.69	-		
				°C	20	25	30	35	40	45	50	55	60	-	
				°F	68	77	86	95	104	113	122	131	140	-	
				Air Filter	Inlet Temperature									-	-

* Based on SAE standard ambient pressure vs. altitude. Assumes LT return temperature is 10°C above air filter inlet.

Barometer		Altitude		Table B *											
In Hg	mbar	Feet	Meters	Derate Multiplier Off Grid (Island or Load Share)											
20.7	701	9843	3000	0.63	0.56	-	-	-	-	-	-	-	-		
21.4	723	9022	2750	0.69	0.61	0.53	-	-	-	-	-	-	-		
22.1	747	8202	2500	0.74	0.66	0.59	0.51	-	-	-	-	-	-		
22.8	771	7382	2250	0.79	0.71	0.64	0.56	-	-	-	-	-	-		
23.5	795	6562	2000	0.84	0.76	0.69	0.61	0.54	-	-	-	-	-		
24.3	820	5741	1750	0.89	0.82	0.74	0.66	0.59	-	-	-	-	-		
25.0	846	4921	1500	0.94	0.87	0.79	0.72	0.64	0.53	-	-	-	-		
25.8	872	4101	1250	1.00	0.92	0.84	0.77	0.69	0.58	-	-	-	-		
26.6	899	3281	1000	1.00	0.97	0.89	0.82	0.74	0.63	0.52	-	-	-		
27.4	926	2461	750	1.00	1.00	0.95	0.87	0.79	0.68	0.57	-	-	-		
28.3	954	1640	500	1.00	1.00	1.00	0.92	0.85	0.73	0.62	0.51	-	-		
29.1	983	820	250	1.00	1.00	1.00	0.97	0.90	0.78	0.67	0.56	-	-		
29.5	995	492	150	1.00	1.00	1.00	0.99	0.92	0.81	0.69	0.58	-	-		
30.0	1012	0	0	1.00	1.00	1.00	1.00	0.95	0.84	0.72	0.61	0.50	-		
				°C	20	25	30	35	40	45	50	55	60	-	
				°F	68	77	86	95	104	113	122	131	140	-	
				Air Filter	Inlet Temperature									-	-

* Based on SAE standard ambient pressure vs. altitude. Assumes LT return temperature is 10C above air filter inlet.

Continuous rating definition

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 ISO8528, ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.